

Employment outlook: 2002–12

Industry output and employment projections to 2012

Employment in the dominant service-providing sector is expected to grow at a slower pace than in the 1992–2002 period, thereby slowing the projected growth in total employment

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The Bureau of Labor Statistics projects total employment in the United States to increase by 21.3 million during the 2002–12 period, rising from 144.0 million to 165.3 million. This increase results in a projected annual growth rate of 1.4 percent, which is slightly slower than the 1.6-percent rate of growth experienced during the preceding decade. The increase of nonfarm wage and salary jobs, from 131.1 million in 2002 to 152.7 million in 2012, is expected to account for most of the growth in total employment. The number of nonfarm self-employed workers and unpaid family workers is expected to increase by 144,000. Countering these gains, agricultural employment, which includes wage and salary workers, the self-employed, and unpaid family workers, is projected to decrease by 340,000 to settle at 1.9 million by 2012. (See table 1.)

Real industry output is projected to expand to \$23.3 trillion by 2012, an increase of \$6.4 trillion from the \$16.8 trillion level achieved in 2002.¹ This translates into a projected 3.3-percent average annual growth rate and parallels the rate of growth exhibited during the past decade. Accounting for approximately 70.8 percent of the growth in total nominal output, the service-providing industries are projected to

reach \$15.5 trillion by 2012. Even though output in this sector is expected to grow by \$4.5 trillion by 2012, its projected 3.5 percent growth rate is slightly slower than that generated during the past decade. This is contrasted against the 3.0-percent annual growth expected by the goods-producing sector, which is faster than the historical 2.3 percent growth rate that this sector experienced between 1992 and 2002. Even with the relatively accelerated rate of output growth in the goods-producing sector, excluding agriculture, its share of current-dollar total output, however, will continue to decline from 31.4 percent in 1992 to 25.1 percent by 2012.² Annual output growth in agriculture is expected to grow slightly from the previous 10-year period, to 1.6 percent annually. Its share of total output, however, will also decline, dropping from 2.2 percent in 1992 to 1.3 in 2002. (See table 2.)

The aggregate picture of the 2002–12 economy sets the projected labor force growth rate equivalent to that of the previous 10-year period, assumes a slower growth rate for GDP, and projects output to continue to outpace labor force growth due to productivity gains. Macroeconomic factors provide the foundation for the industry and output projections and include the labor force and demographic changes, Government defense

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Table 1. Employment by major industry sector, 1992, 2002, and projected 2012

Industry sector	Thousands of jobs			Change		Percent distribution			Average annual rate of change	
	1992	2002	2012	1992–2002	2002–12	1992	2002	2012	1992–2002	2002–12
Total ¹	123,325	144,014	165,319	20,689	21,305	100.0	100.0	100.0	1.6	1.4
Nonfarm wage and salary	109,526	131,063	152,690	21,537	21,627	88.8	91.0	92.4	1.8	1.5
Goods-producing, excluding agriculture	22,016	22,550	23,346	534	796	17.9	15.7	14.1	.2	.3
Mining	610	512	451	-98	-61	.5	.4	.3	-1.7	-1.3
Construction	4,608	6,732	7,745	2,124	1,014	3.7	4.7	4.7	3.9	1.4
Manufacturing	16,799	15,307	15,149	-1,492	-158	13.6	10.6	9.2	-9	-1
Service-providing	87,510	108,513	129,344	21,003	20,831	71.0	75.3	78.2	2.2	1.8
Utilities	726	600	565	-126	-34	.6	.4	.3	-1.9	-6
Wholesale trade	5,110	5,641	6,279	531	638	4.1	3.9	3.8	1.0	1.1
Retail trade	12,828	15,047	17,129	2,219	2,082	10.4	10.4	10.4	1.6	1.3
Transportation and warehousing	3,462	4,205	5,120	744	914	2.8	2.9	3.1	2.0	2.0
Information	2,641	3,420	4,052	779	632	2.1	2.4	2.5	2.6	1.7
Financial activities	6,540	7,843	8,806	1,303	964	5.3	5.4	5.3	1.8	1.2
Professional and business services	10,969	16,010	20,876	5,040	4,866	8.9	11.1	12.6	3.9	2.7
Education and health services	11,891	16,184	21,329	4,293	5,145	9.6	11.2	12.9	3.1	2.8
Leisure and hospitality	9,437	11,969	14,104	2,532	2,135	7.7	8.3	8.5	2.4	1.7
Other services	5,120	6,105	7,065	985	960	4.2	4.2	4.3	1.8	1.5
Federal Government	3,111	2,767	2,779	-344	12	2.5	1.9	1.7	-1.2	.0
State and local government	15,675	18,722	21,240	3,047	2,518	12.7	13.0	12.8	1.8	1.3
Agriculture ²	2,639	2,245	1,905	-394	-340	2.1	1.6	1.2	-1.6	-1.6
Nonagriculture self-employed and unpaid family workers.	9,009	9,018	9,162	10	144	7.3	6.3	5.5	.0	.2
Secondary wage and salary job in agricultural production, forestry, fishing, and private household industries ³	178	143	128	-35	-15	.1	.1	.1	-2.2	-1.1
Secondary jobs as a self-employed or unpaid family worker ⁴	1,973	1,545	1,434	-428	-111	1.6	1.1	.9	-2.4	-.7

¹ Employment data for wage and salary workers are from the BLS Current Employment Statistics (payroll) survey, which counts jobs, whereas self-employed, unpaid family workers, and agriculture, forestry, fishing, and hunting are from the Current Population Survey (household survey), which counts workers.

² Includes agriculture, forestry, fishing, and hunting data from the Current Population survey, except logging, which is from the Current Employment Survey and government wage and salary workers, which are excluded.

³ Workers who hold a secondary wage and salary job in agricultural production, forestry, fishing, and private household industries.

⁴ Wage and salary workers who hold a secondary job as a self-employed or unpaid family worker.

spending and tax policies, foreign economic activity, business investment decisions, personal consumption patterns, and aggregate productivity trends.³

Ten-year comparisons

BLS projects the labor force to grow at an annual rate of 1.1 percent between 2002 and 2012. This mirrors the 1.1-percent growth rate experienced over the 1992–2002 period. The growth rate of the nonfarm labor productivity index is projected to average 2.1 percent per year from 2002 to 2012, which is about the same rate that was observed over the previous 10 years. Annual GDP growth is expected to marginally retreat from its 3.2-percent rate over the 1992–2002 period to 3.0 percent over the projection period. Fixed nonresidential investment, with a projected 6.6-percent annual rate of growth, is expected to be the GDP component with the fastest growth

potential, followed by exports' 5.7 percent. Expected to still account for almost 70 percent of the economy's output, personal consumption expenditure is expected to grow at 2.8 percent over the projected period.

