Linking micro datasets to better service policy-making and analyses

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IFC-BNM-ECB Satellite (Session 2)
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1. Central bank statistics supporting a wide array of policy making
2. AnaCredit: a magnifying glass for Central Banks’ tasks
3. RIAD: a register to integrate micro and granular data
4. Challenges and opportunities
5. Possible way forward
1. ECB Statistics supporting a wide range of policy-making

ECB’s Monetary Policy

ESCB statistical function

SSM Banking Supervision

ECB/ESRB Macro prudential policies

Single Resolution Board
“…well-established ESCB statistics will continue to provide the “big picture” of economic developments. But we should also offer a magnifying glass.”

Mario Draghi, ECB President, 8th ECB Statistics Conference, 2016

Moving beyond and behind aggregated data on credit to corporations and related credit risk using granular AnaCredit, as a “magnifying glass” to:

- Better understand monetary policy transmission and systemic risk
- Respond to unforeseen policy needs

⚠️ Non-standard times => Non-standard measures => New statistics!
Multipurpose dataset

Monetary policy conduct

Demand & supply in credit markets and access to finance of SMEs

- Evaluate lenders' risk exposures and balance sheet conditions and borrowers' indebtedness to appropriately identify demand and supply in credit market
- Identify shocks to demand and credit crunches
- Analysis of credit market conditions for SMEs
- Assess the impact of non-standard monetary policy measures on SMEs access to funding through bank credit
Multipurpose dataset

Monetary policy implementation

- transmission channels of standard/non-standard monetary policy measures
- study "credit channel" and "risk-taking channel" of (standard) monetary policy
- assess non-standard measures such as liquidity provision (TLTROs) which are targeted to specific types of borrowers
- detailed information on banks' loan portfolio and evaluate the impact of measures on firms' access to finance, especially SMEs
2. A magnifying glass for Central Banks’ tasks (4/6)

**Multipurpose dataset**

Risk management

**Sectoral risk analysis/monitoring for macro stress testing**

- detect *systemic vulnerabilities at sectoral level*, e.g. compute expected shortfalls, exposure indexes

- improve macro-stress testing, by allowing to develop a module for SME losses using micro data
Multpurpose dataset

Financial Stability

Risk exposures, interconnectedness and potential contagion

- study the *interconnection between host-country banks’ loans* and their mother companies via the credit portfolio and credit risk associated
- understand *interconnectedness* and possible *contagion* across jurisdictions
- analyse *capital flows in periods of crisis* and assess possible policy instruments to mitigate liquidity dry-out
2. A magnifying glass for Central Banks’ tasks (6/6)

**Multipurpose dataset**

**Developing new and enhancing existing statistics**

- Enhance the *quality of statistics* comparing aggregated and granular data; Compile new breakdowns of aggregated statistics not collected directly from reporting agents

- Further analyse credit allocation and *credit risk concentration* to assess their economic and employment impact

- Support and monitor new areas of policy, e.g. *green finance*
• AnaCredit = *Analytical Credit Datasets*

• *Loan-by-loan* information on (euro area) *banks’ credit exposures* to *all legal entities* – including Small and Medium size Enterprises

• All euro area (19) and, nearly, all (27) *EU countries*
  
  ❑ *Reporting* initially *from Credit institutions only*

• Basic features:

  ❑ *88 data attributes per loan*, including lender and borrower identifiers (=>link to *business register*), credit and credit risk, interest rate

  ❑ Reporting frequency: *monthly* (quarterly for some attributes)

  ❑ *Proportionality* with possibility for NCBs to grant (full or partial) *derogations to smaller institutions* and € 25,000 *reporting threshold*

  ❑ *First reporting* in November 2018 = 1\textsuperscript{st} reference period *Sept. 2018*
3. RIAD in a nutshell

RIAD as the backbone of all ESCB granular statistics

- RIAD to serve as unique, *shared master data set serving all ESCB granular data collections*: lenders and borrowers (loans), issuer and holders (securities) and beyond

- A *shared platform*, for several stakeholders both in ‘write’ and in ‘read mode’, with NCBs as national hubs

- Advanced compounding rules to always derive the best information *at any point in time*

- Strict checks to ensure *high data quality and consistency*

- Flexible derivation of *group structures* based on different definitions
Comprehensive data model

incl. reference data on individual units plus relationships among them

A. Identification  e.g. identifiers, address
B. Stratification   e.g. industrial activity, geographical allocation
C. Demographic developments  e.g. birth/closure date, corporate actions
D. Relationships between units  e.g. ownership, control, (fund) management

Linking different datasets: a key feature for data integration!

