Maintaining the quality of EU statistics while enabling re-use

Marco Pellegrino
Eurostat

Maintaining the quality of EU statistics while enabling re-use

1. Eurostat's Vision for the next decade
2. Statistical data and the EU open data policy
3. Use and re-use: risks and challenges
4. How to move forward

Statistics

Statistics by theme
Statistics A - Z
Browse / Search database
Bulk download
Access to microdata
GISCO:Geographical Information and maps
Metadata
- Concepts and definitions
- Legislation and methodology
- Classifications
- Glossaries and thesauri
- National methodologies
- Euro-SDMX Metadata Structure
- Standard code lists

SDMX data and metadata exchange

EU Policy Indicators

- **Europe 2020 indicators**
- **Euro indicators/ PEEIs**
- **Sustainable Development Indicators**
- **Employment and social policy indicators (including equality and migrant integration)**
- **Macroeconomic Imbalance Procedure**

Statistics by theme

General and regional statistics
- Regions and cities (including metropolitan regions)
- Land cover/use statistics (LUCAS)
- Rural development
- Cohesion policy indicators

International cooperation:
- Enlargement countries
- European Neighbourhood Policy countries
- International statistical cooperation

Economy and finance
- National accounts (including GDP)
- ESA 95 Input-Output tables
- European sector accounts
- Government finance statistics
- Exchange rates
- Interest rates
- Monetary and other financial statistics
- Harmonized Indices of Consumer Prices (HICP)
- Purchasing power parities (PPPs)
- Balance of payments

Population and social conditions
- Population
- Health (Public health/ Health and safety at work)
- Education and training
- Labour market (including Labour Force Survey (LFS))
- Income, Social Inclusion and Living conditions
- Social protection
- Household Budget Surveys
- Crime and criminal justice
- Culture
- Quality of life indicators

Industry, trade and services
- Structural business statistics
- Short-term business statistics
- Tourism
- Manufactured goods (Prodcom)
- Information society
- Postal services

Agriculture and fisheries
- Agriculture
- Forestry
- Fisheries
- Agri-Environmental Indicators

International trade
- International trade

Transport
- Transport

Environment and energy
- Environment

Science and technology
- Science, technology and

Eurostat's Mission Statement

To be the leading provider of high-quality statistics on Europe

Our aims are:

- To be the reference for statistics on Europe
- To provide the statistical information needed to design, implement, monitor and evaluate EU policies
- To develop and promote standards, methods and procedures that allow the cost effective production and dissemination of comparable and reliable statistics throughout the EU and beyond
- To steer the European Statistical System, strengthen cooperation among its partners, and ensure its leading role in official statistics world wide
- To be the public authority for European Statistics and verify data used for administrative purposes.

Free dissemination policy

- Started 1st October 2004
- All statistical Data and electronic publications are free of charge via the Eurostat website
- Available in three languages (English, German and French)
- > 4.500 datasets online available
- > 1.200 tables online available
- > 6.000 publication available
- Data updated twice a day
- Among top 5 visited websites of the European Commission

Inflation dashboard

Eurostat - Harmonised Index of Consumer Prices - Microsoft Internet Explorer provided by European Commission

http://epp.eurostat.ec.europa.eu/inflation_dashboard/

File Edit View Favorites Tools Help

Favorites | Medical Service | ESS VIP REFERENCE DOCU... | Anywhere Conferencing | Web Slice Gallery

Eurostat - Harmonised Index of Consumer Prices

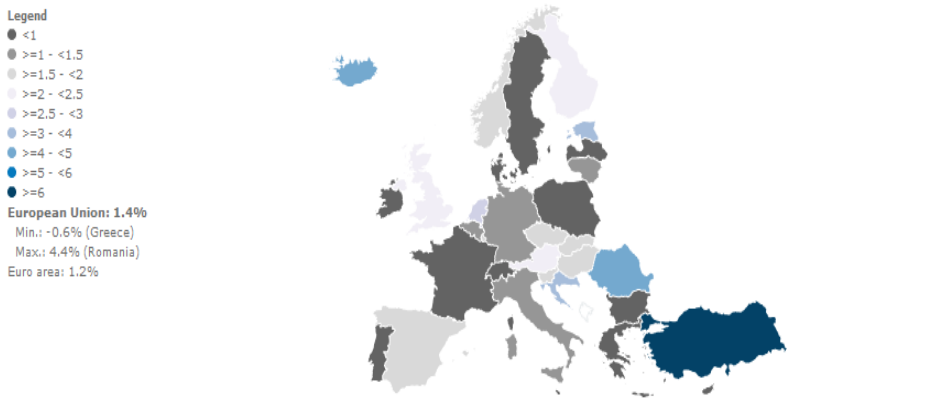
Page Safety Tools

v1.5.0 - build 20120223

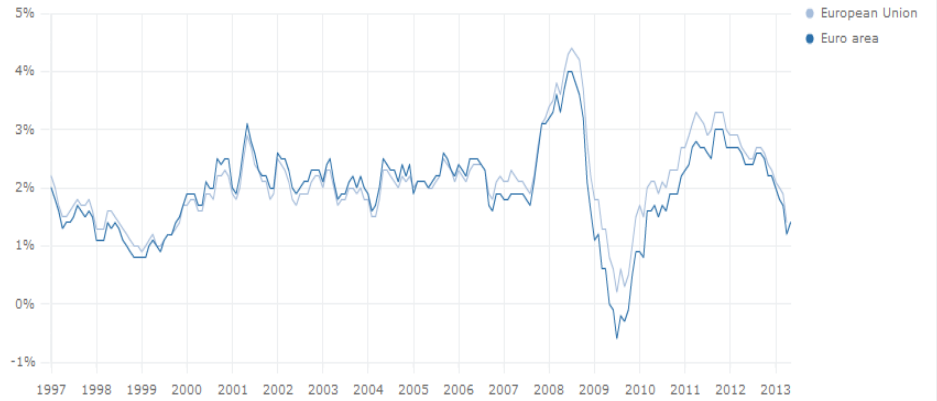
Enable full screen

Measuring inflation: The Harmonised Index of Consumer Prices (HICP) - Annual percentage changes

