Big techs in finance: some stylised facts
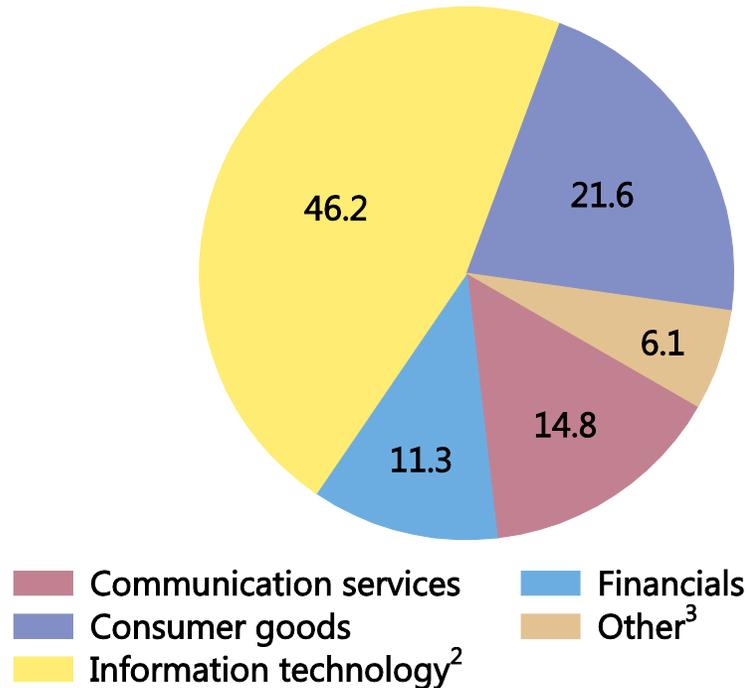
Leonardo Gambacorta (BIS & CEPR)

CEPR European Conference on Household Finance 2019 - Rhodes, 19 September, 2019
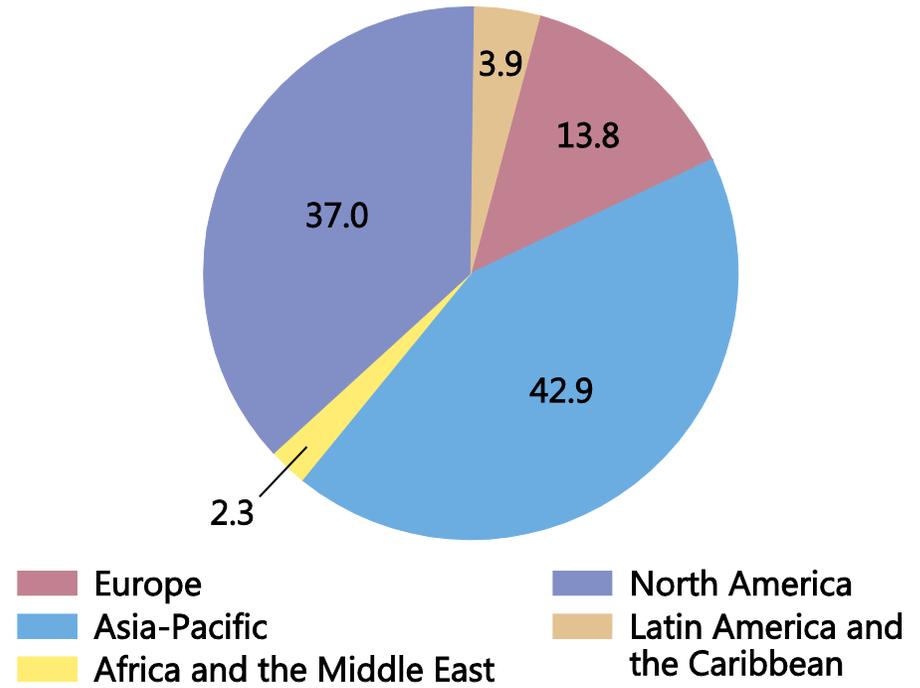
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Financial services are a small part of big tech business

Big techs' revenues by sector of activity[1]

- Communication services — 14.8
- Consumer goods — 21.6
- Information technology[2] — 46.2
- Financials — 11.3
- Other[3] — 6.1

