AI and financial stability

Response to Yoshua Bengio on "The future of AI - and considerations for systemic risks"

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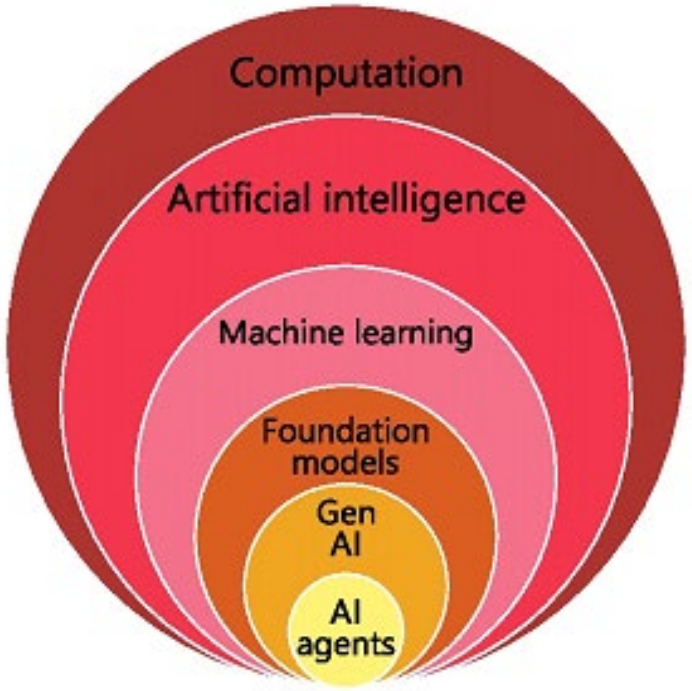
* The views expressed here are those of the presenter and not necessarily the Bank for International Settlements

Overview

- Challenges of AI in finance
  - What's new for the financial sector?
  - The AI supply chain is highly concentrated
- Spillovers from the real economy
  - Impact of AI on the labour market
  - Heterogeneity in AI effects across countries
- Conclusions

Challenges of AI in finance

Decoding AI: what's new for the financial sector?



Foucault T, L Gambacorta, W Jiang, and X Vives (2025): "Artificial intelligence in finance", CEPR IESE Report 7.

- Gen AI is changing our lives
- Financial sector is among the most-exposed to AI, reflecting the high share of cognitive tasks and abundant data
- With Gen AI, what is new?
  - ✓ Automaticity: no human intervention
  - ✓ Speed: rapid data processing and diffusion
  - ✓ Ubiquity: across sectors and the economy
- What are the emerging challenges of using Gen AI in banking and finance?
- Compare traditional analytics, with ML and Gen AI

Challenges arising from AI use in finance

	Financial intermediation	Insurance	Asset management	Payments
Traditional analytics	Rigid, requires extensive human supervision, small number of parameters		Zero-sum arms race for private gains, flash crashes	Technical vulnerabilities
Machine learning	Black box mechanisms, algorithmic discrimination, threats to consumer privacy, emergence of data silos		Zero-sum arms race for private gains, model herding, algorithmic coordination	New liquidity crises, increased cyber risks
Generative AI	Hallucinations in customer facing applications, garbage-in-garbage-out, increased market concentration, increased consumer privacy concerns, collusion			