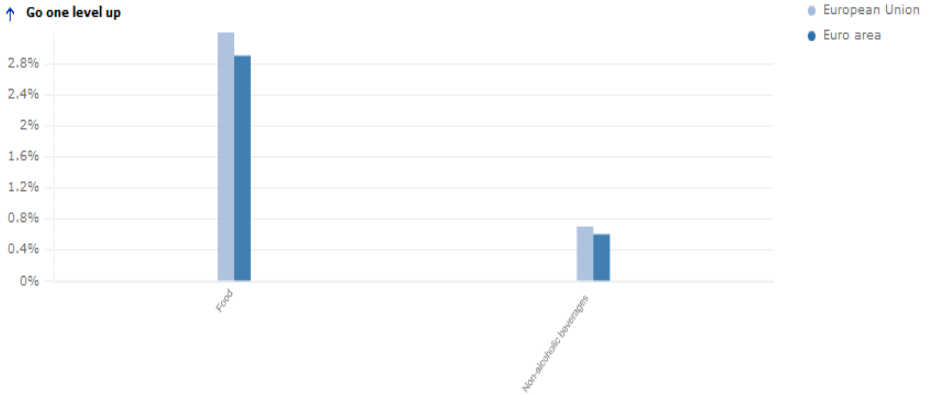
Overall HICP inflation rate by countries: **April 2013**



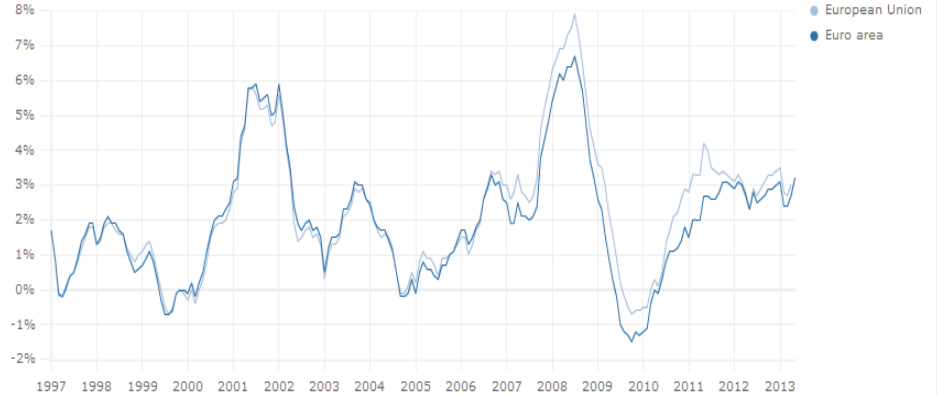
Overall HICP inflation rate - Latest (April 2013)



Breakdown of **Food & non-alcoholic beverages** by Main Heading: **April 2013**



Food



☑ European Union

☑ Euro Area

Time range: Jan 1997 1999 2001 2003 2005 2007 2009 2011 Apr 2013 ▶

Unemployment rate - quarterly data

Code: tipsun30

The unemployment rate is the number of unemployed persons as a percentage of the labour ... more

