



# AI and credit intermediation

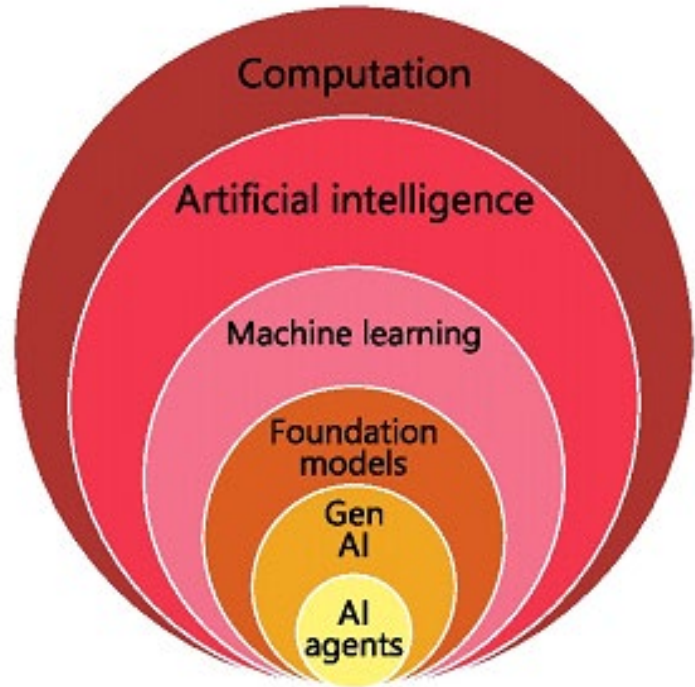
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\* The views expressed here are those of the presenter and not necessarily the Bank for International Settlements

# Decoding AI: what's new for credit intermediation?



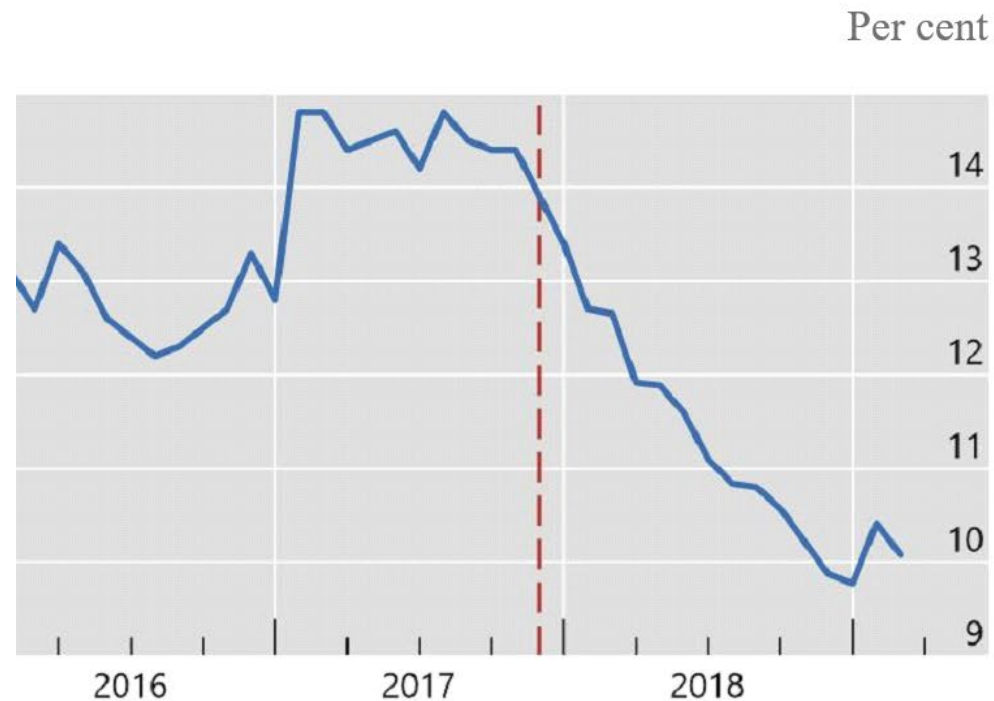
Foucault T, L Gambacorta, W Jiang, and X Vives (2025):  
“[Artificial intelligence in finance](#)”, CEPR IESE Report 7.

