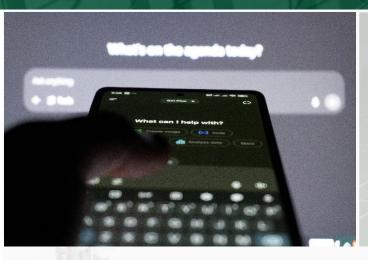


ECONOMIC RESEARCH - NOVEMBER 2025

INVESTMENT INSIGHT

ARTIFICIAL INTELLIGENCE



- √ The main players in the existing oligopoly
- ✓ Anatomy of the ecosystem: the 3-layer pyramid
- ✓ Stock market performance 2020-2025: the valuation revolution
- ✓ Evolution of the main AI ETFs

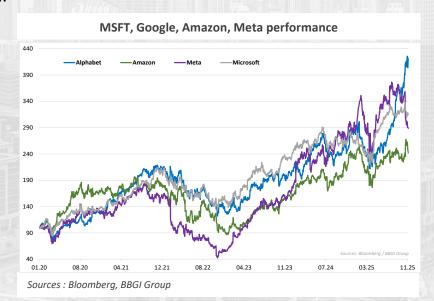
2026 WILL SEE THE END OF THE BETA FACTOR AND THE RETURN OF MICROANALYSIS

The core oligopoly and strategic divergence

The battle for AI supremacy is currently fought among five distinct strategic forces. OpenAI/Microsoft serves as the Catalyst and innovator, dominating API adoption with models like GPT-4o. Google is the Awakened Giant, leveraging its Gemini family and unmatched ecosystem (Search, Android) to compete on performance. Meta is the Open-Source Champion, offering its Llama models freely—a "scorched earth" strategy challenging proprietary dominance. New challengers like Anthropic (the safety-focused alternative) and Mistral AI (the European champion) complete the competitive landscape.

Layer 1: Infrastructure and hardware foundation

This foundational layer is the Physical Basement of the Al supply chain—the "shovel and pickaxe sellers" of the gold rush. It encompasses everything tangible that generates computing power. Key sub-sectors include Chip Design (dominated by NVIDIA, with custom chips from Google, Amazon, and Microsoft), Manufacturing Equipment (critical tools from ASML), Chip Manufacturing (foundries like TSMC), and Data Centers & Networks (plumbing via Super Micro Computer, Arista Networks, and Vertiv). This layer is non-negotiable; no model can be built without it.



NVIDIA: The hardware monopolist

NVIDIA is the undisputed Kingmaker of the AI era. With a near-monopoly (over 80%) on the specialized GPUs (H100, B200) required for large-scale model training, it controls Layer 1. No major player can innovate without its chips, making its stock performance astronomical and defying traditional valuation metrics. The market has correctly identified NVIDIA as the most critical bottleneck and the most profitable component in the entire AI value chain, followed closely by its factory suppliers like ASML and TSMC.

Layer 2: Platforms, models, and the central brain

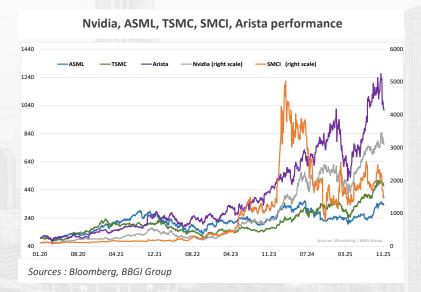
Layer 2 forms the Central Brain, hosting the models and providing the on-demand computational power. This includes the Cloud Hyperscalers (AWS, Azure, GCP), which are the largest consumers of Layer 1 infrastructure, leasing it to developers. Beneath them are the Model Foundations (OpenAI, Google, Meta, Anthropic) that create the Large Language Models (LLMs). The crucial fuel for this layer is Data & Analysis, managed by companies like Snowflake and Databricks, which prepare the massive data lakes necessary for training.

Layer 3: Applications, software, and end use

This is the top of the pyramid, representing the End User Interface and commercial realization of AI. It includes "Infused" Enterprise Software (SaaS giants like Microsoft's Copilot and Salesforce's Einstein GPT, adding AI "superpowers" to existing products) and AI "Native" Applications (like ChatGPT or Perplexity AI). A vital vertical is Cybersecurity, where firms like CrowdStrike use AI for defense while also facing AI-powered attackers. This layer must demonstrate clear ROI, driving the shift to "show me the money."

Stock market outlook: The valuation revolution

The AI revolution has created a stark valuation hierarchy. Layer 1 winners (NVIDIA, SMCI) experienced stratospheric performance, driven by the immediate demand for compute. Cloud Giants (Layer 2)— Microsoft, Google, and Amazon—performed exceptionally well, with Microsoft's early OpenAl investment being the "deal of the century." The outlook for Layer 3 Software (Salesforce, Adobe) is more nuanced, with investors demanding tangible evidence that high-priced AI add-ons will be adopted and profitable. ETF analysis confirms this hierarchy: "Shovel Seller" (Semiconductor) ETFs have significantly outperformed broader tech and diversified AI funds (BOTZ), illustrating the necessity of targeted exposure to the infrastructure layer.



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