Flags Codes Labels Codes & Labels

geo \ time	2008Q3	2008Q4	2009Q1	2009Q2	2009Q3	2009Q4	2010Q1	2010Q2	2010Q3	2010Q4	2011Q1	2011Q2	2011Q3	2011Q4	2012Q1	2012Q2	2012Q3	2012Q4	2013Q1
Belgium	7.3	7.2	7.6	7.6	8.0	8.0	8.3	8.4	8.3	7.9	7.2	7.2	7.3	7.2	7.2	7.6	7.7	8.0	8.2
Bulgaria	5.5	5.2	5.8	6.4	7.2	8.0	9.4	10.1	10.3	11.3	11.3	11.2	11.1	11.5	12.0	12.3	12.4	12.5	12.4
Czech Republic	4.3	4.5	5.6	6.5	7.2	7.3	7.8	7.3	7.1	7.0	6.9	6.8	6.6	6.5	6.9	6.9	7.0	7.2	7.2
Denmark	3.4	3.8	4.9	6.0	6.3	7.0	7.2	7.6	7.4	7.6	7.5	7.4	7.5	7.9	7.5	7.9	7.4	7.3	7.1
Germany	7.2	7.2	7.6	7.9	7.9	7.7	7.5	7.2	6.9	6.7	6.3	6.0	5.8	5.6	5.5	5.5	5.4	5.4	5.4
Estonia	6.5	8.4	10.5	13.2	15.2	16.5	18.2	18.4	16.3	14.6	13.4	13.1	11.8	11.8	10.6	10.0	10.0	9.8	:
Ireland	7.0	8.1	10.4	12.0	12.7	13.1	13.1	13.8	14.0	14.8	14.3	14.5	14.9	15.0	15.0	14.9	14.8	14.2	13.7
Greece	7.4	7.9	9.0	9.2	9.6	10.2	11.2	12.1	12.8	14.1	15.3	16.7	18.3	20.6	21.9	23.9	25.4	26.1	26.6
Spain	11.8	14.0	16.7	17.9	18.5	19.0	19.4	20.1	20.3	20.5	20.7	21.0	22.0	23.0	23.8	24.7	25.5	26.1	26.5
France	7.8	8.1	8.9	9.6	9.6	10.0	9.8	9.7	9.7	9.7	9.6	9.5	9.6	9.8	10.0	10.2	10.3	10.5	10.9
Italy	6.9	6.9	7.3	7.5	8.1	8.2	8.5	8.5	8.3	8.3	8.0	7.9	8.6	9.2	10.0	10.6	10.8	11.4	11.9
Cyprus	3.6	3.6	4.2	5.3	5.7	6.5	6.7	6.5	6.1	5.9	6.8	7.4	8.0	9.5	10.4	11.4	12.3	13.3	14.1
Latvia	8.1	10.9	14.0	17.4	19.8	21.0	21.3	20.3	19.7	18.1	17.1	16.8	16.1	15.5	15.5	15.3	14.4	13.8	12.4
Lithuania	5.9de	7.9de	10.4de	12.9de	14.7de	16.4de	17.4de	18.3de	18.4de	17.8de	16.7	15.6	14.9	13.8	13.6	13.3	13.0	13.2	12.5
Luxembourg	5.0	5.2	5.4	5.3	5.1	4.9	4.6	4.5	4.5	4.7	4.7	4.8	5.0	4.8	5.0	5.1	5.1	5.2	5.5
Hungary	7.8	8.1	9.1	9.8	10.5	10.7	11.1	11.3	11.2	11.0	11.0	11.0	11.0	10.9	11.1	11.0	10.7	10.9	:
Malta	6.1	6.1	6.5	7.0	7.0	6.8	7.4	6.7	7.1	6.9	6.5	6.8	6.2	6.5	6.2	6.6	6.3	6.5	6.6
Netherlands	3.0	3.0	3.2	3.5	3.9	4.2	4.5	4.5	4.5	4.4	4.2	4.2	4.4	4.9	5.0	5.2	5.3	5.6	6.2
Austria	3.7	4.1	4.4	4.8	5.1	4.8	4.5	4.5	4.5	4.2	4.3	4.1	3.9	4.3	4.1	4.3	4.5	4.6	:
Poland	6.9	6.9	7.4	7.9	8.4	8.8	9.8	9.6	9.6	9.6	9.5	9.6	9.7	9.9	10.0	10.0	10.2	10.4	10.6
Portugal	8.7e	8.7e	9.7e	10.5e	11.1e	11.2e	11.6e	12.0e	12.2e	12.3e	12.4	12.6	12.7	14.1	14.9	15.6	16.1	17.0	17.7

:=not available d=definition differs, see metadata e=estimated b=break in time series