- ❖ Credit intermediation exists to deal with **information asymmetries** between borrowers and lenders
- ❖ Banks have *always* used models, but traditionally:
  - ✓ Structured data organised in silos
  - ✓ Linear modelling frameworks
  - ✓ Slow adjustment to shocks
- ❖ AI changes the nature of prediction:
  - ✓ It processes **large amounts of structured and unstructured data**
  - ✓ It captures **non-linear relationships**
  - ✓ It is less focused **on collateral**

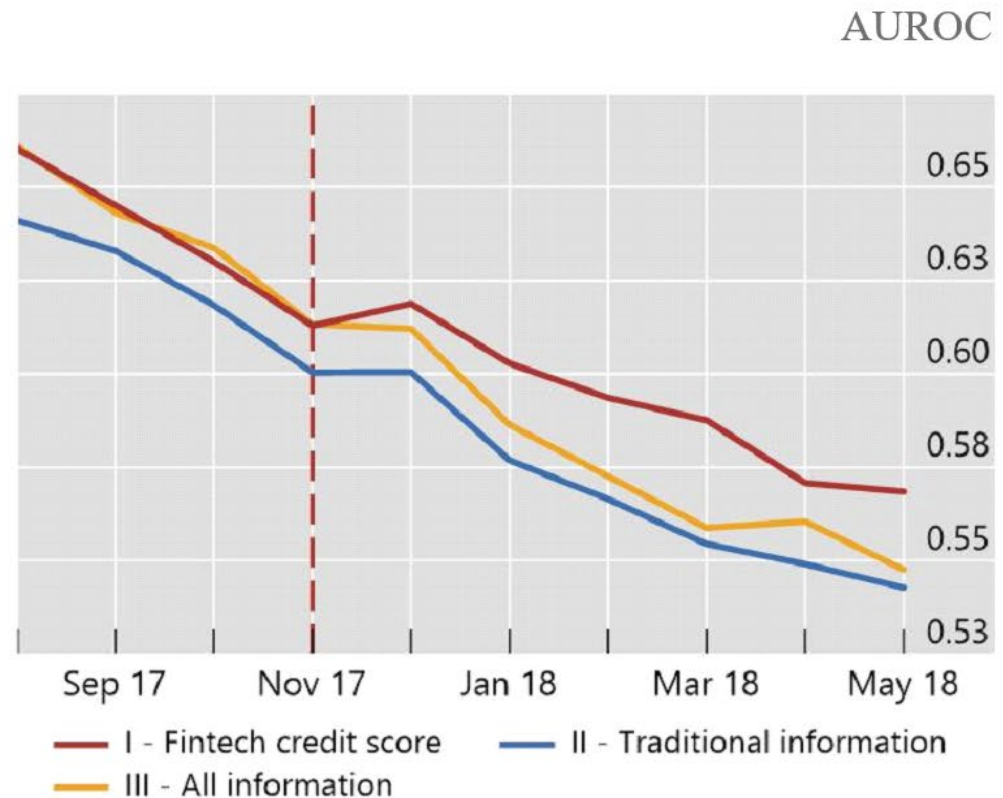


# Fintech credit scores show greater predictive power in case of a shock

A. Annual growth in total credit to the Chinese economy



B. Predictive power of traditional vs fintech credit score<sup>1</sup>



Notes: The vertical dashed line indicates when the People's Bank of China (PBoC) issued specific draft guidelines to tighten regulations on shadow banking. <sup>1</sup> The vertical axis reports the Area Under the ROC curve (AUROC) for every model. The AUROC is a widely used metric for judging the discriminatory power of credit scores.

Source: Gambacorta L, Y Huang, H Qiu, and J Wang (2024): "[How do machine learning and non-traditional data affect credit scoring? New evidence from a Chinese fintech firm](#)", Journal of Financial Stability, vol. 73, August.

