Developments in Artificial Intelligence Markets

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(Based on joint work with Manuel Bétin, Peter Gal and Paul Peltier)

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The Digital Economy Amid Rising International Tensions
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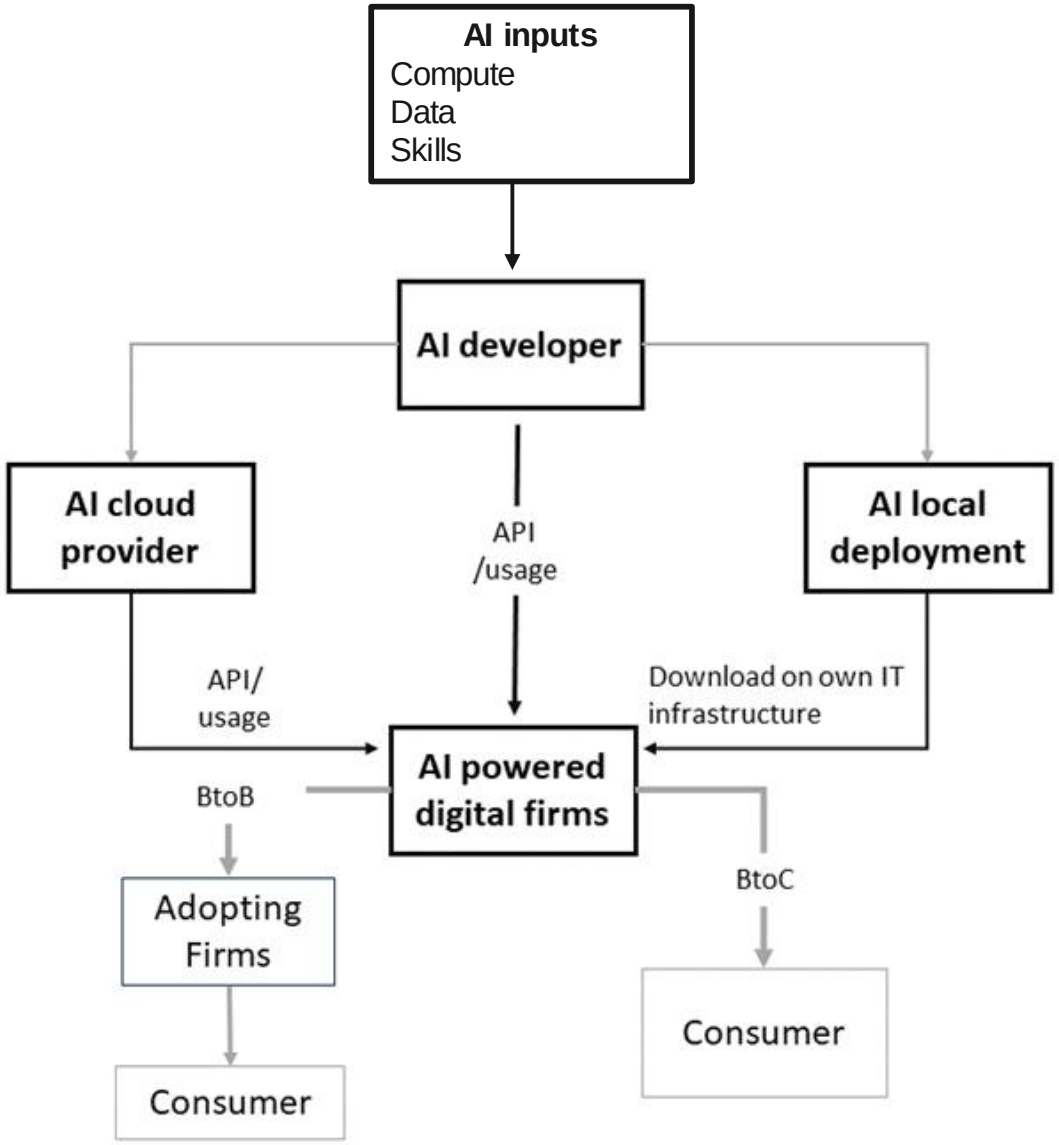
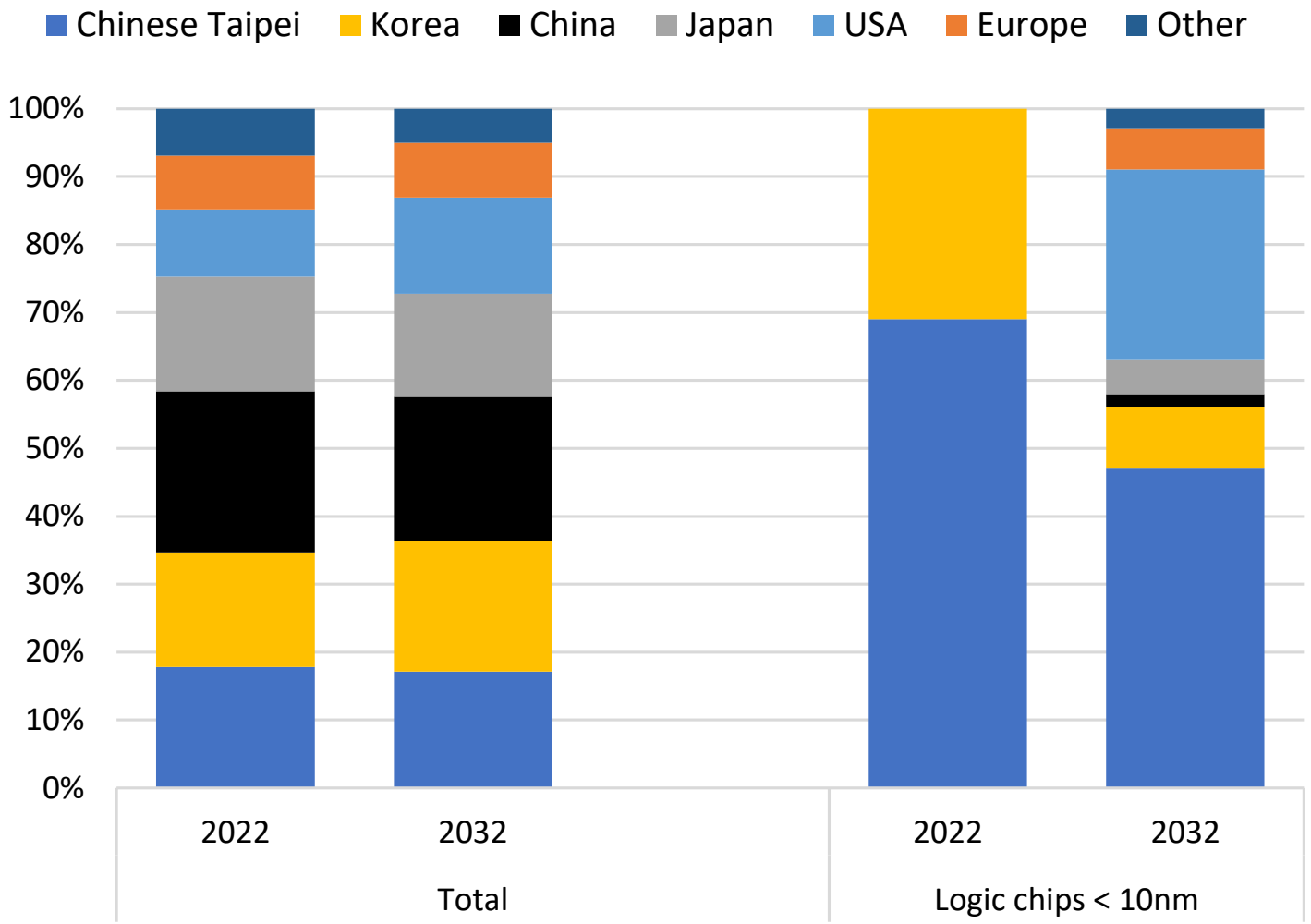
Outline of the presentation

