

Good AI, Bad for Banks?

Emergence of AI and financial stability

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Opinions expressed do not necessarily reflect the official viewpoint of the OeNB or the Eurosystem.

Sicherheit durch Stabilität



Contribution



1. Synthesize the assessments of five reputable institutions – the IMF, BIS, FSB, BoE, and ECB – on how AI may pose risks to financial stability.

2. Categorization of risks and own assessment.

3. Empirical study.

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Synthesis



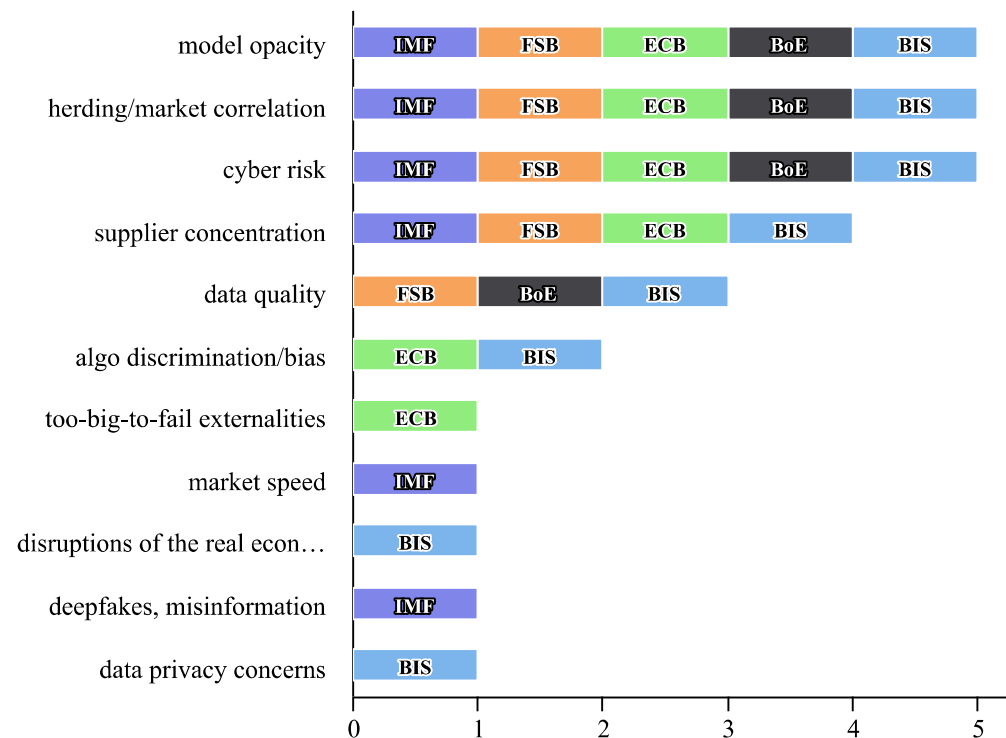
- Bank of England (Bank of England & Financial Conduct Authority, 2022)
- ECB (Leitner et al., 2024)
- BIS (Aldasoro et al., 2024)
- IMF (IMF, 2024)
- FSB (Financial Stability Board, 2024)

1. Consensus on AI's transformative potential

2. Limited consideration of AI's indirect effects

3. No/little on categorization

Main risks identified



Source: OeNB.



