

Data Stocks and Flows in the U.S. National Accounts

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JIS Data Value Creation Workshop

Virtual

February 4, 2021

How does data create value? IoT Sensor Data

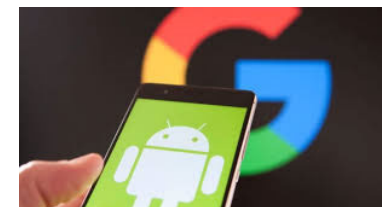
- Caterpillar and John Deere install sensors on machinery and equipment to collect data on operations.
- Sensor data are combined with historical and real-time data on weather, irrigation, and other relevant systems.
- Actionable intelligence is available in platforms to reduce downtime, save fuel, improve safety, and manage crops and worksites.



How does data create value? Personal Data



- Insurance firms collect health and lifestyle data from fitness devices and social network sites to assess risk.
- Location firms collect geolocation data from mobile service providers and mobile apps to sell to advertisers, retailers, and investment firms.
- E-commerce firms collect purchase and browsing data to predict demand and improve service.



Do we see data now?



- **Short answer:** No, not in national accounts
- Databases are within scope of the national accounts boundaries for production and assets
 - Exclude value of data in own-account databases
 - Include value of data in market purchases of databases
- The U.S. national accounts are consistent with international guidelines (*System of National Accounts*)
- Not all assets in national accounts are produced

What should be our approach to measuring and reporting on the value of data?



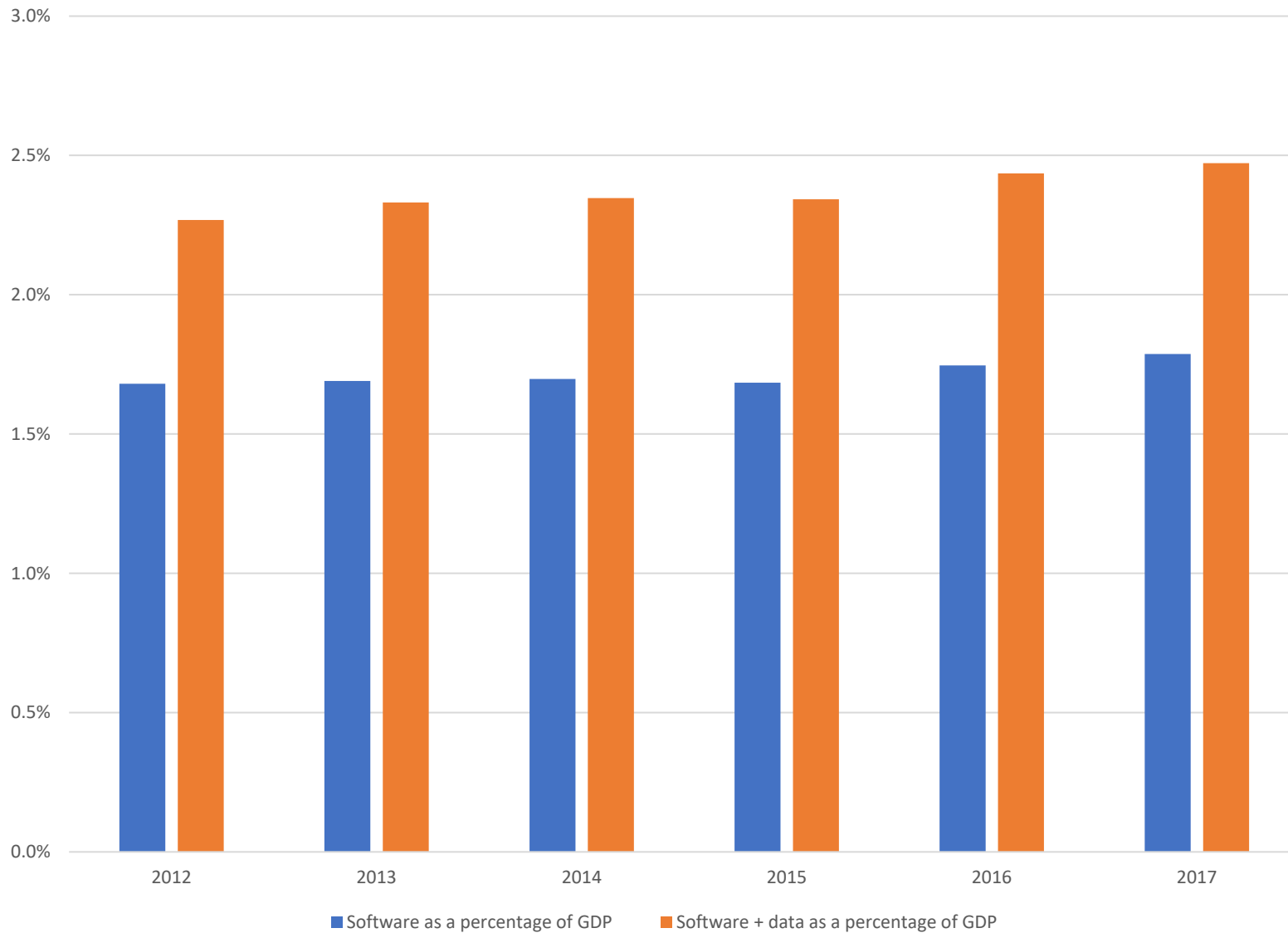
- Research at BEA on data stocks and flows
- Consistent with emerging guidance on the valuation and recording of data
- Valuation methods
 - Market-based: observed transactions
 - Income-based: discounted present value of future profits
 - Cost-based: sum of production costs
 - Labor costs – total compensation
 - Capital costs – economic depreciation and return to capital
 - Intermediate input costs
- Record as a component of software or databases

What should be our approach to measuring and reporting on the value of data?



- Estimating labor costs
 - Identify occupations engaged in data-related activities
 - Collection
 - Storage
 - Processing and analysis
 - Distribution
 - Unsupervised machine learning with online job postings from Burning Glass Technologies
 - Mindful of overlap with existing R&D and software assets
- Estimating capital costs
 - Capital may be more important than labor: e.g., IoT

What should be our approach to measuring and reporting on the value of data?



Thank you!

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