

Table 9.8—COMPOSITION OF OUTLAYS FOR THE CONDUCT OF RESEARCH AND DEVELOPMENT: 1949–2003

(in millions of dollars)

Category	1949	1950	1951	1952	1953	1954	1955	1956
<b>National defense:</b>								
Department of Defense .....	688	700	775	1,100	1,412	1,385	1,397	1,683
Other national defense .....	74	72	71	104	141	166	153	215
<b>Total national defense</b> .....	<b>762</b>	<b>772</b>	<b>846</b>	<b>1,204</b>	<b>1,553</b>	<b>1,551</b>	<b>1,550</b>	<b>1,898</b>
<b>Nondefense:</b>								
General science, space, and technology:								
NASA .....	42	43	44	51	50	48	43	50
NSF .....	.....	.....	.....	.....	.....	4	8	15
Atomic energy general science .....	40	49	50	60	63	64	73	78
Subtotal .....	82	92	94	111	113	116	124	143
Energy .....	N/A	N/A	N/A	N/A	N/A	N/A	27	42
Transportation:								
DOT .....	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal .....	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Health:								
NIH .....	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other .....	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal .....	N/A	N/A	N/A	N/A	45	51	69	81
Agriculture .....	N/A	N/A	N/A	N/A	49	53	62	82
Natural resources and environment .....	N/A	N/A	N/A	N/A	38	38	32	38
All other <sup>1</sup> .....	N/A	N/A	N/A	N/A	50	39	31	42
<b>Total nondefense</b> <sup>1</sup> .....	<b>178</b>	<b>282</b>	<b>279</b>	<b>291</b>	<b>295</b>	<b>297</b>	<b>345</b>	<b>428</b>
<b>Total conduct of research and development</b> <sup>1</sup> .....	<b>940</b>	<b>1,054</b>	<b>1,125</b>	<b>1,495</b>	<b>1,848</b>	<b>1,848</b>	<b>1,895</b>	<b>2,326</b>
<b>Memorandum: Conduct of research and development classified as grants (all nondefense)</b> .....	<b>11</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>13</b>	<b>21</b>	<b>31</b>

See footnotes at end of table.

Table 9.8—COMPOSITION OF OUTLAYS FOR THE CONDUCT OF RESEARCH AND DEVELOPMENT: 1949–2003—Continued

(in millions of dollars)

Category	1957	1958	1959	1960	1961	1962	1963	1964
<b>National defense:</b>								
Department of Defense .....	1,882	2,178	4,950	5,517	6,466	6,689	6,792	7,419
Other national defense .....	252	281	414	420	456	401	352	446
<b>Total national defense .....</b>	<b>2,134</b>	<b>2,459</b>	<b>5,364</b>	<b>5,937</b>	<b>6,922</b>	<b>7,090</b>	<b>7,144</b>	<b>7,865</b>
<b>Nondefense:</b>								
General science, space, and technology:								
NASA .....	55	72	115	330	646	1,112	2,291	3,693
NSF .....	28	31	47	57	70	84	100	147
Atomic energy general science .....	91	126	157	183	214	231	264	288
Subtotal .....	174	229	319	570	930	1,427	2,655	4,128
Energy .....	77	109	129	159	173	397	462	502
Transportation:								
DOT .....	13	26	53	77	89	83	111	107
NASA .....						31	36	40
Subtotal .....	13	26	53	77	89	114	147	147
Health:								
NIH .....	N/A	N/A	N/A	247	295	398	511	637
Other .....	N/A	N/A	N/A	30	35	36	40	66
Subtotal .....	134	157	216	277	330	434	551	703
Agriculture .....	86	97	104	107	117	129	142	154
Natural resources and environment .....	45	54	88	68	106	100	118	120
All other <sup>1</sup> .....	48	57	111	127	119	146	146	177
<b>Total nondefense <sup>1</sup> .....</b>	<b>577</b>	<b>729</b>	<b>1,020</b>	<b>1,385</b>	<b>1,864</b>	<b>2,747</b>	<b>4,221</b>	<b>5,931</b>
<b>Total conduct of research and development <sup>1</sup> .....</b>	<b>2,711</b>	<b>3,188</b>	<b>6,384</b>	<b>7,322</b>	<b>8,786</b>	<b>9,837</b>	<b>11,365</b>	<b>13,796</b>
<b>Memorandum: Conduct of research and development classified as grants (all nondefense) .....</b>	<b>40</b>	<b>46</b>	<b>55</b>	<b>57</b>	<b>58</b>	<b>66</b>	<b>75</b>	<b>85</b>

See footnotes at end of table.

