

5. FEDERAL INVESTMENT

Federal investment is the portion of Federal spending of taxpayer money intended to yield long-term benefits for the economy and the Nation. This spending promises greater benefits than if that money had been allocated in the private sector. It promotes improved efficiency within Federal agencies, as well as growth in the national economy by increasing the overall stock of capital. Investment spending can take the form of direct Federal spending or grants to State, local, tribal and territorial governments.¹ It can be designated for physical capital—a tangible asset or the improvement of that asset—that increases production over a period of years or increases value to the Government. It can also be used for research and development, education, or training, all of which are

¹ For more information on Federal grants to State and local governments see Chapter 8, “Aid to State and Local Governments,” in this volume.

DESCRIPTION OF FEDERAL INVESTMENT

The Budget uses a relatively broad definition of investment. It defines Federal investment as encompassing spending for research, development, education, and training as well as physical assets such as land, structures, infrastructure, and major equipment. It also includes spending regardless of the ultimate ownership of the resulting asset or the purpose it serves. For the purposes of this definition, however, Federal investment does not include “social investment,” meaning investments in healthcare or social services programs where it is difficult to separate out the degree to which the spending provides current versus future benefits. The distinction between investment spending and current outlays is a matter of judgment, but the definition used for the purposes of this analysis has remained consistent over time and is useful for historical comparisons.²

Investment in physical assets can be for the construction or improvement of buildings, structures, and infrastructure, including the development or acquisition of major equipment. The broader research and development category includes spending on the facilities in which these activities occur and major equipment for the conduct of research and development, as well as spending for basic and applied research, and experimental development.³ Investment in education and training includes vocational rehabilitation, programs for veterans, funding for school systems and higher education, and agricultural extension services. This category excludes training for military personnel or other individuals in Government service.

² Historical figures on investment outlays beginning in 1940 may be found in the Budget’s *Historical Tables*. The *Historical Tables* are available at <https://www.whitehouse.gov/omb/historical-tables/>.

³ A more thorough discussion of research and development funding may be found in Chapter 6, “Research and Development,” in this volume.

intangible, but can still increase income in the future or provide other long-term benefits.

Most presentations in the *Analytical Perspectives* volume combine investment spending with spending intended for current use. In contrast, this chapter focuses solely on Federal and federally financed investment, providing a comprehensive picture of Federal spending for physical capital, research and development, and education and training. Because the analysis in this chapter excludes spending for non-investment activities, it gives only a partial picture of Federal support for specific national needs, such as defense.

Total Federal investment spending was \$1,178 billion in 2022. It is expected to decrease by 28.7 percent in 2023 to \$840 billion. The Budget proposes a 2.6 percent increase from 2023 for a total of \$862 billion in 2024.

The Budget further classifies investments as either grants to State, local, tribal and territorial governments (e.g., for highways or education) or “direct Federal programs.” The “direct Federal” category consists primarily of spending for assets owned by the Federal Government, such as weapons systems and buildings, but also includes grants to private organizations and individuals for investment, such as capital grants to Amtrak, Pell Grants, and higher education loans to individuals. For grants made to State, local, tribal and territorial governments, it is the recipient jurisdiction, not the Federal Government, that ultimately determines whether the money is used to finance investment or for current use. This analysis classifies outlays based on the category in which the recipient jurisdiction is expected to spend a majority of the money. General purpose fiscal assistance is classified as current spending, although in practice, some may be spent by recipient jurisdictions on investment.

Additionally, in this analysis, Federal investment includes credit programs that are for investment purposes. When direct loans and loan guarantees are used to fund investment, the subsidy value is included as investment. The subsidies are classified according to their program purpose, such as construction, or education and training.

This discussion presents spending for gross investment, without adjusting for depreciation.

