

**PROCEEDINGS OF THE CONFERENCE ON
“COMMUNICATION: A TOOL TO ENHANCE
STATISTICAL CULTURE”**

Visegrád, Hungary
9–10 June 2011

Published by the Hungarian Central Statistical Office

Copy editor:
COSETTE **KONDORA**

Layout editor:
ÁGNES **KÁLI**

Cover designer:
JUDIT **RÁBA**

*Any secondary publication is allowed only by the indication of source.
All rights concerning the layout graphics and design work of this publication are reserved for HCSO.
Any kinds of reproduction of them have to be approved by HCSO.*

Internet: <http://portal.ksh.hu/pls/ksh/docs/communication/index.html>

This publication can be ordered and purchased:
HCSO, Information Section
H-1024 Budapest, 14–18 Fényes Elek Str. (Ground floor)
Postal address: H-1525 Budapest, P.O.B. 51.
Telephone: (36-1) 345-6789, fax: (36-1) 345-6788

232/2011 – Xerox Hungary Ltd.
ISBN 978 963 235 343 2

© Hungarian Central Statistical Office, 2011

KEYNOTE SPEAKER

WALTER **RADERMACHER** (Director General, Eurostat, European Commission)

SESSION CHAIRS

SESSION 1: PIETER **EVERAERS** (Director, Eurostat, European Commission)

SESSION 2: JAUME **GARCÍA VILLAR** (President, National Statistics Institute of Spain)

SESSION 3: GABRIELLA **VUKOVICH** (President, Hungarian Central Statistical Office)

SESSION 4: FREDDY **VERKRUYSSEN** (Advisor-General, Director of Information, Statistics Belgium)

SPEAKERS

PHILIPPE **BAUTIER** (Head, Communication Unit, Eurostat, European Commission)

MARIE **BOHATÁ** (Deputy Director General, Eurostat, European Commission)

LIDIA **BRATANOVA** (Director, UNECE Statistical Division)

FRANÇOIS **BRUNET** (Chief of Department, Information Service, Insee, France)

ATTILA **CSAJBÓK** (Economic Advisor, MNB (the central bank of Hungary))

COSTAS K. **DIAMANTIDES** (Senior Statistics Officer, Statistical Service of Cyprus)

LUÍS TELES **DIAS** (Deputy Director, Statistics Department, Banco de Portugal)

GEJZA **DOHNAL** (Associated Professor, Centre for Quality and Reliability of Production, Czech Technical University in Prague)

TREVOR **FLETCHER** (Head, Statistical Information Management and Support Division, OECD)

MARIANA **KOTZEVA** (President, National Statistical Institute of Bulgaria)

VINCE **KRUCHINA** (Head, Press and Communication Section, Hungarian Central Statistical Office)

ÉVA **LACZKA** (Deputy President, Hungarian Central Statistical Office)

GUNILLA **LUNDHOLM** (Head, Customer Service, Statistics Sweden)

ELSPETH **MACLEAN** (Branch Head, Statistical Advice and Support, National Statistician's Office, UK Statistics Authority)

MAIJA **METSÄ-PAURI** (Special Editor, Statistics Finland; Editor-in-Chief, Tieto&trendit (Facts and Trends) magazine)

STEPHAN **MOENS** (Advisor, Statistics Belgium)

ADOLFO **GÁLVEZ MORALEDA** (Director for Statistical Dissemination, National Statistics Institute of Spain)

BLAGICA **NOVKOVSKA** (Director General, State Statistical Office, Republic of Macedonia)

PER **NYMAND-ANDERSEN** (Advisor, Directorate General Statistics, European Central Bank)

LEON **ØSTERGAARD** (Head of Communication, Statistics Denmark)

AUREL **SCHUBERT** (Director General Statistics, European Central Bank)

TOMAZ **SMREKAR** (Head of Dissemination, Statistical Office of the Republic of Slovenia)

FREDDY **VERKRUYSEN** (Advisor-General, Director of Information, Statistics Belgium)

Contents

Foreword	7
9 JUNE 2011, THURSDAY	
Plenary Session	9
WALTER RADERMACHER : Official statistics – a language in a complex world	11
Session 1. Statistical literacy and European democracy	17
LIDIA BRATANOVA : Making data meaningful: bringing statistics to the people	19
LUÍS TELES DIAS – PER NYMAND-ANDERSEN : Understanding central banking statistics to enhance statistical and financial literacy in Europe	29
GUNILLA LUNDHOLM : How to enable users to understand and use statistics correctly – An example from Statistics Sweden	41
MAIJA METSÄ-PAURI : Sharing statistical data is not enough – interpretations by statisticians also needed	47
Session 2. The responsibility of statisticians and the responsibility of users of statistics	55
MARIE BOHATÁ : Fit-for-purpose statistics for evidence-based policy making	57
MARIANA KOTZEVA : Census 2011 in Bulgaria – one month only good news or three teams in the same boat not counting the dogs	62
ATTILA CSAJBÓK : The use of international data in Hungarian macroprudential analyses	70
ELSPETH MACLEAN : Barriers to improved statistical commentary: Lack of skill and lack of will	77
COSTAS K. DIAMANTIDES : Dissemination Policy of the Statistical Service of Cyprus	86
GEJZA DOHNAL : How can we (statisticians) influence the repute of statistics?	94
Session 3. EU Presidency Trio	101
ADOLFO GÁLVEZ MORALEDA : Communicating European and national statistics to wider audiences	103

FREDDY VERKRUYSSEN – STEPHAN MOENS : Communication of statistics: tips and tricks	107
-------------------------------------------------------------------------------------------------------	-----

ÉVA LACZKA – VINCE KRUCHINA : That is what we are – statistical culture, communication in Hungary	111
-----------------------------------------------------------------------------------------------------------------------	-----

10 JUNE 2011, FRIDAY

Session 4. Trust in institutions, trust in statistics, statistical culture	119
-----------------------------------------------------------------------------------------	-----

AUREL SCHUBERT – PER NYMAND-ANDERSEN : The role of statistics in generating trust within societies – necessary preconditions	121
--------------------------------------------------------------------------------------------------------------------------------------------------	-----

TREVOR FLETCHER : OECD tools for making statistics more understandable to wider audience	135
-------------------------------------------------------------------------------------------------------	-----

TOMAZ SMREKAR : Building and maintaining trust in official statistics – our approach at the Statistical Office of the Republic of Slovenia	148
---------------------------------------------------------------------------------------------------------------------------------------------------------	-----

LEON ØSTERGAARD : Managing and measuring factors of trust in statistics	158
--------------------------------------------------------------------------------------	-----

FRANÇOIS BRUNET : Factors of trust in statistics in France	170
-------------------------------------------------------------------------	-----

BLAGICA NOVKOVSKA : Building a basis for measurement of the value added in official statistics	182
-------------------------------------------------------------------------------------------------------------	-----

PHILIPPE BAUTIER : Communicating with the press and credibility of the institution: The example of government deficit and debt data	188
--------------------------------------------------------------------------------------------------------------------------------------------------	-----

Photos	195
---------------------	-----

Foreword

Hungary held, for the first time, the Presidency of the Council of the European Union between 1 January and 30 June 2011. We have performed this task of outstanding importance in the framework of the Spanish-Belgian-Hungarian Trio Presidency. These six months constituted a great challenge for Hungary. Important results were reached in the field of statistics as well.

On the occasion of the Hungarian EU Presidency, the Hungarian Central Statistical Office (HCSO) organised an international conference entitled “Communication: a tool to enhance statistical culture” on 9–10 June 2011, in Visegrád. The conference brought together participants from the European countries, Eurostat, UNECE and the European Central Bank. Altogether around 250 experts participated actively in the work of the conference which focused on the role of communication in promoting an efficient use of and building trust and confidence in statistics. The issues discussed were of common interest both for statisticians and users. They highlighted that communication was a major tool for increasing awareness of the use of statistics and for enhancing statistical culture.

The conference programme was divided into four sessions: “Statistical literacy and European democracy”, “The responsibility of statisticians and the responsibility of users of statistics”, “Session of the EU Presidency Trio”, “Trust in institutions, trust in statistics, statistical culture”. The presentations covered different topics, followed by questions and discussion.

This volume contains twenty-one papers presented at the conference as well as a CD-ROM with the proceedings, a short film about the importance of statistics and the material of the book “Statistics of Centuries”.

The contributors have done an excellent job which will be hopefully confirmed by the readers.



GABRIELLA VUKOVICH

President of the HCSO



ÉVA LACZKA

Chair of the HCSO EU Presidency Team

Plenary Session

OFFICIAL STATISTICS – A LANGUAGE IN A COMPLEX WORLD

1. Globalisation, complexity, decisions

- ◆ Driving forces are global (demography, environment, trade, migration ...);
- ◆ Crises are global;
- ◆ Decision makers (voters, consumers, investors, politicians, etc.) are multi-national/territorial/cultural/temporal;
- ◆ Reactions, policies, decisions have to be
 - ◆ interconnected (beyond stovepipes);
 - ◆ supranational (beyond common governance);
 - ◆ accepted by citizens (beyond linear decision processes);
- ◆ Increased complexity;
- ◆ Trust: “pacta sunt servanda”
- ◆ EU = Union in law (and in figures).

2. Statistical information = evidence for decision making → “gouvernementalité”

- ◆ As soon as political decisions are not limited to national issues (e.g. European Union, Climate Change, WTO, etc.) statistical information serve as common language for negotiations and is necessary to create transparency which is precondition for mutual trust.
- ◆ This context requires solid quality of information and quality assurance from a supra-national institution.
- ◆ Difficult to accept from a viewpoint of sovereignty of states (see China, India and US in Copenhagen), but this is one cornerstone in international cooperation.
- ◆ Again true: Statistics = empirical branch of the (science of) state.
- ◆ Economic governance needs surveillance which needs surveys.

3. Statistics – some relevant quotations

- ◆ “Statistics are like bikinis. What they reveal is suggestive, but what they conceal is vital.” *Aaron Levenstein*
- ◆ “Oh, people can come up with statistics to prove anything. 14% of people know that.” *Homer Simpson*
- ◆ “Do not put your faith in what statistics say until you have carefully considered what they do not say.” *W. W. Watt*
- ◆ “The most important things cannot be measured.” *W. E. Deming*
- ◆ “Any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes.” *Charles Goodhart*
- ◆ “If it matters, measure it.” *Fraser Institute* – “If you measure it, it matters.” or “If you don’t measure it, it doesn’t matter.”?

Quality of statistics: a basic feature for users.

4. Language¹

Creating and using language is characteristic for human cognitive facility: systems of symbols, each pairing a specific sign with an intended meaning, established through social conventions:

- ◆ syntax, grammar, methods;
- ◆ semantics, meaning, interpretation;
- ◆ pragmatics, context, application.

5. Communication noise²

In any communication model, noise is interference with the decoding of messages sent over a channel by an encoder. There are many examples of noise:

- ◆ *Environmental noise*. Noise that physically disrupts communication, such as standing next to loud speakers at a party, or the noise from a construction site next to a classroom, making it difficult to hear the professor.

¹ <http://en.wikipedia.org/wiki/Language>

² <http://en.wikipedia.org/wiki/Communication>

◆ *Semantic noise*. Different interpretations of the meanings of certain words. For example, the word “weed” can be interpreted as an undesirable plant in your yard, or as a euphemism for marijuana.

◆ *Syntactical noise*. Mistakes in grammar can disrupt communication (e.g., abrupt changes in verb tense during a sentence).

◆ *Organizational noise*. Poorly structured communication can prevent the receiver from accurate interpretation. For example, unclear and badly stated directions can make the receiver even more lost.

◆ *Cultural noise*. Stereotypical assumptions can cause misunderstandings, such as unintentionally offending Jews by wishing them a “Merry Christmas”.

We have to distinguish between noise and lies. Noise and lies are not identical, and both are possible.

6. Statistics: a short history in four political steps

◆ “Statistics” is the empirical branch of the science of state (German: Statistik → Staatswissenschaften);

◆ Official statistics (political/administrative position, working methods) reflect the development of societies, in particular, the specific relationship between state and citizens;

◆ Some factors create different political settings:

- ◆ constitution (democratic, authoritative);
- ◆ institutional set-up of economy (market, planification);
- ◆ society (closed/national, globalised);
- ◆ main sectors of economic production;
- ◆ dynamics of structural change (slow, fast).

Figure 1. Statistic users and producers: Interactions

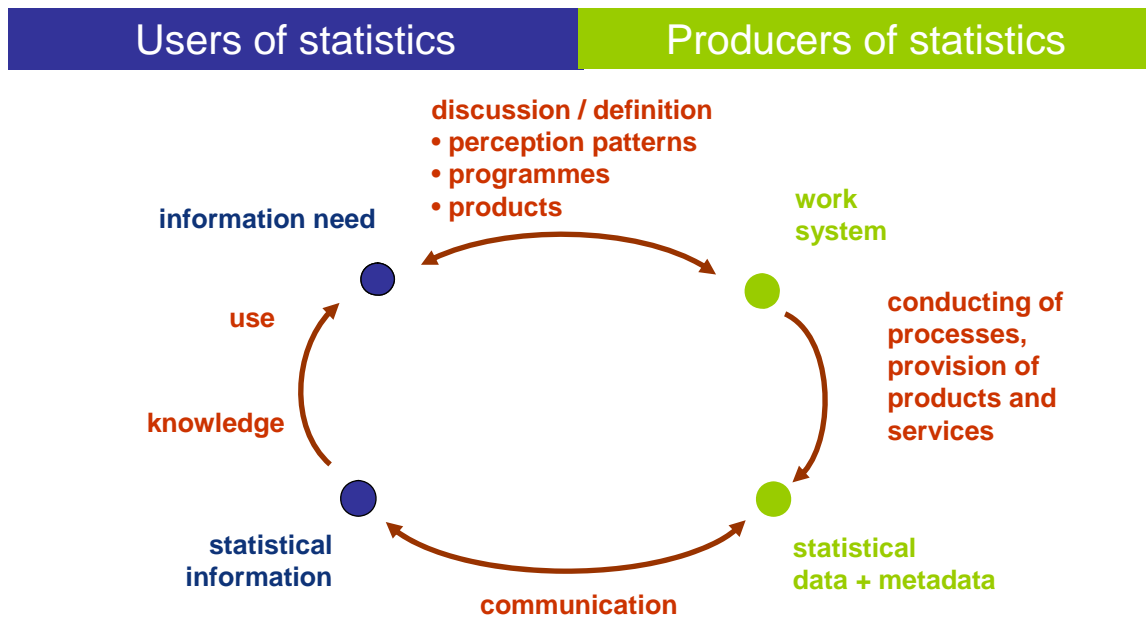
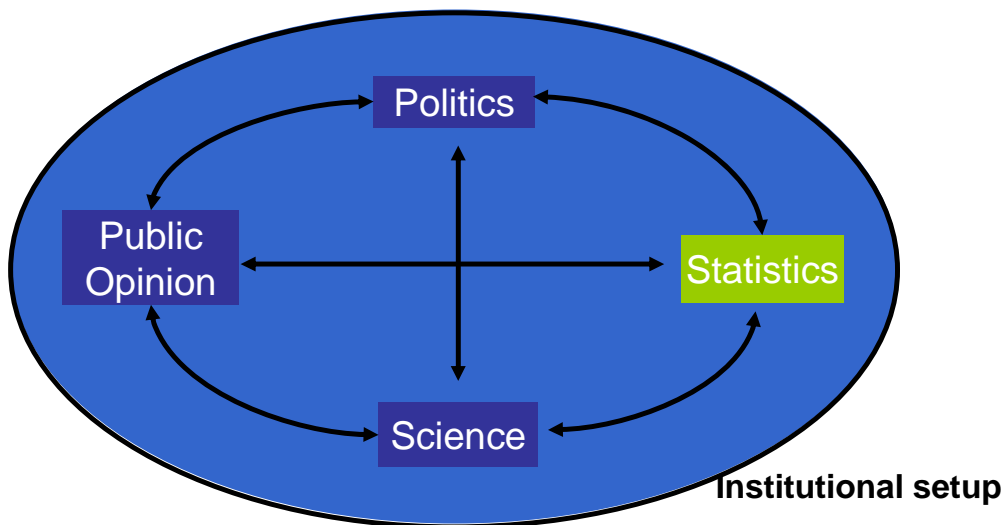


Figure 2. Information needs: How are they defined?



Statistics in an authoritarian regime

- ◆ State = authority = “premium” constituent = “premium” user;
- ◆ Information needs defined by request of government;
- ◆ Statistical Institute with high importance but low independency;
- ◆ Focus on planification;
- ◆ Development of work system with a very high scientific loading;

- ◆ Production in special processes; survey (obligatory response) based on authority of statistical institution;
- ◆ Dissemination oriented to the interests of the regime; impartiality not an issue.

Statistics in a democracy / global info society

- ◆ State is one user as all others (“citizens first”);
- ◆ Information needs defined in a dynamic and complex interaction (open platforms, etc.),
 - ◆ Statistical “services”;
 - ◆ Rapid change processes, horizontal issues, cross-national phenomena;
 - ◆ Development of work system with a very high scientific loading;
 - ◆ Production in integrated processes; surveys limited to areas without existing data;
- ◆ Dissemination = Communication = public good “statistics”.

7. Functions of information: application of language

- ◆ Benchmarking
 - ◆ preparation of structural reforms by comparison (learning from other countries);
- ◆ Negotiation
 - ◆ target values;
 - ◆ enlargement procedure;
- ◆ Performance control
 - ◆ process towards targets, interim flows of money, etc.;
 - ◆ allocation of money: structural funds;
- ◆ Inspection
 - ◆ achievement of targets, compliance with rules and contracts;
 - ◆ consequences when violation of rules, thresholds, etc.;
- ◆ Explanation
 - ◆ public debate, media, transparency, participation in decisions.

8. Conclusions: syntax, semantics, pragmatics

- ◆ Languages are living and growing in interaction with societies.

◆ Statistics are part of societies; development, production and dissemination of statistics have to anticipate relevant trends, in order to minimize inadequate products, underperformance and misinterpretation.

◆ In democratic societies it is important to ensure that statistics are enabled to deliver an infrastructure as a public good (fundamental principles!).

◆ Quality (fitness for purpose) asks for continuous efforts and adaptation to changes in user needs; heterogeneity of user needs has to be balanced out in the determination of the “what”, the portfolio of products and services.

◆ There is no such thing as “non-political” statistics; rather, the political context has to be taken seriously/transparently into account with all its risks and opportunities.

Session 1
Statistical literacy and European democracy

chaired by
PIETER EVERAERS
(Eurostat)

Lidia Bratanova

MAKING DATA MEANINGFUL: BRINGING STATISTICS TO THE PEOPLE

On their own, statistics are just numbers. They are everywhere in our life. Statistics appear in reports on the economy and society, in stock market updates, and even in sports reports. However, it is not sufficient just to produce these numbers. Statisticians also have a responsibility to bring them to life, to make them meaningful and relevant to daily life.

The UNECE has been active in the area of statistical dissemination and communication for over ten years, holding regular work sessions and facilitating the exchange of good practices. The main output from this work is the series of guides on “Making Data Meaningful” of which three volumes have already been published and the fourth is in production. The UNECE paper focuses on the subjects of these guides.

The first two parts of the series concern “writing stories about numbers” and presenting data graphically. The way statistical organisations present and describe the data they disseminate has a clear and direct impact on the way those data are understood and used by society. Statistics may be perfectly accurate and timely, but if they are not presented and explained in a way that they can be understood, they have little value.

Often statistics are communicated to users via intermediaries, usually the media. Therefore part 3 of this series focuses on how to help the media convey the messages behind the numbers. It also explores the growing importance of new media, such as blogs, wikis and Facebook. Modern communication tools offer many opportunities, but in the digital age, they could also threaten the relevance of statistical organisations if they are not used effectively.

It is important to remember, however, that communication is a two-way process. Thus, the fourth part of the “Making Data Meaningful” series moves the focus from producers to users of statistics. It considers how statistical literacy amongst the user community can be improved.

The paper closes with a look at how statistical communication will become increasingly important as the role and nature of official statistics adjust to the realities of the 21st century. Novel approaches to statistical production and new data sources will open the way for radically different sorts of statistical outputs. The success of statistical organisations in adapting to these changes will depend to a large extent on how they use communication to maintain their relevance.

1. Introduction

Statistics play a key role in informing the policy makers and the public about the state of society and the economy. If statistics are poorly presented, it is easy to distort or confuse the message that they should convey.

The UNECE has been working actively in the field of statistical dissemination and communication for many years, with the goal of making official statistics more accessible to users. We organise regular work sessions to spread information and best practices amongst national and international statistical organisations. An important output of this work is the development of guidance material, including the very popular “Making Data Meaningful” (MDM) series. The guides are written by recognized experts from national and international organisations, working under the auspices of the Conference of European Statisticians – the governing body of statistical work at UNECE.

Intended as a practical tool for statisticians and communication specialists, the MDM guides show how to combine text, tables, charts, maps and other devices to bring statistics to life for non-statisticians. They combine a simple and user-friendly style with authoritative content, produced and reviewed by experts from many countries. So far, three volumes have been published:

Part 1: A guide to writing stories about numbers;

Part 2: A guide to presenting statistics;

Part 3: A guide to communicating with the media.

The fourth volume, “A guide to improving statistical literacy”, is currently in preparation.

Today, the MDM guides are widely available and freely distributed as resources to facilitate understanding and promoting official statistics. They are accessible on the Internet¹ and in print in English and Russian. Croatian, Spanish and Japanese versions of the first two guides are also available on the Internet thanks to volunteer efforts in national statistical organisations.

One can find the volume of this series all over the world in the offices of national and international statistical organizations, student dormitories, desks of journalists and briefcases of professors. They have proved highly popular with many different kinds of audiences. This paper draws on the MDM guides, the issues they address, and how they are produced and disseminated.

2. Writing stories about numbers

On their own, statistics are just numbers. They are everywhere in our life: in reports on the economy, in stock market updates and in sports stories, to name a few. To mean anything, their value to the person in the street must be brought to life.

Today, more than ever before, the way we present and describe the data we disseminate has a direct impact on how they are understood and used by society. It is also essential in helping to increase trust in official statistics. Our statistics may be perfectly accurate and

¹ See www.unece.org/stats/documents/writing.

timely, but if they are not presented and explained in a way that they can be understood, they have little value.

The tool to bring the meaning of the numbers to life is the statistical story we develop around them. This is not just about reciting data in words, but about telling a (preferably interesting) story about them. Readers tend to recall ideas more easily than they recall data. A statistical story conveys a message that tells readers what happened, who did it, when and where it occurred, and hopefully, why and how it happened. It should provide general awareness/perspective/context and inform debate on specific issues.

In journalistic terms, the number alone is not the story. A statistical story should show readers the significance, importance and relevance of the most current information. In other words, it answers the question: *Why should my audience want to read about this?* Statistical storytelling is about 1. catching the reader's attention with a headline or image; 2. providing the story behind the numbers in an easily understood, interesting and entertaining fashion; and 3. encouraging journalists and others to consider how statistics might add impact to just about every story they have to tell.

2.1. Why tell a story?

There are at least two reasons why statistical organisations should want to tell a story about their data. Firstly, they have a mandate to inform the general public about the state of the economy and society. This information will also guide the citizens in their decisions concerning their jobs, raising their families, making purchases, etc.

Secondly, statistical organisations need to demonstrate the relevance of their data to the government and the public. In doing this, they can achieve greater public support for their programs, as well as improved relations with the survey respondents and greater visibility of their products. The more a statistical organisation can show the relevance of its data, the more respondents will be encouraged to provide them.

Nowadays most statistical organisations rely mainly on two means of communicating information, on the web-based media (Internet) and on the traditional media. The Internet has become an important tool for making access easier to the information of an organisation. Still, most citizens are likely to get their statistical information from the traditional media, and, in fact, it still remains the primary channel of communication between statistical organisations and the general public.

An effective way to communicate through both means is to tell a statistical story that is written as clearly, concisely and simply as possible. Not everyone is adept at understanding statistics by themselves. Consequently, statistical stories can, and must, provide a helping hand.

2.2. Writing a statistical story

Statisticians have an obligation to make the data useful to the public. Good statistical stories may get people more interested in statistical information and help them to understand

what the information means in their lives. It is important that after people read the statistical stories, they feel wiser, better informed, and not confused.

We, the statisticians, would communicate better if we write our stories the way journalists do. The latter use the ‘inverted pyramid’ style – conclusions first, followed by secondary points in order of decreasing importance throughout the text. As a first decision, it is important to pinpoint the target audience who we are writing for. Then, we have to find and select the right narratives, language, visual and graphic devices that will capture their attention.

The choice of a target audience is more complex these days because of the Internet which is accessible to people with different levels of experience and statistical knowledge. Before the spread of Internet, in the days of printed news releases, the principal target audience was likely to be the media on which the statistical organisations relied to transmit key findings to the public. Today, citizens could get the information they need directly from Internet.

2.3. Understanding the context in which we are communicating

Statistical communication does not occur in isolation. Therefore, it is important to understand the context in which we are communicating. The way in which audiences consume media is constantly changing. There are also distinct differences between and within generations, in their technical abilities and understanding of statistics.

When planning statistical communication, we have to keep in mind four particular trends in on-line media consumption, which represent both opportunities and risks:

- ◆ The Internet is increasingly becoming a medium for entertainment. Any message that is not presented in an interesting way risks not engaging younger people;
- ◆ Society has developed a ‘snack culture’ in relation to information consumption. Audiences increasingly want smaller snippets of information that can be consumed quickly;
- ◆ People using the Internet tend to ‘satisfice’ (satisfy and suffice): they find a vaguely relevant piece of information and stop there, rather than look further for the most relevant one;
- ◆ In addressing different users and choosing presentation styles, we should be careful not to exclude important audiences in the process of making statistical communication more entertaining or easier to consume.

3. Presenting statistics

We have all heard the old saying: “a picture is worth a thousand words”. One of the best techniques for understanding data is to visualize the numbers as a picture. This can make it far easier to see or expose patterns that might otherwise have been concealed.

As data visualization is such an important part of communicating statistical trends and relationships, it must be an on-going activity, not an afterthought. The effective presentation of data is an integral part of the statistical production process.

Nevertheless, we have to take care. Poor visualizations of statistical information can be misleading to users. There are many ways to provide misleading information, whether deliberately or, as is more often the case, unintentionally. There must be a balance between design and function. Complicated visualizations often fail to communicate if users are forced to ‘dig out’ the message. We have to remember that technology is merely a servant – we should not add useless features just because we can. We have to keep the message simple for the reader.

The Making Data Meaningful Guide on presenting statistics provides a lot of recommendations and guidance for the statistical organisations on finding the best way to get their message across to non-specialists, using the most suitable set of tools and skills now available from a dazzling array of communication methods. The guide provides advice on the use of text, tables, charts, maps and other devices to bring statistics to life for non-statisticians. It provides suggestions, guidelines and examples but not strict rules or rigid templates.

3.1. Being aware of human perception

We have to be careful when producing visual presentations of statistical observations. The context in which findings are presented may distort the user's perception.

Experience plays a role in how graphics are understood. It is important to know the audience and their abilities, experience, and the possible differences. We cannot assume that those we target know what we know, either about statistics or about the subject matter.

Statisticians must be aware of their own experience in identifying patterns in numbers, as opposed to the possible inexperience of our readers. As professionals in analysing statistical data, we, the statisticians, are likely to be better than the average person at seeing the underlying message. A visual presentation of data should therefore make the main findings easy to observe and understand.

Numerous technological tools are available to assist in visualising numeric information. We have to make sure the focus is on the substance and message of the chart, rather than on the methodology, design and technology of the graphic presentation.

4. Communicating with the media

Dissemination of statistical information to the media is based on the same core principles that underlie the general dissemination activities of statistical organisations. These are: relevance, confidentiality, independence, objectivity, timeliness, accessibility, clarity, and coherence. Adherence to these core dissemination principles will enhance the credibility of the statistical organisation and build public trust in the reliability of the information it produces.

4.1. Objectives

It is critical that statistical organisations communicate effectively with the media to achieve three important dissemination objectives: 1. to inform the general public about the latest releases of official statistics and reports on the social, economic and general conditions of the country; 2. to demonstrate the relevance of statistical information to the general public and to public and private-sector organizations and businesses to inform decision-making throughout society more effectively; 3. to increase public awareness of and support for statistical programmes and services.

The extent to which an organisation can communicate effectively with and through the media has a large impact on how well it can achieve these objectives. Thus, it is in the best interest of the organisation to build a strong working relationship with the media, to make it easy for journalists to report on statistical information in an accurate, timely and informative manner, and to take steps to increase media coverage as a way of reaching the broader society with important statistical information.

4.2. Understanding the media

To communicate effectively with the media, we must understand the media community. This understanding calls for an awareness of the types, needs and coverage of these media, so that we can provide customized services that meet their various information requirements.

The media use many vehicles to reach their audiences, including newspapers, magazines, and other periodicals, as well as radio, television, and the Internet. While the last two remain the primary news sources for citizens of industrialized countries, newspapers and other printed media can provide more detailed coverage of statistical information.

The key to building a strong working relationship with the media is to understand who they are and how best to meet their information needs in a manner that is both proactive and user-friendly. This relationship includes an obligation to communicate effectively by providing information that is clear, relevant, objective, easy to understand, and useful. A good measure of success lies in the extent to which different news media use the information releases from the statistical organisation, the accuracy with which the information is reported and the trust explicitly or implicitly communicated along with the information.

4.3. Emerging technologies

From traditional media (radio, television, magazine news) to social media

We live in a world of converging media where all modes of communication and information are continually changing the way mass media and consumers – print producers and readers, radio broadcasters and listeners, television broadcasters and viewers, social media channels, and computer applications and their users – create, consume, learn about, and interact with each other and information resources.

Over the last decade, effective communication has shifted from top-down to bottom-up. That is, listeners, viewers and readers of the former traditional media are now choosing how, where, at what time, and in what amounts they wish to consume information.

Today, people are picking and choosing the types and kinds of information that they want to receive. They are subscribing to blogs rather than newspapers, browsing and filtering YouTube videos rather than reading magazines, or reading RSS feeds that they have subscribed to, to stay abreast of the world's happenings and their favourite pastimes and interests. Research shows that traditional journalism is shifting from 'news round the clock' to 'as it happens news'. This change is largely the result of the proliferation of social media. In fact, the *New York Times* now has a 'social media editor' to oversee their social media strategy. Renowned journalism schools have added social media to their requirements. In addition, many statistical organisations are exploring and creating social media channels and training staff to communicate in this new area.

The social media – a challenge for statistical organisations

Social media are changing the way people communicate and connect effectively with others on-line. Social media tools allow users to get involved, to create, to share their own content, and to design their own user experience. Social media applications have become part of the Internet mainstream. Consequently, there is a growing expectation for statistical organisations to provide delivery options and customization that a website cannot provide on its own.

Social media tools for communication are widely used by businesses, governments, and individuals alike. These tools include interactive web journals or blogs (WordPress, Blogger, LiveJournal), micro-blogs (Twitter, Tumblr, Blauk), audio podcasts (iTunes, Podanza, Podcast), images and photos (Flickr, Imgur, Panoramio), videos (YouTube, Vimeo, Google Videos), professional and personal networking sites for information sharing (Facebook, MySpace, LinkedIn), and Wikis (collaborative authoring, i.e. Wikipedia).

One of the challenges for the statistical organisations is to capitalize on these intensely popular social network media and technologies to work most effectively with the public and the media. Deciding how to engage in a chaotic, social media-driven environment has become a hot topic. A challenge that faces the statistical organisations is the pressure to proceed swiftly but cautiously into the realm of social media. An equally serious motivation is that organisations want to preserve trust and credibility with the public and the media.

Social media have excelled at facilitating increased external communication and information sharing. For example, there are about 50 active blogs published by U.S. federal agencies. The diversity of subjects covered by these blogs is testament to the power of technology to provide a quick and easy way to disseminate information to targeted individuals, while providing simple mechanisms for simultaneously soliciting those individuals' comments and questions. Similarly, micro-blogs, like Twitter, have gained enormous popularity as mechanisms for publishing quick status updates, facts, and commentary.

As the new model shifts from newspaper to blog, some considerations include 1. enhancing outreach by using social media requires strategic planning and full integration with marketing, communication, public and media relations, and preparing editorial calendars and promotional campaigns; 2. using social media demands research into social media activities, as well as successfully measured programmes and best practices; 3. there is a need to train existing staff in social media skills; 4. blogs require plain language, conversational writers, messaging approval processes, and fully trained, dedicated staff to adequately monitor and appropriately respond to comments; 5. consistent messaging across media must be monitored.

The most recent MDM guide reflects the increasing impact of social media, including the issue of its integration with broadcast and print media, measuring the impact of social media and online press rooms. The guide recognises that there are many practical and cultural differences among statistical organisations and that approaches may vary from country to country.

4.4. Management issues

There are some management issues that have to be considered in developing a communication strategy.

Allocating resources: Statistical organisations have to allocate adequate resources to develop media relations. We are only as relevant as the extent to which our information is known and used across society, so investing in media relations is fundamentally important to success.

Changing the skill mix: Statistical organisations need specific skills to support disseminating information on the web and to deal with the media. The shift to more visual data, including maps and animated longitudinal data, requires staff with skills in geographic information systems and data visualization. Changing the skill mix has obvious resource implications. The changes are not just technical but also psychological, requiring employees to be more flexible and to change their outlook from the old way of doing business.

5. Improving statistical literacy

Statistical literacy is a term used to describe the ability of an individual or a group of individuals to understand and comprehend statistics. The field of statistical literacy is not new. For more than 30 years researchers have been discussing this interdisciplinary topic in fields such as mathematics, statistics, pedagogics, psychology, or linguistics. The discussion is based on the fact that statistical literacy requires many abilities: mathematical skills, the competency to understand figures correctly, and to distinguish between valid and misrepresented data, etc. Furthermore, it enables people to assess the information that the figures provide and finally to understand what the actual data reveals about economy and society.

In general, official statistics has been preoccupied with producing data. Statisticians only recently started to reflect whether these data are understood. The ability to understand statis-

tics is the prerequisite for successful communication with our users. Therefore, several initiatives had been put into practice in order to increase statistical literacy of all fields of societies: that of scholars and students, journalists, decision makers in politics and businesses, and, overall, of the general public.

The UNECE is currently preparing a new volume of the Making Data Meaningful series which will provide an overview of the current initiatives (such as the International Statistical Literacy Project) and define strategies for improving the statistical literacy of different user groups. It will give examples and recommendations on educating the opinion leaders about statistics, enhancing statistical literacy of decision makers, the education community, businesses and the general public. It will also cover steps to improve the dissemination activities of the statistical organizations (including good practices for metadata and geo-referencing) and to evaluate the impact of statistical literacy activities.

6. Producing the MDM guides and user feedback

As noted earlier, the guides are written by groups of authors from different national and international statistical organizations, who are recognised experts in their fields. The production of the guides is closely linked to the regular work sessions on the communication of statistics, organised by UNECE, where topics are decided, authors are recruited, and outputs are reviewed.

To encourage productive collaboration, the UNECE uses a wiki platform for drafting new guides. The authors are given full access to it and encouraged to post their work online so it is available for comments and reviews. This open work process results in the constant exchange of opinions among authors, increasing the quality of the final product. Very often, the authors ask their colleagues from different statistical organizations to join the online discussion and provide their feedback.

Drafts of the guides are distributed for review to participants at the work sessions on the communication of statistics. This means that typically over 60 experts from all around the world have the chance to provide inputs and suggestions for improvements, further enhancing the quality and relevance of the published guides. Final drafts are submitted to the Bureau of the Conference of European Statisticians for approval before publication.

As well as printed versions, the MDM guides are freely available for downloading in PDF format from the website of the UNECE Statistical Division (<http://www.unece.org/stats/documents/writing/>).

One can also read and download them on Scribd (<http://www.scribd.com/UNECEstat>) which is the largest website for social reading and publishing. It provides different file formats for download (MS Word, plain text, PDF, and even mp3) and upload. The mp3 version of the documents uses an innovative text-to-speech package and allows people to listen to the text of their documents.

The MDM guides have received excellent feedback from a wide range of people and organizations in official statistics and beyond. For example, the London School of Economics library featured them on their website (<http://lsedatalibrary.blogspot.com/2010/02/making-data-meaningful.html>). The guides also appeared on the website of the United States Environmental Agency. In addition, various national and international statistical organizations refer to and recommend them, too.

7. Conclusion

As noted at the beginning of the paper, statistics on their own are just numbers. Although they are everywhere in our life, it is not sufficient just to produce these numbers. We, the statisticians also have a responsibility to bring them to life, to make them meaningful and relevant to daily life.

Novel approaches to statistical production and new data sources will open the way for radically different sorts of statistical outputs. Statistical communication will become increasingly important as the role and nature of official statistics adjust to the new realities of the 21st century. The success of statistical organisations in adapting to these changes will depend to a large extent on the ability to effectively communicate the results of their work in order to maintain their relevance.

Luís Teles Dias – Per Nymand-Andersen

UNDERSTANDING CENTRAL BANKING STATISTICS TO ENHANCE STATISTICAL AND FINANCIAL LITERACY IN EUROPE*

The perceived remoteness of the statistical function within national and European institutions is likely to continue in the future and has been amplified by the current financial market turmoil. European citizens demand that national and European institutions justify their existence and be transparent in, and accountable for, their actions, for example on the basis of impartial and reliable statistics. This paper argues that the national and European statistical function must step up efforts and proactively provide tailored and enhanced statistical information useful for European businesses and citizens. Enhancing statistics and financial literacy in Europe is necessary as the world becomes smaller and citizens are flooded with ever-increasing volumes of information from private and public sources and with ever more advanced technologies. In such a fast-changing and complex world, statistical and financial literacy is becoming increasingly important in order to enable citizens to participate efficiently in the society in which they live. This paper addresses the challenges statisticians face in order to enhance statistical and financial literacy within European democracies. It provides examples of ways of presenting statistical facts to the general public using statistics from the central banking community as part of fostering transparency on monetary policy decisions and their underlying evidence-based statistics.

*Give me statistical knowledge and I will construct a world out of it.*¹

1. Introduction

The perceived remoteness of national and European institutions may lead to a flawed interpretation of their objectives and responsibilities in society. Human nature is such that misunderstandings may bring about confusion, followed possibly by loss of confidence and trust in the established public institutions and governments. This also applies to the institutions and central banks responsible for national and European statistics.

* The views expressed in this article are those of the authors and do not necessarily reflect the views of the BdP and the ECB. The authors would like to thank *Aurel Schubert* (ECB) and *Luís D’Aguilar* (BdP) for the useful comments provided.

¹ Inspired by the German philosopher *Immanuel Kant*’s quote “Give me matter and I will construct a world out of it”. (*Kant* [1755])

European citizens need to feel that statistics – as a public good – are trustworthy and useful in guiding the national and European decision-making process and that they are contributing to the political agenda, generating public discussions in society. This requires that the general public have an understanding of basic statistics and economic concepts – useful as part of their personal decision-making in life – and to interpret the rationale of today’s complex and integrated policy decisions.

In a complex and dynamic Europe, with its diverse economies, financial structures and cultures², the majority of citizens cannot be expected to differentiate between statistics released by public and private institutions, on the one hand, and between reliable and poor-quality statistics, on the other. The latter contribute to chatter and confusion, blurring the communication of reliable statistics and central bank policies (*Orphanides–Dale–Österholm* [2008]). This becomes even more apparent when factual statistics are used together with forecasts which are then frequently revised.

It is also clear that the art of communicating statistics is often underestimated and that statisticians are frequently accused of speaking their own language tailored mainly towards the world of statistical experts, whose language in turn is not necessarily fully understood by politicians, financial market participants, the media, or the public at large. Statistics need to be communicated by means of language and terminology that are commonly used and easily recognised by the various segments of users. Therefore, the statistical function needs to enhance its statistical communication strategy and its ability to better explain the methods and statistics, for example to policy-makers, the media and financial users.

Rapid advances in the availability of public and private statistical data, as well as information technologies, may also contribute to the trend whereby citizens are confronted with more information in a shorter time and need to adopt a position on frequently changing topics with a broader geographical scope. This is important in today’s information age and in a communication context, as the available (often competing and overlapping) data volume is already tremendous and expected to continue to increase in the future (*The Economist* [2010]), leading to possible information overload and challenging the way statistics are communicated (*Nyman-Andersen* [2011]).

The provision of trustworthy and easily understood statistics contributes to enhancing and safeguarding welfare within society. On the one hand, this requires that the audiences for statistics can relate and use them as part of their own processes, either being part of their professional and private life, or knowing that the statistics are used for sound policy-making. The ability to communicate statistics easily to various user groups is a precondition to obtain the necessary support and trust from European market participants, firms and citizens. On the other hand, this also requires that some basic statistics and economics concepts are known to users as a necessary prerequisite for applying and using the statistics in practice. Policy-

² According to European Commission Multilingualism, within the euro area there are 331 million citizens, speaking 15 official languages. In addition, there are over 60 regional and minority languages, spoken regularly by 40 million citizens. (http://ec.europa.eu/education/languages/languages-of-europe/doc141_en.htm)

makers and statisticians should coordinate and prioritise the enhancement of the statistical and financial literacy of European citizens.

Our first discussion addresses the concept of statistical and financial literacy and highlights the benefits of engaging in it, before elaborating on some suggestions and initiatives for promoting statistical and financial literacy in Europe.

2. Statistical and financial literacy

Statistical literacy is an essential aspect of financial literacy, and both are also important to the functioning of the European System of Central Banks (ESCB)³: firstly, because the ESCB is responsible for one of the two European statistical systems⁴; secondly, as part of its communication and its accountability responsibilities vis-à-vis European citizens.

2.1. Statistical literacy

Wallman [1993] defines “statistical literacy” as the ability to understand and critically evaluate statistical results that permeate our daily lives – coupled with the ability to appreciate the contributions that statistical thinking can make in public, private, professional and personal decisions. The *Australian Bureau of Statistics* [2009] provides a number of *criteria* – partly taken from *Gal* [2002] – that could be used to supplement the above (conceptual) definition:

- ◆ *Data awareness.* Statistical literacy requires a person to have an awareness of data sources, associated metadata, data availability and data accessibility, and to understand that statistics are contextual;
- ◆ *Ability to understand statistical concepts.* Statistical literacy requires the ability to read and use tools (e.g. percentages, ratios, measures of spread, central tendency and variability), as well as tables, graphs and maps;
- ◆ *Ability to analyse, interpret and evaluate statistical information.* The ability to organise data, construct and display graphs and tables, and work with different representations of data is also fundamental to achieving statistical literacy – how data are organised can contribute to how data are interpreted;
- ◆ *Ability to communicate statistical information and understanding.* Part of being statistically literate concerns people’s ability to discuss or communicate reactions to statistical information (e.g. their understanding of the meaning of the infor-

³ The ECB and the 27 EU national central banks (NCBs).

⁴ The other is the European Statistical System (ESS) which consists of Eurostat and the 27 EU national statistical institutes (NSIs). The two systems work in parallel and closely together, with no statistical overlap, as reflected within, and updated from time to time in, the related Memorandum of Understanding.

mation, their opinions about the implications of this information, or their concerns regarding the acceptability of given conclusions) in an effective manner that can impact upon decision-making.

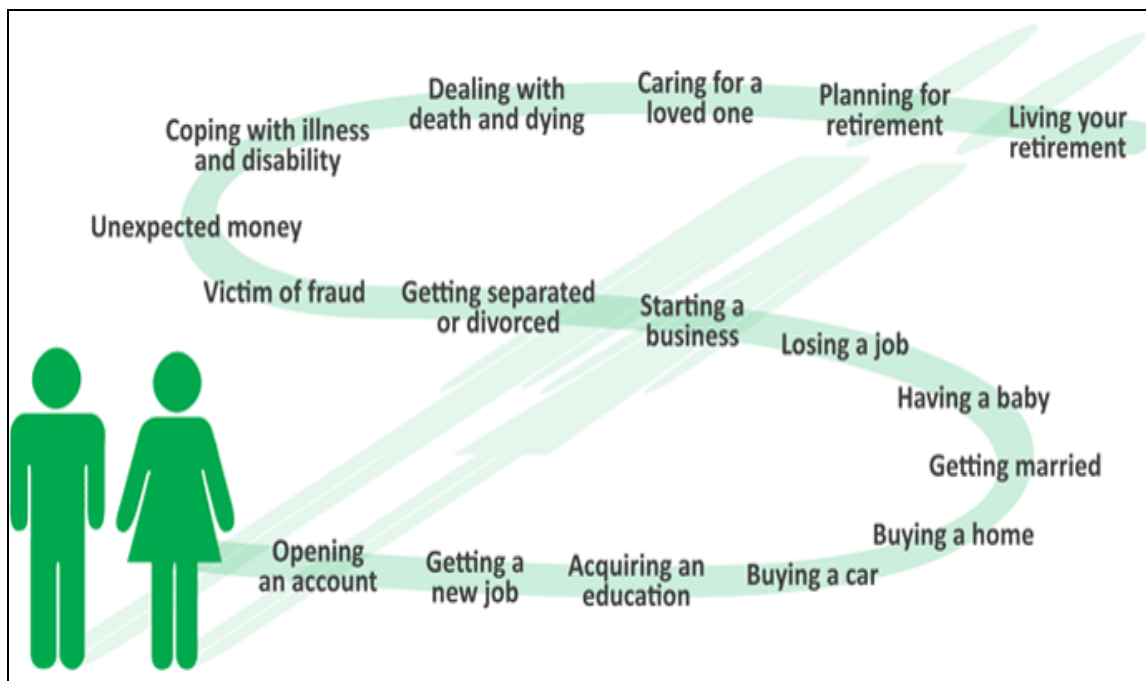
Combining these two formulations may offer a means to assess the actual levels of statistical literacy among the different segments of users, thereby giving the relevant authorities the possibility to take more informed decisions regarding which *strata* of users need to enhance their statistical skills and, ultimately, improve their decision-making processes.

2.2. Financial literacy

Financial literacy can be defined as “*having the knowledge, skills and confidence to make responsible financial decisions*”. (Task Force on Financial Literacy [2010a])

Financial literacy is a lifelong journey, where individual financial decisions are required as part of different stages in life which vary both in nature and context. The Figure illustrates the financial choices citizens may face during their lives.

Financial decisions through the lifelong journey⁵



When approaching or entering a new stage in their life cycle, people tend to be more engaged and more willing to learn about new financial topics and responsibilities.