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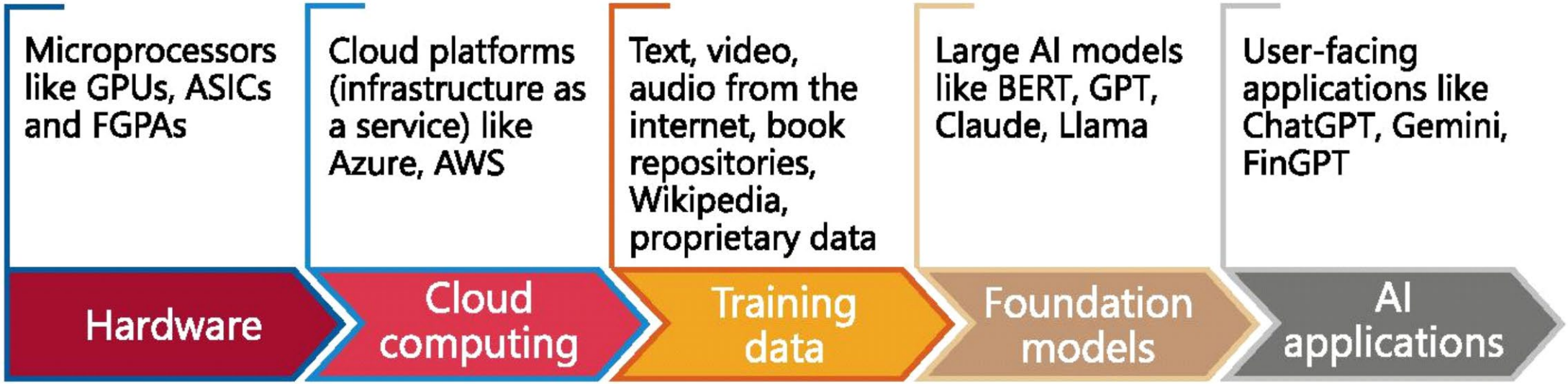
The AI supply chain is highly concentrated



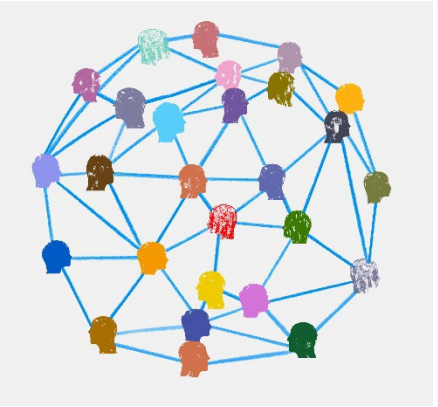
Source: Gambacorta L and V Shreeti (2025): "The AI supply chain", BIS no 154, March.

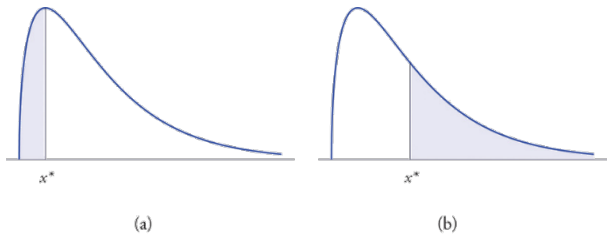
- Market concentration is evident across all layers of the AI supply chain
- Big techs are expanding their footprint over the AI supply chain, integrating their services across different markets to reinforce their dominance
- Impact on competition and contestability remains unclear

Financial stability and AI

Early rule-based systems were already important for financial stability: 1987 US stock market crash

Machine learning increases network interconnectedness, data uniformity, model herding