Full historisation of all data ... new data versioning

Elaborate access management

e.g. special application roles and different levels of confidentiality
• RIAD allows to identify, store and present *two types of group composition*
  ✓ Type A – based on direct and indirect “control”
  ✓ Type B – based on “pure ownership” (all relationships)
3. RIAD Stakeholders and Use cases

Standardising and integrating existing frameworks across domains:

- Financial Market actors
- Non-compliance cases
- Credit lenders and borrowers
- Published lists
- Securities issuers and holders
- Statistical reports

Market Infrastructure and Payments

- Payment Services Institutions
- SSM Master Data
- Supervised banks invoicing

Banking Supervision

- Banking group structure
- Aggregated risk analysis

Risk Management

- Identification of risk counterparties
- Debtors data

Market Operations

- Group structure
- Close Links relationships
- Collateral management counterparties
- Market operation counterparties

Statistics

RIAD
To gradually increase availability of *granular data* at the ECB, while ensuring a *holistic approach* to data reporting building on

- **Consistency**: same concepts and definitions across domains
- **Interoperability**: possibility to combine granular information from different frameworks (e.g. securities, loans) to assess total exposures
4. Challenges and opportunities (1/3)

- [...] **big data** also involve challenges related to, e.g., *identification* and *effectiveness and efficiency* in the data usage and analysis.

- Dynamic factor models, or Bayesian shrinkage, can help address difficulties arising from the *multiple dimensions* of dataset.

- But some methods are still being developed, e.g. for cases involving many observations – over time as our datasets grow ever larger.

Speech by Benoît Cœuré, Member of the Executive Board of the ECB, at the conference on “Economic and Financial Regulation in the Era of Big Data” - Banque de France, Paris, 24 November 2017.
The Eurosystem supports banks in implementing AnaCredit

**AnaCredit Manual**
- Detailed *documentation to clarify* the reporting for AnaCredit datasets
- To provide additional background and guidance with concrete *cases/examples*
- Parts I, II and III = 577 pages have been *published* a year-and-a-half prior to go live
- AnaCredit Manual complemented by Q&As
- Validation checks (also published) to help automate

**Cooperation via BIRD**
- Cooperation with the banking industry within *Banks’ Integrated Reporting Dictionary (BIRD)*
- BIRD provides a formalised representation of AnaCredit as set out in Regulation *from the business point of view*
- Commercial banks participate on a voluntary basis
4. Challenges and opportunities (3/3)

- **Complex financial world** reflected in *complex AnaCredit data model* necessary to support a *wide range of analyses on credit and credit risk*; still the data model is *explained at length in the Manual and Q&As*

- Statistics areas will support researchers at central banks (and beyond) by offering *pre-defined ‘views’ of the data* tailored on their needs

- Continuous **dialogue with researchers and other users** to define most appropriate *data marts* for pre-defined queries and analysis; Also **banks** will benefit from *feedback loops*

- Ensure **methodological support** – e.g. consolidate exposures or debt –, *correct usage of the data* and interpretation of the results
5. The way forward

- First delivery of data to users – expected by end-2019 after ca. 12 months to fix initial teething problems

- Acquire and further develop tools to analyse the data with a view to deriving stories out of them

- Then, start reflecting on possible extensions – 2022 and beyond
  - Extend coverage to other lenders, e.g. FVCs, FCLs, Insurance
  - Extend credit risk attributes
  - Cover other instruments

- Ensure more data integration with other reporting e.g. banks’ balance sheet (BSI), banks’ interest rates (MIR), securities holdings (SHS) from all sectors or large institutions
Thank you!

Questions?

Word-cloud from the AnaCredit Regulation
ECB broader strategy for statistics: key words

Harmonisation based on Standards
define common practices and processes for data production based on standardised concepts

Integration
managing various areas of statistical (and supervision) information as parts of a single system

Digitalisation
benefit from dematerialisation of financial documents in the banks’ systems
2. A magnifying glass for Central Banks’ tasks

- AnaCredit will provide *complete* and *harmonised* information on credit and credit risk for all euro area countries - and beyond…

- Data based on
  - Common *concepts and definitions* across 19, and actually 27, countries
  - Unique *reporting threshold* - € 25,000

- Comprehensive and harmonised *data assurance metrics*

- Gradually *replacing existing credit registers*

- A *10-year-old dream* comes *true*!

  “For a more resilient international financial system we need a global credit register based on a harmonized approach with adequate standardization across countries” — Issing Committee (February 2009)