⁵ Task Force on Financial Literacy [2010a]

On the basis of the above definition, enhancing financial literacy in Europe means that

- ◆ *knowledge* is provided, enabling the general public to understand financial and statistical topics and form part of their understanding of national and personal decision-making;
- ◆ *skills* are acquired, offering citizens the ability to apply financial knowledge in professional and everyday life;
- ◆ *confidence* in society is provided, giving people the self-assurance to take important financial decisions in the medium to long term, which is often a key factor in galvanising people into action;
- ◆ *responsible financial decisions* are made so that citizens may use the knowledge and skills and develop the confidence to make choices that are appropriate to their financial circumstances on a financially sound basis.

3. Benefits of a statistically and financially literate population

A statistically and financially literate population in Europe offers multiple benefits, not least to the overall economy. Examples of such benefits are, inter alia:

- ◆ *Promoting self-sufficiency and financial independence* – thereby helping a population to be more responsible for its own financial decisions and actions;
- ◆ *Strengthening competitiveness*. As citizens become more knowledgeable and confident, they will shop around for financial offers and compare products prior to deciding. Citizens will adopt smart attitudes and habits, including asking questions before making decisions, and compare financial products that include credit cards, lines of credit, bank and mortgage loans, insurance, pensions and a variety of other investments, within a suitable professional and private portfolio;
- ◆ *Understanding personal finance*. Financially literate citizens are able to understand e.g. interest rates and fees associated with saving schemes, investments, loans and other types of debt and investment arrangements, and are aware of their own behaviour, as savers and investors, including the principles of risk and reward in making investment decisions.

On the macroeconomic level, a statistically and financially literate population

- ◆ promotes and enhances financial stability – a population that has the knowledge, skills and confidence in taking sound financial decisions makes the household sector more resilient to potential macroeconomic shocks and negative effects from the financial system;

- ◆ facilitates the understanding and acceptance of needed national and European policies, as part of fostering financial soundness, fiscal prudence and economic policies;
- ◆ contributes to improving the savings rates of households and to more efficiently allocating resources to productive activities in the real economy, thereby contributing to the growth of our economies.

In turn, a knowledge society

- ◆ enriches the political debate and provides citizens with the ability to understand the medium- to long-term benefits of sound policy-making. A better understanding of economic issues leads to broader public support for measures ensuring the sustainability of public finances and to reduced deficiencies within our societies;
- ◆ supports transparency in, and the accountability of, policies at national and European level and contributes to strengthening European values. Citizens will engage in (rather than reject) the broader national, European and global economic and financial debate and policies.

4. Central banking engagement in promoting statistical and financial literacy

Central banks themselves have an interest in making the general public understand and use their statistics for financial decision-making. It is widely agreed that fostering transparency on monetary policy decisions and their underlying motivations contribute to an efficient and effective passage for these decisions and facilitate the acceptance process. For instance, research suggests that, in many countries, more and better central bank communication has contributed to a notable improvement in the predictability of monetary policy decisions (*Blinder et al.* [2008]), while additional recent research indicates that central banking transparency conduce to a reduction in financial market volatility (*Jansen* [2010]).

For central banking policy purposes, statistical and financial literacy helps to build public support for the pursuit of price stability in Europe and also to create a ‘*culture of stability*’ in society (*Stark* [2006]), supporting the task of the central bank and other prudent economic policies.

People will accept that safeguarding price stability is the best contribution that monetary policy can make to economic efficiency and welfare if they know that price stability

- ◆ protects the real purchasing power of money and income, so that they can concentrate on productive activities rather than on strategies to protect their wealth and income against inflation or deflation;
- ◆ enhances the ability of markets to allocate resources to their most efficient use, by stopping signals from changes in relative prices becoming blurred by a general trend in prices;
- ◆ reduces risk premia in longer-term interest rates, thereby permanently lowering financing costs for the corporate and household sector.

Central banks are well-placed to play a leading role in the enhancement of statistical and financial capability in Europe. The greater the general understanding of statistical, economic and financial issues is, the greater the possibilities are to communicate the policies of the ESCB and to generate support for stability-oriented policies. In promoting financial literacy, central banks are well-placed to contribute to:

- ◆ facilitating the functioning of financial markets;
- ◆ supporting sustainable and sound policies;
- ◆ building up positive reputation;
- ◆ assisting the acceptance process of policy decisions;
- ◆ enhancing the effectiveness of monetary policy. (*Gnan-Silconer-Weber* [2007])

The two statistical systems at European level are unique in this respect, as they define harmonised statistical concepts and also collect and provide meaningful and comparable EU, euro area and national statistics to support, inter alia, the functions of the European Central Bank (ECB), the Eurosystem, the European System of Central Banks (ESCB) and the European Systemic Risk Board (ESRB), and to sustain overall economic policies within the EU. The specific statistical function of the Eurosystem and the reliability of its statistics – as one of the two European statistical systems – guaranteed and safeguarded by the principle of ‘independence’ as reflected within the Treaty provisions.⁶ Independence of statistics is a necessary precondition in democracies. With independence comes responsibility: independent institutions and authorities have the responsibility to act prudently and to be accountable and transparent for actions and decision-making, e.g. by releasing reliable and meaningful national and euro area statistics (*Schubert-Nymand-Andersen* [2011]).

⁶ Article 130 of the Treaty (ex. Art. 108 of TEC) grants the ECB far-reaching independence. The Treaty explicitly stipulates that, when exercising their powers, neither the ECB nor any member of its decision-making bodies may seek or take instructions from Community institutions or bodies, from any government of a Member State or from any other body. The Treaty further states that the Community institutions and bodies and the governments of the Member States must respect this principle and must not seek to influence the members of the decision-making bodies of the ECB.

Statistical and financial literacy needs to be further coordinated and prioritised. The perceived lack of trust in governments and institutions by the general public is likely to continue (EC [2010]). European citizens demand that national and European institutions justify their existence and be transparent and accountable for their actions, inter alia, on the basis of impartial and reliable statistics. The recent financial market turmoil may have contributed to a decline in the credibility of public authorities and statistics. The latter remained accurate (though in some cases incomplete), but the perceived reality and people's trust in statistics were tarnished.

A factual illustration of the perceived phenomenon relates to the perception among European citizens of the excessive increase in inflation during the changeover to the euro. While the statistical facts clearly showed the opposite, the perception of citizens pointed to an increase in inflation during the change over period. The causes of this phenomenon may be manifold and seem to be based on a misconception and lack of understanding 1. of the concept of inflation, 2. of how it is measured and 3. calculated and, at the same time, 4. in respect of the inability of responsible statisticians to communicate the technicalities of measuring inflation in non-technical terms that the non-technical experts and professionals can understand.

5. A clear call for enhancing the statistical and financial literacy of European citizens and the communication function of statistics

The vast amount of statistics available to the Eurosystem is an enormous asset which could be used more proactively with marginal effort. Euro area and associated national statistics could be viewed as a 'European public good' – free, reliable and trustworthy statistics for use by national and European policy-makers, market analysts, academics and citizens. The concept of an official public source of reliable statistics has the advantage that analysts and policy-makers can focus on making policy assessments and policy decisions rather than searching for data and information of variable quality among a broad and ever more widely available set of public and private data sources, with the associated impact on sound policy assessment and good decision-making. By virtue of its global economic importance, the ESCB statistical function has a responsibility to provide access to its statistics and the respective metadata for economic and financial research (*Liebscher-Schubert* [2008]).

The use of euro area statistics outside the central banking community is therefore geared more towards the professional users, researchers and monitors of central banking activities, including the media. This makes the role of journalists even more important as it is their task to communicate the central banking policy and to convey statistical evidence to the general public and the citizens of Europe – as in the case of explaining the indirect benefits of having inflation rates below, but close to, 2 percent over the medium term.

One of the most effective tools that central banks possess is their power to compile and explain statistics and policies based on the long-standing reputation of national central banks to provide independent, factual and credible statistics. The European citizens can learn to trust central banks.⁷ An informed public – a public that recognises the role of central banks in the economy – will be far more likely to understand and accept the reasoning behind the difficult decisions that central banks sometimes have to make.

6. Ongoing and future initiatives

The rich set of data available to the Eurosystem could be shared with the research community, including – as far as possible – (anonymised) micro-level data. The future availability of micro-level data will open up and enrich academic research topics and provide a more detailed insight into the functioning and interlinking between the financial system and the real economy. Furthermore, tailoring a sub-set of Eurosystem statistics serves the specific needs of well-defined market segments (journalists, central bank watchers, politicians, research departments of banks, financial agents, etc.). In addition to the dissemination of (sometimes dense) statistical tables, the released data should be accompanied by descriptive statistics, and be easily accessible and flexible to use/reuse, as part of the user's working process. Summary statistics in terms of simple indicators and clear communication should be pursued.

Statistical presentation and visualisation tools could simplify and make statistics easy to understand and accessible for the different target groups. For instance, the ECB has released interactive graphs of national and euro area inflation rates and their components⁸ along with interactive graphs showing euro area national government (debt and deficit) financing⁹ and euro area yield curves.¹⁰

The ECB has also recently released a statistical video, presenting and explaining euro area statistics and where to find them, available for viewing on the ECB website or on its new YouTube channel.¹¹

Further efforts have been initiated to cooperate with external partners – e.g. designing university projects for market surveys of users – with a view to better understanding user needs and their appeal for support tools that facilitate the use of statistics, and to exploring additional and supplementary dissemination channels to reach new user groups.

⁷ If you cannot trust a central banker, who can you then trust? This is closely linked to the undisputable independence of the ECB and national central banks as stated within the Treaty.

⁸ <http://www.ecb.europa.eu/stats/prices/hicp/html/inflation.en.html>

⁹ <http://www.ecb.europa.eu/stats/gov/html/index.en.html>

¹⁰ <http://www.ecb.europa.eu/stats/money/yc/html/index.en.html>

¹¹ See the video at <http://www.ecb.europa.eu/stats/html/index.en.html> or the ECB's YouTube page at <http://www.youtube.com/ecbeuro#p/c/9436A6D62BD97634/1/FyHiyPYyDp0> (also available in Portuguese).

The ECB itself, as part of its educational programme, has also launched two new games – “Economia” and “Inflation Island” – which are available on the ECB website.¹² The ECB will also initiate a new Europe-wide schools competition in a bid to help improve young students’ knowledge of economics and monetary policy.

Considerations are also under way involving electronic publications for iPad and tablet PCs and statistics for mobile devices.

Some of these initiatives have also been mirrored and developed further in a number of member countries, with very positive results. For instance, over the last few years, the Banco de Portugal has been promoting ‘road shows’ in universities, professional associations and businesses, whereby staff from its Statistics Department explain how the statistical function is organised at the Bank and the tools available to access the information on an interactive basis. The Bank is also very much committed to enhancing the media understanding of the statistics for which it is responsible, e.g. through dedicated workshops, particularly whenever new statistics are released.

In parallel with these initiatives, the ESCB has also initiated a dedicated Task Force¹³ to build upon the ESCB experience in communicating statistics and to provide proposals for *new ideas to make ESCB statistics more ‘accessible’*, as part of building up the statistical and financial capabilities of European users and to promote awareness of official ESCB statistics and of how to use and interpret these statistics. This work is in its preliminary stages and aims to produce proposals for, inter alia:

- ◆ more focused market segmentation of users;
- ◆ further exploring of existing communication channels;
- ◆ ways to build up trust and to communicate statistics to specific audiences;
- ◆ customised statistics useful to the reporting agents.

Efforts to enhance the statistical and financial literacy of European citizens cannot be seen in institutional isolation and need a broader, coordinated approach between public and private stakeholders in order to make a focused, timely and measurable impact in today’s dynamic society and democracies.

7. Concluding remarks

In today’s dynamic and complex world, European businesses, citizens and politicians are being flooded with ever-increasing volumes of information of variable quality from private and public sources, and are continuously confronted with the need to adopt positions, deci-

¹² <http://www.ecb.europa.eu/ecb/educational/inflationisland/html/index.en.html>

¹³ STC Task Force on “Accessibility of Statistics”.

sions and subsequent actions from a broad field of expertise and geographical scope within a shorter period of time. Policy-makers cannot expect businesses and citizens to be able to distinguish good-quality, reliable statistics from poor-quality public information, which subsequently impacts on sound decision-making in societies. Furthermore, European citizens demand that national and European institutions and policy-makers 1. justify their existence, 2. benefit society, and 3. are transparent and accountable for their actions, inter alia, on the basis of impartial and reliable statistics. European citizens need to feel that official statistics are 1. a public service of high quality, 2. useful in guiding the national and European decision-making processes, 3. contribute to the political agenda, and 4. generate public discussions in our societies.

In terms of macroeconomics, significant benefits can be reaped from investing in enhancements to statistical and financial literacy in Europe – ranging from fostering financial soundness in private and national economies, making the household sector more resilient to potential macroeconomic shocks and negative effects (e.g. due to the financial crisis) and facilitating the understanding and acceptance of necessary national and European policies as part of fostering financial soundness, fiscal prudence and economic policies. Furthermore, a knowledge-based population will foster transparency and accountability within democracies and contribute to (rather than reject) strengthening citizens' engagement in the broader national, European and global economic and financial debate as well as policies.

Central banking communication itself has an interest in creating a 'culture of stability' in society – as part of demonstrating and using its statistics in the decision-making process of safeguarding price stability. This is possibly the best contribution that monetary policy can make to economic efficiency and welfare.

The perceived lack of trust in governments, institutions and statistics by citizens is likely to continue. Even though the central banking community is initiating activities to strengthen statistical and financial literacy in Europe, further coordination and prioritisation among national and European institutions – including private partnerships – is needed to impact effectively on society.

Official European and associated national statistics could be viewed as a 'European public good' – free, reliable and trustworthy statistics for use by national and European policy-makers, market analysts, academics and citizens. The concept of an official public source of reliable statistics has the advantage that analysts and policy-makers can focus on making policy assessments and policy decisions rather than on searching for data and information among a broad and increasingly more available range of public and private data sources, with an associated impact on sound policy assessment and good decision-making.

This also challenges the statisticians to enhance significantly their communication policies and tailor their statistics to the needs of the various user groups by using readily understandable language and tools fit for purpose, as part of the citizens' daily working and decision-making process in private and professional life.

References

- AUREL, S. – NYMAND-ANDERSEN, P. [2011]: *The role of statistics for generating trust within societies – necessary preconditions*. Hungarian EU Presidency Visegrád Conference. 9–10 June. Visegrád.
- AUSTRALIAN BUREAU OF STATISTICS [2009]: *What is statistical literacy and why is it important to be statistically literate?* NSW State and Regional Indicators. September.
- AUSTRALIAN BUREAU OF STATISTICS EDUCATION SERVICES [2011]: *Statistical Literacy Paper*. [http://www.abs.gov.au/websitedbs/CaSHome.nsf/home/downloadable+files.es/\\$file/Statistical_Literacy_Paper.pdf](http://www.abs.gov.au/websitedbs/CaSHome.nsf/home/downloadable+files.es/$file/Statistical_Literacy_Paper.pdf)
- BLINDER, A. S. – EHRMANN, M. – FRATZSCHER, M. – DE HAAN, J. – JANSEN, D. [2008]: Central Bank Communication and Monetary Policy: A Survey of Theory and Evidence. *Journal of Economic Literature*. Vol. 46. No. 4. pp. 910–945.
- EC (EUROPEAN COMMISSION) [2009]: *Multilingualism*. http://ec.europa.eu/education/languages/languages-of-europe/doc141_en.htm
- EC [2010]: *Europeans' Knowledge of Economic Indicators*. Special Eurobarometer No. 323. January. http://ec.europa.eu/public_opinion/archives/ebs/ebs_323_en.pdf
- GAL, I. [2002]: Adults' Statistical Literacy: Meanings, Components, Responsibilities. *International Statistical Review*. Vol. 70. No. 1. pp. 1–25.
- GAL, I. [2004]: Statistical Literacy – Meanings, Components, Responsibilities. In: Ben-Zvi, D. – Garfield, J. (eds.): *The Challenge of Developing Statistical Literacy, Reasoning and Thinking*. Kluwer Academic Publishers. Dordrecht.
- GNAN, E. – SILGONER, M. A. – WEBER, B. [2007]: Economic and financial education: concepts, goals and measurement. *Monetary Policy & the Economy*. Q. 3. pp. 28–49.
- JANSEN, D.-J. [2010]: *Does the Clarity of Central Bank Communication Affect Volatility in Financial Markets? Evidence from Humphrey-Hawkins Testimonies*. Contemporary Economic Policy. 16 December.
- KANT, I. [1755]: Universal Natural History and Theory of the Heavens. In: Bynum, W. F. – Porter, R. (eds.) [2006]: *The Oxford Dictionary of Scientific Quotations*. Oxford University Press.
- LIEBSCHER, K. – SCHUBERT, A. [2008]: Torn between New Data Needs and Respondents' Fatigue. Are Efficiency Gains the Philosopher's Stone? *Statistiken*. Q 3. pp. 26–38.
- MURRAY, T. S. [2011]: *Financial Literacy: A Conceptual Review*. Research paper prepared for the Task Force on Financial Literacy (Government of Canada). February.
- NYMAND-ANDERSEN, P. [2011]: *Communicating central banking statistics: Making useful sense of statistics in a dynamic world*. 58th World Statistics Congress of the International Statistical Institute. 21–26 August. Dublin.
- ORPHANIDES, A. – DALE, S. – ÖSTERHOLM, P. [2008]: *Imperfect Central Bank Communication: Information versus Distraction*. Working Paper Series No. 1. Central Bank of Cyprus. Nicosia.
- STARK, J. [2006]: *Economic Education – An Important Factor in the Implementation of the Monetary Policy*. International Conference of Central Bankers and Economic Educators. 29 September. Warsaw.
- TASK FORCE ON FINANCIAL LITERACY [2010a]: *Leveraging Excellence*. February. http://www.financialliteracyincanada.com/documents/Consultation_Report.en.pdf
- TASK FORCE ON FINANCIAL LITERACY [2010b]: *Canadians and Their Money: Building a Brighter Financial Future*. Report of Recommendations on Financial Literacy. December. http://publications.gc.ca/collections/collection_2011/fin/F2-198-2011-eng.pdf
- THE ECONOMIST: *Data, data everywhere. A special report on managing information*. 27 February. <http://www.di.unipi.it/~turini/Analisi%20dei%20dati/Materiali/Economist--010.pdf>
- TREATY OF THE EUROPEAN UNION, Article 130 (ex. Art. 108 of TEC).
- VAN DER CRUIJSEN, C. – JANSEN, D.-J. – DE HAAN, J. [2010]: *How Much Does the Public Know about the ECB's Monetary Policy? Evidence from a Survey of Dutch Households*. Working Paper Series No. 1265. European Central Bank. Frankfurt am Main.
- WALLMAN, K. K. [1993]: Enhancing Statistical Literacy: Enriching our Society. *Journal of the American Statistical Association*. Vol. 88. No. 421. pp. 1–8.

Gunilla Lundholm

HOW TO ENABLE USERS TO UNDERSTAND AND USE STATISTICS CORRECTLY – AN EXAMPLE FROM STATISTICS SWEDEN

According to Swedish law, official statistics shall be available for the purposes of public information, investigative activities and research, be objective and publicly available. An important aim of the law is to give citizens a tool for evaluating the activities of the government, the municipalities and government agencies – a tool for a developed democracy. A basic condition for that is good statistical literacy among the users. In this paper I initially state that the main prerequisites for good statistical literacy are educated users and good presentations of data. Then I present the ways we work to increase literacy.

For Statistics Sweden, the website and its related statistical databases are the most cost-effective way to publish, describe, and store statistics. However, it is a hard job to make the statistics understandable for all categories of users via the website and we are not yet there. Therefore, on nearly each page of the Statistics Sweden's website the phone number and e-mail address to our Customer Service are published. If the users cannot find the statistics they want or do not understand what they have found on the web, they can call or send an e-mail to the Customer Service with their questions.

The customer service function is centralised today, as we believe that the availability and quality of the service will be much better. Earlier there were minor customer services at different units within Statistics Sweden.

The main principle for our Customer Service is to support self-help. That is, to guide the users on the web and to metadata, instead of immediately presenting the figures asked for. In this way, the users have to work to get an answer and they learn more about the structure and idea of the website and statistics.

We have also found that irrespective of a continuously developed website, there is a need to educate the users. By doing so, we reduce the demand for support from the quite costly Customer Service. Among others, study visits and courses are ways to do this.

All in-coming questions to the Customer Service are registered in a database and are used for feedback to the webmaster and to the producers of the statistics. By doing so, we improve the structure, presentation and content of the website. Another important benefit of this register is that we get an overview of the demand for statistics within different subject-matter areas and for information not included in official statistics.

To improve and develop our support services there is a continuous need for the education of the staff. They must be familiar with statistics and know how to communicate with users.

Finally, I draw some conclusions regarding the efforts to raise literacy by the Customer Service and give some thoughts on the level of literacy and the related support to be given by Statistics Sweden in the future.

1. Educated users and good presentation of data are needed to raise statistical literacy

According to Wikipedia, statistical literacy is defined as an individual's or group's ability to understand statistics. At Statistics Sweden's Customer Service (hereinafter referred to as the Customer Service) we define statistical literacy as the ability to understand the demarcation between statistics and the facts about a certain phenomenon in society and the ability to read and interpret statistics in graphs and tables published by government statistical producers. The user categories we are working with are those who contact the Customer Service when they need help in finding and/or understanding the statistics needed. Nearly all users contacting the Customer Service have access to the Internet and their majority has visited the website before contacting us. The user categories at the Customer Service are (in order of magnitude): enterprises, the public sector, the general public, journalists, students, and researchers.

There are many different attitudes towards statistics among the users. On the one side, we find those who generally regard that as boring and hard to relate to real life. They are seldom fully aware of the amount of statistics they use in their daily life. Their interpretation of society is to a great extent based on the facts they get from statistics via newspapers, the Internet, books, courses, etc. They do not trust statisticians and statistics but they need some facts at that particular moment. On the other side, we find those who regard statistics as something that can answer all questions. To these people statistics are the truth.

In practice, the correct attitude towards statistics should be something in between – users have to realise the value of statistics but still be critical. Step one in raising literacy is to make users understand what statistics are. Our task is to endorse their correct use by our continuously developed website and with support and education of the users.

2. The web is channel No. 1

According to the Official Statistics Ordinance, all official statistics in Sweden must be published electronically over a public network, that is, published on the Internet. The purpose of this regulation is to provide good access to official statistics for everybody. With this regulation as a base, all official statistics are published on the Internet and Statistics Sweden has launched a channel strategy. The strategy says that the website is channel number one for communicating with users. Today our website includes 17 000 pages, except for PDF and excel files and the statistical database, and about 450 000 visitors use it every month.

The second channel is communication via telephone and the third one is face-to-face meetings. The aim for this prioritisation is to raise the degree of self-service, availability, and

flexibility, all measured in relation to costs for Statistics Sweden and usefulness for users. Users should always experience that they choose the best channel depending on their needs. The source of the information is the same in all channels. If users cannot find the information needed on the website, they are welcome to call the Customer Service.

However, it is possible to deviate from this strategy: users may ask questions via e-mail when the Customer Service is not open while they are working. The answer will be sent within hours of operation. This is a service of value for international users because of the different time zones. We have seen that they are to a greater degree represented among those who send questions via e-mail than among users who phone the Customer Service.

3. Reasons for developing a central Customer Service

Previously, the switchboard at Statistics Sweden forwarded the users' calls to the department producing the type of statistics in question. If the switchboard could not connect a question to a certain department, it was transferred to a minor customer service unit. The job of this latter was basically to take care of questions that fell between two stools. The users could also visit Statistics Sweden's website and phone directly to the responsible person listed in the presentation of the survey they believed might have answers to the question. The main principle, when answering the questions, was to give just the figure asked for. Mostly there were no stipulated opening hours for telephone service at different departments. If there were staff available, they answered the telephone but if no one was available, nobody answered ...

In the autumn of 2007 a study was conducted on how Statistics Sweden answered to users' questions about statistics. The study made it clear that the answers were often incorrect. It also revealed that the availability of the departments and minor customer service units was too poor: no one answered the telephone in too many cases. To solve this problem, a central Customer Service was formed. Its task is to take care of the users' questions. It has fixed opening hours posted on the website. The staff at different units is to serve as a back-office for the Customer Service when there is a need for an expert for answering questions from users.

4. Focus areas for developing the Customer Service

When developing the new Customer Service, Statistics Sweden have had five different areas of focus: 1. availability; 2. guidelines on how and what to communicate with users; 3. instructions for study visits and courses; 4. feedback based on the registration of all incoming questions; 5. continuous education of the staff.

4.1. Availability

Good availability means generous opening hours. It is important that the users know when the Customer Service is open, they do not have to wait too long before getting an answer and that the staff on duty be sufficient. Good availability is not directly connected to the users' literacy but it is directly connected to the trust in the organisation. Furthermore, I think that users' trust in the organisation is linked to the trust in statistics. I also believe that a good basis for literacy is that the users place reliance on the organisation and statistics.

As I mentioned above, Statistics Sweden had no stipulated opening hours earlier with the exception of the minor customer services and some other units whose opening hours differed from one another. There were no calculations on the staff on duty needed, so sometimes the users had to wait their turn for a long time before getting an answer. The discipline was occasionally poor, thus, even if it was opening time, no one answered the telephone.

One of the first steps taken by the new Customer Service was to propose fixed opening hours for receiving questions from users. The same hours were fixed for the staff at different units which serve as a back-office for the Customer Service when there is a need of an expert for answering the questions from a user.

The new Customer Service identifies its staffing needs according to the Erlang C Calculator. Today there are three or four persons on duty at the same time (depending on what time of the day it is). The staff number is dependent on the number of phone calls, on the length of conversations and on the amount of time accepted for call waiting. For example: if the conversations take two minutes longer on average, there is a need of one more person on duty in the Customer Service. This means an increase of staff costs by about EUR 125 000 annually. So it is very important to minimise the length of the conversations, of course, without tampering with the quality of the support.

The estimated number of phone calls and the length of each call are based on switchboard statistics compiled monthly. At the end of this year, a modern technique will be introduced, enabling us to see the number of incoming phone calls in real time. This means that the staff will be employed in a more flexible and thus more cost-effective way.

4.2. Help for self-help and how to communicate

Our support principle is 'help for self-help', that is, to guide the user on the website and give assistance to him/her to find the answer to his or her question.

Besides the good distribution of staff for cost-effective support, guidelines and education are needed. In the spring of 2010 we ran a project with the title "How to answer questions at the Customer Service?" It resulted in guidelines regarding which questions to handle. It is not our task to answer all kinds of questions and sometimes we have to explain the demarcation between statistics and facts or the difference between statistics produced by Statistics Sweden and, for instance, a survey conducted by a public opinion institute. It is also a challenge to decide as soon as possible if a user should talk directly with an expert or not. An important

part of the guidelines has dealt with communication: how to open the conversation, how to grasp the question quickly by counter questions, for what purposes we need statistics, how to handle upset users, etc. Based on these guidelines three persons of the staff received training in coaching and thus the coaching process started. Now there is regular training of all the staff. As a result, they act in a uniform way: the length of the conversations is shorter and the users get better service.

4.3. Education of users

There are three ways to educate users. First, the Customer Service is the focal point for users' study visits to Statistics Sweden. A project run by the Customer Service will soon be finished and, with the aim to raise statistical literacy, a proposal will be made for 'general' study visits to be organised for various user categories. Standard presentations for different target groups will be prepared so that they can be used throughout the organisation. The main idea related to study visits is to give the users a draft description of how to find and understand the statistics wanted and of how to use the website. If they want more help, we will offer them in-depth description of some subject-matter areas, index usage, etc. for a fee. As the second way to educate users, general courses will be also carried out by the Customer Service in cooperation with experts on different statistics. Study visits and courses are developed based on incoming questions to the Customer Service that show the difficulties users are facing.

A third, perhaps longer-term way to educate young people on how to use statistics is one of our website features named "Classroom" designed for teachers and young people. It provides tools for working with and understanding statistics.

4.4. Continuous education of the staff

Most of the customer service staff has degrees in statistics and economics. The official statistics are divided in different subject matter areas; two or three staff members are responsible for each of them. These groups follow what happens in their statistical areas and continuously inform their colleagues on the changes and news about statistics. They also organise seminars and courses in case there is a need for more in-depth knowledge.

4.5. Feed-back based on the registration of all incoming questions

All incoming questions to the Customer Service are registered in clear language in a database. The following variables are recorded: date, customer category, subject matter area the question pertains to, and if the question is answered at the Customer Service or forwarded to the back-office. From the database we can extract lists of questions or tables where the number of questions is shown in different categories according to the variables mentioned above. It is a simple and inexpensive but very useful tool because it

1. gives an overview of statistics that are asked for but not available at Statistics Sweden;

2. outlines what the users found difficult in finding, understanding and using statistics. It also serves as feedback for *improving*

a) the producers' presentations of their statistics. The group responsible for a certain subject matter area mentioned in section 5.4. also has the responsibility of informing the producers about the users' problems with statistics (when they do not understand something, need more information, ask for special presentations, etc.) A quick fix solution is to prepare a 'frequently asked questions' (FAQ) feature and publish it on the website while waiting for a permanent solution that is integrated in the presentation of the statistics concerned.

b) the website. Representatives from the Customer Service have regular meetings with the webmaster for sharing experience regarding the users' views on the website and on the statistical databases. They also discuss the difficulties users have with the website and the short- and long-term solutions.

5. Conclusions

Statistics are complicated. We will never be able to have a website which is sufficient for all users and to produce all statistics requested by them, so there will always be a demand for a customer service. In the long run the ongoing work to develop the website, the statistics, the principle of help for self-help, the frequently recurring courses and study visits organized for users, as well as the continuous education of the staff are all ways to raise statistical literacy.

According to statistics on incoming phone calls, the number of users contacting the Customer Service shows a declining tendency. An observation also supports this conclusion: last autumn the Customer Service conducted a user-satisfaction survey where we found that about 60% of the people contacted the Customer Service for the first time. Based on these results, we do think that many users learn enough during their first contact and can help themselves after that. We have seen another tendency too: the questions incoming to the Customer Service are becoming more complicated. The registration of questions started one year ago, so within another year we will have a better base for studying changes in the number of questions and in the degree of their difficulty.

These results combined with new user-satisfaction surveys will probably provide input for further development of statistics, the website and not least of the competence of the staff. I believe that the staff of the Customer Service will play a more and more consultative role in the future rather than only provide guidance.

Maija Metsä-Pauri

SHARING STATISTICAL DATA IS NOT ENOUGH – INTERPRETATIONS BY STATISTICIANS ALSO NEEDED

This paper highlights how sharing statistical data is not enough – we need to combine the interpretation of statistics, in the form of short stories, with the use of dynamic visualisation tools. Choosing topics of general importance as well as listening to varied user needs are important to attract interest towards the statistical culture and to raise dialogue between statisticians and users. This paper also shows examples of Statistics Finland’s long tradition of statistical storytelling. As a consequence, we have a good chance of enhancing and strengthening the role and brand of Statistics Finland as an open, professional, competent and reliable information provider. In addition, the key results of the survey about the use of the social media in European NSIs (carried out in August–September 2010) are presented.

1. Introduction

Socio-economic and environmental changes are more profound and complex than ever. In order to measure and to get an overview of the development, there is great demand for high quality, comparable and updated statistical data as well as for developing new indicators. Simultaneously, the development of Web 2.0 and Information and Communication Technologies (ICT) has extended to every field of our life. This revolution has already and will in the future have a significant impact on statistical culture. In particular, it will influence the dissemination and communication of statistics.

This paper consists of two parts: 1. Interpreting statistical data and meeting various user needs – Statistical storytelling, Statistics Finland’s experience; 2. Social media is here to stay – Key results of the survey on social media in the national statistical institutes (NSIs).

2. Interpreting statistical data – meeting various user needs

Due to the enlargement of Web 2.0, there is an ever greater demand for listening, following and monitoring the user behaviour on the Internet now – and being proactively as pre-

pared as possible for the future. It is important to understand the various user demands and their changing behaviour in searching, using and sharing statistical data and information. We should not forget or underestimate this at any point while developing and innovating new services and contents providing value added on the websites of national statistical institutes (NSIs) and international organisations publishing statistical data.

Dealing with topics of general importance (e.g. economic, social and environmental development) in an understandable way is demanding, but extremely important in advancing European democracy. Accurate interpretation and analysis of official statistical data – done by statistical experts – and communicating it clearly is crucial for giving Europeans an unbiased, reliable and understandable picture of the state and development in Europe.

While analysing and interpreting statistical data and trying to give answers, for example, to the ‘hot topics’ of today (e.g. indicators of financial and economic crisis, globalisation, climate change, social exclusion, wellbeing, migration) – we are dealing with particularly complex and challenging phenomena. Our aim is to provide reliable indicators and data to measure them and with the means of successful and clear communication avoid misunderstanding (or misuse) of official statistical data. Furthermore, an active collaboration and dialogue between statisticians, researchers and other experts are also necessary – as well as open and effective co-operation with the media.

It is equally important, however, to look for topics closer to the daily life of people and publish appealing stories attracting the interest of a wider audience. Generating interest towards statistics and improving statistical literacy, in particular among younger people, is worth a great effort and consequential to preparing for the future of European democracy.

2.1. Statistical storytelling – Statistics Finland’s experience

Statistics Finland aims to develop and renew its range of products and services in order to be proactive in meeting the needs of our users. The aim is to ensure as wide and open use of statistics as possible in society. In recent years, the amount of data available as a self-service on the website has increased: electronic releasing of data has been widened and new thematic pages have been built for topic combinations.

There is also a long experience of advancing statistical literacy in different ways. For example, on the World Statistics Day (20 October 2010), the producers of official statistics in Finland focused on statistical literacy and user skills as essential civic skills. Exercises and learning materials were produced for schools that were also given the opportunity to invite experts to visit them in different parts of Finland.

One of our tools used for making statistics understandable is *statistical storytelling*.¹ For quite a long time now, we have published two magazines (print magazines and a selected number of articles on their websites): one focusing on economic and environmental issues (*Tieto&trendit (Facts and Trends)*), a print version published eight times per year since 2005),

¹ On statistical storytelling see e.g. *Ellingsen* [2005], *UNECE* [2005], and *Grossenbacher* [2010].

the other on issues relating to welfare and wellbeing (*Hyvinvointikatsaus (Review of welfare)* periodical published four times per year since 1990).

The articles published in these magazines aim to address the key questions of our society, e.g., progress, wellbeing, and sustainable development, in an understandable way. They are targeted to the media, public sector, decision makers, business life, organisations, and academics.

In addition, there is a wide compilation of *web articles* on all kinds of various topics and themes targeted to larger audiences on our web sites.

The ongoing changes in the operating environment – as more and more data and information are shared free on the Internet and as Web 2.0 and social media are here to stay – have, without doubt, recently changed and challenged the role and concept of the print magazines in many ways. On the other hand, it has also brought positive pressure to re-evaluate their concepts as well as to sharpen their role. In order to have any chances of maintaining the print magazines, these broad compendium-type magazines/periodicals must:

- ◆ identify the needs of their audiences and keep a close relation to the readers using the means and tools of social media and networking;
- ◆ combine the print with a relevant web edition that meets the user needs on the Internet – we are currently working on this;
- ◆ provide value added in the form of catchy contextualised stories, in-depth journalistic articles, short reviews/explanatory texts, interviews, etc.;
- ◆ use dynamic visualisation tools – in our case eXplorer – and invent good stories to fully exploit the remarkable possibilities;
- ◆ identify the most suitable tool/tools of social media, carry out a well-planned pilot with the aim to provoke a dialogue with the audience (we are currently working on launching a blog).

2.2. We have the data, who will tell the story

Trying to interpret and communicate difficult and, in some cases, sensitive topics is all but an easy task – as well as finding appealing stories to attract the attention of particularly young people. At Statistics Finland, there are a number of competent and experienced statisticians with skills and interest in writing – either in-depth articles or shorter statistical stories on various topics. This might not, however, be the case in the future.

Therefore, it is important to look continually for new “storytellers” and raise new generations of statisticians motivated towards statistical storytelling, particularly oriented to writing for the web and certain enthusiasm for using dynamic visualisation tools. Creative touch and pioneering spirit towards the use of social media is also essential in order to meet the user needs of younger audience.

We recently offered our statisticians a course, in the form of a writing workshop, on improving storytelling skills in general and writing statistical stories to be published in our mag-

azines, either in the print version or on the web. Based on our experience, it seems that this kind of a writing process and sharing experiences with others for comments and feedback might be one worthy tool for learning to interpret statistical data better and to write in an understandable way as well as enhancing the interest towards writing.

As a premise for improving skills for ‘web writing’, our long experience is a great benefit and a good starting point. However, writing web-articles differs from the traditional print magazine type of – although in our case journalistic – writing in many ways. This should be emphasised when planning or developing any kind of written content designed particularly for the web. It is also important that the Dissemination Unit regularly arranges for the staff courses specially focused on web publishing and writing. This will as well be the case for data visualization (the use of eXplorer) by the end of 2011.

2.3. Opportunities of visual storytelling

Our brain is dramatically affected by images, interactive graphics and visual explorations. Therefore, the keyword of statistical storytelling is *combination*: a well-designed combination of images, numbers, words and stories. These elements constitute together a strong instrument for understanding statistics and statistical information. (*Barbieri–Giacche* [2010])

The online editions of some newspapers (*The Economist*, *The Guardian*, *The New York Times*), for example, already devote a lot of space to images and graphs, especially to interactive graphics – along with the trend of data journalism – and collaborate with the official data providers. It looks as if in Finland some newspapers/media will also, gradually, follow the international trend. Interpreting and understanding statistical data, however, require certain expertise, which can be a challenge for the majority of journalists.

As a tool for dynamic visual storytelling at Statistics Finland, we have recently (in spring 2011) brought into use *eXplorer*² which was first experimented for publishing and, in particular, for visualising the regional results of the parliamentary elections (pilot). Currently, we are looking for suitable interesting topics and applicable regional data for making more use of it on our websites, for example, in our web articles on the population and on the renewed website of the *Tieto&trendit* magazine. Combining the interactive visualisation with catchy short stories requires certain skills and much effort as well as active and innovative collaboration between the statisticians and web-editors involved.

Are we likely to find such skilled and innovative storytellers as *Hans Rosling*³, who is a forerunner in this area (also developed what he called “*Gapcasts*” (www.gapminder.org) – i.e. videos using interactive graphics and spoken narration to discuss a particular issue, for example, infant mortality using Chroma Keying)? Most likely the answer is no – at least not in eve-

² Other NSIs or international organisations currently using eXplorer: Statistics Sweden, Statistics Denmark, Italian National Institute of Statistics, Statistics New Zealand, and the OECD.

³ Hans Rosling’s presentation of Trendalyzer in 2004 opened people’s eyes to the opportunities of dynamic visualisation tools in statistical institutes (especially in the Netherlands and UK) and in many international organisations (OECD, IMF, ECB, World Bank).

ry corner –, but it should not be an obstacle to motivating and supporting this kind of process and interest in all possible ways in our statistical culture.

As communicating statistics to wider audiences is understood to be more and more important, would it not be wise to take this orientation – interpreting statistics and exploiting new tools of storytelling – into account also in recruiting new statisticians with hopefully fresh and innovative ideas? Who knows, we would end up – with lottery luck – finding potential future-Roslings.

2.4. Concluding remarks

Accurate analysis and interpretation of official statistical data – done by experts and, in many cases, in collaboration with academic researchers – is crucial for giving Europeans a clear and unbiased picture of the development in Europe. As trying to fulfil this challenging task – and meeting various user needs of today – offering only databases and tables is, obviously, not enough. Instead, we should bring our statistical data closer to people presenting and communicating them in a way that people can understand our message and relate it to their world.

Storytelling makes data meaningful turning it into knowledge. It also facilitates a key function of official statistics: it makes statistical information visible and understandable to all advancing European democracy. In order to strengthen and support this function – and proactively meet the future challenges – it is crucial to promote its importance in our statistical culture more effectively.

One of the concrete ways for advancing such development is putting more emphasis on these skills in recruiting and raising new generations of skilled statisticians motivated towards this direction as well: oriented to interpreting, storytelling and innovative use of dynamic visualisation. Consequently, we have a good chance of enhancing and strengthening the role and brand of Statistics Finland as an open, professional, competent and reliable information provider.

3. Social media is here to stay

New ICT tools and the success of the Web 2.0 also change profoundly the way in which people look for, find, produce and share data. The world of Web 2.0 is a natural environment especially for the new generation. “The use of Web 2.0 transforms the “consumer” of some particular information/service provided via the Internet into a “prosumer” – a person who is simultaneously a consumer and a producer of the information/service.” Social media constitutes also a new arena in which amateur and expert information meet. Substantial question is in which source of information do users trust?

In this new environment, the keywords are openness, collaboration, participation, interaction, dialogue and sharing knowledge, which should be taken into account when advancing new effective solutions and creating new contents. One should also keep in mind the fact that *Google never forgets*.

This tremendous “change has deep implications for the world of official statistics, which is becoming more aware of the need to exploit the opportunities offered by web 2.0.” (*Giovannini* [2010]) As social media is here to stay, one would expect that national statistical institutes capitalize on these intensely popular social network media and tools to work most effectively with its wider audience and the people (*UNECE* [2011]). However, one can easily notice that prudence is dominating (*Giovannini* [2010]).

International organisations – such as the OECD and the World Bank – have brought into use, for example, Wikis and blogs. Instead, the use of social media particularly in European NSIs has lagged behind other innovations. According to an informal survey of statistical dissemination and communication professionals, conducted by the UNECE, the main reasons for limited activity in this area include the need to be cautious in order to maintain public credibility and managing with limited resources (*Gardner* [2008]).

As part of a Eurostat project (“*Sponsorship on Communication*”) Statistics Sweden launched a blog with various statistics. Statistics Estonia has a blog and a Facebook page publishing statistical information in the form of short articles. Recently, Statistics Netherlands and Statistics Italy (ISTAT) have also paid more attention to this area.

3.1. Key results of the survey on social media

A survey about the use of social media in the NSIs was carried out jointly by Eurostat and Statistics Finland in *August to September 2010*. (*Vesterinen* [2011]) It was conducted as a web questionnaire to all the members of the Eurostat Dissemination Working Group. The main purpose of the survey was to find out the current state of social media usage and future plans as well as eventual risks and benefits related to social media.

Social media were used as a tool for external communication by 61 percent of the respondents. The most popular social media tool was *Twitter*, applied in more than one third of the organisations. Chats and wikis were used in every fifth, YouTube, Facebook and blogs only in 15 percent of the institutes.

Social media were mainly used to distribute information, to promote the use of statistics and to *increase statistical literacy*. They were also quite commonly employed to reach new audiences and to improve user support, as well as to receive user feedback and for marketing. Even though some of the NSIs considered adolescents and young adults the most relevant target groups, most of the respondents had not identified any specific target groups but aimed to *reach wide audiences and ‘ordinary people’*.

In most cases, social media were seen as a tool for promoting and increasing the use of statistical information in society, and *for reaching as wide audiences as possible*. More interactive

communication and engagement in social debate were often mentioned as the main reasons for applying social media, too. Promotion of the image of the NSI as a *modern, dynamic organisation* and a positive *potential employer* was also cited as one of the most important purposes for using social media.

On the one hand, over 40 percent of the respondents consider social media as a very or rather important communication tool. On the other hand, those not valuing social media (rather unimportant or unimportant) had a similar share of the answers. More than one third of the NSIs had a strategy for social media either compiled or under compilation, and one third had included social media in the communication strategy. The last third considered a strategy or policy for social media unnecessary.

More than one half of the NSIs do not monitor social media at all. Those applying some monitoring systems mainly use web analytic tools, or monitor the quantity and quality of chats and blogs manually.

Insufficient resources and lack of competence and experience were considered the *most severe obstacles to increasing the use of social media*. Shortage of resources was mentioned as a considerable hindrance in over 50 percent of the answers, and shortage of time in 42 percent of the answers. Lack of technical support or safety risks were regarded as limitations by one fifth of the respondents. Social media were considered a reasonably young phenomenon *requiring still some monitoring before taking full action*. Other topics commonly mentioned as limitations or obstacles included, e.g. lack of tools for mastering social media.

The answers consider *safety risks, false profiles and distribution of incorrect and/or harmful information the most severe threats* to social media as these may lead to significant damage to reputation and credibility. Insufficient time for monitoring social media and inadequate mandate of employees to join the discussions and correct improper information were considered problematic, too. Regardless of these challenges, adhering too much to traditions and the current modes of action, and lack of risk-taking and experimenting were also seen as main threats to the development of the NSIs. Cooperation with other organisations, sharing of best practices and close monitoring of development were listed as ways of preparing for the future challenges. The importance of pilot projects and trials were emphasised by many respondents.

In general, the NSIs appeared very enthusiastic and willing to try and experiment with social media, and the potential benefits are already recognised by many of the respondents. However, one of the major challenges remaining is how to get evidence about the potentials to *convince the management* and to *assure sufficient resources* for the activities.

References

- BARBIERI, G. – GIACCHE, P. [2010]: *Beyond the data: Exploiting the IT tools young and adult people use in their everyday life*. Invited Paper. 8th International Conference of Teaching Statistics. 11–16 July. Ljubljana.
- ELLINGSEN, D. [2005]: *Draft Guidelines for Statistical Storytelling*. Joint UNECE/OECD Work Session on Statistical Dissemination and Communication. 14–15 February. Henley-on-Thames.

GIOVANNINI, E. [2010]: *Wikis, dynamic charts, videos and other innovative tools to transform statistics into knowledge*. Invited Paper. 8th International Conference of Teaching Statistics. 11–16 July. Ljubljana.

GROSSENBACHER, A. [2010]: *Storytelling revisited*. International Marketing and Output Data Base Conference. 6–10 September. Vilnius. <http://blogstats.wordpress.com/category/imaodbc/>

UNECE (UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE) [2005]: *Making Data Meaningful, Part 1: A guide to writing stories about numbers*. United Nations. Geneva.

UNECE [2011]: *Making Data Meaningful, Part 3: A guide to communicating with the media*. United Nations. Geneva.

VESTERINEN, A. [2011]: *Social media's opportunities for Statistics Finland*. Bachelor's Thesis. Kymenlaakso University of Applied Sciences (Kymenlaakson ammattikorkeakoulu). Kotka.

