



Irving Fisher Committee on
Central Bank Statistics

BANK FOR INTERNATIONAL SETTLEMENTS

IFC – Bank Indonesia International Workshop and Seminar on *“Big Data for Central Bank Policies / Building Pathways for Policy Making with Big Data”*

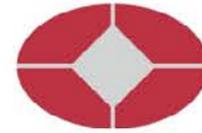
Bali, Indonesia, 23-26 July 2018

How do central banks use big data to craft policy?¹

Bruno Tissot,

Bank for International Settlements

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



BANK FOR INTERNATIONAL SETTLEMENTS

How do Central Banks use Big Data to craft policy?

Bruno TISSOT

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Head of Secretariat, Irving Fisher Committee on Central Bank Statistics (IFC)

International Seminar on Building Pathways for Policy Making with Big Data – Bali, 26 July 2018

Panel discussion



Overview

- ❑ Central banks' growing interest for Big Data
- ❑ Main results of an IFC survey
- ❑ Working with Financial Big Data
- ❑ Lessons identified during the Workshop
- ❑ Looking forward



Central banks' growing interest for Big Data

- **Private sector** use big data to produce new & timely indicators
- Opportunities for **Central Banks: new type of information**
- Not just the internet: **3 key developments in Financial Big Data**
 - The **internet** of things
 - **Digitalisation**
 - Expansion of **micro financial data-sets** in the aftermath of the Great Financial Crisis of 2007-09



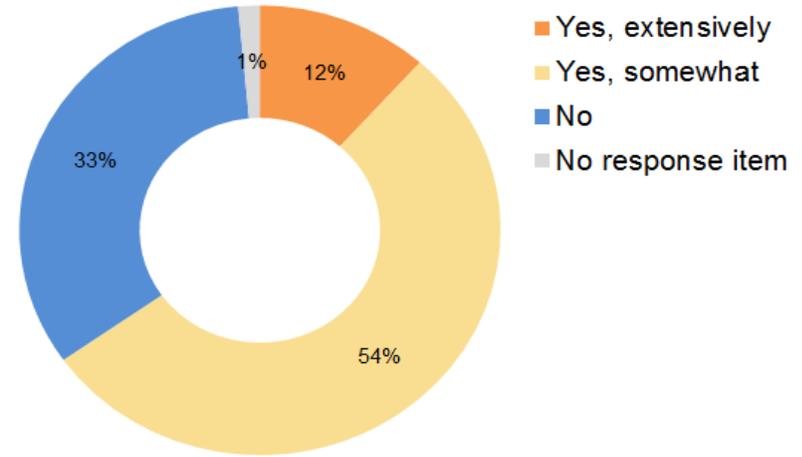
Central banks' growing interest for Big Data

- Recent IFC survey to **assess experiences and interest**
- **Report** on www.bis.org/ifc/publ/ifc-report-bigdata.pdf
- Big Data concept is **not clearly defined**: different understanding and interest among institutions
- Not so much interest in exploring Big Data in general terms...
... but **focus on issues related to central banks' mandates**

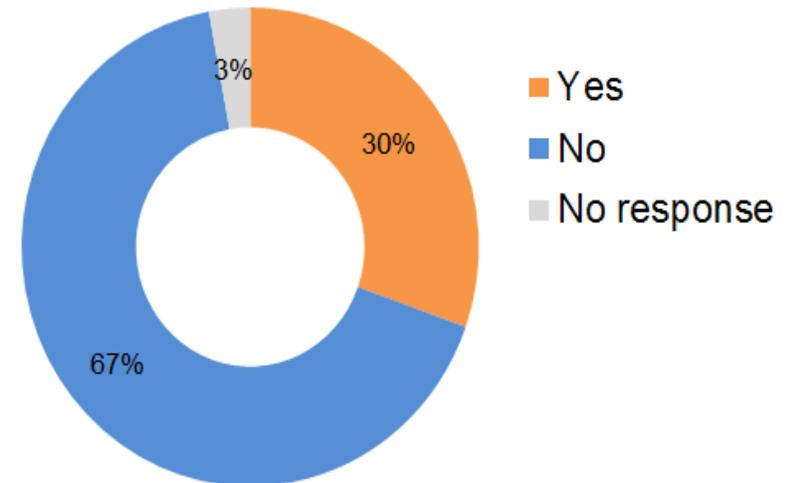


Main results of an IFC survey

- **Significant interest** in big data within the central banking community, esp. at **senior policy level**
- Yet central banks have **limited experience** in use of big data



