

18. FEDERAL INVESTMENT

Federal investment is the portion of Federal spending intended to yield long-term benefits for the economy and the country. 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 of grants to State and local governments. It can be designated for physical capital, which creates a tangible asset that yields a stream of services over a period of years. It also can be for research and development, education, or training, all of which are intangible but still increase income in the future or provide other long-term benefits.

DESCRIPTION OF FEDERAL INVESTMENT

The distinction between investment spending and current outlays is a matter of judgment. The budget has historically employed a relatively broad classification of investment, encompassing physical investment, research, development, education, and training. The budget further classifies investments into those that are grants to State and local governments, such as grants for highways, and all other investments, or “direct Federal programs.” This “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 or higher education loans directly to individuals.

The definition of investment in a particular presentation can vary depending on specific considerations:

- Taking the approach of a traditional balance sheet would limit investment to only those physical assets owned by the Federal Government, excluding capital financed through grants and intangible assets such as research and education.
- Focusing on the role of investment in improving national productivity and enhancing economic growth would exclude items such as national defense assets, the direct benefits of which enhance national security rather than economic growth.
- Examining the efficiency of Federal operations would confine the coverage to investments that reduce costs or improve the effectiveness of internal Federal agency operations, such as computer systems.
- Considering a “social investment” perspective would broaden the coverage of investment beyond what is included in this chapter to include programs such as maternal health, certain nutrition programs, and substance abuse treatment, which are designed in

Most presentations in this volume combine investment spending with spending intended for current use. This chapter focuses solely on Federal and federally financed investment. It provides a comprehensive picture of Federal investment spending for physical capital, research and development, and education and training, but because it disregards spending for non-investment activities, it provides only a partial picture of Federal support for specific national needs, such as defense, transportation, or environmental protection.

part to prevent more costly health problems in future years.

This analysis takes the relatively broad approach of including all investment in physical assets, research and development, and education and training, regardless of ultimate ownership of the resulting asset or the purpose it serves. It does not include “social investment” items like health care or social services where it is difficult to separate out the degree to which the spending provides current versus future benefits. The definition of investment used in this section provides consistency over time (historical figures on investment outlays back to 1940 can be found in the Budget’s historical tables).¹ Table 18–2 at the end of this section allows disaggregation of the data to focus on those investment outlays that best suit a particular purpose.

In addition to this basic issue of definition, there are two technical problems in the classification of investment data: the treatment of grants to State and local governments, and the classification of spending that could be shown in multiple categories.

First, for some grants to State and local governments it is the recipient jurisdiction, not the Federal Government, that ultimately determines whether the money is used to finance investment or current purposes. This analysis classifies all of the outlays into the category in which the recipient jurisdictions are expected to spend a majority of the money. Hence, the Community Development Block Grants are classified as physical investment, although some may be spent for current purposes. General purpose fiscal assistance is classified as current spending, although some may be spent by recipient jurisdictions on investment.

¹ The historical tables are available at <http://www.budget.gov/budget/Historicals> and on the Budget CD-ROM.

Second, some spending could be classified in more than one category of investment. For example, outlays for construction of research facilities finance the acquisition of physical assets, but they also contribute to research and development. To avoid double counting, the outlays are classified hierarchically in the category that is most commonly recognized as investment: physical assets, followed by research and development, followed by education and training. Consequently, outlays for the conduct of research and development do not include outlays for the construction of research facilities, because these outlays are included in the category for investment in physical assets.

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. For more information about the treatment of Federal credit programs, refer to the section on Federal credit in Chapter 9, “Budget Concepts,” in this volume.

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 18–1. They include major public physical investment, the conduct of research and development, and the conduct of education and training. Combined defense and nondefense investment outlays were \$464.3 billion in 2014. They are estimated to increase to \$520.9 billion in 2015 and decrease to \$490.6 billion in 2016. The major factors contributing to these changes are described below.

Major Federal investment outlays will comprise an estimated 12.3 percent of total Federal outlays in 2016 and 2.6 percent of the Nation’s gross domestic product. Greater detail on Federal investment is available in Table 18–2 at the end of this section. That table includes both budget authority and outlays.

