The European Commission’s science and knowledge service

Joint Research Centre
Opening & Introduction

Sven Langedijk, Head of Unit

COIN 2017 - 15th JRC Annual Training on Composite Indicators & Scoreboards
06-08/11/2017, Ispra (IT)
Complexity
Complexity and super-abundance of knowledge
“We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers, people able to put together the right information at the right time, think critically about it, and make important choices wisely.”

[E.O Wilson, 1998, Consilience]
Data Revolution

Source: http://digitalcommunity.mit.edu/community/featured_content/big-data/blog/2013/06
Data Revolution

Information Explosion

- Volume
- Variety
- Velocity

Analysis Gap

Ability to Analyze
Making sense of Data, Information and Knowledge

- Today’s information deluge
- Fundamental role for the JRC role in managing knowledge in support of EU policy making
Knowledge Centres

Provide

✓ relevant data
✓ knowledge
✓ intelligence

in a **specific policy** field

The European Commission’s Knowledge Centre for Disaster Risk Management

The European Commission’s Knowledge Centre on Migration and Demography
Knowledge Centres

Provide

- relevant data
- knowledge
- intelligence

in a **specific policy** field

**The European Commission’s Knowledge Centre for Territorial Policies**

**The European Commission’s Knowledge Centre on Bioeconomy**
Competence Centres

Provide

- scientific expertise
- state-of-art methods
- tools

to inform policies in any policy field
Competence Centres

Provide

✓ scientific expertise
✓ state-of-art methods
✓ tools

to inform policies in any policy field
Competence Centre COIN

Provide

- scientific expertise
- state-of-art methods
- tools

to inform policies in any policy field

Our aims

Serve as reference point for EU policy makers on monitoring multi-dimensional phenomena

Maintain the global recognition in auditing composite indicators and scoreboards
What we do

Support to EU Services (> 40 indices & scoreboards)
- E.g., Social Scoreboard for the European Pillar of Social Rights (26/04/2017; CAB Juncker), Cultural and Creative Cities Monitor (06/07/2017; Commissioner Navracsics)

Collaborations with international partners (> 100 audits)
- E.g., Global Innovation Index (INSEAD, WIPO), Commitment to Reducing Inequality Index (Oxfam), Financial Secrecy Index (Tax Justice Network)

Methodology
- Jointly with the OECD quality control frame (conceptual coherence, multivariate analysis, sensitivity analysis, multi-criteria decision analysis, statistics and policy)

Training & Community of Practice on Composite Indicators and Scoreboards
- 6-10 November 2017, Ispra (15th year! and 2nd CoP)
### Ever increasing number of monitoring tools

150 composite indicators and scoreboards developed or used by the EC

[COIN Data Hub, available mid 2018]

50% of the EC indices/scoreboards are developed with JRC contribution

| DG FISMA | • Banks’ contribution to EU Single Resolution Fund |
| DG ECHO  | • Index for Risk Management (INFORM)               |
| DG JUST  | • Consumer Conditions & Markets                   |
| DG REGIO | • Europe 2020 Index                               |
| DG GROW  | • Small Business Act Principles                   |
| DG RTD   | • Innovation Output Indicator                     |
| DG JRC   | • Cultural and Creative Cities Monitor            |
| EEAS     | • ASEM Sustainable Connectivity Index (Oct. 2018)  |
| ECB      | • Systemic Risk Heat Maps                         |
Example 1: Cultural and Creative Cities Monitor

THE CULTURAL AND CREATIVE CITIES MONITOR

The Cultural and Creative Cities Monitor will strengthen the evidence base for the sound policies we need to promote cultural diversity and the role of the creative industries in boosting growth and people’s well-being.

Commissioner Tibor Navracsics
@TNavracsicsEU

New @EU_ScienceHub tool for #EUCreativeCities is excellent example of #science and facts supporting #culture, #innovation & development.

Tibor Navracsics
@TNavracsicsEU
Jul 6

Media uptake

So far 62 articles in the media, including praise in a UK tabloid

381,000 direct reach of JRC content on social media

FINANCIAL TIMES

London goes on offensive in effort to entice Aramco IPO

Informed sources say the oil giant is mulling a share sale that could raise $20 billion in London, challenging New York

© JRC-COIN © | Opening & Introduction
Example 1: Cultural and Creative Cities Monitor

Example 1: Cultural and Creative Cities Monitor

Example 2: JRC support to DG Regional & Urban Policy

EU2020 Index - EU Targets, 2014

- Cities
- Towns and suburbs
- Rural Areas

Source: Eurostat and calculations by JRC and REGIO. Bubble size is the share of national population living in the area.
Example 3: JRC support to the European Central Bank