- Overview of the AI value chain
- AI inputs : compute, data, skills
  - ✓ The digital investment boom
  - ✓ AI power requirements
- AI model supply
  - ✓ Developers and models
  - ✓ The AI economic frontier
  - ✓ Price developments
- Access to AI models through the cloud
- AI downstream applications
- Concluding remarks

A simple value chain of AI

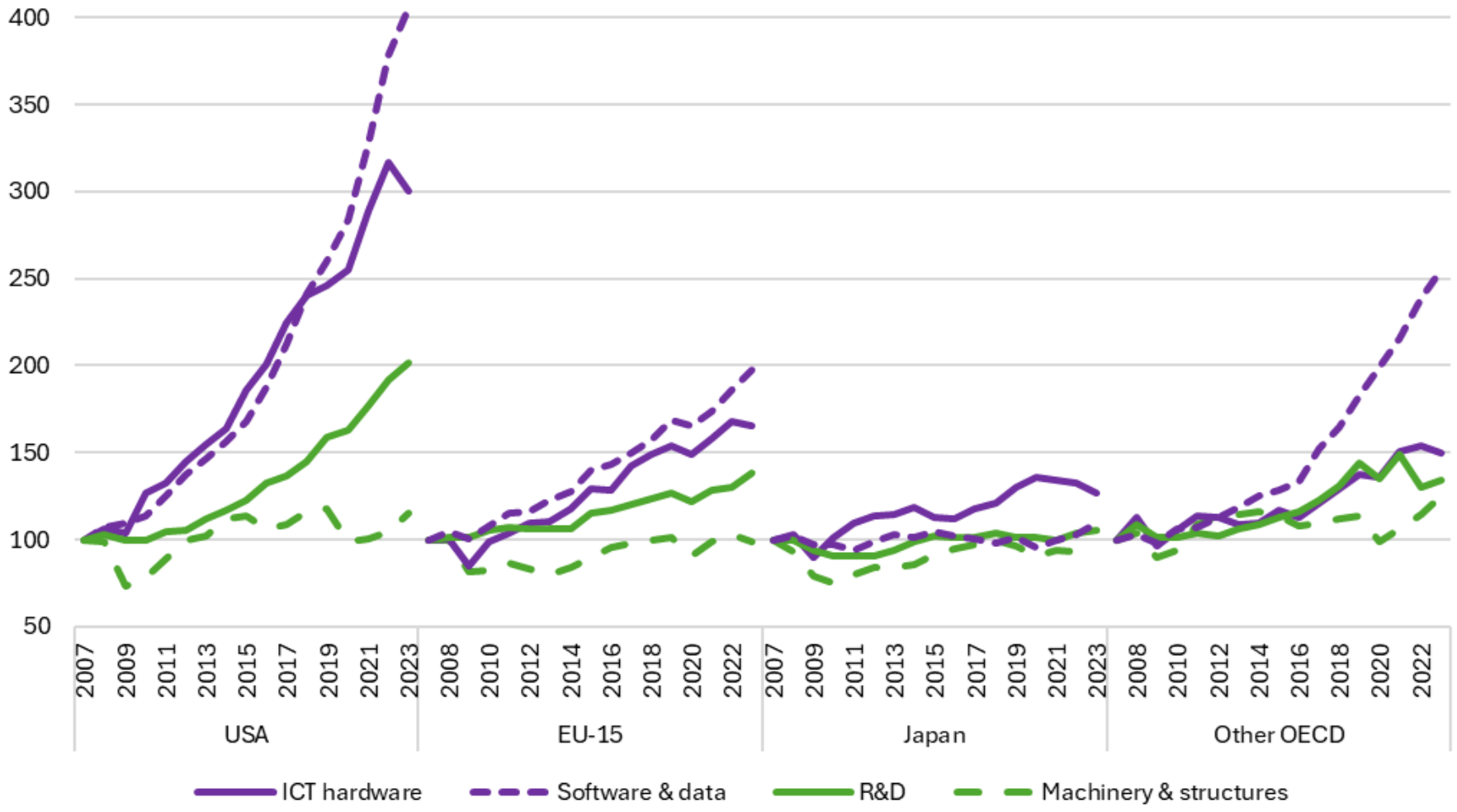


Global chip manufacturing capacity



Source: Boston Consulting Group - Semiconductor Industry Association (2024).

