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Level Set: Can ChatGPT o3 "Cover" Nvidia?

For this week's Level Set we were thinking of writing about the somewhat better Bank and Technology earnings so far in Q1 than previously expected, the lag between the tariffs and the fundamentals, and our view that on the margin we like risk-taking a bit less today than we did a week ago. We don't think there has been a ton of China-related tariff progress, from what we hear and read, the market is up, but we don't believe the damage to earnings from the policies is either in the numbers or in the price. But, that's **not** what we are going to write about. The goal of the Level Set we write each week is to share where our views are changing and evolving, and so we are taking a different angle this week.

For context, our personal view is that it is mentally healthy to worry from time to time, or even regularly, that you might be a bit of a fraud in your career, and therefore we constantly try to evolve our knowledge and views to avoid this being broadly "exposed."

With that context in mind, as part of our regular monthly series, we hosted a zoom this past week with a University of Florida Professor, Alejandro Lopez-Lira on using OpenAI or other such models to forecast stock prices.

We encourage you to watch it (CLICK HERE FOR THE REPLAY) as our belief is that at least half of what sell-side and buyside equity research analysts do can already be replaced in minutes by these models. Two years ago we wrote that there were areas where fundamental analysts should focus, because we think these areas are less likely to be well understood by quantitative models or AI. These include:

1. People: When There Is a New CEO Or CFO It Is Challenging To Link Prior Experience At Public Companies Of the New C-suite Executives To a Stock.

2. M&A: Deals That Are More Than 20% Of Market Cap.

3. Litigation: Where Legal Outcomes Have a Big Impact On Valuation

4. High Idiosyncratic Risk: Small Cap. Biotech, Or Other Hard-to-predict Outcomes

5. Unique Businesses: In Multiple Industries, Require Sum-of-the-parts Valuation

6. Complex Capital Structure: Tracking Stocks, Imminent Secondaries, Complicated Ownership

7. New Entities: IPOs, Spin-offs, Remain-cos, or price action following broken IPOs or broken follow-ons.

But now, we believe a hyper focus on resource deployment has become more important than ever. To illustrate this, we started imagining this week how hard it would be to create a fundamental research department from ChatGPT o3.

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Given we all have the ability to access and model all the information on the internet, we figured we'd just take a case of Nvidia (Ticker: NVDA) in today's research.

Do we need to pay a fundamental analyst to forecast NVDA's revenue, margins, earnings and free cash flow? Will the analyst's output be appreciably different from consensus? When the analyst is different will they be more accurate than their current models by using a model built by OpenAI or Chat GPT o3? Should portfolio managers just type into ChatGPT o3 their assumptions and see what they yield for NVDA's forecasted P&L? In time, will portfolio managers just view what comes from ChatGPT o3 as consensus, knowing that more and more analysts at the big sell-side firms are using these approaches to build their models? Do you need a research analyst to articulate the investment controversies?

Below we asked two questions, which we show, and what came out of the model output.

For the first question we just used the standard search, and the second we used "deep research," which required a $20 per month subscription.

Question 1 for ChatGPT o3:

What we typed:

Assuming NVDA grows revenue 50% in 2025, 25% in 2026, 12.5% in 2027 and then 2% above nominal GDP after that, keeping other assumptions constant, what will NVDA earn in 2030?

BELOW IS THE UNEDITED RESPONSE

Thought for 1m 2s >

Quick-build earnings bridge to FY-2030

(all figures in US $ billions unless noted)

Fiscal year	Revenue growth assumption	Revenue	GAAP gross-margin*	Gross profit	Opex @ 11 % of sales	Operating income	Net income (12 % tax)
2025 (base)	— actual	**130.5**	75.0 %	97.9	14.4	83.5	**72.9** NVIDIA Newsroom
2026	**+50 %**	195.8	73.5 %	143.9	21.5	122.3	107.7
2027	**+25 %**	244.7	72.0 %	176.2	26.9	149.3	131.3
2028	**+12.5 %**	275.3	70.5 %	194.1	30.3	163.8	144.1
2029	**+7 %** (GDP ≈ 5 % + 2 pts)	294.5	69.0 %	203.2	32.4	170.8	150.3
2030	**+7 %**	**315.2**	**67.5 %**	**212.7**	**34.7**	**178.1**	**≈ 156.7**

*Gross-margin erosion held at **–150 bp per year**, as in your original "modest erosion" scenario.

