# Expericenes of the Deutsche Bundesbank

## Session 4. Efforts to strenghten information sharing and dissemination

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**Financial Information Forum of Latin American and the Caribbean Central Banks**
**V Meeting**
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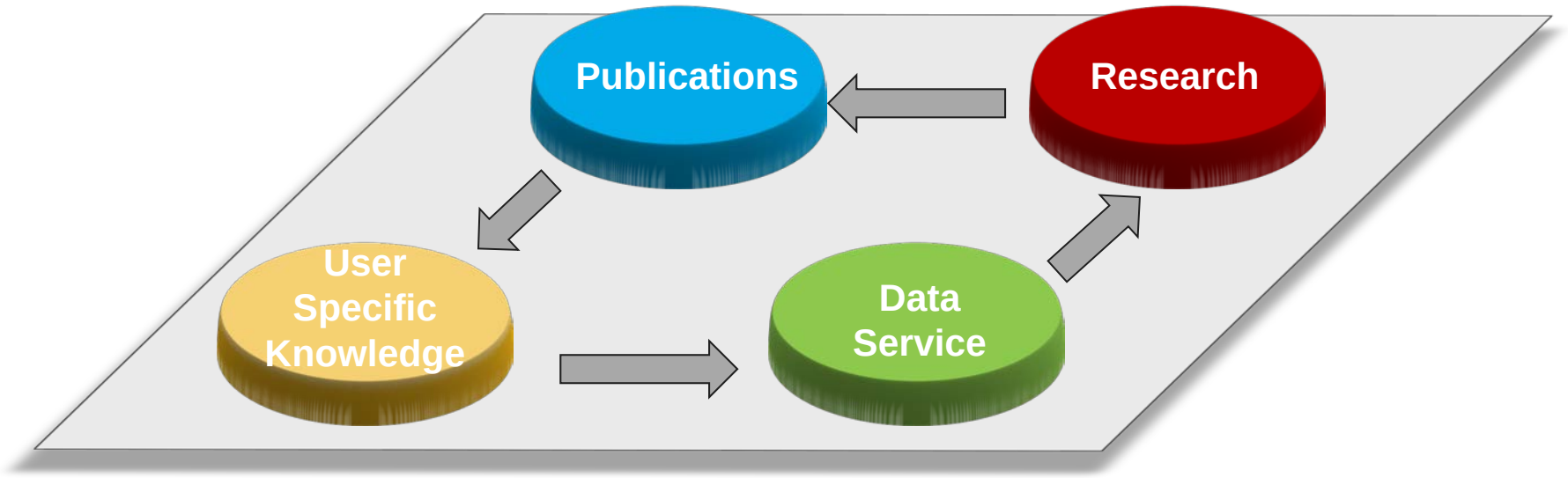
**Lima, Peru**

The views expressed here do not necessarily reflect the opinion of the Deutsche Bundesbank or the Eurosystem.

# What's new in (central bank) statistics?

- Micro data overhaul the traditional value-added chain in central banking statistics.
  - Traditional central banking statistics are collected for a **specific purpose**.
  - Micro data are collected only once and can be used for **multiple purposes**: The statistical reporting burden declines.
  - **Data protection** becomes more challenging.
- Technological innovations have revolutionized the infrastructure for collecting, storing, and using micro-data.
  - Advanced knowledge in storage and organization of large (integrated) micro-data.
  - Improved tools for analyzing and processing micro-data.
  - Cheaper storage technologies.
  - Standardization.
- Official statistics has lost the monopoly in providing information to society.