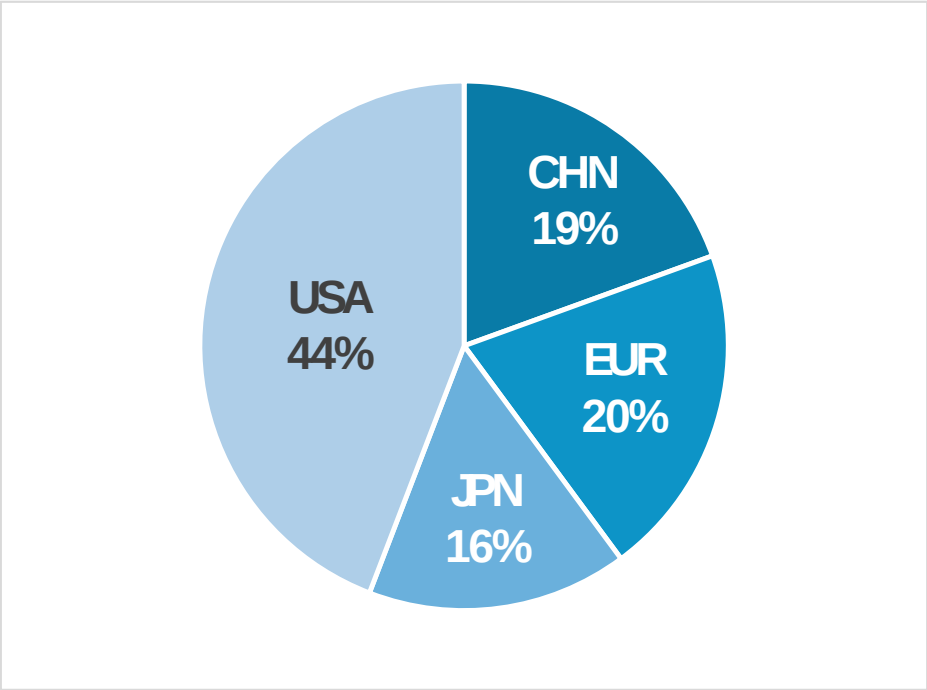
Digital and other investment in the OECD



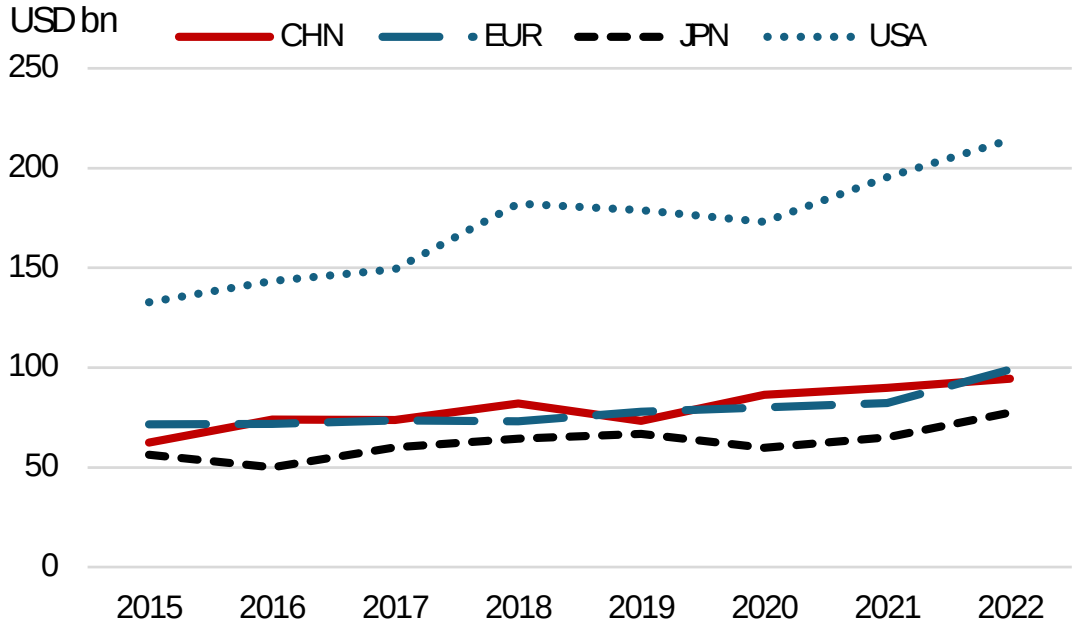
Source: Gal, Hooley, Ozturk and Unsal (forthcoming), based on OECD National Accounts Database.

