Research session
Data in digital markets and money

Thursday 7 October
15:00 CEST (UTC +2)

"Harms of AI"
Daron Acemoglu
Institute Professor
Massachusetts Institute of Technology

"The Digitalization of Money"
Markus Brunnermeier
Edwards S Sanford Professor of Economics and Director of the Bendheim Center for Finance, Princeton University

Chair: Jean-Charles Rochet Full Professor, Geneva Finance Research Institute

#BISResearchConference
#RegulatingBigTech
Platforms and Tokens

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Bank for International Settlements (BIS)
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Tech Trends: Platforms and Money

- Smart phone
- DLT (Blockchains)
- Token (vs account-based)
- Big data, AI, deep learning,
- Digital platforms/ecosystems –
  - Alipay, WechatPay
  - M-Pesa
  - Bitcoin
- Smart contracts and money
- Internet of things: payments from machine to machine
- Micropayments
New Developments

- Digital platforms matching technology
- Digital tokens payment technology

Consequences

1. “Inverse Selection” with Rohit Lamba and Carlos Segura-Rodriguez
2. “Lock-in Effects” with Jonathan Payne
1. Inversion of “Information Advantage”

- Information advantage for customer
  - Borrower
  - Insurance client, ...

soon, for seller/platform
  - Lender (platform) “will know more about me than I know about myself”
  - Insurance company
  - Asset managers, ...

- Customer has multiple attributes and knows most of them, but only platform can better connect/statistically infer them
  - STATISTICAL INFORMATION
    - Correlation between attributes
  - Traditional example:
    - I like a red car
    - Insurance companies knows (from big data) that drivers of red cars are more accident prone
1. From Adverse Selection to Inverse Selection

- **First generation**
  - Asymmetric information matters for markets
  - Markets can unravel, so role for market design
  - Coverage is increasing in riskiness (*Counterfactual!*)

- **Second generation** – advantageous selection
  - Asymmetric information is multidimensional
  - Low-risk types buy lots of insurance due to their high risk aversion
  - Heterogeneity in risk aversion

- **Third generation (?)**
  - Big data changes the notion of asymmetric information
  - “who knows what” needs to be updated
  - Once insurer/platform knows some basic information about you, statistical inference allows it to know more about risks
2. “Lock-in Effects”

- Interaction btw.
  - Network effects/externalities and
  - Lock-in effect of private tokens (money)
    - Ability to lock in “future purchases” to a platform

- Token issuing private platform can extract rents (fees, inflation seigniorage) up to a threshold (after which competing platform will enter).
- Should regulation limit these lock-in effects? If so, how (much)?
2. “Lock-in Effects” with Jonathan Payne

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Diagram:
- Incumbent Platform
- New Platform
- Fee
- good1
- good2
Interaction btw.
- Network effects/externalities and
- Lock-in effect of private tokens (money)
  - Ability to lock in “future purchases” to a platform

Even though one can choose the platform and the token, incentive to “sell” one’s services in exchange to a particular private token since others do so too in the future, when one wants to “buy” a service.
  - “as if” one is born in a “digital currency area”

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Should regulation limit these lock-in effects? If so, how (much)?
2. “Lock-in Effects” with Jonathan Payne

- Should regulation limit these lock-in effects? If so, how (much)?

- **How?** 2 Ways to implement regulation
  
  1. **Regulate** competition among private platforms
     
     Enforce “Currency interoperability”
     
     all tokens have to be useable on all platforms and exchangeable without a fee

  2. **Compete with** private platform
     
     CBDC as “Digital Legal Tender”
     
     private platforms are obliged to accept CBDC
     
     - Without charging a fee
     
     - Without granting a discount for private tokens
2. “Lock-in Effects”

- **Should** regulation limit these lock-in effects?
  - **Yes**, interoperability regulation
    - Lowers “entry hurdle” for new platforms/token issuers
    - Restores efficiency (fully)
    - In dynamic setting: competition leads to more innovations (in payments)
  - **No**, interoperability hurts since lock-in effect is desirable
    - Setting 1: trade on a network (buyer and sellers meet directly)
      - Interoperability allows agents to switch to competing token/platform
      - Current platform cannot enforce repayment of credit (via exclusion)
        ⇒ less credit (less “digital collateral”)
    - Setting 2: trade is intermediated by platform (like Amazon market place)
      - Exclusion from platform might be sufficient to enforce credit repayment
Token differentiation – Uniformity of Money

- Token differentiation
  - Privacy focused token
  - “programmable tokens”

- Segments markets – introduces “information sensitivity” hurts uniformity of money
Conclusion: Regulating BigTech Platforms

- Platforms
- Token issuers

**Inverse selection** (instead of adverse selection)
  - Platform has information advantage (not consumer surplus)

**Lock-in effects** (i) platform and (ii) token
  - Incumbent platform can extract rents at expense of participants + less innovation
  - Platform can extent credit

How to regulate?
  - Regulate competition among private platforms/token issuer interoperability outlaw exchange fees
  - Compete with private platforms/token issuer CBDC as “digital legal tender”
  - *Extra*: Should platforms and payment platforms be allowed to merge?

- Uniformity of money