Trends by sector and industry. Virtually all of the projected employment growth in the economy will be posted by the service-providing sector, reflecting its large relative size. Making up 75.3 percent of total employment in 2002, this sector will continue to enhance its dominance by almost eclipsing the 130 million job mark by 2012 and increasing its share of total employment to 78.2 percent. The goods-providing sector is expected to add 262,000 more jobs over the projected period than it did over the past decade, for a total employment level of 23.3 million jobs in 2012. However, its relatively slow 0.3-percent projected annual rate of growth is dwarfed by the expected 1.8-percent pace and the 20.8 million jobs created by

the service-providing sector. Three out of four jobs in the U.S. economy are accounted for by the service-providing sector.⁴

Within the service-providing sector, education and health services and professional and business services represent the industry divisions with the strongest employment growth, both in terms of absolute and percentage changes. Education and health services is expected to grow at an average annual rate of 2.8 percent and professional and business services is projected to grow 2.7 percent—double the expected rate for the economy as a whole, adding 5.1 million and 4.9 million jobs respectively—both making up almost half of the total employment increases that are expected by 2012. State and local government will be responsible for the economy’s next largest source of employment growth, increasing by 2.5 million jobs. This sector’s employment will grow to 21.2 million workers in 2012, while Federal Government employment is expected to hold steady at its 2002 level of 2.8 million jobs.

The construction industry, the only major goods-producing sector expected to post positive employment growth, is projected to increase by 1.0 million jobs, reaching 7.8 million in 2012. Manufacturing employment is projected to show little change over the projection period, declining by a mere 0.1 per-

cent annually and slightly dipping below its 2002 level of 15.3 million. This is in contrast to the sharper average annual employment declines in manufacturing of almost 1.0 percent experienced during the previous, 1992–2002, decade when this sector lost 1.5 million jobs. This trend is tempered by the fact that 76 percent of this total decline, or 1.1 million jobs, occurred during the recent 2001 recession.⁵ Employment in the mining industries is projected to continue its 1992–2002 historical decline by shedding jobs at a 1.3-percent annual rate to settle at 451,000 by 2012.

The limited employment growth in the goods-producing sector is expected to take place despite strong growth in output. Through productivity gains, output for the goods-producing sector is projected to increase by 3.0 percent annually, which translates into \$1.6 trillion in additional output. Output generated by manufacturing industries, the dominant goods-producing sector, is projected to expand by \$1.5 trillion to \$5.4 trillion in 2012. This sector’s projected 3.4 percent average annual rate of growth in output augments the relatively slower 1.7-percent projected growth rate for the construction industry and rivals the 3.5-percent output growth expected by the service-providing industries.

Table 2. Output by major industry sector (gross duplicated output), 1992, 2002, and projected 2012

Industry sector	Billions of chained 1996 dollars			Average annual rate of change		Billions of dollars			Percent distribution		
	1992	2002	2012	1992–02	2002–12	1992	2002	2012	1992	2002	2012
Total	12,272.1	16,822.0	23,249.8	3.2	3.3	11,104.3	18,409.6	31,599.4	100.0	100.0	100.0
Goods-producing, excluding											
agriculture	3,766.9	4,732.8	6,362.1	2.3	3.0	3,491.1	4,904.5	7,917.6	31.4	26.6	25.1
Mining	154.9	166.1	156.0	.7	–.6	139.1	158.8	208.0	1.3	.9	.7
Construction	547.1	718.7	851.8	2.8	1.7	475.6	865.5	1,204.9	4.3	4.7	3.8
Manufacturing	3,066.7	3,840.1	5,360.9	2.3	3.4	2,876.4	3,880.3	6,504.7	25.9	21.1	20.6
Service-providing	7,682.1	11,052.4	15,542.4	3.7	3.5	6,878.4	12,352.2	22,360.8	61.9	67.1	70.8
Utilities	278.0	267.2	320.3	–.4	1.8	262.1	302.4	460.0	2.4	1.6	1.5
Wholesale trade	600.3	1,025.3	1,622.5	5.5	4.7	559.4	951.0	1,898.2	5.0	5.2	6.0
Retail trade	666.9	1,013.1	1,420.0	4.3	3.4	609.8	1,064.9	1,993.9	5.5	5.8	6.3
Transportation and warehousing	436.4	575.7	819.6	2.8	3.6	448.0	685.4	1,183.3	4.0	3.7	3.7
Information	481.3	891.2	1,498.2	6.4	5.3	439.5	965.3	1,981.0	4.0	5.2	6.3
Financial activities	1,524.7	2,229.8	3,037.5	3.9	3.1	1,340.0	2,497.9	4,315.4	12.1	13.6	13.7
Professional and business services	1,063.3	1,778.3	2,669.4	5.3	4.1	934.6	2,089.2	4,136.8	8.4	11.3	13.1
Education and health services	813.9	1,087.5	1,476.3	2.9	3.1	707.7	1,289.7	2,455.0	6.4	7.0	7.8
Leisure and hospitality	441.2	592.3	797.2	3.0	3.0	400.4	687.9	1,160.8	3.6	3.7	3.7
Other services	298.3	381.7	505.6	2.5	2.9	268.7	444.1	739.7	2.4	2.4	2.3
Federal government	394.2	377.7	443.4	–.4	1.6	299.1	376.4	542.9	2.7	2.0	1.7
State and local Government	685.3	838.9	980.4	2.0	1.6	609.1	998.0	1,493.7	5.5	5.4	4.7
Agriculture, forestry, fishing, and hunting	273.8	299.6	351.6	.9	1.6	247.4	299.2	414.2	2.2	1.6	1.3
Special industries ¹	550.3	704.1	908.3	2.5	2.6	487.4	853.7	906.9	4.4	4.6	2.9
Residual ²	–1.0	33.2	84.60	.0	.0	.0	.0	.0

¹ Consists of nonproducing accounting categories to reconcile input-output system with NIPA accounts.

² Residual is shown for the first level only. Subcategories do not necessarily add to higher categories as a byproduct of chainweighting.