Physical investment. Outlays for major public physical capital investment (hereafter referred to as “physical investment outlays”) were \$233.5 billion in 2014 and are estimated slightly increase to \$235.3 billion in 2016. Physical investment outlays are for construction and rehabilitation, the purchase of major equipment, and the

Table 18–1. COMPOSITION OF FEDERAL INVESTMENT OUTLAYS

(In billions of dollars)

Federal Investment	Actual 2014	Estimate	
		2015	2016
Major public physical capital investment:			
Direct Federal:			
National defense	117.1	115.2	110.9
Nondefense	37.5	43.2	39.8
Subtotal, direct major public physical capital investment	154.6	158.4	150.7
Grants to State and local governments	78.9	82.0	84.6
Subtotal, major public physical capital investment	233.5	240.4	235.3
Conduct of research and development:			
National defense	70.6	72.6	76.9
Nondefense	60.7	61.6	63.1
Subtotal, conduct of research and development	131.3	134.2	140.1
Conduct of education and training:			
Grants to State and local governments	56.6	61.0	58.1
Direct Federal	42.8	85.3	57.1
Subtotal, conduct of education and training	99.5	146.2	115.2
Total, major Federal investment outlays	464.3	520.9	490.6
MEMORANDUM			
Major Federal investment outlays:			
National defense	187.6	187.8	187.8
Nondefense	276.7	333.0	302.8
Total, major Federal investment outlays	464.3	520.9	490.6
Miscellaneous physical investment:			
Commodity inventories	–0.5	–0.1	–0.1
Other physical investment (direct)	2.0	2.4	2.5
Total, miscellaneous physical investment	1.5	2.3	2.4
Total, Federal investment outlays, including miscellaneous physical investment	465.8	523.2	493.0

purchase or sale of land and structures. Approximately two-thirds 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 national defense. Defense outlays for physical investment are estimated to be \$110.9 billion in 2016. Approximately 92 percent of defense physical investment outlays, or an estimated \$102.1 billion, are for the procurement of weapons and other defense equipment, and the remainder is primarily for construction on military bases, family housing for military personnel, and Department of Energy defense facilities. Defense outlays for physical investment decrease from \$117.1 billion in 2014 to \$110.9 billion in 2016, primarily due to reduced spending for overseas contingency operations and declines in base budget Defense procurement budget authority over the past several years.

Outlays for direct physical investment for nondefense purposes are estimated to be \$39.8 billion in 2016. Outlays for 2016 include \$21.0 billion for construction and rehabilitation. This amount includes funds for water, power, and natural resources projects of the Corps of Engineers, the Bureau of Reclamation within the Department of the Interior, the Power Marketing Administrations within the Department of Energy, and the Tennessee Valley Authority; construction and rehabilitation of veterans' hospitals and Indian Health Service hospitals and clinics; facilities for space and science programs; Postal Service facilities; construction for the administration of justice programs (largely in Customs and Border Protection within the Department of Homeland Security); construction of office buildings by the General Services Administration; and construction for embassy security. Outlays for the acquisition of major equipment are estimated to be \$18.6 billion in 2016. The largest amounts are for information systems in the Department of Veterans Affairs, facilities and equipment; airport and airway trust fund in the Department of Transportation and procurement, acquisition and construction in the Department of Commerce.

Grants to State and local governments for physical investment are estimated to be \$84.6 billion in 2016, up from \$81.9 billion in 2015. Over 78 percent of these outlays, or \$66.6 billion, are to assist States and localities with transportation infrastructure, primarily highways; this category represents the majority of the increase in physical investment grants from 2015 to 2016. Other major grants for physical investment fund sewage treatment plants and other State and tribal assistance grants, community and regional development, and public housing.

Conduct of research and development. Outlays for the conduct of research and development are estimated to be \$140.1 billion in 2016. These outlays are devoted to increasing basic scientific knowledge and promoting research and development. They increase the Nation's security, improve the productivity of capital and labor for

both public and private purposes, and enhance the quality of life. More than half of these outlays, an estimated \$76.9 billion, are for national defense. 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 \$63.1 billion in 2016. These are largely for the National Institutes of Health, National Aeronautics and Space Administration, the Department of Energy, and the National Science Foundation.

A more complete and detailed discussion of research and development funding can be found in Chapter 19, "Research and Development," in this volume.

Conduct of education and training. Outlays for the conduct of education and training were \$99.5 billion in 2014 and are estimated to rise to \$115.2 billion in 2016. These outlays add to the stock of human capital by developing a more skilled and productive labor force. Grants to State and local governments for this category are estimated to be \$58.1 billion in 2016, roughly 50 percent of the total. They include education programs for the disadvantaged and individuals with disabilities, training programs in the Department of Labor, Head Start, and other education programs. Outlays in grants for education and training decrease from \$60.9 billion in 2015 to \$58.1 billion in 2016, largely due to completed outlays of American Reinvestment and Recovery Act funding in 2015. Direct Federal education and training outlays are estimated to be \$57.1 billion in 2016, up from \$42.8 billion in 2014 but down from \$85.3 billion in 2015. Programs in this category primarily consist of aid for higher education through student financial assistance, loan subsidies, and veterans' education, training, and rehabilitation. The year-to-year pattern of outlays in this category is partially due to updated estimates recorded in 2014 and 2015 of the subsidy costs of past student loan cohorts due to legislative, programmatic, and technical changes.

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.