Session 2
The responsibility of statisticians
and the responsibility of users of statistics

chaired by
JAUME GARCÍA VILLAR
(National Statistics Institute of Spain)

Marie Bohatá

FIT-FOR-PURPOSE STATISTICS FOR EVIDENCE-BASED POLICY MAKING

Official statistics are serving ever growing information needs of a broad variety of users. Simultaneously, these needs are becoming more complex and cross-cutting. This changing environment for official statistics calls for new and more profound communications between statisticians and users.

Users are not homogeneous nor are their needs. Usually, the scope of statistics produced is defined in a stakeholder dialogue, often led by user councils where a whole range of users is represented and priorities are set. At the European level, and in line with Eurostat's mission, the category of political users is treated with priority. If statistics/indicators are used for regulatory purposes, not only a broad dialogue with users has to be held but even an agreement on concepts and required quality has to be achieved.

Statistical quality management is highly developed in Europe. It seems, however, that official statisticians – implementing a universal approach to quality – move only very slowly from an understanding of quality in absolute terms to a relative concept led by the purpose of usage. The paper argues that the current quality management of statistics does not guarantee that statistics are automatically fit for all purposes and sketches main features of a new approach.

1. Introduction

What we are witnessing today is that the need for European Statistics (ES) is constantly increasing and their nature is changing, as they are being used on a massive scale for EU policy making. They are growing in both importance and size, and are also becoming increasingly complex. EU policy is addressing more complicated issues than in the past, and European governance is changing too. There is currently much more interest in statistics on the part of politicians. This makes us proud of our work on the one hand, but on the other hand there are also some associated problems and challenges.

When policy makers and statisticians speak about evidence-based decision making, do they all understand “evidence” in the same way? Can we equate evidence and statistics? There are interpretation issues such as the “correctness” of statistics required by politicians, to name just one. Moreover, some statistics are used directly for regulatory or administrative purposes and this specific use has major implications for the quality of statistics/indicators.

Increasingly we need to bear in mind that the quality of official statistics is not an absolute feature to be dealt with as a ‘stand-alone’ issue. Instead it is relative, defined by the users’

needs, and multifaceted; therefore it must be dealt with in a particular context and in an integrated manner.

As official statisticians we are not particularly at ease with the consequences of these new developments. The new challenges linked to the proximity of ES to politics and their high visibility raise concerns as regards our independence and credibility. An open debate might help to reduce these worries. The purpose of this paper is to contribute to that debate.

2. Universal approach to quality

The joint work on quality in official statistics got off the ground at the end of the last millennium and has already become an important issue on which we work together very closely in the European Statistical System (ESS) and even beyond. In recent years, we have seen an expansion of the scope of our policies on quality and many improvements in the quality of official statistics at all levels. The ESS has invested energy in improving outputs, processes, and quality management systems. The adoption of the ES Code of Practice, the strengthened governance structure, as well as enhanced cooperation between the ESS and the European System of Central Banks, have all lent a new impetus to quality enhancement initiatives.

By now, we have put quality policies for official statistics in place at all levels. However, as these policies are conducted at their respective level, there is no guarantee that national quality initiatives will also lead to improved ES. Thus, it should be our shared concern to facilitate a convergence of all national quality initiatives in such a way that they fit together at European level. The recommendations of the Sponsorship on Quality established by the ESS in 2009 will deal with this crucial task and – I am convinced – will help us attain this objective.

Looking back, we can see that our understanding of and approaches to quality have developed over time. Quality has become a ‘buzzword’ and everyone agrees that official statistics should be of a high quality. Quite often the word “official” is taken as a synonym for high quality. However, we have to make it clear that there is no such thing as absolute quality in statistics. Quality is always contextual, because it is defined by users’ needs. The “fit for purpose” concept of statistics was developed in order to explain the relative and differentiated character of statistical quality. As official statisticians, we have not been particularly successful so far in communicating to our users that there are certain limitations where quality is concerned. In my view, the fact that we have been developing a universal approach to quality has contributed to that state of affairs. This universal approach has been based on a series of quality initiatives around the adoption of the ES Code of Practice, aimed at implementing an all-encompassing quality assurance policy for ES.

Although the universal approach has stabilised the position of ES, answers are needed to some serious questions, since recent years have also shown that the ESS is not as robust in an environment as difficult as the European one.

3. New approach to quality

The main issues to be addressed by the new approach can be covered by the following three questions:

1. Does the current quality management of statistics guarantee that ES are automatically fit for all purposes?
2. Do statistical processes (and thus their management) really have to be uniform and independent of how their results are used?
3. Should we look for ways to reduce our vulnerability?

Communication No. 211 adopted by the Commission in April 2011 provides guidance for quality management of ES and Eurostat and, together with its partners in the ESS, it is currently reflecting the implementation of that Communication. The core of the new approach should be based on a broad acceptance by our stakeholders of our methods, processes, and results and on the fully-fledged implementation of the fit-for-purpose quality paradigm. An important aspect of this Communication is the implementation of the audit-like powers recently assigned to Eurostat in the area of excessive deficit procedure (EDP), and the appropriate involvement of NSIs in the upstream quality verification processes.

In addition to the specific work in the area of EDP, Eurostat is also considering the following basic aspects of the new approach:

We take the use/purpose of our statistics into account in our processes for defining, compiling, and disseminating statistics/indicators, and we distinguish between

- ◆ general ES subject to our standard quality management in full compliance with the Code;
- ◆ experimental/innovative statistics (e.g. statistics sufficiently reliable for intended analyses), and
- ◆ statistics “with authority/for specific political purposes” with “audited” or “certified” quality.

We consider our statistics to be fit for purpose if our methods are based on a broad consensus among the scientific, professional and political communities concerned and if our results are sufficiently reliable for their intended purpose (adequate granularity, timeliness, accuracy, etc.). The broad consensus on methods is supposed to be achieved by

- ◆ a clear definition of users’ needs; this includes an understanding (and acceptance) of their political purpose;
- ◆ a close dialogue between producers and users;
- ◆ an open debate with the scientific community;
- ◆ targeted communication with the media.

Sufficient reliability should be achieved

- ◆ by specific audit-based or certification processes in the case of statistics drawn upon for political processes, such as EDP;
- ◆ by a regular review of the results in discussion with specific users in the case of “experimental” statistics.

A fit-for-purpose policy will require the following special organisational arrangements:

- ◆ The audit and/or certification processes for statistics used for conducting policy processes must be underpinned by legislation.
- ◆ For statistics that have been newly developed (or adapted) for a specific policy, their experimental, potentially innovative character has to be underpinned, along with a commitment to ensure a maximum of transparency and regular scrutiny by the scientific community, as well as the launching of an invitation to the scientific community to contribute to the ongoing work.

4. Conclusions

This conference has given us an opportunity to discuss the adequacy of our quality definitions and management tools, and to take another step towards a common understanding between producers and users of what constitutes quality.

However, at the same time, it is encouraging for us, producers to witness the growing interest, and even concern, about statistical concepts, methods of production, costs, respondents burden, priorities and – of course – the quality of our products in general. Statistics are an important tool for policy makers, businesses, scientists and the general public. Users need to be well informed and aware of the strengths and the weaknesses of the statistics they use. This is not an easy or straightforward task, as we have to explain not only our compliance with quality standards, but also the actual standards themselves. These are not set in stone and they need to be continuously refined in order to reflect new developments in statistics and in our societies.

References

- BOHATÁ, M. [2010]: *Opening speech*. Q2010 European Conference on Quality in Official Statistics. 4 May. Helsinki. <http://q2010.stat.fi/programme/>
- COUNCIL OF THE EUROPEAN UNION [2010]: *Regulation (EU) No 679/2010 of 26 July 2010 amending Regulation (EC) No 479/2009 as regards the quality of statistical data in the context of the excessive deficit procedure*. Brussels. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:198:0001:0004:EN:PDF>

EUROPEAN COMMISSION [2011]: *Towards robust quality management for European Statistics*. Communication from the Commission to the European Parliament and the Council. COM (2011) 211 final. Brussels. http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/documents/COM-2011-211_Communication_Quality_Management_EN.pdf

EUROSTAT [2005]: *European Statistics Code of Practice*. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-77-07-026/EN/KS-77-07-026-EN.PDF

RADERMACHER, W. – BOHATÁ, M. – REEH, K. [2010]: *Debating Official Statistics - Some thoughts about the need for a broader public dialogue on official statistics*. Q2010 European Conference on Quality in Official Statistics. 4 May. Helsinki. <http://q2010.stat.fi/sessions/session-10/>

Mariana Kotzeva

CENSUS 2011 IN BULGARIA – ONE MONTH ONLY GOOD NEWS OR THREE TEAMS IN THE SAME BOAT NOT COUNTING THE DOGS

This paper describes the content, goals and stages of the communications campaign for Census 2011, as well as the outlines of its main components and channels (media campaign, national and local partnerships, social media, on-line interactions, and trainings) that prompted participation and led to the census success. The well-targeted, efficient and nationwide campaign was, certainly, a precondition for the overall success of Census 2011. However, the positive results go beyond the Census. The campaign proved the good cooperation between institutions at central and regional level. The Population Census became a national priority supported by all state institutions, local authorities and the citizens of the country. Thus the overall confidence in the role and mission of official statistics has been increased.

1. Introduction

On 1st February 2011 Bulgaria conducted the Seventeenth Population and Housing Census (hereinafter referred to as Census) in its modern history. Data collection took place in two stages. From 1 to 9 February 2011 for the first time Bulgarian population was offered the opportunity to fill in the census questionnaire via Internet. In the last three weeks of February (from 10 to 28 February 2011) interviewers visited households to conduct face-to-face interviews with those who had not used the Internet option.

The Census was an overall success. It is well recognized in the country that Census 2011 appeared to be the largest population mobilization in recent Bulgarian history, a period of full support to the survey by all stakeholders (government, local authorities, media, citizens, and communities), a time of active National Statistical Institute (NSI) presence, reflected in a positive manner by the media. A key factor for the successful preparation and implementation of the Census was the nationwide, well-targeted and comprehensive integrated public communications campaign.

The Census 2011 Public Communications Campaign was one of the most extensive and far-reaching marketing campaigns ever conducted in Bulgaria. Every census is a complex exercise and the outcome depends strongly on the population participation rate. Therefore the campaign attempted to motivate each person to take part in this particular one and to make

her/him feel like she/he is a crucial part of it. For a very limited timeframe, our marketing activities reached 3 million households.

A key milestone in the preparation of Bulgarian Census 2011 was the understanding that communications had to be an indispensable part of the whole process. (In the previous censuses the focus was on the dissemination of results.) As regards the communication side, the emphasis was placed on public awareness promoted mainly through media channels. The changing media landscape and the development of modern information and communication technologies (ICT) have shifted the focus from simple dissemination to a more interactive way of communication with users and respondents of official statistics. The Census as the largest statistical survey in scope is not an exception. Furthermore, having the importance of the Census itself, it is absolutely essential to ensure that the data collected are accurate and complete. In order to turn Bulgarian citizens into committed supporters of the Census, an effective and well-targeted communications strategy was developed.

It is now a standard practice to use marketing approach to the output of official statistics, but it has not been applied on such a scale to census data collection before. The collection phase of Census 2011 was a significant communications exercise. More than 3 million households needed to be made aware of the importance of the Census but also to understand how and when they might participate in it, and, in particular, how to use the Internet opportunity.

It was not enough to talk about the importance of the Census and generate interest in the upcoming results. The public communications campaign had to address a number of issues related to the innovations in the census methodology and implementation. It had to provide answers to several questions: Why should the residents be willing to participate? How could they use the e-census opportunity? Why was it necessary to be co-operative with the census interviewers? While answering all the challenges and addressing the innovations related to the Census, we faced serious budget constraints and thus the data collection had to be carried out at the lowest possible costs.

This paper describes the content, goals and stages of the communications campaign for Census 2011, as well as the outlines of its main components and channels (media campaign, national and local partnerships, social media, on-line interactions, and trainings) that prompted participation and led to the census success. Lessons derived from our experience can help other national statistical offices in the preparation of their own communications campaigns and in their efforts to inform, motivate and get the support of the citizens and institutions.

2. Goals and scope of the communications campaign

During the preparation of Census 2011, we identified a number of new challenges which had not been in existence before and which, in turn, influenced the scope and content of the public communications campaign. Proliferation of new communications channels, emergence of social networking, increasing importance of privacy concerns, appearance of citizen jour-

nalism and existence of mistrust towards governmental institutions among some societal groups are, inter alia, the phenomena that require the changing and reshaping of the communications and dissemination policies of official statistics in general and of the pre-partitioning and implementation of the Census in particular.

In addition to the general challenges listed above, the public communications campaign needed to reflect innovations in the organization and implementation of the Census. The major one among them refers to the introduction of the e-census. For the first time in the history of Bulgarian statistics, the citizens were able to complete the questionnaires on-line. An additional challenge was posed by the decision of the Parliament to advance the Census and to conduct it earlier than it was initially planned, which resulted in a very limited timeframe for the preparation and implementation of the public communications campaign.

In order to overcome these obstacles and ensure the broadest possible participation in the Census, we had to develop a flexible and innovative approach, different from the strategies implemented in the previous censuses. The public communications campaign had three main goals:

- ◆ To increase Census 2011 coverage through making people aware of the importance of the census results and motivating them to participate;
- ◆ To improve accuracy of the Census 2011 results;
- ◆ To generate a positive environment and support to the Census 2011 interviewers during the field work.

The mix of the two main methods of data collection (e-census and traditional face-to-face interviews), carried out consecutively, required the communications campaign to take place in three phases:

- ◆ Educational phase – the period before the census date;
- ◆ E-census motivation phase – the period of the E-census (from 1 to 9 February 2011);
- ◆ The period of getting support to the traditional fieldwork – the period of three weeks of visiting households and conducting face-to-face interviews.

Each phase required specific actions in order to achieve the goals, to prompt participation and to spread the census messages as broadly as possible. The Census 2011 public communications strategy was incorporated in the general strategy of transparency and openness of the statistical surveys methodologies applied by the Bulgarian NSI to society. This principle was extensively followed in the period of preparation of Census 2011 when the census program, the questionnaires and instructions were developed. A number of consultations with academia, government institutions and non-governmental organizations were carried out. The debate on the scope, content and design of the census questionnaires was opened to the general public, which helped a lot in making people aware of the importance of the census results

and of the benefits that the Census might bring at local and individual level. The open sharing of information on the census forms contributed to the building of confidence in the objectives and methodology of the process, especially as regards the sensitive questions related to ethnicity, disability, mother tongue, and religion.

In order to meet the goal of a complete and accurate census, we developed a communications strategy that consisted of the following main components:

- ◆ paid advertising;
- ◆ media partnerships and training;
- ◆ national and regional partnerships;
- ◆ on-line interaction and using of social media channels;
- ◆ targeting of specific groups and communities with the engagement of community leaders.

As the budget for paid advertising was relatively small, a great deal of attention was focused on the other four elements of the campaign. The communications strategy covered both national and regional level but a special emphasis was given to ensuring consistency and co-ordination of activities and providing unifying themes and messages across all segments.

3. Components of the Census 2011 Public Communications Campaign

Paid advertising covered radio, television and print media. A plan for advertising was prepared by a marketing and advertising agency that received the assignment after an opened tender procedure organized by the Bulgarian NSI. Despite the limited budget, advertising was well received by the public. The advertising plan was strictly followed and consistency of the activities across all media was ensured. It covered both national and regional media. During the preparation of the advertising plan, a thorough analysis of the specific needs of the local markets was carried out and those that needed a tailored-made approach were identified. Special attention was paid to populations and communities that were considered hard to count such as minorities, remote areas, and refugee camps.

A key building block in the Census 2011 public communications campaign was the visibility and active presence of NSI in the media during the data collection period and for several weeks before the census date. The cornerstone of our successful co-operation with the media was the large-scale and intensive training of journalists that the Bulgarian NSI undertook in January 2011, the month preceding the Census start. We organized several two-day seminars for the national media, the regional media for each region, the persons responsible for public relations in the district administrations and for their counterparts in municipalities. In total, more than 200 journalists coming from practically all media present in the country took ac-

tive part in the training. During the seminars the NSI staff focused on explaining the benefits versus costs of the Census and the role of the census results played in the planning and funding of a range of services, such as healthcare, education and transport, especially at local level. The training was also used to receive a feedback from journalists on topics and questions that were of particular interest to the public. This information helped the final tuning and adjustment of the communications campaign to the expectations and needs of the various census stakeholders.

There is clear evidence that the training of the media ‘catapulted’ the Census into the society in a positive manner. In fact, since the starting date, during the whole data collection period and up until now we have enjoyed a very positive attitude towards the Census and its implementation by NSI. There was enormous media interest during the data collection phase. According to the national media rating of the most important events, Census 2011 was the event number one in the week of the E-census. In general, the media coverage of the Census was either positive or neutral. There were only a few cases of negative coverage but they were questioning the benefits of asking some questions in the census form (i.e. why it was necessary to ask about families, about availability of water, bathroom, etc.) rather than raising a concrete problem of the census implementation. The key factor in the success of the media campaign, in particular in handling media requirements, was the availability of the NSI staff and the NSI President. We dealt with the critical comments on the spot and attempted to anticipate and apply a pro-active approach to the ‘hot’ topics that might have the potential of turning into problems. The top management and key census experts of NSI participated in more than 70 media events in the census month – in 35 TV, 14 newspaper and 26 radio interviews. More than 10 direct TV broadcasts from the NSI building or other places were incorporated into the TV central news. With the participation of the NSI staff, approximately 2 000 media events were realized in one month and there were much more local media events in the regional statistical offices. In total, approximately 2 000 media events were realized in one month with the participation of the NSI staff and there were much more local media events with the participation of our staff in the regional statistical offices. A special role in the process of promoting the Census had the NSI President’s trip around the country that covered all regions in Bulgaria. Everywhere local press conferences, meetings with local authorities and non-governmental organizations, with children, students, universities, local leaders and gatekeepers of some communities were organized. In each region an attempt was made to tailor public communications to the local needs, in order to show how the census results would help to address local problems with infrastructure, labour markets, community services, etc.

A key building block of our public communications campaign was the establishment of national and local partnerships. Enormous efforts were made in building targeted, customized and trust-based co-operation with the local authorities at municipal and district level. We got their support in many ways especially as regards the e-census. In several places local authorities provided rooms equipped with computers having Internet access where citizens could complete census forms on-line, free of charge. They organized help desks in the prem-

ises of the municipalities and district administrations. During the Census we received the so-called third party endorsement where mayors and regional governors gave their formal support (by official letters) to the e-census. These letters were sent to all regional government structures and public institutions and distributed to all citizens via media and Internet. In addition, at a meeting of the Council of Ministers, Prime Minister *Boyko Borissov* and Deputy Prime Minister and Minister of Finance *Simeon Djankov* asked all the ministers to send letters promoting the Internet census as an easier, quicker and more convenient option which also saves financial resources and protects the environment.

In the last years the Internet has become the main channel for the dissemination of statistical results and sharing of information on data methodology and production. The Census 2011 public communications campaign relied heavily on on-line interaction and the usage of social media channels in getting people aware of the purposes and organization of the Census. A separate webpage dedicated to the Census was created. In addition, NSI provided a set of promotional materials that was distributed to the local authorities free of charge to be used in their regional campaigns. During the Census 2011 campaign we tried to take for the first time the opportunities provided by the social media. After some discussions in the office and a thorough analysis of the pros and cons of the NSI presence in social media, we decided to implement this approach consciously albeit in a limited scale. Namely, we did not open Twitter and Facebook accounts but our team contributed to the content of similar web pages that were dedicated to the Census but created by others. We responded to people who asked questions on Facebook. In this way we answered in real time to the concerns raised by the society. We used social media in order to provide links to websites where more detailed information can be found. In addition, social media proved extremely useful in reaching some of the hardest-to-count groups that live a lot on-line and in social media.

Bulgarian NSI worked with local authorities and community groups to make sure Census 2011 accounts for population diversity. Special attention was paid to ethnic minorities, non-Bulgarian speaking communities, and homeless people. A crucial moment in designing a well-targeted campaign was the analysis of the surveys and the research conducted before and during data collection on the factors that motivate different social groups to take part in the Census and, in particular, in the e-census. Showing commitment and transparency, we shared our research with local authorities and non-governmental institutions, thus enabling them to better tailor Census 2011 messages to their local populations.

4. Key content issues of the Census 2011 Public Communications Campaign

The attitudes towards Census 2011 were quite different from those towards Census 2001. Nowadays the behaviour of Internet users and the concerns on privacy and security are more clearly articulated than in the past. A significant effort was made to address these issues. It

was widely explained using various media channels how and when the census interviewers would visit households. People were urged to be pro-active in the identification of the interviewers – to ask to see their identification cards if they did not automatically show it. A help-line for advice on identification of the 2011 Census staff was opened, too.

Although a refusal to complete the census form is an offence under the Census Law and leads to prosecution and payment of a fine, special emphasis was given not to aim at these sanctions. On the contrary, we attempted to convince the people that the Census is a useful exercise which eventually brings benefits to local communities and households. As a result, by the end of the Census 2011 there were as few as 50 recorded refusals to fill in the census forms.

5. Key factors for the successful Census 2011 Public Communications Campaign

There were several guiding principles upon which our Census 2011 Public Communications Campaign was built and which in turn proved to be key factors for the overall success of Census 2011:

- ◆ Activity instead of passivity – Communication was based on actions rather than counteractions. The NSI teams tried to foresee and express the results of their activity and defend its grounds instead of responding to provocative attacks or assumptions.

- ◆ Positivism instead of negativity – The emphasis was on the positive trends, activities, services, and future benefits for the society as a whole. Actions to overcome the existing problems were shown instead of focusing only on the public opinion related to them. The demand for positive solutions and final results was highlighted.

- ◆ Being bidirectional instead of unidirectional – Population Census 2011 team ventured on a model of bilateral communication and feedback from target audiences.

- ◆ Openness instead of closeness – The system of open communications and access to information for all members of society created a sense of unity, built confidence in the institution, and formed teams of like-minded people.

- ◆ Coordination instead of the lack of coordination – A program was built on targeted and orderly messages subject to common purpose in which there was coordination and control in terms of by whom, when and how public communications was created.

- ◆ Involvement instead of exclusion – Including more people in the process of communication helped to break with the ‘we–they’ framework. The very cen-

sus interviewers played the role of communicators, informing in advance friends and relatives of what is ahead.

These principles lie at the basis of the successful and entirely positive media campaign, the lack of crisis situations and the achievement of the objectives – increasing the level of awareness and gaining partnership, interest and participation of citizens, institutions and the media, as well as creating an atmosphere of equal dialogue with all participants in Population Census 2011.

To facilitate and integrate the campaign and to use the expertise of our staff to the fullest, a core team on communication was established. This team included two groups of experts – public communications specialists and statisticians. Their main task was to coordinate communications activities and to avoid working in silos. This team worked in close collaboration with external firms that were involved in the design and implementation of the campaign. It reviewed all the promotional materials to ensure the messages towards different groups and regions were consistent. The participation rates were monitored daily. The team identified areas of low response and prepared a response mix of activities that might be undertaken to increase participation rate.

6. Conclusions

The well-targeted, efficient and nationwide campaign was, certainly, a precondition for the overall success of the Census 2011 campaign. However, the positive results go beyond the Census. The campaign proved the good cooperation between the institutions at central and regional level. The Population Census became a national priority supported by all state institutions, local authorities and the citizens of the country. Thus the overall confidence in the role and mission of official statistics has been increased.

Attila Csajbók

THE USE OF INTERNATIONAL DATA IN HUNGARIAN MACROPRUDENTIAL ANALYSES

1. Overview

- ◆ What is macroprudential policy?
- ◆ How macroprudential analysis is done in a central bank?
- ◆ Why this analysis needs international data more than ever?
- ◆ Sources of international data on financial stability
- ◆ Challenges related to these data sources
- ◆ Some suggestions

2. Types of policies aimed at financial stability

Ex ante (preventive, prudential)

- ◆ Microprudential supervision and regulation
 - ◆ Aim: stability of individual banks;
 - ◆ Typical provider: supervisory authority.
- ◆ Macroprudential supervision and regulation (in the focus after the recent financial crisis)
 - ◆ Aim: minimising systemic risk, enhancing the resilience of the financial sector as a whole;
 - ◆ Typical provider: central bank.

Ex post (crisis management)

- ◆ Crisis containment (managing a liquidity crisis – central bank);
- ◆ Crisis resolution (managing a solvency crisis – government).

3. Dimensions of macroprudential policy

Systemic risk has both a cross-sectional and a time dimension

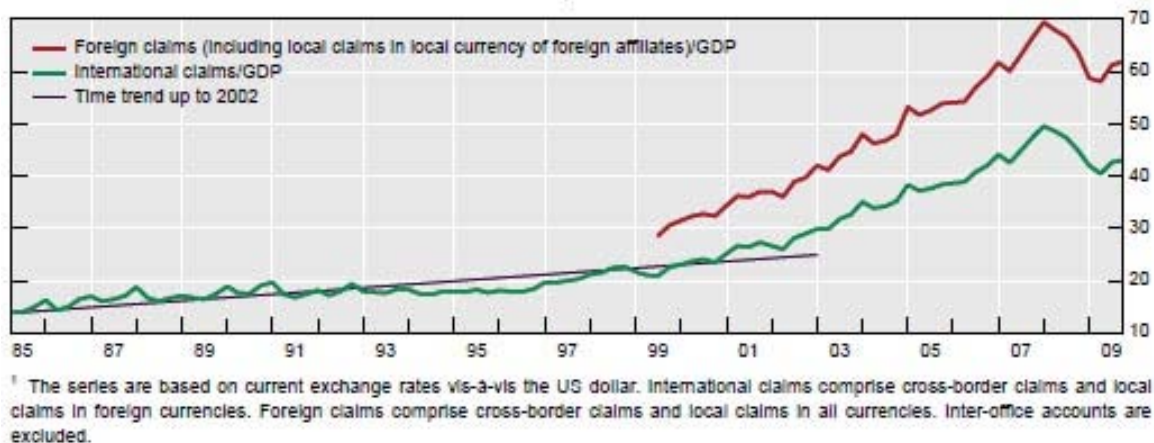
- ◆ Sources of cross-sectional systemic risk:
 - ◆ size (“too big to fail”);
 - ◆ interconnectedness (often cross-border);
 - ◆ substitutability (critical infrastructure, e.g., clearing houses).
- ◆ Sources of time-series systemic risk:
 - ◆ “procyclicality”: excessive risk taking of banks (households and corporates) during booms followed by excessive risk aversion during busts.

For macroprudential analysis, new types of data are needed (e.g., interconnectedness), often in a cross-border setting.

One feature of the recent crisis was a very quick and pronounced contagion which also highlights the need for international data.

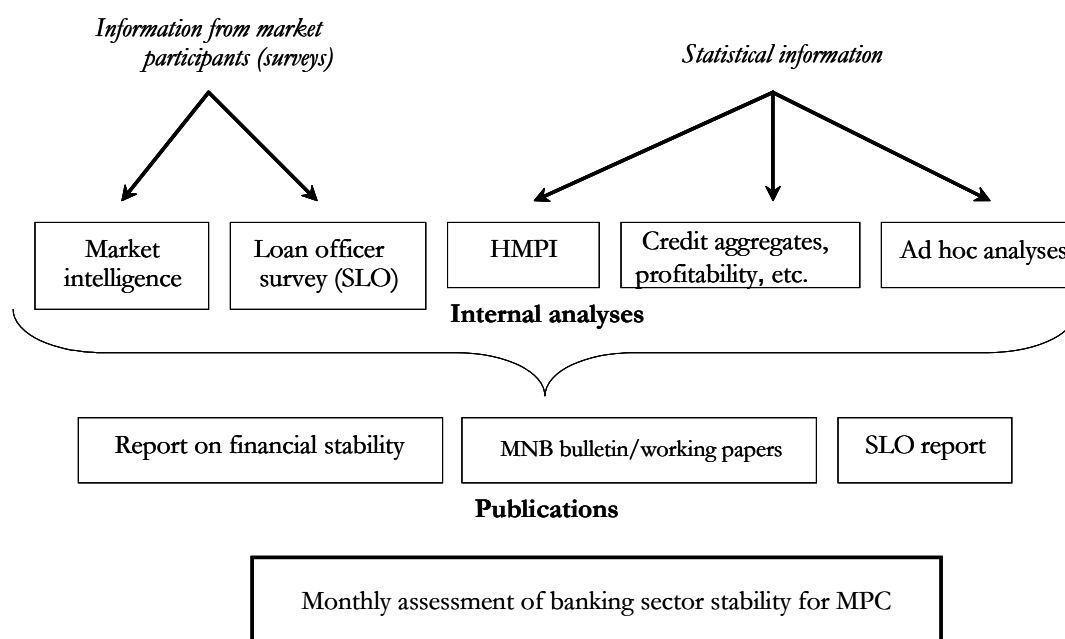
4. In the past decade, banking has become increasingly international...

Figure 1. Ratio of banks’ international positions to global GDP (percent)



Source: Committee on the Global Financial System [2010]: *Long-term issues in international banking*. CGFS Papers No. 41. Bank for International Settlements. Basel.

Figure 2. Macroprudential monitoring at MNB



Remark: HMPI stands for Hungarian macroprudential index, MNB for the National Bank of Hungary and MPC for Monetary Policy Committee.

5. Why do we need international financial stability data? What are our requirements?

Aims:

- ◆ identifying global trends that may influence local financial stability;
- ◆ benchmarking, peer group analysis;
- ◆ identifying the build-up of contagion risks.

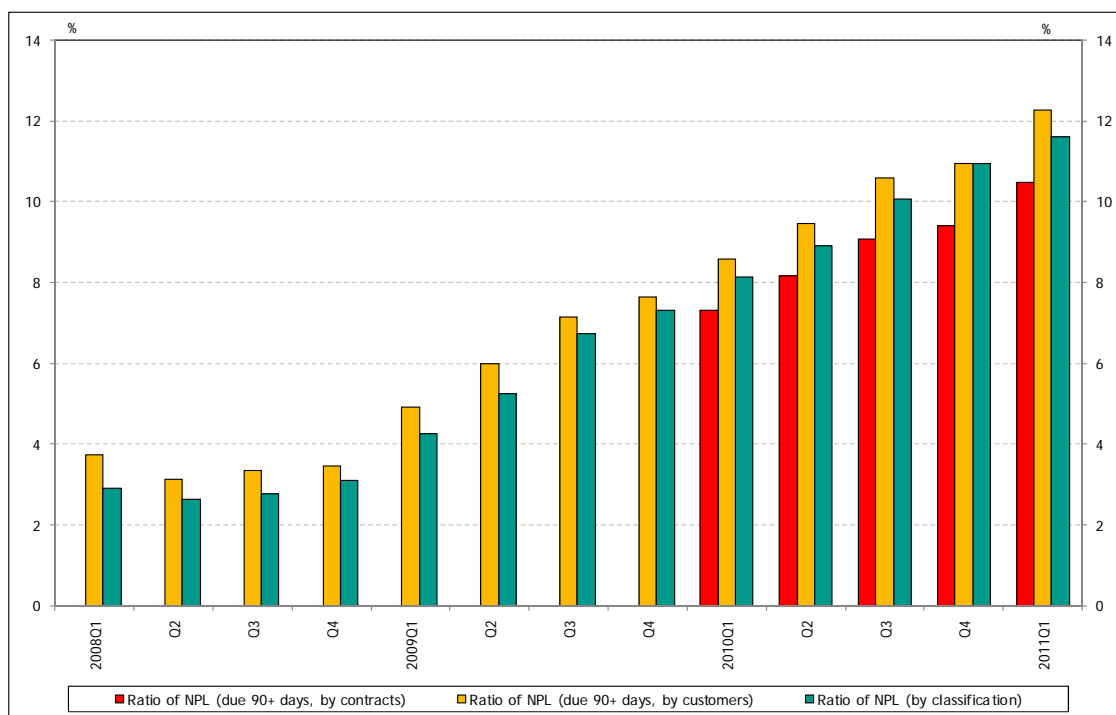
Requirements:

- ◆ clear and standardized reporting requirements;
- ◆ low overlap between different data collections;
- ◆ comparability on a cross-country basis.



Adequate data in, adequate analysis out

Figure 3. An example for three different definitions of the non-performing loans (NPL) ratio



Source: MNB.

6. The more data we need, the more data we have to submit: map of reports to international institutions

International institutions:

- ◆ Bank for International Settlements (BIS): prudential data set – B/S data, P/L (monthly), portfolio quality (quarterly);
- ◆ European Bank for Reconstruction and Development (EBRD): banking sector data;
- ◆ European Central Bank (ECB): money flow index (MFI) statistics, EU consolidated banking data (CBD) statistics;
- ◆ International Monetary Fund (IMF): financial soundness indicators (FSIs) for banking sector;
- ◆ Organisation for Economic Co-operation and Development (OECD): bank profitability – financial statements of banks + methodological country notes;
- ◆ World Bank: soundness indicators.

Regional initiatives:

- ◆ Oesterreichische Nationalbank (OeNB – the central bank of the Republic of Austria): banking sector data for OeNB's financial stability reports (FSRs);
- ◆ Central and Eastern European countries (CEC5) (namely, Czech Republic, Hungary, Poland, Slovakia, and Slovenia): macroeconomic indicators, banking sector data (e.g., B/S, P/L, etc.).

From these the MNB mainly uses BIS, ECB and IMF data for financial stability analysis.

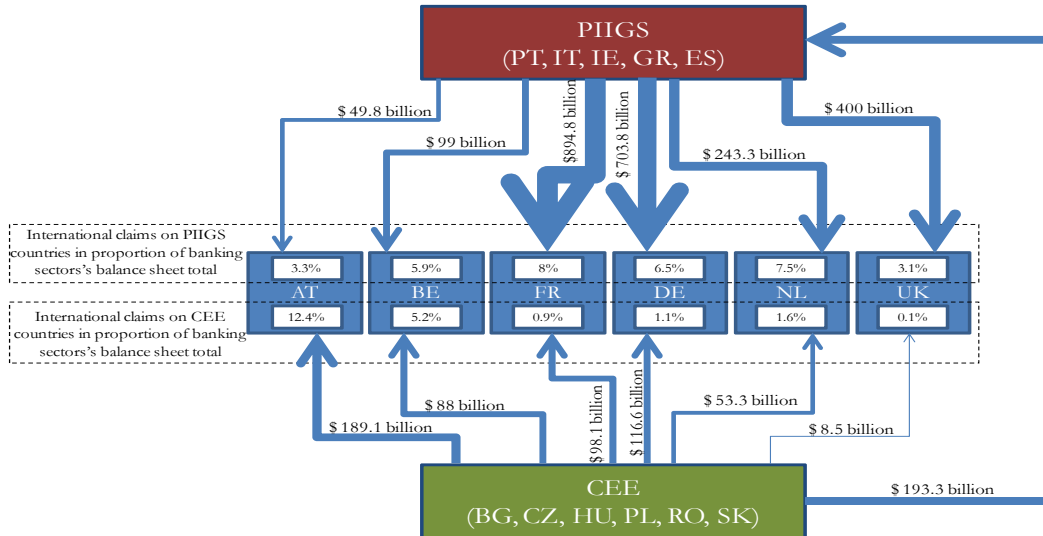
7. An example for the data collection of BIS

BIS (locational and consolidated) banking statistics: quarterly collection of banks' international claims in wide range of breakdowns.

- ◆ Why is it important?
 - ◆ It facilitates analyses in a global perspective, as external positions of the reporting banking sectors vis-à-vis other countries could be measured...
 - ◆ Shortcomings or inconveniences:
 - ◆ inconsistencies between the locational and the consolidated bases (different calculation or accounting principles?);
 - ◆ although the locational banking statistics should be consistent with the balance of payment (BOP) and external debt statistics, sometimes there are inexplicable figures.

8. An example for the use of BIS data during the eurozone periphery crisis

Figure 4. International claims vis-à-vis PIIGS and CEE countries



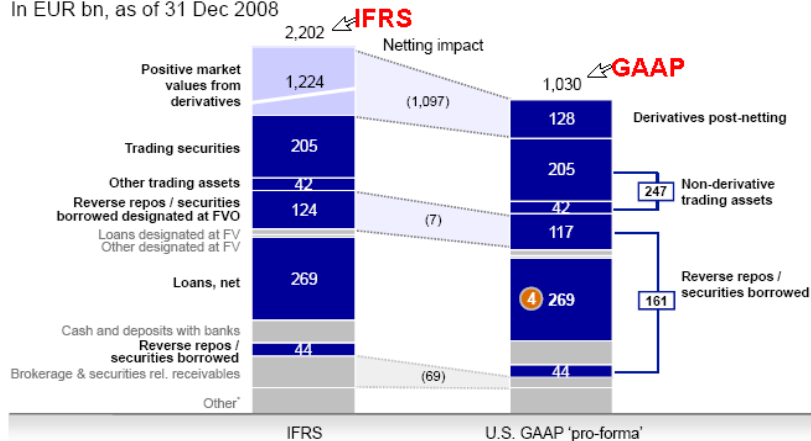
Note: PIIGS countries: Portugal (PT), Italy (IT), Ireland (IE), Greece (GR), and Spain (ES); CEE countries: Bulgaria (BG), Czech Republic (CZ), Hungary (HU), Poland (PO), Romania (RO), and Slovakia (SK). AT, BE, FR, DE, NL, and UK stand for, respectively, Austria, Belgium, France, Germany, the Netherlands, and the United Kingdom.

Source: BIS locational banking statistics.

Figure 5. Accounting standards, another source of confusion – The case of Deutsche Bank

Total assets: Analysis of major categories

In EUR bn, as of 31 Dec 2008



Note: IFRS and GAAP mean International Financial Reporting Standards and Generally Accepted Accounting Principles, respectively.

Source: Deutsche Bank.

9. Lessons from financial stability statistics of international institutions generally

Caveats and challenges:

- ◆ comparability (low level of clarification for contents of data);
- ◆ national versus international accounting standards;
- ◆ bank secrecy: problems with cross-border sharing of data on individual institutions.

Some suggestions:

- ◆ decrease parallel features of international data collections (a good example is the joint BIS–IMF–OECD–World Bank statistics on external debt);
- ◆ clear methodology ensuring data to be submitted on an equal basis;
- ◆ standardised national level data collections (e.g., Common Reporting (COREP), Financial Reporting (FINREP)) could ensure comparable international data collection.

Elsbeth Maclean

BARRIERS TO IMPROVED STATISTICAL COMMENTARY: LACK OF SKILL AND LACK OF WILL

In 2009 the UK Statistics Authority published a new Code of Practice for Official Statistics. This requires statisticians to, “[p]repare and disseminate commentary and analysis that aid interpretation, and provide factual information about policy or operational context of official statistics...” (Principle 8, practice 2). This has proven to be a stumbling block for many statistical producers who are challenged by the requirement to go beyond ‘writing the numbers’. The National Statistician’s Office (NSO) in the UK has a role in assisting statistical producers to fulfil their obligations under the Code. As a part of this the NSO is working with statistical producers to assist them in improving commentary. This has been identified as a priority as good statistical commentary is key to increasing the broad use, understanding and influence of statistics.

This paper discusses some of the activities undertaken by the NSO to work with statistical producers to improve the way they communicate their statistics to the wider user community, outlines some of the barriers we have identified and discusses how these barriers are being overcome.

1. Introduction

A key part of the work of the National Statistician’s Office (NSO)¹ is to assist producers of official statistics in the United Kingdom (UK) to improve the accessibility and impact of their statistical commentary. This paper gives a brief overview of the UK statistical system, the Code of Practice for Official Statistics and the role of the National Statistician’s Office (NSO) in supporting producers of official statistics. It then goes on to discuss two key barriers that have been identified as standing in the way of statistical producers improving the way they communicate their statistics; lack of the skills needed and lack of the will to do it. The ways the NSO has tried to help producers of official statistics overcome these barriers, including workshops, ‘champions’ and guidance, are also discussed.

¹ The National Statistician’s Office supports the UK’s National Statistician in performing her roles and responsibilities.

2. The UK Statistical System

The production of official statistics in the United Kingdom is highly decentralised. There are over 150 organisations that produce official and national statistics² including government departments, arm's length bodies³ and the Devolved Administrations. The *Statistics and Registration Service Act 2007*⁴ includes provisions that define the coverage of official statistics in the UK and requires the production of a Code of Practice for Official Statistics (the Code)⁵. The UK Statistics Authority⁶ (the Authority) was established by the Act and has two main functions:

- ◆ oversight of the Office for National Statistics, its executive office, and
- ◆ independent scrutiny (monitoring and assessment) of all official statistics produced in the UK.

To facilitate the second of these functions, the Code was published by the Authority in January 2009. It sets out a series of practices and protocols that should be followed by producers of official and national statistics. In a highly decentralised statistical system such as that found in the UK, the Code should:

- ◆ establish common standards;
- ◆ help ensure users receive a coherent and trustworthy service;
- ◆ help ensure trusted and trustworthy statistics are produced.

The Code was developed with statistical users, in the broadest sense, in mind and its aim is to ensure that:

- ◆ the range of official statistics meets the needs of users;
- ◆ the statistics are produced, managed and disseminated to high standards;
- ◆ the statistics are well explained.

² <http://www.statisticsauthority.gov.uk/national-statistician/types-of-official-statistics/index.html>

³ <http://www.statisticsauthority.gov.uk/national-statistician/producers-of-official-statistics/index.html>

<http://www.statisticsauthority.gov.uk/national-statistician/producers-of-official-statistics/non-crown-bodies/index.html>

⁴ <http://www.statisticsauthority.gov.uk/about-the-authority/uk-statistical-system/legislative-background/key-legislative-documents/statistics-and-registration-service-act-2007.pdf>

⁵ <http://www.statisticsauthority.gov.uk/assessment/code-of-practice/code-of-practice-for-official-statistics.pdf>

⁶ The UK Statistics Authority is an independent body operating at arm's length from government as a non-ministerial department, directly accountable to Parliament. It was established on 1 April 2008 by the Statistics and Registration Service Act 2007. The Authority's statutory objective is to promote and safeguard the production and publication of official statistics that serve the public good. It is also required to promote and safeguard the quality and comprehensiveness of official statistics, and ensure good practice in relation to official statistics. <http://www.statisticsauthority.gov.uk/about-the-authority/index.html>

3. The Code of Practice for Official Statistics and statistical communication

The Code was developed by the Monitoring and Assessment⁷ team in the Authority with the assessment of statistics against its principles, protocols and supporting practices in mind. Following an assessment, the producer of the statistical output assessed is generally given a list of requirements to undertake in a limited timeframe (usually three months) to comply with the Code. Failure to comply with these requirements can result in the statistical output either failing to be designated as National Statistics or failing to be confirmed as National Statistics, if it had this status prior to the introduction of the Code.

In the assessments carried out thus far by the Monitoring and Assessment team, a significant area of non-compliance has been with the principle concerned with frankness and accessibility:

“Prepare and disseminate commentary and analysis that aid interpretation, and provide factual information about the policy or operational context of official statistics. Adopt formats for the presentation of statistics in graphs, tables and maps that enhance clarity, interpretability and consistency.” (Principle 8, practice 2)

Virtually all of the assessment reports published to date (about 114)⁸ by the Authority have included a requirement to improve the commentary included in statistical releases. The commentary that accompanies statistics is critical in making them accessible to as wide an audience as possible and ensuring they have the maximum impact; it will lead to a better understanding of statistics by all and to wider and better use. This in turn will ensure that statistics have a higher degree of impact and influence and are less likely to be misinterpreted or ignored by the media and politicians.

4. Role of the National Statistician’s Office

The 2007 Act enshrined the role of the National Statistician in law. The National Statistician is the UK Government’s principal adviser on professional statistical matters, the Chief Executive of the Authority and has overall responsibility for its executive office that produces

⁷ With effect from 1 April 2008, the Statistics and Registration Service Act 2007 gives the Authority statutory powers to carry out assessments of the extent to which official statistics comply with the Code of Practice for Official Statistics. The Act also enables the Authority “to monitor the production and publication of official statistics”. <http://www.statisticsauthority.gov.uk/assessment/index.html>

⁸ <http://www.statisticsauthority.gov.uk/assessment/assessment/assessment-reports/index.html>

statistics – the Office for National Statistics. She is also the (non-statutory) head of the Government Statistical Service⁹.

The National Statistician's Office (NSO) supports the National Statistician in performing her roles and responsibilities. Its work includes supporting the development of statistical policy and planning, providing advice to producers of official statistics, managing relations with international statistical organisations, providing recruitment services for the Government Statisticians Group (GSG), liaising, through various fora, with users of statistics, and providing communication services for the Government Statistical Service (GSS).

Concerns raised by the National Statistician and issues identified by the Authority's Monitoring and Assessment team with the commentary currently produced have meant that improving statistical commentary has become a key priority for improvement for the National Statistician, with the NSO providing advice and guidance to producers of official statistics.

5. Barriers to improved statistical commentary – lack of skill and lack of will

In working with producers to help them improve their commentary, the NSO has identified two key barriers stopping statistical producers making the required improvements to their commentary: a lack of skill or ability to improve, and a lack of will or belief in the need to improve.

Much of the statistical commentary currently produced commonly takes the form of what some refer to as 'elevator statistics' in that it merely describes short-term movements in the statistics and comments on if they have gone up, down or stayed the same. For example, the extract below does not give any context for the changes that are reported and leaves the reader with no indication if the changes are large, small or indeed 'typical'.

In the first quarter of 2011, long-term insurance funds were provisionally estimated to have had net disinvestment of £6.6 billion, an increase of £3.5 billion on the net disinvestment figure of £3.1 billion shown in the fourth quarter of 2010. General insurance funds showed net investment of £0.1 billion, a £1.1 billion decrease on the previous quarter, while net investment by self-administered pension funds increased by £5.2 billion to show a net investment of £15.7 billion. Investment trusts reported net investment of £0.8 billion in the first quarter of 2011 compared to £0.5 billion in the fourth quarter of 2010, while net investment by unit trusts and property unit trusts decreased by £6.3 billion to show a net investment of £6.7 billion.¹⁰

⁹ <http://www.statisticsauthority.gov.uk/national-statistician/government-statistical-service/index.html>

¹⁰ <http://www.statistics.gov.uk/pdffdir/iip0611.pdf>

This type of commentary generally leaves the reader with more questions than answers as it completely fails to answer the ‘why’ questions. However, the Code requires that commentary goes further and actually aids in the interpretation of the statistics and provides factual information about the policy or operational context to which the statistics relate.