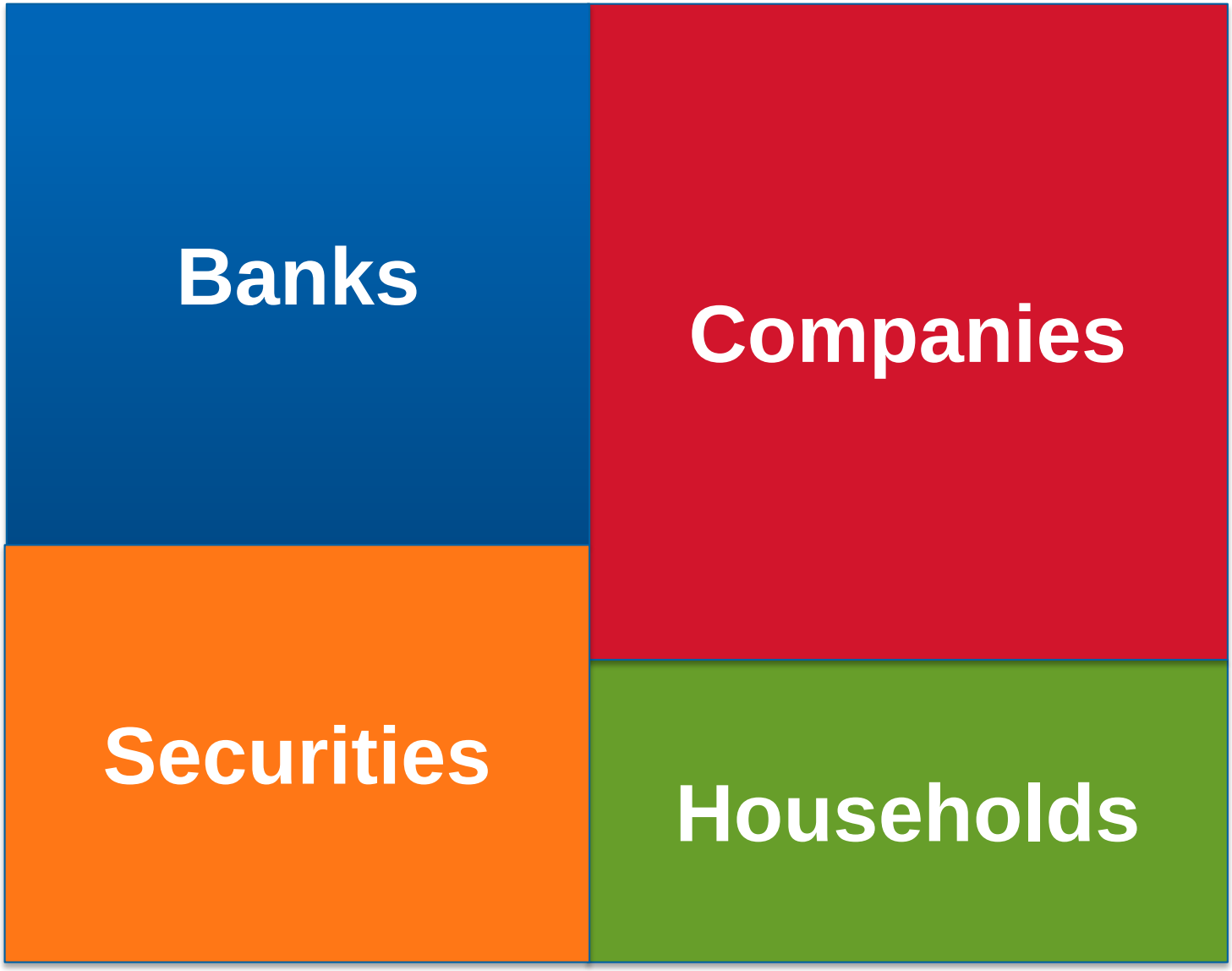
# Knowledge Life Cycle



# Overview

- (Motivation)
- The Research Data and Service Center of Bundesbank (RDSC)
- INEXDA: The International Granular Data Network

# Available microdata at the RDSC



# Motivation for establishing the RDSC: IMIDIAS

- The RDSC is part of the internal project **Integrated MicroData-based Information and Analysis System (IMIDIAS)**
- Granular data become more and more important for assessing monetary and regulatory policy as well as for financial stability. Hence the Bundesbank has launched the large-scale initiative IMIDIAS aimed at making better use of existing data both, for policy analysis as well as internal and external researchers.
- **Goals of IMIDIAS:**
  - Support policymaking process
  - Encourage cooperation with (external) researchers
  - Promote evidence-based policy-making

# Tasks of the RDSC

**The RDSC offers access for non-commercial research to (highly sensitive) micro data of the Bundesbank:**

- Generate (linked) micro data
- Offer advisory service on data selection and data access (data handling, research potential, scope and validity of data)
- Provide data access and data protection
- Document data and methodological aspects of the data
- Work on own research projects (in close cooperation with the Bank's business areas and the Research Centre)
- Organize conferences and workshops.

# Factsheet on the RDSC

- 20 employees
- 12 working places for guest researchers in Frankfurt
- 2 working places in Düsseldorf
- In 2018:
  - Around 130 project applications, 73 were realized
  - Around 280 output controls
  - Average of used data products per research project: 2.68
  - Papers of RDSC users are out
- In 2017: over 300 active projects, over 160 institutions involved (around 90 non-German)

# Data Generating Process

Until now (in many cases): ad hoc generation of data for research.

