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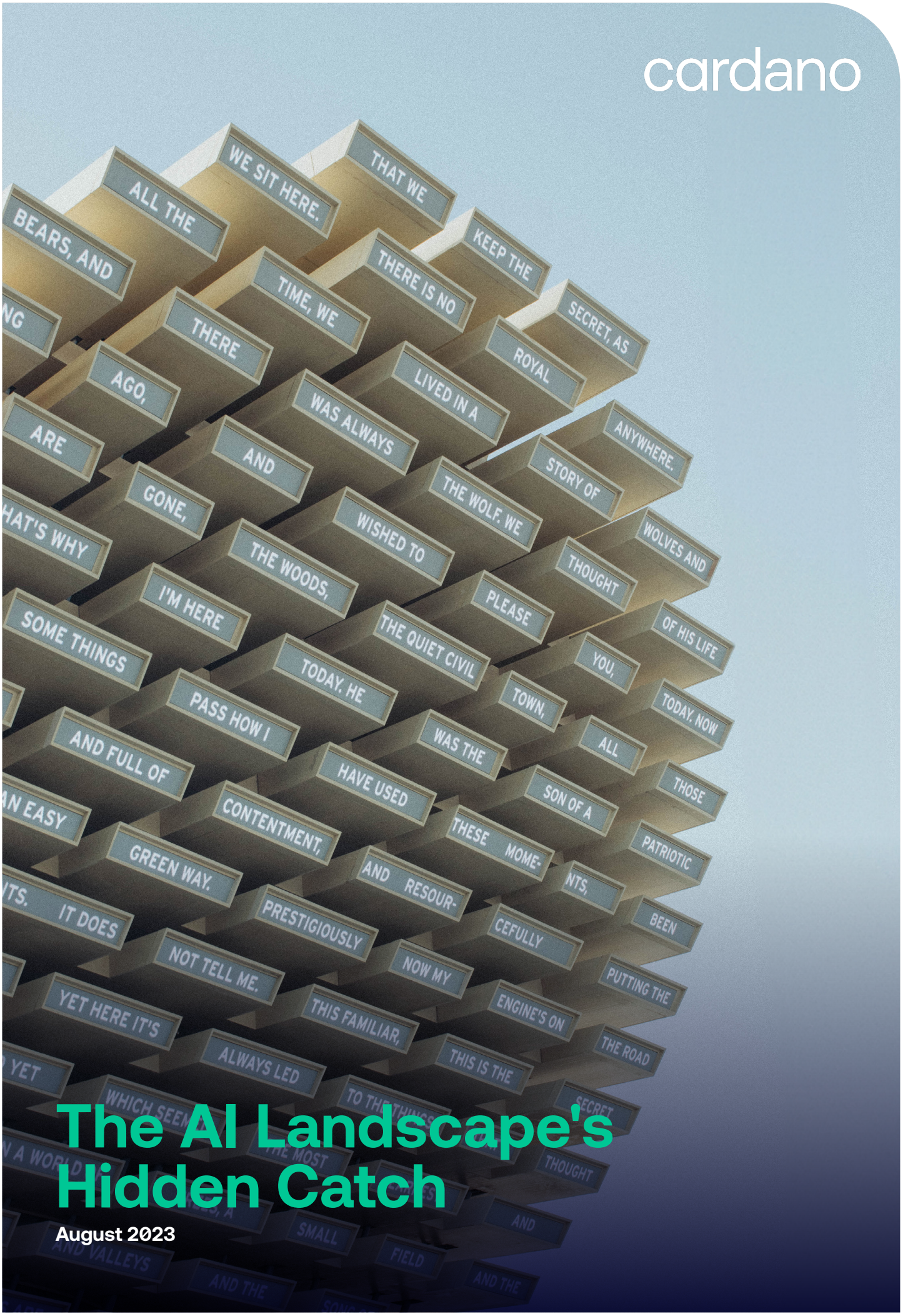

The AI Landscape's Hidden Catch

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The tech giants are the darlings of the stock market.

Experts

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Not only do they carry high expectations, but they also seem to add a touch of green to the portfolios of ESG funds. However, does their presence genuinely lead to a more sustainable world? Moreover, what implications does the overconcentration of tech companies have on investors' risk management?

The American tech exchange, Nasdaq, is currently undergoing a remarkable growth spurt. From a macroeconomic standpoint, this performance might be puzzling, especially with interest rate hikes dampening economic growth and concerns about a potential recession in the US. One of the crucial factors contributing to Nasdaq's strength is the promise of AI. Over the past decades, researchers have tirelessly worked on artificial intelligence, and the breakthrough lies in generative AI. This technology can effectively handle vast amounts of unstructured data using learning algorithms that mimic the behavior of neurons in the human brain. It's an awe-inspiring yet worrisome development.

One major concern is the risk associated with ChatGPT posting self-generated content on the internet and then using it as input for further learning. Interestingly, a computer science professor has already drawn a parallel between the internet and a swimming pool that slowly becomes polluted.