The extract below is an example of good practice in statistical commentary as it not only reports the statistics but also provides context to help users interpret them.

The prison population grew rapidly between 1993 to 2008 – an average of 4 per cent a year. This rapid rise was driven by:

- ◆ increased numbers of people sentenced to immediate custody from 1999 to 2002;
- ◆ increases in the average custodial sentence length and increased use of indeterminate sentences;
- ◆ increase in numbers recalled to prison following breaches of the conditions of licence and these offenders spending longer in prison once recalled.

However, the rise in the prison population has slowed considerably since the *summer of 2008 with an average annual increase of 1 per cent.*

The flatter trend seen since 2008 partly reflects the introduction of the Criminal Justice and Immigration Act (CJIA) 2008, which changed sentencing and offender management in ways which helped to reduce growth in the prison population. For more information see CJIA 2008.¹¹

6. Lack of skill

Many statisticians, unsurprisingly, have a background in mathematics or statistics and have often never been required to write about statistics in a way that makes them accessible to a broad, non-expert audience. Hence they have not learnt the skills needed to do this, or if they have gained these skills, they have been actively discouraged from using them in their everyday work. This is discussed further below.

6.1. Workshops

In an effort to address this lack of skill, the NSO has developed a workshop that focuses on encouraging participants to assess critically commentary they and others have written and then to redraft it. Participants use guidance developed by them and other organisations, in-

¹¹ <http://www.justice.gov.uk/publications/docs/offender-management-stats-qtly-bullet-july-sept10.pdf>

cluding the UK Statistics Authority¹² and the UNECE¹³, and are encouraged to think about the known and potential users of the statistics as well as the known and potential uses of the statistics to do this. Whilst only a few workshops have taken place, results so far have been promising. Many participants have found them useful and have gone on to review and re-write their own statistical commentary in a way that is more closely aligned with the principles in the Code.

There has been widespread demand for places at workshops, which is a positive sign. However, there is a concern that this is largely due to pressure from the outside (the requirement for improved commentary resulting from assessment) rather than because of a real belief that improved commentary, and thus enhanced statistical communication, is something to aspire to.

6.2. Commentary champions

There are also plans to use a workshop approach to train a group of people from across several different departments ('Commentary Champions') in the key aspects of writing good statistical commentary. It is the goal that these workshops will help the 'champions' gain the skills and confidence to take the lead in promoting good practice in statistical commentary back in their own organisations. Workshops and 'refresher sessions' will continue to be offered and the 'champions' encouraged to develop departmental specific guidance for writing good statistical commentary in an effort to embed good practice.

6.3. Guidance and good practice

A collection of existing standards and guidance and examples of good practice for the production and dissemination of statistics, is being put together by the NSO. The intention is to store this guidance and good practice on STATNet, the GSS intranet site that contains news, standards and guidance, learning and development, and vacancies, etc. to make it easily available. The NSO have examples that reflect good practice in some areas but not all. Thus far it has proven difficult to find examples of existing statistical commentary that provide examples of all aspects of 'good practice'. To enable us to make the best use of the examples available, the NSO plans to include a statement with each example that points out the areas that can be considered examples of good practice and areas where more work is needed to reach the required standard.

However, it is key that individual organisations take responsibility for improving their own statistical communication. They are being encouraged to develop guidance that is based on organisational processes and procedures and include examples that are relevant to them, rather than relying on general guidance that may be perceived as being imposed on them.¹⁴

¹² <http://www.statisticsauthority.gov.uk/news/standards-for-statistical-releases.html?format=print>

¹³ <http://live.unece.org/stats/documents/writing.html>

¹⁴ For example, the Office for National Statistics in the UK has developed guidance for use by their staff.

6.4. Development programmes

In the longer term the NSO believes it would be appropriate for training in statistical communication to be included in professional development programmes for statisticians. This would help to raise the profile of the importance of statistical communication and the skill needed to communicate well across a broad audience.

7. Lack of will

Historically statisticians who work in government departments in the UK and many other countries have believed that their job should be confined to producing statistics with only a limited commentary, restricted to reporting the actual numbers and any change over time. It is often believed that if users want words to go with the numbers, they should write them themselves. As explained above, the Code of Practice makes it clear that the role of statisticians is broader and should encompass ensuring the statistics are accompanied by commentary, analysis and metadata that aids interpretation and provides factual information about the policy and operational context of the statistics (Principle 8, practice 2 of the Code).

7.1. Resources

It is often argued that providing the additional material required by the Code would take extra resource that is not available. However, the type of information that would add context to the statistics is often already known by the statisticians as they use it when evaluating if the statistics make sense and are accurate. While limited resources is a real concern for many departments, they would not use this as an argument if commentary was accorded the same status and importance as more traditional statistical methods such as seasonal adjustment or weighting – processes that are unlikely to be left undone.

7.2. Needs of users

It has been claimed by some producers of statistics that they provide what the users of their statistics want – the numbers with limited accompanying text. This may be what many of the known and expert users of the statistics believe they want and find most useful. However, it is unlikely that this would fulfil the needs of less expert users nor is this likely to encourage those who do not currently use the statistics to start to use them. It has been suggested by some producers in the UK that if users want commentary they should write it themselves. An understanding of the full range of users and uses, and potential users and uses, for any statistics produced is key to ensuring they are used and understood by as wide a section of society as possible, thus increasing their value and raising the profile of statistics and statisticians.

Increasing the amount of information that is published alongside statistics to include “analysis that aid interpretation, and provide factual information about the policy or operational context...”¹⁵ has caused producers of official statistics in the UK to fear they will ‘cross over the line’ and stray into the analyst’s role and cause people to see them as less objective. This is not the case. In providing factual information about the policy or operational context of the statistics, producers are not being asked to make comments on the validity of government policies, nor are they being asked to provide commentary that is partial. Ensuring statisticians have the skills and knowledge needed is a vital part in ensuring they are confident in producing commentary that is both informative and impartial.

7.3. Cultural change

Addressing the lack of will of statistical producers to improve the way they communicate their statistics will, in most cases, necessitate a cultural change within each producer organisation. Changing the culture of an organisation is not an easy process and often takes years to achieve. The NSO knows that this will be the case with producers of official statistics and plans to approach it by supporting a variety of possible solutions. Promoting the positive impact of improved statistical communication is one of these.

Many of the statistical producers with whom the NSO has worked find this a challenge as it is contrary to the culture of their organisations. Many believe it goes against how they have been taught to do their jobs as well as what they believe their job should be. It is often stated that explaining how the statistics were produced, their quality, and giving a high level summary of the movements in the numbers, is the job of a statistician; anything more than that is stepping outside their remit. Statisticians feel it brings with it the risk of accusations of misinterpretation and bias and stepping into the role of the analyst.

7.4. Impact of change

Measuring the positive impact of improved statistical commentary is not an exact science. One way that it can be measured is by monitoring both the amount of coverage received and the quality of the coverage. An example of where this has been done is the National Health Service’s, Information Centre for Health and Social Care.¹⁶ It has found that, following redrafting of press releases and statistical commentary to ensure that they are easy to understand and the key messages are highlighted, the amount of press coverage has increased. The quality of the coverage in the press has also improved with the key messages and findings being more accurately reflected and the statistics less likely to be interpreted incorrectly.

The workshops promoting good statistical communication discussed above are another way of promoting cultural change. However, the focus of the workshops is on staff who produce commentary, in a bottom up approach, not on the people who have the power to di-

¹⁵ Principle 8, practice 2 of the Code.

¹⁶ <http://www.ic.nhs.uk/>

rectly challenge or change organisational policies and practices. Given this, there is a need to understand the drivers for change in organisations that have made or are starting to make changes to the commentary in their statistical releases that reflect the UNECE's guidance and the Code. Once these drivers for change are understood, work will be carried out to determine how they can, if possible, be generalised across statistical producers in the UK.

8. Conclusion

As mentioned above, the Code sets down the standards against which the statistical commentary that accompanies national statistics is judged. It would be preferable for statistical communication to be improved because producers believed that this was the right thing to do and would mean they produced statistics that were more accessible and had a greater impact and influence. Assessment against the Code appears to be the only reason why they concede to make any changes in the short term. If producers fail to comply with the Code, or to show a willingness to make progress towards this, the Authority has the power to remove National Statistics status from their statistics. National Statistics status has not been removed from any statistics solely because of a lack of adequate commentary, but it has played a part in the removal of National Statistics status from one set of statistics.¹⁷ However, there is a need to disconnect the need to change due to assessment from the need to change for the good of users in the broadest sense.

A multi-faceted approach is needed to address the combination of the lack the skill and will to communicate statistics well amongst many producers of official statistics in the UK. A combination of encouragement in the form of seminars, workshops, a network of champions and the provision of easily accessible guidance and examples of good practice is being offered by the NSO in an attempt to address the barriers due to lack of skill. While it will take resources and time to build the skills needed to produce statistical commentary that fulfils the requirements of the Code, there is little doubt that this is achievable. However, these efforts will not have the desired effect on statistical communication in the UK if there is no change in the culture of the organisations in which statisticians work. Cultural change within an organisation is usually a long slow process. The NSO has no legislative or regulatory power to force change and can only offer support and advice to statistical producers in an effort to help them change.

It is too early to judge if the approach outlined above will be successful. There is great demand for the workshops, seminars and a 'library' containing examples of good practice. However there is continued scepticism amongst some producers as to the value of better statistical communication, a view reinforced by evidence of changes being made only because of the Code and accompanying assessment process rather than because of the value of it.

¹⁷ <http://www.statisticsauthority.gov.uk/assessment/assessment/assessment-reports/assessment-report-95--construction-price-and-cost-indices.pdf>

Costas K. Diamantides

DISSEMINATION POLICY OF THE STATISTICAL SERVICE OF CYPRUS

The Statistical Service of Cyprus (CYSTAT) is facing an increased number of users on both national and international level. Furthermore, great challenges for CYSTAT are changing users' needs and calls for better quality of statistical information. At the same time, however, CYSTAT is requested to increase efficiency of statistical production and to reduce burden on statistical respondents. Such development has a significant impact on the scope, contents and quality of observed statistical information and, consequently, on the methods, tools and techniques used for collection, processing and dissemination of statistical information.

This paper deals with the last stage of the traditional statistical life cycle which is the dissemination of statistical information and aims to answer the question "Where does the responsibility of statisticians end and where does the responsibility of users begin?" To answer this question the guiding principles of CYSTAT's Dissemination Policy are examined as well as the procedures followed by CYSTAT in the dissemination of the statistical information. Moreover, as the interaction with users is considered to be of high importance in promoting overall knowledge and awareness of official statistics among the different user groups, several actions for improving the communication with the users are identified and described.

1. Introduction

The Statistical Service of Cyprus is the competent authority responsible for the compilation and dissemination of most of the official statistical data in Cyprus. CYSTAT functions under the Ministry of Finance, however, the Statistical Service maintains its autonomy in technical matters and has exclusive responsibility for the choice of methodology, technique, definitions and procedures for the realization of the programmes of statistical activities, as well as for the dissemination of the statistical data and metadata produced.

Over the last decade, the demand for Cyprus's statistical data has grown exponentially. This is mainly due to three important factors. The first factor is the increased demand for data and metadata by EU institutions, mainly Eurostat and the European Central Bank, due to the fact that Cyprus joined the European Union in 2004 and adopted the Euro in 2008. The second factor concerns the increased usage of official statistics by several groups of users like journalists, students and enterprises. Finally, the third factor is the easy access to the official statistics from the website of the Statistical Service of Cyprus. Nowadays, users do not

only ask for data but for metadata as well and they are interested to know about methodologies, quality of data, etc.

With the widespread proliferation of the Internet in the 1990s Statistical Services are all over the world recognizing the revolution that would bring this technology to statistical information, proceeded to direct exploitation. The Statistical Service of Cyprus was not the exception. CYSTAT has been one of the first government departments in Cyprus with a website since 1997. Certainly the Internet has revolutionized the field of information and specifically the statistical information which in turn affected the way official statistics are disseminated. The Internet has become CYSTAT's main tool for dissemination.

In 2006, CYSTAT published for the first time on its website the Dissemination and Pricing Policy. Since then, there have been three updates mainly reflecting changes on the website. The Policy states the principles which govern the dissemination of official statistics by CYSTAT and describe the procedures applied in the dissemination of statistical information, the dissemination tools, data access procedures and the pricing policy for printed publications.

2. CYSTAT's Dissemination Policy

According to provisions of the Statistics Law (2000) CYSTAT "shall see to the dissemination of the statistics produced by it". In this framework, the aim of CYSTAT is the provision of timely and reliable statistical data (socio-economic, demographic and environmental data) to all government agencies, enterprises, researchers, analysts, journalists, educational professionals and students.

The responsibilities of CYSTAT on the dissemination of statistical information are well defined within its Dissemination Policy. The Dissemination Policy of CYSTAT is based on the provisions of both the Cyprus Statistics Law of 2000 and the European Statistics Code of Practice (adopted by the Statistical Programme Committee in 2005), as follows:

Statistics Law of 2000

3.(3) The Statistical Service shall see to the dissemination of the statistics produced by it;

12.2 (b) ... the Statistical Service is responsible for prescribing the time and the manner of dissemination of the results of its surveys or work in such a way that all users have equal and simultaneous access thereto;

13.(3) The statistics compiled on the basis of the data resulting from a survey shall be published in such a manner as to render impossible the direct and indirect disclosure of the identity of those who provide the data or of the persons to whom the data relate.

European Statistics Code of Practice

Principle 6: Impartiality and objectivity

Statistical authorities must produce and disseminate European statistics respecting scientific independence and in an objective, professional and transparent manner in which all users are treated equitably.

Principle 15: Accessibility and clarity

European statistics should be presented in a clear and understandable form, disseminated in a suitable and convenient manner, available and accessible on an impartial basis with supporting metadata and guidance.

CYSTAT's Dissemination Policy is guided, besides the Statistics Law and the Code of Practice, by the following nine Principles:

Principle 1: User orientation

The users of CYSTAT statistics are the driving force for the production of statistical outputs and their dissemination. CYSTAT endeavours to fit data dissemination to the demand of users and to monitor the relevance and usefulness of existing statistics.

Principle 2: Comprehensiveness of statistical information

The same set of statistics may have a variety of users. Therefore there is a need to respond to different requirements. Statistics should be presented in a clear and understandable form which facilitates a proper interpretation and meaningful comparisons. It is envisaged to disseminate statistics to the general public in such a way that the users can both access and use the statistics for their own purposes.

Principle 3: Equal, indiscriminatory and simultaneous access to statistical information for all users

CYSTAT offers the same conditions to all users accessing its website. Furthermore, the release calendar published contains the dates of the press releases and announcements of CYSTAT scheduled to be released in the following week as well as in the next four months. Users without access to the Internet may ask for documents/data at CYSTAT's premises at the time of the release. A list of users who have privileged pre-released access is available in the dissemination policy document.

Principle 4: Availability

CYSTAT's website is the main source of statistical information. The website is available to everyone with Internet access, 24 hours/day, 7 days/week.

Principle 5: Independence

CYSTAT maintains its professional independence from the policy, regulatory or administrative departments and bodies as well as from the private sector. It is

publishing the produced statistics according to the release calendar independently of the current political and/or social situation.

Principle 6: Professionalism and transparency of methodology

Methodological techniques and procedures of statistical processes are publicly available in order to keep transparency. The optimal international and EU statistical principles, methods and proceedings are applied by CYSTAT in order to facilitate comparability at the cross-national level.

Principle 7: Timeliness and punctuality

CYSTAT promotes the timely collection and publication of statistics as soon as possible after the reference period. Statistical information is provided according to the Release Calendar and according to the Annual as well as the Five-Year Programme of work.

Principle 8: Regularity

CYSTAT promotes establishing the production and regular publication of good quality statistics. For a number of indicators, CYSTAT has set the time period that should elapse from the reference period to the publication date.

Principle 9: Confidentiality

CYSTAT safeguards the protection of statistical information, the privacy of data providers (survey respondents, administrative offices) and the use of statistical data solely for statistical purposes. Statistical microdata are accessible for research purposes only and under strict provisions. Statistical authority staff sign legal confidentiality commitments on appointments. The penalties are prescribed for any wilful breaches of statistical confidentiality as described in Statistics Law 2000.

In addition to the principles described above, the following procedures are applied in the dissemination of statistical information:

Procedure 1: News releases

News releases should be disseminated on the website at 12:00 o'clock.

Procedure 2: Future date releases

Future date releases for key statistical indicators should be announced so that the timing of the release is not influenced by the results. The Release Calendar is available every Friday. It includes the scheduled announcements for the following week as well as for the next four months.

Procedure 3: Timely dissemination

Dissemination of the results and publications should take place as soon as possible.

Procedure 4: Notification of errors and changes

Users should be informed of any errors, delays or changes as soon as they are known.

Procedure 5: No need of approval by government

CYSTAT does not need any approval of any governmental body before the publication of its statistics. CYSTAT has the sole responsibility of deciding what, how and when to publish.

Procedure 6: Responsibility for disseminated statistics

The Director of CYSTAT and the heads of the divisions bear the responsibility for all statistics produced and disseminated.

Procedure 7: Increase of efficiency in production and dissemination of statistics

Increase the productivity in the collection, processing and dissemination of statistical data by the use of the high technology.

Procedure 8: Use of standards

Disseminated tables and graphs should follow the relevant standards so that they can be easily understandable.

Procedure 9: Explanatory notes

Disseminated data should be accompanied by methodological explanatory notes both in the publications and on the website. Explanatory notes are important information for users in order to enable them to understand accuracy and comparability of disseminated statistics.

Procedure 10: User feedback

User feedback is very important in order to learn their further expectations so that to improve the users' satisfaction with the disseminated statistics.

Due to the wide range of different groups of users of official statistical data, CYSTAT aims at disseminating the information in such a way as to avoid any misinterpretation of published statistics by the users. This is safeguarded under the provisions of the first two principles of the Dissemination Policy as well as those of Procedures 8 and 9. In practice, the statistical data published on the website are available in tables (Excel files) in a standard format; the announcements are kept simple and if they refer to the availability of new statistics the most important figures are briefly described; there are always links between announcements and related tables/ publications; the methodological information is presented in a standard format; and finally, the publications – available in both electronic format and hard copy – include the methodological information, the statistical data, a clear description of the results and all the necessary explanations.

As stated in Procedure 10 the feedback from users is considered to be of major significance in order to improve the offered services. For this reason, CYSTAT has established annual web-based user satisfaction surveys. These surveys as well as other actions which are related to the communication with the users are described in the following section.

3. Communication

There is a wide range of groups of users of official statistical data such as government agencies, politicians, researchers, students, businesses, media and the general public. Although there is no defined communication policy, CYSTAT aims to promote overall knowledge and awareness of official statistics among the different user groups.

Communication with the users is mainly through individual user questions. Users may contact CYSTAT in any of the following ways: by filling in a form available on the website, e-mail, telephone, fax, and by post. All the contact information of CYSTAT (e-mail, telephones, and fax) is available on the website, in all printed and electronic publications and in all correspondence. It is common, however, that users contact directly the responsible officers, usually by phone, in order to obtain the information they want!

As the website has become the main dissemination tool, CYSTAT produce a quarterly report with web-usage statistics. The report contains information on the number of unique visitors, page views, most accessed webpages and files, number of registered users, etc. It is produced only for internal purposes. Feedback from users is systematically collected through annual web-based user satisfaction surveys. The questionnaire is available on the website for a period of one month and an information pop-up window appears when first entering the website. In addition, all registered users receive an email informing them about the survey. This feedback is used to fine-tune dissemination activities.

Around 250 announcements are published on the website every year. CYSTAT aims at clarity and avoids unnecessary jargon in its announcements. All announcements are bilingual, in Greek and English, and the content is identical in both languages.

CYSTAT has been a member of the European Statistical Data Service (ESDS) network since 2005. The mission of the network is to provide help and guidance to Internet users of European statistical data. Users may contact the centre in Cyprus from Eurostat's website, CYSTAT's website, by e-mail and phone.

In order to improve the internal communication, CYSTAT will install the web-enabled version of the Office Automation System (eOAS) which has been recently introduced to a number of ministries and departments. The ultimate aim of eOAS is the electronic management and administration of all documents of the civil service, as well as the automation of the procedures and regulations that rule their creation, archiving, security, confidentiality grading, distribution and disposal, including their final destruction or long term preservation for future accessibility by the public and researchers.

4. Improvements

Although CYSTAT has a long history in the statistical data dissemination through the Internet and a dissemination policy framework has been established making clear the respon-

sibilities of CYSTAT as the producer of the official statistics in Cyprus, there is a need for upgrading the dissemination services it offers as well as the quantity and quality of the information produced and disseminated. Having recognised this need and in the framework of the implementation of its strategy for the development of a new integrated statistical information system, CYSTAT has initiated several projects. Two important projects are the development of online databases and the provision of methodological information for as many statistical themes as possible by using the standard Euro SDMX Metadata Structure (ESMS).

Despite the positive comments of the users who participated in the annual user satisfaction surveys, CYSTAT aims at assisting in the development of a 'statistical culture' in Cyprus by creating a website and/or a CD which will explain in simple terms and descriptions of the various statistical concepts in Greek. It is envisaged that lessons will be learned from the experience of other countries and organisations that have developed similar websites/ CDs.

Another area of improvement in the communication of statistical information to the users is the improvement of the contents of the announcements, the statistical storytelling. In order to gain skills in the statistical storytelling and for improving the writing of announcements, CYSTAT staff participated in a related training course organised by a local university.

CYSTAT has some experience in establishing focus groups with users. Such a group was established few years ago with the aim of discussing the contents of the website and making concrete suggestions for improvement. The results were encouraging and the participants expressed their positive comments on that initiative. CYSTAT aims at creating focus groups for other domains too.

Although several other national statistical institutes have explored the participation in the social media, CYSTAT considers this field to be of a low priority mainly due to the lack of human resources. The priority is to produce reliable and up-to-date statistical information! Similarly, another option which was examined and finally rejected due to the same reason, i.e. the lack of human resources and other priorities, was the appointment of a spokesperson.

Last but not least, the objective of CYSTAT is to establish a Communication Policy. CYSTAT recognises that active communication with the different groups of users is an integral part of its responsibilities. This policy should state with clarity the guiding principles of the communication with the users.

5. Conclusions

CYSTAT has established a clear and well-defined Dissemination Policy. The Policy encompasses the responsibilities of CYSTAT as producer of official statistics in Cyprus. CYSTAT fully respects the principles defined in the Policy and applies all procedures defined. Despite the positive comments of the users who participate in the satisfaction surveys, the quest for offering upgraded statistical information and services to the general public can never end. CYSTAT has identified several areas for improving the dissemination activities

and taking into consideration various constraints, such as limited human resources and reduced budgets, has prioritized those activities.

The communication with users is an area which needs improvement. The establishment of a Communication Policy will put the interaction with them under a specific framework with clearly defined principles. Many indicators are used daily for different reasons by students, journalists, politicians, and other groups. How can we safeguard that the statistical information produced is correctly used and not abused? The answer to this question is twofold. First, as producer of official statistical information, CYSTAT should provide as much information as possible clearly, concisely and simply without neglecting quality and second, to enable the development of the 'statistical culture' in Cyprus.

Gejza Dohnal

HOW CAN WE (STATISTICIANS) INFLUENCE THE REPUTE OF STATISTICS?*

The repute of statistics is influenced by both statisticians and users of statistics. A significant role is played by the media which are often subject to the requirements of the government and politicians. A certain point is to continuously improve the statistical literacy from an early age. Of course, the role of statistical societies is also important in the process.

1. The basic question is: Is there a need for an improvement of the reputation of statistics at all?

I guess there are no doubts about it. Several proclamations similar to the famous quote, “*There are three kinds of lies: lies, damned lies, and statistics*” imputed to a renowned British politician, *Benjamin Disraeli* are the proof. Although this statement is intended as a joke, it’s a sad message which, unfortunately, many people agree with.

Moreover, some papers describe how we can obtain contradictory results from the same data by choosing a slightly different method for their assessment.¹ But we, statisticians know that statistics don’t lie!

2. So where, you may ask, is the problem?

The above question can be considered as a part of a much wider problem which we can entitle as “responsibility of statisticians and responsibility of statistics users”. The concept of responsibility is closely linked to the concept of conscience. Whom should we be accountable to? The answer is surely, above all, to our conscience.

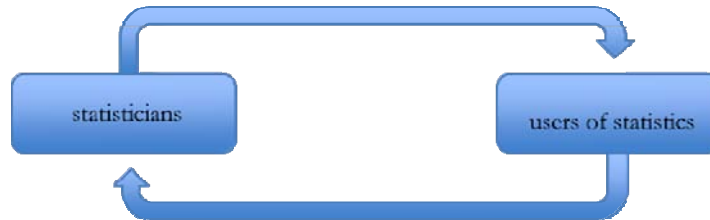
Are some bad intentions driven by economic or political interests the fundamental reasons for misunderstanding data and statistical inferences? We cannot exclude any of them.

* Acknowledgements: This work has been supported by the Czech Ministry of Education (Project No. 1M06047 of the Centre for Quality and Reliability of Production).

¹ Klashka, J. [1986]: *The statistical method how to prove something*. In: Proceedings of the Conference ROBUST’86. JCMF. Prague. pp. 42–49 (in Czech).

While we are not able to influence the second reason by any means, the first one could be slightly depressing. Improved statistical literacy of a population should lead to a considerable reduction in the possibility of the misuse of statistics for economic and political purposes.

Figure 1. Responsibility of statisticians and responsibility of statistics users



3. I guess we (statisticians) must start with ourselves

It is a question of statistical ethics which has been treated worldwide since the nineteenth century. At times, ethical shortcomings in official statistics have also been associated with very dire events, including genocide. However, in daily life, a lot of less influential ethical issues threaten the credibility of statistics as a whole. This leads to undermining the trust that data providers, the public and policy makers have placed in the agency of government statistical work generally.

Two fundamental documents were developed, serving as a base for a lot of issues mentioned below:

- ◆ Declaration of Professional Ethics for Statisticians (International Statistical Institute (1986));
- ◆ Status of Statistical Ethics (American Statistical Association (ASA (1996)).

As I stated, responsibility is closely linked to our conscience. The latter cannot be forced but must be nurtured. In this sense, school surroundings play a very important role. Professional responsibility must be cultivated already at university. From the outset, the need for a responsible approach must be stressed to all students of statistics. I can still remember several professors who have influenced my professional whole-life approach.

Such professional responsibility necessarily requires:

- ◆ *Impartial and proper formulation of a problem.* This item is connected with a good definition of the scope of the investigation, with understanding what we can do and what we can obtain as a result. Very often our results are misinterpreted due to an inappropriate generalization and extrapolation out of proper limits.
- ◆ *Proper planning of experiments.* A good definition of the problem is necessary, but not sufficient for a good analysis. You must have a proper plan of the whole experiment not to leave any possibility out of consideration.

♦ *Gathering of accurate and fully representative data.* Any experiment leads to some level of generalization. Therefore, we must carefully plan our experiments to prepare it for target purpose.

♦ *Choice of an appropriate method and mathematical model.* It is evident that any method is not appropriate to any data. At least, in practice, we often meet the improper use of mean value, normality assumption or independence premise. We all know the famous joke about one master, one servant and one goose (the master ate the whole goose, the servant ate nothing, hence each of them ate one half of goose in mean value).

♦ *Correct and impartial interpretation of results.* This is a crucial step in statistical inference. We must keep in mind that the primary condition determines the result. It is not allowed to extend the results beyond the scope of investigation on the one hand and to constrict them to a part of population in the survey on the other hand. Publication of incomplete information is often misleading and constitutes an impression of lie (in the better case, otherwise the damned lie).

Statisticians should be fully aware of the consequences of not meeting these standards as many users consider the actions of careless statisticians as a failure of statistics itself, adding to its unfortunate reputation.

4. Certification of statisticians...

Professional statistical certification has been discussed worldwide since the 1980s, due to an ASA initiative. The basic document, the Summary Proposal for the Certification of Statisticians was prepared by ASA Committee on Certification in November 1993.

Current discussion has both brought the prospect closer to reality and stimulated more controversy than (it used to have) in the past. Certification here means an optional process by which individuals can achieve professional recognition for statistical knowledge and achievement, whether or not (they are) accompanied by an academic statistical degree. Such a voluntary program, without legal status and applying only to individuals, differs fundamentally from both academic program accreditation and legal licensure of practitioners which it has been confused with.

5. The statistical literacy of the users of statistics

A significant problem is the weak statistical literacy of the users of statistics. Who are the users? Originally, the primary user of statistics was the state, specifically the government which employed such analyses in its daily governance. Contemporarily, the users of statistics include the whole population.

◆ *Political exploitation.* The fact that the government use statistics in its daily governance constitutes another ‘weak point’ as the statistical results can be easily exploited for political ends/ conclusions.

◆ *Proper governance which reflects statistical surveys.* This is a very important aspect of the assessment of statistics usefulness. When people feel a loopback between statistical surveys and governance, their trust in statistics boosts up.

◆ *Statistics has to reflect the world in which we live.* As it was mentioned, the users of statistics include the whole population. The results of statistical surveys provide them with information about the world in which they live.

◆ *Statistical literacy.* The absence of statistical literacy usually leads to ignoring statistics. In some sense, this is a better contingency than bad statistical literacy which leads to the misunderstanding and refusing of statistics.

◆ *Understanding the statistical inference.* This is a crucial condition for people to get a standpoint to statistics. To understand statistical inference, it does not mean to know statistical methods, but only the knowledgeable user is able to pass judgment on the usefulness of statistics. He/she is able to distinguish between correct and wrong use of statistics.

An important role here is played by the ‘*conscience of the media*’ that does not always interpret the results of statistical surveys in the correct way and often does not interpret them at all. The possible reasons are the following:

- ◆ weak (or missing) knowledge of basic statistics;
- ◆ partial or improper information;
- ◆ information based on inaccurate and not fully representative data;
- ◆ incorrect and partial interpretation of results.

Such ‘use of statistics’ often controversially makes a barrier between statisticians and users of statistics instead of a bridge.

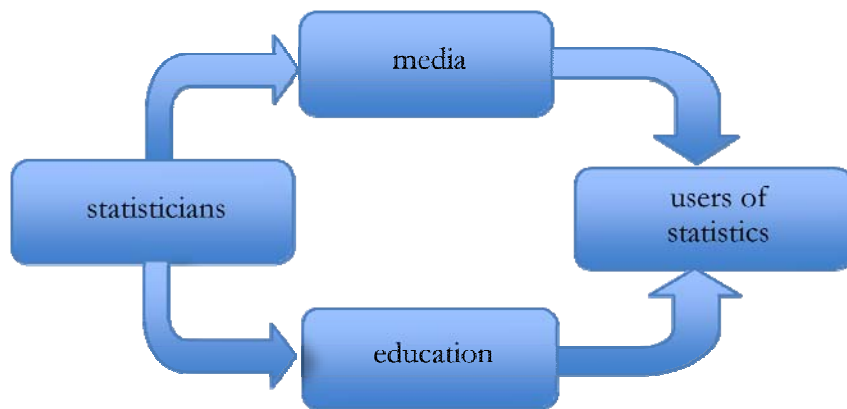
6. The role of education

Lament for weak awareness of statistics is due to the fact that we, statisticians, have cared little about the improvement in statistical literacy. Therefore the responsibility of statisticians nowadays lies within bringing up and educating children already from school age.

Sometimes, I am asked for a talk about statistical thinking. I am convinced that all people have some form of statistical thinking in their minds. This inborn statistical thinking underpins our learning to walk, talk and learning about our world since infancy, which is clearly conducted by our subconscious. To start explaining the basic principles of statistical induction at the university level is evidently too late.

- ◆ Education in statistics (in our sense) must therefore start from an early age to take advantage of this fact, preferably as early as *kindergarten*.
- ◆ The basic statistical calculus should be explained along with the first steps of mathematical education at the *basic school* level.
- ◆ There are a limited number of programs for statistical education of students at *secondary school* level, which have proved being highly successful. Unfortunately they remain rare.

Figure 2. The role of education and media



The *International Statistical Literacy Project* (ISLP) of ISI is a large program which has as a main objective to contribute to statistical literacy across the world, among the young and adults, in all walks of life.

In 2010/2011 the International Statistical Literacy Competition was in progress. Its main goal was to increase awareness of statistics among students and teachers throughout the world, to promote statistical literacy resources, and to bring together parties interested in statistical literacy in each country. It was a poster competition open to teams of two or three members, registered by their teachers. In two age categories (students born in or before 1995 and students born in or before 1992), in total, 4 891 participants were registered from 30 countries. The competition was organized in cooperation with ISI, International Association for Statistical Education (IASE) and ISLP country coordinators, national organizing committees and teachers. (See <http://www.stat.auckland.ac.nz/~iase/islp/competition-second>)

The *Statistical Project Competition (SPC) for Secondary School Students* has been an annual event of the Hong Kong Statistical Society since 1986/87. This year the 25th round of SPC was held. (See <http://www.hkss.org.hk/SPC/2010-11/DEFAULT.htm>) All award-winning posters will be printed in a publication issued by the organisers.

The key objectives of the competition were three-fold:

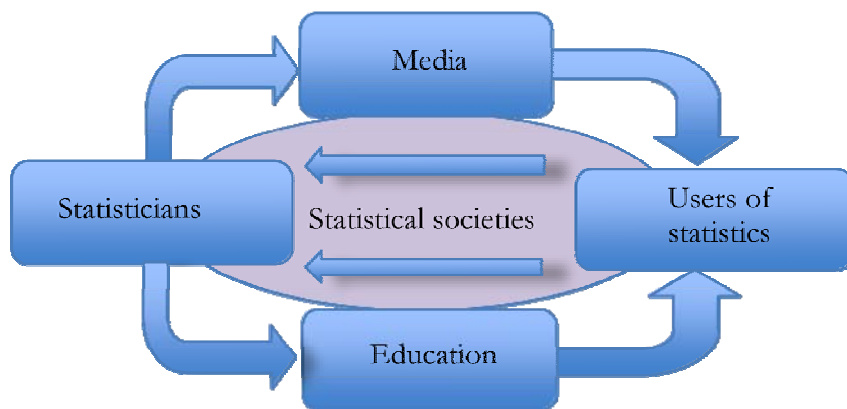
1. to promote the interest of secondary school students in research methods, statistics and statistical techniques;

2. to encourage students to understand the local community in a scientific and objective manner through the proper use of statistics;
3. to promote a sense of civic awareness.

In the USA, the Consortium for the Advancement of Undergraduate Statistics has announced the Third Biennial Undergraduate Statistics Project Competition. The purpose of the competition was to encourage the development of data analysis skills, to enhance presentation skills and to recognize outstanding work by undergraduate statistics students.

The competition was open to undergraduate students globally. The project topics involved statistical applications using real data. The criteria for project evaluation included appropriateness of data collection, data analysis and conclusions, clarity of presentation, and originality and importance of the topics. Student teams could submit projects as long as their members had undergraduate status at the time of conducting the research, even though they were not undergraduates in spring 2011, when the projects were judged. (See <http://www.causeweb.org/usproc/>)

Figure 3. The role of statistical societies



As referred to at the meeting of national statistical societies in Paris 2010, the Spanish Statistical Society organized a statistical competition for students of secondary schools, similar to the Undergraduate Statistics Project Competition in the USA. The objective was to formulate a problem, to collect data and to evaluate them by appropriate statistical tools. It had more than 450 participants. Such a competition is very challenging not only for students but also for their teachers, who must give them full (sometimes time-consuming) assistance.

On the one hand, improving the reputation of statistics could be a big challenge for our statistical societies, but, on the other hand, we suppose that our efforts will be fruitful and raise interest and trust in our work and in statistics as a whole.

Session 3
EU Presidency Trio

chaired by
GABRIELLA VUKOVICH
(Hungarian Central Statistical Office)

Adolfo Gálvez Moraleda

COMMUNICATING EUROPEAN AND NATIONAL STATISTICS TO WIDER AUDIENCES

National statistical offices have a lot of experience in disseminating timely, accurate and reliable statistics in an efficient way. Nowadays, however, users have access to several sources of data. In order to have new audiences informed, national statistical institutes (NSIs) should go beyond dissemination of information in communication about the core values of official statistics. Some initiatives are presented in this paper to increase visibility and credibility of European statistics.

1. Introduction

Dissemination and communication are vital steps in the production process of statistics. They allow us to make available not only the data we elaborate but also the methods we apply and adequate explanations to ensure the proper use of information by all types of users.

Besides these classical elements that are present in the statistical dissemination systems, it is also important:

- ◆ to provide some institutional information about our organisations and values of official statistics as a reliable source of data in which users can trust;
- ◆ to improve the relations with the media as strategic partners to reach wider audiences for our messages;
- ◆ to explore new channels and tools to communicate with users.

2. The Sponsorship Group on Communication

The mandate of the Sponsorship Group on Communication approved at the European Statistical System Committee (ESSC) meeting in November 2009 includes the above mentioned issues as it was formally established in the objectives:

1. to improve the visibility of the European Statistical System (ESS) and European statistics in general;

2. to improve the image of the ESS as a network of closely cooperating organisations;
3. to increase the use of European statistics;
4. to improve the image of the National Statistical Institutions (NSIs) and Eurostat;
5. to increase the credibility of official European statistical data among the media and the members of the public;
6. to increase awareness of the fact that the importance of statistics goes well beyond national interests.

The Sponsorship on Communication is led by *Mr. Jaume García*, the President of the National Statistics Institute of Spain (INE) and *Mr. Pieter Everaers* Eurostat Director responsible for Communication and Dissemination.

The countries which are participating in this group are Bulgaria, the Czech Republic, Germany, Spain, France, Lithuania, Romania, Sweden, Switzerland and the United Kingdom.

During the Spanish Presidency, this group held its first meeting in Madrid where different actions were agreed in order to achieve significant improvements aligned with the objectives. In subsequent meetings they have been evaluated and developed and some of them have been scheduled in the agenda of the Dissemination Working Group for executive follow-up.

Here we present these actions because they contribute to better communication of both national and European statistics.

3. Increasing visibility of the ESS – The first priority

The European Statistical System has been an institutional reality since the approval of Regulation (EC) No 223/2009. However, users of European or national statistics are not aware of what ESS is and what it really means. Therefore the Sponsorship Group on Communication proposed a strategy to the ESSC (approved at the meeting in February 2011) in order to make the system “more visible” for users.

The strategy consists of the development of relevant institutional and statistical information for both national and European level.

Within this framework, a project was launched to achieve that the users of the NSI websites can have easy (first) access to these pieces of information in their own language. What they will find on these websites is not only general information about topics such as ESS and its main regulations, the idea of quality in European statistics but also some examples of statistical production: a common set of tables. Accessibility may be further increased by presenting this information in the national language.

Those who want to acquire in-depth knowledge of ESS or news and statistical releases produced by ESS partners, may visit an ESS-centralized website where they can find every detail in English.

Moreover, all this information will have a common visual element, an ESS logo, to allow users to identify in a simple way the idea of a common network.

With all these elements, the users will perceive the existence of ESS and also the value of national statistics beyond national purposes as they contribute with their input to the elaboration of European statistics, which help to define common policies and to allow international comparisons.

4. Improving coordination of the ESS members with the media

Recognising the strategic value of the relations with the media in communicating statistical information to the public, the Sponsorship Group on Communication has established the PrESSnet Group, where NSI and Eurostat press officers can meet and exchange experience in order to have better coordination in this field.

Common actions on special occasions, such as the common press release issued on the World Statistics Day, are considered useful to improve the image of ESS as a true system.

Another important issue in which this group will cooperate is to coordinate actions when some misuses of statistics by the media are identified, especially when two or more organisations can be affected, typically an NSI and the Eurostat. This coordination will increase the credibility of European statistics.

5. Exploring new channels and tools to communicate with users

5.1. Social media

The use of social media is increasing every day in our societies. The role that NSIs and official statistics can have in this playground is providing a “trending topic” in our meetings; it is also important to consider the benefits and risks of the strategy to follow. For this reason, some guidelines have been developed by the Sponsorship Group on Communication that underline the main objectives to be achieved by different target groups and the need to establish clear boundaries of engagement for organisations and individuals representing them.

5.2. Statistical literacy portals

Increasing the statistical literacy of our societies should also allow better and well-informed use of our information. Many efforts have been made by different institutions in

this field where synergies can be achieved by reutilising contents and sharing applications between projects. The Sponsorship Group on Communication has also elaborated some guidelines on how to develop statistical literacy portals focused on students, and there is a compilation of websites devoted to statistical education that can be inspiring to new projects of this area.

6. Conclusions

NSIs have a lot of experience in disseminating statistical information to the users. The projects presented here can be useful as initiatives to reach wider audiences: from students, through specialized websites, or young people who are intensive users of social media to general public who acquire knowledge about our statistical data through the media. All of them will rely on official statistics if we make an effort to better communicate the quality principles and core values of our institutions.

Freddy Verkruyssen – Stephan Moens

COMMUNICATION OF STATISTICS: TIPS AND TRICKS

Independently from the intrinsic quality of statistics, communication is an essential element in building credibility and trust. This paper proposes some practical guidelines in the fields of user-friendliness, image policy and communication policy, building on the experience of the authors in day-to-day work and during the Belgian EU Presidency.

1. Introduction

In recent years, our society has been more and more built on perception. Not how things really are seems important, but how they are perceived by people, by opinion makers and by the media.

There are many examples from the recent past to illustrate this. Remember the catastrophic communication of the Japanese energy company after the disaster at Fukushima. Muddled and contradictory information made the leaders of the plant untrustworthy; anything they said afterwards was met with disbelief. Or let's look at *President Obama's* communication after the strike against *Osama Bin Laden*. Here also, the information was not always consistent. But Obama immediately corrected errors, gave good reasons for them and, above all, always stated and restated his firmness. By doing so, he could maintain trust.

However, perception is only part of the story. As statisticians, we know how important the intrinsic quality of our figures is to build up credibility and trust. But even the soundest figures need an interface to the public (and to politicians!) and cautious attention to their effect on the public opinion.

In the following, we will try to give some tips and tricks (or, if you want, dos and don'ts) to attain more visibility, credibility and trust by means of communication.

We will focus on three points: 1. user-friendliness; 2. a policy to improve the image of statistics and of the statistical institute; 3. a clear and integrated communication policy, highlighting the 'sexiness' of statistics.

2. User-friendliness: forget statistics, think about news!

2.1. Guiding principle

Any communication, be it on the website or otherwise, should *not* be along the structure of the NSI or along the structure of its data warehouse *but* along the way of thinking of users. Taking the website as an example:

- ◆ Avoid complicated tree menus; instead, give eye catchers with deeper figures underneath (like a newspaper article).
- ◆ Use interactive tools to keep users interested and enhance statistical literacy.
- ◆ Try to anticipate questions that may arise in a user: put yourself in his/her place.
- ◆ The (utopian?) target should be: not more than two clicks for a user to find the requested data!

2.2. What kind of users do we target?

Roughly, we can distinguish two kinds of users: professional users and the so-called general public.

- ◆ Regarding professional users (scientists, politicians, teachers, journalists, etc.), we have to try and enhance their statistical literacy.
- ◆ The ‘general public’ does not exist. We should think in target groups. For most of them (the ‘mean’ users), enhancing their statistical literacy may be a target in the long run. But to begin with, the first principle is to keep it simple!
- ◆ We should never forget that underprivileged groups are also potential users and ask for a specific approach: the elderly (who often have no access to internet!), immigrants (should we provide basic information in other languages?), etc.

User-friendliness is not only crucial to the communication of results but also to the techniques of gathering data (surveys, forms, letters, etc.). This is a vast field of work; it was explained more in detail at the BLUE-Enterprise and Trade Statistics (BLUE-ETS) Conference in Heerlen.

3. Image policy: be innovative!

- ◆ There is no image without reality. Only a professionally run institute can have a good image. We are the market leaders in the field of official statistics and should be perceived as such.
- ◆ Always stress any innovating initiative; at the end you will be perceived as a state of the art company.

- ◆ The press is your partner. Be proactive in your press policy. Try to have a figure in the press every day. Ask them to mention your name!
- ◆ Politicians are your partners. Be proactive with politicians. They need figures to support policy-making. Be firm when it comes to quality and independence but friendly and cooperative when you have the opportunity to help – and influence – them!

4. Parenthesis: working with politicians, the EU Presidency experience

During the Belgian Presidency, the Presidency Team was confronted for the first time with negotiations with the European Parliament. It had some informal meetings with the rapporteurs of different parliamentary committees and took part in two trialogues.

From the first meeting on (with *Brian Simpson*, Member of the European Parliament) it was clear that our normal way of communicating on statistics – stressing the quality and reliability of data – was completely useless. It would only provoke a smile and the reaction “Ha! Those reliable statisticians!”

What was important to them – and therefore, should be important to us in those circumstances – was that they needed something to sell to their constituency, and perhaps also to some lobbyists.

Communicating with them not only called for a different language but also for a different attitude, a much larger view of things.

What did the Presidency Team learn from this experience?

- ◆ Never stress technical matters.
- ◆ Never stress difficulties, always stress opportunities.
- ◆ Try to understand why some items are politically unavoidable, even if statistically they are ‘impossible’ or at least not very relevant. A good example was the insertion of data on persons with reduced mobility (PRMs) in the Tourism dossier. Statisticians should be aware that such politically sensitive issues have to be dealt with. It is their job to find a solution.
- ◆ Never forget: public statistics must (also) have a political relevance.

5. Communication policy: think like your client

- ◆ Create a serious, modern, fresh, ‘easy’ corporate identity, including your name and logo. Distinguish yourself from other government services, especially from the tax office.

- ◆ Always stress the importance and usefulness of surveys for enterprises and citizens.
- ◆ Offer feedback and tailor-made data to enterprises, along your ‘normal’ offer on your website.
- ◆ Write short, attractive letters and e-mails.
- ◆ Make well laid-out, simple forms, also online.
- ◆ To achieve this, organise a well functioning prepress department.
- ◆ Build an integrated, independent, distinctive publication policy, clearly recognisable and using the most modern techniques, especially in website design and interactive data.

6. Conclusion

Just like the speakers before us (and without doubt also those after us), we hope to have laid the finger on certain strengths and weaknesses in our communication. Communicating and informing people on statistics is quite an undertaking these days. The speed at which information is spread is truly breathtaking. Once you are on the Internet, there is no way back, and it is impossible to control where the information is going.

Some of the tips we have given you may seem so obvious that we should not have mentioned them at all. But we know from experience that we still make the same mistakes every day.