1. Model Opacity

2. Herding and Market Correlation

3. Cyber risk

4. Supplier concentration

Contribution

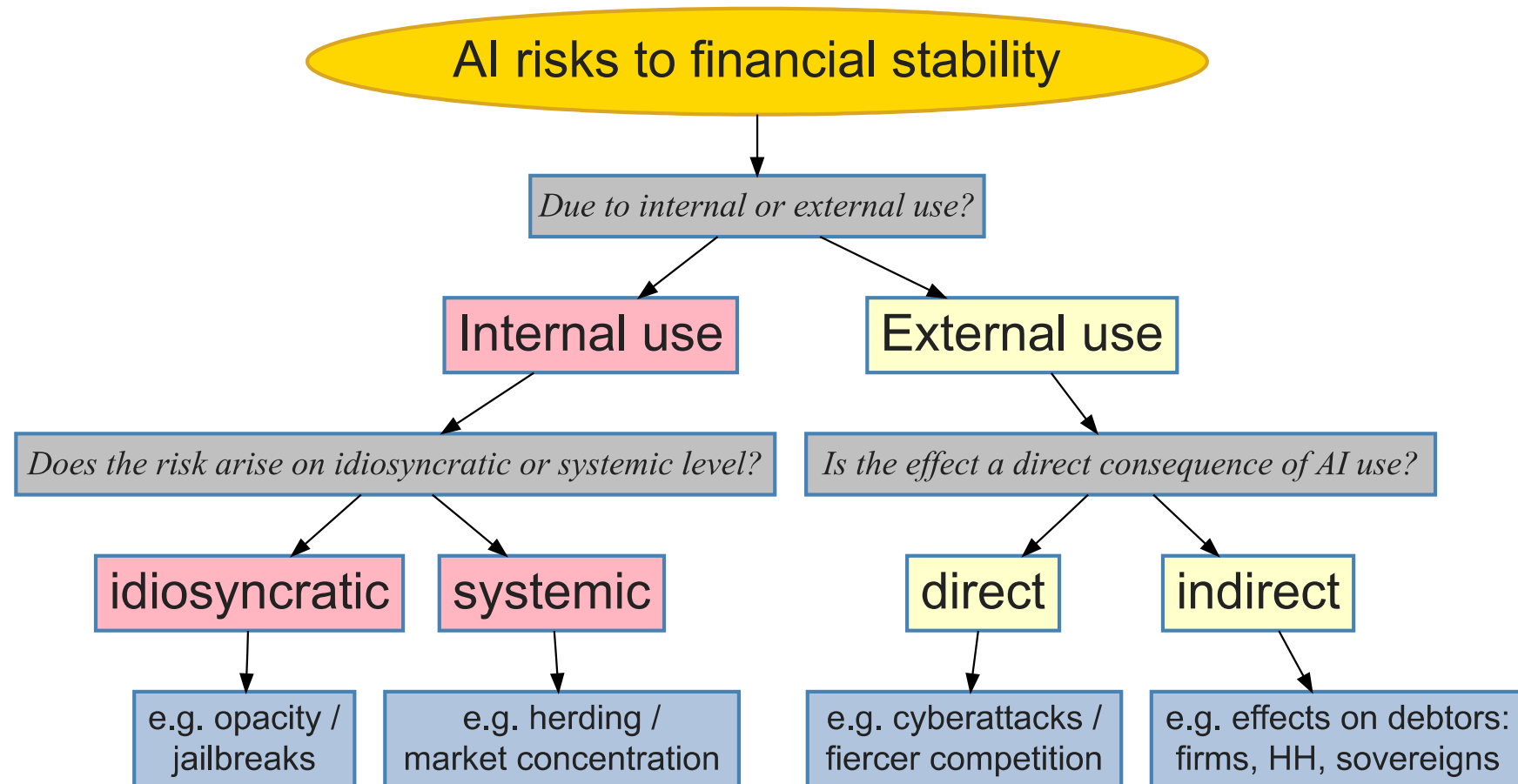


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Attempt at categorization (I: horizontal)



Attempt at categorization (II: scenario approach)

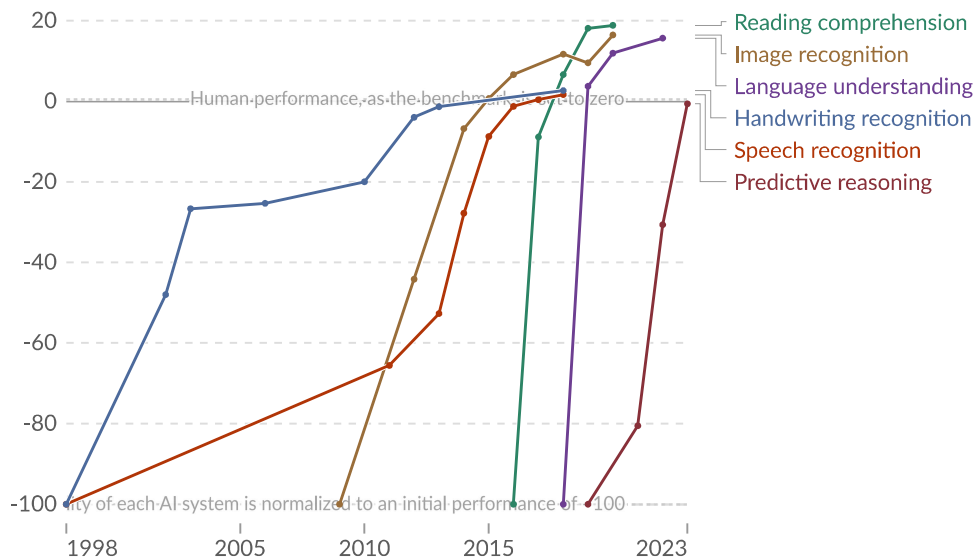
Test scores of AI systems on various capabilities relative to human performance