International comparisons. Mirroring the trends in agriculture production and productivity in the beginning of the last century, output in the goods-producing industries and specifically manufacturing continued to grow, while employment declined as productivity increased. As the following tabulation illustrates, this phenomena is shared by most industrialized countries:⁶

Country	Average annual rates of change, 1982–2002	
	Manufacturing employment	Manufacturing output
United States	–0.7	3.0
United Kingdom	–2.1	1.3
Italy	–.9	1.8
Japan	–.9	2.3

The United Kingdom and Italy, examples of the industrialized nations of Europe, and Japan also experienced continual productivity-led employment declines in their manufacturing sectors. However, spurred by capital investments, advances in technologies, and improvements in operational methods, production was able to increase, while fewer workers were required. On average, these four countries managed annual output increases of 2.1 percent between 1982 and 2002. However, increasing labor productivity allowed these countries to demand less labor—dropping by an average annual rate of 1.1 percent over the same 20-year period. Even though these countries share similar employment patterns with the United States, productivity levels in the United States have historically surpassed the rest of these countries—contributing to this country’s historical higher rates of output growth.

The U.S. economy, however, is expected to remain service-dominated as that sector’s output reaches \$15.5 trillion by 2012. The goods-producing sector, alternatively, is expected to generate \$6.4 trillion in output by 2012. Mirroring their employment influence, 37.8 percent of the projected nominal output for the service-providing industries will be attributed to financial activities and professional and business services. Highlighting this sector and setting the pace for the overall economy, information industries are projected to post the fastest output growth with a 5.3 annual rate, reaching \$1.5 trillion by 2012.

Service-providing sector

Information. The fastest growing sector in the economy, with a 5.3-percent projected output growth rate, is the information sector, which provides publishing, Internet, cable, and telecommunication services. Accounting for 39.8 percent of this sector’s projected growth in output and 27.3 percent of its total employment, telecommunications, except cable and

other programming distribution is expected to grow by 4.9 percent annually to reach \$645 billion by 2012. Providing domestic and international telephone communications, including cellular services, this industry’s main demand sources will be advanced technology and competition lowering prices for high-speed Internet access and wireless telephone services, as well as deregulation expanding the breadth of offered residential telecommunication services. In addition, business demand is expected to rise as companies increasingly rely on their telecommunication systems to conduct electronic commerce. This industry’s employment gains, however, are expected to be limited by productivity gains, as technological improvements such as fiber optic lines and advanced switching equipment, increase the data transmission capacity of telecommunication networks. Employment for this industry is projected to stabilize at its 2002 level of 1.1 million jobs. (See table 3.)

The software publishing industry is expected to be the Nation’s fastest growing employer by 2012, with a projected annual growth rate of 5.3 percent. (See table 4.) Even though this represents a slowdown relative to the past decade, the 173.7 million more jobs created by this industry during the projected period will be the result of firms continuing to invest heavily in software. Such investments boost productivity, increase efficiencies, and have become the backbone of a largely technology based economy. One of the fastest sources of output growth is expected to come from the software publishing industry—an 8.4-percent increase in output.

Also resonating the information sector’s trend, the Internet services, data processing, and other information services industry, is expected to be the third fastest and one of the largest sources of output growth in the economy by 2012. (See table 5.) Mainly providing Internet publishing and broadcasting, general access, and search facilities, this industry’s output is expected to reach \$232.6 billion by 2012, reflecting an increase of \$145.7 billion and a 10.3-percent annual rate from its 2002 level.

Professional and business services. Adding 4.9 million jobs at an average annual rate of 3.9 percent between 1992 and 2002, the professional and business services group was the economy’s largest and fastest growing sector. Jobs in this industry cluster are projected to increase at a 2.7-percent annual rate, to 20.9 million in 2012 from 16.0 million in 2002. Despite the relative slowdown in the rate of employment growth, it is still expected to almost double the 1.4 percent posted by the economy as a whole, which will maintain its position as one of the economy’s fastest and largest source of job creation. With accompanying above-average output gains of 4.1 percent, rising by \$891.1 billion to \$2.7 trillion in 2012, this industry group is also expected to be the largest source of output growth in the service-providing sector.

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Table 3. Employment and output by industry, 1992, 2002, and projected 2012

2002 NAICS	Industry	Employment							Output				
		Thousands of jobs			Change		Average annual rate of change		Billions of chained 1996 dollars			Average annual rate of change	
		1992	2002	2012	1992-2002	2002-12	1992-2002	2002-12	1992	2002	2012	1992-2002	2002-12
NA	Nonagriculture wage and salary ¹	109,526	131,063	152,690	21,537	21,627	1.8	1.5	11,448	15,818	21,973	3.3	3.3
21	Mining	610	512	451	-98	-61	-1.7	-1.3	155	166	156	.7	-6
211	Oil and gas extraction	182	123	88	-60	-34	-3.9	-3.2	94	87	80	-7	-9
212	Mining (except oil and gas)	272	212	180	-60	-32	-2.5	-1.6	47	54	52	1.4	-5
2121	Coal mining	118	75	52	-43	-23	-4.4	-3.5	22	26	23	1.8	-1.1
2122	Metal ore mining	50	29	18	-21	-11	-5.2	-4.8	11	10	11	-6	.8
2123	Nonmetallic mineral mining and quarrying	104	108	110	3	2	.3	.2	14	18	17	2.1	-5
213	Support activities for mining	156	177	183	22	6	1.3	.3	14	24	26	5.3	.9
22	Utilities	726	600	565	-126	-34	-1.9	-6	278	267	320	-4	1.8
2211	Electric power generation, transmission, and distribution	537	436	405	-101	-31	-2.1	-7	207	207	254	.0	2.0
2212	Natural gas distribution	154	116	90	-38	-26	-2.8	-2.5	66	53	58	-2.1	.9
2213	Water, sewage, and other systems	35	49	71	13	23	3.2	3.9	5	6	8	2.2	2.7
23	Construction	4,608	6,732	7,745	2,124	1,014	3.9	1.4	547	719	852	2.8	1.7
31-33	Manufacturing	16,799	15,307	15,149	-1,492	-158	-9	-1	3,067	3,840	5,361	2.3	3.4
311	Food manufacturing	1,518	1,525	1,597	7	72	.0	.5	384	437	517	1.3	1.7
3111	Animal food manufacturing	55	52	52	-4	1	-7	.1	25	30	38	2.1	2.2
3112	Grain and oilseed milling	71	62	61	-9	-1	-1.3	-1	49	57	70	1.6	2.0
3113	Sugar and confectionery product manufacturing	103	83	80	-20	-3	-2.1	-3	22	26	30	1.7	1.6
3114	Fruit and vegetable preserving and specialty food manufacturing	218	182	180	-36	-2	-1.8	-1	44	50	59	1.4	1.7
3115	Dairy product manufacturing	143	137	124	-6	-13	-4	-1.0	57	56	58	-3	.4
3116	Animal slaughtering and processing	438	520	601	83	80	1.7	1.4	98	118	144	1.9	2.0
3117	Seafood product preparation and packaging	55	44	40	-11	-4	-2.3	-8	8	7	8	-1.2	1.2
3118	Bakeries and tortilla manufacturing	290	295	303	4	9	.1	.3	39	43	53	1.1	2.0
3119	Other food manufacturing ..	146	152	155	5	4	.4	.2	44	51	59	1.5	1.5
312	Beverage and tobacco product manufacturing	209	206	179	-3	-27	-1	-1.4	96	98	105	.3	.7
3121	Beverage manufacturing	165	172	158	7	-14	.4	-8	59	64	74	.8	1.3
3122	Tobacco manufacturing	44	33	20	-10	-13	-2.7	-4.8	36	34	33	-5	-3
313	Textile mills	479	293	157	-186	-136	-4.8	-6.1	51	45	36	-1.4	-2.2
3131	Fiber, yarn, and thread mills	97	64	37	-33	-27	-4.1	-5.3	12	11	8	-1.0	-2.5
3132	Fabric mills	256	147	80	-109	-67	-5.4	-5.9	26	22	21	-1.7	-4
3133	Textile and fabric finishing and fabric coating mills	126	82	40	-44	-42	-4.2	-6.9	13	12	7	-1.0	-6.0
314	Textile product mills	202	196	181	-6	-16	-3	-8	26	30	35	1.4	1.3
3141	Textile furnishings mills	120	119	111	-1	-8	-1	-7	18	21	23	1.8	1.0
3149	Other textile product mills ..	82	78	70	-5	-8	-6	-1.1	9	9	11	.6	2.1
315	Apparel manufacturing	905	358	112	-548	-246	-8.9	-11.0	64	50	23	-2.4	-7.6
3151	Apparel knitting mills	110	50	20	-60	-30	-7.7	-8.7	10	6	2	-4.3	-9.7
3152	Cut and sew apparel manufacturing	752	282	77	-470	-205	-9.4	-12.2	50	40	17	-2.2	-8.1
3159	Apparel accessories and other apparel manufacturing	43	26	15	-17	-11	-4.8	-5.4	4	4	3	-1.3	-1.5
316	Leather and allied product manufacturing	121	50	33	-71	-17	-8.5	-4.0	10	8	6	-2.5	-2.6
3161	Leather and hide tanning and finishing	15	9	5	-7	-4	-5.7	-6.3	3	3	1	-1.5	-7.7
3162	Footwear manufacturing	72	21	18	-51	-4	-11.5	-1.8	5	3	4	-3.6	2.1