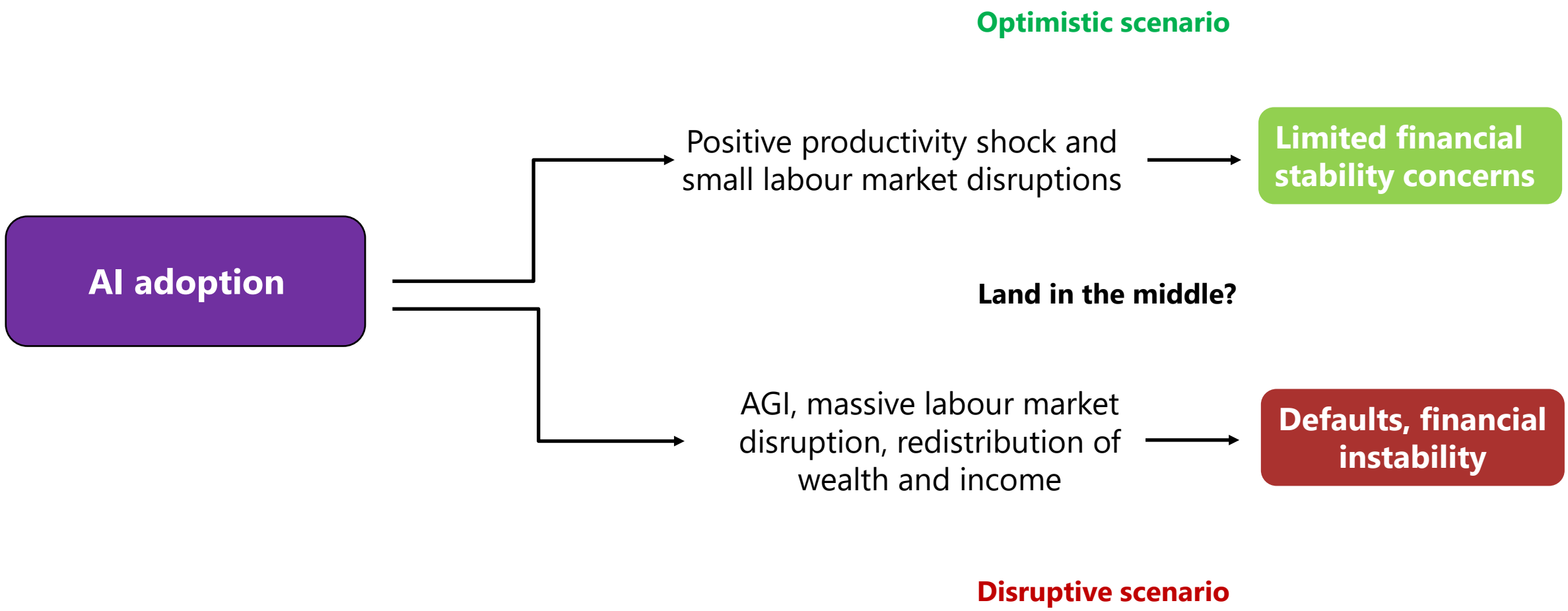


Gen AI leads to the fat tail problem and viral events. AI supply chain concentration creates third party dependencies (model, data and algorithmic herding) resulting in more uniform behaviour

Source: Aldasoro, I, L Gambacorta, A Korinek, V Shreeti and M Stein (2024): "Intelligent financial system: how AI is transforming finance", *BIS Working Papers*, no 1193.