Within each domain, the initial performance of the AI is set to -100. Human performance is used as a baseline, set to zero. When the AI's performance crosses the zero line, it scored more points than humans.

Our World in Data

Table Chart

Edit



Data source: Kiela et al. (2023) – [Learn more about this data](#)

Note: For each capability, the first year always shows a baseline of -100, even if better performance was recorded later that year.

4 Scenarios:

3. AGI / SI

Artificial General Intelligence /
Superintelligence

2. Fast and powerful AI

1. AI moderate

0. „AI-Winter“
AI-Disappointment

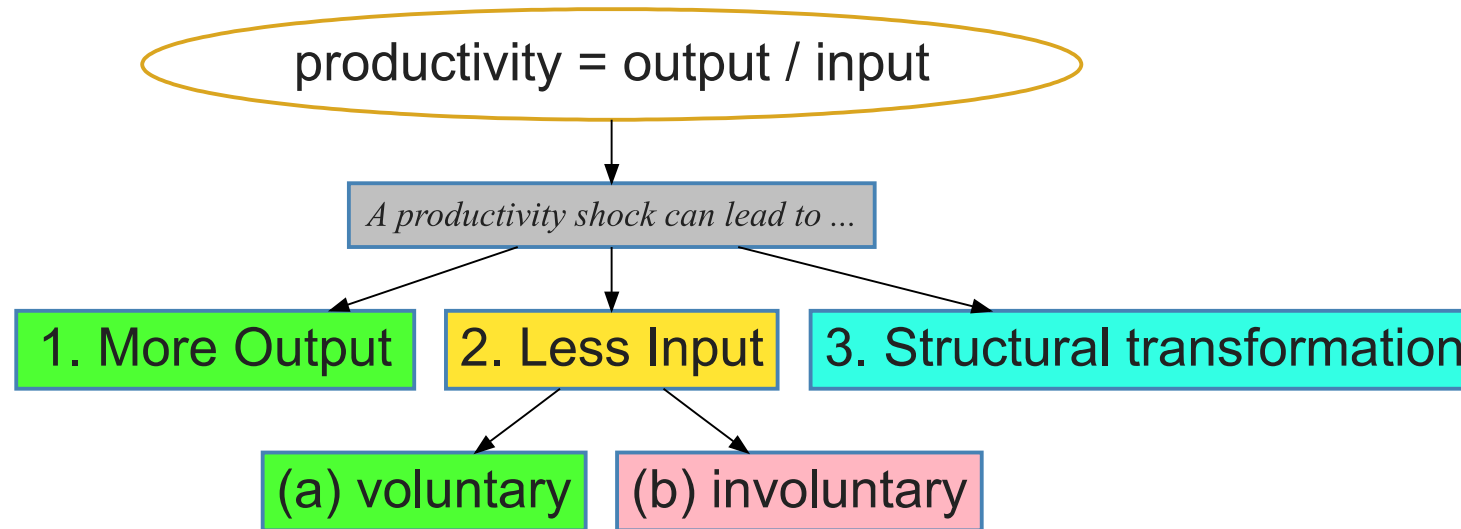
We follow the recommendation of Korinek & Suh (2025) by addressing the uncertainty with a scenario-based approach