Firm-level digital capital expenditure across regions

Share of digital investment expenditure 2022



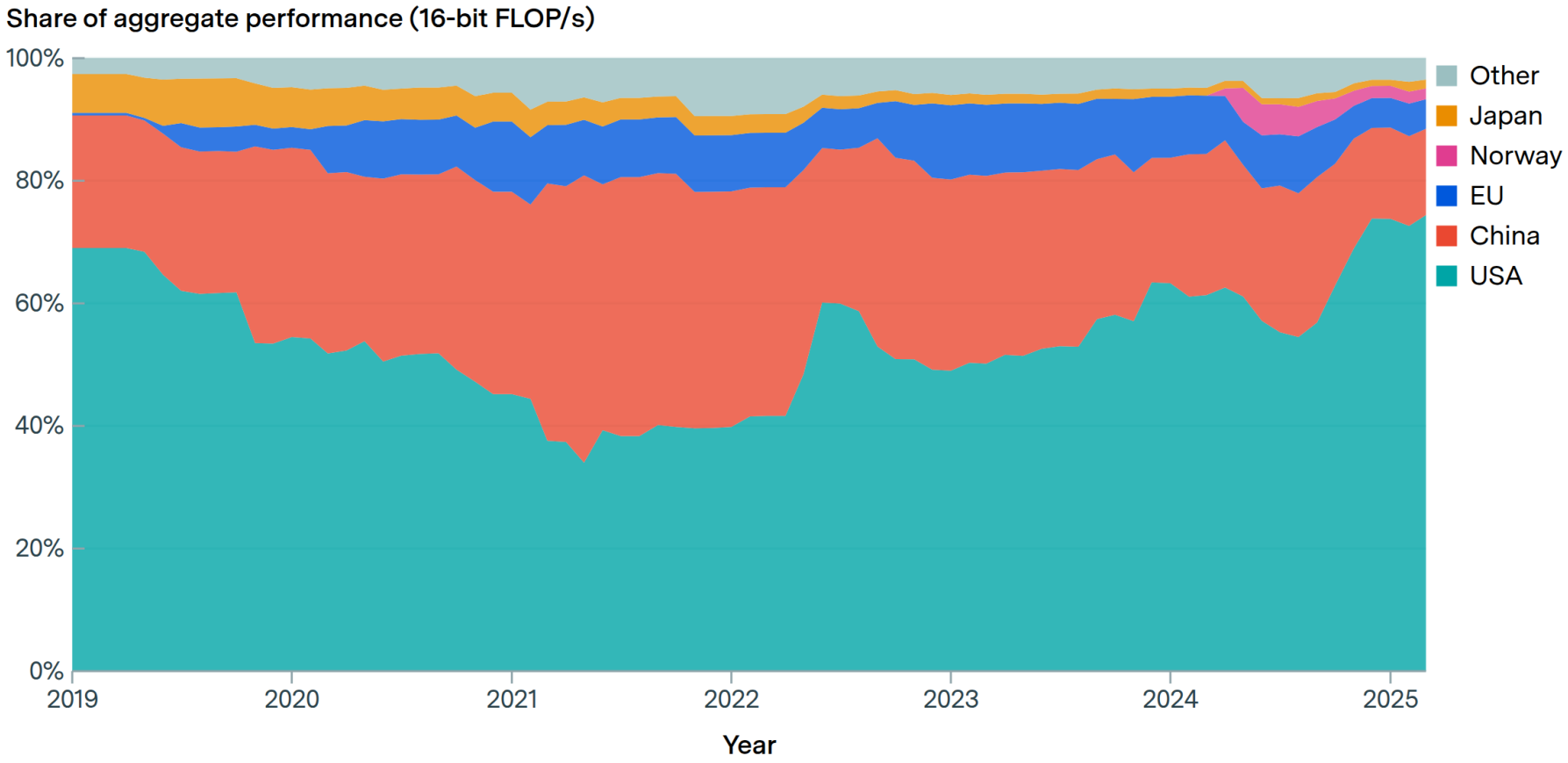
Digital investment expenditure



Note: Digital investment is proxied by capital expenditure (capex) in the "Technology" sector, as defined by Thomson Reuters industry classifications (covering ICT hardware and software & data firms). Investment flows are expressed in constant 2015 PPP-adjusted USD to ensure comparability. The "EUR" category includes AUT, BEL, CHE, DEU, DNK, ESP, FRA, GBR, ITA, NLD, SWE.
Source: Gal, Hooley, Ozturk and Unsal (forthcoming), based on Worldscope and OECD National Accounts Database.

The United States leads in total computational performance, followed by China

EPOCH AI

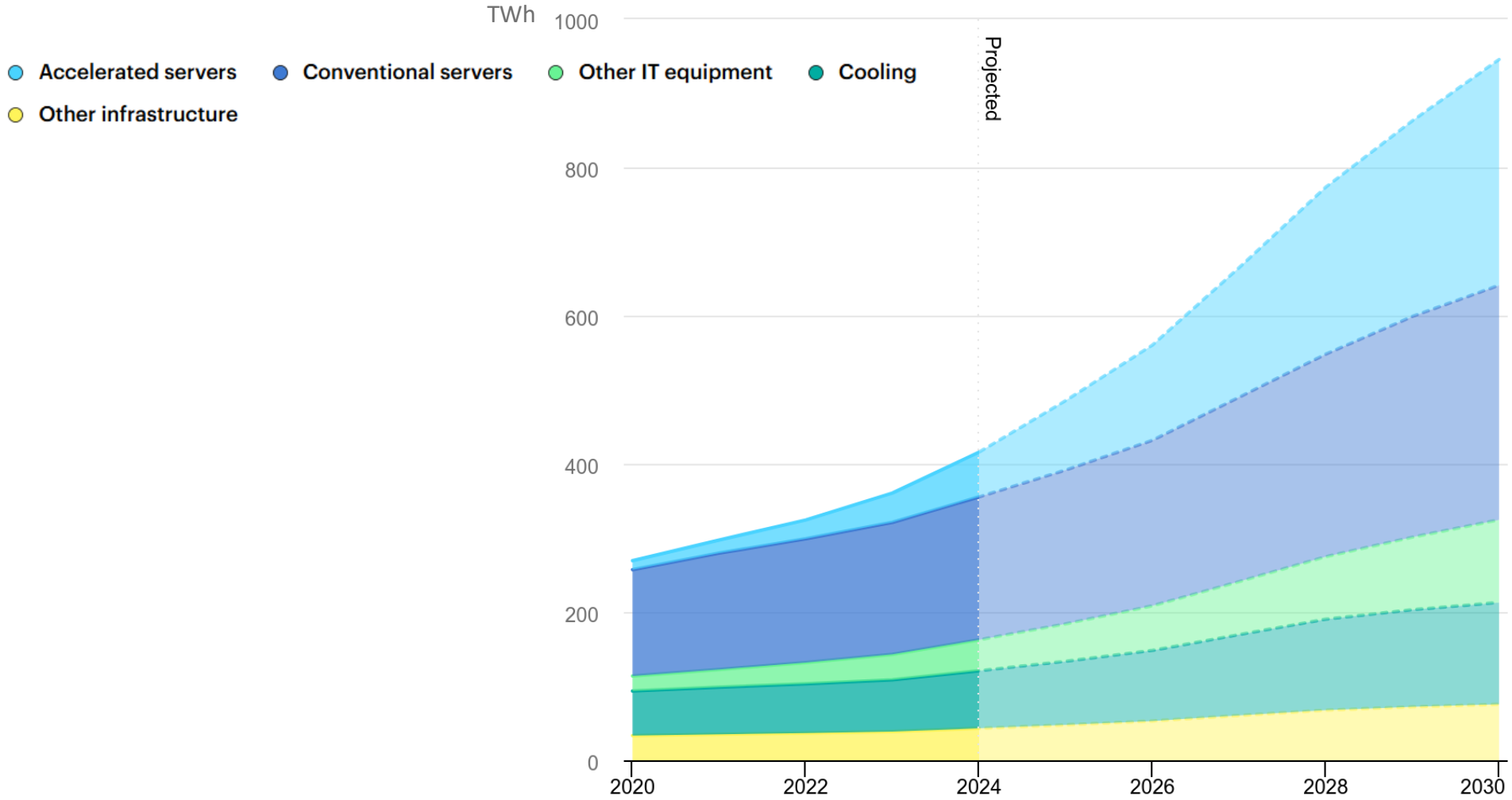


Source: Konstantin F. Pilz et al. (2025), "The US hosts the majority of GPU cluster performance, followed by China". Published online at epoch.ai. Retrieved from: 'https://epoch.ai/data-insights/ai-supercomputers-performance-share-by-country'.