Source of Data: Eurostat

Country Profiles

http://epp.eurostat.ec.europa.eu/guip/introAction.do

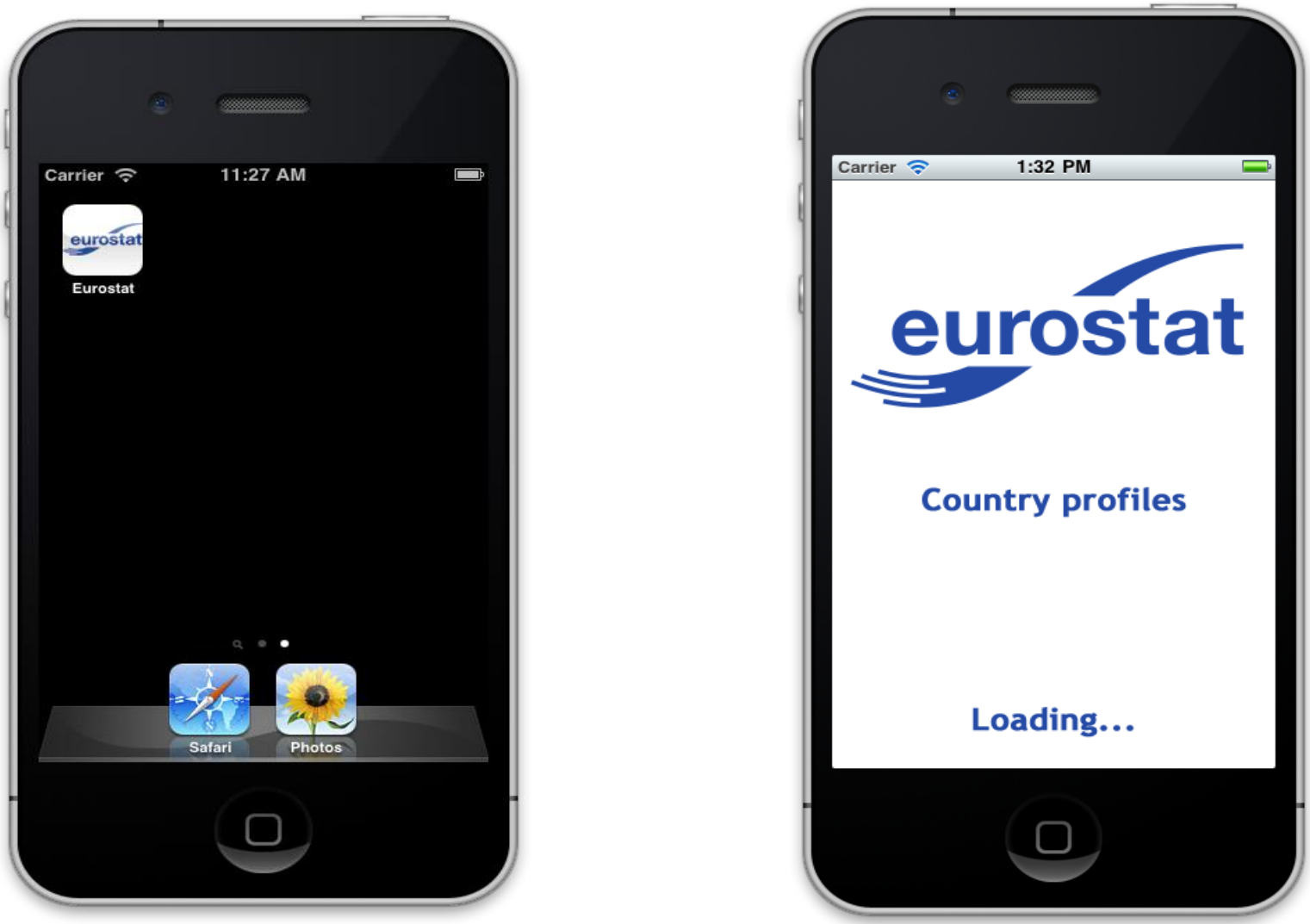
Europe | Ireland

General Information

News

Theme: Euro indicators	Country: Ireland		Country: eu27:European	
Long term government bond yields - %	3.48	[2013m05]	2.62	[2013m05]
Balance of payments, current account, quarterly data - Million EUR	2851	[2012q4]	21768	[2013q1]
Economic sentiment indicator - Index	N/A		90.8	[2013m05]
HICP - All items - Percentage change on previous month	0.0	[2013m05]	0.1	[2013m05]
HICP - All items - Percentage change compared to corresponding month of the previous year	0.5	[2013m05]	1.6	[2013m05]
HICP - All items - Percentage change - 12 months average	1.5	[2013m05]	2.2	[2013m05]
Domestic producer prices - total industry (excluding construction) - Percentage change on previous month	-0.3	[2013m04]	-0.7	[2013m04]
Domestic producer prices - total industry (excluding construction) - Percentage change compared to corresponding month of the previous year	1.2	[2013m04]	-0.2	[2013m04]
Production in industry - total (excluding construction) - Percentage change on previous month	3.0	[2013m04]	0.3	[2013m04]
Production in industry - total (excluding construction) - Percentage change compared to corresponding month of the previous year	0.4	[2013m04]	-0.8	[2013m04]
Harmonised unemployment rate by sex - % (SA)	13.5	[2013m04]	11.0	[2013m04]
Labour cost index - Percentage change on previous quarter	N/A		0.6	[2013q1]
Labour cost index - Percentage change compared to corresponding quarter of	0.5	[2013q1]	1.9	[2013q1]