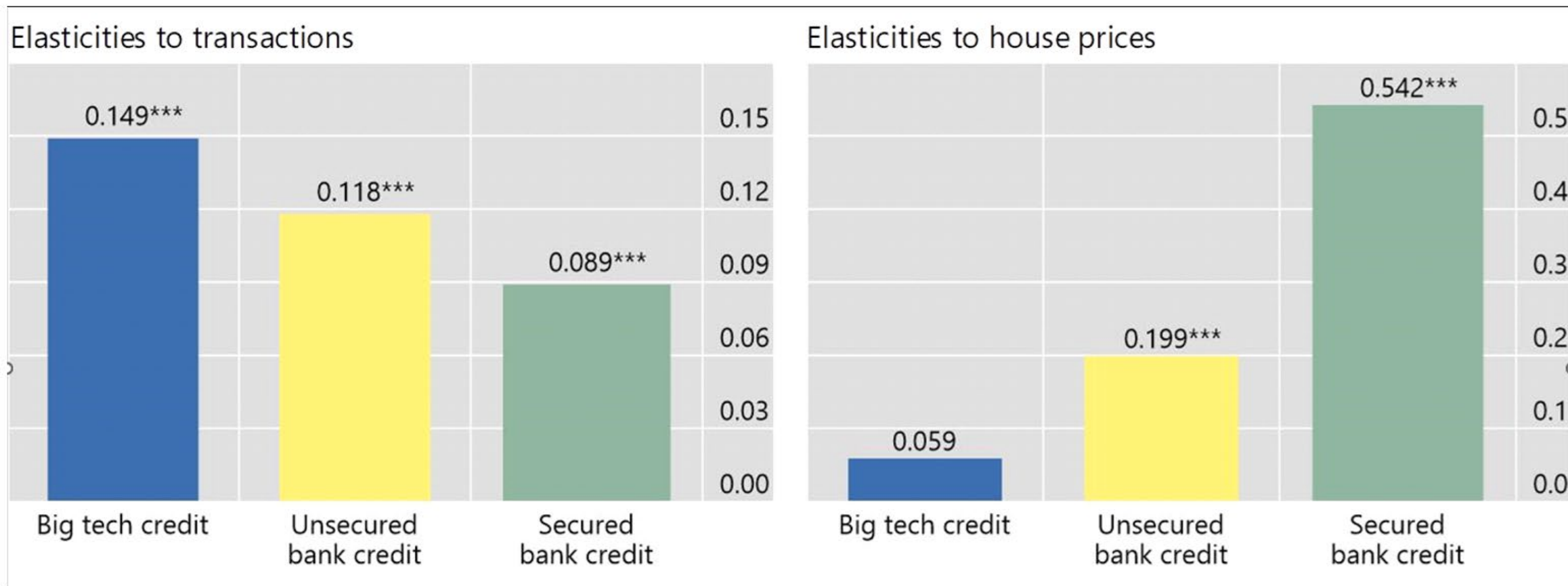
## Credit quality and interest rates

Years	Credit quality SMEs: NPL ratio		Average interest rates SMEs	
	Banks (1)	MYbank	Banks (1)	MYbank (2)
2017	5.85%	1.23%	6.55%	17.70%
2018	5.50%	1.30%	6.16%	13.39%
2019	3.22%	1.30%	6.70%	10.21%
2020	2.99% (3)	1.52%	5.88% (4)	9.03%
2021	-	1.53%	5.69%	9.23%
2022	2.18% (5)	1.94%	5.25%	7.74%
2023	-	2.28%	4.78%	8.24%

Notes: Non-Performing Loans (NPLs) indicate loans that are typically overdue by 90 days or more. (1) Credit lines below 10 million Yuan (5 million in 2017 and 2018). (2) Data obtained from public balance sheet information dividing interest earned and total loans for SMEs. (3) As of August 2020. (4) January–November 2020. (5) As of April 2022.

Source: De Fiore F, G Cornelli, L Gambacorta, and C Manea (2024): "[Big tech, financial intermediation and the macroeconomy](#)", Boston Fed Discussion Papers, November.