See footnotes at end of table.

Table 3. Continued—Employment and output by industry, 1992, 2002, and projected 2012

2002 NAICS	Industry	Employment							Output				
		Thousands of jobs			Change		Average annual rate of change		Billions of chained 1996 dollars			Average annual rate of change	
		1992	2002	2012	1992–2002	2002–12	1992–2002	2002–12	1992	2002	2012	1992–2002	2002–12
3169	Other leather and allied product manufacturing	33	20	11	-13	-9	-5.0	-5.9	3	2	1	-1.6	-7.7
321	Wood product manufacturing ..	502	557	634	55	77	1.0	1.3	73	83	112	1.2	3.0
3211	Sawmills and wood preservation	134	121	110	-13	-11	-1.0	-1.0	25	26	34	.6	2.7
3212	Veneer, plywood, and engineered wood product manufacturing	88	116	138	28	21	2.8	1.7	17	20	26	1.8	2.6
3219	Other wood product manufacturing	280	320	386	39	67	1.3	1.9	32	37	52	1.5	3.4
322	Paper manufacturing	640	550	477	-90	-72	-1.5	-1.4	146	141	144	-.4	.2
3221	Pulp, paper, and paperboard mills	232	168	126	-63	-42	-3.1	-2.8	73	68	65	-.8	-.5
3222	Converted paper product manufacturing	408	382	351	-26	-31	-.7	-.8	73	73	79	.0	.8
323	Printing and related support activities	780	710	734	-70	24	-.9	.3	92	91	94	-.1	.3
324	Petroleum and coal products manufacturing	152	119	102	-33	-18	-2.4	-1.6	161	181	199	1.2	1.0
325	Chemical manufacturing	1,029	930	891	-99	-38	-1.0	-.4	363	401	450	1.0	1.2
3251	Basic chemical manufacturing	246	171	140	-76	-31	-3.6	-2.0	117	98	76	-1.8	-2.5
3252	Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	151	114	89	-37	-26	-2.8	-2.5	54	56	54	.4	-.4
3253	Pesticide, fertilizer, and other agricultural chemical manufacturing	54	45	35	-10	-10	-1.9	-2.4	23	19	22	-2.1	1.9
3254	Pharmaceutical and medicine manufacturing	225	293	361	68	68	2.7	2.1	72	112	157	4.5	3.5
3255	Paint, coating, and adhesive manufacturing	81	72	62	-8	-11	-1.1	-1.6	22	24	30	.8	2.1
3256	Soap, cleaning compound, and toilet preparation manufacturing	127	122	125	-5	3	-.4	.3	43	52	64	1.8	2.0
3259	Other chemical product and preparation manufacturing	144	112	79	-32	-33	-2.4	-3.4	34	36	42	.6	1.3
326	Plastics and rubber products manufacturing	819	854	991	35	138	.4	1.5	122	164	245	3.0	4.1
3261	Plastics product manufacturing	620	668	797	48	128	.8	1.8	95	133	198	3.4	4.1
3262	Rubber product manufacturing	199	185	195	-14	10	-.7	.5	27	31	47	1.4	4.0
327	Nonmetallic mineral product manufacturing	487	519	579	32	60	.6	1.1	69	85	114	2.1	2.9
3271	Clay product and refractory manufacturing	79	72	80	-7	9	-.9	1.1	7	8	10	.2	3.2
3272	Glass and glass product manufacturing	145	126	125	-19	-1	-1.4	-.1	19	22	33	1.6	3.9
3273	Cement and concrete product manufacturing	178	230	278	52	48	2.6	1.9	27	38	49	3.4	2.5
3274	Lime and gypsum product manufacturing	14	19	21	5	2	3.0	.9	4	5	6	1.6	2.1
3279	Other nonmetallic mineral product manufacturing	72	72	75	0	3	.1	.4	12	13	16	1.0	2.3
331	Primary metal manufacturing ..	630	511	494	-119	-17	-2.1	-.3	140	137	160	-.2	1.5
3311	Iron and steel mills and												

See footnotes at end of table.