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>Reference order</th>
<th>Reference order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of central bank funding</td>
<td>1</td>
<td>H</td>
</tr>
<tr>
<td>Deficit-to-GDP ratio</td>
<td>2</td>
<td>L</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>3</td>
<td>H</td>
</tr>
<tr>
<td>Banking sector leverage</td>
<td>4</td>
<td>H</td>
</tr>
<tr>
<td>Residential property prices</td>
<td>5</td>
<td>H</td>
</tr>
<tr>
<td>MFI lending to NFC</td>
<td>6</td>
<td>L</td>
</tr>
<tr>
<td>Loan to deposit ratio</td>
<td>7</td>
<td>L</td>
</tr>
<tr>
<td>GDP growth</td>
<td>8</td>
<td>L</td>
</tr>
<tr>
<td>Debt redemptions</td>
<td>9</td>
<td>L</td>
</tr>
</tbody>
</table>

**ECB – Systemic Risk Country Heat Map**

[Heat map image]

Low systemic risk ————> High systemic risk
### Example 3: JRC support to the European Central Bank

#### ECB – Systemic Risk Country Heat Map

<table>
<thead>
<tr>
<th>Country</th>
<th>Indicator</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td>Deficit-to-GDP ratio</td>
<td>L</td>
</tr>
<tr>
<td>BE</td>
<td>MFI lending to NFC</td>
<td>H</td>
</tr>
<tr>
<td>BG</td>
<td>Unemployment rate</td>
<td>L</td>
</tr>
<tr>
<td>CY</td>
<td>Banking sector leverage</td>
<td>H</td>
</tr>
<tr>
<td>CZ</td>
<td>MFI's exposure to dom. sovereign</td>
<td>L</td>
</tr>
<tr>
<td>DE</td>
<td>Debt redemptions</td>
<td>H</td>
</tr>
<tr>
<td>DK</td>
<td>Share of central bank funding</td>
<td>L</td>
</tr>
<tr>
<td>EE</td>
<td>MFI lending to NFC</td>
<td>H</td>
</tr>
<tr>
<td>FI</td>
<td>Debt-to-GDP ratio</td>
<td>H</td>
</tr>
<tr>
<td>FR</td>
<td>Loan to deposit ratio</td>
<td>H</td>
</tr>
<tr>
<td>HR</td>
<td>Current account balance</td>
<td>H</td>
</tr>
<tr>
<td>HR</td>
<td>Domestic credit-to-GDP gap</td>
<td>H</td>
</tr>
<tr>
<td>LT</td>
<td>Foreign currency loans</td>
<td>H</td>
</tr>
</tbody>
</table>

**Monitoring progress over time**

---

**Central Bank Example:**

- **JRC support to the European Central Bank Systemic Risk Country Heat Map**

---

**ECB Systemic Risk Country Heat Map**

- **AR ordering (left: less risky, right: most risky)**
- **L**: Low risk
- **H**: High risk
- **n.a.**: Not applicable

---

**JRC-COIN © | Opening & Introduction**
On behalf of the ESRB Secretariat, I would like to thank you and your team for the invaluable support you have provided us. [...] The ranking algorithm your team provided is now approved by the ESRB Advisory Technical Committee. According to this decision, from 2014 onwards, your work will be used for the (confidential) version of our systemic risk heat maps. These will be included in the regular briefing material for the quarterly ESRB General Board meetings and incorporated in our general risk analysis.

In addition, [...] we recently discussed the use of heat maps at an IMF conference on managing strategic risk earlier this month, and of course, also gave full credit to the JRC.
A compass towards better living and working conditions in the EU

- 3 dimensions & 12 areas
- 14 headline & 28 secondary indicators
- 93 indicators in total (gender/age)

Example 5: JRC support to DG Budget

- Assessment of the existing database of indicators
- Strengths and weaknesses of the current system for reporting budget performance
- Recommendations & Conclusions for an indicator framework for the next MFF.
Requests for JRC audits


- UNDP: Human Development Index
- UNICEF: 3 child-poverty indices
- UN IFAD: Multidimensional Poverty Assessment Tool
- WIPO: Global Innovation Index
- ITU: ICT Development Index
- TJN: Financial Secrecy Index

The EC JRC is an in-house science centre providing technical advice to a variety of projects throughout Europe. As part of that mission it is also an expert reviewer of project methodologies, says Siddharth Bannerjee, Nesta project lead for the EDCI. It’s important to be rigorous about methodology. It’s how bias can sneak in when not expected,” he adds. “The EC JRC may not be well known outside certain circles, but it is the ultimate indicator of what a composite index looks like.”

Forbes
Indices are powerful advocacy tools

**COIN helps to ensure that composite indicators are ...**

*developed sensibly and used responsibly.*

- **‘Sensible development’** of a composite indicator implies a quality control process based on both conceptual and statistical considerations.

- **‘Responsible use’** calls for care in drawing conclusions and recommendations without taking into account the conceptual context in which composite indicators were developed.
Welcome to email us at: jrc-coin@ec.europa.eu

COIN in the EU Science Hub

COIN tools are available at:
https://composite-indicators.jrc.ec.europa.eu/