

英伟达 NVIDIA Corporation (NVDA US)

英伟达 H20 出口管制升级：加速国产代替

NVIDIA H20 Export Control Upgrade: Accelerating Domestic Replacement

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热点速评 Flash Analysis

(Please see APPENDIX 1 for English summary)

事件

4月15日，英伟达8-k披露([Link](#))，美国政府于9日告知，H20芯片出口到中国需要许可证，此后又于14日告知，这些规定将无限期实施。通知提及，这一新规将影响该公司共计约55亿美元的季度费用，涉及H20的库存、采购承诺和相关储备。美国将H20纳入“非民用超算风险清单”，意味着AI芯片管制从高端产品（如A100、H100）延伸至定制化中端产品。

点评

历史参照与对于英伟达的冲击：美国对H20的出口管制与2022年A100禁令一脉相承——以许可证之名行禁售之实。2022年政策迫使英伟达推出性能缩水的A800/H800。若H20不能获得许可证，我们预计英伟达FY2026数据中心收入或减少约150亿美元，运营利润下降约120亿美元。中国市场占其全球营收的13.1%（FY2025），且H20原占中国AI推理市场60%份额。根据[The Information](#)，腾讯阿里以及字节在禁令前已突击采购约160亿美元（140万颗）H20芯片。同时下一代Blackwell芯片因性能超标可能无法推出中国特供版，其“架构降级+区域特供”模式面临根本性危机，禁令将加速英伟达数据中心业务在中国市场的退出。

政策反复性与不确定性：英伟达承诺4年5000亿美元在美投资（含Blackwell芯片本土化生产及超算工厂建设），试图换取出口限制松动，但特朗普政府仍以“国家安全”为由收紧管制，凸显政策工具化特征。但是考虑到特朗普政策变化较大，仍然可能会给予许可证或豁免英伟达等情况。今年1月拜登政府所通过《人工智能扩散框架》将Tier2国家（如新加坡）纳入管制范围，要求向这些国家出口先进芯片也需许可证（ECCN 3A090.a标准）。若此AI出口禁令实施将直接封堵英伟达通过跨国企业转售规避禁令的路径，预计英伟达AMD等在Tier2国家数据中心业务收入将同步下滑。

国产替代机遇与挑战：若英伟达完全退出中国数据中心业务，我们预计中国数据中心AI芯片市场将重构为华为、寒武纪、昆仑芯三家公司主导格局。华为的910C芯片以及最新推出的CloudMatrix 384等云服务器将会凭借其推理性能，在中国市场逐步取代英伟达（[华为云CloudMatrix 384：超节点突破与国产算力的自主崛起](#)）。技术路线多元化突破尤为关键：寒武纪推出针对Transformer模型优化的ASIC芯片，能效比提升40%。但国产替代仍面临软件生态短板——CUDA开发者数量是国产生态的200倍，且华为昇腾芯片良率仅32%，短期内难以完全填补算力缺口。

中国可能进一步反制，非AI业务或受打击：与对等关税类似，中方或可能对于英伟达采取一些措施例如之前所进行的反垄断调查（[Anti-Monopoly Penalty — Leave the Low-end if High-end can't be Provided](#)）。若英伟达完全退出中国业务，包括其游戏轻算力以及汽车芯片业务将会对于英伟达的净利润减少5%。同时以下类别将会受益：1) 400亿服务器市场：华为60%/寒武纪20%/昆仑芯10%/沐熙/摩尔/壁韧/隧原等；2) 250亿游戏PC或轻算力市场：景嘉微-信创40%/兆芯/天数/沐熙/摩尔/壁韧/登临等；3) 50亿汽车芯片市场：FSD/高通/联发科/地平线机器人/黑芝麻。

风险

1) 地缘政治风险；2) 需求不及预期；3) 竞争加剧

附录

美国《人工智能扩散框架》概要:

2025 年 1 月 13 日, 美国商务部发布了名为《人工智能扩散框架》的临时最终规则, 对先进计算芯片以及闭源 AI 模型的出口实施新的管控措施, 若不采取行动将会在规则 120 天后的 5 月 13 日开始施行。

限制一: 按照美国政府的新规, 出台不同的限制措施, 美国将相关芯片的出口对象, 分为三个级别。

- 第一等级: 美国和 18 个核心盟友, 包括: 澳大利亚、比利时、加拿大、丹麦、芬兰、德国、法国、法属圭亚那、爱尔兰、意大利、日本、荷兰、新西兰、挪威、韩国、瑞典、中国台湾和英国。这些国家和地区可以不受限制的采购美国的先进 AI 芯片。
- 第二等级: 包括新加坡、墨西哥、印度、马来西亚、以色列、阿联酋、沙特阿拉伯、葡萄牙、土耳其等在内的 140 多个国家/地区。这些地区将面临他们可以采购的计算能力限制: 2025 年至 2027 年期间每个国家/地区可获得的处理性能 (TPP) 总量上限为 7.9 亿, 相当于 5 万个英伟达 H100 GPU。这些中间国家可以去申请 NVEU 资格, 由此便可获得累计最高 5,064,000,000 TPP 的算力 (约等于 32 万块 GPU)。
- 第三等级: 白俄罗斯、中国大陆 (包括香港和澳门)、伊朗、俄罗斯、朝鲜、委内瑞拉、尼加拉瓜、叙利亚等约 22 个国家和地区。这些国家和地区将几乎完全被禁止从美国进口先进的 AI 处理器。