Table 9.8—COMPOSITION OF OUTLAYS FOR THE CONDUCT OF RESEARCH AND DEVELOPMENT: 1949–2003—Continued

(in millions of dollars)

Category	1965	1966	1967	1968	1969	1970	1971	1972
<b>National defense:</b>								
Department of Defense .....	6,623	6,675	7,649	8,071	7,762	7,519	7,639	8,238
Other national defense .....	454	422	419	473	552	502	469	599
<b>Total national defense .....</b>	<b>7,077</b>	<b>7,097</b>	<b>8,068</b>	<b>8,544</b>	<b>8,314</b>	<b>8,021</b>	<b>8,108</b>	<b>8,837</b>
<b>Nondefense:</b>								
General science, space, and technology:								
NASA .....	4,497	5,275	5,042	4,462	4,025	3,518	3,143	3,059
NSF .....	147	176	209	248	280	292	334	407
Atomic energy general science .....	309	339	359	281	385	393	380	370
Subtotal .....	4,953	5,790	5,610	4,991	4,690	4,203	3,857	3,836
Energy .....	478	452	478	515	469	451	454	329
Transportation:								
DOT .....	159	117	69	107	96	224	444	291
NASA .....	58	75	89	128	162	183	205	221
Subtotal .....	217	192	158	235	258	407	649	512
Health:								
NIH .....	523	536	795	784	859	879	912	1,096
Other .....	67	202	110	199	214	194	211	279
Subtotal .....	590	738	905	983	1,073	1,073	1,123	1,375
Agriculture .....	179	205	215	231	232	246	268	296
Natural resources and environment .....	140	160	181	207	232	301	351	507
All other <sup>1</sup> .....	206	284	347	466	392	451	599	611
<b>Total nondefense <sup>1</sup> .....</b>	<b>6,763</b>	<b>7,821</b>	<b>7,894</b>	<b>7,628</b>	<b>7,346</b>	<b>7,132</b>	<b>7,301</b>	<b>7,466</b>
<b>Total conduct of research and development <sup>1</sup> .....</b>	<b>13,840</b>	<b>14,918</b>	<b>15,962</b>	<b>16,172</b>	<b>15,660</b>	<b>15,153</b>	<b>15,409</b>	<b>16,303</b>
<b>Memorandum: Conduct of research and development classified as grants (all nondefense) .....</b>	<b>100</b>	<b>110</b>	<b>125</b>	<b>140</b>	<b>152</b>	<b>167</b>	<b>182</b>	<b>206</b>

See footnotes at end of table.

Table 9.8—COMPOSITION OF OUTLAYS FOR THE CONDUCT OF RESEARCH AND DEVELOPMENT: 1949–2003—Continued

(in millions of dollars)

Category	1973	1974	1975	1976	TQ	1977	1978	1979
<b>National defense:</b>								
Department of Defense .....	8,529	8,960	9,284	9,341	2,312	10,210	10,726	11,045
Other national defense .....	610	446	431	478	143	664	1,351	1,083
<b>Total national defense</b> .....	<b>9,139</b>	<b>9,406</b>	<b>9,715</b>	<b>9,819</b>	<b>2,455</b>	<b>10,874</b>	<b>12,077</b>	<b>12,129</b>
<b>Nondefense:</b>								
General science, space, and technology:								
NASA .....	3,045	2,900	2,876	3,227	846	3,506	3,454	3,655
NSF .....	432	539	571	623	194	668	701	775
Atomic energy general science .....	372	292	310	257	72	267	274	305
Subtotal .....	3,849	3,731	3,757	4,107	1,112	4,441	4,429	4,735
Energy .....	379	525	933	1,424	521	2,197	2,542	3,304
Transportation:								
DOT .....	299	322	307	329	100	315	326	350
NASA .....	235	283	309	324	82	336	379	408
Subtotal .....	534	605	616	653	182	651	705	758
Health:								
NIH .....	1,318	1,413	1,631	2,098	548	1,314	2,439	2,626
Other .....	341	245	258	194	130	335	325	614
Subtotal .....	1,659	1,658	1,889	2,292	678	1,649	2,764	3,240
Agriculture .....	293	315	352	416	100	469	499	549
Natural resources and environment .....	539	511	647	646	166	585	675	895
All other <sup>1</sup> .....	643	683	627	631	-14	577	841	715
<b>Total nondefense</b> <sup>1</sup> .....	<b>7,896</b>	<b>8,028</b>	<b>8,821</b>	<b>10,169</b>	<b>2,745</b>	<b>10,569</b>	<b>12,455</b>	<b>14,196</b>
<b>Total conduct of research and development</b> <sup>1</sup> .....	<b>17,035</b>	<b>17,434</b>	<b>18,536</b>	<b>19,988</b>	<b>5,200</b>	<b>21,443</b>	<b>24,532</b>	<b>26,325</b>
<b>Memorandum: Conduct of research and development classified as grants (all nondefense)</b> .....	<b>224</b>	<b>238</b>	<b>249</b>	<b>285</b>	<b>80</b>	<b>272</b>	<b>252</b>	<b>256</b>

See footnotes at end of table.