Composition of Federal Investment Outlays

Major Federal Investment

The composition of major Federal investment outlays is summarized in Table 5–1. The categories include major public physical investment, the conduct of research and

development, and the conduct of education and training. Total major Federal investment outlays were \$1,179 billion in 2022. They are estimated to decrease by 29.1 percent to \$836 billion in 2023, and increase by 2.3 percent to \$855 billion in 2024. For 2022 through 2024, defense investment outlays comprise about one-third of total major Federal investment while non-defense investment comprises around two-thirds. In 2023, defense investment outlays are expected to increase by \$20.7 billion, or 8.0 percent, while non-defense investment outlays are expected to decrease by \$363 billion, or 39.5 percent. In 2024, the Budget projects a defense investment increase of \$46 billion, or 16.3 percent, over 2023 and a decrease in non-defense investment of \$27 billion, or 4.8 percent.

Physical investment:

Outlays for major public physical capital (hereafter referred to as “physical investment outlays”) were \$341 billion in 2022 and are estimated to increase by 13.1 percent to \$386 billion in 2023. In 2024, outlays for physical investment are estimated to increase by 12.9 percent to \$436 billion. Physical investment outlays are for construction and renovation, the development or purchase of major equipment, and the purchase or sale of land and structures. Around 68 percent of these outlays are for direct physical investment by the Federal Government, with the remainder being grants to State and local governments for physical investment.

Direct physical investment outlays by the Federal Government are primarily for defense. Defense outlays for physical investment are estimated to be \$222 billion in 2024, \$28 billion higher than in 2023. Outlays for direct physical investment for non-defense purposes are estimated to be \$73 billion in 2024, an increase of 3.4 percent from 2023.

Outlays for grants to State and local governments for physical investment are estimated to be \$141 billion in 2024, a 14.6 percent increase over the 2023 estimate of \$123 billion. Grants for physical investment fund transportation programs, sewage treatment plants, community and regional development, public housing, and other State and tribal assistance. Much of this investment originates from funding included in the Infrastructure Investment and Jobs Act (Public Law 117-58, “IIJA”), which was signed into law on November 15, 2021. The IIJA makes an array of transformational investments in our country’s infrastructure.

Conduct of research and development:

Outlays for research and development were \$153 billion in 2022. Outlays are estimated to increase by 13.6 percent to \$173 billion in 2023, and increase by 13.4 percent in 2024 to \$197 billion. Roughly half of research and development outlays are for defense, a trend which has remained consistent over the past decade. Physical investment for research and development facilities and equipment is included in the physical investment category.

Non-defense outlays for the conduct of research and development are estimated to be \$93 billion in 2024, 6.9 percent higher than 2023. Among the sources of this in-

crease is a roughly \$18 billion investment in the research, development, and manufacturing of semiconductors as well as resources to strengthen and expand STEM opportunities, catalyze regional economic growth and development, and advance U.S. global leadership in the technologies of the future, funded partially through money from the law commonly known as CHIPS and Science Act (Public Law 117-67). Additionally, the increase reflects a nearly \$2 billion investment across multiple agencies to fund the Cancer Moonshot initiative.

A discussion of research and development funding can be found in Chapter 6, “Research and Development,” in this volume.

Conduct of education and training:

Outlays for the conduct of education and training were \$685 billion in 2022. Outlays are estimated to decrease by 59.5 percent to \$271 billion in 2023, and decrease by 19.5 percent in 2024 to \$223 billion.

Grants to State, local, tribal and territorial governments for this category were \$92 billion in 2022. They are estimated to decrease by 6.6 percent to \$86 billion in 2023, and increase by 4.8 percent to \$90 billion in 2024. In 2024, grants are estimated to be slightly over one-third of total investment in education and training. This pattern of spending on grants to State, local, tribal and territorial governments for education and training is largely explained by changes in spending levels in response to the health and economic crises caused by the COVID-19 pandemic. For example, through the Education Stabilization Fund, which received nearly \$166 billion in funding from the American Rescue Plan Act of 2021 (Public Law 117-2), the Department of Education outlayed roughly \$35 billion in 2022. Grants for education and training from this fund are estimated to decrease to roughly \$11 billion in 2023 and increase to around \$15 billion in 2024.