Table 3. Continued—Employment and output by industry, 1992, 2002, and projected 2012

2002 NAICS	Industry	Employment							Output				
		Thousands of jobs			Change		Average annual rate of change		Billions of chained 1996 dollars			Average annual rate of change	
		1992	2002	2012	1992–2002	2002–12	1992–2002	2002–12	1992	2002	2012	1992–2002	2002–12
3312	ferroalloy manufacturing	168	107	76	-61	-31	-4.4	-3.4	47	49	56	.4	1.4
	Steel product manufacturing from purchased steel	66	63	60	-3	-3	-4	-5	16	15	18	-.7	1.5
3313	Alumina and aluminum production and processing	100	80	79	-19	-1	-2.1	-2	29	25	26	-1.5	.3
3314	Nonferrous metal (except aluminum) production and processing	102	81	80	-20	-1	-2.2	-2	26	22	21	-1.9	-.3
3315	Foundries	196	180	199	-16	20	-9	1.0	21	25	38	2.1	4.2
332	Fabricated metal product manufacturing	1,497	1,548	1,645	51	97	.3	.6	186	226	315	2.0	3.4
3321	Forging and stamping	122	114	132	-9	18	-.7	1.5	18	23	36	2.6	4.5
3322	Cutlery and handtool manufacturing	73	65	70	-8	6	-1.2	.8	8	10	15	1.9	3.7
3323	Architectural and structural metals manufacturing	327	400	478	74	77	2.1	1.8	41	55	81	3.1	3.9
3324	Boiler, tank, and shipping container manufacturing	108	95	90	-13	-5	-1.3	-.5	21	20	26	-.6	2.6
3325	Hardware manufacturing	54	43	45	-11	3	-2.3	.6	9	10	14	.8	3.9
3326	Spring and wire product manufacturing	74	71	59	-4	-12	-.5	-1.8	6	8	9	2.2	1.2
3327	Machine shops; turned product; and screw, nut, and bolt manufacturing	287	318	333	32	15	1.1	.5	29	41	62	3.7	4.2
3328	Coating, engraving, heat treating, and allied activities	137	148	151	11	4	.8	.2	12	16	25	2.8	4.4
3329	Other fabricated metal product manufacturing	316	296	287	-20	-9	-.7	-.3	42	43	49	.3	1.2
333	Machinery manufacturing	1,309	1,237	1,357	-72	120	-.6	.9	186	230	341	2.1	4.0
3331	Agriculture, construction, and mining machinery manufacturing	201	201	212	1	10	.0	.5	33	42	60	2.5	3.5
3332	Industrial machinery manufacturing	142	132	125	-10	-6	-.7	-.5	22	31	47	3.3	4.4
3333	Commercial and service industry machinery manufacturing	138	132	141	-6	9	-.5	.6	22	19	27	-1.3	3.6
3334	Ventilation, heating, air-conditioning, and commercial refrigeration equipment manufacturing	161	167	189	7	22	.4	1.2	22	29	40	2.8	3.2
3335	Metalworking machinery manufacturing	241	217	251	-24	34	-1.0	1.5	21	23	38	.9	4.9
3336	Engine, turbine, and power transmission equipment manufacturing	111	100	100	-11	0	-1.0	.0	23	34	44	4.1	2.7
3339	Other general purpose machinery manufacturing	317	288	339	-29	51	-.9	1.6	43	51	84	1.7	5.2
334	Computer and electronic product manufacturing	1,707	1,521	1,333	-186	-189	-1.1	-1.3	225	557	1,705	9.5	11.8
3341	Computer and peripheral equipment manufacturing	329	250	182	-79	-68	-2.7	-3.1	28	263	2,293	24.9	24.2
3342	Communications equipment manufacturing	210	191	201	-19	10	-.9	.5	45	100	268	8.2	10.4
3343	Audio and video equipment manufacturing	58	42	38	-16	-3	-3.2	-.8	8	9	10	1.0	1.2
3344	Semiconductor and other electronic component manufacturing	519	531	452	12	-79	.2	-1.6	67	134	149	7.2	1.1
3345	Navigational, measuring, electromedical, and control												

See footnotes at end of table.

Table 3. Continued—Employment and output by industry, 1992, 2002, and projected 2012

2002 NAICS	Industry	Employment							Output				
		Thousands of jobs			Change		Average annual rate of change		Billions of chained 1996 dollars			Average annual rate of change	
		1992	2002	2012	1992–2002	2002–12	1992–2002	2002–12	1992	2002	2012	1992–2002	2002–12
3346	instruments manufacturing	549	451	396	-98	-55	-1.9	-1.3	79	92	126	1.4	3.2
335	Manufacturing and reproducing magnetic and optical media	44	57	63	13	6	2.7	1.1	8	7	9	-1.4	2.1
3351	Electrical equipment, appliance, and component manufacturing	580	499	486	-81	-13	-1.5	-.3	88	103	142	1.6	3.3
3352	Electric lighting equipment manufacturing	74	72	70	-2	-2	-.2	-.3	10	12	14	1.8	1.4
3353	Household appliance manufacturing	106	98	84	-8	-14	-.8	-1.5	18	22	29	2.2	2.8
3359	Electrical equipment manufacturing	219	176	180	-43	4	-2.1	.2	26	29	46	.8	4.7
336	Other electrical equipment and component manufacturing	180	152	151	-28	-1	-1.7	-.1	33	41	54	1.9	2.9
3361	Transportation equipment manufacturing	1,977	1,829	1,787	-148	-41	-.8	-.2	462	600	802	2.6	3.0
3362	Motor vehicle manufacturing	260	267	251	7	-16	.3	-.6	166	236	319	3.6	3.1
3363	Motor vehicle body and trailer manufacturing	126	154	172	28	18	2.0	1.1	15	22	39	3.7	5.7
3364	Motor vehicle parts manufacturing	661	731	758	70	27	1.0	.4	115	187	275	5.0	3.9
3365	Aerospace product and parts manufacturing	711	468	386	-242	-83	-4.1	-1.9	138	116	117	-1.7	.1
3366	Railroad rolling stock manufacturing	27	23	24	-4	1	-1.7	.6	5	8	12	4.0	4.2
3369	Ship and boat building	157	146	157	-10	11	-.7	.7	16	19	27	1.6	3.8
337	Other transportation equipment manufacturing ..	36	40	40	4	0	1.0	.1	7	12	16	5.9	2.4
3371	Furniture and related product manufacturing	563	605	666	42	62	.7	1.0	51	66	89	2.7	3.0
3372	Household and institutional furniture and kitchen cabinet manufacturing	373	400	450	28	49	.7	1.2	30	39	53	2.7	3.0
3379	Office furniture (including fixtures) manufacturing	146	151	155	5	5	.3	.3	16	20	27	2.2	3.1
339	Other furniture related product manufacturing	44	54	61	10	7	2.0	1.3	5	7	10	4.1	2.8
3391	Miscellaneous manufacturing	693	692	715	-1	24	.0	.3	85	114	151	3.0	2.9
3399	Medical equipment and supplies manufacturing	297	309	329	12	20	.4	.6	37	55	91	4.1	5.2
42	Other miscellaneous manufacturing	395	383	387	-12	4	-.3	.1	49	59	60	2.0	.1
44–45	Wholesale trade	5,110	5,641	6,279	531	638	1.0	1.1	600	1,025	1,622	5.5	4.7
48, 492, 493	Retail trade	12,828	15,047	17,129	2,219	2,082	1.6	1.3	667	1,013	1,420	4.3	3.4
481	Transportation and warehousing	3,462	4,205	5,120	744	914	2.0	2.0	436	576	820	2.8	3.6
482	Air transportation	520	559	626	40	67	.7	1.1	100	142	229	3.6	4.9
483	Rail transportation	248	218	197	-30	-21	-1.3	-1.0	37	44	58	1.8	2.7
484, 492	Water transportation	57	52	50	-5	-1	-.9	-.3	21	21	28	-.1	2.8
485	Truck transportation and couriers and messengers	1,496	1,897	2,404	401	507	2.4	2.4	170	240	349	3.5	3.8
485	Transit and ground passenger												