Our dataset covers an estimated 10–20% of global aggregate AI supercomputer performance as of March 2025. While coverage varies across companies, sectors, and hardware types due to uneven public reporting, we believe the overall distribution remains broadly representative. Future country shares may change dramatically as exponential growth continues in both AI chip performance and production volume. We are visualizing all countries that held at least a 3% share at some point in time.

Projected power requirements from data centres

Global data centre electricity consumption, by equipment, Base Case, 2020-2030



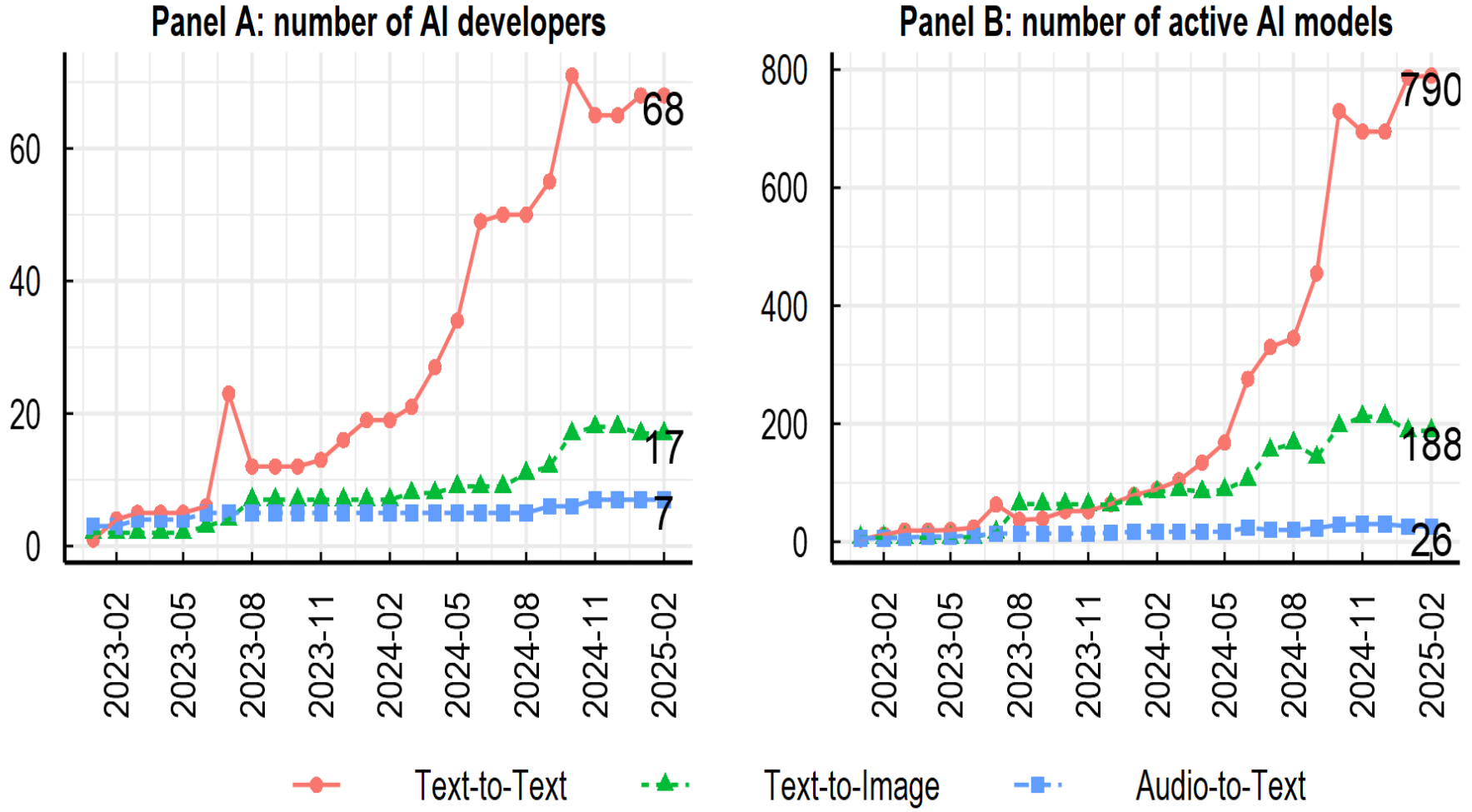
Source: International Energy Agency.

Data and skills

- Data
  - ✓ Scaling law
  - ✓ Data protection
  - ✓ Intellectual property
  - ✓ Big-tech datasets
  - ✓ Firm-specific data