Applications for mobile devices



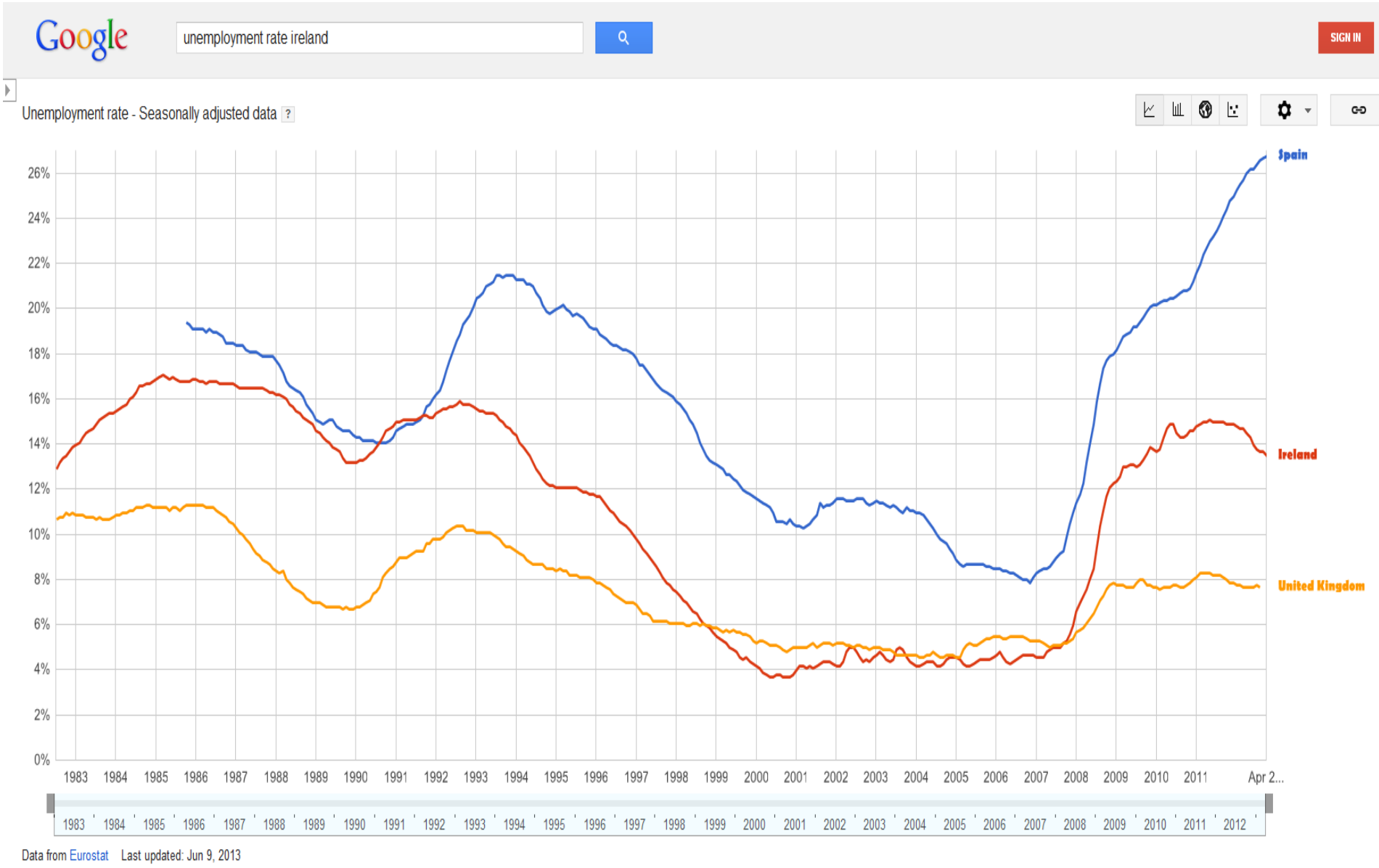
Applications for mobile devices

- http://itunes.apple.com/us/app/country-profile/id490077702?mt=8
- https://play.google.com/store/apps/developer?id=Eurostat
- http://www.androidzoom.com/android_applications/tools/eurostat-country-profiles_bxmbh.html

We have to go where the users are...

- Example: Google search
  - minimum wage belgium
  - tassi di disoccupazione
  - минимальная заработная плата
  - hükümet borcu
  - 最低賃金
  - 最低工资
  - offentliga sektorns skuld

We have to go where the users are...



Source: Eurostat

Google unemployment rate ireland

Public Data

- Unemployment in Europe (monthly)
  - Unemployment
  - **Unemployment rate**

Clear

- Compare by: Country
- Country group: European Union

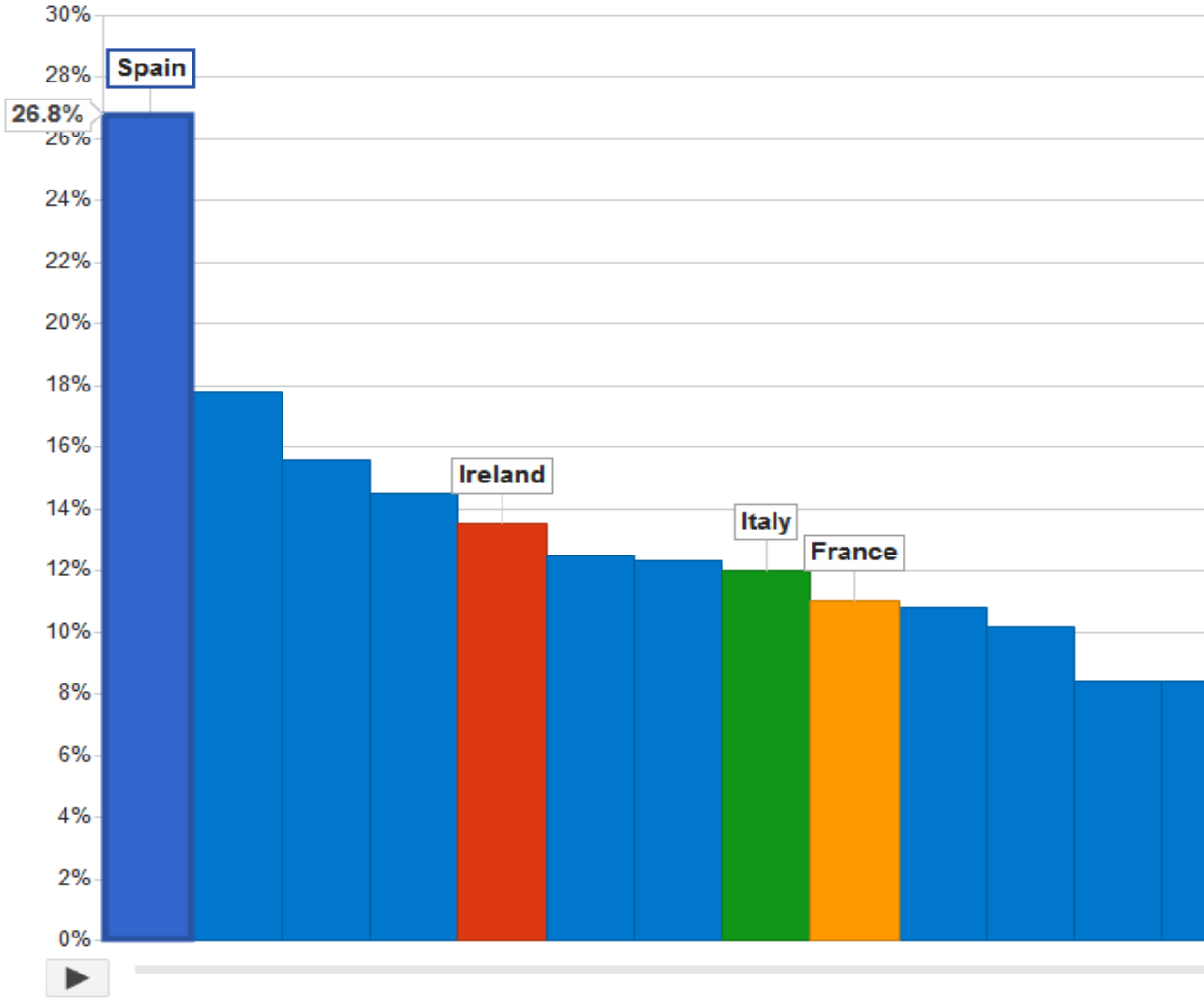
- Finland
- **France**
- Germany
- Greece
- Hungary
- **Ireland**
- **Italy**
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- **Spain**
- Sweden
- United Kingdom