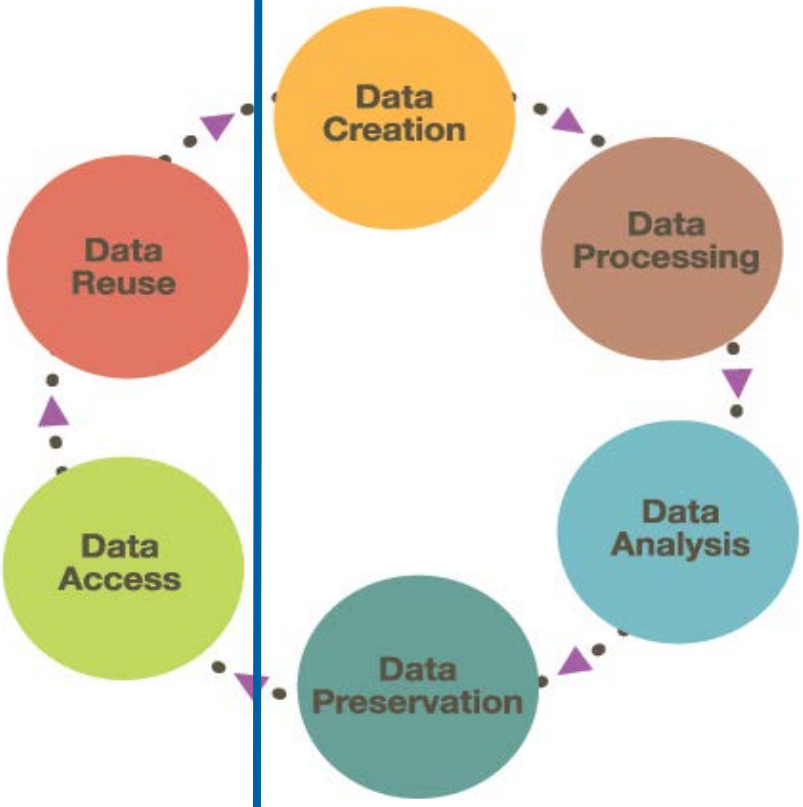
RDSC has started to/with:

- Establishing standardised data products.
- Implementing RDSC data quality procedures.
- Documentation of data.
- Harmonisation of data.
- Register data to get data identifiers (DOIs).

# RDSC - Research Data Life Cycle

- Definition of final data or data structure (research data)
- Identification of data source
- Data transfer (interfaces)

## Front-Office




- Overview of research on that topic/field
- Feedback on data quality
- Change in data needs

- Standardising (RDSC-Standard)
- Quality assurance (QA), Validation, Cleaning

- Record Linkage
- Anomisation

- Promotion of data

## Back-Office

- Target format
- Documetation (RDSC metadata standard)
- Versioning
- Archiving
- DOI registration

# The 5 Safes in the RDSC

- **Safe people**: non-disclosure agreement, contract (with penalty up to 60,000 Euro, publishing the name, exclusion from access up to 2 years).
- **Safe projects**: non-commercial research, project description.
- **Safe environment**: working places without internet connection, (cell) phone, photo, printer and drive.
- **Safe data**: (weakly) anonymized data.
- **Safe results**:  output control, papers/presentations are checked.

