



INFORMATION TO UNLOCK POLICIES

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SEPTEMBER 2023



BANCO DE
PORTUGAL
EUROSISTEMA



Outline

- Good data and good policies
- Banco de Portugal as an increasingly data-driven central bank
- Deep dive on the importance of data to ensure a smooth transition to low-carbon economy



Good data => good policies

Real live examples from my experience of policy maker

“What we measure affects what we do. If we measure the wrong thing, we will do the wrong thing. If we don’t measure something, it becomes neglected, as if the problem didn’t exist.”

Stiglitz, J., J. Fitoussi and M. Durand (2018), *Beyond GDP: Measuring What Counts for Economic and Social Performance*, OECD Publishing, Paris



BANCO DE PORTUGAL AS AN
INCREASINGLY DATA-DRIVEN
CENTRAL BANK



Data is a major asset for central banks

- ✓ Monetary policy
- ✓ Supervision
- ✓ Research
- ✓ Production of statistics
(value return to the society)



Approach of Banco de Portugal

- Internal data sharing (**Integrated data management program**)

Implementation of a **data governance model** and the development of a **data warehouse**, supported by a **data catalogue** and a **master and reference database**

- Harmonized information ecosystem (**Modern data architecture**)

More **efficient in data collection** and **processing**, **optimizing data quality** control processes and **automate many business processes**, and complemented with **data science labs**

- Improving data skills (**BdP Academy / data science school**)

Reflect knowledge from years of work in technological **solutions that optimize decision making**



New data challenges

Microdata are the mainstream and have become more granular

New sources of data that can be transformed into **new knowledge**

Projects involving **big data** are more frequent

Very big **structured datasets** coexisting with very large **unstructured data**

New **data science** approaches to analyse and explore data landscape

Security and **privacy** is a major concern



AI and Advanced Analytics

... for Central Banks

Opportunities

Faster and efficient analysis of a growing volume of data

Facilitate decision making

Better talent management

Challenges

Grey area in explaining and interpreting analysis

Lack of trust

Traceability, auditability, and security of information



AI and Advanced Analytics

... at Banco de Portugal

- Development of solutions based on **business use cases** and **responsible AI frameworks**
- Promoting **data culture** among the business areas
- **Support the use of self-service & Advanced Analytics tools** (Power BI and SQL Data Labs)



Banco de Portugal's AI Platform

- ✓ Automate highly manual and time-consuming processes and tasks in:
 - **Statistics**
Detect anomalies in data report, e.g. with Central Credit Register
 - **Supervision**
Classification of information requests and complaints from the public
Validation of credit contracts' templates
 - **Markets**
Analysis of media and research articles to extract market sentiment
 - **Procurement**
Acquisition procedures (information extraction; navigation between documents)

... and growing



IMPORTANCE OF DATA TO ENSURE
A SMOOTH TRANSITION TO A
LOW-CARBON ECONOMY



Climate change is a new source of financial risk

Data will always be imperfect, but we are working to further develop new ways of mapping the transmission channels to the economy

➤ **Reliable, granular, comparable, and relevant** information to:

- correctly identify, assess, and quantify risks
- understand the interaction between climate change and the economy
- fulfil the mandates of authorities (including Central Banks)
- prevent greenwashing practices

**To
support
good
policy
decisions**



Global problem, so global cooperation

... also on climate data

- NGFS (Network for Greening the Financial System) work on **bridging data gaps** and the definition of **climate scenarios** provide a **common benchmark** to regulators and supervisors **at international level**
- Joint work of the European Financial Reporting Advisory Group and the International Sustainability Standards Board: to ensure **international consistency** and **minimize overlapping climate disclosure standards**



Collection and use of the data

- Scenario analysis and stress tests, warrants very granular firm-level information on greenhouse gas emissions and the specific location of firms' physical assets

Private providers

- 1st assessments (data limitations)
- Opacity of methodologies inhibits the scrutiny of the data

Public sources

- Produce in-house data (lack of granularity)
- ECB analytical indicators on physical and transition risks: commitment to improvement

