



## Insight

# The DOJ and Nvidia: AI Market Dominance and Antitrust Concerns

ANGELA LUNA | OCTOBER 7, 2024

### Executive Summary

- The Department of Justice (DOJ) recently initiated an investigation into possible antitrust violations by Nvidia, a major chipmaker that has seen tremendous growth in recent years due to advancements in artificial intelligence (AI) that require the types of chips Nvidia makes.
- The DOJ sent subpoenas to Nvidia after rivals raised concerns suggesting that Nvidia promotes exclusive use of its chips and prioritizes customers that can immediately use its products, as well as that its recent acquisitions, particularly the purchase of AI management firm RunAI, foreclose competition from potential rivals.
- As federal agencies begin to more carefully scrutinize competition concerns in AI markets, Congress should undertake appropriate oversight to ensure they stay focused on practices that harm competition – such as the ability to control prices and tie-in products – rather than simply targeting firms due to their size.

### Introduction

The Department of Justice (DOJ) recently [initiated an investigation](#) into possible antitrust violations by Nvidia, the chipmaker tailored to artificial intelligence (AI) tasks that has become the dominant player in AI chipmaking. With growing strains on the resources needed to develop and deploy AI tools and models, Nvidia has expanded into software and specialized computing services, positioning itself as a one-stop shop for AI development. Nvidia has also built a large [community](#) of AI programmers who innovate with its technology, further positioning the firm as a leader in the field of AI.

Nvidia's large position in the market has spurred concerns from the firm's competitors, who suggest that Nvidia promotes exclusive use of its chips and prioritizes customers that can immediately use its products. In response to these concerns, the DOJ issued subpoenas to the company, seeking evidence of whether Nvidia's market dominance has violated antitrust law. Specifically, regulators are concerned that Nvidia has monopoly power in the market for AI chips, and the concerns suggest that Nvidia could be implementing illegal tying agreements by promoting exclusive use of its chips and complementary AI services. Further, recent acquisitions, particularly the purchase of AI-management firm RunAI, raised concerns from regulators about harm to competition, potentially leading to a challenge attempting to block future acquisitions.

While federal regulators should scrutinize markets for anticompetitive conduct, Congress should be careful to distinguish the Biden Administration's "big is bad" approach to antitrust policy from the legitimate application of antitrust law. Under modern jurisprudence, having a significant market share, or even having monopoly power by itself, is not against the law; instead, legal issues arise only if a monopolist conducts unfair business practices that reduce competition and negatively impact consumers. Yet the Biden Administration's usual

approach largely ignores the effects of firms' conduct on competition, and instead focuses on market concentration.

Targeting firms like Nvidia for their size alone would come with significant negative consequences, both for the economy and national security. Therefore, Congress should undertake appropriate oversight to ensure the antitrust agencies stay focused on practices that harm competition – such as the ability to control prices and tie-in products – rather than simply industry concentration.

## **Nvidia AI Market Dominance**

Nvidia has become the world's dominant player in AI chipmaking, [controlling](#) between 70 and 95 percent of the market for AI chips. Nvidia's success can largely be credited to its early entry into the market, as it swiftly identified the AI trend and began designing chips specifically for AI tasks such as image, speech, and text recognition. The company excels in producing chips for the complex and enormous calculations that generative AI systems perform.

Much of current AI infrastructure has been built around Nvidia's products, which serve as a backbone for many other businesses. For example, Tesla cars' self-driving feature [utilizes](#) Nvidia chips, as do practically all major tech companies' cloud computing services. But Nvidia's leadership in AI extends beyond its chips. It has cultivated a vast network that also includes data centers, software, and cloud computing services, thus creating a seamless AI development platform. Finally, over the past decade, Nvidia has built a large community of AI programmers that innovate with its technology.