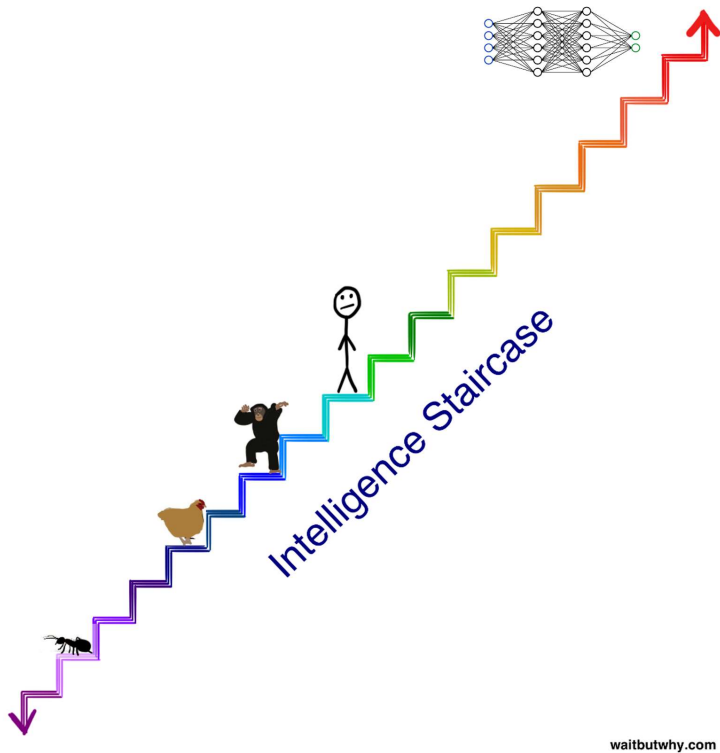
Scenario 1: AI moderate scenario

- Welcome, ❤️ you are already living it!
- Main risk: deepfakes.
- "information bombs"

Scenario 2: Fast and powerful AI



Scenario 3: AGI / SI Artificial General Intelligence / Superintelligence



- Tail Event. Chow et al. (2024).
- AI-Revolution not like Industrial Revolution, but like Manhattan Project
- Alignment problem becomes central (AGI alignment)

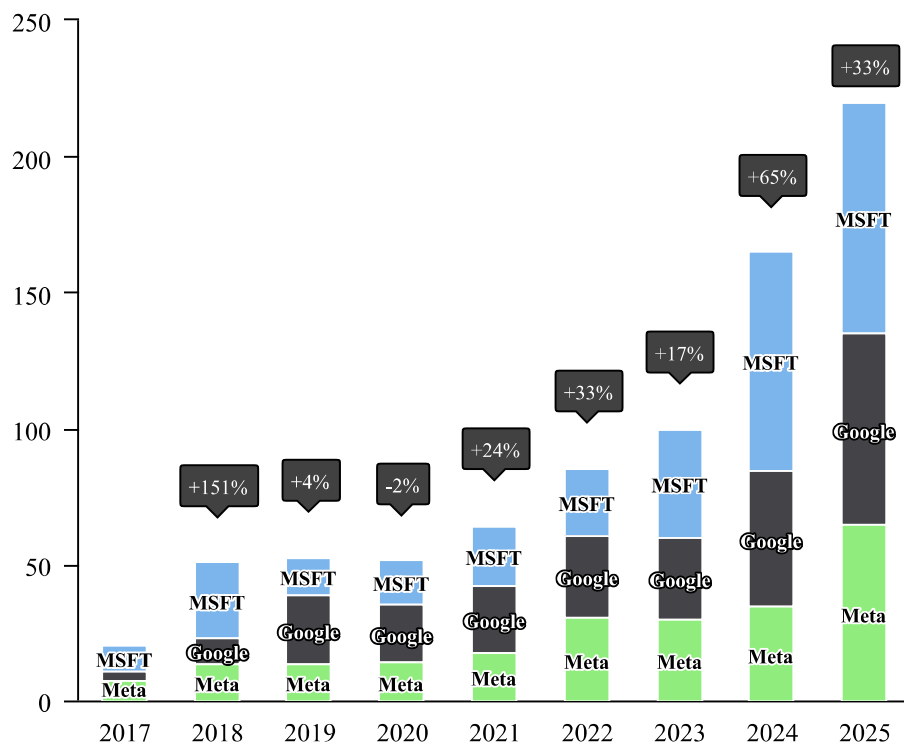
Mitigation: All bets are off. Beyond remit of financial stability institutions.