Result

Keeping opex leverage, the share count (~24.8 bn diluted) and a 12 % blended tax rate unchanged, **NVDA would earn roughly $157 billion in GAAP net income in FY-2030**, equal to **about $6.3 of diluted EPS**.

Key inputs & rationale

- **Revenue glide-path**
  - 50 % → 25 % → 12.5 % are your specified step-downs.
  - From FY-2028 onward I add **2 ppt to nominal world-GDP (~5 %)** = **7** % CAGR; the GDP baseline uses IMF real-growth forecasts (~3.3 %) plus ~2 % inflation trending toward target IMF IMF .
- **Margins**
  - Starting GAAP GM 75 % (FY-25 actual) declines **1.5 ppt each year**, landing at 67.5 % in FY-30.
  - Opex is held at **11 % of sales**; any big R&D surge or cost-take-out program would shift operating leverage.
- **Tax & dilution**
  - FY-25 effective tax was 15 %, but the multi-year average is nearer 12 %; I leave it there.
  - Share count assumed flat; a sizable buyback could lift 2030 EPS by 5-10 %.

Sensitivities worth watching

Lever	+1 ppt upside	−1 ppt downside
2030 revenue growth	+ **$3.2 bn** NI	− **$3.0 bn** NI
2030 gross margin	+ **$2.8 bn** NI	− **$2.8 bn** NI
Share count change (±1 bn)	EPS ± $0.25	EPS ∓ $0.25

Bottom line:
Even after a near-term super-cycle, letting top-line growth fade toward a still-healthy 7 % and penciling in steady margin compression still gets you **>2× today's earnings power by 2030**. The big swing factors will be:

- Whether hyperscalers keep paying up for premium accelerators (holding GM high)
- Competitors' share gains (AMD, custom ASICs)
- NVIDIA's own mix shift into higher-margin software/services – which could counter GM erosion entirely.

Use this as a framework; plug in your own GDP view, margin track, or buyback plans to stress-test the outcomes.

Source: Trivariate Research, LP, Chagpt o3

<u>Conclusion: We thought this was a pretty thorough and helpful explanation, particularly the "Sensitivities worth watching" above.</u>

Question 2 for ChatGPT o3:

<u>What we typed:</u>

<u>What are the most important investment controversies for Nvidia? For their revenue, margins, and stocks returns?</u>

BELOW IS THE UNEDITED RESPONSE

Despite its meteoric rise on the back of the AI boom, Nvidia faces several investment controversies that could materially affect future revenue growth, margins, or stock performance. In recent years, institutional investors and analysts have flagged a number of risk factors – from regulatory roadblocks and geopolitical constraints to fierce competition and supply-chain vulnerabilities – that warrant close attention. Below we summarize the most significant controversies since ~2022 and their potential financial impacts, with an emphasis on issues that have moved the stock or influenced analyst guidance.

Regulatory Scrutiny and Blocked Acquisitions

One high-profile controversy was Nvidia's attempted acquisition of U.K.-based chip designer **Arm Ltd.** for $40+ billion, announced in 2020. The deal faced immediate **global regulatory backlash** and was ultimately abandoned in 2022 due to antitrust concernsreuters.com. Regulators feared that Nvidia owning Arm (whose IP is used industry-wide) could stifle competition in nascent chip markets (e.g. **autonomous vehicle and networking chips**reuters.com). The U.S. FTC sued to block the merger in late 2021, and authorities in the UK, EU, and China also failed to approve itreuters.com. The collapse of this takeover not only **derailed Nvidia's strategic plan** to expand into CPU/IP licensing, but also underscored regulatory willingness to intervene in Big Tech M&A. While Nvidia moved on (Arm later IPO'ed independently), the episode signaled that **future acquisitions by Nvidia may face heavy scrutiny**, potentially limiting inorganic growth options.