Spillovers from the real economy

Effects of AI adoption on the labour market: two scenarios

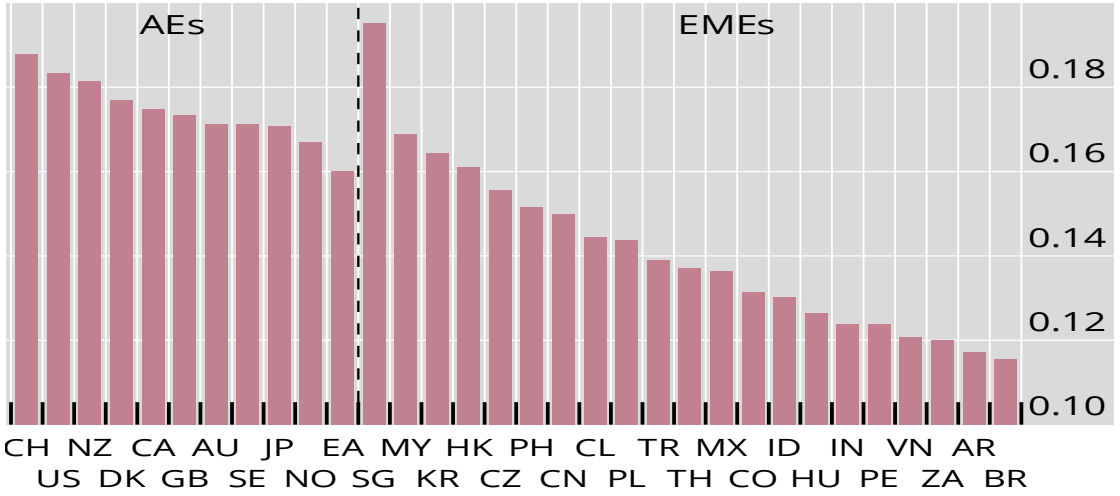


Source: Aldasoro, I, S Doerr, L Gambacorta, G Gelos and D Rees (2024): "Artificial intelligence, labour markets and inflation", SUERF, Policy Brief, no. 923.

Heterogeneity in the effects of AI across countries

- AI preparedness and adoption
  - Varying AI adoption rates due to digital literacy, age, demographics, internet diffusion, labour market conditions, and fiscal space to support large-scale reskilling

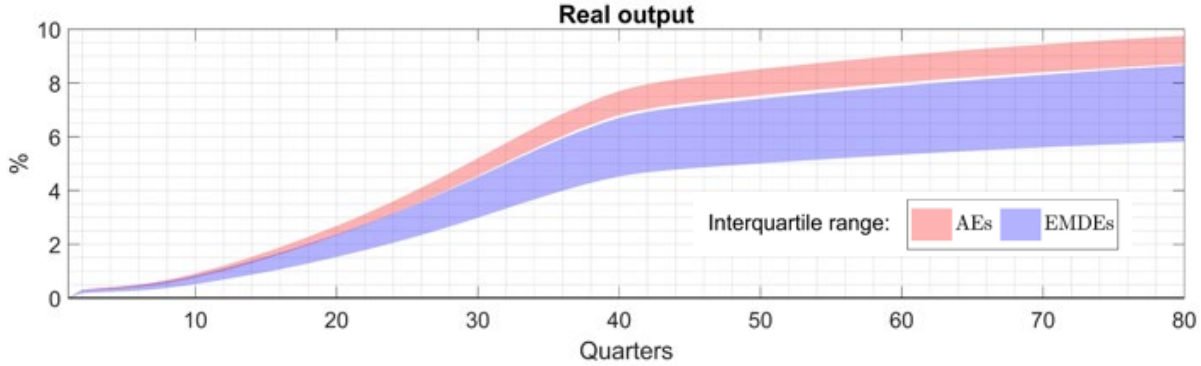
AI preparedness: AI capital and labour market policies



International Monetary Fund (2024): "AI Preparedness Index (AIPI) – Methodology Note", Washington DC.

- Sectoral differences
  - AEs excel in AI-adopting sectors (eg, finance, healthcare, advanced manufacturing, IT). EMDEs greater reliance on agriculture, resource-based activities, or traditional manufacturing sectors

Effects of increase in productivity due to AI



Cornelli G, L Gambacorta, D Rees, and F Smets (2025): "Gen AI and productivity: differences in the effects across countries", mimeo. The graph shows the effects of a perfectly anticipated positive supply shock to TFP arising from gen AI. The simulation covers 70 countries – 23 AEs and 47 EMDEs – and uses the AI industry exposure measure developed by Felten el al (2021) to assess the order of the impact of AI adoption across industries. The calibration is set so that the aggregate impact on TFP growth amounts to 0.5% per year for the US, as a benchmark, over a decade.

Conclusions

Main takeaways

- Challenges of AI in finance
  - Generative AI enhances financial services through automation and data utilization, but introduces new risks like model hallucination and market concentration
  - Systemic risk effects via model herding and viral events
- Financial stability and the real economy
  - AI adoption boosts productivity but may cause disruptions in the labour market: different scenarios (AI as a co-pilot vs AGI/ASI)
  - Concentration in AI supply chain, sectoral differences, and AI preparedness could cause heterogenous effects across countries
- Technology has no border: need of international cooperation
  - AI regulation must balance innovation and safety, transparency, and adaptable principles to manage evolving technology impacts

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