



BANK FOR INTERNATIONAL SETTLEMENTS

Big data, small data, price data, exposure data

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Outline

- Brief discussion of Prof. Cavallo's presentation
- Moving beyond "price" data to "exposure" data
- Efforts underway in the BIS International Data Hub



Billion prices project (BPP)

- Fascinating initiative:

- Perfect application of new technology to aid in macro monitoring
- More timely and (perhaps) more accurate than traditional CPI data
- Case of Argentina (other countries with significant differences?)
- Limitations of web-based prices well known, but not always relevant
 - web-based prices not representative; services not captured

- Some questions:

- To what extent are “large” products covered? (eg heavy machinery, airplanes, etc)
- How deal with “major” web retailers shutting down or falling out the sample?
- Can underlying data be matched with products produced in the respective country?
- With employment in the underlying country?



How far will web-based data get us?

- Applications of Big Data: a quick google search suggests...
 - Indices of market sentiment
 - Consumer behavior and purchasing patterns
 - Unemployment patterns
 - Price patterns and inflation (Cavallo et al)
 - Public health
 - Income inequality (tax data)
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- What about “balance sheet linkages”? Particularly cross-country?
 - Where is the “Big data” covering *exposures* and *funding dependencies*?
 - Recent IFC report on CB use of Big Data had little mention of exposure data
 - Examples: Questions of importance to macro-prudential supervisors:
 - How big are global pension funds’ aggregate exposures to real estate in Brazil?
 - How big are European banks’ exposures to structured finance?
 - How big are non-US banks’ combined short-term USD rollover needs?



Capturing balance sheet linkages:

- Proper aggregation requires underlying granularity
 - “exposure” metrics are tricky:
 - gross vs net exposures,
 - netting sets and netting agreements, collateral practices, imperfect hedges
 - potential (ie forward looking exposures)
 - Consolidated balance sheet view (transcends national borders)
 - Information about corporate hierarchy (who owns whom?)
- Balance sheet linkages highly confidential → not on the web
- Some data exist at the national level, but are often not shared
 - Legal gateways typically do not exist for sharing information across agencies
 - Virtually no sharing of such information across countries
 - Definitions of exposure metrics differ across countries
- Are “Micro data hubs” a solution?



Origins of the BIS International Data Hub (Hub)

- G20 FSB-IMF Data Gaps initiative
 - 20 recommendations covering a wide range of statistics
 - Two recommendations covering micro data for GSIBs
 - GSIB's top bilateral exposures
 - GSIB's exposures to countries and sectors
 - Aid to micro- and macro-prudential authorities in monitoring financial stability
- Multilateral Framework Agreement
- Hub Governance Group (HGG)
 - Oversees the governance of the Hub and all data sharing arrangements
 - Eleven participating countries
- Hub established at the BIS in March 2013
 - Feedback about accuracy, completeness and timeliness of data
 - Coordinate with HCS on banks' compliance with reporting guidelines



Hub's responsibilities

- Storage of highly confidential data
 - Process weekly, monthly and quarterly data submissions
 - Management of secure transmission channel and storage facilities
- Assessment of data quality
 - Feedback about accuracy, completeness and timeliness of data
 - Coordinate with HCS on banks' compliance with reporting guidelines
- Production of analytical reports
 - Separate reports for the I-I and I-A data
 - Development of analytical tools and metrics
- Secretariat for the Hub Governance Group (HGG)
 - Organization of HGG meetings
 - Facilitate communication between HGG agencies



What does the Hub collect?

- I-I credit data (top 50)
 - **GSIBs' top 50 counterparty exposures, with instrument granularity**
 - **Revised guidelines released (March 2015)**
- I-I funding data (top 50)
 - **GSIBs' top funding dependencies**
 - **Granular instrument, currency and maturity breakdowns**
 - **First reporting: July 2015**
- I-A data (BIS CBS)
 - **Established dataset → smooth reporting**
 - **Recent transition to CGFS Stage 2 enhancements**
- I-A data (Phase 3 granular)
 - **Full balance sheet with currency, maturity and instrument crossings**
 - **More detail on exposures to top counterparty countries**
 - **Reporting to start in 2017**



Data sharing arrangements

- Phase 1 (March 2013)
 - Only supervisory agencies
 - Still a “micro-prudential” focus
- Phase 2 (Sept 2014)
 - Non-supervisory central banks (BoC, BoE, BdF and SNB) gain access
 - Move towards “macro-prudential” focus
- Phase 3 (2015-16)
 - International Financial Institutions (BIS, IMF and FSB) to have limited access
 - Goal is to aid in macro-prudential surveillance and regulatory design
 - Masking and prioritisation of ad hoc requests



Operational challenges

- Ensuring common reporting basis (definitions)
 - IFRS vs GAAP
 - Definitions of Potential Exposure (PE)
- Identifiers for corporate hierarchy
 - Legal Entity Identifier (LEI) still in early stage
 - Considerable time spent cleaning entity names/parents
- Access and sharing
 - Even sharing at the national level is problematic
 - Legal gateways exist amongst supervisory agencies, but not much farther
- Integration in national supervisory/monitoring frameworks
 - Changes to supervisory work flows
 - Broadening their monitoring scope beyond national focus



Concluding thoughts

- Big Data should be exploited where possible
- But....key financial stability questions require “linkage” data
 - Generally not publicly available
 - Requires consistent definitions for aggregation
 - Starts within multinational banks’/firms’ risk management systems
- Coordinated international effort is required to:
 - Ensure common definitions for international comparability
 - Establish legal gateways for the sharing of micro data
 - Move coverage beyond “banks” to less-regulated sectors (insurance, asset managers, etc)
- Will take time !!!



That's it!!
Thank you.
Questions?