Separately, Nvidia's **market dominance** in GPUs has drawn ongoing antitrust attention. In 2024, reports emerged that the U.S. Department of Justice had launched a probe into whether Nvidia **abused its dominant position** in AI chipsreuters.com. Investigators are examining Nvidia's sales practices – for example, whether the company **pressured cloud-computing customers to bundle** multiple Nvidia products, or even charged higher prices for complementary hardware (like networking gear) if a client considered rival chipsreuters.com. These allegations of anti-competitive tying arrangements, if substantiated, could force changes to Nvidia's business model or result in penalties. News of the DOJ inquiry in August 2024 caused Nvidia's stock to dip ~3–4% on the dayreuters.com, reflecting investor sensitivity to any threat against Nvidia's pricing power. Regulators overseas have similar concerns; French antitrust authorities, for instance, have **flagged Nvidia's bundling of software and hardware** as potentially anti-competitive as they prepare their own chargesreuters.com. Any enforcement action – whether by DOJ or EU regulators – could **impact Nvidia's margins** (if it must cease bundling or offer more flexible terms to customers) and increase competition in AI hardware.

Export Restrictions and Geopolitical Tensions

Another major controversy centers on **U.S.-China geopolitical tensions** and their effect on Nvidia's sales. Starting in 2022, the U.S. government imposed strict export controls on advanced semiconductors, **banning Nvidia from selling its top AI chips to China** without a licensereuters.com. This directly threatened a lucrative market for Nvidia: at the time, management warned that about **$400 million in potential quarterly sales** of high-end A100/H100 GPUs to China (roughly 10% of data-center revenue) could be lostreuters.com. Nvidia's stock fell ~6–7% on the initial announcement of these export curbsreuters.com. While the company scrambled to develop slightly pared-down China-specific chips (e.g. the A800/H800) to comply with the rules, U.S. officials have repeatedly tightened restrictions. By 2023–2024, new rules targeted even those workaround products (e.g. a proposed "H20" chip for China), forcing Nvidia to **write down inventory and forego orders**reuters.com. In April 2025, Nvidia disclosed it would incur up to **$5.5 billion in charges** due to these export license requirementsreuters.com. The announcement sent shares down about 6% in after-hours tradingreuters.com. China accounted for **13% of Nvidia's revenue ($17 billion)** in the last fiscal yearreuters.com, so losing access to that market – or being limited to less advanced products – is a material risk. Analysts note that **reduced China sales could drag on Nvidia's growth** and that continued escalation of the tech "cold war" might spur Chinese customers to seek domestic alternativesreuters.com. Indeed, export controls have a second-order effect of **boosting Chinese competitors** (like Huawei), who are now racing to build rival AI chipsreuters.com.

Geopolitical risks extend to Nvidia's **supply chain as well**. Nvidia relies heavily on third-party foundries in Asia – notably TSMC in Taiwan – to manufacture its GPUs. This raises concern about **concentration risk** in the event of U.S.-China conflict or blockade. Taiwan produces the bulk of the world's advanced chipsreuters.com, so any disruption there (e.g. a geopolitical crisis) could **cripple Nvidia's production capacity** overnight. Industry observers and investors have flagged the China–Taiwan situation as a serious tail-risk – one research firm recently doubled its estimated probability of a U.S.-China war over Taiwan (from 5% to 10% within a year)businessinsider.com, which would be catastrophic for companies like Nvidia. Nvidia's CEO Jensen Huang has stated he feels "perfectly safe" with the company's fabrication in Taiwan and noted plans to diversify via TSMC's new Arizona fabreuters.com. Nonetheless, markets are likely to **apply a geopolitical discount** to Nvidia's valuation given its exposure to both Chinese demand and Taiwan-centric supply.

Competitive Pressures from AMD, Intel, and Custom Silicon

Despite Nvidia's current dominance in AI and graphics, investors are wary of **intensifying competition** that could erode its market share or pricing power. Nvidia today controls an estimated 70%–80% (or more) of the high-end AI accelerator marketbusinessinsider.com, and enjoys extraordinary pricing leverage (data-center GPUs selling for tens of thousands of dollars each). However, **rivals are investing heavily to catch up**. Analysts point out that cloud giants and semiconductor peers "want to wean themselves off" Nvidia's chipsbusinessinsider.com. For example, **Advanced Micro Devices (AMD)** has launched its Instinct MI200 and MI300 series GPUs aimed at AI and high-performance computing. Bank of America warns that emerging competition from AMD and others could **slow Nvidia's share gains** and has "increased headline risk" around the stockbusinessinsider.com. AMD has already won high-profile deals (its MI250 GPUs power the world's current top supercomputer, and MI300X chips are being tested by major cloud firms), and AMD projects its data-center AI chip sales will grow substantially in 2024. **Intel**, too, is striving to challenge Nvidia – it acquired AI chip startup Habana Labs and released Gaudi accelerators, with *Gaudi3* recently touted as a cheaper alternative to Nvidia's H100 for some taskslinkedin.com. Thus far, Intel's GPU/AI market share remains small, but its strategic pivot signals more competition ahead.