It should be clear to any one of us that communicating data will become a much more sensitive issue, when policy makers rely more and more on statistics – take Europe 2020 for example. Also the need for fast quality indicators and relevant statistics will only increase.

The more politicians rely on us, the more we will have to adopt a different attitude. Communicating, also with the political scene, does not mean at all that our independence is in danger. In fact, as we said before, we can tell from experience that our first contacts with the European Parliament during the Presidency were very constructive and smooth. Politicians of course have their own approach, but in the end the result was acceptable for both sides. We need to be more open and flexible here. Let us suggest that at a next conference we could also invite some politicians to share their views.

Finally, you will probably have noticed that we have not really discussed social media (Facebook, Twitter, etc.). This has nothing to do with aversion to these new technologies, nor does it have anything to do with our age. We need to be open to this kind of changes, but we should also be cautious. At the last informal meeting of press officers in Brussels, it turned out that we are still far from a generalised approach. It is not only a matter of financial resources and manpower, but also of content and speed of execution.

However, this is a different story altogether, to which we will undoubtedly get back. At the moment we try to justify our role as official statistician. We do this with the resources we are given, and with quality communication and information techniques that are aimed at professionals and experts, as well as at the general public.

Éva Laczka – Vince Kruchina

THAT IS WHAT WE ARE – STATISTICAL CULTURE, COMMUNICATION IN HUNGARY

The task and goal of the nearly 150-year Hungarian Central Statistical Office (HCSO) is to give a realistic, objective picture of the state and changes of society, economy, ownership and environment for the state governance and administrative organs as well as for the organizations and members of society (Act XLVI of 1993 on statistics). To this end, the office has been following and examining users' demands and satisfaction as well as their changes for years. Our latest image survey was connected to the events, programmes of the first World Statistics Day organized on 20 October 2010. Based on its results the HCSO has evaluated the confidence of the population in statistical data, the awareness of the statistical work and institutions and the current situation of the Hungarian statistical culture. Although the results were flattering to us in several respects, it became also clear that we still have a lot to do in the field of the development of statistical culture. In addition to the above, the proceeding presents, by means of some examples, the way the HCSO tried to persuade data suppliers and users about the importance of statistical data and how the former results can be used.

1. Briefly on the Hungarian Central Statistical Office, on the Hungarian statistical service

The Hungarian Central Statistical Office (HCSO) is a professionally independent government office supervised by the Minister of Public Administration and Justice. Its predecessor, the national statistical organization was established in 1867.

In its current form, the HCSO is a so-called centralized statistical organization, consisting of 16 central departments, 6 regional directorates, in addition to a special statistical library and the Demographic Research Institute.

The National Statistical Data Collection Program (OSAP) serves as a base for the work of the HCSO. OSAP provided for 291 statistical data collections in 2010: nearly half of them (49%) were conducted by the HCSO, while the rest was carried out by the other members of the statistical service. At present, respondents can also provide information electronically (via XML) in 54% of the data collections, which was chosen by almost half of the respondents last year. In the case of 17 – population – data collections, the HCSO collects statistical data, using the interview technique.

The HCSO publishes 200 “first releases” in addition to more than 150 other regular publications. An online information database was set up in 2001 which has been available in its present form since 2007 on the HCSO website. The office has been operating a so-called Researchers’ Room since 2007, where users may primarily analyse census micro data.

2. On the Hungarian statistical culture and its measurement

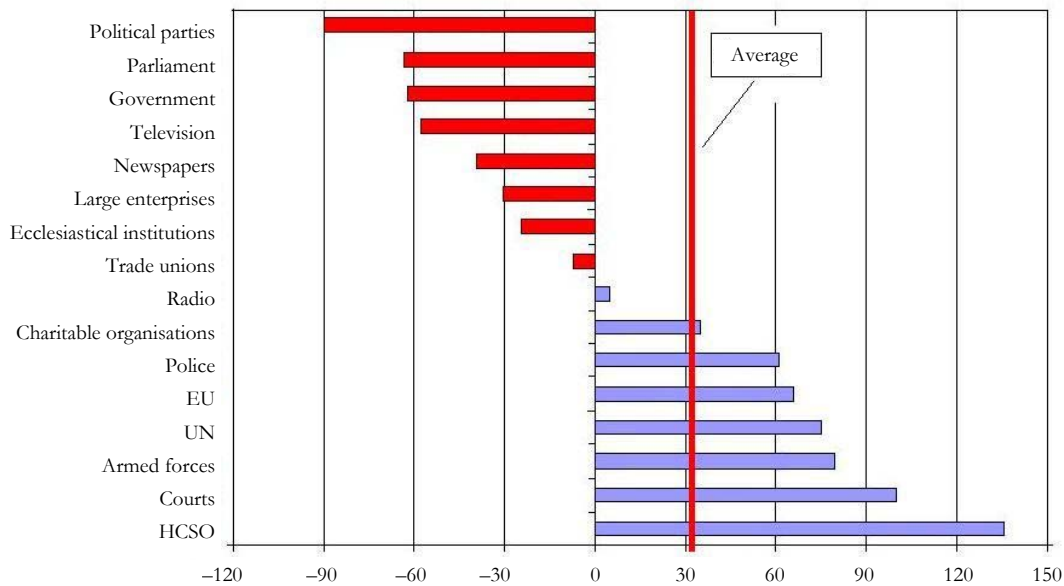
In the history of the Hungarian statistical office, there are several examples of user opinion/satisfaction measurements. One of the large-scale surveys was performed in 2003, when the HCSO invited a company to analyse its image. At that time, one-third of the respondents knew which institute is responsible for collecting, publishing statistical data, while the proportion of the respondents considered statistical data collections fully and partly justified, was 50% and 30%, respectively.

The OECD initiative within which the OECD Committee on Statistics has established a working group with the participation of 16 countries gave new impetus to the surveys in 2009. Its goal was to measure public confidence in and cognizance of the statistical offices. The working group has elaborated a model questionnaire under the direction of *Ivan Fellegi*, the then President of Statistics Canada. OECD invited the statistical offices in 2010 to complete this test questionnaire, however, the HCSO did not undertake it at that time.

The latest survey was conducted in connection with the World Statistics Day in October 2010, when the HCSO used the OECD questionnaire as a sample. On 20 October, the participants of the World Statistics Day programs organized in Hungary by the Hungarian Central Statistical Office, the Hungarian Statistical Society and the Committee on Statistics of the Hungarian Academy of Sciences were asked to fill in the questionnaire. During the day, 126 questionnaires were completed, the majority of the respondents were students or young persons (aged between 20 and 34). Two thirds of the participants of the programs came from the capital or from the central region of the country.

The Hungarian questionnaire addressed people’s awareness of the HCSO, confidence in the Hungarian organizations, evaluation of the HCSO work and, in the case of some selected statistical fields, trust in published data. It is a flattering result that 90% of the respondents have heard of the HCSO before, and 16% of the queried people use statistical data often, while 41% occasionally. The majority of frequent statistical data users showed interest in GDP, employment statistics, inflation and consumer price index. Based on the questionnaire, the office has prepared the following confidence index diagram.

Figure 1. Confidence index



There is no doubt that the results could bias in several respects. Among others, this is due to the fact that the survey was conducted in the capital and in the central region where people are typically better informed and more inquiring than in other parts of the country. The questionnaire was completed by students and other (young) people who are familiar with the office, its work, and more or less use statistical data, because that is why they visited the HCSO on the World Statistics Day. Despite the ‘partiality’ of the respondents, statisticians obtained useful information through the questionnaire, and they can use this knowledge and experience to elaborate further surveys and researches.

3. Efforts made to develop statistical culture

First of all, the comprehensive program of the World Statistics Day 2010 shall be mentioned.

For about three months, statistical curiosities were published weekly on the HCSO website.

A statistical “talent show” was organized for high school students. Its success was proven by the fact that 53 (high school) teams competed with the participation of 210 students coming from almost each region of the country. The high professional standard of the competition was a pleasant surprise: winners took almost maximum points.

Entries were also invited from college/university students in the categories of diploma theses, PhD theses and National Scientific Students’ Association studies on statistical subjects. Fifty-five entries of high standard arrived from several higher education institutions of the country.

A “public day” was held on 20 October 2010, when groups and individuals visited the HCSO, could acquainted with the work, publications and databases of the statistical office and gained insight into the methodology of the preparation of statistics, that is, into the “smarts of statistics”. To our great surprise, nearly 900 people went to see our office in Budapest on this single day, 140 of them were individual visitors. The regional directorates organized a public day with the same success too.

The so-called Statistical Toto had also a favourable outcome. In July, August and September of 2010 a Toto was published weekly and could be played online on the HCSO website by anyone. It included questions about the history of statistics, the work of the office, statistical data collections, publications, and about statistical data that could be found on the HCSO website, in our publications and databases. Our goal was not simply to assess people’s statistical knowledge, it was rather to encourage frequent visits to the website and, hereby, to raise visitors’ awareness. During the formerly mentioned three months, the Statistical Toto became a popular menu item. Having regard to the fact that it could be read also in English together with statistical curiosities, it was played not only by Hungarians but also by foreigners.

As an example, the participants of the conference organized in Visegrád, played a Toto game included in the Annex of this proceeding.

Valuable gifts implying statistics (such as a laptop, pen drives, various publications) were awarded to the winners of the World Statistics Day 2010, and the university students, among them, were also invited to attend the scientific statistical conference (their registration fee and meals/accommodation were covered).

Finally, I would like to present a special, Hungarian communication tool that was successfully used by the HCSO to enhance the knowledge of respondents. It has a history that goes back to the years after the millennium, when the Agriculture Statistics Department of the HCSO prepared the so-called “Account Calendar”. It has been a popular annual publication in Hungary, especially in the country, which, besides its calendar functions, provides useful, primarily practical information for readers, supplemented by entertaining sections. It is analogous to the traditional calendars and, since its target readers are farmers, contains a calendar and chapters on the following: sources of agricultural statistics, things to know about agricultural statistical surveys, useful information to complete questionnaires, most important achievements of statistics, useful hints, traditions, recipes and riddles. Its success has fostered the publication of the “Health Calendar”, whose ‘philosophy’ is the same but its content is adapted to its own readers’ interest. Thanks to these calendars, respondents better receive enumerators, contribute to the higher-quality completion of questionnaires and look forward to coming-out data and publications.

Figure 2. Calendars for data providers



Supplementing the presentation, *Vince Kruchina* introduced a TV spot for the opinion of the general public, media, decision makers, researchers on statistics and emphasized the importance of the statistical culture and the further challenges of statistics. The short film is included in the CD-ROM supplement to this volume.

Annex

The Toto game played by the participants of the conference

- When do you think the first population census took place in Hungary?*
 - 1 Between 1784 and 1787
 - 2 In 1869
 - X** In 1910
- Which town do you think was the royal seat between 1323 and 1408?*
 - 1 Debrecen
 - 2 Sopron
 - X** Visegrád
- Nowadays ten million people live in Hungary. The territory of the country is 93 000 sq. km. The territory and the population number of which EU Member State do you think is nearly the same?*
 - 1 Ireland
 - 2 France
 - X** Portugal

4. *In which year do you think Hungary accessed the European Union?*
- 1 In 1990
2 In 2004
 X In 2010
5. *The 270 kilometre-long route between Budapest and Vienna took 57 hours by horse cart and 30 hours by express post carriage. How long do you think it takes a Rail jet train today to reach its destination?*
- 1 3 hours
 2 11 hours
 X 50 minutes
6. *The number of automobiles was 1 047 in 1910 in Hungary. How many passenger cars do you think were running on public roads 100 years later, in 2010?*
- 1 0.5 million
 2 20 million
X 3 million
7. *Spas have always been a major attraction in Hungarian tourism. In 1900, 165 thousand guests visited altogether 180 spas. How many guests did the 76 spas of Budapest receive in 2008?*
- 1 10.7 million
2 More than 6 million
 X 2.5 million
8. *In how many out of the EU Member States do you think there are more women than men?*
- 1 In 6
2 In all 27
 X In 12
9. *Albert Szent-Györgyi received the Nobel Prize for Medicine in 1937. For what discovery do you think the prize was awarded to him?*
- 1 For his discoveries in the field of biological combustion processes – especially vitamin C and fumaric acid catalysis
 2 For his work related to cathode radiation
 X For the discovery and development of holographic methods
10. *In November 1953, the Hungarian football team played a legendary match against the English eleven. What do you think was the outcome of the match?*
- 1 6:3
 2 3:2
 X 0:0
11. *How many people do you think live in the European Union?*
- 1 100 million
2 500 million
 X 1.7 billion

12. *When do you think the official statistical service was established in our country?*

- 1 In 1920
- 2 In 1788
- X In 1867

13. *In Hungary the unemployment rate of the population aged 15–64 was 11.2% in 2010. How much do you think the unemployment rate in the EU was, compared to that in Hungary?*

- 1 EU unemployment rate was higher than its equivalent in Hungary.
- 2 They were equal.
- X EU unemployment rate was lower than its equivalent in Hungary.

+1 *How much do you think Hungarian GDP per capita at purchasing power parity was as a percentage of the EU-27 average in 2009?*

- 1 65%
- 2 42%
- X 97%

Session 4.
Trust in institutions, trust in statistics,
statistical culture

chaired by
FREDDY VERKRUYSSEN
(Statistics Belgium)

Aurel Schubert – Per Nymand-Andersen¹

THE ROLE OF STATISTICS IN GENERATING TRUST WITHIN SOCIETIES – NECESSARY PRECONDITIONS

The current financial market turmoil appears to have negatively affected the credibility of and trust in (several) national and international authorities in Europe. It cannot be excluded that certain statistics – or their limited quality – may have contributed to and amplified the financial turmoil and may have undermined trust in national and European institutions, policies and statistics, even outside of those countries in the eye of the storm. In addition, European citizens are increasingly demanding that public authorities justify their existence and be transparent and accountable for their actions, including on the basis of reliable statistics. Fostering transparency in policy decision-making and communicating the underlying official statistics can contribute to an efficient dissemination and acceptance of these decisions in society. Ensuring the reliability and effective communication of statistics is therefore fundamental to building up trust in the institutional structure of democracies and to strengthening core European values. This paper addresses the challenges of and preconditions for producing and communicating reliable statistics in order to build up trust within societies.

*Independently produced statistics on the health of the economy are a necessary precondition for informed choices supporting sound decision-making. “[T]he reliability of the general government statistics underlying the Excessive Deficit Procedure and the Stability and Growth Pact must be guaranteed when they come out”.
“Yet as we are in a highly integrated union, we need reliable statistics not just from the majority of Member States – we need it from each and everyone, no matter how large or how small the country is. We have seen that the potential for loss of credibility affects the entire union.”
(Jean-Claude Trichet [2010], President, European Central Bank)*

1. Introduction

Reliable and trustworthy statistics are a fundamental cornerstone of any modern democracy. The provision of facts and information correctly describing the economy and society are

¹ The opinions expressed in this paper are those of the authors and not necessarily those of the European Central Bank (ECB) or the European System of Central Banks (ESCB).

necessary preconditions for understanding the level of sophistication in today's societies and for supporting the increasingly complex (financial) choices of policy-makers as a basis for taking good and sustainable decisions for the short, medium and long term.

Central banks in general, and the European Central Bank (ECB) in particular, are heavy users of statistics, also produced by the national statistical institutes (NSIs). Therefore, their decision-making processes, as well as their communication activities and their reputations, depend heavily on the quality of the underlying data. This is especially true for the highly data-intensive two-pillar strategy of the ECB.

The rapid advances in the amount of available information, in information technologies and in the speed of integration in the EU have led to a significant transformation of the economic landscape, especially for the new democracies of central and eastern Europe. This poses special challenges for policy makers in explaining to the public policy choices which are well supported by trustworthy statistics.

The provision of trustworthy statistics contributes to enhancing welfare in society and is a key communication tool to obtain the necessary support and trust of market participants, firms and European citizens. As *Alexandre Lamfalussy*, the first President of the European Monetary Institute (EMI), said: "Unless policy can be justified and explained, it will not be understood and the institution carrying it out will lack credibility." (*Lamfalussy* [1996]) Thus, not only are good quality data required for the decision-making process itself, but the explanatory power of statistics is a cornerstone in communicating *sustainable and accountable* decision-making, thereby fostering public understanding and acceptance of today's complex policy decisions.

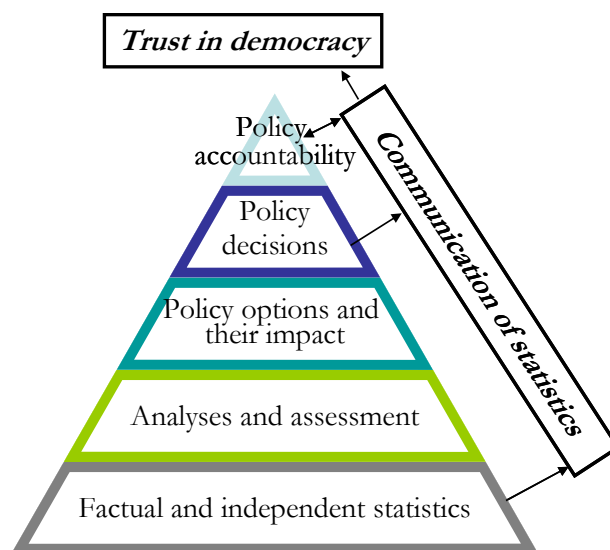
Good quality statistics are therefore a key factor in maintaining public confidence in 1. the policy decisions, 2. the statistics themselves, 3. the institutions producing the statistics, and 4. the persons making the policy decisions.

2. Generating trust in democracies

Reliable, independently produced statistics on the state of the economy are necessary preconditions for sound decision-making and are therefore indispensable for building-up and maintaining trust in democracies.

Statistics are fundamental building blocks for any analysis and assessment of the economy from which policy options and impact analyses are generated. Policy-makers can evaluate these options and their associated implications for society prior to decision-making. Once decisions have been taken, the transparent monitoring and evaluation of the impact underpin the political accountability of decision-making. The more sound and sustainable decisions are, the more trust citizens will have in democratic systems and institutions. As the European Commission put it: "Users of European statistics should be able to confidently use this information as an input to their own decision-making." (*EC* [2011a])

Figure 1. The role of statistics in generating trust within societies



Trust in statistics and policy-making are therefore essential aspects of every democracy. Trust in institutions, meaning the citizens' conviction that they can rely on statistics and policies from a given institution, is important because the institutions' legitimacy and policy efficacy depend on it. If citizens do not trust an institution, they might ignore or reject its policy decisions or they may act to undermine the authority of the institution (*Kaltenthaler-Anderson-Miller [2010]*), thus eroding its legitimacy at either a national or European level. Statistics must also be communicated to the general public *1.* without preferential treatment for certain users or user groups, *2.* as part of the policy decisions, and *3.* to gauge the impact of those decisions. This is part of the institutions' political responsibility and accountability vis-à-vis the affected citizens.

There is a clear link between providing good quality statistics and taking good quality decisions.

The truth of the popular saying “garbage in, garbage out” is becoming ever more apparent in today's societies in which mountains of erroneous information can be widely spread in a very short time.

Good and reliable statistics are, however, not guaranteed and require that certain methodological, political and legal preconditions are fulfilled.

3. Necessary preconditions for generating trust in statistics and societies

The necessary preconditions for providing good quality statistics include *1.* good basic data from the respective reporting agents, *2.* skilled and professional staff applying the right

methodologies, and 3. independence of the data producers, without any political interference.

A standard approach to evaluating the quality of statistics is multidimensional and based on key quality principles.

Key aspects of and principles for ensuring good quality statistics²

Key aspects of quality in statistics	Key principles for ensuring quality in statistics
Relevance	Independence and accountability of statistical functions
Accuracy (including good basic data from reporting agents)	Budgetary and personal independence
Reliability	A clear mandate for data collection (legal acts)
Timeliness	Good governance
Consistency	Statistical expertise – using sound methodology (skilled and professional staff)
Impartiality and objectivity	Cost-effectiveness without excessive burdens on reporting agents
Comparability	
Accessibility and clarity	

The independence of the producers and of the production of statistics from direct or indirect political influence is fundamental to safeguarding not only quality, but also transparency, accountability and, ultimately, public trust. It is vital that policy-makers and the general public understand that a statistical function independent from day-to-day political influence is the best way to safeguard continued confidence in statistics. “Statistics must indeed be developed, produced and disseminated in an independent manner free from any pressures from political or interest groups or from Union or national authorities.” (EC [2011a])

A successful example of enhancing public welfare by giving independence to a previously politicised function is the case of monetary policy making in Europe (and increasingly also in other parts of the world). Painful experiences in history and empirical evidence have led to the conclusion that central bank independence is one of the most important, if not the most important, preconditions for a monetary policy that ensures sustainable price stability.³ This central bank independence has several aspects, including institutional, functional, financial and personal independence. These require legal provisions to guarantee that the central bank

² Extracted and supplemented from the ECB Statistics Quality Framework (ECB [2008]). This ECB quality framework is similar to other international statistical quality frameworks, such as the Fundamental Principles of Official Statistics of the United Nations Statistical Commission (<http://unstats.un.org/unsd/methods/statorg/FPEnglish.htm>), the Principles Governing International Statistical Activities (http://unstats.un.org/unsd/methods/statorg/Principles_stat_activities/principles_stat_activities.htm), the European Statistics Code of Practice (<http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home>), and the IMF Data Quality Assessment Framework (<http://www.dsbb.imf.org/Pages/DQRS/DQAF.aspx>).

³ This was one of the painful lessons of the ‘great inflation’ of the 1970s. With the Maastricht Treaty the requirement of independent central banks was made mandatory in the EU. This has also served as a role model for many countries and regions around the world, resulting in a period of worldwide moderate inflation rates.

can carry out its tasks and duties without political interference or any other form of external interference.

Central bank independence also concerns its statistical functions, meaning that, without any political interference, the central bank must be able to collect data and provide, as a public good, reliable statistics on the health of the (financial) economy that also serve as the basis for its own judgements in the conduct of monetary policy. One element of a central bank's functional independence is its ability to define the required statistical framework by using legal acts and applying sound statistical methodologies. As *Jean-Claude Trichet*, President of the ECB, put it: "The independence granted to the ESCB by the Treaty means that there is no political interference in the compilation and dissemination of statistical information." (*Trichet* [2008])

Financial independence, which refers to a central bank's autonomy over its financial resources and income, is a key factor in protecting the central bank from potential pressures via arbitrary, conditional, or insufficient budgetary allocations. Personal independence means that the decision-makers of a central bank are personally protected from political pressure and influence. Key provisions in this respect include fixed terms of office for the members of the respective bodies and clear and very narrow limits on the possibilities for dismissal. Article 130 of the Treaty on the Functioning of the European Union (ex Article 108 TEC) grants the ECB and national central banks (NCBs) far-reaching independence in all of these areas: "When exercising the powers and carrying out the tasks and duties conferred upon them by the Treaties and the Statute of the ESCB and of the ECB, neither the European Central Bank, nor a national central bank, nor any member of their decision-making bodies shall seek or take instructions from Union institutions, bodies, offices or agencies, from any government of a Member State or from any other body. The Union institutions, bodies, offices or agencies and the governments of the Member States undertake to respect this principle and not to seek to influence the members of the decision-making bodies of the European Central Bank or of the national central banks in the performance of their tasks."

Due to the crucial role that (some of the) statistics play in policy-making in Europe, like the fiscal data for the excessive deficit procedure or the data for the future excessive imbalances procedure, a similar independence regime for statistics might be justified and even necessary in order to safeguard the European Statistical System (ESS) and all its member institutions from political pressures. This could be an important contribution to strengthening trust in European statistics.

4. Is independence of public institutions compatible with democracy?

The rationale for making some governmental functions independent of political influence is to avoid welfare-reducing distortions caused by short-term electoral cycles and party-

political objectives.⁴ In the case of monetary policy, the possibility of influencing decision-making would tend to generate a political business cycle with overly expansionary policies (especially before elections) and subsequent sub-optimal high inflation rates. In the case of statistics, there are also incentives to manipulate data (and numerous examples thereof) in order to influence public opinion, political choices and voting behaviour. Depending on the particular political objectives, there might be an interest in painting a rosier or a more negative picture of the economy. It is very tempting to abuse the power of an information monopoly for political purposes. The resulting information noise not only leads to misinformation, but might also induce wrong decision-making, including by private agents, and thus can result in suboptimal outcomes and increased costs to society.

Manipulating the figures must be distinguished from misinterpreting the figures. The latter may be either intentional or unintentional (*Huff* [1954]) and can also lead to wrong policy-decisions and misleading communications. Statistics are a purely factual representation of the current state of affairs within society, but they can be easily misinterpreted by analysts or policy-makers. Therefore, they need to be accompanied by descriptive, explanatory statements from statisticians. A specific effort should also be made with respect to the publication of both the data and the methodologies used in their production. This will improve mutual understanding and cooperation between policy-makers, analysts, statisticians and citizens. (*Flores* [2011])

Here again, independence from political influence is of utmost importance. There is a danger in (and for) a democracy that users and policy-makers who know how to do so might manipulate statistics, and consequently citizens' perceptions, for their own (subjective) short-term policy purposes. This danger remains hazardous in democracies, and the losers are always the citizens, who have to suffer the welfare losses of bad decision-making.⁵

Especially in the area of fiscal data there is a strong incentive for politicians to manipulate or to misinterpret the respective statistics. However, it is first and foremost the citizens (and taxpayers) who are being cheated, as they are being misinformed. The citizens will not get the full picture of the state of affairs, but they will have to bear the costs (i.e., service the debt), irrespective of the information provided. Thus, it is not first and foremost a European institution that is cheated by wrong fiscal data but the citizens/taxpayers of the country concerned. Conversely, the citizens should be the main guardians and beneficiaries of impartiality and the independence of their statistical institutions.

Statistics are a public good and they have to be comparable and consistent over time and communicated as part of the documentation of policy actions and as a measure of the impact

⁴ Empirical evidence demonstrates that OECD countries have pre-electoral expansionary policies and post-electoral partisan cycles. Politicians tend to use fiscal policy to increase their popularity before elections, followed by offsetting policies after elections to compensate for the pre-election effects. The political cycle is steered by the ideological preferences of political constituencies rather than economic needs. (*Sousa* [2002])

⁵ The European Commission has launched a website presenting a few practical examples and responding to published articles and stories based on twisted facts or even lies: Myths and Rumours debunked (http://ec.europa.eu/dgs/communication/take_part/myths_en.htm).

of policies in a democracy. Independent statistics are a fundamental part of ensuring transparency and accountability and of providing a factual representation of the dynamics within societies, irrespective of policy sentiments. This is where the communication role of statistics kicks in. In a democracy based on facts and evidence, it is important that statisticians help to guide (with the unique statistical knowledge and know-how) and support the users of statistics by providing a complete set of appropriate statistics and by making these available to the public at large.⁶ Policy-makers should devote their scarce time to policy formulation, not to debating which sets of statistics to choose, with the associated and unintentional risk of misrepresenting the health of the economy. As *Janez Potoènik*, European Commissioner for the Environment, said: “Good statistics are much, much cheaper than wrong decisions.” (*Potoènik* [2011])

5. With independence comes responsibility and accountability

As indicated above, independently produced statistics protect society from the political temptation to misuse statistics for short-term electoral purposes. However, in a democratic system, independence is not just a privilege, but comes with responsibility, accountability⁷ and the need to be transparent. Independence and accountability are thus two sides of the same coin. In the case of statistics, this means being transparent about the data sources and methodologies used for producing statistics and it means communicating and demonstrating the fulfilment of statistical quality objectives (see Table). For the ECB, the statistical pages on its website⁸ are where all the ECB statistics, the legal framework, methodological manuals and guidelines, quality reports and data are explained and communicated to the public. There is no privileged access to statistics and all releases are pre-announced together with detailed work programmes for the forthcoming business/calendar cycles. Where applicable and appropriate, statistics are part of the ECB’s regular publications and public presentations.

Broad public awareness of the benefits of independence is essential. Fostering and preserving such awareness requires, in particular, that independence is not undermined by political interference and is respected by the respective governments.

So what is the current state of affairs concerning *trust* in democracies in Europe?

⁶ This leads to the need for an easily accessible database of reliable statistics which can be used by all interested parties and which form the basis for policy assessments, discussions, choices and decisions.

⁷ “Accountability” is the notion that citizens 1. are able to know the reasoning behind policy decisions, 2. have the ability and tools to monitor and track the impact of those decisions in society, using reliable and factual independent statistics, and 3. are able to reward or punish policy-makers for the policies they pursue both during and after their term of office. This notion includes three essential features for measuring accountability: policy decisions, information, and sanctions. If citizens do feel that these essential features are met, they are likely to trust the institutions.

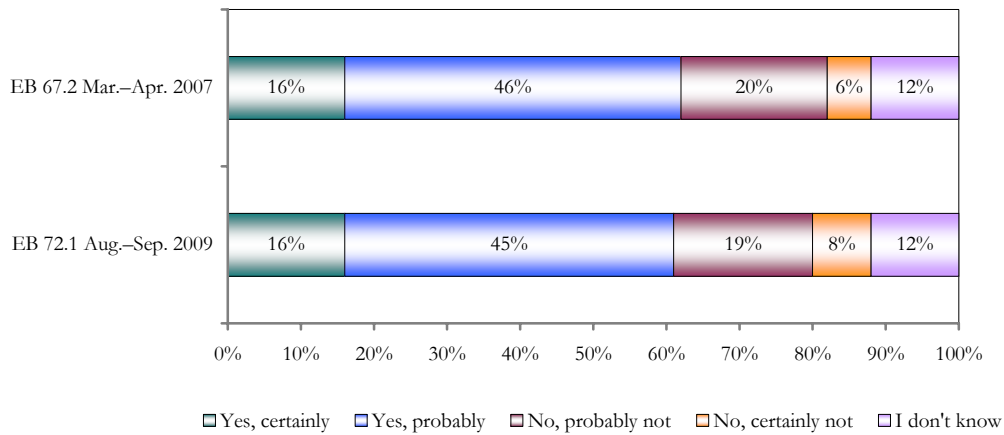
⁸ <http://www.ecb.europa.eu/stats/html/index.en.html>

6. The state of affairs with respect to trust in the EU

The European Commission publishes biannually the “Eurobarometer surveys” on European citizens’ sentiments and their knowledge of economic and statistical indicators. The importance of and trust in statistics is measured in a special edition of this survey. (EC [2010])

Figure 2. The importance of statistics in policy decisions – European Union

Survey question (QC5): “Some people say that statistical information play an important role in business, public and political decision making. Personally, do you think that, in (our country), political decisions are made on the basis of statistical information?”



Note: Here and hereinafter EB means Eurobarometer.

Source: European Commission.

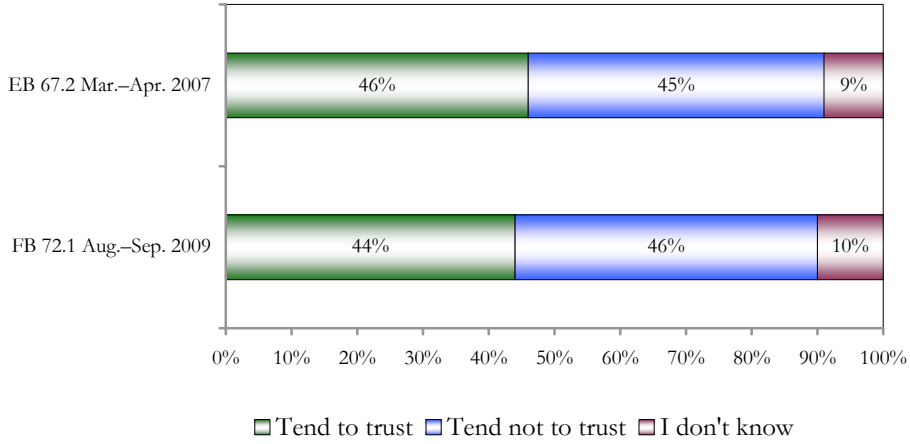
Overall, only 61% of the Europeans believe that political decisions are made or probably made on the basis of statistical information. Even more worrying is the fact that only 16% of these are certain that decisions are based on statistics. At national level citizens see a strong role for statistics in Denmark (84%), the Netherlands (79%) and Sweden (77%), but not in Latvia (38%), Bulgaria (46%) and Hungary (49%).

The Eurobarometer survey also asked European citizens about their trust in official statistics. Here the picture appears less positive and trust has declined since the previous special survey in 2007.

Europeans’ opinions of the trustworthiness of official statistics deteriorated somewhat between 2007 and 2009. A relative majority of citizens, albeit a slim majority, tend *not to trust* official statistics (46%), while only 44% tend to trust statistics. The remaining 10% are undecided. This represents a two percentage point fall in European citizens’ trust in statistics since spring 2007.

Figure 3. Trust in statistics – European Union

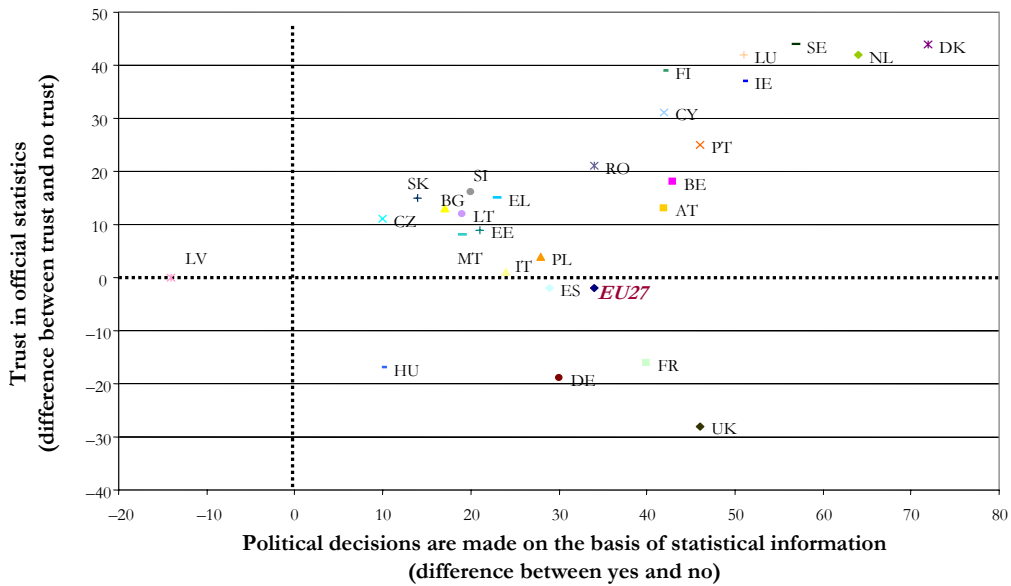
Survey question (QC6): “Personally, how much trust do you have in the official statistics in (our country), for example the statistics on unemployment, inflation or economic growth? Would you say that you tend to trust these official statistics or tend not to trust them?”



Source: European Commission.

If one combines the policy use of statistics with the level of trust, the national pictures differ significantly among EU Member States, with Denmark and the Netherlands as the positive and Latvia and Hungary as the negative outliers.

Figure 4. Perception of policy use of statistics and trust in statistics in EU Member States (percent)



The result is disturbing in several EU Member States and can be seen as a worrying development. Democracy depends on the active and passive support of its citizens. Democracy is, after all, as *Winston Churchill* remarked, not perfect, but still the best form of government we know. The 2010 Eurobarometer report (EC [2011b]) shows that trust in national governments and parliaments is significantly worse. A clear majority of respondents, 67% and 62% respectively, tend to *distrust national governments and parliaments* (only 28% and 31% of respondents, respectively, trust national governments and parliaments). The difference between those who “trust” and those who “distrust” is –31% and –39%, respectively, which is far lower than the figures for trust in statistics and trust in the European Union. With regard to the latter, 43% of respondent trust the EU whereas 45% of respondents distrust it, resulting in a difference of (only) –2%.

7. Why is the level of trust so low in EU democracies and why should we care?

It cannot be ruled out that the financial market turmoil and the sovereign debt crisis may have contributed to a decline in trust in national governments and also in statistics in Europe. A number of important financial markets statistical indicators⁹ were (and are) signalling an increase in risk, and some of these indicators reflected market sentiment questioning the ability of sovereign states to prudently manage their national fiscal policies and debt obligations. It cannot be excluded that, owing to their low quality and volatility, certain statistics, which are important for the assessment of national governments’ obligations under the Stability and Growth Pact, may have contributed to and even exacerbated the financial turmoil and may also have undermined trust in (some) national and European institutions and their policies.¹⁰

Revisions, i.e. changes due to more or better information, are an integral part of producing timely and reliable statistics. In general, however, they should be small and unsystematic and should not have a significant impact on assessment and decision-making.¹¹ Frequent and sizeable revisions have negative repercussions on the level of confidence and trust in the statistics. Furthermore, some government ministries, serving national political and regional interest, collect data on, and release their own forecasts of, economic developments; in particular on government revenues and expenditures. Recently, such forecasts by government agencies have been subject to large revisions which impact on national budget deficits and the associated assessment of the budget deficit procedures. In these particular cases, the use of such forecasts

⁹ For example, spreads on sovereign bonds in Europe across maturities, associated CDS spreads, the general situation in the money market and debt securities markets, and volatility measures.

¹⁰ It should, however, be noted that the biggest revisions of figures in the case of Greece related to government forecasts of budget deficits and not to actual statistics.

¹¹ Statisticians see revisions as an integral part of enhancing the quality of statistics and a reflection of the trade-off between the timeliness of releasing statistics and quality adjustments in statistics.

could be misleading, pursuing certain short-term political agendas and negatively influencing the reputation of statistics and statisticians. Communication intermediaries (the media, journalists and economic observers) and subsequently the general public cannot be expected to differentiate between good quality statistics and other available information, owing to an ever-increasing supply of public and private data. This can lead to confusion and, ultimately, to rejection, if the citizens do not feel that the statistics are useful for national and European policy-making or for their own professional and personal decision-making. Within the tight European statistical networks – those of central banks or statistical institutes – quality differences between different members can generate large collateral damage, both within the particular system and through spillovers from one statistical system to the other. As the popular saying goes, one bad apple spoils the lot. In such a complex European environment, users and citizens cannot always be expected to distinguish between the good and bad apples, whether at national or European level. However, the impact of and damage from poor statistics occur mainly at the national level. Trying to deceive national citizens in order to prevent them from knowing the true facts and figures of the economic and financial situation is not only likely to backfire at the next election, but will also impact negatively on the general trust in national governments, policies and statistical offices.

If European citizens feel that good quality statistics 1. are not used by policy-makers, 2. do not play a meaningful role in setting policy priorities, and 3. are not used to hold policy-makers (at national and European level) to account for policy decision, then the low level of trust will continue. Such a low level of trust is a risk to the stability of a democracy, especially if the levels remain so low or deteriorate further.

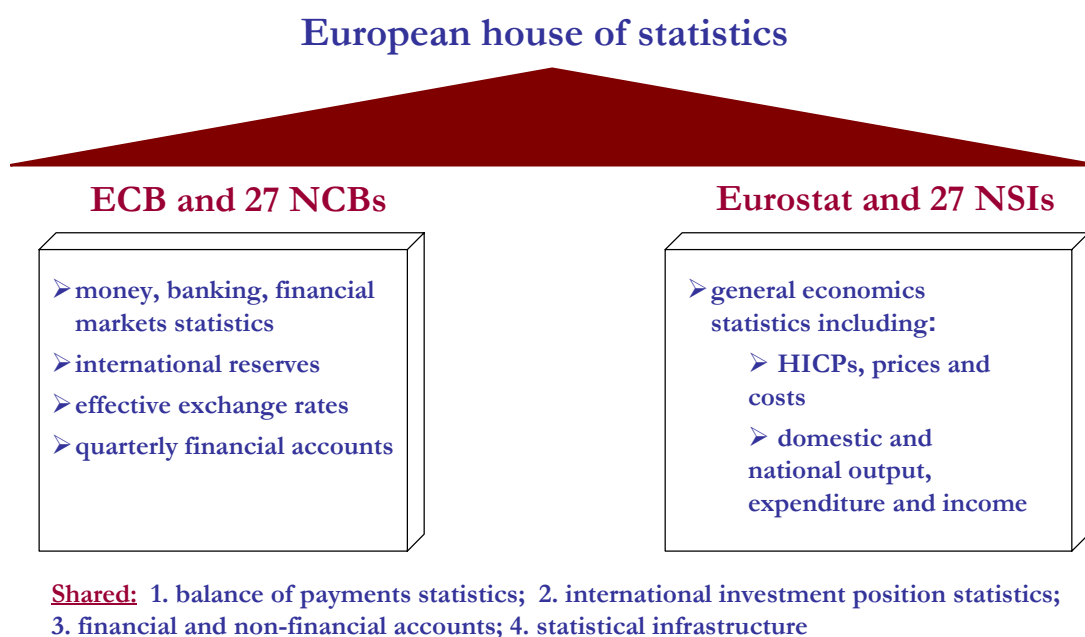
Joint policy actions at national and European level are necessary to strengthen the level of trust and public confidence in good statistics, institutions and policies at both national and European level. To safeguard the good quality of statistics, national and European politicians and institutions need to step up their efforts to make the necessary changes to the European statistical architecture.

8. What is needed to strengthen public confidence in statistics?

There are two statistical systems at the European level, supporting both national and European policies. One system, the European System of Central Banks (ESCB), is led by the ECB supported by the 27 NCBs, and the other, the European Statistical System (ESS), comprising the 27 NSIs, is led by Eurostat.

In each case the NCBs or NSIs work together effectively as a team to produce the national and European statistics, based on a harmonised European framework implemented at national level. The consistency of national approaches is vital for European statistics and for the comparability of the national contributions which are relied upon by national and European policy-makers for making good decisions.

Figure 5. The European statistical architecture



Based on a Memorandum of Understanding

Source: European Central Bank.

Policy actions are needed to guarantee the professional independence and to strengthen the impartiality and objectivity of statistics in Europe. As the President of the European Commission pointed out at the Eurostat Conference in March 2011, “Policy-makers must provide the right incentives for and guarantee the professional independence of statisticians, strengthening their impartiality and objectivity. This is even more relevant in the European context to ensure trust between the Member States and between the Member States and the Commission.” In the meantime, the European Commission has already reacted and initiated concrete proposals in this direction with its Communication of 15 April 2011 “Towards robust quality management for European Statistics”.

If implemented fully, this will be an important step towards strengthening the governance, and thus enhancing the quality and the reputation, of the ESS. Of particular importance is the proposal to require unconditional professional independence for the ESS, comprising Eurostat and the network of NSIs. As mentioned in the Commission’s Communication, statistics must be “developed, produced and disseminated in an independent manner free from any pressures from political or interest groups or from Union or national authorities”. In order to ensure the implementation of this vision, it will be important that independence is defined in a broad sense, covering, among other things, the term of office and appointment procedure for the head of the statistical institution, as well as a (very restricted) dismissal procedure. It will also be important to create certainty concerning the necessary funding.

A formal commitment by all Member States (by their governments as well as by their NSIs) to fully implement the strengthened Code of Practice is also needed. As a chain is only as strong as its weakest link, there needs to be a level playing field in the entire system, with all parts of the system living up to the same strict commitments.

In addition to these new governance rules, a basis for more trust could also be generated by enhancing financial and statistical knowledge of European citizens. The more the general public can understand economic and financial statistics and can judge their quality and the quality of the processes behind the numbers, the easier it will be to communicate the policies and to gain acceptance for both the statistics and the decisions.

9. Conclusion

The outbreak of the current financial market turmoil and the sovereign debt crisis were not due to a lack of statistics or due to any quality shortcomings of existing statistics. Nevertheless, some unreliable statistics (and especially forecasts) may have exacerbated the situation. The relatively low and declining level of trust in statistics in Europe, and of their perceived policy use, is an undeniable fact. Furthermore, public surveys, like those released by the European Commission, indicate that a large majority of citizens distrust national governments and parliaments. If not addressed adequately and urgently, these developments pose risks to the fabric of our societies and to the stability of our democracies.

As EU-Commission President *Barroso* pointed out recently, “[p]olicy makers must provide the right incentives for and guarantee the professional independence of statisticians, strengthening their impartiality and objectivity. This is even more relevant in the European context to ensure trust between the Member States and between the Member States and the Commission.”

Independently produced official statistics, which credibly represent the facts and dynamics of our economies and societies, will be instrumental to restoring public trust. Statisticians have to stay united against all attempts by political interests or tendencies to manipulate statistics as part of a policy decision-making process, which would result in sub-optimal policy decisions. Unless resisted successfully, these tendencies remain a hazard for democracies and the losers are always the (national) citizens. They will have to suffer the consequences of unsound (short-term) policy decisions.

The completion and guaranteeing of the broadly defined professional independence of the whole European statistical architecture also brings responsibility and accountability. This responsibility requires that the statistical function be transparent with regard to the methods used and that it documents its compliance with key quality principles. In addition, it needs to communicate timely, relevant statistics – fit for the purpose of sound decision-making.

At the European level, the European Commission has outlined an important step in this direction with its Communication of 15 April 2011 “Towards robust quality management for

European statistics”. This initiative of the Commission now needs to be fully and credibly implemented by all Member States and rigorously monitored by the Commission. As the President of the Commission said, “Further strengthening of the governance of the European Statistical System will be key in this respect.” (Barroso [2011]) For this a sound legal framework and a strong governance structure with surveillance and enforcement mechanisms are needed. In order to empower the citizens, a commitment to enhance the statistical and financial literacy in Europe could support these initiatives.

Enhancing the independence and the governance structure of the European statistical architecture will contribute to fostering and strengthening national and Union identity and improve trust in policies, national institutions, and statistics, thereby bringing Europe closer to its citizens. Communicating and using independent statistics is therefore fundamental for trust in the institutional structure of our democracies and for strengthening European values.

All producers of European statistics must take up the challenge to work in this direction, since adaptations of the legal framework alone will not be sufficient. It is up to the statisticians themselves to make this change a reality. Let us start right now.

