The Temptation of Chinese AI: Israel Must Not Be Blinded by DeepSeek

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The global race for artificial intelligence (AI) supremacy is accelerating, and China's latest move—the launch of the DeepSeek AI model—has sent shockwaves around the world. The technology industry, stock markets, academia, and governments are all evaluating whether this Chinese engineering breakthrough could also shift the geopolitical balance. In light of the challenges facing Israel's National AI Program, the true efficiency and cost of this new Chinese model are examined against the officially published figures. The key takeaway is that Israel must not be dazzled by Chinese advancements or tempted by technological shortcuts at the expense of building its own national AI infrastructure and securing its digital sovereignty.

The rapid pace of AI developments continues to astonish and make waves worldwide. The latest major breakthrough came with the launch of an AI model named **R1**, developed by the Chinese company **DeepSeek** at the end of January 2025—coinciding with Donald Trump's inauguration as US president and the celebration of the Chinese New Year. Western media coverage of the model focused on its astonishingly low training cost—reportedly under $6 million—its computational efficiency, which significantly surpasses that of competing Western models, and its commercial pricing, which is substantially lower than the current market rates set by rival companies such as the popular **ChatGPT**.[1]

Immediately after its launch, claims arose about the broader implications of this scientific and engineering achievement. According to DeepSeek's performance estimates, it appears that China—despite facing strict US export restrictions—had either found a way to circumvent them or, even more remarkably, managed to achieve this breakthrough independently using older-generation computing hardware, namely GPUs, already in its possession and not subject to export controls. Until the launch of **DeepSeek's R1**, the prevailing assumption in the tech world was that the immense computational power required for AI systems was irreplaceable and that only the most advanced processors—primarily produced by Western companies, particularly the American firm **NVIDIA**—could support such capabilities. Initial global reactions were extreme, with some even comparing the surprise to the Soviet launch of the **Sputnik satellite in 1958**, dubbing it the **"DeepSeek Moment"** or the **"Sputnik Moment of AI."**[2]

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[1] Kyle Wiggers, "DeepSeek Claims Its 'Reasoning' Model Beats OpenAI's o1 on Certain Benchmarks," *TechCrunch* (blog), January 27, 2025, https://techcrunch.com/2025/01/27/deepseek-claims-its-reasoning-model-beats-openais-o1-on-certain-benchmarks/; DeepSeek-AI et al., "DeepSeek-R1: Incentivizing Reasoning Capability in LLMs via Reinforcement Learning," arXiv, January 22, 2025, https://arxiv.org/abs/2501.12948.

[2] Jack Burnham and Craig Singleton, "'AI's Sputnik Moment': Chinese AI Model DeepSeek-R1 Reportedly Surpasses Leading U.S. AI Models," *FDD Policy Brief*, January 30, 2025,

Indeed, the market response was swift, as shares of global tech giants declined sharply, leading to significant financial losses.

Since its release, a worldwide public debate has erupted over the technological and geopolitical ramifications of the ongoing competition between China and the United States for technological dominance. This debate has not bypassed Israel, which is experiencing its own crisis around AI policy and supremacy. Israel's ranking in global AI indices has been steadily declining, and its national AI initiatives have struggled to position the Israeli industry as a global leader—an achievement the country previously attained in other emerging technologies such as cybersecurity.

Even worse, Israel's standing was severely damaged in the final week of US President Biden's term when he issued an executive order classifying countries based on their technological value, trustworthiness, and alignment with the United States in its competition with China. The Tier 1 category includes 18 countries that the United States considers its most reliable allies and sees as the most valuable partners for collaboration in AI and advanced technologies. Tier 3 includes countries such as China, Russia, Iran, and North Korea, to which the export of AI technology is strictly prohibited. According to the order, the United States will impose restrictions on the export of advanced processors that enable the development of artificial intelligence to Tier 2 countries, and these restrictions include—for the first time—Israel. In some respects, Israel is experiencing collateral damage from the US–China technological rivalry. However, this is a partial and overly simplistic explanation, as Israel's placement in Tier 2 reflects deeper and broader concerns—notably, a lack of American trust in Israel's alignment with the strategic objectives of the United States and its ability to develop AI responsibly. This creates a vicious circle, as being included in Tier 2 and facing restrictions on AI chip exports will further exacerbate Israel's inability to advance its AI program and reverse its declining global standing.