限制二: 新增闭源 AI 大模型的出口限制, 对美国数据运营公司的全球算力部署进行限制。新规还建立了 UVEU 机制, 让微软、谷歌等总部设在美国的运营数据中心的公司可以申请特殊的政府认证, 授权后建设数据中心。

APPENDIX 1

Summary

Events

On April 15, Nvidia's 8-K disclosure (Link) stated that on April 9 the U.S. government notified the company that exporting H20 chips to China requires a license, and then on April 14 informed that these regulations would be implemented indefinitely. The notice mentioned that the new rule would affect the company with approximately \$5.5 billion in quarterly expenses, covering H20 inventory, procurement commitments, and related reserves. The U.S. has placed H20 on its "Non-Civilian Supercomputing Risk List," which means that AI chip controls have extended from high-end products (such as A100, H100) to customized mid-range products.

Comment

Historical Context and Impact of Restriction on Nvidia: The U.S. export control on H20 follows the same pattern as the 2022 A100 ban—using licensing as a pretext to effectively enforce a sales ban. The 2022 policy forced Nvidia to launch the downgraded-performance A800/H800 models. If H20 chips fail to secure the necessary licenses, we expect Nvidia's FY2026 data center revenue to drop by about \$15.8 billion and its operating profit to decline by \$12 billion. The Chinese market makes up 13.1% of Nvidia's global revenue (FY2025), and H20 originally accounted for 60% of China's AI inference market. According to The Information, Chinese companies rapidly purchased approximately \$16 billion worth (1.4 million units) of H20 chips. Additionally, due to their excessive performance specifications, the next-generation Blackwell chips may not offer a China-specific version, endangering the "lower AI performance + region-specific supply" model. This ban is likely to accelerate Nvidia's exit from the Chinese data centre market.

Policy Inconsistency and Uncertainty: Nvidia has committed to investing \$500 billion in the U.S. over four years (including plans for localized production of Blackwell chips and constructing supercomputing factories) in an effort to negotiate a relaxation of export restrictions. However, the Trump administration tightened controls citing "national security," demonstrating the policy's tool-like nature. Given the unpredictable changes in such policies, it remains possible that Nvidia might still be granted licenses or exemptions. In January this year, the Biden administration passed the "Artificial Intelligence Diffusion Framework," which extended controls to Tier 2 countries (such as Singapore) and requires that exports of advanced chips to these countries also need a license (under the ECCN 3A090.a standard). If this AI export ban is implemented, it will directly block Nvidia's potential workaround via multinational resale, likely causing a simultaneous decline in data centre revenue for Nvidia, AMD, and others in Tier 2 countries.

Opportunities and Challenges for Domestic Substitution: If Nvidia completely withdraws from the Chinese data centre market, we expect the Chinese AI chip market for data centres to be restructured and dominated by three companies: Huawei, Cambricon, and Kunlunxin. Huawei's 910C chip and the recently launched CloudMatrix 384 cloud server—leveraging their strong inference performance—are expected to gradually replace Nvidia in the Chinese market (Huawei Cloud's CloudMatrix 384: breakthrough in supernode performance and the rise of domestic computing power). Diversifying technological approaches is especially crucial; for example, Cambricon has launched an ASIC chip optimized for Transformer models, achieving a 40% improvement in energy efficiency. However, domestic substitution still faces challenges in the software ecosystem—the number of CUDA developers is 200 times that within the domestic ecosystem, and Huawei's Ascend chips currently have only a 32% yield, making it difficult to completely fill the computing gap in the short term.

Potential Further Chinese Countermeasures Affecting Non-AI Business: Similar to the application of reciprocal tariffs, China might take measures against Nvidia, such as conducting antitrust investigations like in the December 2024 (Anti-Monopoly Penalty — Leave the Low-end if High-end can't be Provided). If Nvidia completely exits the Chinese market—including its gaming light-computing and automotive chip businesses—its net profit could decrease by 4%. Meanwhile, the following segments stand to benefit: 40 Billion RMB Server Market: Huawei 60% / Cambricon 20% / Kunlunxin 10% / others such as Muxi, Moore, Biren, Suiyuan, etc. 25 Billion RMB Gaming PC or Light-Computing Market: Jingjiawei-Xinchang 40% / Zhaoxin, Tianshu, Muxi, Moore, Biren, Denglin, etc. 5 Billion RMB Automotive Chip Market: FSD, Qualcomm, MediaTek, Horizon Robotics, Black Sesame.