References

- BARROSO, J. M. D. [2011]: *Statistics for policy-making*. Speech given at the Eurostat Conference. 10 March. Brussels.
- EC (EUROPEAN COMMISSION) [2010]: *Europeans’ Knowledge of Economic Indicators*. Eurobarometer Special Surveys. No. 323. January. http://ec.europa.eu/public_opinion/archives/ebs/ebs_special_eco_ind_en.pdf
- EC [2011a]: *Communication from the Commission to the European Parliament and the Council – Towards robust quality management for European Statistics*. COM(2011) 211 final. Brussels.
- EC [2011b]: *Public Opinion in the European Union*. Standard Eurobarometer. No. 74. February. http://ec.europa.eu/public_opinion/archives/eb/eb71/eb71_std_part1.pdf
- ECB (European Central Bank) [2008]: *ECB Statistics Quality Framework (SQF)*. April. <http://www.ecb.int/pub/pdf/other/ecbstatisticsqualityframework200804en.pdf>
- FLORES, E. [2011]: Speech given at the Eurostat Conference. 10 March. Brussels.
- HUFF, D. [1954]: *How to Lie with Statistics*. W. W. Norton and Company Inc. New York.
- KALTENTHALER, K. – ANDERSON, C. J. – MILLER, W. J. [2010]: Accountability and Independent Central Banks: Europeans and Distrust of the European Central Bank. *Journal of Common Market Studies*. Vol. 48. No. 5. pp. 1261–1281.
- LAMFALUSSY, A. [1996]: *The Statistical Requirements for Monetary Union*. European Monetary Institute. July. p. 1.
- SOUSA, P. A. B. [2002]: *Central bank independence and democratic accountability*. <http://www.univ-orleans.fr/deg/GDRecomofi/Activ/doclyon/desousa.pdf>
- TRICHET J.-C. [2010]: *The continuing quest for reliable and timely statistics*. Opening speech at the Fifth ECB conference on statistics “Central bank statistics: what did the financial crisis change?” 19 October. Frankfurt. <http://www.ecb.int/press/key/date/2010/html/sp101019.en.html>
- TRICHET, J.-C. [2008]: *A strategic vision on euro area statistics*. Speech given at the Fourth ECB Conference on Statistics. 24–25 April. Frankfurt.

Trevor Fletcher

OECD TOOLS FOR MAKING STATISTICS MORE UNDERSTANDABLE TO WIDER AUDIENCE

The OECD are much involved in developing and promoting data visualisation “storytelling” tools for making statistics more easily understandable to a wider audience. These animated visual presentations incorporate the use of a number of graphical interfaces such as maps, bubble charts, histograms, etc. as well as the associated explanatory text or voice-overs.

These interfaces can be used as expert tools for specialists or can be customised to provide simple, easy to understand animations for the general public via press releases, briefings and news items.

The same tools have been integrated with the OECD Statistical Information System to provide graphics for its online data warehouse (*OECD.Stat*) for analysis and sharing.

This paper demonstrates these various visualisation methods to show how statistics can be communicated in an interesting and innovative way to diverse audiences and to allow them to make informed decisions based on this data.

The paper will cover the following topics: data visualisation and *OECD eXplorer*, the *OECD eXplorer* ‘Expert Version’, evolution of *OECD eXplorer* with custom developments, integrating *OECD eXplorer* with *OECD.Stat*, using *OECD eXplorer* in wikis, blogs and videos, other OECD visualisation tools, and conclusion.

1. Data visualisation and eXplorer

As we are all aware, animations have the ability to capture attention. As the publishers and owners of our organisations’ web sites, we are also very aware that attention of internet users has become a very scarce commodity, with the vast amount of freely available information that competes for users’ attention on the internet.

Animated data visualisations – even using official statistics! – can grab and hold viewers’ attention and are thus efficient instruments of communication. Over the last few years the OECD has experimented with a number of such animated data visualisation tools for presenting its data in innovative ways to reach a wider audience. These kinds of animations can greatly widen the appeal of statistics and have the ability to revolutionise the power and influence of official, or any other data.

The OECD’s developments up till now using dynamic graphics have consisted of a number of ‘tailor made’ custom applications such as the *Business Cycle Clock*, *OECD Development Data* graphics on aid to agriculture, the Gapminder *Trendalyzer* interactive bubble chart for

presenting data on the OECD FactBook, the *Better Life Initiative* plus open sources solutions such as Tableau. During this period the OECD has also collaborated with the Swedish company *NComVA* (formerly the Research Institute NCVA) on the eXplorer software which is on its way to becoming the most widely used visualisation tool in the organisation.

2. OECD eXplorer

OECD eXplorer is an innovative map-based visualisation tool using time-based animations that allow for different views on data (maps, scatter plots, histograms, parallel coordinate plotters, etc.). These views are synchronised and can be used for creating animated “stories” to explain interesting data correlations: using eXplorer allows experts to analyse data and to discover and publish the stories they found.

The partnership between OECD and NComVA came about after the OECD seminar “Innovative ways of turning statistics into knowledge” held in Stockholm in 2008; the purpose of the seminar was to contribute to the development of tools to help people transform statistics into knowledge and decisions with a goal that statistics to be used this way become known, available and understood by wider audiences.

The seminar was held in the context of the OECD Global Project on “Measuring the Progress of Societies” and contributed to one of the goals quoted in the Istanbul Declaration: “*produce a broader, shared, public understanding of changing conditions, while highlighting areas of significant change or inadequate knowledge*”.

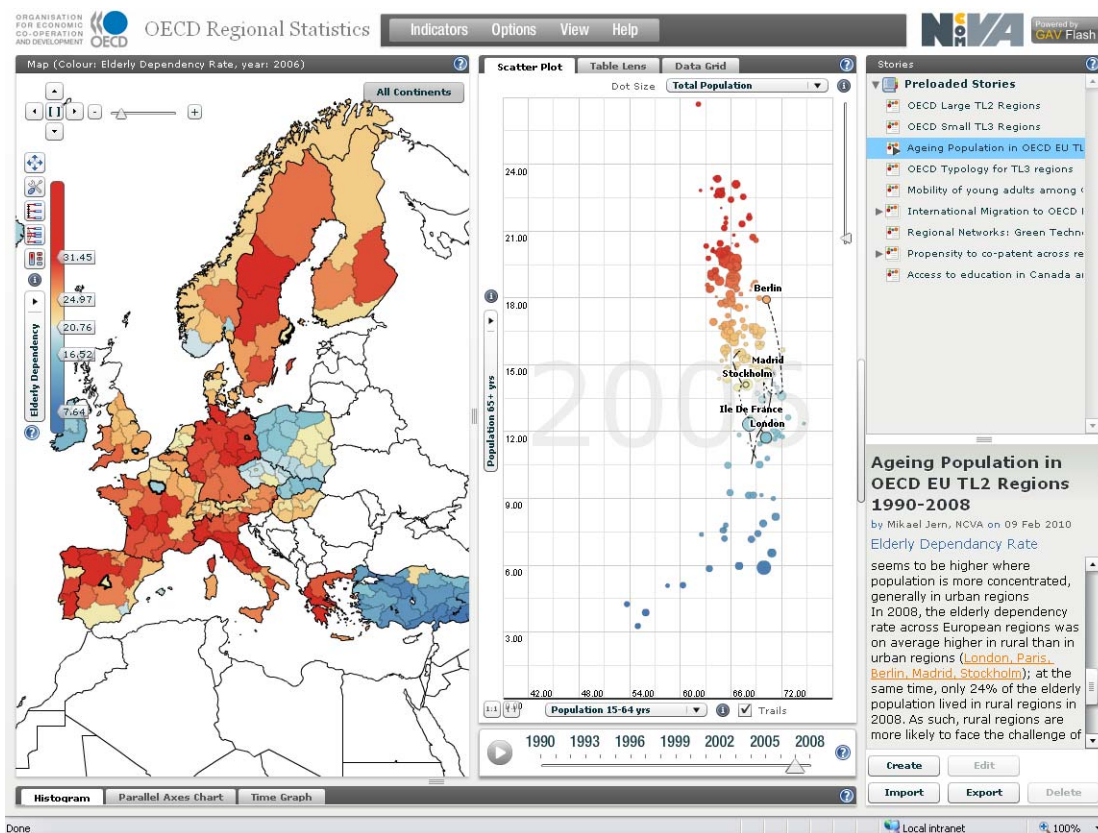
3. OECD eXplorer ‘Expert Version’

The first version of eXplorer was deployed on the OECD website in 2009 using *regional data*. This application included the full complement of graphical components (map, scatter plot, table lens, data grid, histogram, parallel axes chart, and time graph) together with a set of pre-defined stories that a user could select and animate over the time dimension.

Given the richness of functionality available on this version it was positioned as an expert tool, with the aim in mind that over time single components of the system could be used to communicate simpler messages on the web, blogs, wikis and other platforms.

This expert version using regional data was very well received both by internal OECD users, subject-matter experts, the press and the wider public. Regional data was followed with other OECD statistics from a number of different domains (economic forecasts, science and technology, health, child well-being) and set eXplorer on the way to becoming the organisation’s corporate visualisation tool.

Figure 1. The expert version of eXplorer using regional data



4. The evolution of eXplorer with custom developments

Following the initial deployment of eXplorer, other OECD statistical domains have requested specific additional custom graphical components to better present their own data. These include *flow arrows* to show the in and out flows between countries and regions for trade and migration data (see Figure 2), and also custom graphs for the Programme for International Student Assessment (see Figure 3). The OECD are currently investigating the use of *3D histograms* integrated with the World Map (see Figure 4) as another viewing option. In this way we are building a catalogue of graphical components that can be used singly or in combination to meet the requirements of our own statistical users and experts with the ultimate goal being always to reach a wider audience to communicate statistics in an interesting and easily understandable manner.

At the same time as these custom features have been developed, the eXplorer software platform has evolved to utilise a component-based architecture facilitating the use of individual graphical components in isolation (known as “vislets”) that can then be published according to visualisation the requirement on any platform.

Figure 2. The Flow Map

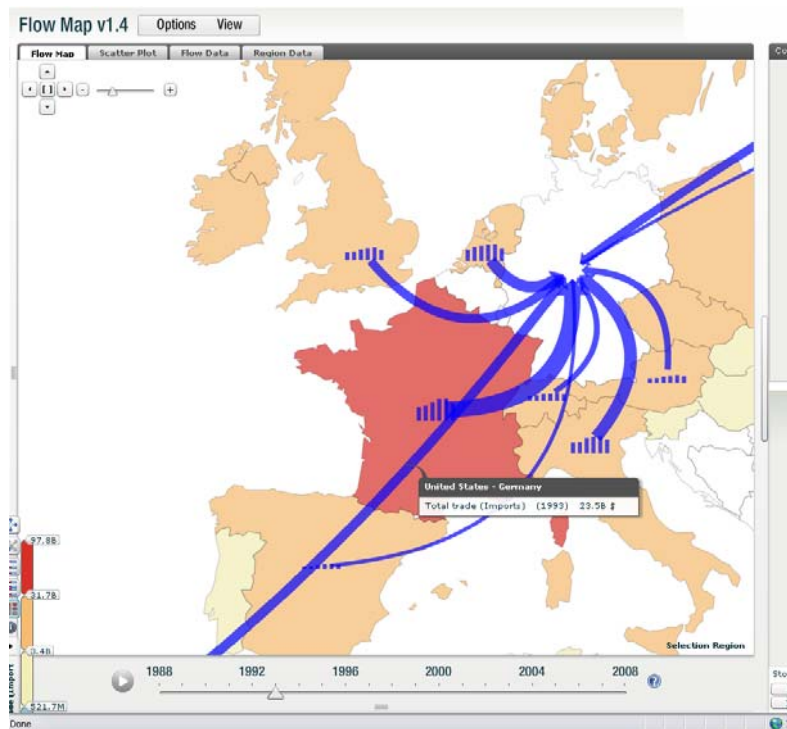


Figure 3. Use of custom graphics for PISA data

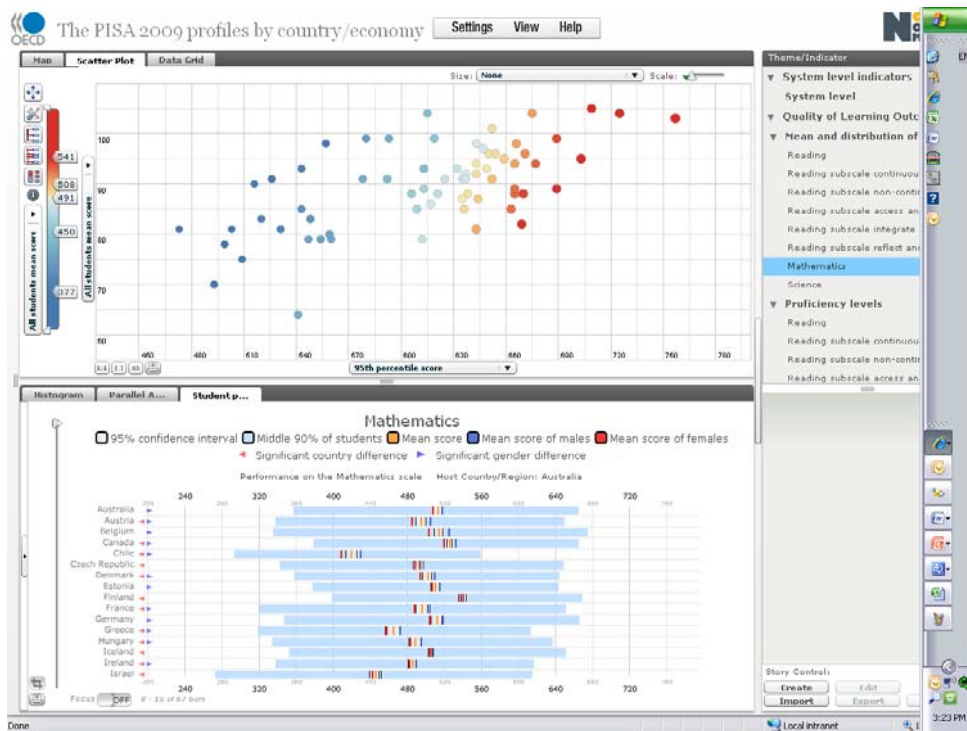
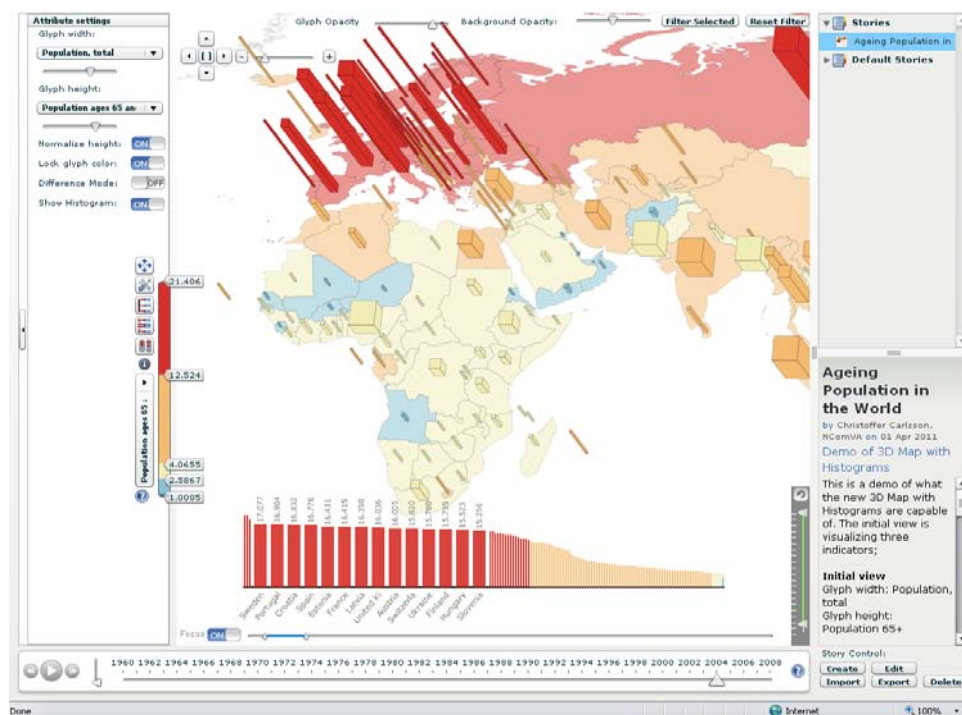


Figure 4. 3D histograms combined with World Map



5. Integrating eXplorer in OECD.Stat

The current version of eXplorer uses a 'snapshot' of data extracted from the data warehouse and loaded into the application using a proprietary data format (in Excel Unicode). We wanted in addition a dynamic graphical view of the latest available data, thus OECD have worked with NComVA to develop a data feed from the corporate data warehouse OECD.Stat. Integrating the two systems in this way allows OECD staff to analyse their own data using eXplorer's graphical components, to discover new correlations and to then easily share them with colleagues via the existing functionality in OECD.Stat for saving queries (and subsequently generating a URL that can then be distributed).

This will speed up the process for deciding which data stories are of interest and should be published and shared with the wider audience on the internet. It will also provide external users of OECD.Stat with a far more interesting and engaging set of graphical tools than existed previously.

The dynamic link from OECD.Stat into eXplorer has the additional advantage of using the Statistical Data and Metadata eXchange (SDMX) format as the data feed. This means that eXplorer can be used by any other organisation or statistical agency that outputs data in SDMX format, and also serves to promote the use of SDMX as a standard for data exchange: the OECD is one of the seven SDMX sponsor organisations (along with the World Bank,

IMF, United Nations Statistics Division, European Central Bank, Bank for International Settlements and Eurostat).

Figure 5. Selecting data in the OECD.Stat Data Warehouse

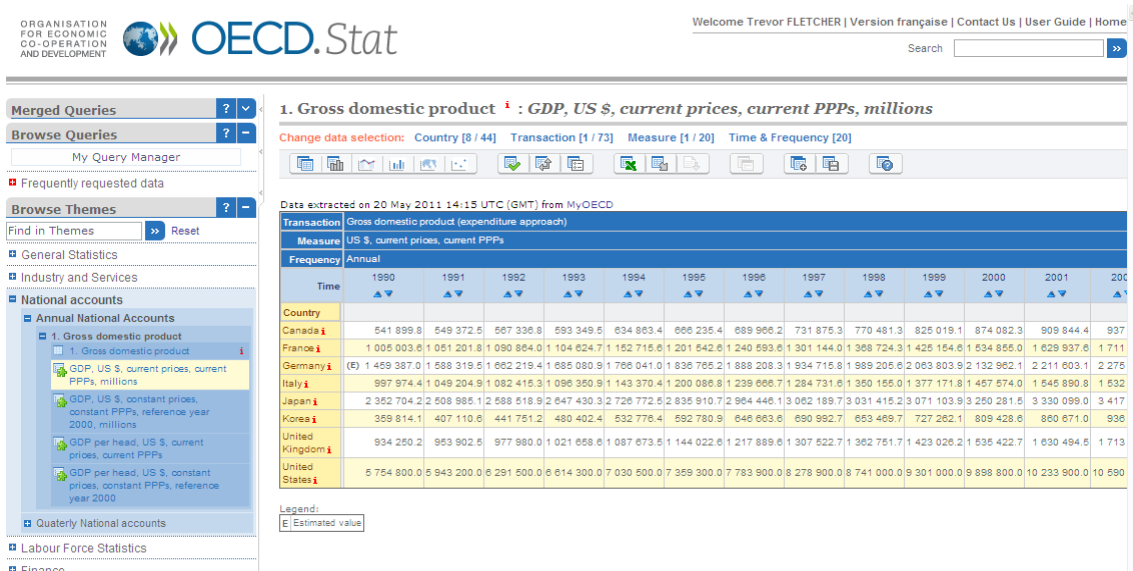


Figure 6. Viewing selecting data with an eXplorer graphical component

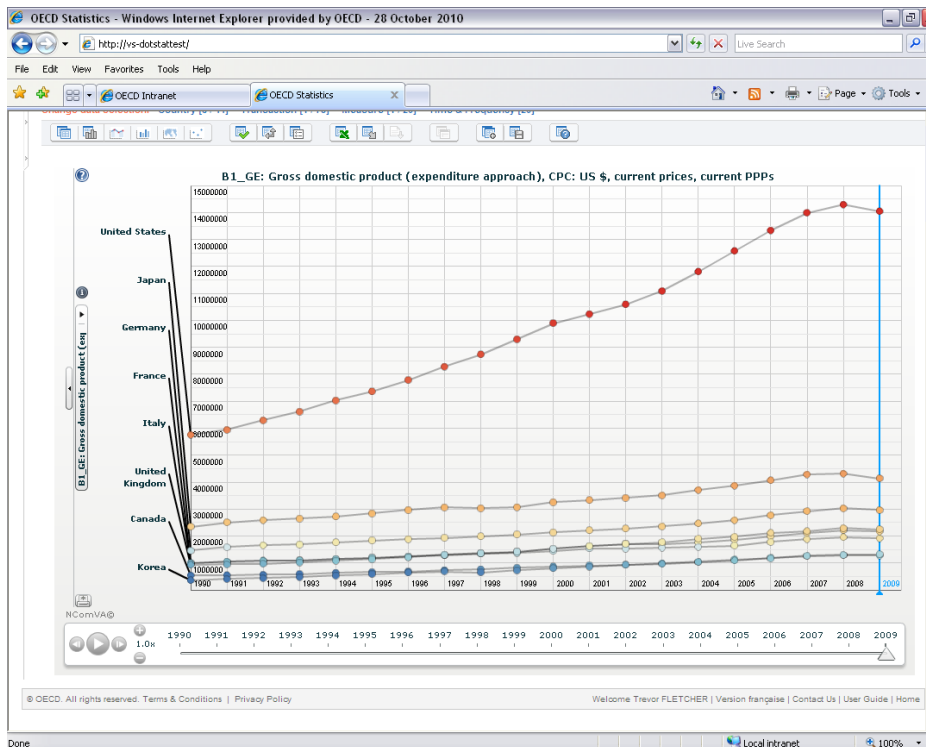


Figure 7. Saving and sharing an animated graphical view URL



6. Using eXplorer vislets in web sites, wikis, blogs and videos

Individual eXplorer vislets can be embedded on web sites, wikis and blogs (see Figure 8), or combined with others to communicate stories simply and effectively. The graphic can be animated by clicking the ‘play’ button and the associated text explains the story.

Figure 8. An eXplorer vislet in a web site

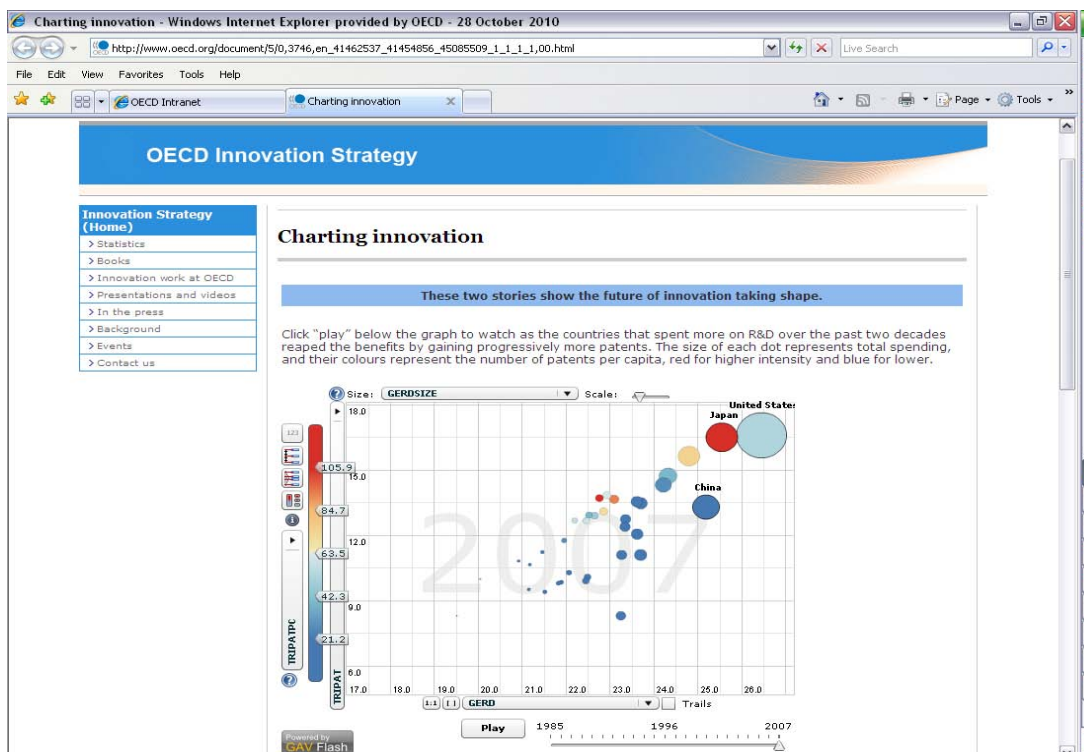
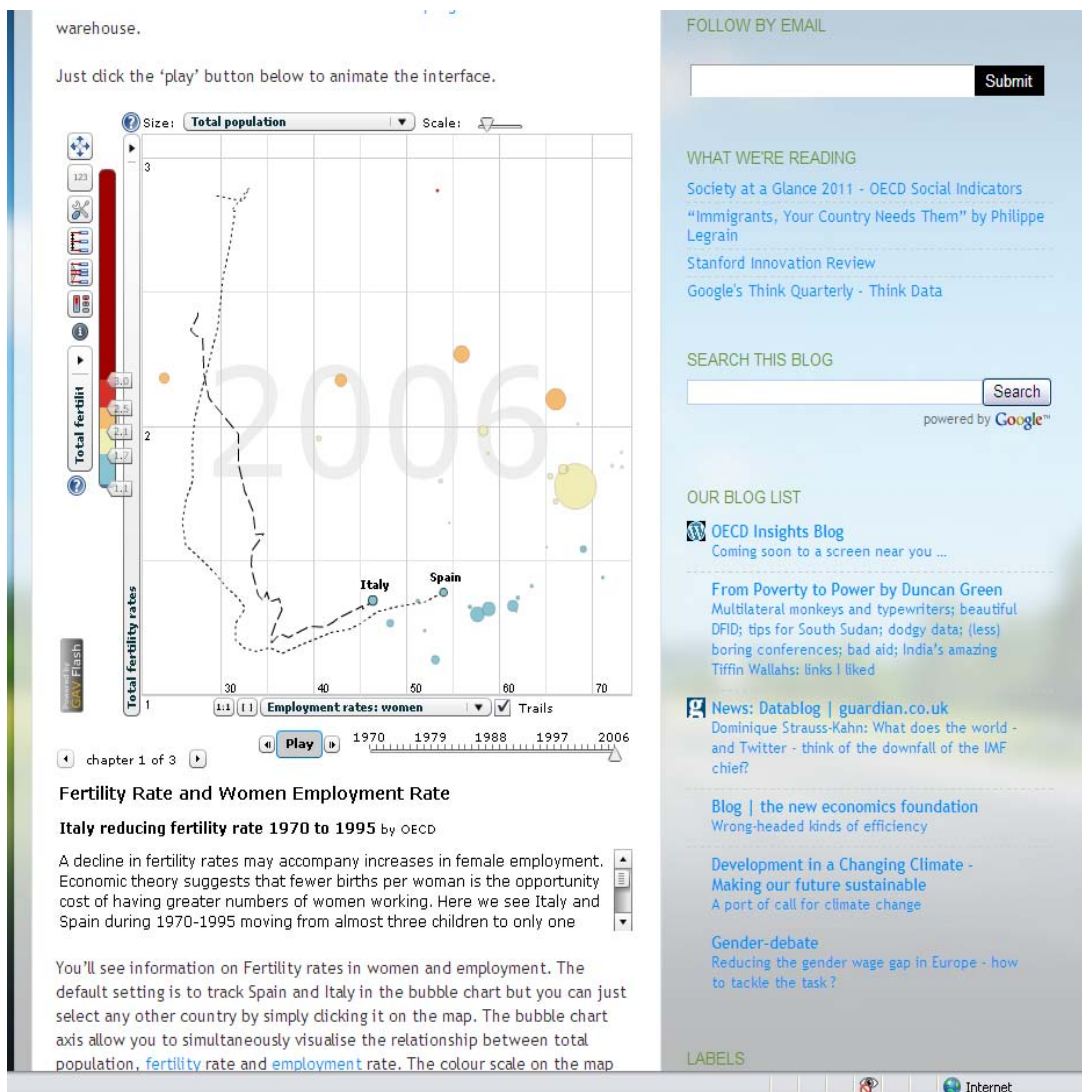


Figure 9. Using an eXplorer vislet in a blog



A data visualisation can be communicated in a much more compelling way by adding a voice-over to the animation. A narrator adds another dimension to explaining the data story – a number of good examples can be seen in Hans Rosling’s YouTube videos. This is an area where the OECD is making an effort to get its own experts to provide narration – however convincing them to do so is not always easy: as the art of discovering data stories and communicating them in this way is a relatively new one, data owners are finding it a challenge how to fit these new tasks into their already busy work plans.

Figure 10. An example of eXplorer used in a BBC video

The image is a screenshot of the BBC News Magazine website. At the top, the BBC logo is on the left, and navigation links for News, Sport, Weather, Travel, and TV are on the right. Below the logo, the word 'NEWS' is in a red box and 'Magazine' is in an orange box. A sidebar on the left lists various news categories: Africa, Americas, Asia-Pacific, Europe, Middle East, South Asia, UK (with sub-links for England, Northern Ireland, Scotland, Wales, UK Politics, Education), Magazine (highlighted), Business, Health, Science & Environment, Technology, Entertainment, Also in the news, Video and Audio, Programmes, and Have Your Say. The main content area shows the page was last updated at 12:28 GMT on Thursday, 2 July 2009. There are links for 'E-mail this to a friend' and 'Printable version'. The main headline is 'An exciting stats website? Believe it' with a sub-headline 'GO FIGURE: Different ways of seeing stats' and a small photo of Michael Blastland. The text below reads: 'A new online tool puts the power of information in the hands of anyone who's interested, and turns data into animation. Here, Michael Blastland, in his regular column, gives just a taste of what the site can do.' Below the text is a screenshot of the 'OECD Factbook eXplorer' interface. This interface shows a world map on the left with a color scale for 'People reporting negative experiences' ranging from -3.5 to 4.5. On the right, there is a scatter plot titled 'Scatter Plot' showing 'People reporting negative experiences' on the y-axis and 'Total population' on the x-axis for the year 2007. The scatter plot shows a positive correlation between population and negative experiences.

7. Other OECD visualisation tools

As mentioned in the introduction, the OECD have a number of other custom designed data visualisations. These are both developed in-house and also use existing commercial and open-source graphical tools. Some examples of these efforts are shown in Figures 11–15.

Figure 11. Custom development for agricultural aid graphics

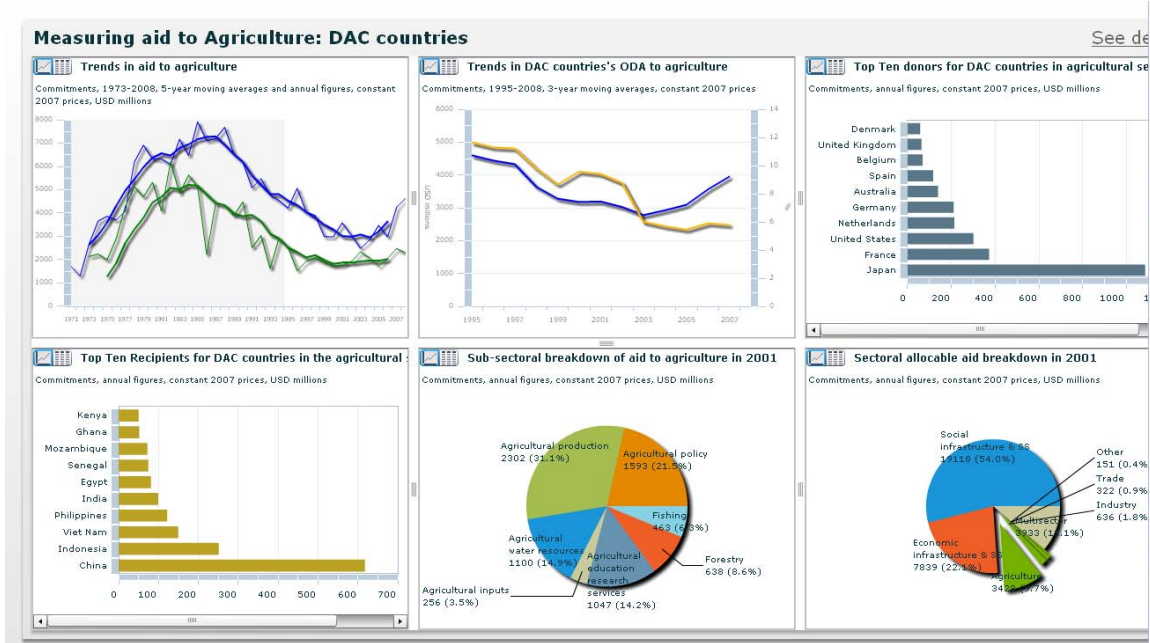


Figure 12. Custom development of Business Cycle Clock

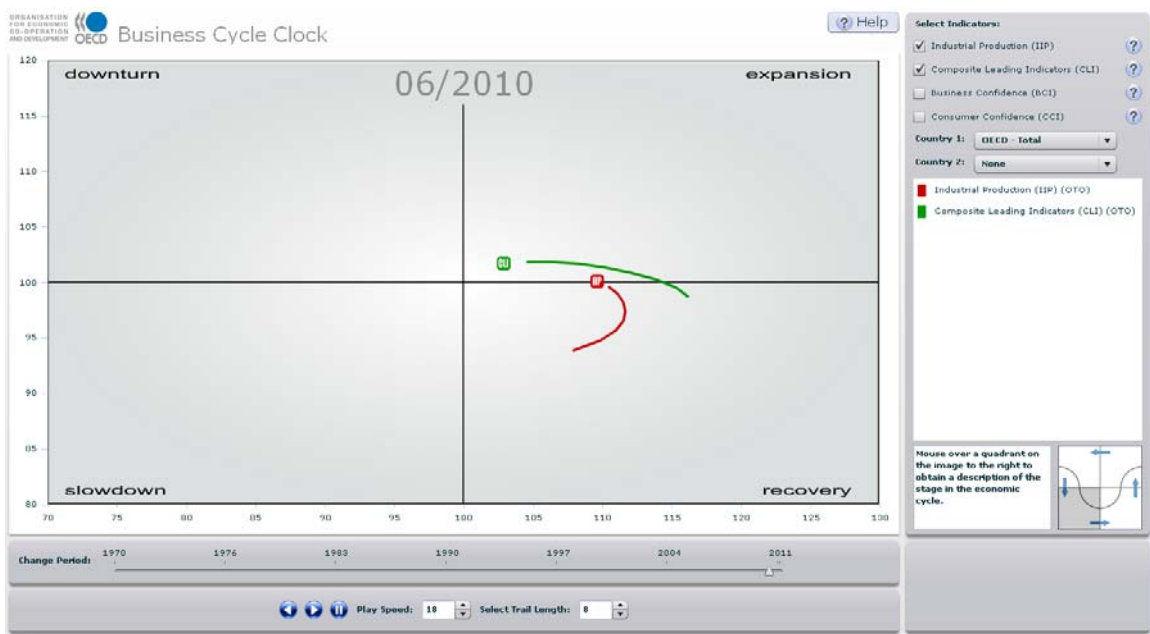


Figure 13. Custom development for OECD Better Life Index

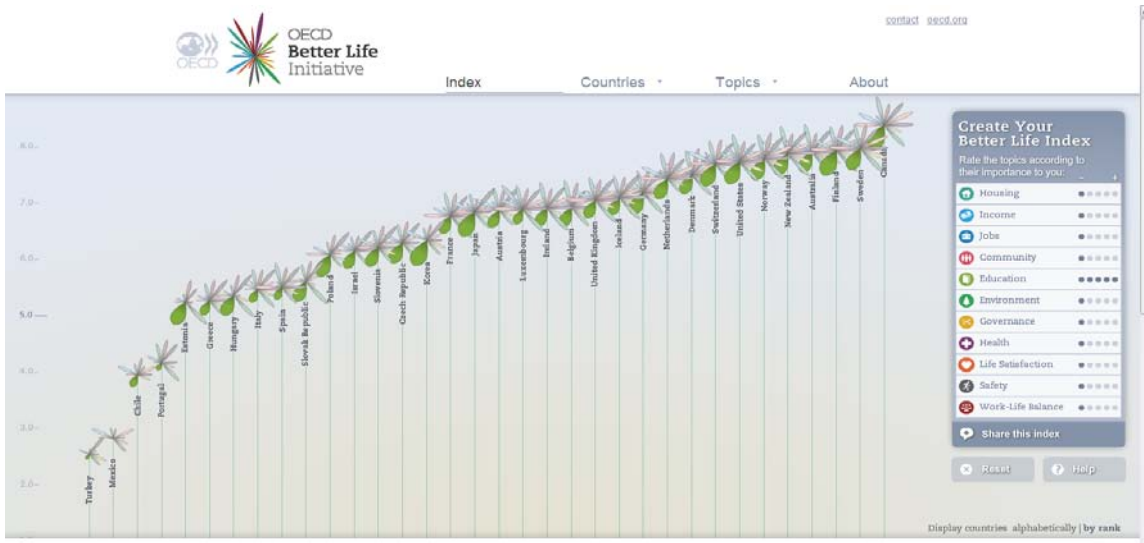


Figure 14. Using Gapminder Trendalyzer for OECD statistics

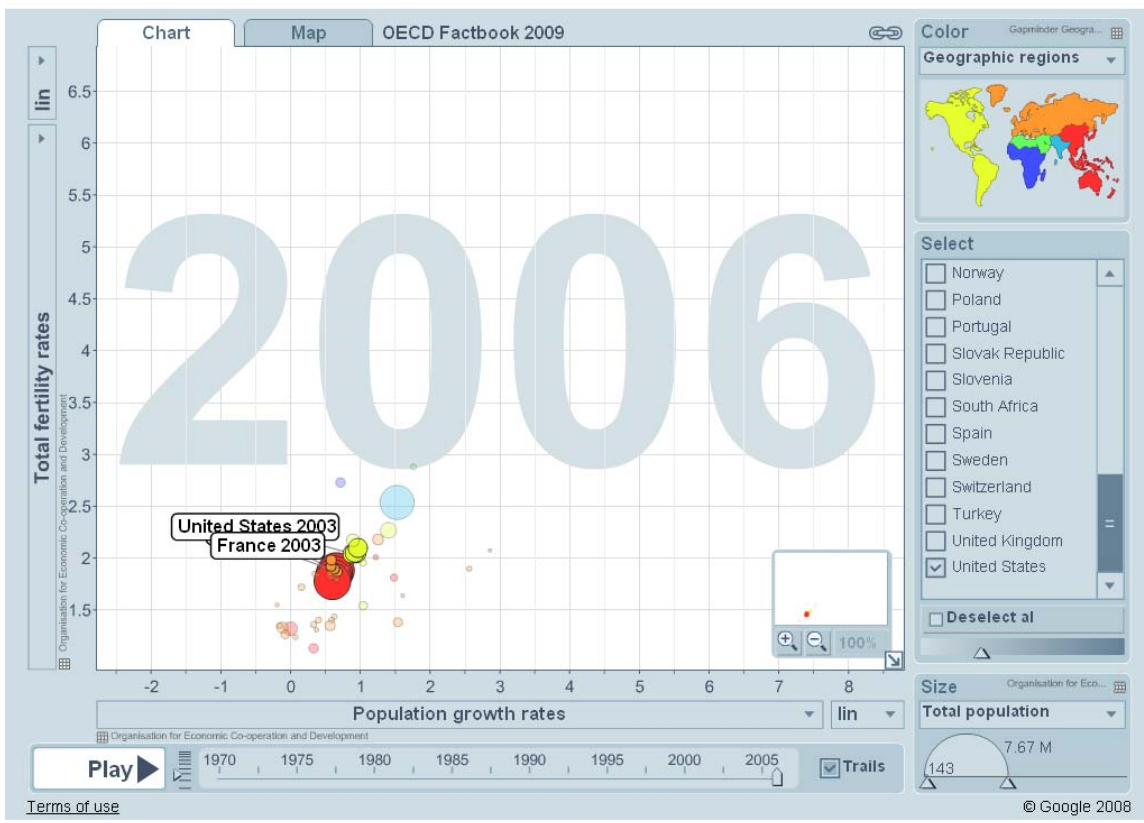
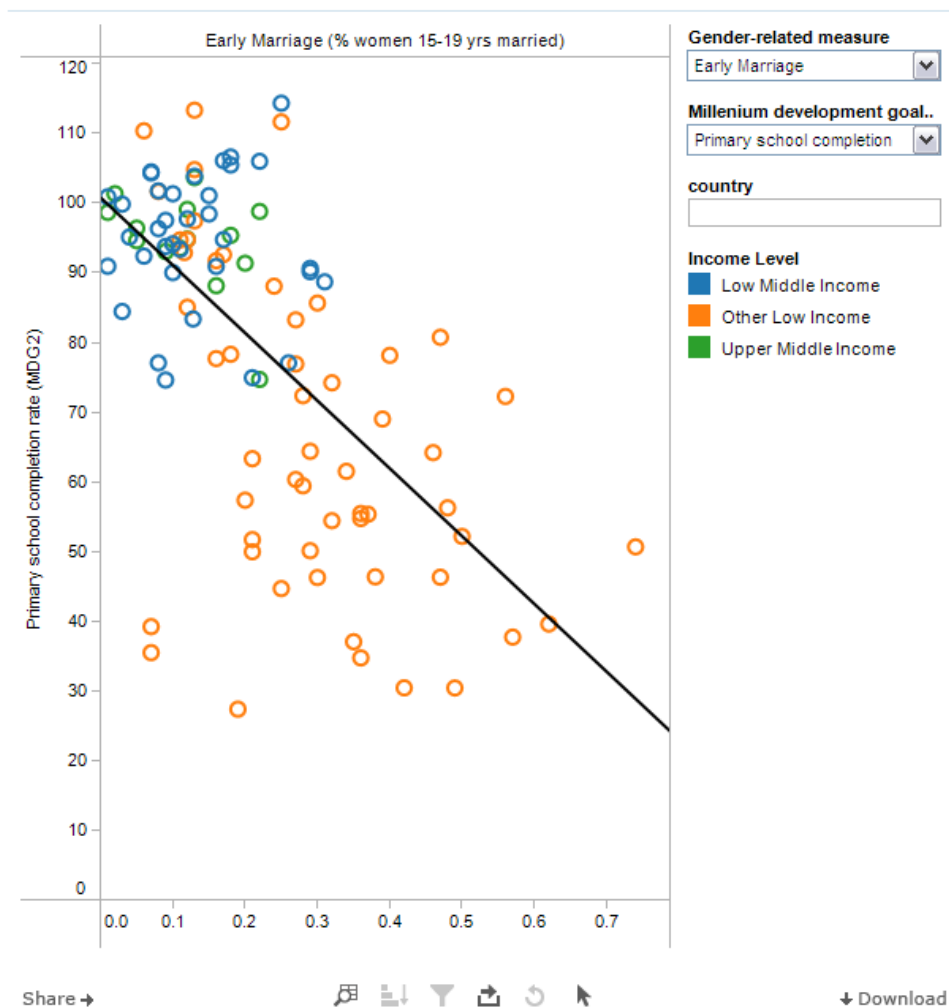


Figure 15. Using Tableau for OECD statistics



8. Conclusion

The OECD has a wealth of data at its disposal. We are working to make this more easily available to users of all profiles, from experts to the general public. Using dynamic, attention grabbing visualisation tools is one of the key ways to achieve this aim.

The OECD Statistics Directorate has been promoting the use of these tools to persuade our data managers and domain experts to make use of them and create data stories of their own that can be made available via a variety of different platforms.

We are actively encouraging data owners to become autonomous in the production of their own animated communication products, combining the graphical tools with video and voice-overs to make the maximum impact and to reach the widest possible audience.

We now have all the ingredients necessary at our disposal: we have the data, we have the domain experts and we have the visualisation tools. We need to combine these together to discover the stories hidden in the data, and then to persuade our storytellers to communicate them. In this way we can better exploit the veritable goldmine of statistics we have at our disposal and provide a service for users to understand better, and make decisions about, the rapidly changing world we are living in.

Tomaz Smrekar

BUILDING AND MAINTAINING TRUST IN OFFICIAL STATISTICS – OUR APPROACH AT THE STATISTICAL OFFICE OF THE REPUBLIC OF SLOVENIA

The paper describes the main pillars and activities connected to building trust in official statistics and in the Statistical Office of the Republic of Slovenia (SORS).

There are four main pillars of building trust in SORS's system: 1. professionalism, quality, and confidentiality of data; 2. awareness of the importance of trust in official statistics among employees; 3. proactivity in networking focused on a variety of stakeholder groups such as members of the Statistical Council and statistical advisory committees, journalists, politicians, researchers, the general public; 4. transparency of SORS's procedures. Different actions designed for strengthening each of the pillars are described in the paper.

Besides the description of the system, the paper also presents a practical example of the recent controversy about the level of public debt in Slovenia. The public debate that emerged included different actors such as high-level politicians, public institutions, journalists, and SORS. This is a clear example how powerful the influence of "ambassadors of official statistics" can be and what an important factor in building and maintaining trust in official statistics and in SORS they are.

1. Introduction to national statistics in the Republic of Slovenia

1.1. Producers of national statistics in Slovenia

SORS is the main producer and co-ordinator of carrying out programmes of national statistics in the Republic of Slovenia. Other producers of national statistics are the Bank of Slovenia (balance of payments, financial and monetary statistics), the Ministry of Finance (general government debt and deficit, public finance statistics), the Agency of the Republic of Slovenia for Public and Legal Records and Services (partly business statistics), the Institute of Public Health (health statistics), the Pension and Disability Insurance Institute (pension statistics), and the Employment Service of Slovenia (partly employment and unemployment statistics).

1.2. SORS

SORS collects data and produces statistics and information services for the needs of public administration bodies, the business sector, the research community and the general public, promotes the use of statistics and develops national official statistics. Statistics must be of sufficient quality, timely and comparable in time, space and internationally. By respecting statistical confidentiality, SORS strengthens trust of data providers and data users. SORS has the power to decide what should be published, how and at what time.

1.3. Statistical Council

The Statistical Council¹ is a professional advisory body for strategic and development questions of national statistics. Its members are high representatives of users and the professional public. The Statistical Council provides advice to the executive function of the national statistics and reinforces the national statistics independence. Even though its role is of advisory nature, it is very much respected due to the high authority of its members.