President Biden's order forced Israel, for the first time, to realize the gravity of the situation, triggering intense discussions within the government, the Knesset, the tech industry, and the defense establishment. Efforts are now focused on either persuading President Trump to overturn former President Biden's directive—a request Prime Minister Netanyahu personally raised during his visit to Washington in early February (with the outcome still uncertain)—or formulating a strategy to elevate Israel to Tier 1.

Given this broader context and the mood in Israel following former President Biden's decision, it is easy to understand why China's DeepSeek announcement immediately sparked hope. If a Chinese company managed to develop a leading AI model at a low cost and without access to advanced chips, then perhaps Israel could follow a similar path. The emotional pendulum swung rapidly—from extreme pessimism after Biden's order to euphoric optimism following DeepSeek's announcement. For example, on the day Biden issued his directive, the Israeli Manufacturers Association urgently called on the prime minister to address the crisis, warning of severe damage to the country's tech industry. Days later, the mood shifted, with Israel's

https://www.fdd.org/analysis/policy_briefs/2025/01/30/ais-sputnik-moment-chinese-ai-model-deepseek-r1-reportedly-surpasses-leading-u-s-ai-models/.

Ministry of Innovation and Science responding to DeepSeek's R1 launch by stating that, "For Israel, the Chinese model presents a promising horizon, suggesting that the country could become a global AI leader without requiring massive investments, which have so far been a significant barrier to independent entry into this elite club."[3]

However, the reality is far more complex and requires a thorough technical analysis, a geostrategic assessment, and a careful evaluation of the implications for Israel. This article focuses on these three key topics. First, we will provide an in-depth technical examination of the new Chinese model, analyzing its computational power and assessing its true cost compared to the published figures. Next, we will assess whether the Chinese breakthrough can fundamentally undermine the technological lead of the United States over China and whether it signals the potential obsolescence of the American export control regime. Finally, we will review the implications for Israel—whether DeepSeek truly represents an opportunity for Israel and whether it realistically could enable the country to achieve a leadership position in the field of AI technologies without relying on large quantities of the most advanced processors, which are currently unavailable due to its second-tier status and American restrictions.

How Powerful and Efficient is DeepSeek, and What Was Its True Development Cost?

The first issue is whether DeepSeek's capabilities and performance are as strong as the Chinese company claims in its official publications or whether Western analyses—largely based on the company's own reported data—provide an accurate picture. As more data becomes available as a result of in-depth evaluations, the picture becomes more transparent.

Initial independent assessments suggest that DeepSeek's performance may not be as impressive as claimed.[4] A closer examination of the published technical details reveals that while DeepSeek's architecture achieves significant cost efficiency in training, this is not due to a groundbreaking innovation but rather by an inventive and expert application of known techniques—all of which were previously developed or implemented by Western companies.[5]

Regarding the claim that DeepSeek's success demonstrates the failure of US export restrictions in preventing China's leadership in AI and semiconductors, it is important to note that DeepSeek itself admitted that the model was trained using processors purchased before the US export restrictions took effect in October 2023. As a result, the full impact of those restrictions has not yet been felt in DeepSeek's current AI models.[6] Furthermore, in a recent

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[3] **Horizon Division,** *"The Launch of the DeepSeek R1 Model Disrupts the Western AI Development Paradigm and Threatens to Shift the Balance in the Geo-Technological Competition Between the U.S. and China,"* **Ministry of Innovation, Science, and Technology, January 28, 2025** [in Hebrew].

[4] Jenia Jitsev 🏳️‍🌈 UA IL [@JJitsev], "DeepSeek R1 Distilled Llama 70B & Qwen 32B Models Claim to Solve Olympiad Level Math & Coding Problems, Matching o1-Mini Which Claims Same. Can they Handle Versions of AIW Problems That Reveal Generalization & Basic Reasoning Deficits in SOTA LLMs?(Https://Arxiv.Org/Abs/2406.02061) 📝 1/n," Tweet, X (formerly Twitter,) February 3, 2025, https://x.com/JJitsev/status/1886210118594760744 7.