Legend:
- Communication services
- Consumer goods
- Information technology[2]
- Financials
- Other[3]

Regional distribution of big techs' subsidiaries[4]

- Europe — 13.8
- Asia-Pacific — 42.9
- Africa and the Middle East — 2.3
- North America — 37.0
- Latin America and the Caribbean — 3.9

Legend:
- Europe
- Asia-Pacific
- Africa and the Middle East
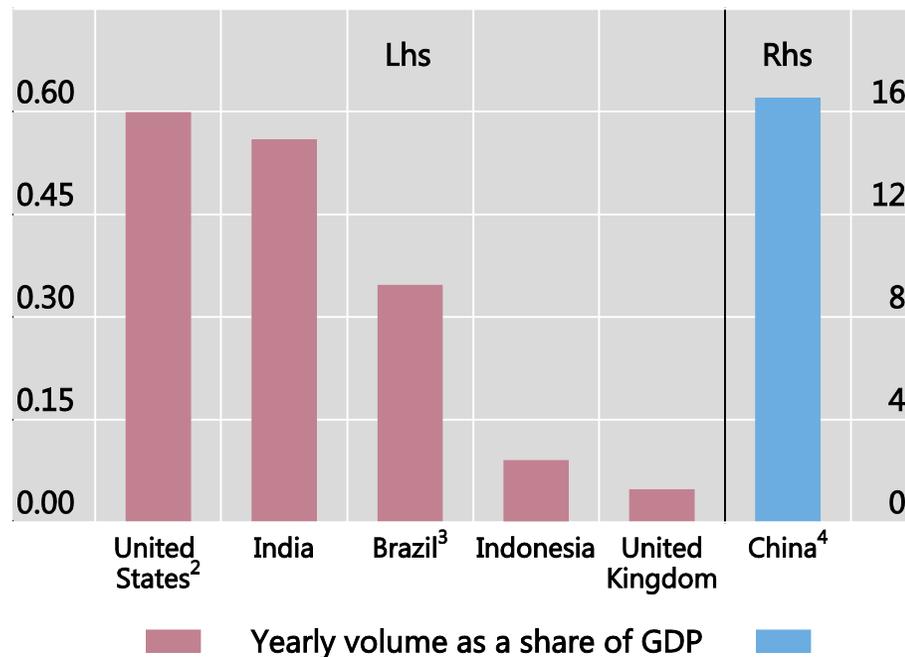- North America
- Latin America and the Caribbean

The sample includes Alibaba, Alphabet, Amazon, Apple, Baidu, Facebook, Grab, Kakao, Mercado Libre, Rakuten, Samsung and Tencent.

[1] Shares based on 2018 total revenues, where available, as provided by S&P Capital IQ; where not available, data for 2017. Data accessed on 3 June 2019. [2] Information technology can include some financial-related business. [3] Includes health care, real estate, utilities and industrials. [4] Shares are calculated on the number of subsidiaries as classified by S&P Capital IQ. Data accessed on 3 June 2019.
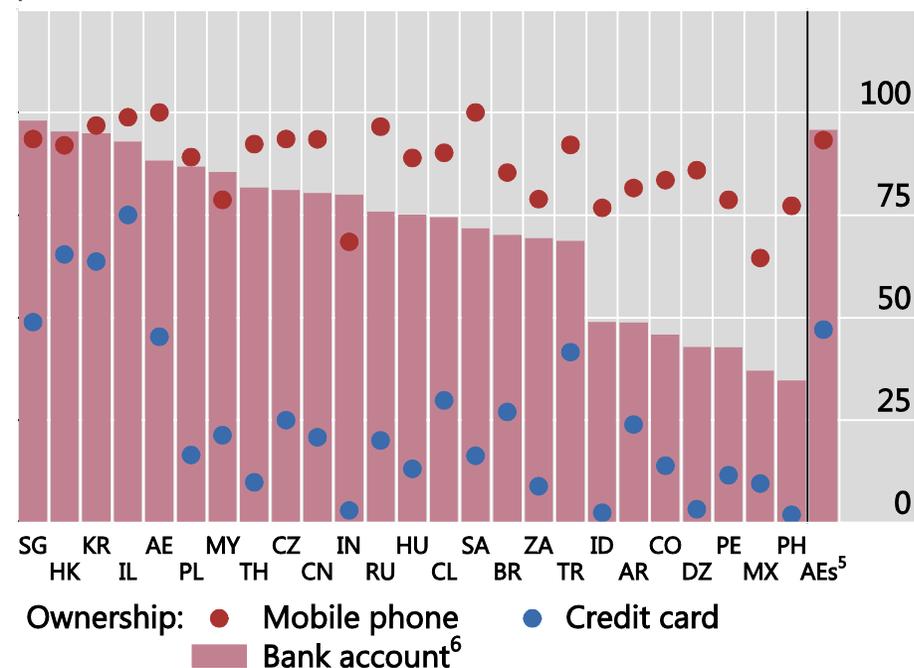
Sources: S&P Capital IQ; BIS calculations.