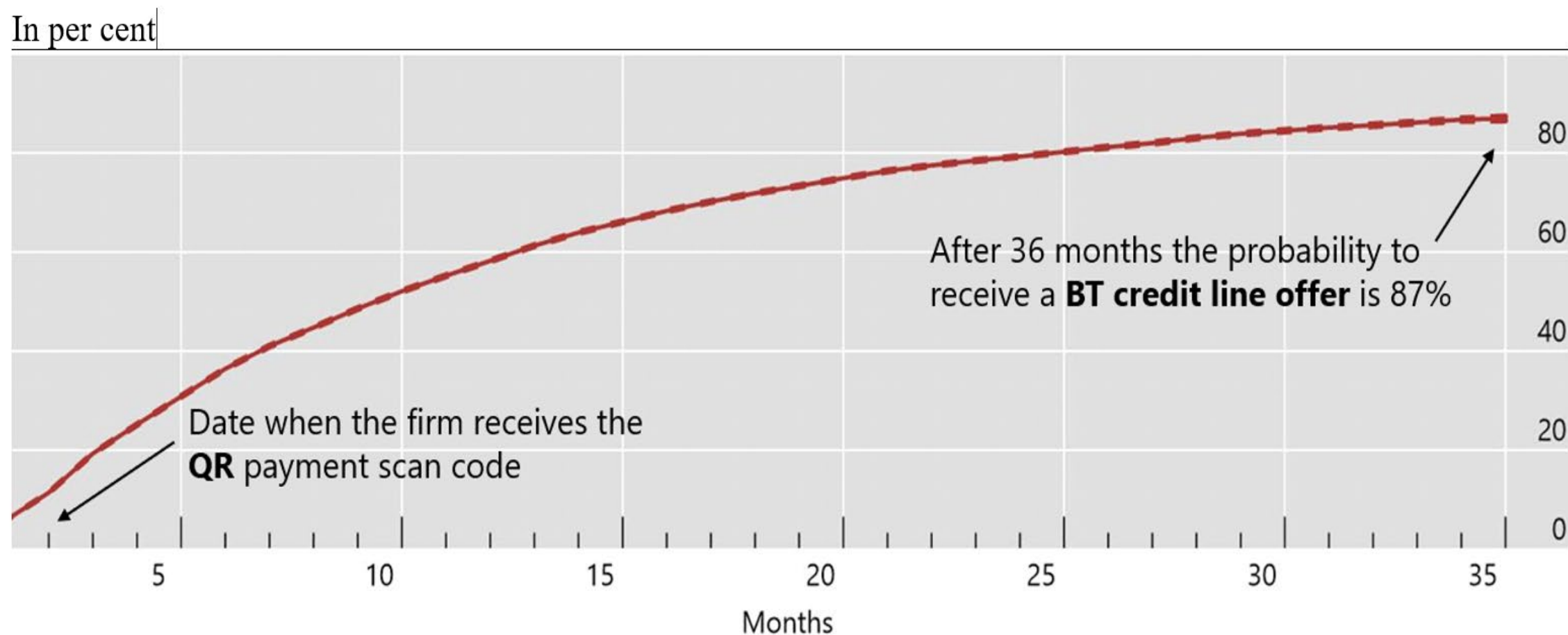
# Data vs collateral: Big tech credit reacts less to changes in house prices and more to firm-specific characteristics



Notes: Elasticity of credit with respect to house prices and GDP. The figure reports the coefficient of three different regressions (one for each credit types) in which the log of credit is regressed with respect to the log of house prices at the city level, the log of GDP at the city level, and a complete set of time dummies. Significance level: \*\* $P < 0.05$ ; \*\*\* $P < 0.01$ .

Source: Gambacorta, L, Y Huang, Z Li, H Qiu, and S Chen (2023), "[Data vs. Collateral](#)", Review of Finance 27(2): 369–398

## The use of QR code in payments allows firms to access big tech credit



Notes: Dashed lines indicate 5th/95th percentiles. The x-axis reports the QR code duration, that is the number of months after the firm started to use the QR code payment system. The y-axis reports the probability for a firm of having access to big tech credit.

Source: Beck, T, L Gambacorta, Y Huang, Z Li and H Qiu (2022), "[Big techs, QR code payments and financial inclusion](#)", BIS Working Paper 1011.

## Main takeaways

- ❖ AI strengthens screening and monitoring using non-linear models and unstructured data
- ❖ Predictive gains may be large during shocks and stress episodes
- ❖ Data can partially substitute collateral, changing the cyclicity of credit
- ❖ AI-based lending improves financial inclusion but depends on complementary financial innovations (payments)
- ❖ The evaluation of AI-driven credit intermediation must balance efficiency gains against amplified systemic and operational risks, underscoring the need for ongoing monitoring and robust governance frameworks