The Data Economy: Market Size and Global Trade

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The disclaimers:

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Li: The views expressed are those of the author and do not necessarily reflect those of the U.S. Bureau of Economic Analysis.

Motivation

- Growth in data flows and use —> need to measure size of market
- Data as an entry barrier in many markets
- Data an intangible asset used by some firms but not others —> how significant is organisational capital as a distinguishing feature?
- Data flows across borders in asymmetric ways —> implications for trade policy?

Recent literature

- On value of data: Eg Jones & Tonetti (2019), Bergemann, Bonatti & Gan (2020) as well as Li et al (2019), Coyle et al (2020)
- On competition: Cremer, Furman, Scott-Morton reports; CMA (2020)
- On trade: Baldwin (2019), Tomiura et al (2020)
- On organisational capital: Lev (2018), Li & Hall (2020)

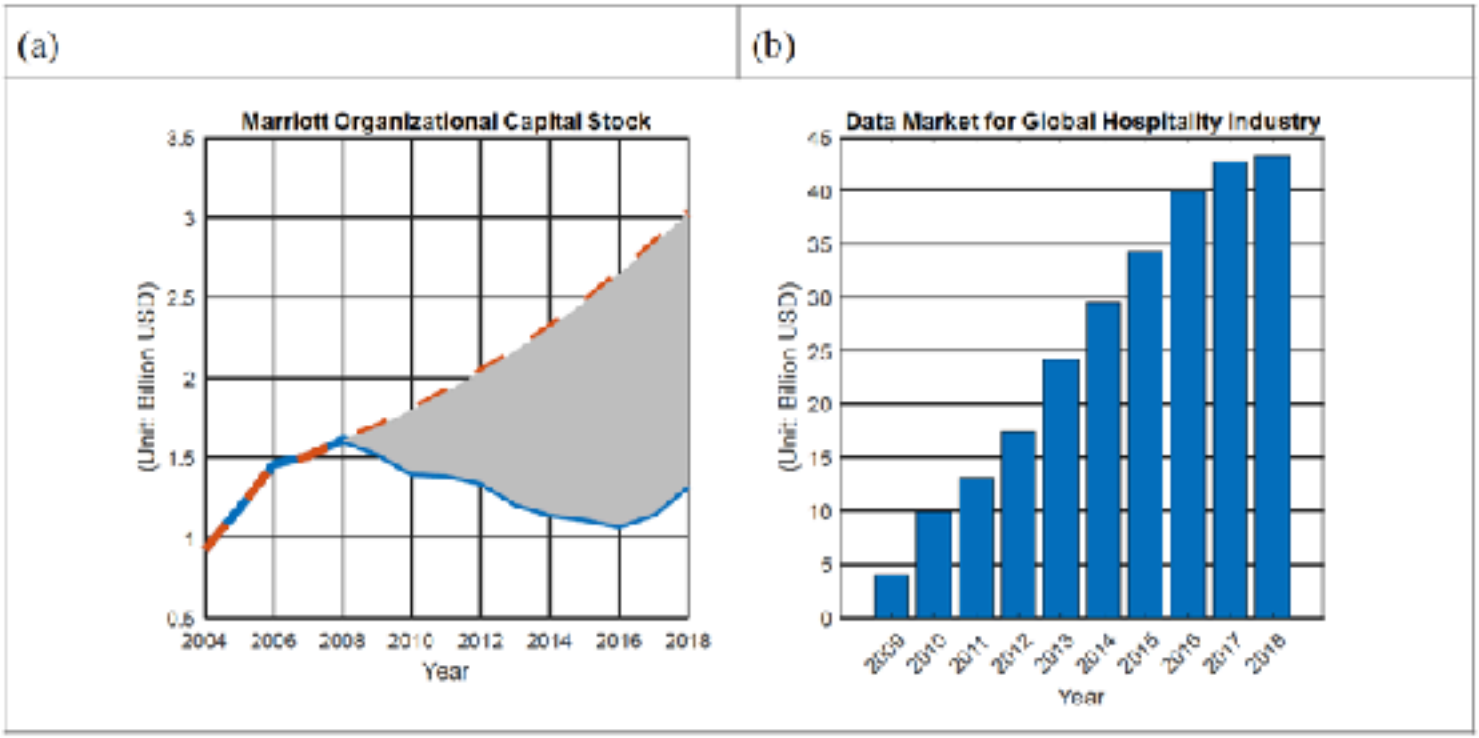
Methodology for estimating size of data markets

Organisational capital and data use

- Cloud & AI enable firms to make use of data
- Data use enhances firm-specific organisational capital
- Online platforms disrupt sector - organisational capital of incumbents depreciates quickly
- Apply Li & Hall (2020) method to estimate before and after depreciation rates of incumbents
- Estimate counterfactual where incumbents use data to maintain ‘before’ rate
- Use Hall (1993) method to estimate actual and counterfactual org capital stocks
- Difference is what incumbents should be willing to pay to use data

Application to global hospitality sector

Figure 4: Marriott's organizational capital stock and the estimated data market size of the global hospitality industry



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Trade typology

Six distinct country types

Type I: Net Data Importers – Large Developed Countries with Dominant International Online Platforms and Leading High-tech Industries

US

Type II: Net Data Importers – Large Developing Countries with Dominant International Online Platforms and Leading High-tech Industries

China

Type III: Net Data Exporters – Large Developing Countries without Dominant International Platforms but with Leading High-tech Industries

India

Type IV: Net Data Exporters – Large Developing Countries without Dominant International Online Platforms and Leading High-tech Industries

Indonesia

Type V: Net Data Exporters – Developed Countries without Dominant International Online Platforms but with Leading High-tech Industries and/or Talent

Europe

Type VI: Net Data Exporters – Small Developing Countries without Dominant International Online Platforms or High-tech Talent

SSA

Trade policy implications

- Data trade highly asymmetric
- Dependence on cloud infrastructure - though lowers market access barriers
- Big digital platforms as investors
- Need for local knowledge to enter markets - Indonesia example
- But data localisation becoming a default policy?

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Conclusions

- Need to estimate value of data flows
- Costs of an AI “arms race”?
- But data trade not directly related to value location in data value chain
- Value created by data use, not ownership
- Data localisation policies should be informed by empirics

Thank you!

Comments on this conference draft welcome:

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