Supervised institutions

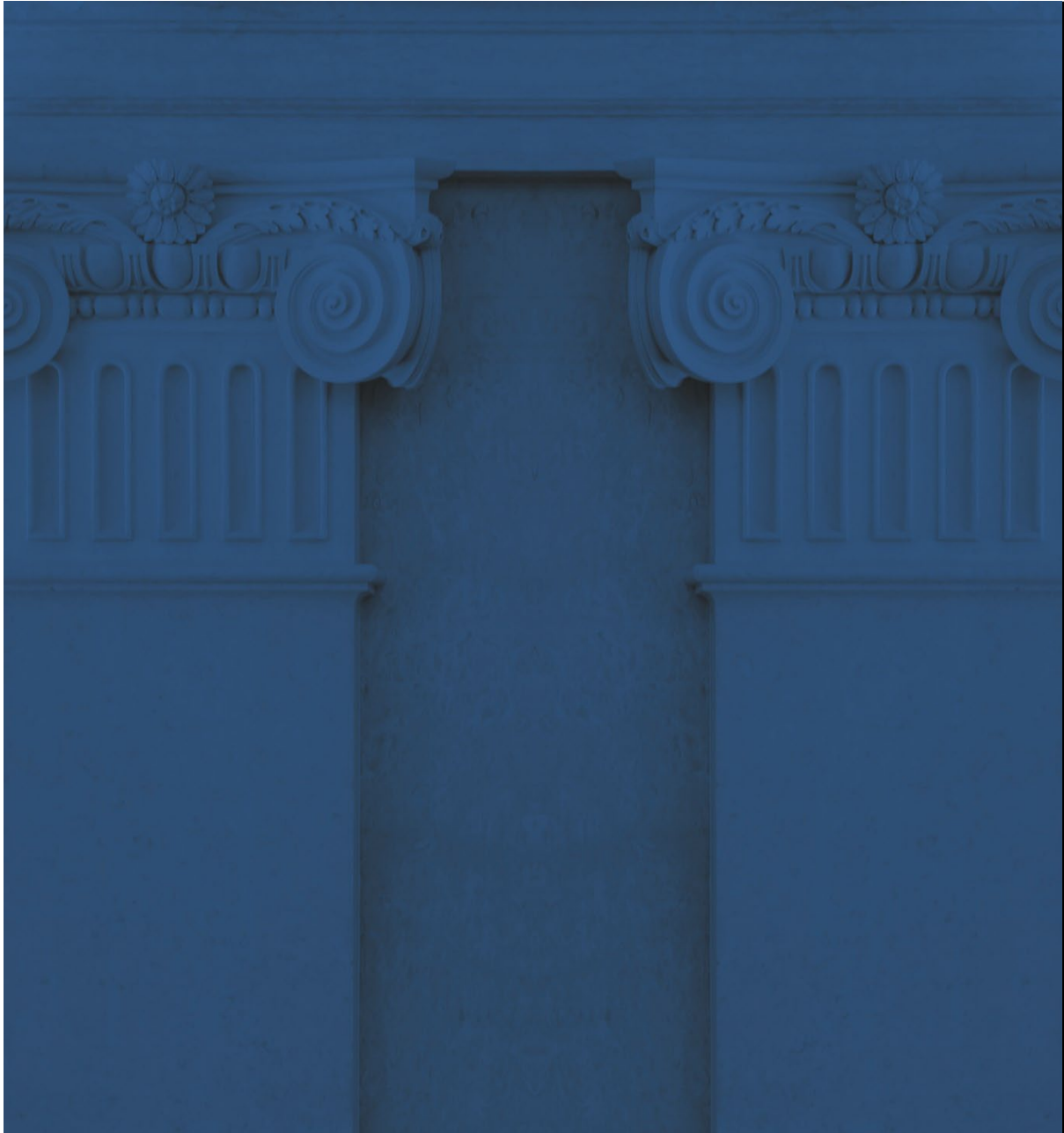
- Privileged relationship with clients
- Readily available and granular



Some challenges

- Lower coverage of compiled indicators: lack of information about firms' carbon emissions
- The concept of emission intensity (i.e. emissions scaled by an indicator of firms' activity), use revenues rather GDP (or GVA), leading to important biases
- Indicators do not consider information about the existing mitigation measures (existence of collateral; insurance)
- Physical risks can be highly amplified by the occurrence of compounding events (e.g., windstorms and coastal floods), a fact that is difficult to incorporate in analysis

...further work at the statistical level



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