Is the topic of big data being formally discussed within your central bank?

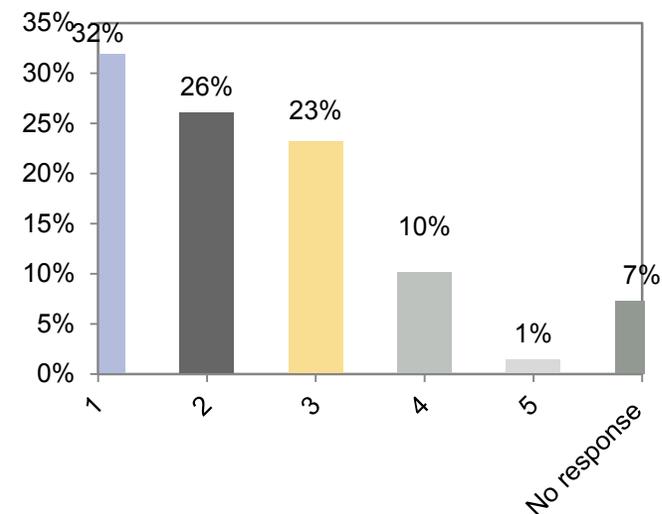


Are you already using big data sources?

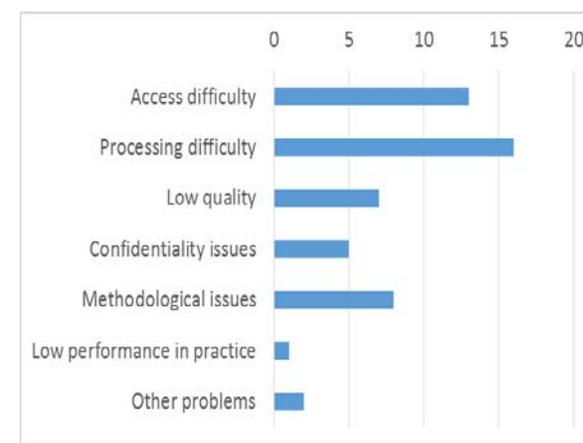


Main results of an IFC survey (2)

- About 60% of the central banks **are not ready to start a regular production** and analysis of big data
- Main **challenge relates to accessing and processing** the data



How would you rate the readiness of your central bank to start regular production and/or analysis of big data (1: low readiness/not ready to 5: high readiness)

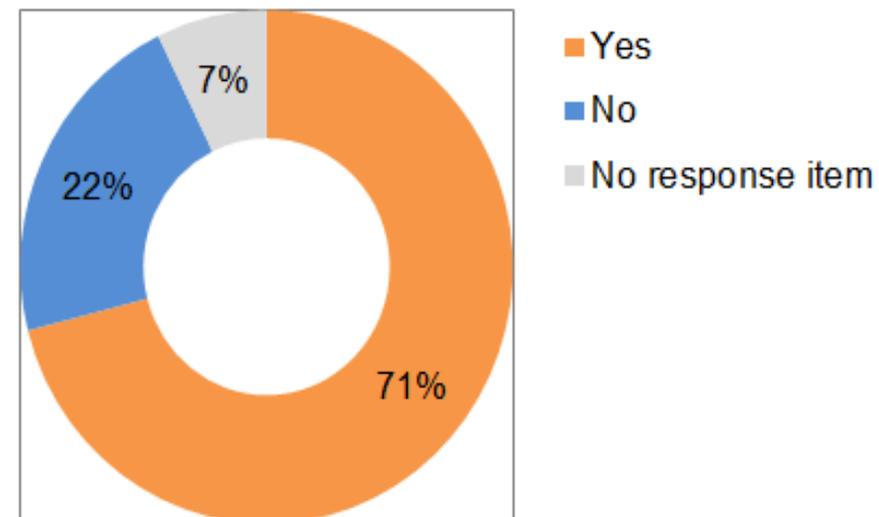


Challenges of using big data



Main results of an IFC survey (3)