Miscellaneous Physical Investment

In addition to the categories of major Federal investment, several miscellaneous categories of investment outlays are shown at the bottom of Table 18–1. These items, all for physical investment, are generally unrelated to improving Government operations or enhancing economic activity.

Outlays for commodity inventories are for the purchase or sale of agricultural products pursuant to farm price support programs and other commodities. Sales are estimated to exceed purchases by \$111 million in 2016.

Outlays for other miscellaneous physical investment are estimated to be \$2.5 billion in 2016. This category consists entirely of direct Federal outlays and includes primarily conservation programs.

Detailed Table on Investment Spending

The following table 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 because it is generally unrelated to improving Government operations or enhancing economic activity.

Table 18-2. FEDERAL INVESTMENT BUDGET AUTHORITY AND OUTLAYS: GRANT AND DIRECT FEDERAL PROGRAMS

(In millions of dollars)

Description	Budget Authority			Outlays		
	2014 Actual	2015 Estimate	2016 Estimate	2014 Actual	2015 Estimate	2016 Estimate
GRANTS TO STATE AND LOCAL GOVERNMENTS						
Major public physical investment:						
Construction and rehabilitation:						
Transportation:						
Highways	39,352	39,198	49,336	42,952	43,269	45,266
Mass transportation	11,869	12,044	19,639	12,135	12,622	13,040
Rail transportation	1,385	1,394	2,438	2,498	3,293	4,335
Air and other transportation	3,908	3,678	3,977	3,505	4,045	3,928
Subtotal, transportation	56,514	56,314	75,390	61,090	63,229	66,569
Other construction and rehabilitation:						
Pollution control and abatement	2,929	2,936	2,982	3,179	3,031	3,061
Community and regional development	4,178	3,965	3,855	7,927	9,074	8,216
Housing assistance	3,624	3,499	3,878	4,314	3,827	3,834
Other	669	588	737	565	773	705
Subtotal, other construction and rehabilitation	11,400	10,988	11,452	15,985	16,705	15,816
Subtotal, construction and rehabilitation	67,914	67,302	86,842	77,075	79,934	82,385
Other physical assets	1,840	1,904	4,196	1,863	2,060	2,260
Subtotal, major public physical investment	69,754	69,206	91,038	78,938	81,994	84,645
Conduct of research and development:						
Agriculture	334	339	350	240	356	301
Other	203	198	237	173	174	163
Subtotal, conduct of research and development	537	537	587	413	530	464
Conduct of education and training:						
Elementary, secondary, and vocational education	37,181	36,853	42,230	38,906	41,359	37,480
Higher education	471	330	280	402	477	368
Research and general education aids	736	738	823	797	850	790
Training and employment	3,545	3,081	3,526	3,270	3,590	3,795
Social services	11,737	11,768	13,587	10,540	11,791	12,091
Agriculture	416	416	420	406	595	639
Other	2,188	2,215	2,264	2,319	2,307	2,924
Subtotal, conduct of education and training	56,274	55,401	63,130	56,640	60,969	58,087
Subtotal, grants for investment	126,565	125,144	154,755	135,991	143,493	143,196
DIRECT FEDERAL PROGRAMS						
Major public physical investment:						
Construction and rehabilitation:						
National defense:						
Military construction and family housing	7,742	5,156	6,930	9,239	8,704	8,614
Atomic energy defense activities and other	28	138	145	27	147	167
Subtotal, national defense	7,770	5,294	7,075	9,266	8,851	8,781
Non-Defense:						
International affairs	1,994	1,649	1,612	1,106	1,173	1,367
General science, space, and technology	1,304	1,172	1,291	1,175	1,338	1,314
Water resources projects	2,905	2,694	2,167	3,240	3,959	3,794
Other natural resources and environment	1,093	1,102	1,487	1,047	1,133	1,294
Energy	6,585	6,069	5,163	6,718	6,192	4,804
Postal service	315	414	402	376	541	458
Transportation	59	294	300	78	229	390
Veterans hospitals and other health facilities	2,910	3,441	3,951	2,826	3,749	3,166

Table 18-2. FEDERAL INVESTMENT BUDGET AUTHORITY AND OUTLAYS: GRANT AND DIRECT FEDERAL PROGRAMS—Continued
(In millions of dollars)

