The IMF Data Mapper – New Features and Potential to Share with Other Statistical Agencies


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Agenda
- Data Visualization Tools: Context & Objectives
- IMF Data Mapper Development
- IMF Data Mapper Architecture
- Demo of IMF Data Mapper & Key Features v2.0
- Feedback on IMF Data Mapper v2.0
- Fit within IMF Economic Information Management Program
- Options for Sharing with Other Organizations
- IMF Data Mapper Architecture – Web Service Development
- Next Steps for Sharing with Other Organizations

Background - Web Services Development for IMF Data Mapper v2.1
Data Visualization Tools: Context & Objectives

- provide more visually attractive and dynamic communications tools
- provide tools to more effectively deliver a message and reach a wider audience
- potential leverage as analytical tools
IMF Data Mapper Development

- developed with the help of external service provider (Mapping Worlds) in cooperation with an internal team consisting of RES, EXR, STA and TGS staff
- functional specifications developed in June 2007
- version 1.0 in production in October 2007, at time of WEO (World Economic Outlook) Press Conference
- including basic map chart features
- gradually expanded datasets to include other indicators – BOP (Balance of Payments), GFS (Government Finance Statistics), AFR REO (Regional Economic Outlook), joint IMF-OECD statistics (MEI-IFS data)
- version 2.0 in production in April 2008, at time of WEO and AFR REO Press Conferences
- including enhanced map chart, bubble chart, play time, history trail, selected messages
IMF Data Mapper Architecture

Data Mapper (v2.0) as released in April 2008
Demo of IMF Data Mapper & Key Features (v2.0)

www.imf.org

- map chart - dynamic links between map and charts
- play time
- bubble chart – comparison between indicators
- history trail
- multi-frequency support (e.g., joint IMF-OECD)
- export capability for use with MS PowerPoint and MS Office tools
- download underlying data to Excel
- standardization of regions across publications
- ability to leverage metadata
- multi-language support
- selected messages
- export Flash animations
- stand-alone CD-ROM production
- ability to “deep link” from external website (e.g., for press releases)
Feedback on IMF Data Mapper (v2.0)


IMF Data Mapper

Trade data sets are large and often difficult to interpret. Simplifying the data and showing policy-relevant relationships is important. The new IMF Data Mapper is a brilliant new on-line tool for doing just that.

http://www.tutor2u.net/blog/index.php/economics/comments/yuans-world/#extended

"The speech is available here from the Bank of England website. Mr Gieve’s speech (Deputy Governor, Bank of England) made use of the IMF data mapper to produce an excellent chart showing the current account deficits and surpluses around the world. You can access the data mapper here."


“The International Monetary Fund recently published their World Economic Outlook. The IMF has done a great job making their website much more interactive, and they now offer their Data Mapper that maps out their global estimates for a number of economic indicators. Below is a screenshot of the Data Mapper showing the IMF’s estimates for 2008 GDP growth across the globe. Check out the Mapper here.”
The vast majority of respondents had not heard of any specific data visualization tools. The one most had heard of was the IMF Data Mapper (25%). After that Data360 (9%). The most knowledgeable were in the Govt/CB sector. The most ignorant, in the Business sector.

40% of those who had heard of the IMF Data Mapper had tried it, but among those, only 10% were currently using it.

64% reckon they would find data comparison tools on the IMF website very or extremely useful (31% extremely).

It appears to be a complete ‘no brainer’ that people want free key economic and financial indicators published on the IMF website (64% extremely useful, another 25% very useful).

A small minority of Govt/Central Bankers (6%) do not think this is a good idea.

Other on line data mainly comes from SourceOECD (67%) and the World Bank (58%). Eondata and Global Insight battle for much of the remaining market.
Fit within IMF Economic Information Management Program

Data Collection
- National Sources
  ICS (Excel/SDMXML)
- Int'l Organizations
  OECD, World Bank, etc.
- Commercial
  Bloomberg, Global Insight, Haver Analytical, etc.

Data Management
- Area Depts
  DMX/Other?
- Research
  TBD?
- Statistics
  EDF/DMX

Data Warehousing
- IMF.Stat
  Publishable Data
  IFS, WEO, REOs, etc.
  Internally Shared Data
  Area & Functional Depts., National Sources, Int'l Organizations, Commercial Sources
  Limited Sharing
  WEO-related, etc.?

Data Dissemination
- PubStat?
  IMF.ORG Statistics Portal
  Online Databases
  Publications
- CD ROM
- SDMX

Data Analysis/Visualization
- Econometric Tools
  Fame, Eviews, Stata 8
- Dynamic/Interactive Graphics
  IMF Data Mapper

Fund-wide Metadata Standards (MetaStore, DSBB, SchemaLogic)
Options for Sharing with Other Organizations

- Host data content from other organizations through the IMF Data Mapper on www.imf.org – currently done for OECD MEI data but not scalable
- Distribute or "license" the IMF Data Mapper application to other organizations – not recommended because it requires PHP infrastructure and presents difficulties to manage common code base
- Define a common “IMF Data Mapper aware” web services interface for data retrieval and configure IBM SOA appliance to redirect data request web services calls to the data provider – web services development will be performed anyway
- Setup the Data Mapper on an Extranet site (hosted by Mapping Worlds) with controlled access – preferred approach while reusing web services development
IMF Data Mapper Architecture – Web Services Development for Sharing with Other Organizations

Data Mapper v2.1 Enhancement - Proposed Design
Next Steps for Sharing with Other Organizations

- Development of Web Services
- Consider Hosting by Mapping Worlds
- Assess Interest of Other Organizations
- Potential Sharing of Future Development Costs

Questions?
Background - Web Services Development for IMF Data Mapper v2.1

- Why Web Services?
  1. To reduce the burden of manual data upload due to frequent data changes and releases
  2. To make a much larger data set in Economic Data Warehouse accessible through a special version of the Data Mapper for internal use and data analysis

- But, what Web Services?
  1. IMF.STAT Data Mapper Web Services
     - Highly customized implementation of a new web services interface for the Data Mapper application which could yield best performance
     - Bypass the existing Web Services layer and directly access EDW
  2. IMF.STAT Data Mapper Web Services
     - Leverage an existing set of web services to the EDW
     - Requires Data Mapper to retain input query parameters to combine with web service XML output to produce the final data set
     - Requires additional data transformation and metadata mapping
3. IMF.STAT SDMX Web Services

- SDMX is standard based which could lead to ease of integration and wide adoption in the future
- SDMX Web Services is one of supported interfaces to the IMF.STAT already
- However, SDMX is a verbose format and the transformation of SDMX data to a format usable by the Data Mapper can be technically challenging
- XML data returned by SDMX Web Services can be extremely large in size preventing it from use in interactive applications, such as the Data Mapper. For instance, it is not practical to directly transmit data in SDMX ML Generic format to the Data Mapper browser via the Internet.

  • In the short term, apply data transformation on the web server to reduce the complexity and size of SDMX data before transmitting to the Data Mapper browser.
  • In the medium term, explore alternative options of reducing XML file size by either applying data compression before data transmission or revising SDMX Web Services to produce SDMX ML Compact or SDMX ML Cross-Sectional formats could be explored as well