Risks: 1) Geopolitical Risks; 2) Demand Underperformance; 3) Intensifying Competition

附录 APPENDIX

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优于大市，未来 12-18 个月内预期相对基准指数涨幅在 10% 以上，基准定义如下

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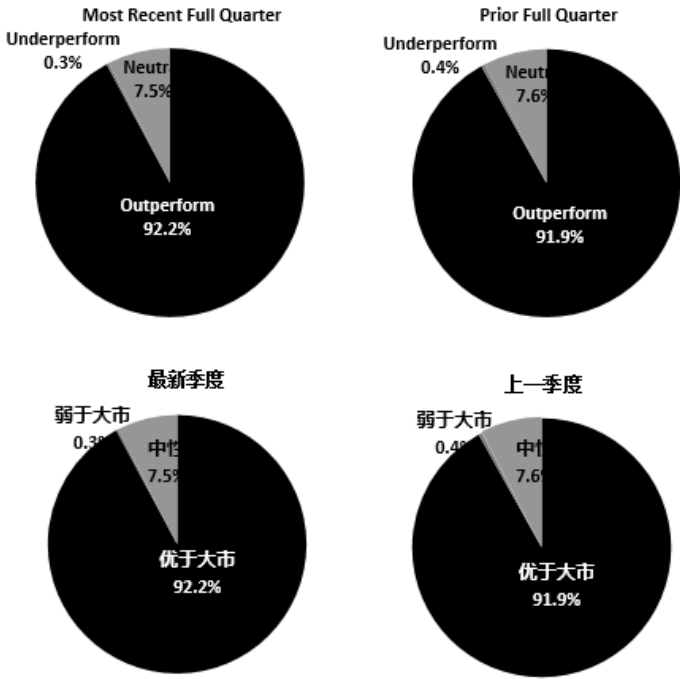
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投资银行客户*	3.3%	3.5%	0.0%

*在每个评级类别里投资银行客户所占的百分比。

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买入，未来 12-18 个月内预期相对基准指数涨幅在 10%以上，基准定义如下

中性，未来 12-18 个月内预期相对基准指数变化不大，基准定义如下。根据 FINRA/NYSE 的评级分布规则，我们会将中性评级划入持有这一类别。

卖出，未来 12-18 个月内预期相对基准指数跌幅在 10%以上，基准定义如下

各地股票基准指数：日本 – TOPIX, 韩国 – KOSPI, 台湾 – TAIEX, 印度 – Nifty100; 其他所有中国概念股 – MSCI China.

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IB clients*	3.3%	3.5%	0.0%

*Percentage of investment banking clients in each rating category.

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NVIDIA Corporation - NVDA US



1. 20 Mar 2023 OUTPERFORM at 257.25 target 305.00.
 2. 12 May 2023 OUTPERFORM at 285.78 target 354.00.
 3. 25 May 2023 OUTPERFORM at 305.38 target 515.00.
 4. 9 Jul 2023 OUTPERFORM at 425.03 target 767.00.
 5. 14 Aug 2023 OUTPERFORM at 408.55 target 774.00.
 6. 24 Aug 2023 OUTPERFORM at 471.16 target 839.00.
 7. 26 Oct 2023 OUTPERFORM at 417.79 target 752.00.
 8. 10 Nov 2023 OUTPERFORM at 469.50 target 752.00.
 9. 22 Nov 2023 OUTPERFORM at 499.44 target 767.00.
 10. 7 Feb 2024 OUTPERFORM at 682.23 target 950.00.
 11. 22 Feb 2024 OUTPERFORM at 674.72 target 950.00.
 12. 1 Apr 2024 OUTPERFORM at 903.56 target 1230.00.
 13. 17 May 2024 OUTPERFORM at 943.59 target 1230.00.
 14. 23 May 2024 OUTPERFORM at 949.50 target 1230.00.
 15. 6 Aug 2024 OUTPERFORM at 100.45 target 131.00.
 16. 29 Aug 2024 OUTPERFORM at 125.61 target 131.00.
 17. 11 Sep 2024 OUTPERFORM at 108.10 target 150.00.
 18. 12 Nov 2024 OUTPERFORM at 147.63 target 168.00.
 19. 21 Nov 2024 OUTPERFORM at 145.89 target 168.00.
 20. 11 Dec 2024 OUTPERFORM at 135.07 target 168.00.
 21. 26 Feb 2025 OUTPERFORM at 126.63 target 168.00.
 22. 2 Mar 2025 OUTPERFORM at 124.92 target 145.00.
- 10-for-1 split implemented on 10 Jun 2024