

Circular December 2024

The AI Revolution: Paradigm shift

The industrial revolution was arguably the first great modern technological paradigm shift. At its heart was the steam engine, which powered factories, trains, and ships, enabling unprecedented production and transportation. But what made the revolution scalable was coal. The cost of extracting, transporting, and utilising coal fell dramatically over decades, making it the key commodity that powered industrialisation.

Coal's declining cost fuelled exponential growth in energy availability, which in turn drove massive productivity gains across industries. Factories could produce goods faster and cheaper, while railroads and steamships connected markets across the globe. The ripple effects transformed economies, societies, and geopolitics.

Fast forward to the 20th century, and another revolution was underway: the rise of the personal computer. Here, the key commodity wasn't a physical resource like coal but a technological one: transistor density. As transistors shrink in size, their power consumption and cost decline proportionally with the number of transistors on a chip doubling roughly every two years. Computing power became exponentially cheaper and more efficient. This commoditisation of computation enabled the development of affordable personal computers leading to cost savings and advancement for both businesses and schools.

Today, we're witnessing another paradigm shift: the AI revolution, driven by large language models (LLMs). These models, like GPT-4 and Meta's LLaMA, are transforming industries from customer service to content creation, programming, and beyond. The cost of training and utilising LLMs, has been falling at an extraordinary pace. Industry estimates suggest a 10x annual decline in the cost of training models. This means that tasks requiring cutting-edge AI capabilities are becoming dramatically cheaper every year. Today, the rapid decline in LLM costs is democratising AI, challenging incumbents, and creating new opportunities for hyperscalers and innovators.



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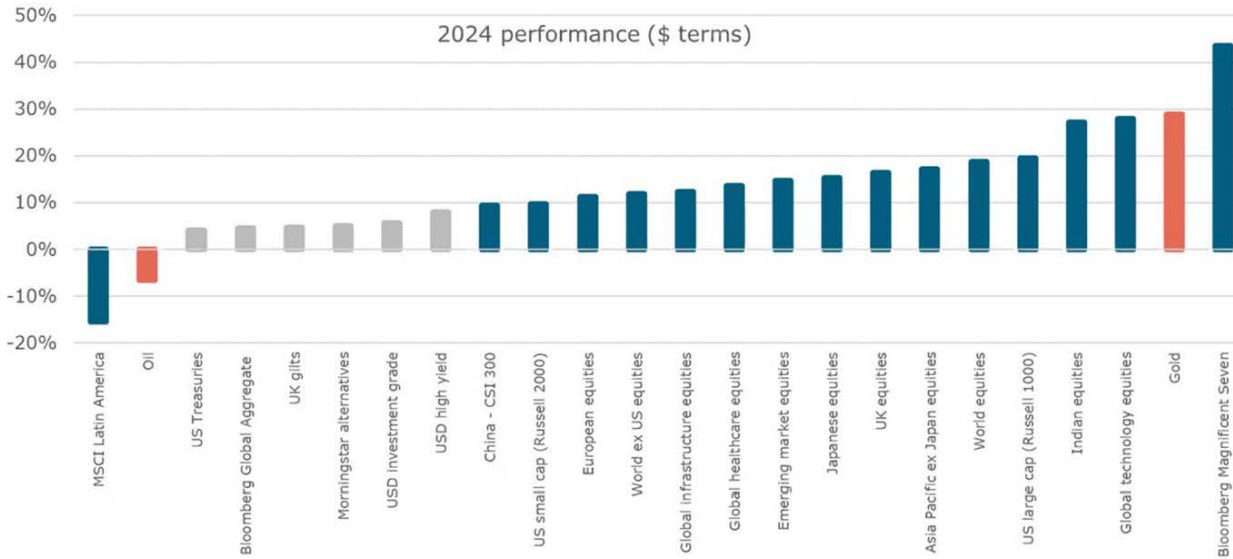
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How does this translate to stock markets?

The 'Magnificent Seven' (Alphabet (Google), Amazon, Apple, Meta Platforms, Microsoft, Nvidia, and Tesla) have driven markets again in what to date has been an excellent year overall. The common thread with these companies is their direct involvement in making or using computer power.

Despite recent volatility, technology is still at the forefront of market returns this year.



Source: Bloomberg, Total return and US dollar terms. Data to 27th September 2024. Past performance is not a guarantee of future returns.

We expect to report an excellent year when we provide next years first reporting in January. In the meantime we wish you all well for the Christmas and New Year holidays.

Referrals

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