[5] Ben Thompson, "DeepSeek FAQ," *Stratechery* (blog), January 27, 2025, https://stratechery.com/2025/deepseek-faq/

[6] Lennart Heim, "The Rise of DeepSeek: What the Headlines Miss," January 25, 2025, https://blog.heim.xyz/deepseek-what-the-headlines-miss/.

interview, DeepSeek's CEO acknowledged that the company's most significant future challenge will be securing processors for training its models.[7]

As for its cost, DeepSeek publicly claimed that its AI model training cost less than $6 million. However, this figure only accounts for the final training run of the model and does not include infrastructure expenses or operational costs. Moreover, DeepSeek actually launched two AI models simultaneously: R1—a reasoning model that has attracted significant attention; and V3—a large language model (LLM). The $6 million referenced by DeepSeek applies only to the V3 model. However, it was, in fact, the R1 model's performance that sparked the global reaction, and DeepSeek had not disclosed its costs. Industry estimates place the actual cost of training the V3 model at about $500 million, which includes the cost of the datacenters, processors and hardware, electricity consumption, and human resources. These costs are typically amortized in AI model training cost estimates published by Western companies.[8]

When we look at a more orderly calculation of the training costs themselves, we see that DeepSeek's quoted training costs **(about $5.6 million and about 2.8 million hours or 57 processor days)** were made using a computer equipped with 2,048 NVIDIA H800 GPUs. This training applied to DeepSeek V3, a large language model (LLM) released in December 2024. DeepSeek claims that V3 performs at a level comparable to or better than the leading Western LLMs, including OpenAI's GPT-4o, META's Llama 3.1 405B, and Anthropic's Claude 3.5 Sonnet.[9] For comparison, when Llama 3.1 405B was released in July 2024, META stated that it required 30.8 training hours using 16,000 NVIDIA H100 GPUs with an estimated training cost of $92.4 million.[10] OpenAI's GPT-4o, released in May 2024, had an estimated training cost of $78 million.[11] At face value, these numbers suggest that V3's training cost was an order of magnitude lower than that of its Western competitors, despite the limited processing capacity available to DeepSeek. Initially, this was the dominant narrative.

However, several key caveats must be taken into account. First, the AI industry follows a trend of improving training and inference performance by a factor of three per year, achieved purely through software and algorithmic advancements (i.e., without requiring new chips). DeepSeek's improvements are in line with this trend; therefore, this factor should be considered when assessing the extent to which the company has truly made a breakthrough.

DeepSeek-AI et al., "DeepSeek-V3 Technical Report" (arXiv, December 27, 2024), https://arxiv.org/abs/2412.19437

[7] Jordan Schneider et al., "Deepseek: The Quiet Giant Leading China's AI Race," January 28, 2025, https://www.chinatalk.media/p/deepseek-ceo-interview-with-chinas.

[8] Dylan Patel et al., "DeepSeek Debates: Chinese Leadership On Cost, True Training Cost, Closed Model Margin Impacts," *SemiAnalysis* (blog), January 31, 2025, https://semianalysis.com/2025/01/31/deepseek-debates/.

[9] DeepSeek-AI et al., "DeepSeek-V3 Technical Report."

[10] Dollar cost based on an estimated usage cost of $3 per hour per NVIDIA H100 processor. For details of the supercomputer and computational cost, see Llama Team, "The Llama 3 Herd of Models," AI @ Meta, July 23, 2024, https://ai.meta.com/research/publications/the-llama-3-herd-of-models/.

[11] Dennis Normile, "Chinese Firm's Faster, Cheaper AI Language Model Makes a Splash," *Science* 387, no. 6731 (January 15, 2025): 238, https://doi.org/10.1126/science.z18lyzw.

Additionally, the H800 GPUs that DeepSeek has stated it uses are not merely a “weakened version” of the H100 GPUs, which are considered “advanced processors” and are subject to export restrictions. Rather, they are a special version designed for export in response to US export restrictions prior to October 2023. To comply with these restrictions, NVIDIA developed a chip that enables similar performance when training small models but not large ones.

In terms of the computing power available to DeepSeek, various estimates suggest that the company possesses approximately 50,000 NVIDIA Hopper GPUs, including H100, H800, and H20 models, in addition to a computer with approximately 10,000 NVIDIA A100 GPUs. However, speculations and allegations have surfaced that DeepSeek may have acquired the most advanced chips, such as the H100, through illicit channels, bypassing US export restrictions and controls. At this stage, these claims cannot be verified or rejected. For this analysis, all calculations assumed that DeepSeek’s reported computing resources were accurate and reliable.

