Congressional Budget Office
Cost Estimate

May 25, 2021

At a Glance

S. 1260, Endless Frontier Act, with an Amendment in the Nature of a Substitute, the United States Innovation and Competition Act of 2021

As posted on the Website of the Senate Majority Leader on May 18, 2021 (file DAV21A48)

By Fiscal Year, Millions of Dollars	2021	2021-2026	2021-2031
Direct Spending (Outlays)	*	34,116	53,524
Revenues	*	*	1
Increase or Decrease (-) in the Deficit	*	34,116	53,523
Spending Subject to Appropriation (Outlays)	not estimated	not estimated	not estimated

Statutory pay-as-you-go procedures apply?	Yes	**Mandate Effects**	
		Contains intergovernmental mandate?	Yes, Under Threshold
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2032?	< $5 billion	Contains private-sector mandate?	Yes, Over Threshold

* = between zero and $500,000.

The bill would

- Appropriate $54 billion for the Department of Commerce and other federal agencies to implement programs to strengthen domestic industries that produce semiconductors, microchips, and telecommunication equipment
- Extend National Aeronautics and Space Administration's (NASA) authority to enter into enhanced-use lease agreements
- Specifically authorize the appropriation of about $190 billion for various provisions in all divisions aimed to strengthen the Nation's domestic technology markets to better compete globally
- Increase the cost of a private-sector mandate by changing the fee structure for filing a pre-merger notification with the Federal Trade Commission; expand existing mandates on colleges and universities for reporting foreign gifts

Estimated budgetary effects would primarily stem from

- An increase in direct spending by appropriating $54.2 billion to strengthen capacity to produce semiconductors, microchips, and telecommunication technology domestically
- Additional use of enhance-use lease agreements by NASA
- Broader authority for certain educational foundations to invest in securities other than public-debt securities and spend interest earnings

Detailed estimate begins on the next page.

See also *CBO's Cost Estimates Explained*, www.cbo.gov/publication/54437;
How CBO Prepares Cost Estimates, www.cbo.gov/publication/53519; and *Glossary*, www.cbo.gov/publication/42904.

Bill Summary

S. 1260 would authorize appropriations and provide direct appropriations for programs to improve U.S. competitiveness in technology and communications. Specifically:

- Division A would, among other things, provide appropriations aimed at strengthening the domestic industry for semiconductors and microelectronics.
- Division B would establish a technology directorate within the National Science Foundation (NSF) and would authorize other programs within the NSF, the National Institute of Standards and Technology, and the National Aeronautics and Space Administration (NASA).
- Division C would specifically authorize appropriations of about $38.5 billion over the 2021-2026 period for international affairs programs, primarily for the United States' contribution to the Inter-American Development Bank, foreign assistance programs for the Indo-Pacific region, and Department of State operations.
- Division D would establish a Made in America Office to prioritize federal procurement of materials produced in the United States, establish a Cyber Response and Recovery Fund to coordinate with nonfederal partners to assess risks of a cyber-attack, and provide resources for response and recovery.
- Division E would establish sanctions to counter illicit trade and forced labor, cyber-attacks, and intellectual property theft.
- Division F would create or amend and reauthorize several elementary, secondary, and higher education grants programs, amend the statutes authorizing the Truman and Madison Foundations, require institutions of higher education to disclose certain gifts from and contracts with foreign sources, and establish requirements that institutions of higher education with certain types of cultural partnerships must meet in order to be eligible to participate in the federal student aid programs. This division also would change the structure for filing fees collected from some businesses that are considering a merger or acquisition.

Estimated Federal Cost

The estimated budgetary effects of S. 1260 are shown in Table 1. The costs of the legislation fall primarily within budget functions 050 (national defense), 150 (international affairs), 250 (general science, space and technology) 370 (commerce and housing credit), 500 (education, training, employment, and social services), and 800 (general government).