The members of the Statistical Council are three representatives of the National Assembly of the Republic of Slovenia, one representative of the National Council of the Republic of Slovenia, two representatives of the Government, one representative of the Bank of Slovenia, one representative of employers' organization, one representative of employees' organization, one representative of the judiciary, two recognised experts in the field of statistics and two representatives of SORS. One representative of employees and one representative of employers are appointed by the Economic and Social Council of the Government of Slovenia, whereas the Statistical Society of Slovenia appoints two recognised experts in the field of statistics.

Main tasks of the Statistical Council are to discuss and adopt opinions about the medium-term and annual programs of statistical surveys and their implementation, proposals of acts and other regulations; to propose the methodological bases, rationalisation and modernization of statistical surveys; to provide initiatives and plans for international statistical cooperation; and to propose classifications which shall be used as national standards.

1.4. Statistical advisory committees

There are 23 statistical advisory committees² (Agriculture, Forestry and Fisheries Statistics Advisory Committee, Construction Statistics Advisory Committee, Crime Statistics Advisory Committee, Cultural Statistics Advisory Committee, Development, Research and Technologies Statistics Advisory Committee, Domestic Trade and Services Statistics Advisory Committee, Education and Training Statistics Advisory Committee, Energy Statistics Advisory Committee, External Trade Statistics Advisory Committee, General Government Accounts

¹ http://www.stat.si/eng/drz_stat_svet.asp

² http://www.stat.si/eng/drz_stat_sosveti.asp

Statistics Advisory Committee, Health Advisory Committee, Information Society Advisory Committee, Labour Statistics Advisory Committee, Mining and Industry Statistics Advisory Committee, National Accounts and Financial and Monetary Statistics Advisory Committee, Natural Resources and Environment Statistics Advisory Committee, Population Statistics Advisory Committee, Price Statistics Advisory Committee, Real Estate Statistics Advisory Committee, Regional Statistics Advisory Committee, Standard of Living and Social Protection Statistics Advisory Committee, Tourism Statistics Advisory Committee, Transport Statistics Advisory Committee) with around 400 outside members and 100 SORS members. Members of the statistical advisory committees are appointed by different public institutions and civil society. Statistical advisory committees have a long tradition in the field of national statistics in Slovenia since they were established long before they were formally introduced by the National Statistics Act in 1995. Their work has a significant impact on the development of national statistics in the country at expert level and in co-operation of institutions in common efforts to provide quality, timely and relevant statistics.

2. Building trust in official statistics and SORS

There are four main pillars of building trust at SORS: 1. professionalism, quality and confidentiality of data; 2. awareness of the importance of trust in official statistics among employees at different levels; 3. proactivity in networking focused on a variety of stakeholder groups such as members of the Statistical Council and statistical advisory committees; 4. transparency of SORS's procedures.

2.1. Professionalism, quality and confidentiality of data

There are different activities for enabling professionalism in producing fit-for-purpose products and services, appropriate quality of products and services, and confidentiality of data. These activities include staff recruitment procedure and training, use of sound methodology, adequate statistical process, and protection of data we collect and statistics we disseminate.

2.1.1. Focus on staff

Staff recruitment is a cooperative activity of the head of the department, who proposes the post requirements and qualifications of the expert, the human resources department which is in charge of the internal and external recruitment procedure, the internal committee which proposes the most suitable candidate to the Director-General, and the Director-General, who makes the final decision about who will be the new employee.

Employees can choose among different in-house and external seminars and workshops at different levels, covering all steps of the statistical process. Some seminars such as the one on

data protection are obligatory for different or all groups of employees. The training program is continuously updated. Main elements are statistical literacy, statistical methodology, topical themes related to statistical subjects, data sources of statistics, data analysis and presentation, use of statistical software, data protection and confidentiality, management issues and foreign languages. The program is coordinated by the training committee and executed by senior employees and external lecturers. Employees have a chance to participate in the European Statistical Training Programme and different domestic and international statistical or topic-oriented conferences.

2.1.2. Strategy of quality in SORS³

SORS understands the quality policy as a corporate culture with five basic quality pillars, mutually linked with modern management tools. These pillars are:

◆ *Independent national statistics.* The current arrangement of the national statistical system in Slovenia assures high level of professional independence of national statistics. This position will be further strengthened, since only professionally and politically independent statistics are trustworthy and thus relevant for the users.

◆ *Data users and data providers.* Balancing between users' requests for statistical data and information on one hand and demands to provide data presented to the data providers on the other is becoming increasingly difficult. It is therefore extremely important to monitor to what extent the published statistics meet the expectations and needs of users and the burden caused on data providers due to their obligation to report the data for statistical purposes. Reducing the burden of data providers and assuring confidentiality and protection of the submitted data (which must be used exclusively for statistical purposes) will continue to be fundamental tasks of national statistics.

◆ *Quality of statistical products and related services.* In order to provide high-quality statistical products and services, SORS complies with the standard definition of quality, as well as with the principles of the European Statistics Code of Practice. The dissemination of quality made great progress with the documentation of the quality of statistical surveys in the form of standard quality reports. Regular contacts with international and scientific organizations, sharing professional expertise, common concepts, standards and practices, membership in the European Statistical System, the United Nations, the Organization for Economic Cooperation and Development, the Conference of European Statisticians, etc., have significant influence on the quality of our statistical products.

³ http://www.stat.si/eng/drz_stat_kakovost.asp

◆ *Process orientation of national statistics.* In the process of preparing statistical data and information in the framework of individual statistical surveys, sources used, methodologies, procedures and also costs related to the statistical survey play an important role. With a transparent statistical process and clearly documented procedures, better quality of the results and better cost efficiency are obtained.

◆ *Human resource development.* Training of employees in order to increase the level of quality of statistical products and services includes several aspects: methodological knowledge, information know-how and the promotion of good practices exchange. It is important that the employees in the system of national statistics are aware of the content of the European Statistics Code of Practice and that they work in accordance with it in their everyday professional work.

The main pillars of quality are defined and thoroughly described in the Medium-term Programme of Statistical Surveys 2008–2012.⁴

2.1.3. Data quality components

SORS has adopted the Eurostat's quality definition. According to this definition the quality of statistical data is composed of the following six components:

◆ *Relevance.* Relevance is the degree to which statistics meet current and potential user needs. It refers to whether all statistics that are needed are produced and the extent to which concepts (definitions, classifications, etc.) used reflects user needs.

◆ *Accuracy.* In the general statistical sense this concept denotes the closeness of computations or estimates to the (unknown) exact or true values. Statistical data are namely not equal to the true values because of variability (values vary due to random effects/errors that appear in the implementation of the survey) and bias (values vary due to systematic effects/errors that appear in the implementation of the survey).

◆ *Timeliness and punctuality.* Timeliness of publication reflects the length of time between the period when the statistical phenomenon was observed and the release date of data. Punctuality refers to the time lag between the announced date of publication in the release calendar and the actual release date of data.

◆ *Comparability.* Used concepts should be harmonized, so that the obtained data and information are comparable over time, between geographical areas and between domains.

◆ *Coherence.* Coherence of statistics is their adequacy to be reliably combined in different ways and for various uses. The problems with coherence can occur

⁴ <http://www.stat.si/doc/drzstat/SPSR-ang.pdf>

when data originate from different sources or from different statistical surveys, where the used concepts, classifications and methodological standards are not harmonized.

♦ *Accessibility and clarity.* Accessibility refers to the physical conditions for users to access the statistical data: where and how it is possible to order data, delivery time, how much it costs (clear pricing policy), access to micro data and metadata, availability in various formats. Clarity refers to the environment in which the data are presented: are data accompanied by appropriate metadata, by graphical presentations, by information on their quality and by information about the extent to which additional assistance is provided by the national statistical institute.

Besides the mentioned quality components, SORS also adds a seventh component, *costs and burdens*. This component measures the cost efficiency of statistical surveys and the burden of data providers when they report the demanded data for statistical purposes.

2.1.4. Reporting about the quality of statistical surveys

Standard quality reports for statistical surveys have been regularly prepared by SORS since 2006 and they cover a broad scope of quality indicators for statistical surveys (in line with the Eurostat's standard for quality reports). Later on also annual quality reports for statistical surveys were introduced; these are shorter, translated also into English and include only the most important quality indicators about individual statistical surveys and are prepared every year. These quality indicators provide an overview of various quality components and enable comparability between statistical surveys and between countries. Individual quality indicators can be divided into producer and user oriented types: the former measure quality from the point of view of producers and the latter from the point of view of the users of statistical results.

2.1.5. User satisfaction surveys

User satisfaction with statistical data and services is regularly monitored with various user satisfaction surveys. The results of these surveys are an important source of information about the needs of users and problems they face. They are accompanied with improvement action plans and disseminated.

2.1.6. Confidentiality of data

SORS protects confidentiality of data provided by suppliers and uses them for statistical purposes only. According to the National Statistics Act, the information may only be made public in a way that no individual person, household or company can be identified. Technical

and organisational provisions to safeguard the data against unauthorised disclosure are in place. All the employees have to sign a document obliging them to keep all individual information they get confidential. There are strict protocols for external researchers who have access to micro data for research purposes.

2.2. Awareness of the importance of trust in official statistics among employees at different levels

Among different in-house seminars the ones about dissemination of statistical products, about confidentiality and information security are dealing with the topic of trust in official statistics. In different documents for internal and external use the importance of trust in official statistics is stressed and described.

2.3. Proactivity in networking focused on a variety of stakeholder groups such as members of the Statistical Council and statistical advisory committees, journalists, politicians, researchers, the general public

2.3.1. Politicians

We present and promote official statistics to politicians directly at ad hoc occasions such as governmental meetings, governmental advisory committees, and conferences and indirectly through internet and media.

A good example of the conference organised by SORS (and OECD) was the Round Table on the Measurement and Use of Data on Social Progress and People's Well-Being⁵ with active participation of the President of the Republic of Slovenia, the OECD Secretary-General, SORS's Director-General and many important Slovenian high-level public employees, researchers and opinion leaders. The Round Table brought together the different stakeholders, such as political leaders, policy-makers, the academic community, statisticians, the civil society, and intensive users of statistics. The objective of their discussions was to identify interconnections between better statistical information, better policies, and better outcomes that increase people's well-being and enhance the progress of societies. The Round Table provided an opportunity to exchange views on conceptual and strategic issues, as well as to discuss ways and means for enhancing cooperation between stakeholders. The challenges for national statistical offices were being shared with the participants to the Round Table in order to build consensus on priorities and resources required to do this work. Shared knowledge on why statistical data are not used better in policy-making and on how existing data can be better exploited will help all stakeholders to improve their strategies.

⁵ <http://www.stat.si/brdo2010/eng/Default.aspx?lang=eng>

2.3.2. Members of the statistical advisory committees and those of the Statistical Council

400 outside members of the statistical advisory committees are closely connected with the national statistics as they meet at least once in 18 months and discuss different themes of national statistics. They are well informed about our work, familiar with its results and the future plans so they can act like ambassadors of national statistics. They share their knowledge of national statistics in their working environments and in society as some of them are opinion leaders. Similarly, it is also true for the members of the Statistical Council.

2.3.3. Public sector employees

There is a range of activities aiming at improving statistical literacy of public sector employees. They can choose to attend different seminars and workshops covering specific fields of statistics to enable them to better understand and access statistics in these particular fields of statistics. Knowing our products and services, they use national statistics more. They are the most numerous participants of the traditional annual users' conference where improvement plans for official statistics in national and international perspective are discussed for three days with strong presence of international statistical experts.⁶

2.3.4. Journalists

Improving statistical literacy of journalists is an on-going activity with the involvement of numerous employees. At regular monthly news conferences, besides data presentations and analysis, methodologies are described, too. We help them also by providing them with data in tables, charts and maps, and explanations they need for their work. With our help it is easy for them to use national statistics and they use it more. From 2011 on SORS and the Statistical Society of Slovenia will introduce the reward for the best use of statistics in media.

2.3.5. Students

Improving statistical literacy of students at different levels is, from SORS's perspective, an important task as we perceive them as our future respondents, users, or employees. Students at different levels can choose various seminars and workshops covering specific fields of statistics to enable them to better understand and access statistics. With this initiative SORS strengthens ties with the teaching staff, too.

2.3.6. General librarians

General librarians can attend a specially designed workshop which enables them to better understand and access national statistics. Outside of the big cities, general libraries are impor-

⁶ <http://www.stat.si/statisticnidnevi/?lang=en>

tant partners for pupils at primary and secondary level, searching for information for their seminar work.

2.4. Transparency of SORS's procedures and methodologies

Procedures and methodologies used by SORS are transparent and in the majority of cases published on our web pages. There are only some exceptions⁷ where publishing such information is not in line with some aspects of the code of practice of official statistics. Main examples of transparency are: information on the system of early access to some data before the first release⁸, information concerning the access to micro data⁹, information on the revision of statistical data¹⁰, information on the correction of errors in published statistical data and information¹¹.

3. Example of how the President of the Republic of Slovenia publicly expressed his trust in statistics SORS produces

A few months ago an important financial newspaper in Slovenia began the controversy about the level of public debt in Slovenia. The public debate that emerged included different actors such as high-level politicians, public institutions, economists, and journalists. When public debate emerged, SORS announced an ad hoc news conference on the level of public debt in Slovenia as a topic. It was, not surprisingly, well attended by the media and the public debt data based on internationally accepted methodology, public image and trust in SORS calmed down the controversy. A few days later the President of the Republic of Slovenia was asked in a TV interview in prime time on national TV about the level of public debt in Slovenia. He answered that he knew how high the public debt in Slovenia was because when the controversy had broken out he visited SORS's web pages. He added that he had full confidence in statistics SORS produces because he knew the level of SORS's professionalism.

4. Conclusions

The process of building and maintaining trust in official statistics in Slovenia is characterised by complexity of actions, involvement of different players and continuity. There are four

⁷ Weights for calculation of inflation, exact numbers for cell suppression, and similar procedures for dealing with confidentiality

⁸ http://www.stat.si/eng/stat_predhodnidostop.asp

⁹ http://www.stat.si/eng/drz_stat_mikro.asp

¹⁰ http://www.stat.si/doc/metod_pojasnila/Revision%20of%20statistical%20data.htm

¹¹ http://www.stat.si/doc/metod_pojasnila/Correction%20of%20errors%20in%20published%20statistical%20data%20and%20information.htm

main pillars of building trust in SORS: 1. professionalism, quality and confidentiality of data; 2. awareness of the importance of trust in official statistics among employees; 3. proactivity in networking focused on a variety of stakeholder groups; 4. transparency of SORS's procedures. Every employee is involved in the process with different tasks. The example of the recent controversy about the level of public debt in Slovenia shows that the influence of the "ambassadors of official statistics" is powerful and they are an important factor in building and maintaining trust in official statistics and in the Statistical Office of the Republic of Slovenia.

Leon Østergaard

MANAGING AND MEASURING FACTORS OF TRUST IN STATISTICS

Trust in official statistics is dependent on several factors which have to be managed professionally by statistical institutions. Some factors commonly agreed upon are transparency in the announcement of statistical releases and equal treatment of users – no pre-release access. A factor sometimes overlooked is the handling of errors and corrections. This paper will argue that users accept errors if they are announced loud and clear, whereas attempts to hide errors or disguise them as updates or corrections is detrimental to trust and confidence in statistics.

Managing trust and confidence in statistics is only possible with systematic monitoring of trust. The paper presents examples of how this may be done and includes references to an OECD-project aiming to make possible international comparisons of trust in statistics.

1. Introduction

Trust in official statistics and in statistical institutions is dependent on several factors which have to be managed professionally by statistical institutions. The following list is certainly not complete, but among the most important factors are:

1. independence from political influence;
2. legal mandate;
3. impartiality and objectivity;
4. statistical know-how;
5. equal access for all users;
6. clarity in communication.

In this paper I will concentrate on the last factor. This is not to say that the others are less important, but because this is a field in which Statistics Denmark has been introducing new tools and methods.

2. Clarity in communication

Some years ago Statistics Denmark introduced a new policy on handling errors. This was partly a result of an unfortunate experience, where we received criticism in connection with

the publication of corrected figures. Major users argued that our website should be used much faster and more actively to inform of the problem. We judged that the criticism was deserved and decided to improve procedures.

In this paper I shall not deal with scheduled revisions or updates but only with ‘real’ errors – that is the publishing of wrong figures as a result of miscalculations, sloppy proof reading or methodological mistakes on the part of the statistical institution. Euphemistically, this is often referred to by statisticians as “unscheduled revisions”.

All statistical institutions make mistakes from time to time, but understandably they are not eager to admit it. In my 12 years of acquaintance with statisticians I have met some standard reactions when it comes to correcting errors:

- ◆ “Is this really necessary?”
- ◆ “Do we have to publish it so visibly?”
- ◆ “I would rather just call it an update.”

3. The problem with errors

3.1. Knowledge is not gathered systematically

The tendency to suppress information on errors has the effect that knowledge of the occurrence of errors in statistics is not gathered systematically. We don’t get information about the causes of errors, how often or under what circumstances they occur. This has two consequences.

First, we lack the information necessary to learn from our mistakes. Information on the causes and conditions of errors is not spread in the organization for everybody to learn from, but kept on a local basis, at best.

Second, we are not able to declare the quality of our statistical product on its most important parameter, namely correctness or reliability. We inform users of the release date, sample size and confidence limits of our statistics, but not of the risk that the figures may simply be wrong.

3.2. Hiding errors puts credibility at risk

Statistical institutions may hide errors in various ways, ranging from simply never admitting them to the clever publishing of ‘revised’ or ‘updated’ figures in distant parts of the website. Whatever way is used, the credibility of the institution is put at risk for a very simple reason.

Wherever human beings are acting, errors are committed. This simple experience is shared by all human beings. Hence, if a statistical institution never admits to publishing errors, it will look suspicious in the eyes of the users.

The consequences for your credibility may be even worse if you are caught in the act of trying to disguise an error as a ‘revision’ or ‘update’, or if you just try to correct formerly published figures without telling your users about it.

You really have no choice but to make errors visible, both to the users, the general public and internally in the organization. An error should be seen as an opportunity for the institution to demonstrate that errors are taken seriously, corrected at the earliest opportunity and corrected figures displayed very visibly to the users.

4. Advantages of making errors visible

4.1. Gathering information on errors

The advantage of making errors visible internally in the organization is that it becomes possible to gather systematic information on the phenomenon – and to produce internal statistics on errors! This is necessary to learn from the mistakes.

In order to make statistics, firstly you have to start with a classification. To make statistics on errors, you have to classify them according to their seriousness in the eyes of the users.

Secondly, you got to have reliable data. Unfortunately the data providers – in this instance the statisticians – will not necessarily report unbiased on their mistakes. Hence, you have to invent ways of gathering information that gets around this.

Finally, you have to publish the results: internally to improve quality procedures and reduce the occurrence of errors, and externally to give the users a true picture of the – hopefully small – probability of your figures being wrong.

4.2. Publishing errors loud and clear to the users

Publishing corrected figures is a task not different from other communication tasks. Firstly, you have to identify the target group – that is, the users most likely to have been misled by the erroneous figures. Secondly, you have to choose the channel or media most likely to reach precisely these users.

In the case of subscription-based statistical information, the task may be fairly easy – you know exactly who have received the wrong figures and can forward an e-mail, a corrected publication or a corrected fact sheet to precisely these people with an explanation of the nature of the error.

It is much more difficult when you do not know exactly who has had the possibility of being misled – the erroneous figures may for example have been published to a broad audience on your website. In this case you have no choice but to announce the error and the correct figures very loud and clear on you website.

The purpose of this is twofold. Firstly, the users who have in fact been misled by the error will receive a good service. Their confidence in you will increase as they will expect to be told again next time an error should occur. Secondly, the users not affected by the error will notice that you are announcing mistakes loud and clear. Their confidence in you will increase as well, as they can see that you are not hiding mistakes.

Of course this is only true to a certain extent. The error in itself and the correction does not add to the credibility of the institution. In the short run, it may cause criticism from affected users. If the number of admitted errors is very high, your credibility will certainly be negatively affected – deservedly so! But in the long run, an error from time to time – which is corrected loud and clear – will increase the users’ confidence that your statistics are generally trustworthy.

5. Deciding a policy on handling of errors

5.1. The classification of errors

In Statistics Denmark’s policy on the handling of errors, an error is defined as an incident making it necessary to correct previously published statistics, without this being planned from the outset. We categorize errors in three groups: blemishes, limited errors, and serious errors.

Blemishes are defined as errors not interfering with the basic understanding or use of the statistics by the users. Examples may be spelling errors or errors in dates or links. Errors in statistical figures will never be regarded as just blemishes.

Limited errors are defined as errors in statistical figures where it is unlikely that the users are misled, or where only minor groups of users are at risk of being misled. When judging this we take into consideration where in the statistics the error occurs – in the main conclusion or in a secondary table – whether the error is more or less obvious to the user, and whether new figures are scheduled to be published soon.

Serious errors are defined as errors where there is a real possibility that not insignificant groups of users are misled. The classification of errors as limited or serious is decided in agreement among the Chief Communication Officer, the head of the relevant statistical department and the director concerned.

5.2. Dealing with blemishes

Blemishes are only corrected online and no action is taken for printed versions of publications. When a blemish is discovered, it is reported to the Communication Centre, and we will correct it as fast as possible online, usually immediately. No mention is made in the publication of the correction.

5.3. Dealing with limited errors

Limited errors are corrected – again as fast as possible – online, and a note is made in the statistics saying “Corrected compared to the original version”. All corrections are made very visibly in red. The date and time of the correction is stated underneath the original date of publication of the statistics. No step is taken to actively forward information on the correction or the corrected version itself to known users, subscribers, etc.

No action is taken as to the printed versions already distributed to users. In our major publications it is clearly stated in the preface that if errors are discovered, a corrected version may be found at a specific web address.

The balanced reaction to limited errors should be seen in light of the way limited errors are defined. The need for correcting the error has to be balanced against the need not to disturb users unnecessarily with corrections not relevant to them.

5.4. Dealing with serious errors

If it is decided that an error is serious, the publication in question – most likely a news release – is immediately removed from the website. It is substituted by a message that an error has been found and the time when a corrected version may be expected. The Chief Statistician will be informed of the incident straight away.

Next, the statistical division and the Communication Centre produce a corrected version of the news release. The corrected publication will be a complete copy of the original publication but with a short introductory paragraph in red on the error and how the error affects the statistics. The date and time of the correction is stated below the original date of publication. The headline will state that it is a corrected version, and the date and time of the correction is stated in the list of news releases on the website.

As fast as possible, a short note on the error and the expected time for a corrected version is placed at the front of our website, right under the day's news releases. From here we link to the corrected publication when this is ready. This note remains on the front of our website for at least two full working days.

All known subscribers to the erroneous news release will be told of the error and will get a copy of the corrected publication. An e-mail with similar content is forwarded to all major news media and news agencies and to a group of known analysts. The e-mail will contain a copy of the corrected news release if it is ready – if it is not, we inform of the character of the error and the likely time of correction.

5.5. A system for collecting information on errors

A system has been developed that systematically collects information on the number and nature of errors and makes the errors visible internally in the organization. The system is based on a reporting module at our intranet where the following information has to be given:

- ◆ Type of statistical publication at fault;
- ◆ Seriousness of the error (blemish, limited or serious error);
- ◆ When was the error discovered and by whom?
- ◆ Type of error and responsibility;
- ◆ Cause(s) of error;
- ◆ When was the error corrected?

- ◆ Actions taken to correct the error;
- ◆ Actions taken to prevent future errors.

The reporting of errors is the responsibility of our news release editor, to whom all errors must be reported immediately after detection. When causes and consequences of the error are known the editor fills in the reporting form on the intranet after consultation with the statistical department responsible for the statistics.

The uploading of the intranet reporting form causes a database to be updated with information on the error. At the same time, an internal e-mail is generated with information on the error. This e-mail is automatically forwarded to the relevant statistical department, to the editorial staff of our news releases, to the Chief Communication Officer and to the management. The automatic process generates maximum internal transparency.

5.6. Measuring errors against a standard

When we implemented the new policy on the handling of errors, we had no idea of the magnitude of the problem. We have now several years of experience with statistics on the occurrence of errors.

Our latest “Strategy 2015” states that we aim to reduce the occurrence of errors (total for serious and limited) to 2% of our news releases (approximately 500 issues a year). Our contract with the Ministry of Economic and Business Affairs for 2011 states that there should be serious errors in no more than 1.25% of the news releases.

As per 1 June the statistics for total errors stands at 2.16% and for serious errors 0.54% of all news releases.

Measuring errors in Statistics Denmark has certainly increased the focus of staff members on errors and how to avoid them. It will take a lot of effort to reduce their occurrence further. Making the errors visible internally and externally is an important step towards securing trust in statistics.

6. Measuring trust in official statistics

Every second year Statistics Denmark conducts a survey among the Danish public to analyse knowledge on and attitude towards the institution. This has been done since 2000, and we have tried to change the questions as little as possible. Hence we have a long time series with data on trust in statistics and in the national statistical institution.

Trust in statistics changes only very slowly over time – the general impression is that there has been a slow rise in trust since the year 2000.

We tried to compare the Danish results with those from the – formerly rather few – countries carried out similar surveys, primarily Sweden, Finland and to some degree the United

Kingdom. For some years, however, we have taken part in the OECD Working Group on Measuring Trust in Official Statistics which last year published recommendations on how measurements could be carried out to make the results internationally comparable.

Hence in our 2010 survey a number of questions have been added and others adjusted to adapt to the formulations of the questionnaire developed in the OECD working group. The overall method of the survey has also changed to be partly based on online interviews, whereas the last survey in 2008 was founded purely on phone interviews.

This means that our results can now be compared with those from other countries, whereas they can only to a limited extent be compared with earlier Danish results.

6.1. Method

The interviews for this survey were conducted in October 2010. A total of 985 persons aged 16–74 were interviewed out of a sample of 1 536 persons. One out of three chose to answer online, whereas two thirds were interviewed over the phone. Afterwards the results have been calibrated to correspond to the full population. Answering online creates more distance to the interviewer and is therefore likely to make the respondents answer less positive than in direct contact with an interviewer. Statistics Denmark carries out the survey itself which entails a bias. In 2001 we asked another research institution to pose two of the questions simultaneously, and the result clearly indicated a bias toward more positive answers when the survey is carried out by the institution that is its subject.

6.2. General results

- ◆ 83% of the Danes trust Statistics Denmark and only 4% distrust it. The level of trust is higher among people who know the institution well and have been in contact with Statistics Denmark within the past two years. 94% of the people who know the institution well trust it.

- ◆ The level of trust in Statistics Denmark is similar to trust in the police, the court system and the central bank.

- ◆ Internationally the Danish trust level peaks along with Australia, New Zealand and Sweden. The Danes have a similar high level of trust that the figures are free from political interference.

- ◆ 91% of the Danes believe that information given to Statistics Denmark is kept confidential.

- ◆ The public's trust in confidential treatment of information is very high in Denmark as well as in Sweden and New Zealand.

- ◆ Three out of four Danes consider statistics on society important or very important as a basis for political decisions.

- ◆ Nine out of ten Danes have as a minimum heard of Statistics Denmark. However, two out of ten only know the name.

◆ One out of four Danes has been in contact with Statistics Denmark within the past two years. Most of them have used the website (Statbank.dk) or been interviewed.

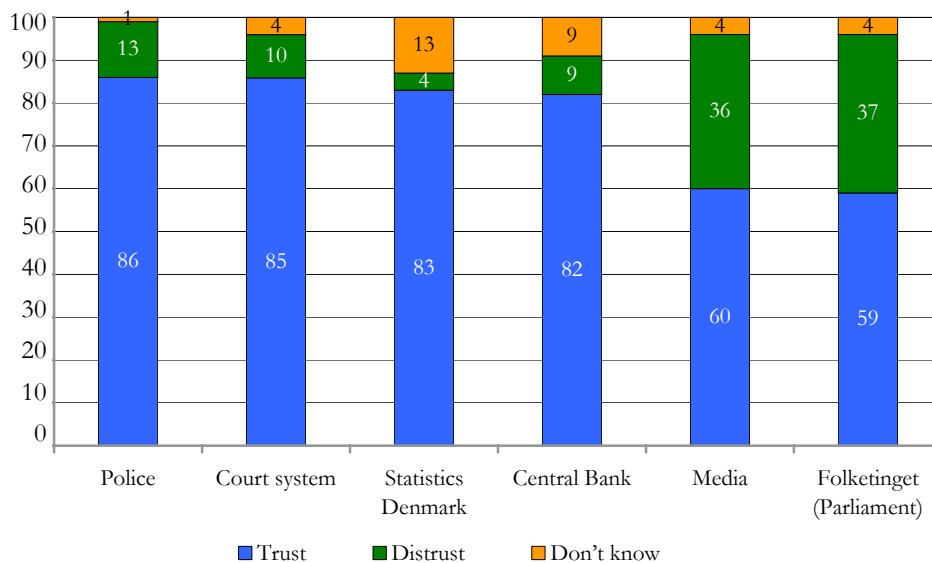
7. Trust in Statistics Denmark

7.1. Statistics Denmark third most trusted after the police and court system

Question: “I will name a list of institutions. For each, please indicate whether you tend to trust it or tend not to trust it.”

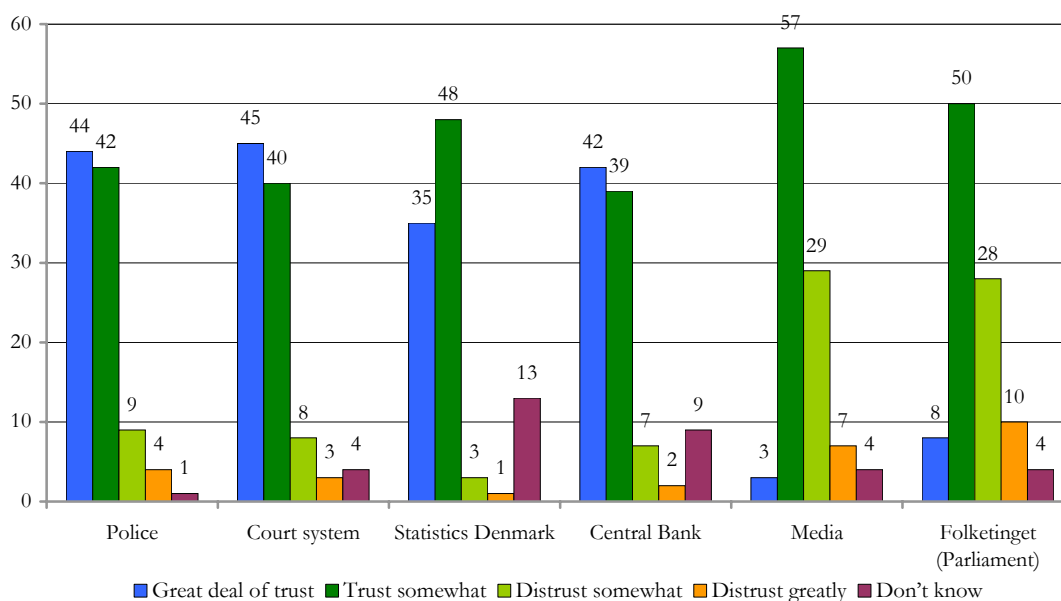
Eight out of ten Danes trust Statistics Denmark. 1% distrusts it greatly, while 4% distrust it somewhat.

Figure 1. Trust/distrust in different institutions (percent)



The four institutions with the highest score, the police, the court system, Statistics Denmark, and the Central Bank, share a high and similar level of trust. Statistics Denmark differs from the other institutions by having the smallest part who expresses distrust (4%) and a relatively large share of “don’t know”, namely 13%. After the four institutions there is a distance to the two last ‘institutions’, the media and the parliament. One out of three Danes mistrusts them, and that is a much higher level of mistrust than in the case of other institutions, particularly Statistics Denmark.

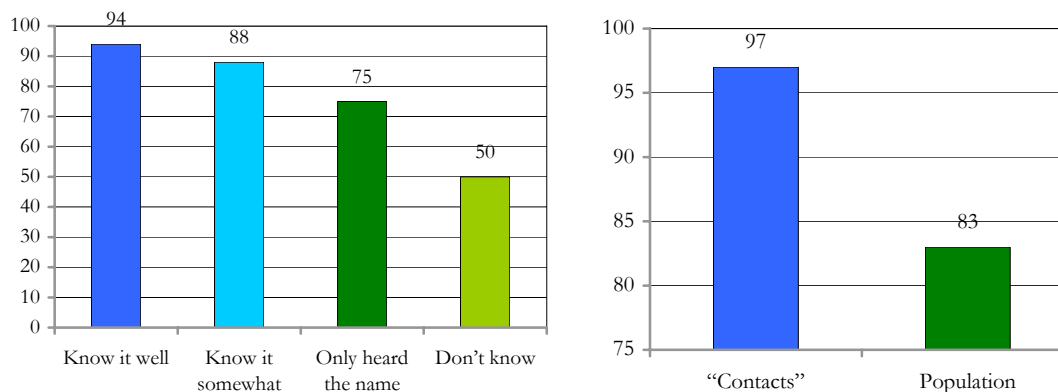
Figure 2. The level of trust/ distrust in different institutions (percent)



The eldest, retired and persons with a primary school background have the lowest level of trust but differences are small. Trust is highest among highly educated, self-employed persons and people aged 50–64 years.

Knowledge of the institution and contact with it makes a difference. 94% of those who state that they know Statistics Denmark well express trust in the institution, whereas this only goes for every second of the persons who don't know it at all. Persons who have had contact with the institution have a higher level of trust than the general public. Almost everyone who has had contact within the past two years state that they trust it greatly or somewhat as opposed to 83% of the general public.

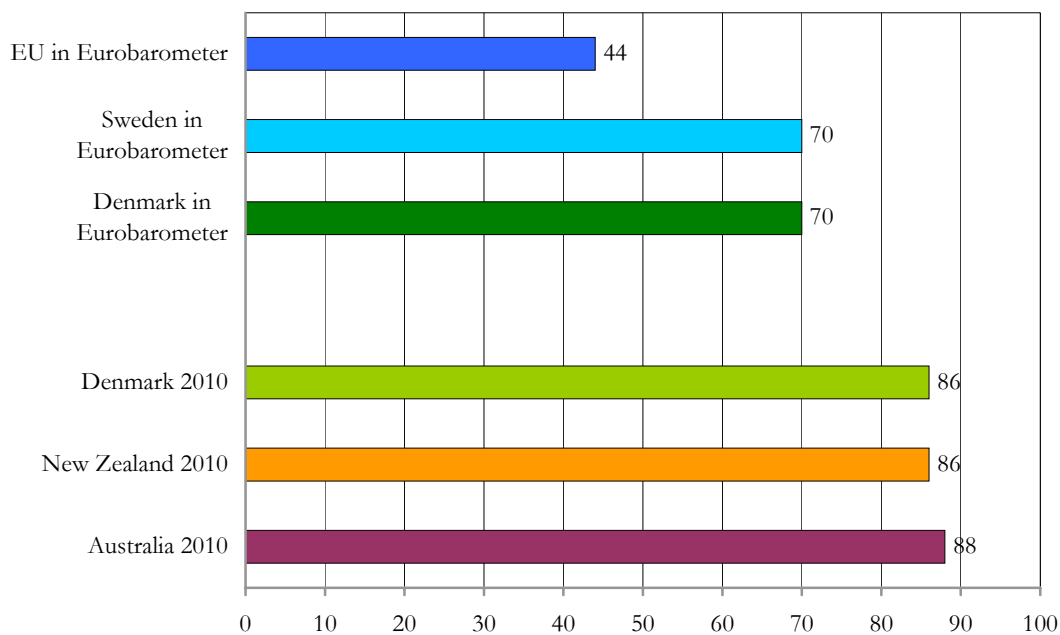
Figure 3. Knowledge of and trust in Statistics Denmark (percent)



In an international perspective, the level of trust in Statistics Denmark and in other public institutions is generally quite high. Denmark has traditionally been one of the countries in the world with the highest confidence in society's institutions. However, a number of studies claim that this confidence has decreased since year 2000.

A Eurobarometer survey shows that 70% of the Danes trust official statistics which places Denmark on a European first place along with Sweden. The average level in the EU is trust from 44% of the population. However, the Danish level is surpassed by Australia and New Zealand.

Figure 4. Trust in national statistics (percent)



7.2. Seven out of ten believe that Danish statistics are unbiased

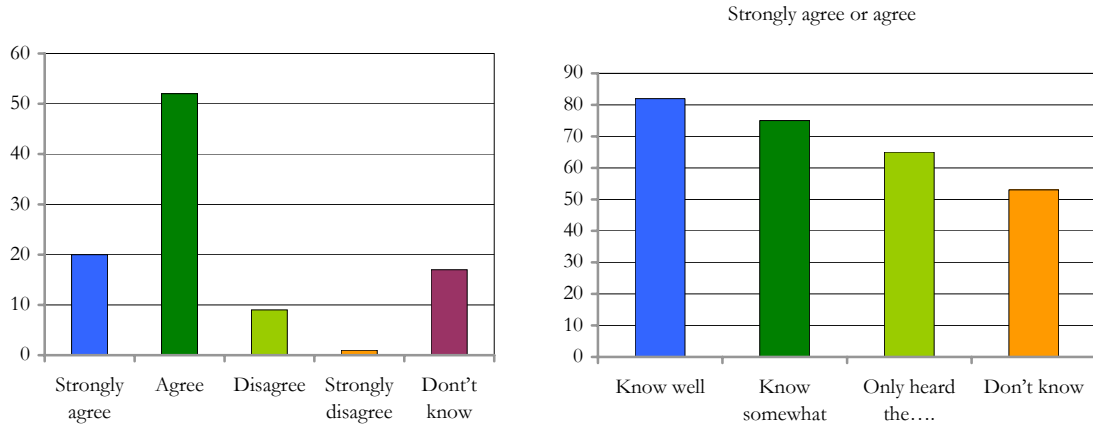
Question: *“To what extent do you agree or disagree with the following statement: Statistics provided by Statistics Denmark are produced without political interference?”*

Two out of ten agree strongly that figures from Statistics Denmark are produced without political interference, while five agree. Altogether, 72% of the Danes believe that the figures are unbiased. Only one out of ten disagrees, while a relatively large share of 17% doesn't know.

Knowledge of the institution enhances trust in the neutrality of the figures. 82% of those who know Statistics Denmark well agree that the figures are produced without political interference, whereas this is only the case for every second of those who don't know the institution.

Figure 5. Trust in the neutrality of the figures of Statistics Denmark (percent)

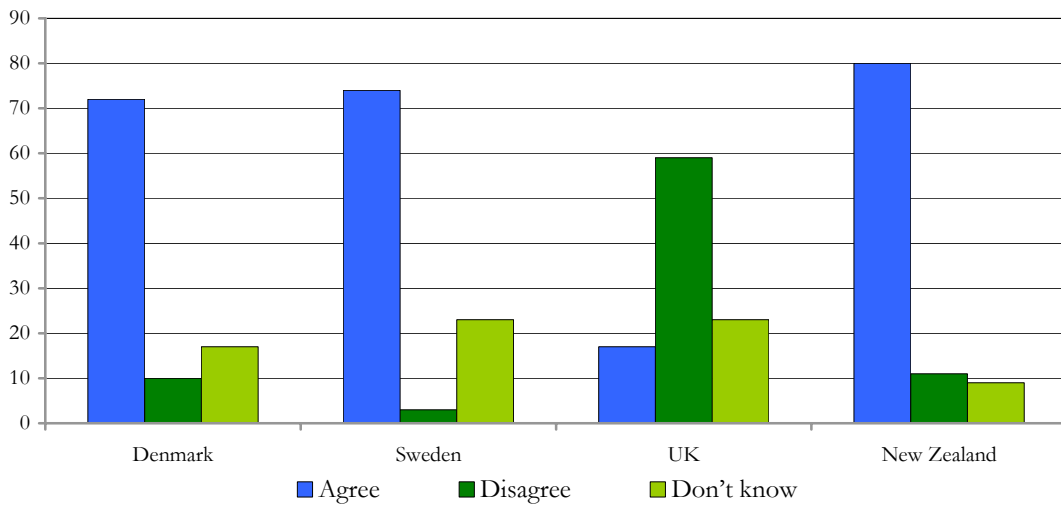
Statement: “Statistics from Statistics Denmark are produced without political interference.”



In an international perspective, the Danes have a high level of trust in unbiased figures, and the same is the case in Sweden and New Zealand. The figures from New Zealand are based on those who already know the institution, which is probably the reason for the very high level. The corresponding figure for Denmark is 78%. The Swedish question concerns trust that the *institution* Statistiska centralbyrån (Statistics Sweden) *itself* is objective and apolitical. The British population is considerably more sceptical towards the neutrality of official figures, which only 17% believe are produced without political interference.

Figure 6. Trust in the neutrality of official statistics in different countries (percent)

Statement: “Agree/disagree that official figures are produced without political interference.”



8. Perspective

Systematic and professional management of trust in official statistics must be based on efficient monitoring of trust and confidence. You can only manage what you are able to measure. Measuring trust has up till now been confined to a few national statistical institutions, but the results of the OECD working group will certainly increase interest in this field internationally.

The same goes for the systematic handling of errors as one small but important step towards securing trust in statistics. The Danish policy in this area has already inspired development in several other countries.

References

ØSTERGAARD, L. [2006]: How to use mistakes to improve credibility. *Statistical Journal of the United Nations ECE*. Vol. 23. No. 4. pp. 269–275. IOS Press.

ØSTERGAARD, L. [2005]: Reputation monitoring. *Statistical Journal of the United Nations ECE*. Vol. 22. No. 2. pp. 157–162. IOS Press.

FELLEGI, I. [2010]: *Report of the electronic working group on measuring trust in official statistics*. OECD Meeting of the Committee on Statistics. 7–8 June. Paris.

MACKIE, M. [2011]: *Public image study of Statistics Denmark*. 18 February.
http://www.dst.dk/upload/public_image_survey_2010.pdf

François Brunet

FACTORS OF TRUST IN STATISTICS IN FRANCE

Insee (National Institute for Statistics and Economic Studies, France) has built a barometer on its own image and on the general opinion about statistical indicators. Three different groups of people were interviewed: 1. the general public, i.e. the French residents (in 2006, 2009, and 2010); 2. the visitors of the Insee website (www.insee.fr) (in 2009 and 2010); and 3. the economic, political and media opinion leaders in France (in 2009).

It emerged that, on the one hand, as an institution, Insee enjoys a very positive image among all three groups but, on the other hand, the general public was suspicious towards socio-economic indicators. The three main factors of distrust towards indicators are the use made of figures by politicians; the gap between statistics and reality: statistics do not seem to reflect the respondent's personal experience; and the lack of information: there is not enough information on how indicators are produced.

However, the main factor of trust in statistics is the trust in the institution which publishes them. Indeed, when changing the order of the survey questions, one can see that the 'Insee trademark' improves the credibility of statistics.

In order to strengthen the image of indicators, Insee made a list of short- and medium-term actions which need to be carried out, according to three axes: 'proximity' (people who are close to Insee have a better image of the institute and of the indicators); 'pedagogy' (a factor of mistrust towards indicators is that people do not know how they are made); and 'proof' (another factor of mistrust towards indicators is that they do not seem to correspond to reality).

The actions target three categories of public: the general public who have a bad opinion on indicators; the media and economic leaders with whom it is necessary to maintain good relations; and leaders of the public action with whom strong relations exist in regional offices and with whom it is necessary to communicate at the national level.

These actions deal with communication, dissemination, publications and indicators. Examples of possible actions presented are: pro-active relations with journalists, putting an end to the 'dictatorship of the average', dealing with social media, broadcasting videos on the web, further integrating the communicational aspects into the calendar of publications, setting up a teaching module, etc.

1. Introduction

This paper presents findings on the level of confidence in statistical indicators in France on the one hand, and in Insee, the French statistical institute, on the other hand.

2. The French statistical barometer

Insee (National Institute for Statistics and Economic Studies, France) has built a barometer on its own image and on the general opinion about statistical indicators. Three different groups of people were interviewed:

- ◆ the general public, i.e. the French residents, the French people (in 2006, 2009 and 2010), 1 000 people each time, through interviews in the street;
- ◆ visitors of the Insee website (www.insee.fr) (in 2009 and 2010), 2 000 people each time, through online survey; and
- ◆ economic, political and media opinion leaders in France (in 2009), 400 people, through interviews by telephone.

Web visitors and leaders are very well educated. 60% of website visitors have attained tertiary education compared with about 15% among the general public.

Interviews were carried out by private agencies for deontological reasons, in order to have an analysis of the results by a specialist in public opinion surveys.

Online surveys were carried out by Insee itself: when an Internet user was visiting our website, a pop-up window invited him to respond to a questionnaire, until the number of respondents reached 2 000.

Questions were almost the same for the three groups in 2009 and 2010 (in 2006 there were fewer questions, and they only dealt with indicators). All answers were assigned to a predefined list of codes (see questions for web visitors in Appendix 1). The questions related to two fields: 1. to the national statistical institute (Field 1); and 2. to statistical indicators (Field 2).

For the general public in 2009 and 2010, and for the visitors (of our website) in 2010, we divided the respondents into two samples. For the first sample, the questions of Field 1 were asked before the questions of Field 2; for the second sample the questions of Field 1 were asked after the questions of Field 2.

We have seen that the order of the questions has a great effect on the results! The results are much more positive with the order of the first sample but they are more reliable with the order of the second sample.