Payments were the first financial service big techs offered

Big tech mobile payment services

Lhs | Rhs

0.60	16
0.45	12
0.30	8
0.15	4
0.00	0

United States[2] India Brazil[3] Indonesia United Kingdom China[4]

▮ Yearly volume as a share of GDP ▮

Fraction of population with bank accounts, mobile phones and credit cards

SG HK KR IL AE PL MY TH CZ CN IN RU HU CL SA BR ZA TR ID AR CO DZ PE MX PH AEs[5]

Ownership: ● Mobile phone ● Credit card
▮ Bank account[6]

[1] 2017 data. [2] 2016 data. [3] Estimate based on the public data for Mercado Libre. [4] Only mobile payments for consumption data (ie excluding mobile payments for money transfer, credit card payments and mobile finance). [5] Advanced economy (AE) average. [6] Respondents who report having an account at a bank or another type of financial institution or report personally using a mobile money service in the past 12 months.

Sources: J Frost, L Gambacorta, Y Huang, H S Shin and P Zbinden, "BigTech and the changing structure of financial intermediation", *BIS Working Papers*, no 779, April 2019; World Bank; Forrester Research; GlobalData; iResearch; Mercado Libre; Nikkei; Worldpay; national data; BIS calculation.
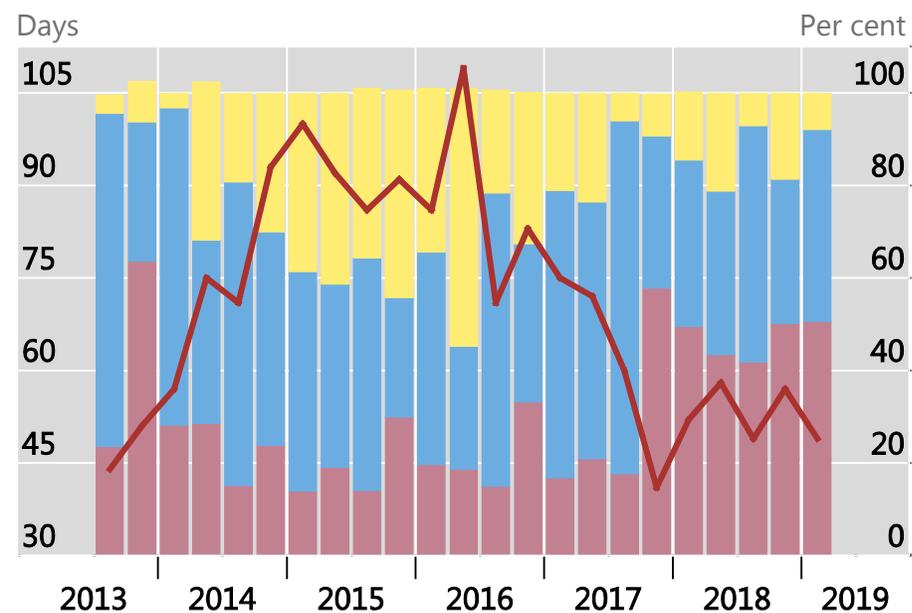
Big techs use their network to offer MMFs and insurance products