Clear selections

- Age group
- **Seasonality** Seasonally adjusted data
- Sex

Unemployment rate - Seasonally adjusted data ?

Countries, European Union - Descending order ?



Data from Eurostat Last updated: Jun 9, 2013

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最低工资, 法国

www.google.com/publicdata
1,365 （每月）- 欧元 - 七月 2011
来源: 欧盟统计局

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法国最低工资12月1日起上调28欧元- 法国中文网
www.cnfrance.com › 法国新闻
2011年12月1日 – 欧洲时报报道，11月30日法国《宪报》公布的一道有关法定最低工资（SMIC）上调的政令，从12月1日起，法定最低毛时薪上调到9.19欧元，亦即按通货 ...

法国公务员工资仅高出最低工资一倍 85%的人应该涨工资 连载 读书 ...
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法国公务员工资仅高出最低工资一倍 法国是老牌的资本主义国家，但在分配制度方面也很注重人道和公平。法国公务员工资的现状是：公务员平均工资高出最低工资一 ...

法国：最低工资将上调1.6% - 人力资源和社会保障部国际交流服务中心
www.cie.gov.cn › 首页 › 国际资讯 › 国际快讯
2010年12月6日 – 据欧洲时报网消息，从2011年1月1日起，法国最低工资(SMIC)将调高1.6%左右，最低小时工资将"超过9欧元大关"。从2010年起，最低工资调整时间 ...

法国上调最低工资标准 财经 凤凰网
finance.ifeng.com › 财经滚动新闻
2011年11月11日 – 法国上调最低工资标准据法《回声报》消息，法国劳动总司11月10日宣布，法国最低工资标准将从1365欧元上调至1393.82欧元，上调幅度2.1%，自12 ...

要是学生在法国打工一个月的最低工资是多少啊- 已解决- 搜搜问问
wenwen.soso.com › 全部问题 › 社会/人文 › 职场就业
1 个回答 - 2008年7月3日
最佳答案： 法国实行法定最低工资制度，法文缩写为"SMIC"。也就是说雇主给予的工资如