Direct Federal education and training outlays in 2022 were \$593 billion. They are estimated to decrease by 67.8 percent to be \$191 billion in 2023, and decrease by a further 30.4 percent to be \$133 billion in 2024. These decreases are largely explained by changes in accounting for the Federal Direct Student Loan Program. In 2022, outlays in this account totaled \$473 billion, mainly due to \$436 billion in upward modifications and \$27 billion in upward reestimates and interest on the reestimates. There were much smaller upward modifications and reestimates in 2023: \$43 billion and \$8 billion, respectively, yielding total estimated outlays for 2023 of roughly \$72 billion. In 2024, outlays are estimated to be \$25 billion and are only associated with loan subsidies for the 2024 cohort; no modifications or reestimates for 2024 have been made.

Programs in this category primarily consist of aid for higher education through student financial assistance, loan subsidies, and veterans’ education, training, and rehabilitation. This category does not include outlays for education and training of Federal civilian and military employees. Outlays for education and training that are for physical investment and for research and development are in the categories for physical investment and the conduct of research and development.

Major Federal investment outlays will comprise an estimated 12.4 percent of total Federal outlays in 2024 and 3.1 percent of the Nation's gross domestic product. Budget authority and outlays for major Federal investment by subcategory may be found in Table 5–2 at the end of this chapter.

Miscellaneous Physical Investment

In addition to the categories of major Federal investment, miscellaneous categories of investment outlays are shown at the bottom of Table 5–1.

Outlays for commodity inventories are for the purchase or sale of agricultural products pursuant to farm price support programs and other commodities. Outlays for other miscellaneous physical investment are estimated to be \$6.8 billion in 2024.

Detailed Table on Investment Spending

Table 5-2 provides data on budget authority as well as outlays for major Federal investment, divided according to grants to State and local governments and direct Federal spending. Miscellaneous investment is not included in this table.

Table 5–1. COMPOSITION OF FEDERAL INVESTMENT OUTLAYS
(In billions of dollars)

Federal Investment	Actual 2022	Estimate	
		2023	2024
Major public physical capital investment:			
Direct Federal:			
National defense	182.8	193.5	221.9
Nondefense	45.4	69.5	72.9
Subtotal, direct major public physical capital investment	228.2	263.0	294.8
Grants to State and local governments	113.0	122.8	140.8
Subtotal, major public physical capital investment	341.2	385.8	435.6
Conduct of research and development:			
National defense	76.4	86.5	103.8
Nondefense	76.1	86.7	92.7
Subtotal, conduct of research and development	152.5	173.2	196.5
Conduct of education and training:			
Grants to State and local governments	92.0	85.9	90.0
Direct Federal	592.9	191.2	133.1
Subtotal, conduct of education and training	684.9	277.1	223.1
Total, major Federal investment outlays	1178.6	836.2	855.2
MEMORANDUM			
Major Federal investment outlays:			
National defense	259.3	280.0	325.8
Non-defense	919.3	556.2	529.4
Total, major Federal investment outlays	1178.6	836.2	855.2
Miscellaneous physical investment:			
Commodity inventories	-3.3	-2.1	0.0
Other physical investment (direct)	2.6	5.9	6.8
Total, miscellaneous physical investment	-0.8	3.8	6.9
Total, Federal investment outlays, including miscellaneous physical investment	1177.8	840.0	862.0

Table 5-2. FEDERAL INVESTMENT BUDGET AUTHORITY AND OUTLAYS: GRANT AND DIRECT FEDERAL PROGRAMS

(In millions of dollars)