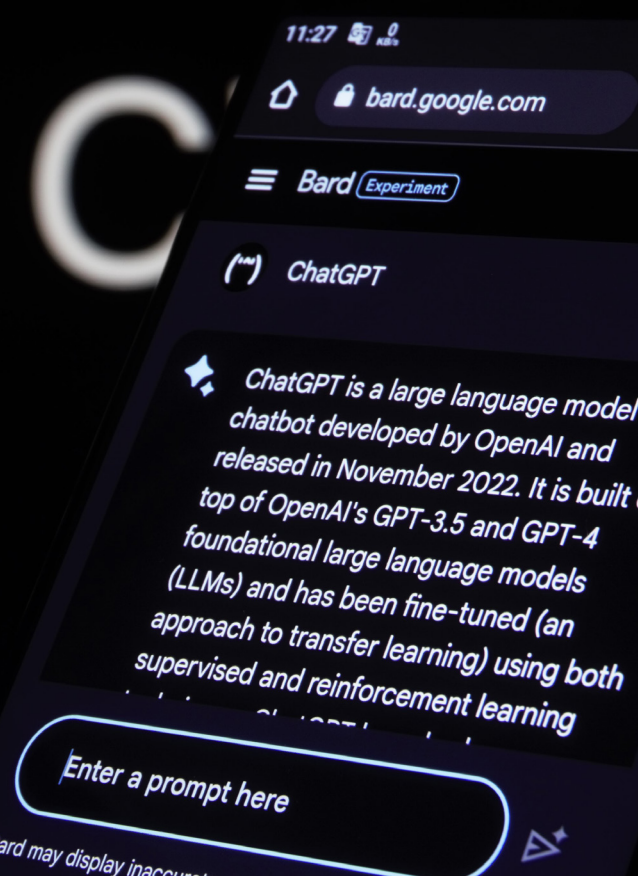
Prosperous Futures

The prevailing optimism can be attributed to the enormous productivity gains that AI is expected to bring about. Some examples include self-driving trucks that can provide round-the-clock supply, revolutionizing logistics processes. Self-learning software ensures that production processes become more controllable and flexible. It enables AI to offer personalized solutions in retail, even in the literal sense, like customized clothing.

According to an article by Goldman Sachs on April 5th of this year, artificial intelligence is projected to increase the global GDP by seven percent over a ten-year period, amounting to a staggering rise of seven trillion dollars. Furthermore, PwC's recent Global Artificial Intelligence Study indicates that by 2030, AI will give the global GDP growth a substantial boost of 14 percent. These impressive figures help explain the euphoria surrounding tech companies.

Exercise Caution

The ascent of AI, from an investor's standpoint, brings both positives and negatives. The drawback of this dynamic is that the performance of (index) portfolios becomes overly reliant on a select group of companies, making the index less representative of the overall market. Seven tech giants, including Meta (owner of Facebook), Alphabet (owner of Google), Microsoft, Apple, and chipmaker Nvidia, wield considerable dominance in the indexes. Any mishaps with these companies can significantly impact your portfolio. Furthermore, it becomes increasingly difficult for active portfolios to outperform the benchmark, as one can only outperform by overweighting the tech giants compared to the index. Those who don't follow this overconcentration in their portfolio allocation risk falling behind.



Not as environmentally friendly as it appears

To address this concentration risk, Nasdaq has opted to reweight the Nasdaq 100 index. This obliges funds tracking this index to sell shares of the magnificent seven (M7) and buy shares of smaller companies, incurring unnecessary transaction costs. Even active investors must sell shares of the M7 to maintain their weightings.

Take a Holistic Approach to Tech Companies

How can you mitigate risks? Fund providers and asset owners can reduce concentration risk by selecting more diversified benchmarks or capping the maximum weight of individual holdings. It is crucial to take a holistic approach when evaluating tech giants. While a tech company may display promising performance, potential ESG (Environmental, Social, and Governance) risks, such as privacy and data security issues, could warrant avoiding investment in such a company.

Moreover, as generative AI gains prominence, the likelihood of controversies and conflicts with regulators increases. For instance, Meta faced a hefty fine of 1.2 billion euros for violating European privacy regulations. In Italy, ChatGPT was temporarily shut down under the orders of the Italian data protection agency until additional privacy measures were implemented.

Presently, the risks that might hinder growth are not fully reflected in stock prices. The current market sentiment shares similarities with the dot-com bubble of the late 1990s. Ultimately, the promise of the internet was fulfilled, but at a slower pace than expected.

Resembling an oil company

The AI landscape may not be as environmentally friendly as it appears. AI applications not only raise concerns regarding privacy regulations but also have a notable impact on the environment. The substantial electricity consumption for 24/7 web data scraping is just one aspect of it. Despite this, tech companies often tout high ESG (Environmental, Social, and Governance) scores, mainly because they generate minimal waste and maintain a relatively small carbon footprint compared to industrial firms. As a result, they are disproportionately represented in sustainable funds. A few years ago, ESG funds may have allocated around 20 percent to technology and another 20 percent to highly sustainable companies. Today, that allocation to technology has risen to about 30 percent, creating an illusion of increased portfolio sustainability. However, in reality, not much has changed. The widespread use of AI solutions contributes significantly to electricity consumption, despite the AI builders themselves having a relatively small CO2 footprint.

Tech companies working on AI development share similarities with oil companies in this aspect. Just like an oil company produces something used by others, tech companies create AI solutions that have widespread applications. While their direct emissions (scope 1) may be manageable, the real environmental impact lies in the fossil fuel consumption by AI users, referred to as scope 3 emissions. In the case of AI, scope 3 emissions are notably significant, with data centers alone accounting for three percent of global electricity consumption.

The positive news is that as renewable energy and more efficient devices become increasingly prevalent, scope 3 emissions are expected to decrease. We all have a role to play in reducing the environmental impact of AI. Since AI adoption will be widespread across organizations, how can we make artificial intelligence greener? One approach is to opt for efficient machine learning models that consume less energy. Additionally, considering how data is stored and selecting data centers powered by green energy can substantially reduce the carbon footprint of AI-driven projects. Interestingly, AI itself can contribute to finding sustainable solutions that lower CO2 emissions by interpreting vast amounts of data and facilitating well-informed decisions.