Yu'ebao's asset composition

Per cent (left axis) / Per cent (right axis)
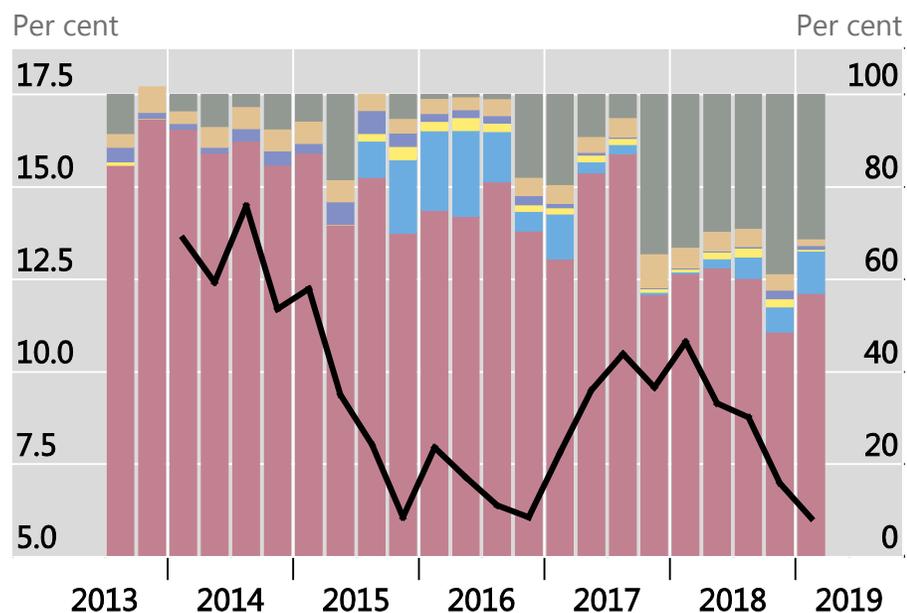
Lhs: —— Share in total interbank funding[1]

Rhs:
- Bank deposits
- Commerical paper
- Treasury bonds
- Interbank CDs[2]
- Policy bank bonds[3]
- Reverse repos[4]

Maturity of Yu'ebao's assets

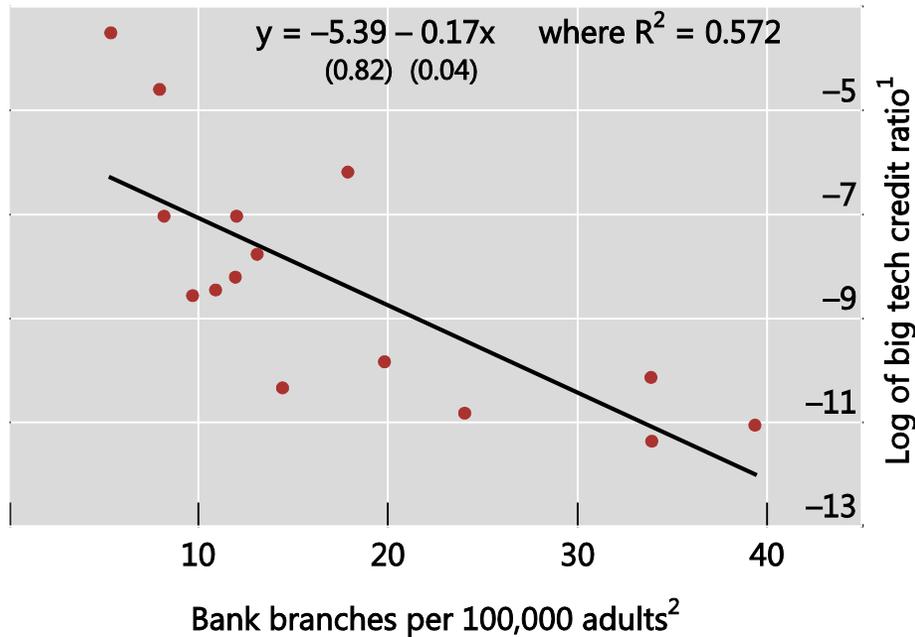Days (left axis) / Per cent (right axis)

—— Average maturity (lhs)