Description	Budget Authority			Outlays		
	2022 Actual	2023 Estimate	2024 Estimate	2022 Actual	2023 Estimate	2024 Estimate
GRANTS TO STATE AND LOCAL GOVERNMENTS						
Major public physical investment:						
Construction and rehabilitation:						
Transportation:						
Highways	75,972	70,913	68,018	49,701	57,803	65,288
Mass transportation	20,945	22,080	21,901	34,032	20,192	19,819
Rail transportation	16,003	16,101	17,349	2,461	3,896	5,190
Air and other transportation	12,249	12,227	12,659	6,539	8,621	8,875
Subtotal, transportation	125,169	121,321	119,927	92,733	90,512	99,172
Other construction and rehabilitation:						
Pollution control and abatement	13,496	15,982	16,104	3,329	3,676	4,789
Community and regional development	11,922	14,797	7,120	9,266	15,967	19,373
Housing assistance	6,260	6,242	14,233	4,495	6,355	7,328
Other	45,813	1,775	1,483	942	2,217	3,649
Subtotal, other construction and rehabilitation	77,491	38,796	38,940	18,032	28,215	35,139
Subtotal, construction and rehabilitation	202,660	160,117	158,867	110,765	118,727	134,311
Other physical assets	16,343	3,856	8,566	2,214	4,090	6,453
Subtotal, major public physical investment	219,003	163,973	167,433	112,979	122,817	140,764
Conduct of research and development:						
Agriculture	380	396	414	330	393	463
Other	361	344	361	52	65	69
Subtotal, conduct of research and development	741	740	775	382	458	532
Conduct of education and training:						
Elementary, secondary, and vocational education	35,929	46,780	50,087	66,745	55,129	59,486
Higher education	3,040	3,100	3,420	2,323	2,885	3,056
Research and general education aids	997	1,111	1,151	1,170	1,318	1,236
Training and employment	3,397	3,486	3,633	3,155	4,048	3,294
Social services	15,223	17,020	18,426	14,966	18,620	18,137
Agriculture	459	471	478	373	445	566
Other	3,308	3,403	3,229	3,296	3,490	4,249
Subtotal, conduct of education and training	62,353	75,371	80,424	92,028	85,935	90,024
Subtotal, grants for investment	282,097	240,084	248,632	205,389	209,210	231,320
DIRECT FEDERAL PROGRAMS						
Major public physical investment:						
Construction and rehabilitation:						
National defense:						
Military construction and family housing	13,024	17,000	14,871	9,451	10,632	14,594
Atomic energy defense activities and other	3,847	4,842	4,771	2,977	3,794	4,587
Subtotal, national defense	16,871	21,842	19,642	12,428	14,426	19,181
Nondefense:						
International affairs	1,305	1,290	1,299	941	1,227	1,425
General science, space, and technology	3,138	2,068	2,159	1,917	2,586	2,190
Water resources projects	27,726	6,228	5,267	4,856	8,761	7,799
Other natural resources and environment	3,476	4,920	3,334	1,596	2,188	3,001
Energy	33,994	7,861	5,737	3,755	5,522	7,442
Postal service	942	2,938	754	621	1,009	945
Transportation	673	684	680	119	186	318
Veterans hospitals and other health facilities	6,552	7,350	11,870	4,541	7,281	8,537
Administration of justice	2,435	1,981	2,194	1,434	3,035	2,640
GSA real property activities	7,690	1,507	12,338	1,059	2,144	2,404
Other construction	5,618	4,696	8,526	3,755	4,556	5,963
Subtotal, nondefense	93,549	41,523	54,158	24,594	38,495	42,664
Subtotal, construction and rehabilitation	110,420	63,365	73,800	37,022	52,921	61,845

Table 5–2. FEDERAL INVESTMENT BUDGET AUTHORITY AND OUTLAYS: GRANT AND DIRECT FEDERAL PROGRAMS—Continued

(In millions of dollars)