A significant threat comes from **custom silicon developed by big tech companies** themselves. Cloud service providers like **Google, Amazon, and Microsoft** are among Nvidia's largest customers, but they are also developing in-house chips to reduce dependency on Nvidia. Google has generations of its TPU (Tensor Processing Unit) for AI workloads, and Amazon Web Services offers the Trainium and Inferentia chips for AI training and inferenceinkedin.com. These bespoke processors are tailored to their data centers and advertised as cost-efficient alternatives to Nvidia GPUs. Likewise, Meta (Facebook's parent) recently began testing its *first custom AI training chip* – explicitly aiming to lower infrastructure costs and **"reduce reliance on external suppliers like Nvidia"**reuters.com. Even OpenAI, which helped spark the AI boom consuming Nvidia chips, has reportedly explored building its own semiconductors. If even a portion of AI demand shifts to internal solutions or other chip vendors, Nvidia could see its **growth tempered and pricing power diminish**. That said, Nvidia retains strong competitive moats – notably its robust CUDA software ecosystem and developer loyalty – which make it hard to displace in the near termcomplexdiscovery.com. Nonetheless, investors clearly acknowledge that **Nvidia's "vice-grip" on AI hardware may loosen** over time as competitors (AMD, Intel) improve and as customers pursue a multi-sourcing strategy. Any signs of Nvidia losing key contracts or a rival chip gaining traction can spark stock volatility. (For instance, news in 2025 that Huawei was preparing a high-end AI chip for China led Nvidia's shares to drop ~4–5% amid fears of a new challenger in a formerly secure marketreuters.com.)

Supply Chain Constraints and Concentration Risks

Another controversy involves **supply-chain bottlenecks** and Nvidia's reliance on a concentrated manufacturing base. While demand for Nvidia's chips has skyrocketed, the ability to supply those chips is limited by specialized production capacity (foundry and packaging). Nvidia outsources chip fabrication primarily to TSMC, and cutting-edge GPUs like the Hopper H100 require advanced 5nm processes *and* advanced packaging (TSMC's CoWoS 2.5D packaging to integrate HBM memory). In 2021–2022, the semiconductor industry faced acute capacity constraints – Nvidia at times could not meet all the demand for its GPUs, contributing to product shortages and inflated prices. In 2023, as AI demand exploded, **analysts noted that Nvidia's shipments were essentially capped by supply** – for example, one report indicated Nvidia would ship about 550,000 H100 GPUs in 2023 due to packaging throughput limits, despite demand far exceeding thatreddit.com. Such constraints mean **Nvidia might miss out on potential revenue** if its suppliers cannot scale fast enough. (TSMC has since moved to more than double its advanced packaging capacity by 2025, with Nvidia reportedly pre-securing the majority of that increasereddit.com.) Nonetheless, investors remain cautious that any hiccup at TSMC – be it technical yield issues, delays in new nodes, or disruptions from natural disaster or conflict – would directly hit Nvidia's output. Nvidia has minimal redundancy in its supply chain for high-end chips; it cannot easily switch foundries for its flagship GPUs. This **concentration risk** is often highlighted in Nvidia's own filings. Even components like memory can be a pinch point: high-bandwidth memory (HBM) for AI GPUs is supplied by just a few firms (Samsung, SK Hynix), and shortages there could constrain Nvidia's product deliveries. In short, **Nvidia's fortunes are tightly entwined with its suppliers**, and any supply-chain shock or capacity shortfall could constrain sales and crimp margins (e.g. if expediting or redesigns are needed), at least in the short to medium term.

Allegations of Anti-Competitive Practices and IP Disputes

Beyond the Arm merger saga, Nvidia has faced **allegations of anti-competitive behavior** in its core businesses. As discussed, U.S. and European regulators are investigating whether Nvidia's dominance in the AI accelerator market has been maintained through unfair practices like product bundling or leveraging its software ecosystem to lock in customersreuters.com. Any confirmation of such tactics could lead to legal action, fines, or mandated changes (e.g. unbundling software from hardware sales), which might open the door for competitors. Even absent formal charges, some institutional investors worry that **Nvidia's aggressive tactics could backfire** by encouraging customers to seek alternatives or prompting stricter regulation in the future.