Table 9.8—COMPOSITION OF OUTLAYS FOR THE CONDUCT OF RESEARCH AND DEVELOPMENT: 1949–2003—Continued

(in millions of dollars)

Category	1980	1981	1982	1983	1984	1985	1986	1987
<b>National defense:</b>								
Department of Defense .....	13,469	15,739	18,363	20,566	23,850	28,165	33,396	34,732
Other national defense .....	1,174	1,199	1,447	1,732	1,915	2,195	2,260	2,365
<b>Total national defense .....</b>	<b>14,643</b>	<b>16,937</b>	<b>19,809</b>	<b>22,298</b>	<b>25,765</b>	<b>30,360</b>	<b>35,656</b>	<b>37,097</b>
<b>Nondefense:</b>								
General science, space, and technology:								
NASA .....	4,262	4,798	2,697	1,999	3,023	2,410	2,863	2,693
NSF .....	838	900	1,020	998	1,127	1,182	1,399	1,426
Atomic energy general science .....	345	501	401	464	505	510	510	576
Subtotal .....	5,445	6,199	4,118	3,461	4,656	4,102	4,772	4,695
Energy .....	3,289	3,681	3,330	2,728	2,762	4,249	2,622	2,321
Transportation:								
DOT .....	412	409	341	270	342	467	489	347
NASA .....	449	481	523	539	515	559	568	557
Subtotal .....	861	890	864	809	857	1,027	1,057	905
Health:								
NIH .....	2,898	3,352	3,435	3,532	3,942	4,412	4,837	4,942
Other .....	784	732	906	929	617	719	738	869
Subtotal .....	3,682	4,084	4,341	4,461	4,560	5,131	5,574	5,811
Agriculture .....	563	643	696	717	754	775	798	796
Natural resources and environment .....	951	912	838	856	846	884	924	886
All other <sup>1</sup> .....	801	822	664	570	787	689	738	745
<b>Total nondefense <sup>1</sup> .....</b>	<b>15,592</b>	<b>17,231</b>	<b>14,850</b>	<b>13,602</b>	<b>15,221</b>	<b>16,856</b>	<b>16,485</b>	<b>16,159</b>
<b>Total conduct of research and development <sup>1</sup> .....</b>	<b>30,235</b>	<b>34,168</b>	<b>34,660</b>	<b>35,900</b>	<b>40,986</b>	<b>47,216</b>	<b>52,141</b>	<b>53,256</b>
<b>Memorandum: Conduct of research and development classified as grants (all nondefense) .....</b>	<b>288</b>	<b>251</b>	<b>290</b>	<b>197</b>	<b>223</b>	<b>215</b>	<b>319</b>	<b>464</b>

See footnotes at end of table.

Table 9.8—COMPOSITION OF OUTLAYS FOR THE CONDUCT OF RESEARCH AND DEVELOPMENT: 1949–2003—Continued

(in millions of dollars)