Description	Budget Authority			Outlays		
	2022 Actual	2023 Estimate	2024 Estimate	2022 Actual	2023 Estimate	2024 Estimate
Acquisition of major equipment:						
National defense:						
Department of Defense	189,705	211,500	216,650	169,241	177,809	201,346
Atomic energy defense activities	1,799	1,678	1,792	1,204	1,306	1,440
Subtotal, national defense	191,504	213,178	218,442	170,445	179,115	202,786
Nondefense:						
General science and basic research	760	594	557	459	559	545
Postal service	4,259	4,710	4,748	1,175	1,948	3,878
Air transportation	4,818	4,740	5,209	3,881	4,471	4,808
Water transportation (Coast Guard)	2,452	1,704	1,507	1,600	3,316	2,059
Other transportation (railroads)	5	5	32	4	5	24
Hospital and medical care for veterans	4,283	3,838	4,215	3,600	6,112	4,024
Federal law enforcement activities	1,793	2,971	2,741	1,372	3,441	2,878
Department of the Treasury (fiscal operations)	5,227	412	573	498	654	1,186
National Oceanic and Atmospheric Administration	1,422	1,819	1,829	966	1,492	1,900
Other	6,222	6,773	7,872	7,039	8,747	8,292
Subtotal, nondefense	31,241	27,566	29,283	20,594	30,745	29,594
Subtotal, acquisition of major equipment	222,745	240,744	247,725	191,039	209,860	232,380
Purchase or sale of land and structures:						
National defense	-32	-33	-33	-33	-30	-29
Natural resources and environment	502	508	496	333	569	650
General government	-152	-241	-152	-241
Other	168	165	188	21	-66	-56
Subtotal, purchase or sale of land and structures	486	399	651	169	232	565
Subtotal, major public physical investment	333,651	304,508	322,176	228,230	263,013	294,790
Conduct of research and development:						
National defense:						
Defense military	78,622	92,854	95,734	71,318	81,691	98,611
Atomic energy and other	5,232	5,595	5,752	5,131	4,819	5,219
Subtotal, national defense	83,854	98,449	101,486	76,449	86,510	103,830
Nondefense:						
International affairs	231	226	226	231	226	226
General science, space, and technology:						
NASA	11,659	12,226	13,149	11,443	12,162	12,706
National Science Foundation	6,532	7,438	8,641	5,989	6,595	7,835
Department of Energy	6,448	6,397	6,821	5,472	8,160	6,981
Subtotal, general science, space, and technology	24,639	26,061	28,611	22,904	26,917	27,522
Energy	6,195	6,528	7,491	2,528	4,215	5,754
Transportation:						
Department of Transportation	1,353	1,066	1,198	797	937	1,123
NASA	720	771	833	693	739	802
Other transportation	43	41	36	28	60	43
Subtotal, transportation	2,116	1,878	2,067	1,518	1,736	1,968
Health:						
National Institutes of Health	43,588	46,341	47,700	38,962	42,310	44,417
Other health	1,378	1,289	2,738	1,033	918	1,113
Subtotal, health	44,966	47,630	50,438	39,995	43,228	45,530
Agriculture	2,618	2,497	2,576	2,062	2,701	2,933
Natural resources and environment	3,118	3,368	3,596	2,656	3,118	3,428
National Institute of Standards and Technology	5,647	2,830	2,255	773	973	1,411
Hospital and medical care for veterans	1,588	1,624	1,690	1,580	1,579	1,645
All other research and development	1,794	1,685	1,765	1,441	1,576	1,729
Subtotal, nondefense	92,912	94,327	100,715	75,688	86,269	92,146

Table 5–2. FEDERAL INVESTMENT BUDGET AUTHORITY AND OUTLAYS: GRANT AND DIRECT FEDERAL PROGRAMS—Continued
(In millions of dollars)

Description	Budget Authority			Outlays		
	2022 Actual	2023 Estimate	2024 Estimate	2022 Actual	2023 Estimate	2024 Estimate
Subtotal, conduct of research and development	176,766	192,776	202,201	152,137	172,779	195,976
Conduct of education and training:						
Elementary, secondary, and vocational education	10,495	1,733	5,241	55,258	69,487	48,877
Higher education	518,232	104,796	69,298	516,174	98,363	60,079
Research and general education aids	2,497	2,669	3,019	2,354	2,933	2,872
Training and employment	2,654	2,704	3,091	2,176	2,454	3,099
Health	2,355	2,516	2,873	2,352	2,850	3,009
Veterans education, training, and rehabilitation	15,158	9,112	8,663	12,071	11,999	11,929
General science and basic research	1,059	1,196	1,287	936	1,116	1,170
International affairs	775	790	836	760	949	898
Other	1,088	1,040	1,307	793	1,049	1,148
Subtotal, conduct of education and training	554,313	126,556	95,615	592,874	191,200	133,081
Subtotal, direct Federal investment	1,064,730	623,840	619,992	973,241	626,992	623,847
Total, Federal investment	1,346,827	863,924	868,624	1,178,630	836,202	855,167