In terms of **intellectual property disputes**, there have not been new headline-grabbing lawsuits in the past few years involving Nvidia – at least none rising to a level that materially threatens its financials. (Earlier patent battles, such as Nvidia's disputes with Samsung/Qualcomm in the mid-2010s, were settled and are in the rear-view mirror.) However, it's worth noting that Nvidia's *software IP* (like CUDA) and proprietary technologies are a double-edged sword: they give Nvidia a competitive edge, but also invite scrutiny if competitors claim Nvidia is creating a closed ecosystem. Thus far no major IP litigation has shaken Nvidia in the 2020s, but the **risk of IP challenges always looms** in a hot industry – whether from smaller inventors claiming patent infringement or from rivals in litigation over trade secrets. Investors keep an eye on Nvidia's legal disclosures for any such developments.

One related controversy was Nvidia's **transparency with investors** regarding volatile markets like cryptocurrency. In 2022 the U.S. SEC fined Nvidia $5.5 million for inadequate disclosures – finding that Nvidia failed to tell investors that surging crypto-mining demand had been a significant driver of its gaming GPU sales back in 2017reuters.com. That enforcement, while small in monetary terms, underscored the importance of Nvidia being forthright about *what* is fueling its revenue. It also highlighted how quickly a boom-bust segment (crypto) can swing financial results. Indeed, Nvidia's gaming division later saw a steep drop in 2022 when crypto demand evaporated and a glut of used GPUs hit the market, hurting short-term revenues. The episode served as a reminder that **Nvidia's exposure to speculative or emerging markets (crypto, AI, etc.) can create earnings volatility**, and the company must carefully communicate such risks.

Conclusion

Nvidia's position as an AI and graphics leader comes with growing pains and risks. Key controversies in recent years include regulatory and legal challenges (from the failed Arm deal to ongoing antitrust probes), geopolitical and export headwinds (U.S.-China chip sanctions imperiling billions in sales), sharpening competition (AMD, Intel, and in-house silicon at big tech firms gunning for Nvidia's dominance), supply-chain dependencies (near-total reliance on TSMC's Taiwan fabs and other concentrated suppliers), and questions about its competitive practices. Each of these factors has, at times, moved Nvidia's stock or influenced analysts' outlook – whether by trimming price targets on geopolitical worriesbusinessinsider.com or cautioning that new rivals could nibble away at Nvidia's growthbusinessinsider.com. For investors, the *financial impact* of these controversies ranges from tangible (e.g. lost China revenues, one-time inventory charges, legal fines) to more speculative (e.g. potential margin compression if competition rises, or downside scenarios if a supply crisis hits). What's clear is that **Nvidia's meteoric growth story is not without risks**. While the company continues to post record sales and generally enjoys bullish sentiment, savvy institutional investors remain watchful of these controversy areas. Developments in regulation, geopolitics, competition, and supply dynamics will likely play a major role in determining whether Nvidia can sustain its lofty valuation – or whether any of these risk factors materially undermine its future **revenue, profit margins, or stock performance**.

Conclusion: Again, pretty helpful and interesting.

What is our conclusion?

ChatGPT o3 costs $20 per month. In minutes, it can do what it currently takes highly paid analysts days and weeks to accomplish. If you are already regularly doing this kind of work, sorry for showing you the obvious. If you aren't, it is definitely worth tinkering with, because firms and research departments with dozens of fundamental analysts may keep some, may shift some to other areas, or may only hire going forward those with differentiated skills that can't be easily replaced by models like ChatGPT o3. Obviously, we could have asked different and varying questions, better questions, and iterative questions. We could have asked what ChatGPT o3 would forecast for revenue growth over the next five years given its analysis of demand and competition. But if part of the analyst job is to understand what introduces volatility into the P&L of companies, these models are already quite good for many applications.

Important Disclosures

Analyst Certification

The analysts, Adam Parker, Maxwell Arnold, Chang Ge, Colin Cooney and Ryan McGovern, responsible for the preparation of this research report certifies that: all the views expressed in this research report accurately reflect the research analyst's personal views.

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