- A vast majority of central banks **want to cooperate** together



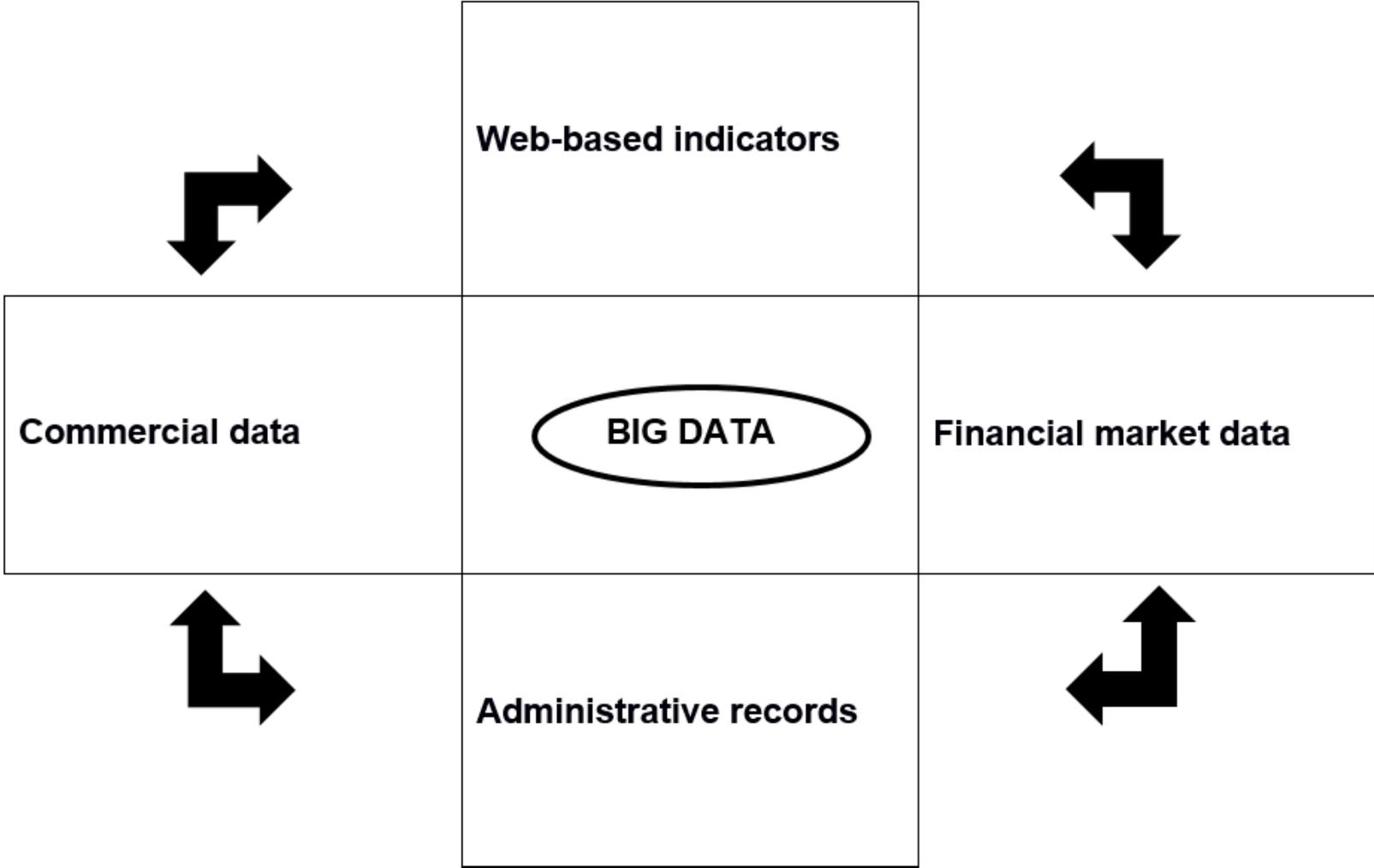
Would you be willing to cooperate with other IFC members and engage your central bank in the area of big data?