See footnotes at end of table.

Table 3. Continued—Employment and output by industry, 1992, 2002, and projected 2012

2002 NAICS	Industry	Employment							Output				
		Thousands of jobs			Change		Average annual rate of change		Billions of chained 1996 dollars			Average annual rate of change	
		1992	2002	2012	1992–2002	2002–12	1992–2002	2002–12	1992	2002	2012	1992–2002	2002–12
	transportation	288	372	488	84	116	2.6	2.8	21	26	30	2.2	1.2
486	Pipeline transportation	60	42	42	-19	0	-3.6	.0	30	27	29	-1.0	.7
487,488	Scenic and sightseeing transportation and support activities for transportation	388	553	652	165	100	3.6	1.7	36	44	57	2.1	2.6
493	Warehousing and storage	406	514	660	108	147	2.4	2.5	21	31	42	4.1	3.1
51	Information	2,641	3,420	4,052	779	632	2.6	1.7	481	891	1,498	6.4	5.3
511	Publishing industries	854	970	1,133	115	163	1.3	1.6	134	222	334	5.1	4.2
5111	Newspaper, periodical, book, and directory publishers	740	714	703	-27	-11	-4	-1	105	122	132	1.5	0.8
5112	Software publishers	114	256	430	142	174	8.4	5.3	31	102	229	12.6	8.4
516, 518, 519	Internet services, data processing, and other information services	307	529	773	222	244	5.6	3.9	25	87	233	13.1	10.3
512	Motion picture and soundrecording industries	254	387	503	133	116	4.3	2.7	50	93	178	6.3	6.7
515, 517	Broadcasting and telecommunications	1,226	1,535	1,643	309	109	2.3	.7	272	491	745	6.1	4.3
5151	Radio and television broadcasting	226	241	235	15	-6	0.6	-2	34	40	46	1.7	1.5
5152, 5175	Cable and other subscription programming and program distribution	126	221	300	95	79	5.7	3.1	36	53	64	3.9	1.9
517, except 5175	Telecommunications, except cable and other programming distribution	873	1,073	1,108	200	35	2.1	.3	202	401	645	7.1	4.9
52–53	Financial activities	6,540	7,843	8,806	1,303	964	1.8	1.2	1,525	2,230	3,038	3.9	3.1
521, 522, 525, 533	Credit intermediation and related activities, monetary authorities, and funds, trusts, and other financial vehicles	2,414	2,819	3,126	405	308	1.6	1.0	527	794	1,114	4.2	3.4
521, 5221	Monetary authorities and depository credit intermediation	1,793	1,761	1,873	-31	112	-2	.6	281	408	584	3.8	3.7
5222, 5223, 525, 533	Nondepository credit intermediation and related support activities, funds, trusts, and lessors of nonfinancial intangible (except	621	1,058	1,253	436	196	5.5	1.7	246	386	530	4.6	3.2
523	Securities, commodity contracts, and other financial investments and related activities	476	801	925	325	124	5.3	1.5	97	350	526	13.6	4.2
524	Insurance carriers and related activities	2,040	2,223	2,391	184	168	.9	.7	313	347	419	1.0	1.9
5241	Insurance carriers	1,367	1,402	1,451	35	49	.3	.3	237	237	288	.0	2.0
5242	Agencies, brokerages, and other insurance												

See footnotes at end of table.

Table 3. Continued—Employment and output by industry, 1992, 2002, and projected 2012

2002 NAICS	Industry	Employment							Output				
		Thousands of jobs			Change		Average annual rate of change		Billions of chained 1996 dollars			Average annual rate of change	
		1992	2002	2012	1992–2002	2002–12	1992–2002	2002–12	1992	2002	2012	1992–2002	2002–12
531	related activities	672	821	940	149	119	2.0	1.4	76	112	133	3.9	1.7
532	Real estate	1,115	1,348	1,513	233	165	1.9	1.2	542	660	873	2.0	2.8
5321	Rental and leasing services	496	652	852	156	200	2.8	2.7	52	88	127	5.3	3.8
53,225, 323	Automotive equipment rental and leasing	151	197	225	46	28	2.7	1.3	14	34	51	9.4	4.2
5324	Consumer goods rental and general rental centers	267	353	484	86	131	2.8	3.2	15	20	27	3.2	2.7
54	Commercial and industrial machinery and equipment rental and leasing	78	102	143	24	41	2.7	3.4	24	34	50	3.5	3.9
5411	Professional, scientific, and technical services	4,594	6,715	8,579	2,122	1,864	3.9	2.5	568	881	1,370	4.5	4.5
5412	Legal services	950	1,112	1,330	162	218	1.6	1.8	142	151	171	0.6	1.3
5413	Accounting, tax preparation, book-keeping, and payroll services	658	867	1,082	209	215	2.8	2.2	58	80	98	3.2	2.1
5414	Architectural, engineering, and related services	902	1,251	1,306	349	54	3.3	.4	110	157	217	3.7	3.3
5415	Specialized design services	81	123	161	42	38	4.2	2.7	13	21	29	5.0	3.6
5416	Computer systems design and related services	445	1,163	1,798	718	635	10.1	4.5	55	127	302	8.8	9.0
5417, 5419	Management, scientific, and technical consulting services	358	732	1,137	374	406	7.4	4.5	59	114	169	6.7	4.1
5418	Scientific research and development and other and technical services	830	1,026	1,241	196	215	2.1	1.9	90	166	284	6.3	5.5
55	Advertising and related services	370	442	525	72	84	1.8	1.7	42	67	111	4.8	5.2
56	Management of companies and enterprises	1,623	1,711	1,906	88	195	.5	1.1	256	468	669	6.2	3.6
561	Administrative and support and waste management and remediation services	4,753	7,584	10,391	2,831	2,807	4.8	3.2	240	433	638	6.1	4.0
5611, 2	Administrative support services	4,516	7,267	9,987	2,751	2,720	4.9	3.2	206	384	572	6.4	4.1
5613	Office administrative and facilities support services	275	390	508	116	117	3.6	2.7	27	58	87	8.1	4.2
5614, 5616, 5619	Employment services	1,593	3,249	5,012	1,656	1,764	7.4	4.4	47	104	172	8.3	5.1
5615	Business support and investigation and security services and support services, n.e.c.	1,244	1,772	2,261	528	489	3.6	2.5	64	114	165	6.0	3.7
5617	Travel arrangement and reservation services ..	245	258	226	13	-32	.5	-1.3	21	25	36	1.8	3.7
562	Services to buildings and dwellings	1,160	1,597	1,980	438	383	3.3	2.2	47	81	109	5.5	3.1
	Waste management and remediation services	237	317	404	80	87	3.0	2.5	34	49	66	3.7	3.0