Table 1.
CBO's Estimate of Effects on Revenues and Direct Spending of an Amendment in the Nature of a Substitute to S. 1260, the United States Innovation and Competition Act of 2021

	By Fiscal Year, Millions of Dollars												
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2021-2026	2021-2031
	Net Increase or Decrease (-) in Direct Spending												
Division A—CHIPS and O-Ran 5G Emergency Appropriations													
Budget Authority	0	26,000	7,500	6,800	6,600	7,300	0	0	0	0	0	54,200	54,200
Estimated Outlays	0	3,773	5,886	7,626	7,857	8,946	7,199	5,670	3,271	2,140	1,111	34,088	53,479
Division B—Endless Frontier Act Title VI—Space Matters													
Estimated Budget Authority	0	3	10	10	10	2	*	*	*	*	*	36	38
Estimated Outlays	0	*	1	3	6	10	7	5	2	1	*	21	38
Division F—Other Matters Title I—Competitiveness and Security For Education and Medical Research													
Estimated Budget Authority	0	3	3	3	*	*	*	*	*	*	*	9	10
Estimated Outlays	0	3	3	3	*	*	*	*	*	*	*	9	10
Divisions B, C, D, and F Various Titles													
Estimated Budget Authority	*	*	-1	*	*	*	*	*	*	*	*	-2	-3
Estimated Outlays	*	*	-1	*	*	*	*	*	*	*	*	-2	-3
Total Direct Spending[a]													
Estimated Budget Authority	*	26,006	7,512	6,813	6,610	7,302	*	*	*	*	*	54,243	54,245
Estimated Outlays	*	3,776	5,889	7,632	7,863	8,956	7,206	5,675	3,273	2,141	1,111	34,116	53,524
	Increases in Revenues												
Divisions B, C, D, E, and F Various Titles	*	*	*	*	*	*	*	*	*	*	*	*	1
	Net Increase in the Deficit from Changes in Revenues and Direct Spending												
Effect on the Deficit	*	3,776	5,889	7,632	7,863	8,956	7,205	5,675	3,273	2,141	1,111	34,116	53,523

Component may not sum to totals because of rounding; * between -$500,000 and $500,000.

a. Section 4153 of Division D would authorize the Secretary of the Department of Health and Human Services to sell some assets maintained in the Strategic National Stockpile (SNS) under conditions outlined in the bill. Proceeds from such sales would be classified as mandatory offsetting receipts, which are recorded in the budget as reductions in direct spending. However, CBO has no basis for determining the timing of sales from the SNS or the amount of receipts that would result from those sales.

Basis of Estimate

For this estimate, CBO assumes that the bill will be enacted near the end of fiscal year 2021and that the necessary amounts will be appropriated each year. Estimated outlays are based on historical spending patterns for similar programs.

Direct Spending
CBO estimates that enacting S. 1260 would increase direct spending by about $54 billion over the 2021-2031 period.

Division A—CHIPS and O-Ran 5G Emergency Appropriations. Division A would appropriate $50.2 billion to enhance the domestic semi-conductor industry, $2.0 billion to support research and development projects at the Department of Defense, $500 million to improve the security of telecommunications technologies and supply chains for semiconductors in other countries, and $1.5 billion for grants to support the deployment of 5G wireless technology that uses open radio access networks.

Division B—Endless Frontier Act Title VI—Space Matters. Section 2669 of division B would raise the maximum payment NASA could offer its employees as an incentive to separate by $15,000, to $40,000. CBO expects that those higher payments would induce some NASA employees who might not otherwise leave the federal government, to do so. Retirement-eligible employees would, in CBO's estimation, retire about 18 months sooner, on average, than they would under current law. Based on information from NASA and from the Office of Personnel Management, CBO expects a handful of those employees each year would receive retirement annuities and health benefits sooner than under current law. In total, CBO estimates, those accelerated payments would increase spending on retirement benefits by $3 million over the 2021-2031 period.

Section 2675 of division B would extend through December 31, 2025, NASA's authority to enter into enhanced-use lease (EUL) agreements, which under current law expire on December 31, 2021, and would permit NASA to accept any type of in-kind consideration under EUL agreements. (NASA's current authority to accept in-kind consideration is limited to facilities that produce renewable energy.)

Based on a review of recent agreements NASA has executed, CBO expects that some EUL agreements would contain terms for third parties to build or renovate facilities for energy production, launch, and other specialized uses. Although NASA can under current law use other authorities to enter into similar agreements with third parties, CBO expects that enacting section 2675 would accelerate and increase the likelihood of such agreements.