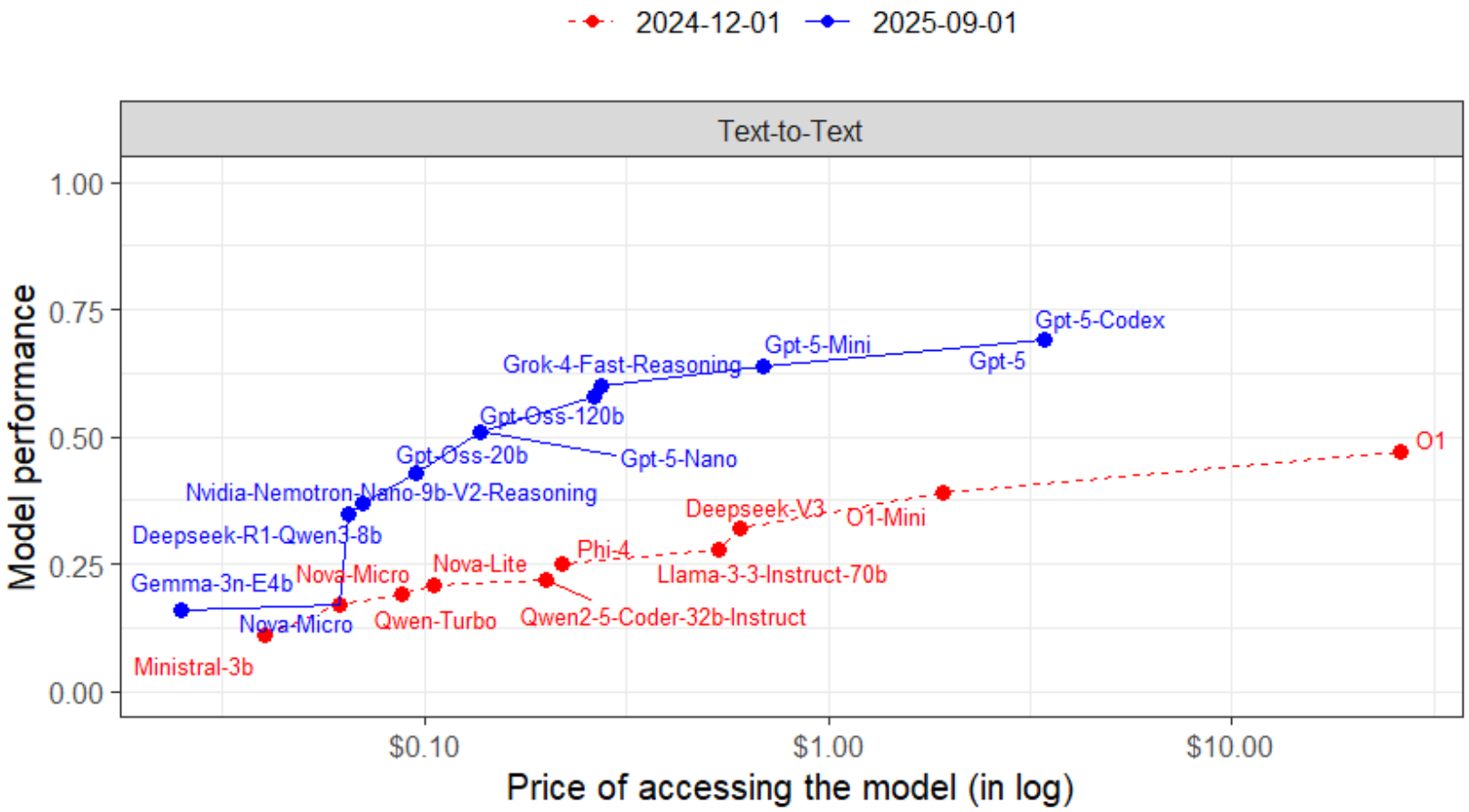
- Skills
  - ✓ Top AI researchers
  - ✓ Digital and AI skills
  - ✓ Upskilling and reskilling

The rise of AI supply



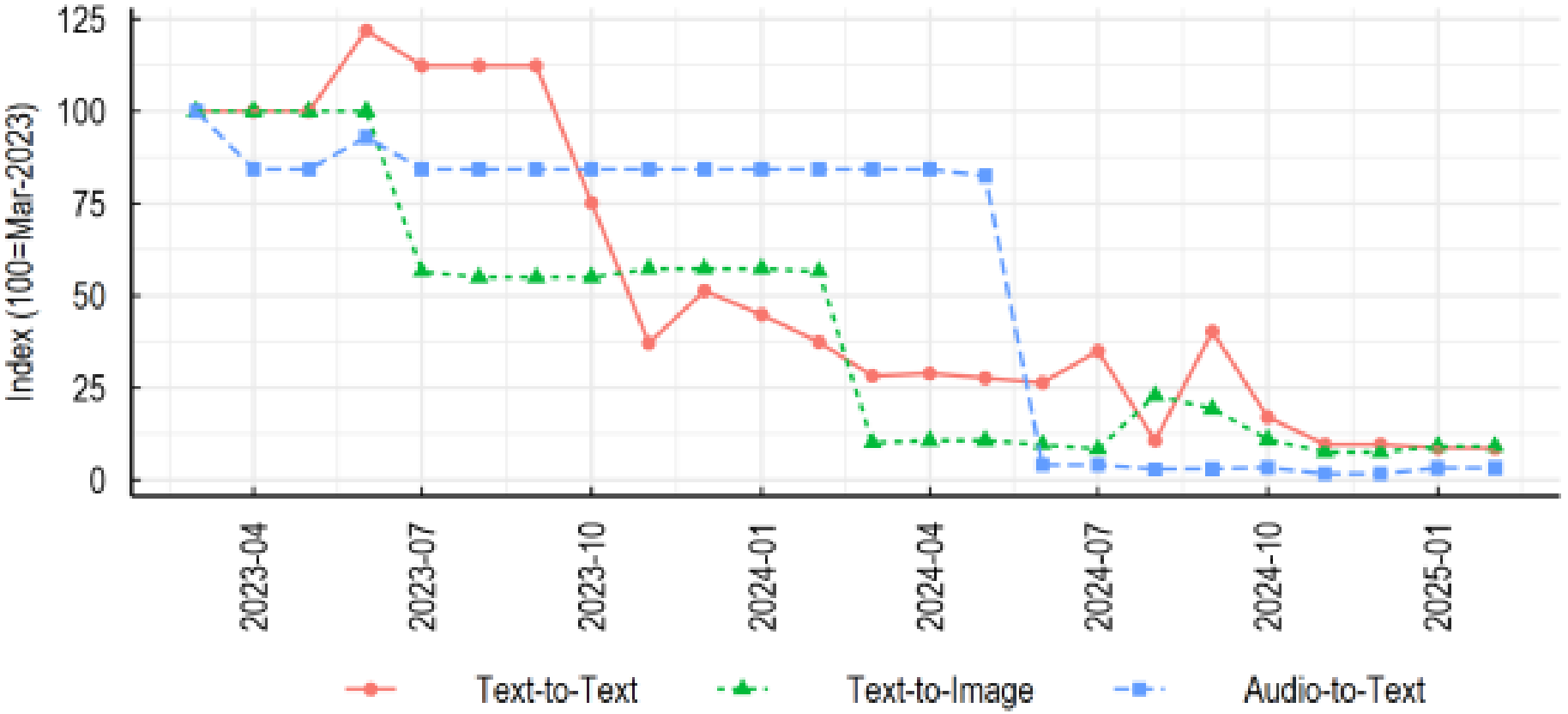
Note: Developers refer to companies that train and optimise the AI models (e.g. OpenAI, Anthropic, Google…).
Source: André, Bétin, Gal and Peltier (2025) with data from Artificial Analysis.

