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Congress must pass innovation legislation, despite hurdles

John P. Bailey

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Senate leaders are expected to release updated text on a slimmed-down set of bills to bolster the U.S. semiconductor chip industry. The measures will likely include $52 billion in subsidies and an investment tax credit to boost U.S. manufacturing, but the rest of the Bipartisan Innovation Act (BIA) remains in limbo at a time when more urgent action is needed. (The BIA is made of separate House and Senate bills that chamber leaders are now trying to reconcile .)

Strengthening America's leadership in science and innovation tomorrow will depend on three crucial areas of investments needed today. First is bolstering semiconductor manufacturing both domestically and with more ideologically aligned nations. The economic integration enabled by trade policy and globalization over the past several decades has created vulnerabilities in our chip supply chains. A recent report found that the U.S. share of semiconductor manufacturing over the past 20 years has fallen from nearly 40% to 12%. Just 6% of new global capacity will be located in the U.S. over the next decade, but China will add more than 40%, becoming the largest semiconductor manufacturing location. This has created notable economic and national security vulnerabilities, as noted in a National Counterintelligence and Security Center report .

The second is boosting federal research and development (R&D) investments to spark new discoveries that entrepreneurs will convert into the next technological breakthroughs. The incredible technological breakthroughs we benefit from today were the result of research bets made years ago. But that pipeline is in danger of drying up at a time when other nations are increasing investment. Between 2000 and 2017, R&D spending in the U.S. grew only 4.3% annually , compared to more than 17% for China.

Finally, there is the talent gap. The most important capital for maintaining and extending a nation's innovation capabilities is its human capital. Instead of attracting and retaining the best and brightest from around the world, America's outdated, byzantine immigration system hinders our nation's scientific and innovation efforts. The Cato Institute estimates a backlog of nearly 9 million qualified immigrants waiting for legal permanent residence in the U.S. Additional H-1B visa backlogs are depriving America's tech industry of needed talent.

There is still a small window of opportunity for Congress to advance reforms in this area. There is broad bipartisan support for increasing the National Science Foundation's budget

to support basic research in frontier efforts, including artificial intelligence (AI) and quantum computing. Most of the differences between the House and Senate bills are in how to prioritize the investments.

And there is some hope of addressing immigration. “If there’s broad support for the provisions , then I’m absolutely open to including it,” said Sen. Todd Young (R-IN), who sponsored the Senate piece of the BIA. “More broadly in terms of skills-based immigration reform, I think it’s essential to maintaining our national competitiveness.” There are any number of commonsense reforms that could help, including increasing the cap on employment-based visas and providing international students who graduate from American universities better opportunities to receive employment-based green cards.

Congress should also create pathways that accelerate the brain drain of scientists from Russia and China and put their talents to work for the U.S. This would deprive foreign adversaries of technical and scientific talent while strengthening our capabilities. It is also a strategy the U.S. used during World War II when German scientists and engineers came to America through efforts such as Operation Paperclip. The Soviet Scientists Immigration Act of 1992 also enabled more than 750 skilled professionals to immigrate to America.

It’s rare to have a set of issues that not only strengthen America’s economy but also support a generation of technological breakthroughs aimed at solving intractable problems or providing benefits to society. But these investments are also smart foreign policy. As Eric Schmidt writes , “Let’s imagine a future pandemic . . . and let’s imagine that a global competitor, such as China, not only invents the solution, but keeps it to themselves. How would we feel?” This vulnerability extends to next frontier technologies such as AI and quantum computing. As the National Security Commission on Artificial Intelligence noted:

AI is expanding the window of vulnerability the United States has already entered. . . . America’s technological predominance — the backbone of its economic and military power — is under threat. China possesses the might, talent, and ambition to surpass the United States as the world’s leader in AI in the next decade if current trends do not change. Simultaneously, AI is deepening the threat posed by cyber attacks and disinformation campaigns that Russia, China, and others are using to infiltrate our society, steal our data, and interfere in our democracy.

The BIA is a small step in the right direction to help counter these emerging threats