## **Antitrust Concerns**

Nvidia's large position in the market has spurred concerns from the firm's competitors. In response to these concerns, the DOJ issued subpoenas to the company, seeking evidence of whether Nvidia's market dominance has violated antitrust law. At issue is that DOJ officials suspect Nvidia's business practices may be anti-competitive. The company has, as [Politico](#) put it, "faced criticism from customers and competitors for its sales tactics, which some say lock them in at the expense of other options, as well as how it bundles essential related software to the chips." These practices are not unusual, however. Companies such as Apple and Amazon also provide a wide integration of products and services. Apple, for example, controls everything from software systems (iOS, macOS) to services (iCloud, Apple Music) offering a complete package of related products to its consumers. Indeed, Nvidia's practices may be pro-competitive. For example, Nvidia CEO Jensen Huang said the company [prioritizes](#) customers that can immediately deploy its products in fully operational data centers, a strategy aimed at accelerating AI adoption and preventing stockpiling. The DOJ is also investigating Nvidia's acquisition of RunAI, a company that offers AI computation software, with fears that the deal could strengthen Nvidia's dominance and further hinder customers from considering rival products.

Under existing law, the concerns around Nvidia would likely focus on two theories of harm: an illegal tying agreement and an anti-competitive merger. Nvidia's significant market-share growth and vertical integration in recent years could indicate the firm has monopoly power, i.e., the ability to control prices or limit output. If that is the case, Nvidia could violate the law if it ties the purchase of its chips in one market to the use of its services in another in which Nvidia does not have monopoly power, such as by [bundling](#) AI development packages its customers need including chips, software, and networking services. According to current [antitrust](#) jurisprudence, an illegal tying agreement occurs when a business forces customers to purchase one product (the tying product) to access another (the tied product). This is a well-developed theory of harm under current law and can be

judged to harm competition unless the firm has significant pro-competitive reasons for the behavior.

Further, as Nvidia continues to acquire companies to support its businesses, the DOJ can also sue to block mergers and acquisitions that are harmful to competition. Under the Clayton Act, federal regulators can block a merger that diminishes competition or risks forming a monopoly, which would otherwise lead to higher consumer costs or fewer product options. At the same time, mergers and acquisitions often lead to efficiencies and growth – such as lower production costs due to larger-scale operations, improved research and development investment, and better product offerings by combining the best of both companies – which would benefit consumers, so regulators often consider the potential effects on competition. If the merger is consummated, however, it will be much more difficult for the DOJ to retroactively [unwind the acquisition](#) or allege that the acquisition violates the law.

## **Importance of Congressional Oversight**

While federal regulators should carefully scrutinize emerging markets for anticompetitive behavior, these investigations should remain rooted in consumer harm and harms to competition at large, rather than just market concentration. There has been growing [concern](#) that the Biden Administration is focusing its antitrust analysis inordinately on market concentration, in part by actively promoting small and medium-sized businesses at the expense of larger firms and moving away from the modern approach to antitrust that specifically targets anticompetitive conduct and harm to consumers.

Targeting Nvidia on the basis of size alone would have significant consequences for the U.S. AI industry. With countries competing for leadership in AI, a steady flow of chips is essential for developers, and particularly those based in the United States, to advance their AI technologies. Nvidia sells its chips to many countries around the world, but big U.S. tech companies – including Amazon, OpenAI, Microsoft, Alphabet, and Tesla – are [believed](#) to be among Nvidia’s main customers, while countries such as China are [seeking](#) to have homegrown alternatives for their chip suppliers. If the Biden Administration unnecessarily hamstring one of the most important companies in the industry, developers may consider moving their operations abroad, and the United States could lose its competitive edge in AI to other nations.

As federal agencies begin to more carefully scrutinize competition concerns in AI markets, Congress should undertake appropriate oversight to ensure they stay focused on practices that harm competition – such as the ability to control prices and tie-in products – rather than simply targeting firms due to their size. For example, tying – one of the DOJ’s stated concerns – is a well-established theory of harm, with well-established elements. If Nvidia has monopoly power in a chip market and is using that power to tie in other AI services, the DOJ should bring its case. In other words, the agency’s investigation should focus on the actual conduct of the company and not only on the market size of the large firm.

Similarly, antitrust law has a long history of merger review and challenges, largely focused on economic analysis of the competitive effects of the merger. If the DOJ sees fit to scrutinize Nvidia’s acquisitions, it must consider their competitive effects. But penalizing Nvidia for its acquisition of another firm could ultimately stifle innovation in a fast-moving industry, and in particular if these acquisitions promote, rather than stifle, competition.

Without clear evidence of wrongdoing, the DOJ’s investigation into Nvidia itself could cause unnecessary market disruption. Uncertainty surrounding its future operations could limit Nvidia’s research and development funding, as well as its willingness to enter into similar deals moving forward until the investigation is resolved.