- **Selected big data pilot projects**

- Administrative dataset (eg corporate balance sheet data)
- Web search data set (eg Google type search info)
- Commercial dataset (eg credit card operations)
- Financial market data (eg high-frequency trading, bid-offer spreads)



Working with Financial Big Data: 4 main areas



Working with Financial Big Data: Exploration

- Key objective for central banks is to **better understand**
 - The new data-sets and related methodologies for their analysis
 - The value added in comparison with “traditional” statistics
- Focus on **pilots**: how big data can help to
 - Better monitor the economic and financial situation
 - Enhance the effectiveness of policy
 - Assess the impact of policy actions
- Possible tasks may well **further expand**
 - Constant creation of new information/research needs
 - Exploring behaviours in a “virtual economy”



Working with Financial Big Data: Opportunities

- **Focus on sources** that can effectively support micro- and macro-economic as well as monetary and financial stability analyses
 - Other big data – eg geospatial information – of lower interest
- **Feedback loop** inherent to policy-making authorities
 - Big data sources can affect policy-making
 - In turn policies implemented can generate new data-sets
- Big data provide **new “business opportunities”** for central banks
 - Qualitative statements to decipher central banks’ communication
 - Large number of big data pools generated by financial regulations
 - In turn, big data can strengthen supervisors’ capacity



Working with Financial Big Data: Challenges

- **Handling big datasets** requires significant resources and proper arrangements for managing the information
- **Using big data in policy-making** is not without risks
 - **Conveying a false sense of accuracy** and precision
 - **Undermining** effectiveness / reputation / legitimacy of **policy**
 - **Altering decision-making**
 - *bias towards responding quickly and more frequently to news, encouraging shorter horizons?*
 - *risk of excessively fine-tuning policy communication based on perceived expectations rather than actual economic developments*



Lessons identified during the workshop (1)

- 1. Potential use cases have expanded for central banks,** as monetary policy-makers and micro- & macro-prudential authorities
- 2. Authorities need to both have a bird's eye view of the financial system and also be able to zoom in depending on circumstances**
- 3. Information needs evolve over time:** the building up of fragilities will typically require aggregated statistics to spot “abnormal patterns”; resolution work after a crisis calls for timely & granular data



Lessons identified during the workshop (2)

- 4. Decisions on data have become of strategic importance**
- 5. What matters** is less the way public authorities organize their information management than **the coherence of the process transforming “data” into (useful) “information”**
- 6. Proper information frameworks needed to enhance the governance of big data-sets** collected / used by central banks
- 7. Important challenges when accessing private information that is a by-product of commercial & administrative activities**



Looking forward (1)

- What is still unknown is whether and how far big data will trigger **a change in central banks' "business models"**
 - They are **relatively new** in exploiting big data, in contrast to the greater experience gained by statistical offices
 - They have traditionally been **data users rather than producers**, but the situation has changed since the crisis
 - Central banks are **in a key position** to ensure that big data can be transformed in useful information supporting policy



Looking forward (2)

- Big data sources of information **still under evaluation**
 - **Cooperation** (both **internationally** among authorities working on financial stability issues as well as **domestically** among statistical authorities) is the way to go to learn from each other
 - **IFC ongoing collaborative work** to explore the synergies and benefits of using big data for policy purposes
 - Other initiatives to enhance **information sharing** should be promoted