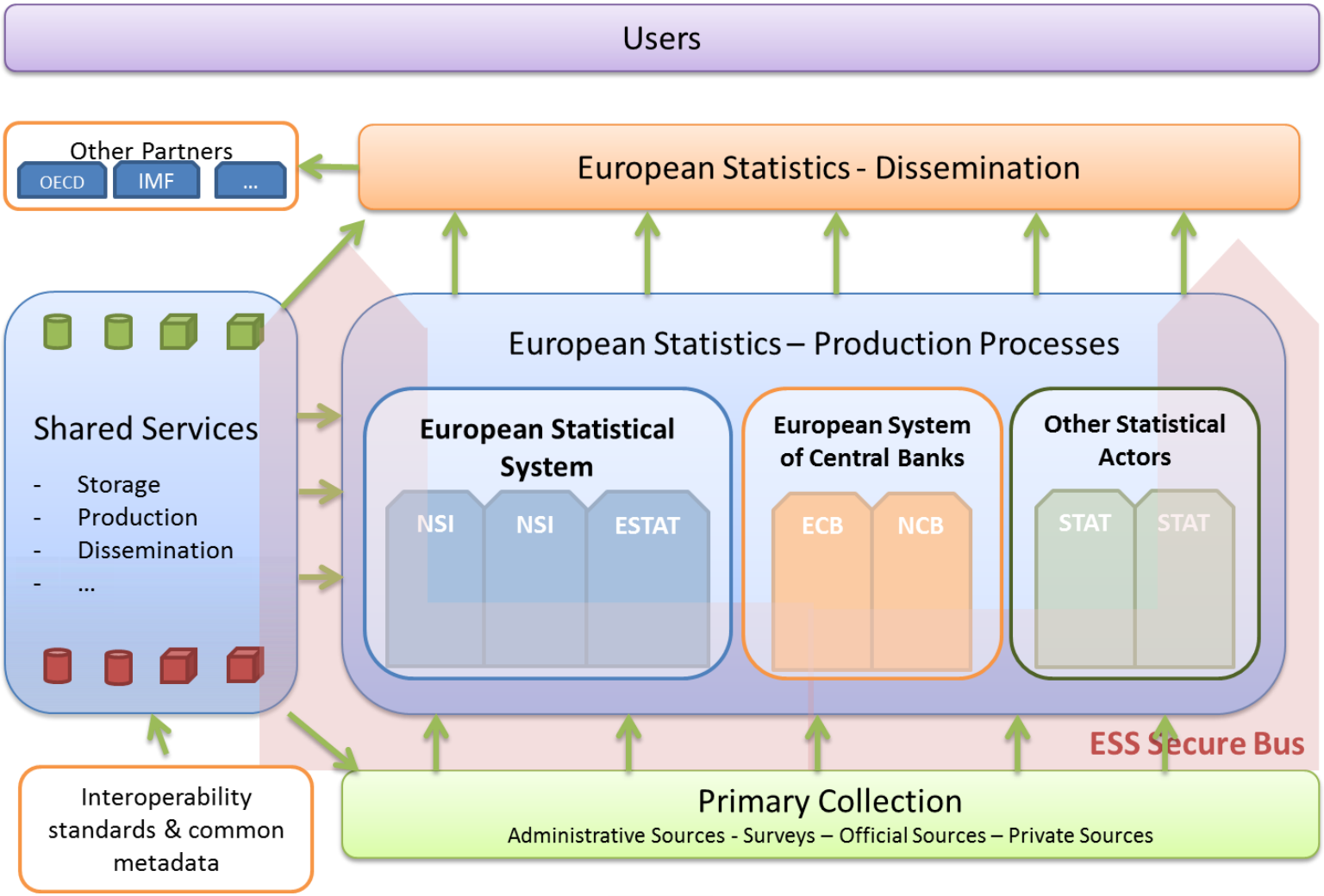
Done

Where are we?

- **Dramatic changes** in the environment of official statistics producers (e.g. data deluge)
- **Modernization** of statistical information system seen as a question of survival for the sector of official statistics
- **Standardization** viewed as a key enabler for modernization

→ *"Standards-based" industrialization of statistical production*

Future state of the ESS production and dissemination



The ESS.VIP Programme

It aims at:

- realising economies of scale and productivity gains through sharing information, services and costs;
- at developing a common ESS infrastructure and appropriate legal framework and new administrative mechanisms that will allow for sharing of information, services and costs among ESS partners.

1. Building up common infrastructure through technical cross-cutting projects

- Information models and standards;
- Networks/infrastructure for exchange of information;
- Data Warehouses reference architecture;
- Shared services;

2. Sharing information, services and costs through projects in selected statistical domains

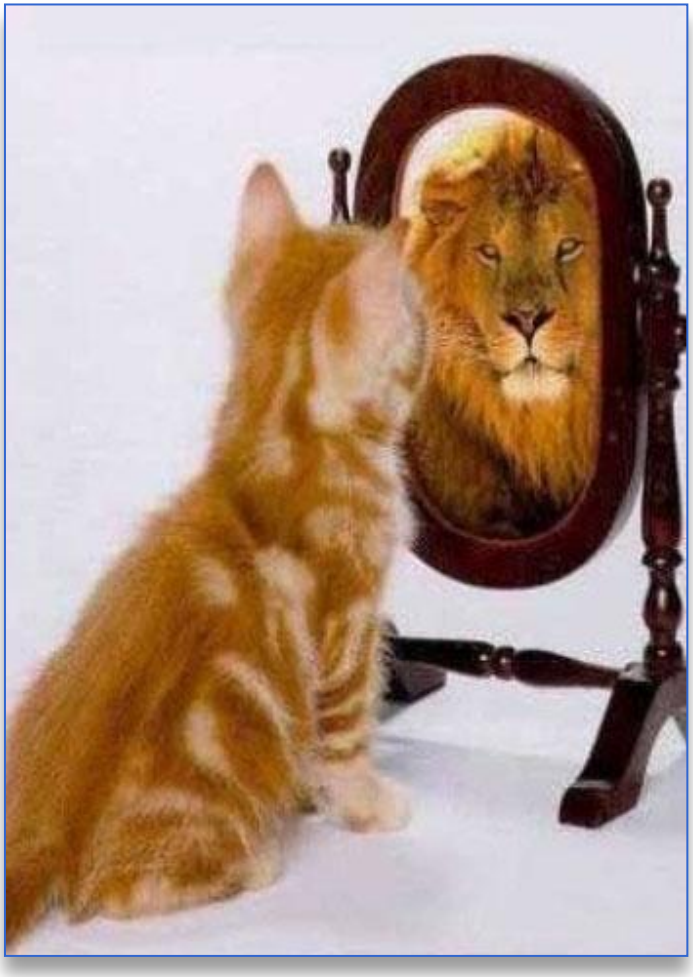
Administrative Data Sources; European system of Interoperable Statistical Business Registers; National Accounts; Price and Transport Statistics; International trade in goods; Information and technology surveys; Common Data Validation Policy.

3. Developing frameworks and administrative mechanisms

Governance; Legal framework; Human resources; Cost sharing and financial resources; Communication.

European Commission

Are we too ambitious ?