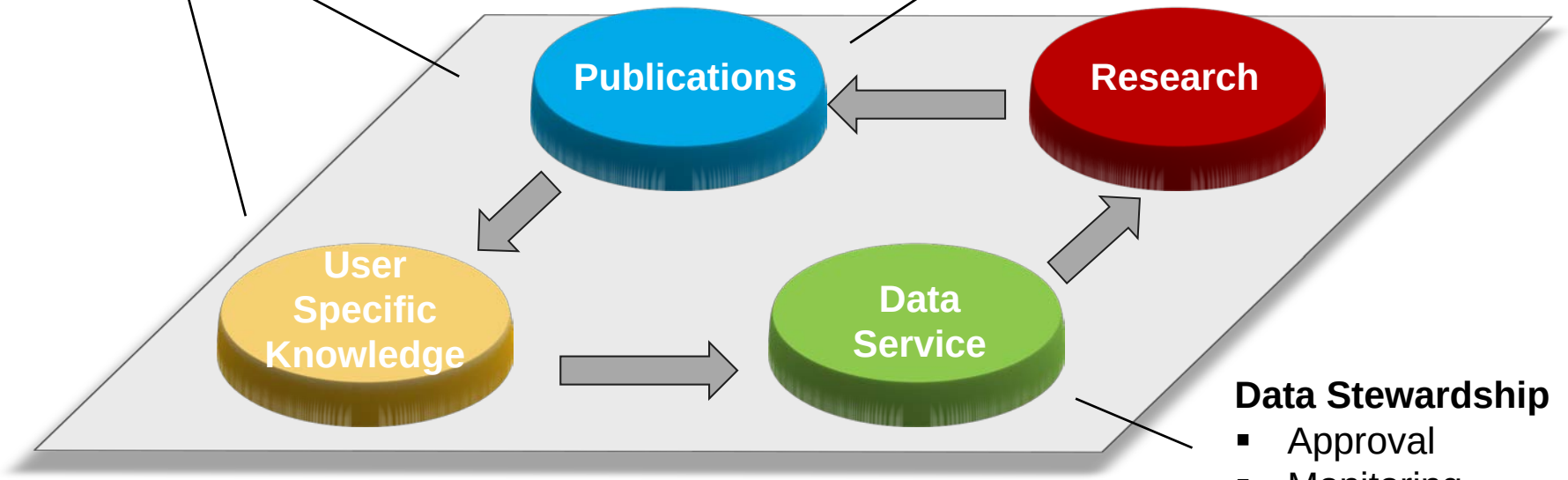
- **Access to real data**, anonymization is only one dimension, others have more effects on data protection.

# Knowledge Life Cycle (IDIS-R)II

**Collaboration**
- Knowledge sharing
- Metadata

**Secure workspace**
- Services and Tools

**Rich Context**




**Data Stewardship**
- Approval
- Monitoring
- Reporting

INEXDA

The Granular Data Network

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# Motivation

- **Aggregate datasets** are important for **monitoring macroeconomic developments** and **macroeconomic policy**
- **Granular data** is necessary to understand **global developments** and in particular **differences across countries**
- Combining datasets and looking beyond aggregate statistics into heterogeneous developments require the **transformation** of **“data“** into **“knowledge“**
- **Local constraints** make it difficult, or often impossible, to link micro datasets from different jurisdictions, even for research and financial stability analysis
- **Better accessibility** and **sharing of granular data** would open up **new possibilities** for analysis by providing new **insights into the effect of policies**

What can **we do** from the **statistical side** to support this process?

# INEXDA: The Granular Data Network

On 6th January 2017,

BANCA D'ITALIA · BANQUE DE FRANCE EUROSYSTÈME · BANK OF ENGLAND · BANCO DE PORTUGAL EUROSISTEMA · DEUTSCHE BUNDESBANK EUROSYSTEM

have launched the **I**nternational **N**etwork of **Ex**changing Experiences on Statistical Handling of Granular **Da**ta (INEXDA), an international cooperative project to declare their willingness to further strengthen their cooperation.

Since its foundation, the following institutions have joined INEXDA as members:

BANCO DE ESPAÑA Eurosistema · EUROPEAN CENTRAL BANK EUROSYSTEM · TÜRKİYE CUMHURİYET MERKEZ BANKASI · BANCO CENTRAL DE CHILE · БАНК РОССИИ · eurostat

# INEXDA‘s General Mission

- General mission is to **promote data sharing and data access**
- Promoting the **G20 Data Gaps Initiative II**, in particular recommendation 20, addressing the accessibility of granular data. INEXDA is mentioned in a G20 paper
- Acknowledging and supporting the work on data sharing of the **Irving Fisher Committee** on Central Bank Statistics
- INEXDA is governed by an **MoU**, that every member has to sign
- Sharing of granular data between INEXDA members not part of this MoU

# Working Arrangements

*The members of INEXDA have implemented the following working arrangements:*

1. **Key decisions** are made on a **consensual** basis.
2. The work within INEXDA will be performed at the **operational level of the member institutions**.
3. INEXDA members will convene **twice per year**. **Guests** may be admitted to meetings. A **pre-meeting** will be organized prior to each INEXDA meeting with the purpose to welcoming guests to discuss the progress INEXDA has made so far.
4. The **chair of INEXDA** is elected for a two year term on a consensual basis. The current chair is Renaud Lacroix, Banque de France.
5. The **eBIS*** facility operated by the Bank for International Settlements (BIS) provides the centralized location to **exchange documents** and foster collaborative activities.