Share within maturity bucket (rhs):
- <30 days
- 30–90 days
- >90 days

[1] Share of Yu'ebao's assets (excluding Treasury bonds) as a fraction of total interbank funding. Total interbank funding is calculated as the sum of outstanding amounts in the interbank CD, repo collateral, outright repo and interbank loan markets. [2] Interbank certificates of deposit. [3] Bonds issued by policy banks including Agricultural Development Bank of China, Export-Import Bank of China and China Development Bank. [4] Financial assets held under resale agreements.
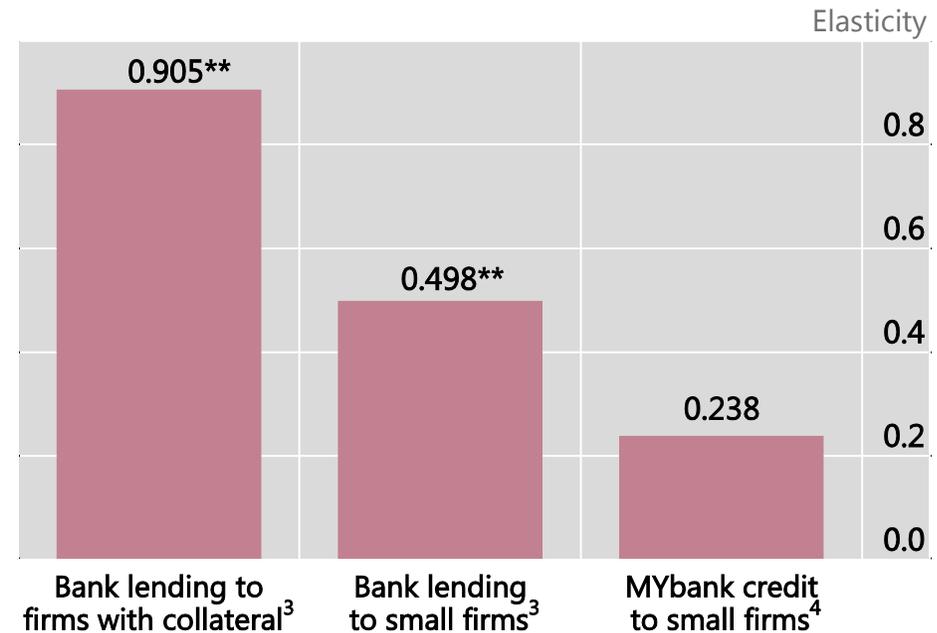
Sources: CEIC; WIND; BIS calculations.

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Big tech credit still small but with very different characteristics

Big tech credit and banking sector development

$y = -5.39 - 0.17x$ where $R^2 = 0.572$
(0.82) (0.04)

Log of big tech credit ratio[1]

−5
−7
−9
−11
−13

Bank branches per 100,000 adults[2]

10   20   30   40

Elasticity of credit with respect to house prices in China

Elasticity

0.905**

0.498**

0.238

Bank lending to firms with collateral[3]

Bank lending to small firms[3]

MYbank credit to small firms[4]

0.0   0.2   0.4   0.6   0.8

Robust standard error in parentheses. ** indicates significance at the 5% level.

[1] The ratio is calculated for 2017 and is defined as big tech credit divided by total credit to the private non-financial sector (including total fintech credit).   [2] Average over the period 2010–15.   [3] Period of estimation: 2005–13.   [4] Period of estimation: 2011–17.

Sources: J Frost, L Gambacorta, Y Huang, H S Shin and P Zbinden, "BigTech and the changing structure of financial intermediation", *BIS Working Papers*, no 779, April 2019; L Gambacorta, Y Huang, H Qiu and J Wang, "How do machine learning and non-traditional data affect credit scoring? Evidence from a Chinese fintech firm", mimeo, 2019; World Bank; Cambridge Centre for Alternative Finance and research partners; company reports; BIS calculations.

References

BIS (2019). Annual Economic Report. Chapter III: "Big tech in finance: opportunities and risks", Bank for International Settlements (https://www.bis.org/publ/arpdf/ar2019e3.htm).

Frost, Jon, Leonardo Gambacorta, Yi Huang, Hyun Shin, and Pablo Zbinden (2019), "BigTech and the changing structure of financial intermediation", Economic Policy, forthcoming (also published as BIS Working Paper Series, no. 779).

Gambacorta, L., Y. Huang, H. Qiu, J. Wang (2019). "How do machine learning and non-traditional data affect credit scoring? New evidence from a Chinese fintech firm", BIS Working Paper Series, forthcoming.

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