The AI Economic Frontier



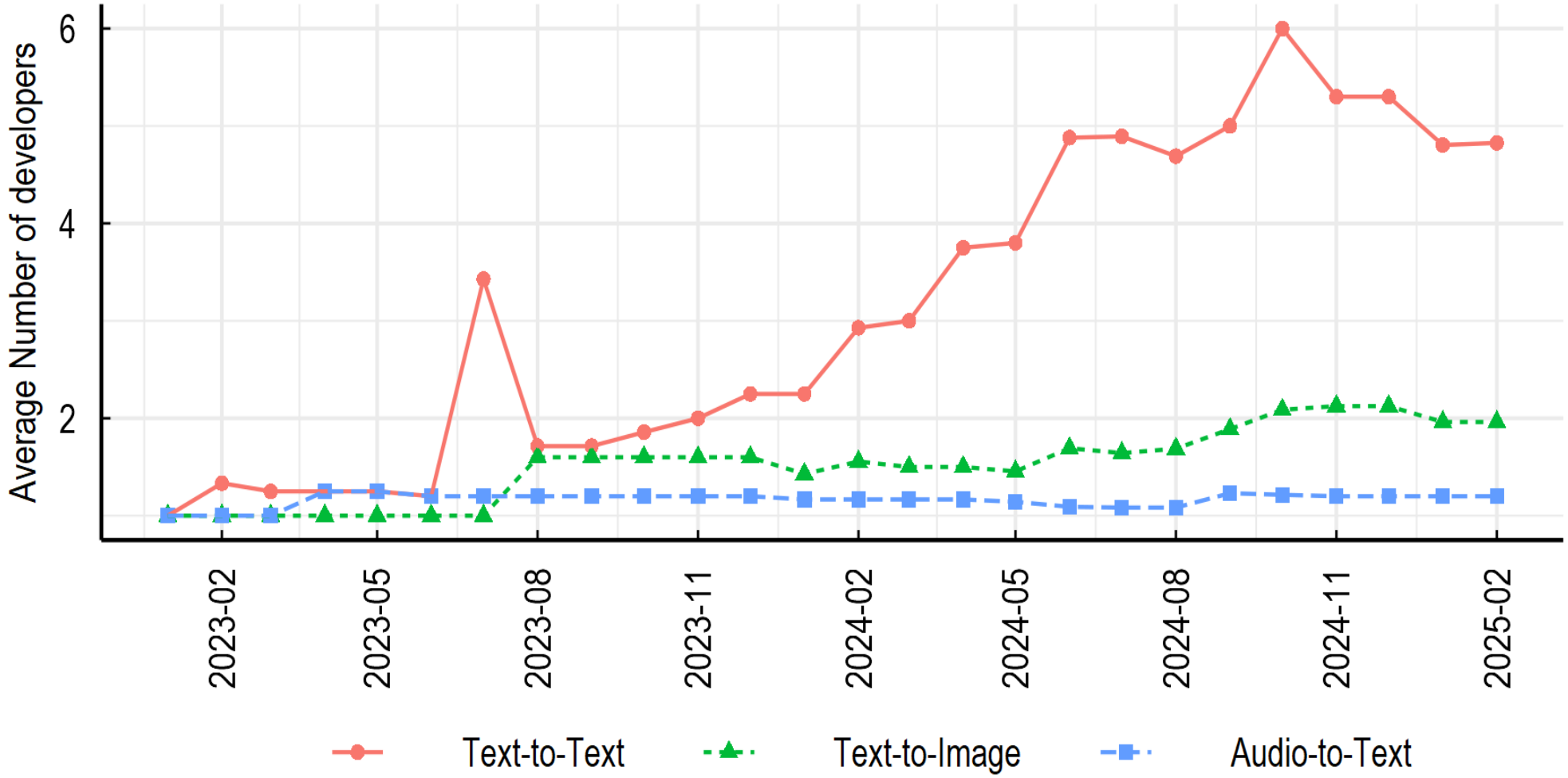
Note: Performance refers to the "*Artificial Analysis Intelligence index*" from Artificial Analysis. It is defined by a normalised weighted index of performance based on common industry benchmarks. For more details about the methodology, including performance and price measurement, see Section 2.2 and Annex B and C in André et al. 2025 and the documentation of Artificial Analysis.
Source: OECD calculations based on André, Bétin, Gal and Peltier (2025) with data from Artificial Analysis.

Quality-adjusted AI prices



Note: The index represents the evolution (starting in March 2023) of the quality-adjusted price of using AI models from the cloud for each AI modality. The index for each modality is a weighted sum of the index for each model segment (Tier 1, 2 and 3) under the baseline demand scenario (respectively 5%, 70%, and 25% of total demand). Each model segment is represented by the model with the best price/quality trade-off available in each month at the AI Economic Frontier.
Source: André, Bétin, Gal and Peltier (2025).

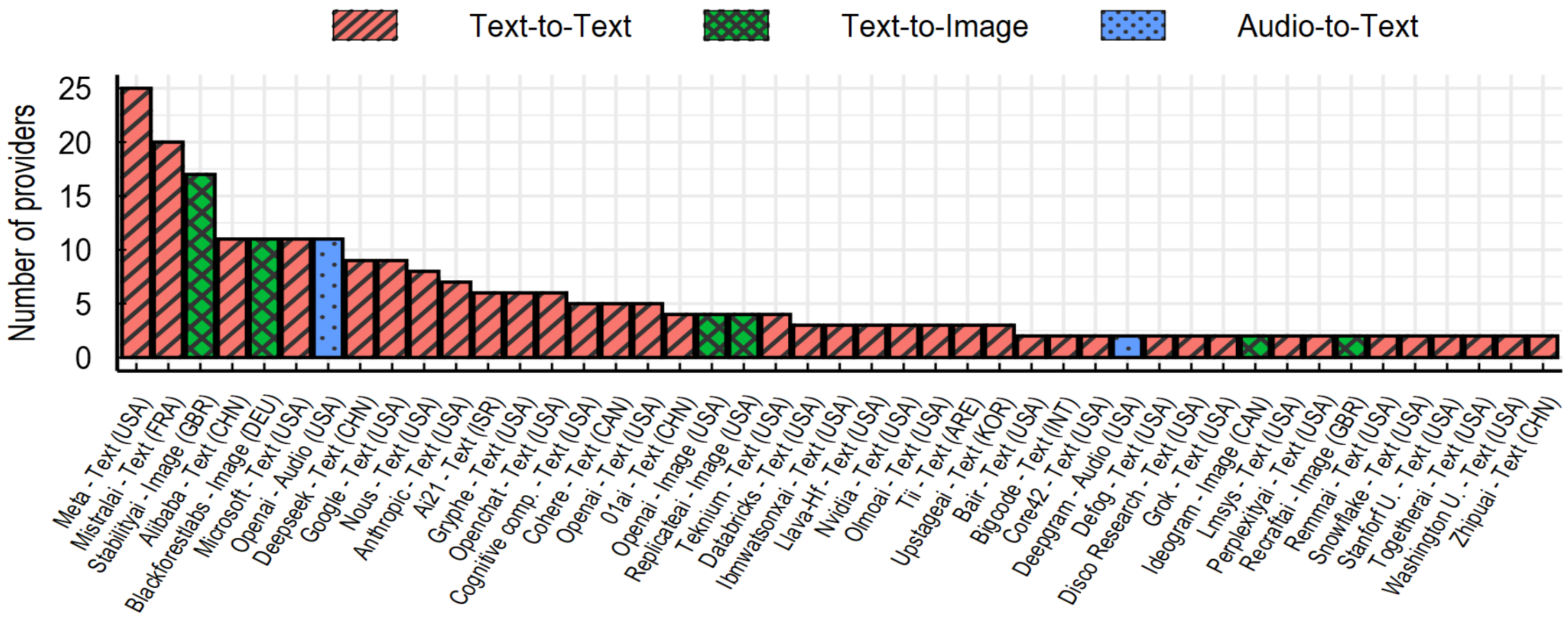
Average number of AI developers per cloud provider