CBO estimates that under EUL agreements finalized over the 2022-2026 period, third parties would invest between $100 million and $500 million in facilities for energy production, launch, and other specialized uses. The federal budgetary effects of governmental transactions financed by third parties would depend on the extent and nature of federal support. In CBO's view, transactions supported entirely by private entities should not be reflected on the federal budget because the cost of those activities would be fully borne by those nonfederal entities.

However, CBO expects that some third parties would recover at least a portion of their investments through contracts with the federal government for specialized facilities used by NASA or other federal agencies. CBO considers such financing on behalf of the federal government primarily for government activities to be similar to an agency's using federal borrowing authority to improve its physical infrastructure. In CBO's view, the costs of such transactions would be direct spending and the full cost of long-term commitments that obligate the government to make payments in future years should be recorded in the budget.

CBO cannot predict how the government might use or benefit from new projects or the extent to which NASA would use the EUL extension under the bill in place of its other alternative financing and leasing authorities to facilitate construction of specialized facilities. In preparing this estimate CBO assumed there was a 50 percent chance that NASA would use the authority provided in the legislation. Based on the federal government's potential share of benefits from any new projects, CBO expects that NASA would use the EUL authority under section 2675 to finance the construction of facilities valued at about $35 million, increasing direct spending by that amount over the 2022-2031 period.

Division F—Other Matters Title I—Competitiveness and Security For Education and Medical Research. Section 6123 of division F would amend the statutes authorizing the Harry S. Truman and James Madison Foundations, including changing how those organizations may invest the amounts in their trust funds. In particular, the bill would permit the Madison Foundation to invest in securities other than public debt securities. Because the trust fund is considered governmental, the purchase of those nonpublic securities would be direct spending. In addition, the bill would authorize the appropriation of additional funding to the trust fund, some of which would be invested in Treasury obligations. The interest earned would later be spent on the trust fund's activities, which would be classified as direct spending because the fund would be authorized to spend interest without further appropriation. In total, CBO estimates this section would increase direct spending by $10 million over the 2021-2031 period.

Divisions B, C, D, and F Various Titles. Several provisions of divisions B, C, D and F, would affect direct spending by insignificant amounts. In total, direct spending would decrease, on net, by about $3 million over the 2021-2031 period. Some of that decrease would stem from an increase in offsetting receipts from fees paid by members of the research security and integrity information sharing analysis organization established under the bill.

Section 4153 of division D would authorize the Secretary of the Department of Health and Human Services to sell drugs, vaccines, and other assets maintained in the Strategic National Stockpile (SNS) provided that the items are within 1 year of their expiration date or determined by the Secretary to no longer be needed in the stockpile due to advances in medical or technical capabilities. Proceeds from such sales would be classified as mandatory offsetting receipts, which are recorded in the budget as reductions to direct spending.

However, CBO has no basis for determining the timing of sales from the SNS or the amount of receipts that would result from those sales.

Revenues
Several provisions of divisions B, C, D, E and F would increase or decrease revenues by insignificant amounts. In total, revenues would increase, on net, by about $1 million over the 2021-2031 period. Some increases stem from penalties imposed for failing to properly label imported king and tanner crabs, fines imposed in cases of fraud used to obtain a federal grant, sanctions imposed on perpetrators of cyber-attacks in the United States that originate from activities in the People's Republic of China, and sanctions related to the theft of trade secrets.

Spending Subject to Appropriation
In total, S. 1260 would specifically authorize the appropriation of $191 billion over the 2021-2031 period. In addition, other provisions of the bill could affect spending subject to appropriation, however, CBO has not completed an estimate of those effects.

Pay-As-You-Go Considerations:

The Statutory Pay-As-You-Go Act of 2010 establishes budget-reporting and enforcement procedures for legislation affecting direct spending or revenues. The net changes in outlays and revenues that are subject to those pay-as-you-go procedures are shown in Table 2.