* INEXDA members can access eBIS here.

# Chronology of past INEXDA meetings

**1st INEXDA meeting in Lisbon**

- INEXDA members (DE, FR, IT, PT, UK)
- *Guests:* BIS

**Jan 2017**

**Memorandum of Understanding**

Signing and publication

**2nd INEXDA meeting in London**

- INEXDA members
- *Guests:* BIS, ECB, ES

**Jul 2017**

**INEXDA Metadata Tool**

by GESIS

**3rd INEXDA meeting in Paris**

- INEXDA members (+ECB, ES)
- *Guests:* AT, BIS, CL, MX, TR, UK (NSI)

**Jan 2018**

**Working groups**

1. Dissemination
2. **Metadata**
3. **ADRF**
4. Modes of accreditation
5. Contracts for research projects/bodies
6. Modes of data provision
7. Output control
8. Risk management for published results

**4th INEXDA meeting in Basel**

- INEXDA members (+CL, TR)
- *Guests:* AT, CH, BIS, DE (NSI), Eurostat, MX, RU, UK (NSI)

**Aug 2018**

**Data Access**

**5th INEXDA meeting in Frankfurt**

- INEXDA members (+Eurostat, Russia)
- *Guests:* AT, BIS, DE (NSI), FR (NSI), GR, NO (NSI), UK (NSI)

**Apr 2019**

**Workshop on Data Access**

# Work program for the first two years

## 1 Comprehensive inventory of **data** in all member institutions

- Agreement on unified metadata schema
- Setup of a platform to collect and exchange metadata
- Start harmonizing metadata across INEXDA member countries

## 2 Comprehensive inventory of existing **data access procedures**

- ECB pilot collection of information on access for researchers
- ADRF for INEXDA proposed by Julia Lane (NYU)
- Setup of working groups

## 3 Dissemination of INEXDA **results**

- Prototype of INEXDA webpage by Banque de France.

# INEXDA's metadata schema

| | |
|---|---|
| 1 | Resource Type |
| 2 | Resource Identifier |
| 3 | Name of Dataset |
| 4 | Creator |
| 5 | DOI Proposal |
| 6 | URL |
| 7 | Language of Resource |
| 8 | Publication Date |
| 9 | Availability |
| 10 | Sampled Universe |
| 11 | Sampling |
| 12 | Temporal Coverage |
| 13 | Time Dimension |
| 14 | Collection Mode |
| 15 | Unit Descriptions |
| 16 | Descriptions |
| 17 | Geographical Coverage |
| 18 | Keywords |
| 19 | Alternative Identifiers |
| 20 | Relations |
| 21 | Publications |

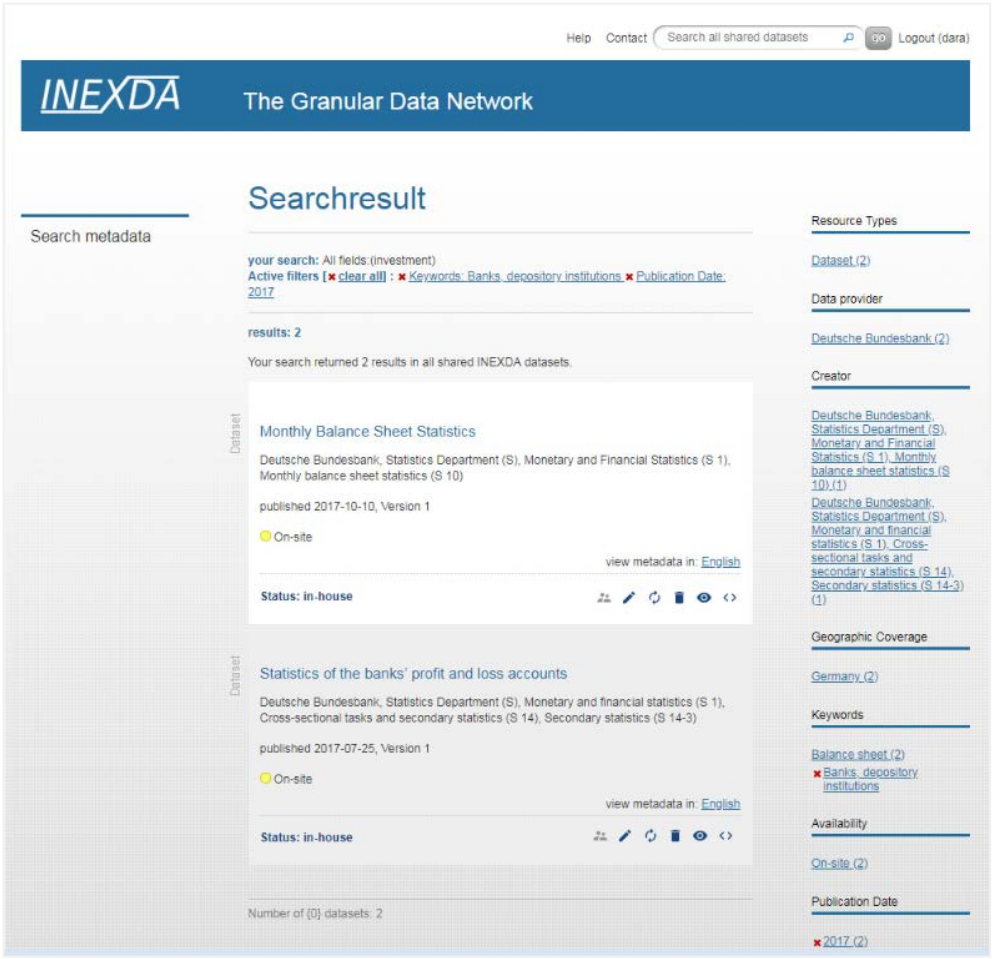
- Based on the GESIS DOI registration service da|ra (GESIS is cooperating with DataCite):

