Discussing: "Good AI, bad for banks?" by Stefan Kerbl
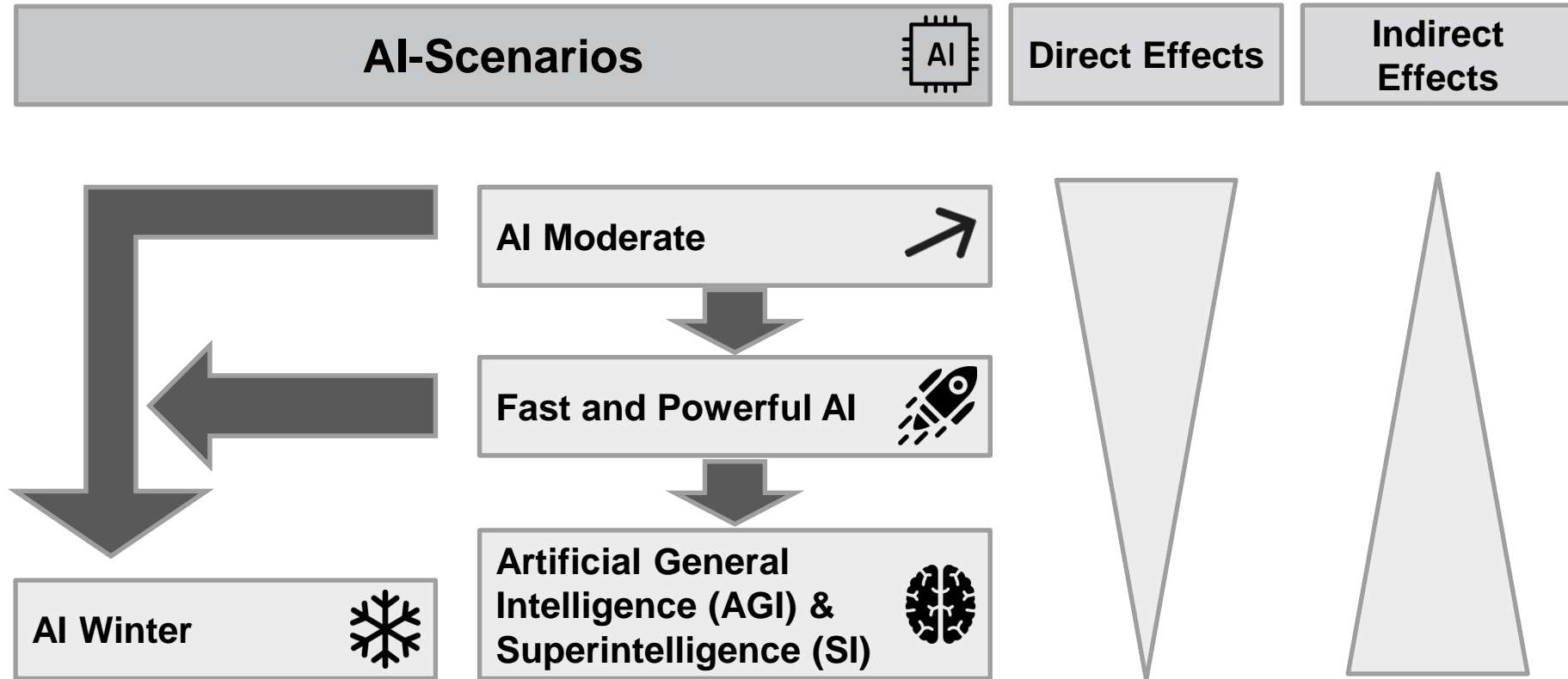
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Opinions expressed by the discussant do not necessarily reflect the official viewpoints of Deutsche Bundesbank or the Eurosystem.

Research Question & Methodology

- **Big Question:** Will rapid AI adoption strengthen banks or undermine stability?

- **Approach:** Synthesized global reports → 4 AI scenarios → empirical tests (Nvidia proxy & event study)

- **Top AI risks identified:** model opacity, herd behavior, cyber attacks, vendor concentration

- **Key findings:** AI advances not boosting bank stocks – mostly neutral/negative, especially for US banks (signals disruption threat)

AI-Scenario Analysis

AI-Scenarios AI | **Direct Effects** | **Indirect Effects**

AI Moderate ↗

Fast and Powerful AI 🚀

Artificial General Intelligence (AGI) & Superintelligence (SI) 🧠

AI Winter ❄

Empirical Analysis: Nvidia Proxy

$$stock_{i,t} = \beta_i \, nvidia_t + \gamma_{1,i}MKT_t + \gamma_{2,i}SMB_t + \gamma_{3,i}HML_t + \gamma_{4,i}BIT_t + \alpha_i + u_{i,t}$$

$\gamma_{1,i}MKT_t$: Market-wide return effect (systematic risk premium)

$\gamma_{2,i}SMB_t$: Premium for small over big firms (size factor)

$\gamma_{3,i}HML_t$: Premium for value over growth firms (value factor)

$\gamma_{4,i}BIT_t$: Bitcoin effect

$$\beta_i = \delta_i \log(TotalAssets)_i + \alpha_i + u_{i,t}$$

$\rightarrow$ differentiates the effect for banks of *different sizes*

Empirical Analysis: Event study

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

$AR_{j,t}$ is the *abnormal return*

$R_{j,t}$ is the *realised (or observed) return*

$\mathbb{E}(R_{j,t}|market_{j,t})$ is the *expected return*

→ Abnormal returns are calculated as *cumulative returns* up to 15 days after the event

The *covered events* correspond to the *releases* GPT-3.5, GPT-4 and DeepSeek-R1 and the *preview* of OpenAI's o1 model

Conclusions

Strengths:

i. Highly relevant and timely *research question*

ii. Succinct and useful *summary of risks* identified by international organisations

iii. The *event study* covers expert-based AI market events

Recommendations:

i. Stronger *link between different sections* eases understanding of main message

ii. Scenario analysis could incorporate *pace of AI progress* as crucial factor

iii. „*Alternative AI proxies*" could be explored