



Free markets. Real solutions.

**Before the
U.S. Department of Commerce
Bureau of Industry and Security
Washington, D.C.**

In the Matter of)
) Docket No. 180712626–8840–01
Advance Notice of Proposed Rulemaking)
Review of Controls for Certain Emerging) 83 FR 58201
Technologies:)

**COMMENTS OF
THE R STREET INSTITUTE**

January 10, 2019

Prepared by:
Caleb Watney,
Technology Policy Fellow
R Street Institute
1212 New York Ave NW, #900
Washington DC, 20001
(202) 525-5717
cwatney@rstreet.org

Introduction:

On behalf of the R Street Institute (“R Street”), we respectfully submit these comments in response to the Bureau of Industry and Security’s (BIS) Advanced Notice of Proposed Rulemaking (ANPRM) in “Review of Controls for Certain Emerging Technologies”.¹

R Street is a free-market think tank with a pragmatic approach to public policy challenges.² R Street has written broadly about the importance of progress in emerging technologies like artificial intelligence (AI)³ and autonomous vehicles.⁴ Given the potential scope of the proposed expansion of export controls in the ANPRM, R Street has a vested interest in pointing out the ways in which overly aggressive export controls could have a detrimental effect on the development of emerging technologies.

Below are some specific considerations we would recommend addressing as the BIS moves forward, especially as they consider export controls for AI.

International AI platforms are a key U.S. advantage:

During this early stage of AI development, the United States should be very cautious about erecting barriers to the development and growth of AI platforms built by U.S. companies. U.S. companies currently maintain a significant lead in the market share of underlying software platforms being used to develop and maintain AI applications. Through open-source software libraries like TensorFlow and Keras, cloud-computing platforms like Amazon Web Services and Google Cloud, and software development tools like Microsoft Azure and IBM Watson, U.S. companies form a critical backbone of services to help entrepreneurs from all over the world build, launch, share and improve their AI tools.

This represents a significant economic benefit to the United States, as these companies provide valuable jobs, productivity growth and tax revenue for the economy.⁵ But even more than their direct economic benefits, these companies represent a sort of soft power in the international AI ecosystem that should not be taken lightly. AI applications are inherently shaped and limited by the platforms on which they are developed. There is a rough cultural consensus which exists among U.S. firms around the value of open collaboration, intellectual property, the importance of respecting individuals’ freedom and the limited degree to which government surveillance should be possible or permitted. However, we can see in countries

¹ Review of Controls for Certain Emerging Technologies, *Advance Notice of Proposed Rulemaking*, Docket No. 180712626-8840-01, 83 FR 58201, Nov. 19, 2018.

² See About R Street, <https://www.rstreet.org/about-r-street/>.

³ See e.g., Caleb Watney, “Reducing entry barriers in the development and application of AI,” *R Street Institute*, Oct. 9, 2018. <https://www.rstreet.org/2018/10/09/reducing-entry-barriers-in-the-development-and-application-of-ai/> [hereinafter Watney, “Reducing entry barriers in AI”] and Caleb Watney, “Comments to the FTC: The consumer welfare implications associated with the use of algorithmic decision tools, artificial intelligence and predictive analytics,” *R Street Institute*, Aug. 15, 2018. <https://www.rstreet.org/2018/08/15/comments-to-the-ftc-the-consumer-welfare-implications-associated-with-the-use-of-algorithmic-decision-tools-artificial-intelligence-and-predictive-analytics/>

⁴ See e.g., Caleb Watney, “Addressing new challenges in automotive cybersecurity,” *R Street Institute*, Nov. 9, 2017. <https://www.rstreet.org/2017/11/09/addressing-new-challenges-in-automotive-cybersecurity/>

⁵ See e.g., Jacques Bughin et al., “Notes from the AI frontier: Modeling the impact of AI on the world economy,” *McKinsey Global Institute*, Sep. 2018. <https://www.mckinsey.com/featured-insights/artificial-intelligence/notes-from-the-ai-frontier-modeling-the-impact-of-ai-on-the-world-economy>

like China, which has rolled out troubling government social credit systems⁶ and used machine learning to target their minority Uighur Muslim population for reeducation camps⁷, that these values are by no means universal. By ensuring U.S. AI platforms maintain their international competitiveness, we can decrease the likelihood that illiberal uses of AI are widely spread across the globe.

Export controls on AI software or limitations on the pool of talent that can work at U.S. firms are to likely be counterproductive in this regard, as they will make it more difficult for U.S. firms to compete with foreign competitors. Even if these types of export controls hurt any particular target country more than the United States in the short term, they will weaken our position in the international AI ecosystem, which could be detrimental in the long run.

The United States currently occupies a powerful position in the AI ecosystem, and we should be very cautious before rolling out any export controls which could decrease our ability to compete in international platform markets.

Export controls will disproportionately impact smaller firms:

The BIS should also be mindful of the disproportionate impact export controls will have on smaller U.S. firms that rely more heavily on stable international supply chains. As AI hardware becomes more specialized, the supply chains for very specific chips become a critical ingredient for cutting-edge ML research.⁸ While the United States maintains advanced manufacturing facilities that are vital to the supply chain, much of the production for particular parts (like back-end semiconductor fabrication) have been outsourced. Given the importance of chip foundries in Taiwan and China, the perceived stability of trade in the region will alter investment patterns and domestic access to these sophisticated chips.⁹

Large incumbent firms will likely be able to afford the costs of increased trade instability or onshore the entire production process if needed. Startups and smaller competitors, however, will have a more difficult time overcoming these barriers and this asymmetry will negatively affect the state of U.S. AI competition.¹⁰

Export controls should be narrowly tailored:

Insofar as BIS deems export controls necessary for national security purposes, they should do so in a narrowly tailored way that tries to minimize negative impacts on U.S. industry. A careful accounting of the impact of export controls on the United States' position in the international AI ecosystem and on domestic AI competition is a good place to begin.

⁶ Mara Hvistendahl, "Inside China's Vast New Experiment in Social Ranking," *Wired*, Dec. 14, 2017. <https://www.wired.com/story/age-of-social-credit/>

⁷ Paul Mozur, "Inside China's Dystopian Dreams: A.I., Shame and Lots of Cameras," *New York Times*, July 8, 2018. <https://www.nytimes.com/2018/07/08/business/china-surveillance-technology.html>

⁸ Tim Hwang, "Computational Power and the Social Impact of Artificial Intelligence," MIT Media Lab, March 23, 2018. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3147971

⁹ Watney, "Reducing entry barriers in AI" at pp. 6-7.

¹⁰ Id.

Conclusion:

We appreciate the opportunity to comment on the Commerce Department's ANPRM Review of Controls for Certain Emerging Technologies and look forward to further participation.

Respectfully submitted,

Caleb Watney
Technology Policy Fellow
R Street Institute