When simplifying the data, it is clear that DeepSeek has achieved an impressive engineering feat. However, the media hype surrounding its significance—especially comparisons with leading Western AI models—has been exaggerated. The company has not demonstrated substantial improvement beyond the industry’s established trend, nor has there been a fundamental scientific discovery that shakes the foundations of algorithmic and computational engineering.

The most significant weakness of DeepSeek is its complete omission of the required infrastructure components in the true total cost of the model production. Additionally, there has been an attempt to create the impression of an almost alchemical breakthrough, suggesting that an enormous number of computations can be achieved using relatively outdated technologies. To better assess the actual computational power demonstrated in this case, it can be compared with the expected capabilities of Israel’s planned national supercomputer, which is currently in the tender phase.

In 2021, the State of Israel decided to establish a national AI laboratory by developing a supercomputer to provide advanced computing services for state and public needs. According to the plan, by 2026, Israel’s supercomputer is expected to be operational and provide approximately 75% of the computing power required to train DeepSeek’s models. This calculation is based on an estimate of 1,500 H100 processors compared to the 2,048 H800 processors used in the DeepSeek system, which delivers a similar computational performance. At best, the Israeli supercomputer will provide only 44% of DeepSeek’s currently available computing power, assuming there are no undisclosed capabilities, such as hidden resources that might indicate a violation of export sanctions.

Moreover, considering both the increasing computing demands for training large AI models and the continuous expansion of computing resources available to AI companies, it is clear

that the gap between Israel's national supercomputer capabilities and market needs will only widen. Even with expected algorithmic improvements or innovative computational efficiency, Israel's supercomputer will not be able to compete in training models like DeepSeek's R1, even when running at full capacity.

Just as Moore's Law describes the industry's consistent trend of doubling transistor density every two years while improving performance, Jevons' Paradox explains that greater efficiency in resource usage does not reduce demand but rather increases it—often outpacing efficiency gains. In the case of DeepSeek, advancements in computational efficiency are unlikely to reduce the demand for computing resources (in this case, chips) but will increase it. Once this realization set in, concerns regarding the future of semiconductor companies subsided. The sharp decline in stock prices for companies such as NVIDIA following DeepSeek's launch was reversed, and their valuations returned to previous levels.

In conclusion, even under the most optimistic calculations, DeepSeek V3 required twice the maximum computing power of the planned Israeli supercomputer at its maximum capacity for training. At a more conservative estimate, the computing power required and available for DeepSeek may have been almost ten times greater. We conclude that relying on DeepSeek as a model for Israel's AI ambitions—without significant investment in infrastructure—would be a mistake.

Implications

As stated at the beginning, there are three main dimensions to these developments: technological aspects, geostrategic implications, and the Israeli perspective. We reviewed the technological aspects, highlighting the gaps between the perceptions of DeepSeek's performance and its actual costs and capabilities. As for the geostrategic implications, several possible conclusions emerge regarding the effectiveness of US export controls. It is tempting to assume that these restrictions have failed, but such a conclusion is overly simplistic. Most of DeepSeek's success is based on technology and hardware acquired before the latest export restrictions were imposed. A more precise conclusion is that the control regime has, paradoxically, been too successful, leading to an unintended effect: it forced Chinese companies to seek and develop alternative methods to remain competitive—methods that do not necessarily rely on increasing computing power.

Despite these restrictions—and perhaps because of them—the United States has not been able to prevent China from achieving strategic parity in AI through alternative technologies and methods that are not subject to export controls. However, as the data shows, China has not made a fundamental scientific breakthrough that reshapes the foundations of computing but has instead closed the gap through creative techniques that align with expected industry trends. Further evidence that the issue is not a failure of export controls is that DeepSeek itself acknowledged its limitations, stating that without access to advanced hardware, its progress would be severely hindered. China currently lacks access to the most advanced chips, and this technological gap is evident. T**wo weeks after DeepSeek's launch, OpenAI (the developer of ChatGPT) released o3-mini**, a new reasoning model that outperformed **DeepSeek R1** on all metrics. This advantage is **solely due to better access to advanced processors**. If this trend

continues, we can expect Western models to **continue outperforming** DeepSeek in the future, especially as they integrate the same techniques that DeepSeek has used while benefiting from **superior computational resources**. Thus, as long as China is forced to innovate due to computing limitations and the United States can adopt those innovations while retaining its computational advantage, both superpowers will remain in a state of strategic equilibrium in AI development.