Modernisation

At the highest levels, the official statistics world sees a need to "modernize" statistical production

- Faster time-to-market
- Treat statistics as a "product" where all production streams are well-managed
- Utilize economies of scale to increase speed and reduce cost
- Utilize automation to lower costs and focus expertise

Changes in the Statistical Environment

- Traditional statistical production is no longer enough!
  - We are faced with many new data sources (Google, cell-phone data, social networking, etc.)
  - The demand for data is growing
  - The cost and speed of traditional survey-based statistical production does not meet demand
  - Ability to deal with "big" data

- But the quality of new data sources is unknown (and it is not *official data:* it is a commodity sold by data aggregators)

Standardisation

- Without a standardised concept of statistical production, we will *not* see:
  - Economies of scale across statistical institutes internationally - shared solutions
  - Good vendor support for the industry
  - Harmonization of statistical data (leading to more comparable data)
  - Reusable, interoperable data for users
- Two major standards have emerged:
  - Statistical Data and Metadata Exchange (SDMX)
  - Data Documentation Initiative (DDI)

RDF Vocabularies

The statistical community has traditionally used XML-based technologies for data production and dissemination

- But their primary mission is to produce *good* data

Linked Data:

- RDF Data Cube vocabulary, based on SDMX
- Extended Simple Knowledge Organization vocabulary (XKOS) is a product of the DDI Alliance (for statistical classifications)
- The DDI Discovery vocabulary is based on the DDI model (for lower-level micro-data)

The EU Open Data Strategy

- Innovation, growth and jobs
- Transparency
- Evidence-based policy making, efficiency gain in public administration

Digital Agenda Scoreboard key indicators

Charts | Indicators

SPARQL Endpoint: http://digital-agenda-data.eu/data/sparql
Dataset: http://semantic.digital-agenda-data.eu/dataset/digital-agenda-scoreboard-key-indicators

Dataset metadata

description
: European Commission services selected around 100 indicators, divided into thematic groups, which illustrate some key dimensions of the European information society (Telecom sector, Broadband, Mobile, Internet usage, Internet services, eGovernment, eCommerce, eBusiness, ICT Skills, Research and Development). These indicators allow a comparison of progress across European countries as well as over time. You can also browse the data with the help of a visualisation tools going at http://digital-agenda-data.eu/, where you are also able to download selected information.

identifier
: digital-agenda-scoreboard-key-indicators

license
: http://ec.europa.eu/geninfo/legal_notices_en.htm

title
: Digital Agenda Scoreboard Dataset

Dimensions

Notation	Label	Comment
indicator	Indicator	Grouped through dimension: indicator-group
breakdown	Breakdown	Grouped through dimension: breakdown-group
unit-measure	Unit of measure	Values from codelist http://semantic.digital-agenda-data.eu/codelist/unit-measure
ref-area	Country	Values from codelist http://eurostat.linked-statistics.org/dic/geo#
time-period	Time period	Vocabulary allows Year, Half, Quarter, Month
indicator-group	Indicator group	Referenced indirectly through dimension: indicator
breakdown-group	Breakdown group	Referenced indirectly through dimension: breakdown

Attributes

Notation	Label	Comment
unit-measure	Unit of measure	Values from codelist http://semantic.digital-agenda-data.eu/codelist/unit-measure

http://eurostat.linked-statistics.org

Eurostat - Linked Data

This is a Linked Data version of the Eurostat data with the goal to provide 5 star Linked Open Data on the European level, in a contextually rich and up-to-date manner, useful for ETL-style business analysis or data warehousing purposes with benefits including but not limited to:

- It allows for a straight-forward comparison of statistical indicators across EU countries.
- Through providing context for statistics it facilitates the interpretation process.
- Enables you to re-use observations in a fine-grained way.

Overview

The following data is available under the original Eurostat license:

- http://eurostat.linked-statistics.org/data/ contains the observations
- http://eurostat.linked-statistics.org/dsd/ contains the Data Structure Definition (DSD)
- http://eurostat.linked-statistics.org/dic/ contains the dictionaries

Via our SPARQL endpoint you can query the entire metadata including DSDs and dictionaries.

We pull in changes from the original Eurostat dataset on weekly basis and our conversion process runs every Saturday at noon taking into account new datasets along with updates to existing datasets. Subscribe to the mailing list in order to receive a weekly email which lists the datasets that has been updated or newly added.

Clarification of Terms

- When we say “data” in the statistical community, we are referring to numeric data of a very specific type: statistics!
  - **The LDOW definition is much broader!**

- When we say “raw data” in the statistical community, we are talking about confidential responses from individuals to surveys
  - **It is illegal to put this directly on the Web, and for good reasons!**

Issues to think about

1. Loss of control
2. Finding Eurostat through third-party products
3. Data may be misused

Questions about open data

1. How proactive should we be in seeking new uses for our data?

2. Can we do more to help people to use Eurostat data creatively but correctly?

3. Can we do more to inform users of third-party products about the added value of Eurostat and the ESS?

Eurostat: the reference provider of statistical data in Europe

- No other EU organization is fully dedicated to the production of statistical data
- Data must be of the highest quality!
- We are data experts – this is what we do!
- We are here to serve Europe as a basis for informed decision-making

Conclusions

- The world of official statistics has collaborated with linked-data experts to create vocabularies based on the best models of the statistical world
- This collaboration must continue: unsolved issues remain
- Working together produces a better result
  - Better policy
  - Better-informed citizens
- Eurostat is committed to pursue this effort!

Maintaining the quality of EU statistics while enabling re-use

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