Category	1988	1989	1990	1991	1992	1993	1994	1995
<b>National defense:</b>								
Department of Defense .....	35,605	37,819	38,247	35,330	35,504	37,666	35,474	35,356
Other national defense .....	2,427	2,547	2,831	2,557	2,666	2,730	2,581	2,343
<b>Total national defense .....</b>	<b>38,032</b>	<b>40,366</b>	<b>41,078</b>	<b>37,887</b>	<b>38,170</b>	<b>40,396</b>	<b>38,055</b>	<b>37,699</b>
<b>Nondefense:</b>								
General science, space, and technology:								
NASA .....	3,252	4,220	5,624	6,277	6,641	7,004	6,663	8,243
NSF .....	1,513	1,570	1,520	1,631	1,733	1,753	1,873	1,894
Atomic energy general science .....	618	680	784	834	784	789	669	700
Subtotal .....	5,383	6,470	7,927	8,741	9,157	9,546	9,205	10,837
Energy .....	2,287	2,454	2,342	2,501	2,593	2,517	2,654	3,152
Transportation:								
DOT .....	323	322	272	333	373	420	519	604
NASA .....	580	755	701	795	976	1,084	1,215	749
Subtotal .....	903	1,077	973	1,127	1,348	1,504	1,734	1,353
Health:								
NIH .....	6,022	6,634	7,092	7,257	7,936	9,063	9,620	10,299
Other .....	849	912	1,162	1,272	1,721	1,311	1,008	961
Subtotal .....	6,872	7,546	8,253	8,528	9,656	10,374	10,628	11,260
Agriculture .....	838	908	937	990	1,070	1,129	1,158	1,186
Natural resources and environment .....	1,052	1,056	1,220	1,323	1,593	1,762	1,747	1,662
All other <sup>1</sup> .....	732	883	1,081	1,085	1,141	1,150	1,271	1,283
<b>Total nondefense <sup>1</sup> .....</b>	<b>18,068</b>	<b>20,394</b>	<b>22,732</b>	<b>24,296</b>	<b>26,558</b>	<b>27,982</b>	<b>28,397</b>	<b>30,733</b>
<b>Total conduct of research and development <sup>1</sup> .....</b>	<b>56,100</b>	<b>60,760</b>	<b>63,810</b>	<b>62,183</b>	<b>64,728</b>	<b>68,378</b>	<b>66,453</b>	<b>68,432</b>
<b>Memorandum: Conduct of research and development classified as grants (all nondefense) .....</b>	<b>478</b>	<b>412</b>	<b>345</b>	<b>401</b>	<b>296</b>	<b>344</b>	<b>376</b>	<b>348</b>

See footnotes at end of table.

Table 9.8—COMPOSITION OF OUTLAYS FOR THE CONDUCT OF RESEARCH AND DEVELOPMENT: 1949–2003—Continued

(in millions of dollars)

Category	1996	1997	1998	1999	2000	2001	2002 estimate	2003 estimate
<b>National defense:</b>								
Department of Defense .....	36,936	37,702	37,558	37,571	38,279	45,454	50,213	56,311
Other national defense .....	2,492	2,475	2,583	2,705	2,771	2,990	4,133	3,628
<b>Total national defense .....</b>	<b>39,428</b>	<b>40,177</b>	<b>40,141</b>	<b>40,276</b>	<b>41,050</b>	<b>48,444</b>	<b>54,346</b>	<b>59,939</b>
<b>Nondefense:</b>								
General science, space, and technology:								
NASA .....	6,963	8,137	8,631	8,316	5,411	6,060	6,085	6,847
NSF .....	2,077	2,015	2,010	2,144	2,446	2,566	2,943	3,085
Atomic energy general science .....	705	703	1,862	2,087	2,246	2,287	2,425	2,486
Subtotal .....	9,745	10,855	12,503	12,547	10,103	10,913	11,453	12,418
Energy .....	2,938	2,641	1,526	1,285	1,265	1,336	1,635	1,596
Transportation:								
DOT .....	534	545	528	465	482	514	710	812
NASA .....	1,120	1,237	1,250	1,117	958	906	498	791
Subtotal .....	1,654	1,782	1,778	1,582	1,440	1,420	1,208	1,603
Health:								
NIH .....	9,642	10,599	11,853	13,027	14,568	17,905	21,257	24,051
Other .....	856	859	865	1,306	1,310	1,804	2,174	2,150
Subtotal .....	10,498	11,458	12,718	14,333	15,878	19,709	23,431	26,201
Agriculture .....	1,168	1,178	1,200	1,200	1,294	1,519	1,643	1,658
Natural resources and environment .....	1,610	1,590	1,653	1,732	1,687	1,749	1,897	1,888
All other <sup>1</sup> .....	1,398	1,392	1,284	1,181	1,230	1,307	1,667	1,645
<b>Total nondefense <sup>1</sup> .....</b>	<b>29,011</b>	<b>30,896</b>	<b>32,662</b>	<b>33,860</b>	<b>32,897</b>	<b>37,953</b>	<b>42,934</b>	<b>47,009</b>
<b>Total conduct of research and development <sup>1</sup> .....</b>	<b>68,439</b>	<b>71,073</b>	<b>72,803</b>	<b>74,136</b>	<b>73,947</b>	<b>86,397</b>	<b>97,280</b>	<b>106,948</b>
<b>Memorandum: Conduct of research and development classified as grants (all nondefense) .....</b>	<b>303</b>	<b>290</b>	<b>302</b>	<b>308</b>	<b>405</b>	<b>382</b>	<b>450</b>	<b>569</b>

<sup>1</sup> Includes off-budget Postal Service amounts as shown in the footnote to Table 9.7.

N/A: Separate detail not available; however, the data are included in the totals.

Note: The Atomic energy defense component includes relatively small amounts of R&amp;D for FEMA beginning in 1983.