Scenario 0: AI Winter



Capex of selected Techgiants

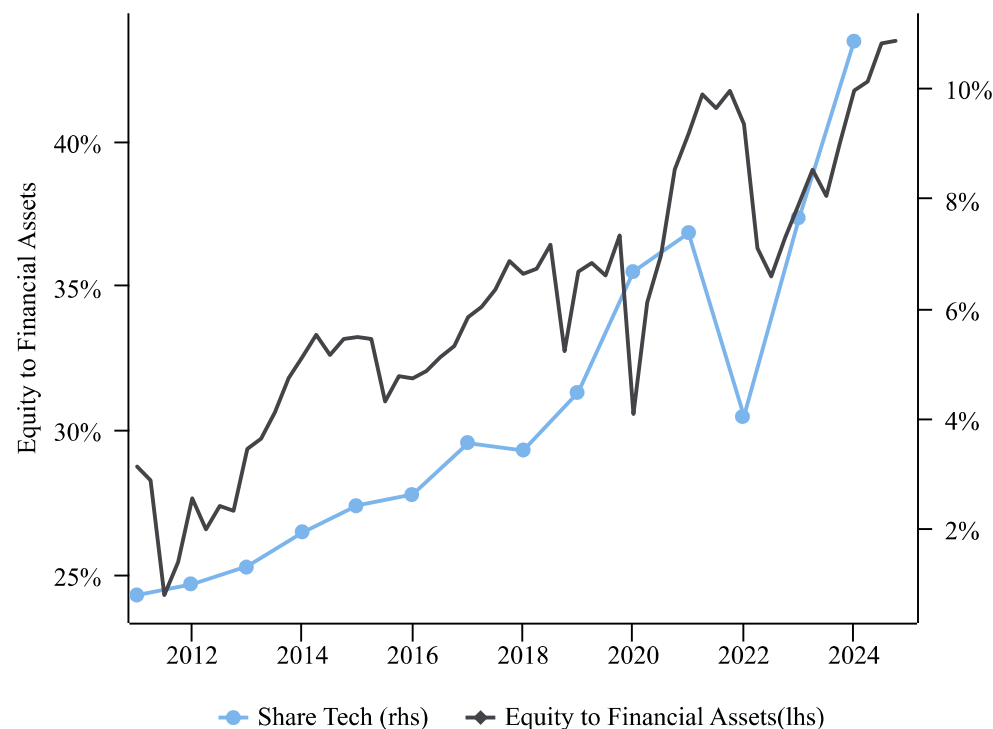
in bn USD.



Source: FT and Base Hit Investing.

Importance of the Wealth Channel

in % of US household total financial assets



Source: FRED & Bloomberg.

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Empirical Study

How do advances in AI change the *market's view* of banks' future earnings?

Are there differences

- between European and US banks?
- smaller and larger banks?

Two approaches:

1. use **NVIDIA stock as proxy** (after controlling for confounders) for AI advancement
2. **event study**: look at stock market performances after positive AI surprises:
 - release of GPT-3.5 in November 2022,
 - the release of GPT-4 in March 2023,
 - the preview of o1 in September 2024 and
 - the release of DeepSeek-R1 in January 2025

Nvidia proxy (I)



Data:

Daily stock market data from 2018-01 to 2025-02 for the European market and to 2024-12 for the US market.

75 US and 54 European publicly traded banks

Approach:

for each bank, estimate

$$stock_{i,t} = \beta_i nvidia_t + X_{t,i} \gamma_i + \alpha_i + u_{i,t}$$

where $X_{t,i}$ is the vector of control variables encompassing the Fama-French three factors (US and Europe separately) and the daily bitcoin return.

Nvidia proxy (II)

Result:

→ no significant effect for US banks, but a small positive effect in Europe, more pronounced for larger banks.