For the United States, this situation calls for a reassessment of its export control regime. While China cannot achieve AI dominance without access to American hardware, it has managed to sustain AI research and development at global standards despite restrictions. This outcome aligns with the stated goal of US restrictions: to prevent China from surpassing the United States in AI technology. However, it can also be argued that these increasing restrictions have inadvertently forced China to develop technological self-sufficiency, even if it cannot achieve global leadership in this area. In this sense, DeepSeek may signal the early stages of China's emerging technological autarky, a goal that the country has openly pursued for years now. Evidence of this trend includes DeepSeek's workforce, which consists solely of Chinese graduates from China's universities, and its exploration of Huawei-produced processors for running its models. In summary, while China is unlikely to surpass the United States in AI leadership, the United States will not be able to prevent China from maintaining strategic parity through export controls alone.

What options does the United States have to respond to this new reality? The current situation resembles that leading up to the development of the atomic bomb. When the United States recognized the transformative potential of nuclear physics, it classified the field and consolidated all related research under the Manhattan Project.[12] This allowed the United States to control the spread of knowledge during a critical period. Currently, the field of AI is at a similar crossroads. Therefore, one of the most powerful tools available to the United States could be restricting the publication of fundamental AI research by effectively bringing the entire field under a **modern equivalent of the Manhattan Project**—possibly through **Project Stargate**, which President Trump announced on his first day in office. Regardless of the approach taken, the world—including both **China and the United States**—must now adapt to a new strategic equilibrium in AI and incorporate this reality into their long-term calculations.

The implications for Israel lead to several fundamental conclusions. The most important takeaway is that, despite the temptation to see DeepSeek as a silver bullet, Israel must not be misled into believing that a technological shortcut can replace the need for massive computing power to sustain a leading and competitive AI program. As shown, DeepSeek used at least dozens of percentage points more computing power than Israel's planned national supercomputer, and this does not even account for the exponential growth in computational

[12] Michael S. Sweeney, *Secrets of Victory: The Office of Censorship and the American Press and Radio in World War II* (University of North Carolina Press, 2001), 196–200.

demands, which roughly double every six months. Any AI infrastructure that lacks **continuous investment in upgrades** will quickly become obsolete.

From a geopolitical perspective, Israel faces a dilemma. It is currently at a disadvantage in terms of AI capabilities and must forge a new path forward. Since its most important ally, the United States, has imposed restrictions on its access to **advanced AI hardware**, some may be tempted to explore Chinese technologies, such as Huawei chips or partnerships with Chinese AI firms, to advance Israel's capabilities. Such a course of action would be a serious miscalculation, and it is critical for both Israel and the United States to prevent this outcome.

The only viable path forward for Israel is to move to Tier 1 and eliminate the restrictions imposed on it. There are three possible routes to achieve this: (1) leveraging diplomatic ties with President Trump to advocate for Israel's promotion to Tier 1 or, at the very least, securing an exemption from current restrictions; (2) enhancing Israel's strategic status through a broader geopolitical arrangement in the Middle East; and (3) reviving the Trusted Technologies Dialogue between the United States and Israel, which was initiated under Israel's Prime Minister Bennett's administration following the Jerusalem Declaration that was signed by former President Biden but has since slowed. Restarting this initiative as soon as possible would reinforce Israel's AI leadership and technological value to the United States. Simultaneously, Israel **must adjust its national AI strategy** to address the critical **infrastructure challenges** outlined in this report. This will **strengthen its position in AI**, **increase its value as a US partner**, and **enable groundbreaking regional collaborations**, including with **Saudi Arabia** and the **Gulf states**.

Conclusion

Recent developments in artificial intelligence, particularly in the past few weeks, lead to the conclusion that Israel cannot afford to be blindly intoxicated by the hype surrounding DeepSeek's capabilities. Instead, there is an urgent need to update the national AI strategy. A **comprehensive national technology program** is needed to guarantee the minimum technological AI infrastructure to secure Israel's technological sovereignty. This strategy should create the necessary conditions for Israel's AI industry to realize its full potential. It will strengthen Israel's strategic value in the eyes of the United States, open exciting opportunities for regional collaborations—particularly with Gulf countries, including Saudi Arabia—position Israel among the world's leading nations in AI, and propel it to new heights.

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