Description	Budget Authority			Outlays		
	2014 Actual	2015 Estimate	2016 Estimate	2014 Actual	2015 Estimate	2016 Estimate
Administration of justice	2,089	1,983	1,385	1,727	1,152	1,461
GSA real property activities	1,668	1,328	2,505	896	1,480	1,244
Other construction	1,746	3,314	12,002	2,095	3,962	1,715
Subtotal, nondefense	22,668	23,460	32,265	21,284	24,908	21,007
Subtotal, construction and rehabilitation	30,438	28,754	39,340	30,550	33,759	29,788
Acquisition of major equipment:						
National defense:						
Department of Defense	99,931	102,091	111,827	107,457	106,000	101,757
Atomic energy defense activities	512	416	507	382	372	380
Subtotal, national defense	100,443	102,507	112,334	107,839	106,372	102,137
Non-Defense:						
General science and basic research	351	383	418	367	370	399
Postal service	580	1,809	1,795	374	1,457	1,873
Air transportation	3,329	3,325	3,474	3,456	3,511	3,487
Water transportation (Coast Guard)	1,196	992	780	1,437	1,192	1,284
Other transportation (railroads)			10			1
Hospital and medical care for veterans	1,352	999	1,020	1,472	1,386	1,394
Federal law enforcement activities	1,825	1,909	1,910	1,664	1,747	1,962
Department of the Treasury (fiscal operations)	315	292	389	234	264	300
National Oceanic and Atmospheric Administration	2,032	2,105	2,401	1,976	2,232	2,289
Other	4,486	4,631	4,976	4,791	5,483	5,602
Subtotal, nondefense	15,466	16,445	17,173	15,771	17,642	18,591
Subtotal, acquisition of major equipment	115,909	118,952	129,507	123,610	124,014	120,728
Purchase or sale of land and structures:						
National defense	-41	-37	-41	-38	-27	-35
Natural resources and environment	265	242	539	227	242	393
General government	109			124	28	
Other	-45	-48	-165	90	387	-190
Subtotal, purchase or sale of land and structures	288	157	333	403	630	168
Subtotal, major public physical investment	146,635	147,863	169,180	154,563	158,403	150,684
Conduct of research and development:						
National defense:						
Defense military	65,762	67,433	71,956	66,534	67,985	72,102
Atomic energy and other	4,845	4,548	4,531	4,042	4,633	4,844
Subtotal, national defense	70,607	71,981	76,487	70,576	72,618	76,946
Non-Defense:						
International affairs	411	411	497	391	411	419
General science, space, and technology:						
NASA	11,257	11,565	11,601	10,776	10,617	10,617
National Science Foundation	5,430	5,562	5,864	5,198	5,271	5,558
Department of Energy	4,079	4,043	4,161	4,108	4,055	4,161
Subtotal, general science, space, and technology	20,766	21,170	21,626	20,082	19,943	20,336
Energy	2,386	2,323	2,963	2,363	2,341	2,771
Transportation:						
Department of Transportation	699	738	914	672	676	752
NASA	476	516	500	481	555	555
Other transportation	19	19	18	24	28	22
Subtotal, transportation	1,194	1,273	1,432	1,177	1,259	1,329
Health:						
National Institutes of Health	29,131	28,892	29,500	28,429	28,636	29,008
Other health	1,629	1,875	1,913	1,196	1,715	1,522
Subtotal, health	30,760	30,767	31,413	29,625	30,351	30,530
Agriculture	1,633	1,652	1,905	1,583	2,048	1,899
Natural resources and environment	2,134	2,159	2,372	1,916	2,010	2,130

Table 18-2. FEDERAL INVESTMENT BUDGET AUTHORITY AND OUTLAYS: GRANT AND DIRECT FEDERAL PROGRAMS—Continued
(In millions of dollars)

Description	Budget Authority			Outlays		
	2014 Actual	2015 Estimate	2016 Estimate	2014 Actual	2015 Estimate	2016 Estimate
National Institute of Standards and Technology	575	594	804	529	346	679
Hospital and medical care for veterans	1,101	1,059	1,114	1,142	1,041	1,082
All other research and development	1,614	1,564	1,650	1,509	1,339	1,503
Subtotal, nondefense	62,574	62,972	65,776	60,317	61,089	62,678
Subtotal, conduct of research and development	133,181	134,953	142,263	130,893	133,707	139,624
Conduct of education and training:						
Elementary, secondary, and vocational education	1,388	1,623	1,888	1,186	1,292	1,451
Higher education	16,864	59,476	30,267	19,986	60,563	30,360
Research and general education aids	2,128	2,131	2,324	2,077	2,125	2,222
Training and employment	2,210	2,141	2,340	2,032	2,315	2,312
Health	1,501	1,556	2,093	1,597	1,684	1,766
Veterans education, training, and rehabilitation	13,533	15,327	15,629	13,729	14,702	16,323
General science and basic research	908	871	902	833	786	919
International affairs	593	602	639	623	699	820
Other	874	903	823	786	1,090	917
Subtotal, conduct of education and training	39,999	84,630	56,905	42,849	85,256	57,090
Subtotal, direct Federal investment	319,815	367,446	368,348	328,305	377,366	347,398
Total, Federal investment	446,380	492,590	523,103	464,296	520,859	490,594