3. The results of the barometer: the French statistical institute enjoys a very positive image but...

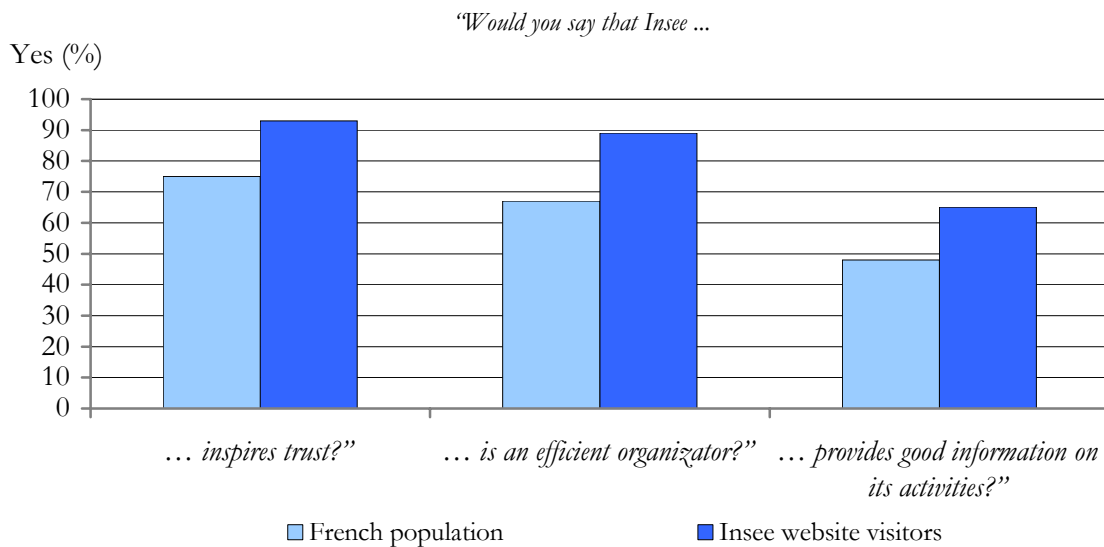
3.1. First result: the French statistical institute enjoys a very positive image

Survey question: *“And can you tell me if you have a very good, rather good, rather bad, or a very bad opinion on Insee?”*

It emerged that, as an institution, Insee enjoys a very positive image among all three groups: about 90% of the visitors to our website and leaders, and more than 75% of the general public have very good or rather good impression on the French statistical institute (about 10% of the respondents were unable to give an opinion).

Moreover, people say that Insee inspires confidence, is efficient and delivers indispensable information. But they think less often that the institute provides good information on its own activities.

Figure 1. Insee enjoys a very positive image



Sources: TNS-SOFRES and Insee surveys, 2010.

3.2. Second result: The closer you are to the NSI, the more you have trust in indicators

Survey question: *“And in general, would you say that you have trust in figures and data published on the economic and social situation in France?”*

On the one hand, the people who are close to Insee, the visitors and the leaders, have trust in socio-economic indicators (about 80%). But, on the other hand, the general public – who does not know the French statistical institute well – is suspicious towards them.

For the three publics, the level of trust in indicators is lower than that in Insee.

Survey question: *“For each of the following figures and data, please tell me if, for you, it reflects very well, fairly well, fairly badly, or very badly what is actually happening in France in this area? ”*

The level of confidence in the different indicators varies widely depending on the nature of the indicator. Among the general public, only between 30 and 40 percent of the respondents have trust in the unemployment rate, in the consumer price index (CPI) and in the public debt

indicator. On the contrary, many people (about 80%) have reliance on demographic indicators (birthrate, census), and 60% have confidence in the gross domestic product growth rate.

Among the two other publics (visitors and leaders), the respondents have higher trust in each indicator (and the majority relies on all of them), and they class the indicators in the same order in term of trust.

3.3. Third result: there are three main factors of distrust

The three main factors of distrust towards indicators are:

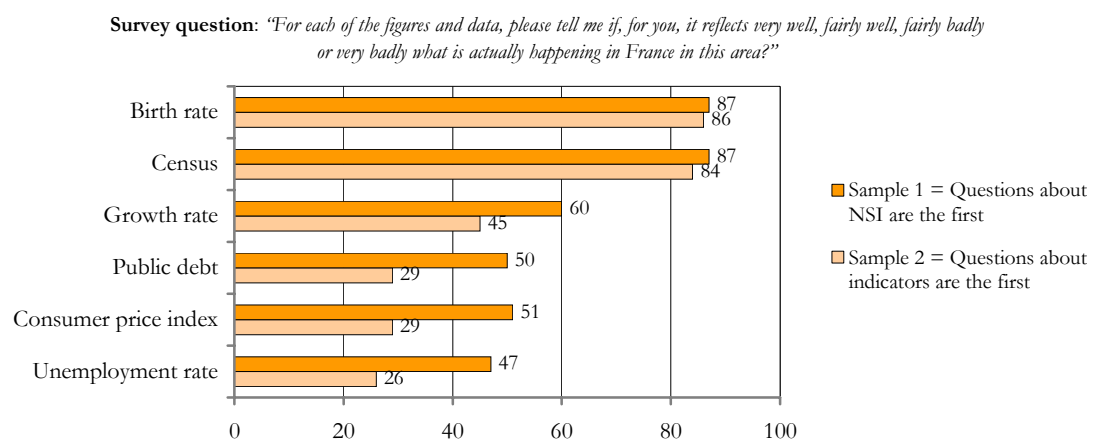
- ◆ the use made of figures by politicians: politicians say what they want;
- ◆ the gap between statistics and reality: statistics do not seem to reflect the respondent’s personal experience;
- ◆ the lack of information: there is not enough information on how indicators are produced.

However, the main factor of trust in statistics is the trust in the institution which publishes them.

3.4. Fourth result: Insee trademark improves the credibility of statistics

Indeed, when changing the order of the survey questions, one can see that the ‘Insee trademark’ improves the credibility of statistics. The effect is very strong for the general public. The respondents who are interviewed first on Insee and then on statistical indicators have trust in statistical indicators (14 percentage points) more often than the respondents who are interviewed first on statistical indicators. For several individual indicators, the gain can reach more than 20 percentage points.

Figure 2. The order of the questions has a very strong effect (percent)



Note: Figure 2 regards those of the general public whose answer was “very well” or “fairly well” to the survey question.

On the contrary, indicators do not reduce the reputation of Insee. All respondents have a good opinion of the institute, even when the questionnaire begins with the questions about the indicators. Between the two samples of respondents, there is no significant difference about the opinion on Insee.

Moreover, the people who do not trust indicators have almost as much trust in Insee as the people who rely on indicators.

4. Insee should do something

Between 2006 and 2009, the confidence of the general public in indicators fell by 12 percentage points in three years. Then, in the period of 2009 and 2010, it was stabilized. We do not know if it is the end of the fall (and the beginning of a rise) or a pause during the fall.

Anyway, today people have trust in Insee but there is too much mistrust in statistical indicators on the part of the general public. We must put an end to this situation otherwise trust in Insee will decrease.

4.1. Insee has made a list of general actions

In order to strengthen the image of indicators, Insee has made a list of short- and medium-term actions which need to be carried out, according to three axes:

- ◆ “proximity”: people who are close to Insee have a better image of the institute and of the indicators; and many people want to know more about Insee’s activities;
- ◆ “pedagogy”: a factor of mistrust towards indicators is that people do not know how they are made;
- ◆ “proof”: another factor of mistrust towards indicators is that they do not seem to correspond to reality. Many would like these figures and data to reflect better their personal conditions and those of their immediate circle.

The actions target three categories of public:

- ◆ the general public who have a bad opinion on indicators;
- ◆ media and economic leaders with whom it is necessary to maintain good relations;
- ◆ leaders of the public action with whom strong relations exist in Insee regional offices and with whom it is necessary to communicate at the national level.

These actions deal with communication, dissemination, publications and indicators. Some examples of actions are as follows:

- ◆ Pro-active relations with journalists in order to introduce our experts and our activities, as well as to understand the need of journalists. Since January 2010, we have established contacts with some of them, in particular with the staff of TF1, the first TV-channel in France. Now TF1 brings more information on Insee during its news broadcasts;

- ◆ Putting an end to the ‘dictatorship of the average’: giving more information about distribution. For example, we have issued results for the first time in 2010 on very high incomes and other results on income, consumption and savings by household category. Moreover, in the Stiglitz Commission Report, there are recommendations in this direction: looking at income and consumption rather than production, giving more prominence to the distribution of income, consumption and wealth;

- ◆ Dealing with social media and smartphones because they are the new media people use while being complementary to our current communication and website. We have been on Twitter (because of its speed, in order to reach new people by the Retweets) and on SlideShare (because of its pedagogic aspect) since the beginning of 2011. We are preparing a site for smartphones;

- ◆ Setting up a teaching module or a pedagogic on-line tool with teachers;

- ◆ Adding in some publications or press releases a sentence from a public decision maker, who says how he/she uses the results and indicators that are published.

4.2. Insee is preparing actions for the consumer price index and the unemployment rate

Consumer price index and unemployment rate are the indicators in which people have the weakest trust. Thus, we need to focus on actions for these two indicators.

For example, regarding CPI, we are planning to act in the following three directions.

Communication tools

- ◆ Building a new list of arguments: the major questions and critics about CPI and the answers. This list should be easy to use by everyone including the agents of our institute;

- ◆ Therefore, improving and updating the FAQ (frequently asked questions) on the site;

- ◆ Creating a quiz. It would be very simple and would contain ten questions. Each question will offer two or three possible answers;

- ◆ Producing for the first time a short (4-minute) video on CPI as in the Netherlands, dealing with questions like: What is CPI exactly? Is the inflation the same for everybody? How does the national institute calculate CPI? Who are the users of this indicator and what do they use it for?
- ◆ Posting a pedagogic slideshow on SlideShare: “CPI in short”.

Website:

- ◆ Improving the CPI simulator (it calculates your personal price index) as in the United Kingdom and Germany;
- ◆ Adding a pedagogic tool on the consumers’ expenses as in Germany (the price kaleidoscope);
- ◆ Creating a page for CPI accessible from the home page in one click, for presenting the main results and tools about this indicator;
- ◆ Overall, writing with simpler words what is on our website about CPI.

Figure 3. The French CPI simulator

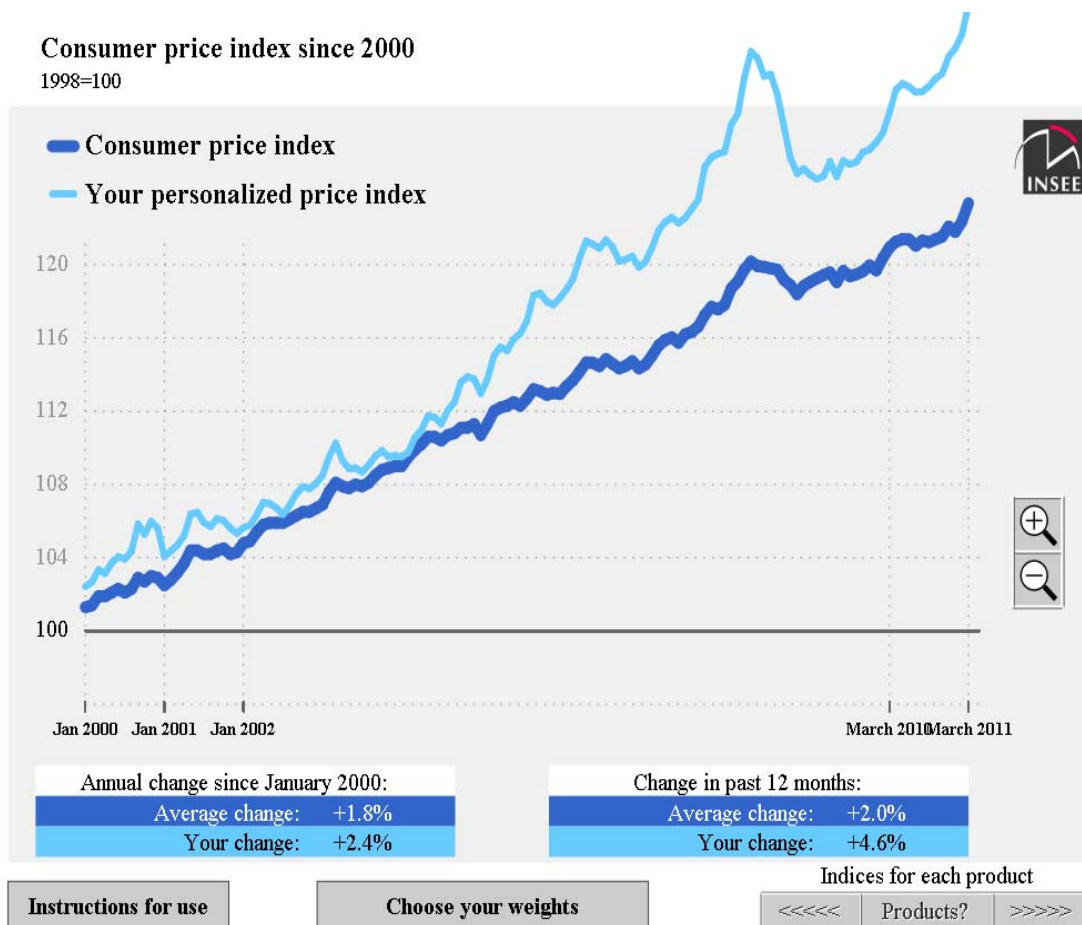
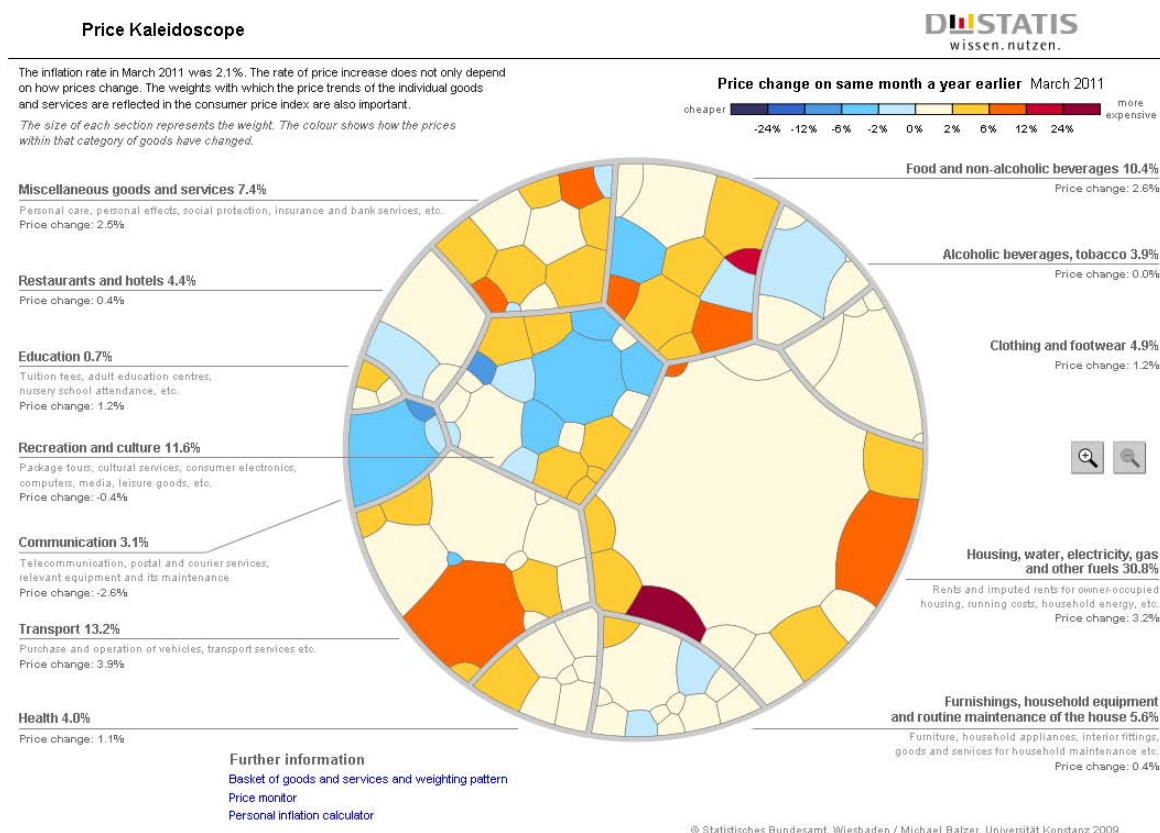


Figure 4. The price kaleidoscope of Destatis



Source: Destatis (German Federal Statistical Office).
<http://www.destatis.de/Voronoj/PriceKaleidoscope.svg>

Publications: new indicators and communication concerns

- ◆ Adding the extreme (strongest, weakest) price changes of single products in the publication of CPI;
- ◆ Studying the link between CPI and the frequency of purchase (the perception of inflation relies on the prices of products that are most frequently consumed);
- ◆ Building indicators of dispersion for products and consumers;
- ◆ Further integrating the communicational aspects into the calendar of publications. Choosing the date of the publication in order to have greater communication impact.

4.3. Insee published the main results

The main results were published in the Insee's Annual Report 2010. However, there are more details in this paper than in the Report (cf. Appendix 2 on the results published in the Report).

We will repeat the compilation of the barometer in future years to monitor the level of public confidence over time and to assess the actions. We will interview French people every year or every two years and the tors to our website every year. We will also interview the economic, political and media opinion leaders,if necessary.

5. Conclusion

Finally, some answers to the four questions of the session are given below.

1. *What is the role of statistics in building trust in institutions?*

In France the answer seems to be none in building trust in Insee. There are four points which appear to argue in favor of that:

- ◆ The level of trust in indicators is lower than that in Insee.
- ◆ The use made of figures by politicians is the main factor of distrust toward indicators.
- ◆ When changing the order of the survey questions, one can see that the ‘statistics mark’ does not change the credibility of the statistical institute.
- ◆ The people who do not trust the indicators have almost as much trust in Insee as the people who trust them.

However, today people do not know Insee well. So there may be a role of statistics in raising public awareness of the institute in the long term. Nevertheless, if the general public continues to have a bad opinion on statistical indicators, Insee’s reputation will decrease.

2. *Does trust in statistics depend on statistical culture and statistical literacy?*

The answer is yes. Two points argue in favor of that:

- ◆ The closer you are to the NSI, the more you have trust in indicators.
- ◆ Web visitors and leaders are very well educated, they often have trust in indicators.

Moreover, among the general public, people with lower secondary education attainment have even less trust in statistical indicators than the others (the difference is about 10 percentage points).

3. *Does trust in institutions lead to trust in statistics?*

In France, the answer is clearly yes, concerning Insee. Two points argue in favor of that:

- ◆ The main factor of trust in statistics is the trust in the institution which publishes them.
- ◆ When changing the order of the survey questions, one can see that the ‘Insee trademark’ improves the credibility of statistics.

4. *What is the role of communication in building trust in statistics?*

In France, it has a great role in my opinion. For years, Insee communicated especially with journalists. Now, the institute is trying to widen its communication in particular in the direction of the general public via traditional mass media and social media because today, owing to the Internet and the progress in the education level, people communicate more than ever.

We will see in one or two years if our efforts bring a better reputation to the French statistical indicators.

Appendix 1

Questions for web visitors (2009 and 2010)



Your opinion on Insee

1. Do you know Insee ?

- Very well
- Fairly well
- A little
- Only by name
- Not at all

2. What is your opinion on Insee ?

- Very good
- Fairly good
- Fairly poor
- Very bad
- No opinion

For each proposal below, indicate to what extent it corresponds to your opinion :

	Totally corresponds	Fairly corresponds	Does not really correspond	Does not correspond at all
3. Insee is a powerful organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Insee is a trust-worthy organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Insee is an organization which provides information on its activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Insee produces and disseminates information which is independent from any political power	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Insee produces and disseminates reliable pieces of information on the French economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Insee produces and disseminates information which reflects well reality as you experience it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Insee produces and disseminates information which is indispensable to analyze the social and economic situation in France	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Insee produces and disseminates information which is accessible to all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Insee produces and disseminates information which is easily understandable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Your opinion on economic and social indicators

For each of the following data, indicate to what extent it reflects, according to you, what is actually happening in France in the given field :

	Reflects very well	Reflects rather well	Reflects rather poorly	Reflects very badly	Does not know
Data from population census	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unemployment rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benchmark rates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Growth rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Birth rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Purchasing power	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Index of consumer prices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public debt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. On a general basis, do you trust figures and data which are published concerning the economic and social situation in France ?

- Yes, totally
- Yes, fairly
- Rather not
- Not at all

Nota bene: Arrangements relating to the various indicators appear on the screen in random order; answer to Question 20 is mandatory.

21. You expressed your mistrust towards figures and data which are published regarding the economic and social situation in France. Among the following propositions, indicate the two main reasons for this mistrust:

- These figures correspond neither to what I experience, nor to what people around me experience
- Politicians use them to express what they want
- These figures are not explained well
- I do not know what they correspond to, nor how they are produced
- I do not trust organizations which produce these figures and data
- There are too many controversies regarding these figures
- Too many figures and data are published

You can change your choices at any time by simply clicking on the boxes

Question 21 presented only if the modalities “rather not” or “not at all” were chosen for Question 20 (then move on to Question 23).

Question 22 presented only if the modalities “yes, totally” or “yes, fairly” were chosen for Question 20.

Appendix 2

Main published results

The main results were published in the Insee’s Annual Report 2010 (compare http://www.insee.fr/en/insee-statistique-publique/default.asp?page=connaissance/rae/partie1_3.htm). They are as follows:

Three out of four French people trust INSEE

“Insee is a trustworthy organization”. Polled by TNS-SOFRES in late September 2010, three out of four French people “fairly agree” or “fully agree” with that statement. Among visitors to our website, nine out of ten trust the institute, according to an October 2010 online survey entitled “Tell us what you think”. Nine out of ten persons also view the information produced by Insee as “indispensable” and “reliable”. And the same percentage regard the institute as “efficient”. The results were identical in 2009.

While the French trust the Institute, they do not necessarily feel the same about all “figures and data published on the economic and social situation in France”. Many would like these figures and data to better reflect their personal conditions and those of their immediate circle. They also want to know more about Insee’s activities. At times our website visitors find the commentaries and explanations too technical, and regret an excessive use of specialized vocabulary. This is an educational shortcoming that the Institute is working to correct with the help of its users.

Blagica Novkovska

BUILDING A BASIS FOR MEASUREMENT OF THE VALUE ADDED IN OFFICIAL STATISTICS

The development of statistical systems on one hand and the fast evolution of the Information and Communication Technologies (ICT) on the other are creating many challenges in the way how statistical institutions deal with different groups of users and their statistical literacy.

One of the challenges is how to assure optimum increase in the value added of official statistics (VAS). This indicator can be quantified by using the following expression: $VAS = N \cdot QS$, where N is the size of the audience (number of those who know official statistics) and QS is the quantity of official statistics relevant for the users. In this paper, the specific importance of the above mentioned factors determining the value added of statistics produced by the State Statistical Office of the Republic of Macedonia and their development are described.

The quantity of official statistics has been noticeably increased by the introduction of many new surveys essential for balanced policy making. Simultaneously with the growth of QS , the size of the audience has also become markedly greater. In this process of communication with users, new techniques and technologies are particularly effective. According to the results achieved with measurement of VAS, the main limiting factor for the increase of the value added of statistics is the individuals' 'numeracy'. In this paper, particular attention is paid to the State Statistical Office's commitment to systematic approach when dealing with measurement of the value added in official statistics, the results achieved with measurements done till now, the lessons learned and the future plans relevant for each phase of measurement of value added in official statistics.

1. Introduction

Previously, we studied the issue of increasing the value added of official statistics in countries in transition, in particular in the case (of the State Statistical Office) of the Republic of Macedonia. We concluded that the changes in the statistical system had to be made in a way to obtain optimum benefit, which can be achieved by assuring optimum increase in the value added of official statistics.

2. Measurement of value added in official statistics

Value added in official statistics (VAS) can be quantified by using the following expression:

$$VAS = N \cdot QS, \quad /1/$$

where N is the size of the audience (number of people who know official statistics) and QS is the quantity of official statistics relevant for the users. The particular importance of the above factors determining the value added of statistics produced by the State Statistical Office of the Republic of Macedonia and their development were described for the first time in 2009, with emphasis on the impact of new techniques and technologies on it.

With measurement of value added we found that in support of transition and integration processes, the statistical system has substantially improved over the past two decades; the quantity of official statistics has been noticeably increased by the introduction of many new surveys essential for balanced policy making as is seen from the number of statistical surveys for three consecutive periods shown in Table 1.

Table 1. Number of statistical surveys in the Five-Year Statistical Programme

	Period		
	1998–2002	2003–2007	2008–2012
Planned surveys	416	353	476

The substantial increase in the quantity of official statistics led to the significant growth of the value added in official statistics. Simultaneously with the increase of QS, the size of the audience has also become markedly greater. As a measure of the number of people who know official statistics, we decided to use combination of the *number of requests for statistical data* and *the number of visitors to the website of the statistical office*. However, it was not obvious how a unique measure for the size of the audience can be constructed from two distinct variables. In order to answer this question, we first studied the evolution of the variables during a certain period. The results of these two figures are given in Table 2 for the last 8 years.

Table 2. Requests for specific data, by year

	2003	2004	2005	2006	2007	2008	2009	2010
Number of requests for data	738	777	848	824	788	927	752	672
Number of visitors	33 000	90 000	205 000	677 410	696 624	806 684	851 865	932 792

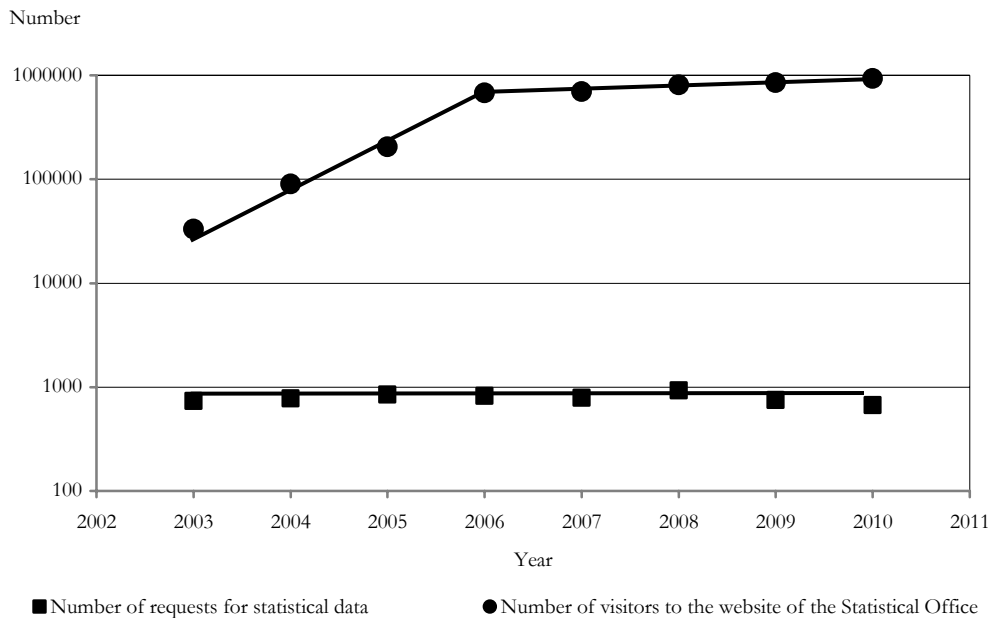
Table 2 shows that the number of requests for data was increasing with fluctuations until 2008 and decreasing afterwards.

In contrast, a very strong increase is observed in the number of visitors of the website of the statistical office. In eight years, it increased around 28 times. This result strengthens the previous finding that new techniques and technologies are particularly effective in enlarging the size of the audience.

Compared to the increase of the *number of visitors to the website of the statistical office*, the variation of the *number of requests for statistical data* is rather small. Hence we can conclude that

the size of the audience is constantly growing despite decrease in the latter, caused by the shift of the users from older to newer technologies.

Figure. Requests for specific data, by year



In order to describe the variations of the *number of visitors to the website of the statistical office* and those of the *number of requests for statistical data* in more details, a logarithmic plot for both of them is shown in the Figure. It is clear that the *number of visitors to the website of the statistical office* first increased sharply (exponentially) then it moved slowly possibly towards saturation. The variations of the *other factor* are much smaller, it can be roughly considered as constant or slowly decreasing. As a whole, the size of the audience has outstandingly increased during the last decade, mainly due to the new technologies.

Since variations of both N and QS show the same direction, a rather big increase of VAS occurred in the last ten years.

3. Lessons learned

Based on a more profound analysis that involves several factors influencing the quantity of official statistics relevant for the users and gives the following expression for VAS

$$VAS = N \cdot [(QSA \cdot MF) \cdot RS \cdot TS \cdot NL], \quad /2/$$

we have drawn substantial conclusions.

In /2/ the total amount of official statistics that reaches the generic user is $QSR = QSA \cdot MF$, where QSA represents the total statistical information produced by the official source and MF the role played by the media. RS is the relevance of the official statistics communicated to the user, TS is the trust that individuals have in official statistics, and NL is the individuals' 'numeracy', i.e. the ability to reason with numbers and other mathematical concepts.

We found that the communication of relevant official statistics to the users requires enormous efforts, mainly connected to the motivation of statistical units to provide enough input data they dispose. The trust that individuals have in official statistics gradually progresses. Nevertheless, the main limiting factor for the increase of the value added of statistics is the individuals' numeracy since the portion of those who correctly interpret data and use them in their practical activities seems to be rather limited. Moreover, this is a factor that cannot be directly improved by the statistical system and requires contribution of other actors in the form of, for example, the education system or specific government activities aiming at improving the awareness of the use of statistical data.

The State Statistical Office demonstrated commitment to systematic approach when dealing with measurement of the value added in official statistics.

In order to increase the amount of produced statistical information

- ◆ new surveys and new techniques in production were introduced not only by the State Statistical Office but also by other partners in the national statistical system.

In order to enhance communication with users

- ◆ a new policy for dissemination of statistics was defined;
- ◆ a new communication strategy was established;
- ◆ new datasets and new databases were developed;
- ◆ dissemination of statistical information at the local level with specific points for access to the data was organized.

In the age of information and computers, a higher degree of statistical culture and literacy is needed. The capacity of applying statistical reasoning and interpreting statistical information is necessary. Numeracy and statistical literacy include therefore facility in dealing with numbers and quantitative problems, in understanding basic mathematical ideas and patterns, statistical reasoning and the importance of thinking in terms of probability, the importance of data production and presentation, as well as the omnipresence, quantification and explanation of variability. The knowledge of basic concepts of statistics and probability is important but understanding the meaning of information is essential (such as the ability to recognise the nature and limitations of statistical information or to distinguish a 'good' number from a 'bad' one; the knowledge of the implications of using various sampling processes on the accuracy of the results, etc.). (*Biggeri-Zuliani* [1999])

In order to raise statistical literacy and numeracy as the main limiting factors for increasing value added of statistics:

- ◆ SSO organized a training programme for different users with the aim to enhance the capability of users to analyse available statistical data bases;
- ◆ co-operation was established with different users (professional associations, universities, schools for media, local governments, NGOs). The main purpose of this co-operation is to increase statistical literacy;
- ◆ most of the publications were re-designed. In this way the official statistics will become more accessible and re-usable for users.

The State Statistical Office is also doing a lot of other activities for the diffusion of the statistical literacy and culture not only among users, but also in the Office itself and in the public administration.

In-house training is a well-established programme with the aim of strengthening professional skills of the main producers of official statistics.

4. Future plans and challenges

Although substantial improvements were made, faster increase of the size of the audience is required in order to further raise the value added in official statistics. Since the new technologies demonstrated their ability to contribute to this improvement, saturation has been observed, and now it is a big challenge to find and implement new solutions that could make additional breakthroughs. Solutions are also be searched for improving the numeracy that seems to be nowadays the main limiting factor.

Improvement of communication with users, better usage of official statistics and transforming statistics into knowledge are the main challenges identified by the State Statistical Office for increasing the value added of official statistics.

- ◆ To examine the needs of the users, their knowledge in official statistical production and trust in official statistics, the third user satisfaction survey will be organized in November of 2011. Its results would help to measure the effectiveness of using official statistics by different users.
- ◆ To promote better official statistics, new communication tools will be introduced. A new website with visualization tools was launched this year. Further development of the communication tools, especially the use of the Internet, is part of the priority goals. New forms of communication could help better organize and facilitate the dissemination process.
- ◆ To improve communication with the media and their way of presenting information, a Memorandum for Cooperation was signed with the High School

for Journalism and Public Relations. The cooperation plan includes teaching of students in practical usage of communication tools introduced by the statistical office, general presentation of statistical production and students' participation in in-house trainings organized by SSO.

References

BIGGERI, L. – ZULIANI, A. [1999]: *The dissemination of statistical literacy among citizens and public administration directors*. 52nd ISI Session. 10–18 August. Helsinki. <http://www.stat.auckland.ac.nz/~iase/publications/5/bigg0981.pdf>

GIOVANINNI, E. [2008a]: *Measuring Society's Progress: A key issue for policy making and democratic governance*. Statistics User Forum "Transforming Official Statistics to Serve Society". 12 November. London. <http://www.rss.org.uk/docs/Giovaninni%20paper.doc>

GIOVANINNI, E. [2008b]: *The role of communication in transforming statistics into knowledge*. Fourth ECB Conference on Statistics "A strategic vision for statistics: Challenges for the next 10 years". 24–25 April. Frankfurt am Main.

NOVKOVSKA, B. [2009]: *How to give value added to official statistics – specific experiences of a developing country*. 57th Seminar of ISI. 16–22 August. Durban.

STATE STATISTICAL OFFICE OF THE REPUBLIC OF MACEDONIA: *Five-year program*. 2003–2007; 2008–2012.

Philippe Bautier

COMMUNICATING WITH THE PRESS AND CREDIBILITY OF THE INSTITUTION: THE EXAMPLE OF GOVERNMENT DEFICIT AND DEBT DATA

Communicating on deficit and debt data has always been an important issue for Eurostat. However, the economic and financial crisis which has considerably increased the relevance of these figures in the European Union, has highlighted the specific role of Eurostat in the field of government finance statistics. In this domain, Eurostat is not only collecting and publishing data from Member States. If Eurostat has doubts on the quality of the reported data for any Member State, it can “express a reservation” on these data or even publish different data than those received. That is why Eurostat is often seen as a “referee” in the field of government finance statistics and why today not only politicians, decision makers, economists but also the public at large are much more aware of our role.

This situation has led to an explosion of the number of questions raised by journalists from all over Europe to Eurostat over the last two years. At a more general level, it is clear that because the communication on deficit and debt statistics is a very sensitive issue, the exercise of communication on this specific statistical field has a direct impact on the whole credibility of Eurostat. For these reasons, Eurostat has tried to define a more structured communication policy.

The aim of this paper is to explain our communication policy in the field of sensitive statistical issues and to try to draw some lessons from the recent statistical developments, such as those which recently occurred in Greece.

1. Introduction

On the one hand, communicating with the press is a difficult exercise but on the other hand, it can be very fruitful for a statistical organisation. It is a difficult exercise because the messages delivered to journalists should be interesting for the public at large, should avoid statistical jargon and should minimise the risks of misinterpretation while on the other side, statistics are a science which is not always simple to understand and easy to explain to non-specialists.

However, successful communication with the media is very positive for the institution because press, radio and TV are the main source of information for most of the population and

a statistical institute will reach a much larger audience by communicating with journalists. It can also be very positive because when your data are quoted in the press and used to animate a debate in society, it demonstrates the trust in your figures and their usefulness. Generally speaking, it reinforces the credibility of the institution. Nevertheless, it is clear that if a media communication misses its target or fails, it can be very quickly a disaster for the institution itself.

I would like to take the case of sensitive issues such as government finance statistics to show how important media communication is, both for the image of Eurostat as a whole and for its international credibility. In this paper I present two opposite and real examples of communication (a bad one and a good one!) to illustrate my point and try to draw some lessons from these examples.

2. Eurostat's role in the field of public finance statistics: a referee

For more than fifteen years now, communicating on deficit and debt data has always been a very important issue for Eurostat. The fact that two out of the four Maastricht criteria are the ratio of government deficit to gross domestic product and the ratio of government debt to GDP explains the political importance that these data have.

However, the recent economic and financial crisis has reinforced the relevance of these figures in the Europe Union. In particular, rating agencies and financial markets follow more closely these data especially for those Member States which are in financial difficulties. In the specific statistical domain of public finances, Eurostat's role is particularly complex because it is not only to collect and publish data from Member States. If Eurostat has doubts on the quality of the reported data for any Member State, it can "express a reservation" on these data or even publish different ones than those received.

Concretely, twice a year, around the third week of April and the third week of October, Eurostat publishes a news release with data for the previous four years on the ratios of government deficit and debt to GDP notified by each of the 27 Member States. Eurostat also publishes aggregated data for the EU and the euro area. It is in this news release that Eurostat may express a reservation on the data notified by a Member State or even amend the data of a Member State.

Eurostat's role is also complex because new financial operations have been developed through the years, obliging the office to regularly update the content of its "Manual on government deficit and debt". For example, Eurostat has introduced in this manual new chapters on the treatment of "Public-private partnerships" and on "Securitisation operations", where the ruling for the recording of these specific operations is clearly defined.

For all these reasons, Eurostat is often seen as a 'watchdog' or, said in a more neutral way, a 'referee' in the field of government finance statistics and today not only the politicians, decision makers, economists but also the public at large are much more aware of our role.

3. “The France Telecom affair”: a disaster for Eurostat’s credibility

The France Telecom case became famous in the media. In 1996, France announced that before its privatisation, the state-owned company France Telecom would make a one-off payment of around 6 billion euro to the government. In return, the French government would have to pay from then onwards the pensions of all workers of France Telecom through social security.

The question asked to Eurostat was simple in theory: how should this payment be recorded? But it was clear that the reply had also a very important economic effect in practice on the reduction or not of the French deficit.

After having consulted technical working groups and finally the Committee for Monetary, Financial and Balance of Payments statistics (CMFB) composed of experts of EU national central banks and national statistical institutes, Eurostat decided that the payment from France Telecom could indeed be considered as a non-financial operation, reducing effectively the French deficit.

However, the ruling was far from being uncontroversial for several reasons. Firstly, the process of consultation of the CMFB was not very well organised at that time and some Member States complained about it. Secondly, even if Eurostat's decision conformed to the position of a majority of Member States in the CMFB, a few Member States were against it. Moreover, Eurostat did not properly communicate on its decision which was not explained to the press.

If you add to this lack of transparency and communication, on the one hand the fact that Eurostat’s decision permitted France to just remain under the 3% threshold of public deficit, and on the other hand the fact that the Commissioner in charge of Monetary and Financial Affairs, and Eurostat’s Director General at that time were both French, you have all the elements for an explosive attack on Eurostat in the media.

This was the case and the press expressed the suspicion that Eurostat’s decision was a French conspiracy, where French “eurocrats” favoured their country in order to enter the euro area, and putting into question the legitimacy of the entire “Maastricht process”. It goes without saying that Eurostat’s credibility was ‘in pieces’ and that we would need some time to recuperate from this disaster.

4. The odyssey of Greek public finance statistics

More recently, Eurostat has been under the spotlights because of what is called the Greek case. What has happened since autumn 2009 follows on from a long voyage through the choppy seas of Greek data. In October 2009, Eurostat published the second notification of the year of deficit and debt data and expressed a reservation on data sent by Greece.

It was not the first such reservation. Between 2005 and 2009, Eurostat expressed reservations on the Greek data in its biannual press release on five occasions. And even before, in November 2004, a report on the revision of Greek government deficit and debt data was released by Eurostat, showing that figures were misreported in the years preceding 2004.

Two weeks after the publication of the Eurostat news release of October 2009, the ECOFIN Council asked the Commission to prepare a report on the “renewed problems in the Greek fiscal statistics” and to propose appropriate measures to be taken in this situation. In response, the Commission published in January 2010 a report by Eurostat on this issue.

This report, immediately released on our website, put in question the reliability of Greek deficit and debt figures provided by the Greek statistical authorities and mentioned clearly instances of deliberate misreporting by the Greek authorities as well as a lack of co-operation and transparency needed for the proper assessment by Eurostat of the quality of the data.

Moreover, at the beginning of February 2010, a German newspaper mentioned for the first time that in 2001, Greece had been able to borrow a significant sum of money without recording it in its government debt. This was made possible through a complex financial operation carried out with the support of a very famous international financial institution. This article generated an explosion of questions from European and American media.

The general lack of credibility of Greek data over the years added to the fact that Eurostat was not aware of the specific operation undertaken by the Greek authorities and was not able to detect it, explain why several journalists, as well as some politicians, expressed either doubts on Eurostat’s competence or suspicions about our real role and independence: “Eurostat knew about the operation but the Commission said nothing in order to facilitate the entrance of Greece in the euro area” was the content of some articles published in the press.

Eurostat’s press office had some difficult times in the first half of 2010 during which we received dozens of requests for interviews with our Director General and a few hundred questions by e-mail. Today the situation is much quieter and my impression is that Eurostat has come through these events with its credibility reinforced for different reasons.

Firstly, we were able to point to the history of reservations on Greek data, showing that despite the absence of auditing power, Eurostat had for many years been able to identify areas of concern. Secondly, senior European politicians recognised themselves that they should have agreed in 2005 to Eurostat’s request for auditing powers, following our 2004 report on Greece. Thirdly, the 2010 report was not only perceived as a comprehensive review of the technical issues to be resolved, but also as a concrete analysis of institutional failures in the Greek statistical system. Last but not least, the Greek authorities themselves pushed to restore their own credibility. In particular in 2010, they took appropriate measures to create the institutional framework necessary to ensure the professional independence of the Greek statistical office while at the same time the technical issues were progressively resolved with the co-operation of Eurostat. In consequence, Eurostat expressed no reservation on Greek data in the autumn 2010 and spring 2011 notifications.

In conclusion to this part I think that the title, chosen by a journalist of the *Financial Times* in a recent article on public finance statistics, gives a relatively good idea of how Eurostat's role is today perceived: "Don't mess with Eurostat".

5. Anticipate, communicate, advocate

How can communicating with media help to improve the credibility of an institution? It might appear contradictory at first because very often the media are perceived as, if not the cause, at least the vehicle of transmission of the loss of credibility of an organisation. That's why when an institution is confronted with a sensitive issue which risks appearing in the press, its first reaction is not in general to communicate with the media, which is something judged as risky and dangerous.

However, from the two experiences briefly presented and from some others that we have had in between, I think that communicating with the media can really help to strengthen the image of the institution, although under certain important conditions.

The first lesson which can be drawn from our experience is simple. When a statistical institution is involved in a sensitive issue with political, economic or social implications, not *to communicate* with the press is not an option.

The credibility of the institution can be very quickly damaged for a long period if a suspicion of lack of transparency or of independence is diffused in the media. The only solution is to explain the position of the institution to the media. This announcement should be done in an official way and be available to all journalists at the same time through for example a news release, a document published on the internet or a press conference. This is why, after the France Telecom affair, Eurostat decided that any important methodological decision taken by Eurostat, will be announced and explained to all interested users through a Eurostat news release, sent to all journalists and published at the same time on our website.

The second lesson is that, to be a success, communicating with the media on sensitive issues should not be done under the pressure of the journalists. It should be organised in 'due time', which means that the statistical office should try as much as possible to keep the control of the time of the communication. It is not very easy to do, but when a communication with the press is done under media pressure, it is often too late and the image of the institution is already sullied.

This means that when confronted with a sensitive situation, the role of the press office is *to anticipate* the need to communicate. Of course, to play its role, the press office has to be permanently informed by the hierarchy of the institution of all important issues which could interest the media. In the examples mentioned, nothing was really anticipated concerning France Telecom, while as regards the Greek case, several important moments of communication were foreseen, following in particular the publication of the report on Greece in January 2010 and of the two notifications in April and October 2010.

Finally and this is the third general lesson that I would like to mention, the statistical institute and in particular its press office has *to advocate* for the institution. Concretely, it means that the role of the press office is not only to explain to the journalists the position of the organisation, it is also to defend it against possible criticism, suspicion or misinterpretation.

That is why, for the most important sensitive issues, Eurostat's press office always drafts with the service concerned what we call "defensive lines" where we try to imagine the most difficult questions that could be raised by the press and prepare a reply. These replies might be very useful when for example after the publication of a press release, you receive questions from journalists to whom you are immediately able to reply.

By anticipating possible reactions of the press, you will have a chance to control the calendar, by communicating with the media, you will have a chance to avoid being accused of lack of transparency, and by advocating, you will have a chance to defend properly your institution. Of course, this does not mean that this advice is enough to ensure the credibility of the institution. Other factors, in particular political, may interfere and make the work of the press office in a statistical institute even more difficult!

Photos



Participants of the conference

9 JUNE 2011, THURSDAY

Plenary Session



GABRIELLA VUKOVICH, WALTER RADERMACHER and ÉVA LACZKA



WALTER RADERMACHER

Session 1

Statistical literacy and European democracy



**GUNILLA LUNDHOLM, LIDIA BRATANOVA, PIETER EVERAERS,
PER NYMAND-ANDERSEN, LUÍS TELES DIAS and MAIJA METSÄ-PAURI**



LIDIA BRATANOVA



LUÍS TELES DIAS



GUNILLA LUNDHOLM



MAIJA METSÄ-PAURI



Audience

Session 2

The responsibility of statisticians and the responsibility of users of statistics



**ATTILA CSAJBÓK, GEJZA DOHNAL, COSTAS K. DIAMANTIDES, ELSPETH MACLEAN,
JAUME GARCÍA VILLAR, MARIANA KOTZEVA and MARIE BOHATÁ**



MARIE BOHATÁ



MARIANA **KOTZEVA**



ÁTTILA **CSAJBÓK**



ELSPETH MACLEAN



COSTAS K. DIAMANTIDES



GEJZA DOHNAL

**Session 3
EU Presidency Trio**



**ADOLFO GÁLVEZ MORALEDA, STEPHAN MOENS, FREDDY VERKRUYSSEN,
GABRIELLA VUKOVICH and ÉVA LACZKA**



ADOLFO **GÁLVEZ MORALEDA**



STEPHAN **MOENS**



ÉVA LACZKA



VINCE KRUCHINA

10 JUNE 2011, FRIDAY

Session 4

Trust in institutions, trust in statistics, statistical culture



AUREL SCHUBERT, PER NYMAND-ANDERSEN, TREVOR FLETCHER,
FREDDY VERKRUYSSEN, TOMAZ SMREKAR and LEON ØSTERGAARD



FRANÇOIS BRUNET, BLAGICA NOVKOVSKA, FREDDY VERKRUYSSEN,
PHILIPPE BAUTIER and GABRIELLA VUKOVICH



AUREL SCHUBERT



PER NYMAND-ANDERSEN



TREVOR FLETCHER



TOMAZ SMREKAR



LEON ØSTERGAARD



FRANÇOIS BRUNET



BLAGICA NOVKOVSKA



PHILIPPE BAUTIER



The three Toto winners – 13-13 hits
DANIEL DEKIC, PHILIPPE BAUTIER, PER NYMAND-ANDERSEN

Accommodation and conference venue



Thermal Hotel Visegrád



The Basilica of Esztergom





Danube Bend



Visegrád



Citadel



Solomon Tower



Royal Palace



Hercules well

Szentendre



Danube bank



Main Square with the Memorial Cross



Blagovestenska Church



A cobble-stoned street

Hungarian Open Air Museum