Table 2.
CBO's Estimate of the Statutory Pay-As-You-Go Effects of S. 1260, the Endless Frontier Act, with an Amendment in the Nature of a Substitute, the United States Innovation and Competition Act of 2021, As posted on the Website of the Senate Majority Leader on May 18, 2021 (file DAV21A48)

	By Fiscal Year, Millions of Dollars												
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2021-2026	2021-2031
	Net Increase in the Deficit												
Total change	0	3,776	5,889	7,632	7,863	8,956	7,205	5,675	3,273	2,141	1,111	34,116	53,523
Less:													
Designated as Emergency Requirements	0	3,773	5,886	7,626	7,857	8,946	7,199	5,670	3,271	2,140	1,111	34,088	53,479
Statutory Pay-As-You-Go Impact	0	3	3	6	6	10	6	5	2	1	0	28	44
Memorandum:													
Increases in Outlays	0	3	3	6	6	10	7	5	2	1	0	28	45
Increases in Revenues	0	0	0	0	0	0	0	0	0	0	0	0	1

Components may not sum to totals because of rounding.

Sections 1002 and 1003 would designate the funds provided in division A as emergency requirements. Pursuant to section 4(g) of the Statutory Pay-As-You-Go Act, those costs are excluded from the totals above.

Increase in Long-Term Deficits

CBO estimates that enacting S. 1260 would not increase on-budget deficits by more than $5 billion in any of the four consecutive 10-year periods beginning in 2032.

Mandates:

The bill would impose intergovernmental and private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA). CBO estimates that the aggregate cost of the private-sector mandates would exceed the annual threshold established in UMRA ($170 million in 2021, adjusted annually for inflation). The cost of the intergovernmental mandate would not exceed the UMRA threshold ($85 million in 2021, adjusted annually for inflation).

Mandate that Applies to Public and Private Entities
Division F would expand an existing mandate on private and public colleges and universities by lowering the threshold for reporting gifts and contracts with foreign entities to those with an annual value of at least $50,000. The bill also would require certain research institutions to disclose any monetary gift or compensation received from a foreign source. CBO estimates that the aggregate cost of complying with both mandates is small because they would incrementally increase the administrative cost of existing reporting requirements and the number of new entities affected is small.

Intergovernmental Mandate
Because some states already require public and private colleges and universities to report gifts or compensation from foreign sources, schools in those states would be able to use those state disclosures to satisfy the expanded federal reporting requirements under the bill. By requiring states to confirm with the Secretary of Education that state public disclosure laws have been satisfied, division F would impose an intergovernmental mandate, but CBO expects related costs to be small.

Mandates that Applies to Private Entities
Division E would increase the cost of an existing private-sector mandate on some businesses by changing the fees to file a pre-merger notification with the Federal Trade Commission. CBO estimates that the incremental increase in the filing fee would have a net cost of about $200 million in each of the first five years the mandate is in effect.

CBO identified additional private-sector mandates in divisions B, C, and E, and estimates that the cost to comply with them would be small. Those mandates would prohibit the sale of shark fins or products containing shark fins and ban the possession of shark fins for noncommercial purposes unless obtained under a permit, prohibit individuals or entities in the United States from engaging in transactions involving assets and property that have been frozen by sanctions authorized in the bill, and could prohibit U.S. financial institutions from issuing some high-value loans to sanctioned entities. Division C also would eliminate the sunset for the Global Magnitsky Human Rights Accountability Act, which would permanently extend an existing mandate. That act is set to expire in 2022.

Estimate Prepared By

Federal Costs:

Sunita D'Monte (international affairs)
David Hughes (commerce programs)
Justin Humphrey (education programs)
Matthew Pickford (general government)
Aldo Prosperi (Department of Defense)
Lisa Ramirez-Branum (health programs)
Janani Shankaran (NASA)

Mandates:

Brandon Lever
Lilia Ledezma
Fiona Forrester

Estimate Reviewed By

David Newman
Chief, Defense, International Affairs, and Veterans' Affairs Cost Estimates Unit

Sheila Dacey
Chief, Income Security and Education Cost Estimates Unit

Chad Chirico
Chief, Low-Income Health Programs and Prescription Drugs Cost Estimates Unit

Susan Willie
Chief, Natural and Physical Resources Cost Estimates Unit

Kathleen FitzGerald
Chief, Public and Private Mandates Unit

Leo Lex
Deputy Director of Budget Analysis

H. Samuel Papenfuss
Deputy Director of Budget Analysis

Theresa Gullo
Director of Budget Analysis