Source: André, Bétin, Gal and Peltier (2025).

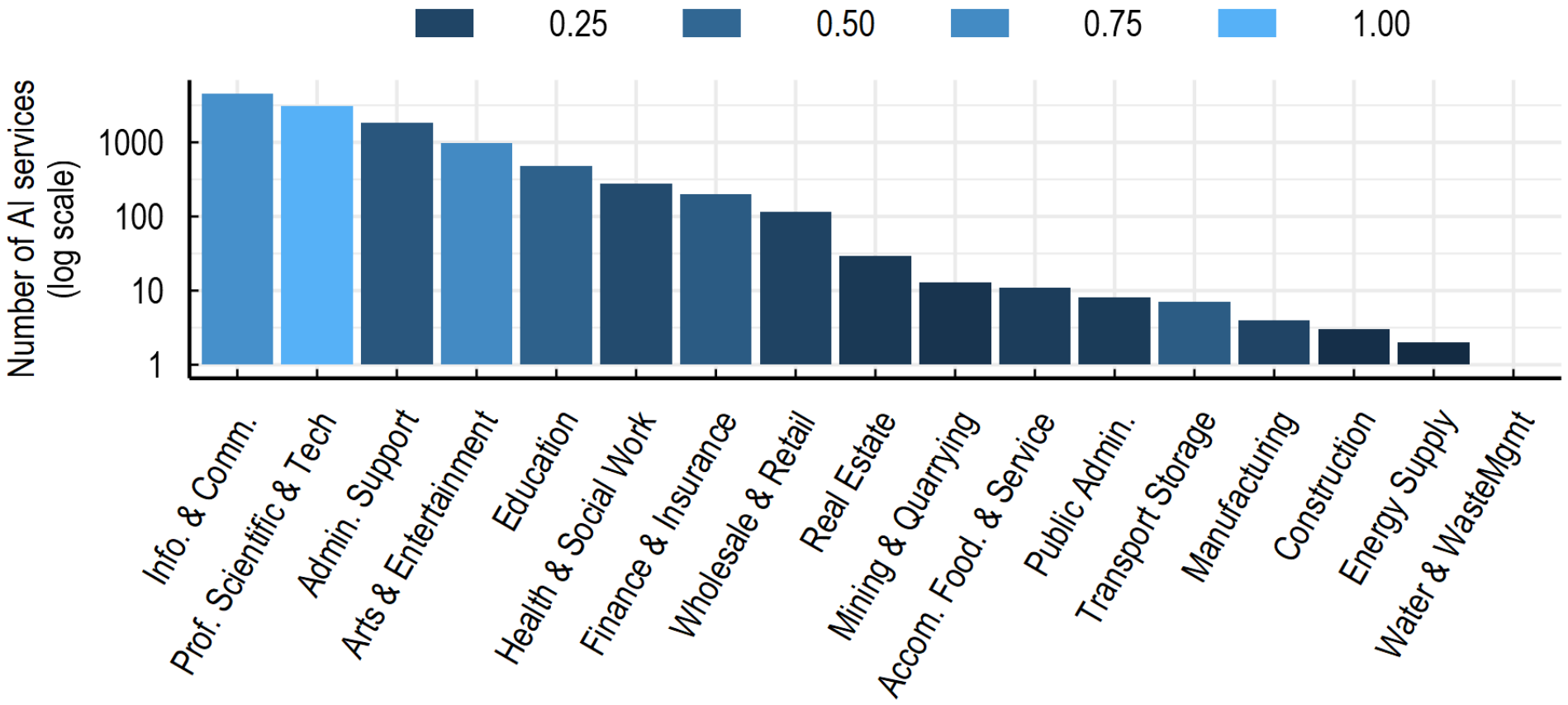
Number of cloud providers serving AI models

January 2025



Note: Only companies developing models served by at least two cloud providers are shown.
Source: André, Bétin, Gal and Peltier (2025).

Supply of AI services across sectors



Note: The figure shows the number of AI services and their popularity (normalized number of clicks in colour) for AI tasks available on the platform and classified by economic sectors (ISIC level 4). Popularity is normalised to range between 0 and 1.
Source: André, Bétin, Gal and Peltier (2025), based on data from There is an AI For That (TAAFT).

Concluding remarks

- AI inputs tend to be concentrated but abundant supply of models
- Digital investment
  - ✓ Much faster growth than other investment globally
  - ✓ Especially strong growth in the US
- Compute
  - ✓ US leading, followed by China
  - ✓ Rising role of the private sector
- Power supply challenge
- AI developments
  - ✓ Rising supply of foundation models from various countries, including open-source
  - ✓ AI frontier shifting rapidly: better models at cheaper user cost
- Concentration in the cloud market but providers generally give access to several AI models
- Numerous AI downstream applications are available and there is scope for further development

THANK YOU !

For more information:

André, C., M. Bétin, P. Gal and P. Peltier (2025), "Developments in Artificial Intelligence markets: New indicators based on model characteristics, prices and providers", *OECD Artificial Intelligence Papers*, No. 37, OECD Publishing, Paris, https://doi.org/10.1787/9302bf46-en.

BETTER POLICIES FOR BETTER LIVES