See footnotes at end of table.

Table 3. Continued—Employment and output by industry, 1992, 2002, and projected 2012

2002 NAICS	Industry	Employment							Output				
		Thousands of jobs			Change		Average annual rate of change		Billions of chained 1996 dollars			Average annual rate of change	
		1992	2002	2012	1992–2002	2002–12	1992–2002	2002–12	1992	2002	2012	1992–2002	2002–12
61	Educational services	1,713	2,651	3,410	938	759	4.5	2.6	95	125	149	2.8	1.8
62	Health care and social assistance ...	10,178	13,533	17,919	3,355	4,386	2.9	2.8	719	962	1,326	3.0	3.3
621	Ambulatory health care services	3,200	4,634	6,532	1,434	1,899	3.8	3.5	332	452	656	3.1	3.8
6211–3	Offices of health practitioners	2,267	3,190	4,419	923	1,229	3.5	3.3	251	332	469	2.9	3.5
6214–6, 6219	Ambulatory health care services except offices of health practitioners	933	1,444	2,113	511	670	4.5	3.9	82	120	424	2.7	2.4
622	Hospitals	3,711	4,153	4,785	442	632	1.1	1.4	256	334	424	2.7	2.4
623	Nursing and residential care facilities	2,044	2,743	3,685	700	942	3.0	3.0	71	88	114	2.1	2.6
6231–2	Nursing care and residential mental health facilities	1,578	2,048	2,607	470	559	2.6	2.4	56	65	82	1.5	2.4
6233, 6239	Community care facilities for the elderly and residential care facilities, n.e.c	465	695	1,078	230	382	4.1	4.5	16	23	33	4.2	3.4
624	Social assistiatnce	1,223	2,004	2,917	780	913	5.1	3.8	59	88	132	4.1	4.1
6241–3	Individual, family, community, and vocational rehabilitation services	777	1,269	1,867	493	597	5.0	3.9	34	52	78	4.2	4.1
6244	Child day care services	447	734	1,050	288	316	5.1	3.6	24	37	55	4.3	4.0
71	Arts, entertainment, and recreation	1,236	1,778	2,275	542	497	3.7	2.5	95	143	200	4.2	3.4
711	Performing arts, spectator sports, and related industries	290	358	421	68	63	2.1	1.6	41	53	65	2.4	2.2
7111, 7113–5	Performing arts companies, promoters, agents, managers and independent artists	195	240	277	45	37	2.1	1.4	27	34	43	2.4	2.3
7112	Spectator sports	95	118	144	23	26	2.2	2.0	15	19	22	2.3	1.9
712	Museums, historical sites, and similar institutions	75	113	136	38	24	4.1	1.9	4	7	9	5.9	2.7
713	Amusement, gambling, and recreation industries	872	1,308	1,717	436	410	4.1	2.8	49	83	126	5.5	4.2
72	Accomodation and food services	8,201	10,191	11,829	1,991	1,638	2.2	1.5	347	449	597	2.6	2.9
721	Accommodation	1,562	1,780	2,080	218	301	1.3	1.6	90	116	173	2.5	4.1
7211	Traveler accommodation	1,517	1,726	2,019	209	293	1.3	1.6	88	113	169	2.5	4.1
7212–3	RV parks, recreational camps, and rooming and boarding houses	44	53	62	9	8	1.9	1.5	2	3	4	2.1	3.2
722	Food services and drinking places	6,639	8,412	9,749	1,773	1,337	2.4	1.5	256	333	423	2.7	2.4

See footnotes at end of table.

Table 3. Continued—Employment and output by industry, 1992, 2002, and projected 2012