  https://www.da-ra.de/en/home

- Name of metadata items closely follows da|ra conventions to enable seamless DOI registration, if desired later in the project.

- Is basis for INEXDA metadata database that was established to store and view metadata from INEXDA members.

# INEXDA's metadata database




*The database serves as …*

1. an information tool for INEXDA members, researchers and analysts
2. the basis for the harmonization activities of INEXDA (e.g. item relation)

*Current contributions to the database come from*

- Deutsche Bundesbank
- European Central Bank
- Banca d'Italia
- Banco de España
- Banco de Portugal

# Working Group on Data Access

**1 INEXDA workshop on data access procedures**

- Serve as a kick-off event for the INEXDA work stream on data access
- Utilise current momentum to improve data access procedures for data producers and researchers.

**2 Define common access procedures**

- Identify similar workflows used by data providers.
- From there define a standard
- Need to be in compliance with internal data policies and external government regulations.

**3 Development of open software solution**

- Set of common access procedures will define software requirements
- Needs to be flexible enough to accommodate different legal frameworks

# How to become an INEXDA member

Other central banks, national statistical institutes and international organizations are **encouraged to join INEXDA**.

*The following **procedure** has been established to admit new members:*

| | |
|---|---|
| | A representative of the applying institution has to attend at least one INEXDA meeting in person before the formal application process is initiated |
| | Send an application letter signed by the head of the statistical department of the respective institution (or, in case of national statistical institutes, by the head of the responsible statistical department) to the chair of INEXDA. |
| | All INEXDA members must agree to any application by a new institution. |
| | Sign the MoU*. Congratulations, you are now a member of INEXDA. |

* The INEXDA Memorandum of Understanding (MoU) can be accessed here.

# INEXDA: Conclusion

- INEXDA provides a platform for exchanging experiences on statistical handling of granular data for central banks, national statistical institutes and international organizations

- Supports the G20 process, especially the Data Gaps Initiative 2 recommendation aiming to promote the exchange of (granular) data as well as metadata

- So far, focus has been on taking stock which granular data is available in member institutions using a unified metadata schema

- Focus is gradually shifting towards harmonizing metadata and exchanging experiences about data access procedures

# Summing Up: Bundesbank

- Accessing data through a RDSC/RDC is the best way for using highly sensitive data like Bundesbank's data.
- The Bundesbank hopes to (further) stimulate international research and policy analysis with these data.
- Accessing the data is comparatively easy and inexpensive.

➢ Come, visit us in Frankfurt!

# Summing Up: General

- **Development** was/is fast, but **incremental**:
  trust building, growing data complexity, learning process …
- (New) **skills** for researchers / data producers.
- **Engagement** of researchers (value of data work?).
- **Efficiency**: researcher passport, metadata system (with elements of tripadvisor, amazon), project management in a RDC, …
- **Harmonization/Internationalization**: G20 initiative on data sharing and data access of central banks, INEXDA.

# Thank you !

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