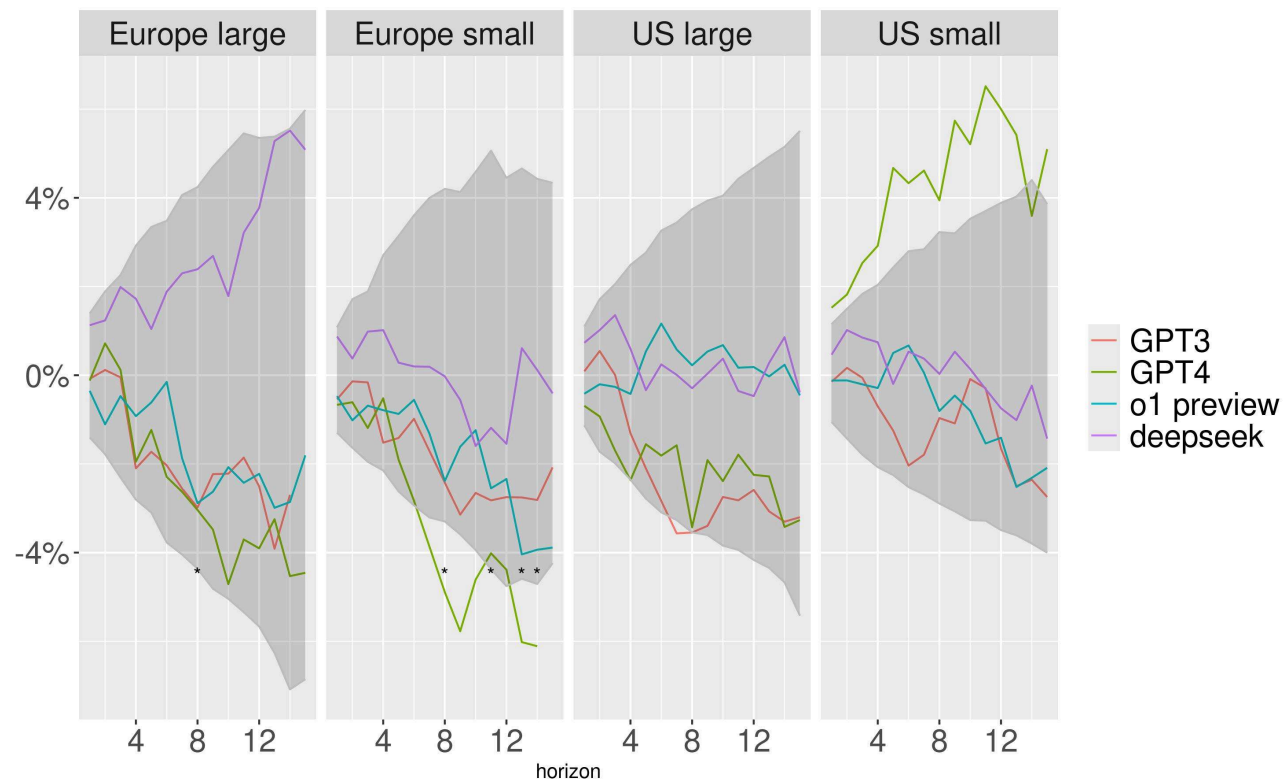
→ regression of regressions: Are smaller banks affected differently?

	Intercept	log(TotalAssets)	n	R ²
total	-0.0661 *** (0.0234)	0.0059 *** (0.0021)	129	8.59
Europe	-0.091 ** (0.0401)	0.0087 ** (0.0036)	50	16.66
US	-0.0436 * (0.0261)	0.0035 (0.0022)	75	2.91

Event study



$$AR_{j,t} = R_{j,t} - \mathbb{E}(R_{j,t} | market_{j,t})$$



Conclusions



- International bodies tasked with financial stability stress the risks of **model opacity, herding, cyber risk and supplier concentration**.
- Our approach categorizes risks according to **four scenarios**. The more powerful AI becomes and the faster it does so, indirect effects on banks' debtors will dominate.
- a society adaptive to the new technology is in a better position to **channel the productivity growth into more output**. Ultimately, such a stance will benefit financial stability.
- Empirics: mixed evidence. Market seems uncertain too. **Smaller European banks rather negatively affected**.

Thank you for your attention!

Vielen Dank für Ihre Aufmerksamkeit!

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