2002 NAICS	Industry	Employment							Output				
		Thousands of jobs			Change		Average annual rate of change		Billions of chained 1996 dollars			Average annual rate of change	
		1992	2002	2012	1992–2002	2002–12	1992–2002	2002–12	1992	2002	2012	1992–2002	2002–12
81	Other services	5,120	6,105	7,065	985	960	1.8	1.5	298	382	506	2.5	2.9
811	Repair and maintenance	964	1,241	1,418	277	177	2.6	1.3	118	158	205	2.9	2.7
8111	Automotive repair and maintenance	636	897	1,046	261	149	3.5	1.6	69	93	124	3.1	2.9
8112	Electronic and precision equipment repair and maintenance	99	105	101	7	-5	.6	-.5	17	17	18	.5	.2
8113	Commercial and industrial equipment (except automotive and electronic) repair and maintenance	149	156	185	8	29	.5	1.7	16	28	42	5.4	4.1
8114	Personal and household goods repair and maintenance	80	82	86	2	3	.2	.4	17	20	22	2.0	.7
812	Personal and laundry services	1,099	1,247	1,485	148	238	1.3	1.8	76	98	125	2.6	2.4
8121	Personal care services	434	523	667	89	144	1.9	2.5	20	27	35	2.8	2.6
8122	Death care services ..	116	139	155	22	16	1.8	1.1	12	12	13	.5	.8
8123	Drycleaning and laundry services	359	366	393	7	27	.2	.7	18	21	25	1.5	1.7
8129	Other personal Services	190	219	270	29	51	1.4	2.1	26	38	53	4.0	3.3
813	Religious, grantmaking, civic, professional, and similar organizations	2,177	2,861	3,460	684	600	2.8	1.9	94	117	166	2.2	3.6
8131–3	Religious, grantmaking and giving services, and social advocacy organizations	1,403	1,944	2,372	541	428	3.3	2.0	49	66	107	3.1	4.9
81,348,139	Civic, social, business, and similar organizations	774	917	1,088	143	172	1.7	1.7	45	50	59	1.2	1.5
814	Private households ...	880	757	703	-123	-54	-1.5	-.7	10	9	11	-.8	1.1
....., 491	Federal Government ..	3,111	2,767	2,779	-344	12	-1.2	.0	394	378	443	-.4	1.6
491	Postal Service	800	845	807	45	-38	.5	-.5	51	61	76	1.7	2.2
....	Federal electric utilities	28	28	24	1	-4	.2	-1.7	7	9	11	2.5	2.0
....	Federal Government enterprises, n.e.c.	138	52	32	-86	-20	-9.3	-4.6	6	7	11	1.4	4.1
....	Federal general government	2,145	1,842	1,915	-303	73	-1.5	.4	252	209	216	-1.9	.4
....	Federal Government capital services	-	-	-	-	-	-	-	78	93	133	1.7	3.7
....	Local government passenger transit	210	231	260	21	29	1.0	1.2	7	9	10	2.6	.4
....	State and local government	15,675	18,722	21,240	3,047	2,518	1.8	1.3	685	839	980	2.0	1.6
....	State and local electric utilities	85	93	108	9	14	1.0	1.4	18	24	29	2.5	2.2
....	State and local government												

See footnotes at end of table.

Table 3. Continued—Employment and output by industry, 1992, 2002, and projected 2012

2002 NAICS	Industry	Employment							Output					
		Thousands of jobs			Change		Average annual rate of change		Billions of chained 1996 dollars			Average annual rate of change		
		1992	2002	2012	1992–2002	2002–12	1992–2002	2002–12	1992	2002	2012	1992–2002	2002–12	
....	enterprises	532	689	734	157	46	2.6	.6	78	104	131	2.9	2.4	
....	State and local government hospitals	1,083	995	1,024	-89	29	-9	.3	41	48	56	1.5	1.5	
....	State and local government education	7,875	9,876	11,606	2,002	1,730	2.3	1.6	276	321	375	1.5	1.5	
....	State and local general government, n.e.c.	5,890	6,838	7,508	948	670	1.5	.9	207	241	260	1.5	.8	
....	State and local government capital services	-	-	-	-	-	-	-	58	93	122	4.9	2.8	
....	Owner-occupied dwellings	-	-	-	-	-	-	-	552	710	907	2.6	2.5	
11	Agriculture	2,639	2,245	1,905	-394	-340	-1.6	-1.6	274	300	352	.9	1.6	
111, 112 1131–2, 114	Agricultural products ...	2,318	1,955	1,632	-362	-324	-1.7	-1.8	221	246	286	1.1	1.5	
1133	Forestry, fishing, hunting, and trapping	96	68	50	-28	-17	-3.4	-2.9	12	12	14	-4	1.7	
115	Logging	120	98	90	-23	-7	-2.1	-8	29	31	36	.8	1.4	
	Support activities for agriculture and forestry	105	124	133	19	9	1.6	.7	11	11	16	-3	3.4	
	Nonagriculture self-employed and unpaid family workers	9,009	9,018	9,162	10	144	.0	.2	-	-	-	-	-	
	Secondary wage and salary jobs in agricultural production, forestry, fishing, and private household industries	178	143	128	-35	-15	-2.2	-1.1	-	-	-	-	-	
	Secondary jobs as a self-employed or unpaid family worker	1,973	1,545	1,434	-428	-111	-2.4	-7	-	-	-	-	-	
....	Total ^{5,6}	123,325	144,014	165,319	20,689	21,305	1.6	1.4	12,272	16,822	23,250	3.2	3.3	

¹ Includes agriculture, forestry, fishing, and hunting data from the Current Population Survey, except logging, which is from the Current Employment Survey and government wage and salary workers, which are excluded.

² Comparable estimate of output growth is not available.

³ Workers who hold a secondary wage and salary job in agricultural production, forestry, fishing, and private household industries.

⁴ Wage and salary workers who hold a secondary wage and salary job as a self-employed or unpaid family worker.

⁵ Wage and salary data are from the Current Employment Statistics survey, which counts jobs, whereas self-employed, unpaid family workers, and agriculture, forestry, fishing, and hunting are from the Current Population Survey which counts workers.

⁶ Output subcategories do not necessarily add to higher categories as a by product of chainweighting.

Note: Dash indicates data not available.
n.e.c. = not elsewhere classified.

Fueling 7.4 percent average annual increases between 1992 and 2002, the demand for employment services, the largest industry within the professional and business services group, heightened as companies sought new ways to reduce costs and become more responsive to changes in market demand. Even though this industry, which includes temporary staffing services, professional employer organizations, and employ-

ment placement agencies, is projected to grow significantly slower than in the past, its 4.4 percent growth rate still ranks among the top five industries with the fastest employment increases. The projected addition of 1.8 million workers by 2012 translates into 5.0 million total jobs, and positions this industry as the second largest source of jobs created by 2012. (See table 6.) The catalyst for this industry's positive relative

momentum will be increases in the demand for temporary staffing services, as flexible work arrangements and schedules continue to proliferate. In addition, professional employer organizations are expected to continue their historical growth as companies, facing increasingly complex employee-related laws and regulations look to control costs, reduce risks, and provide more integrated services by contracting out their personnel management, health benefits, workers' compensation and unemployment insurance, tax, and payroll responsibilities. Employment placement agencies, which provide preliminary employment screening tasks and executive recruitment services, are expected to be the slowest employment services sector. Employment increases for this industry are projected to be tempered by reduced labor needs from online employment placement agencies and various segments of competition, for example, job matching Internet sites operated by educational institutions and professional associations.

The projected growth rate for employment in computer systems design and related services is 4.5 percent—among the five fastest in the economy and more than three times faster than the economy's average. Setting a staggering precedent over the 1992–2002 period, this industry's employment grew at a 10.1-percent annual rate, compared with 1.8 percent for total nonfarm job growth. Employment in computer systems design and related services, providing expertise in the field of information technologies, grew from 445,000 jobs in 1992 to 1.2 million in 2002, and is projected to increase to 1.8 million by 2012. Reflecting the expansion of electronic commerce, a growing reliance on the Internet, faster and more efficient internal and external communication, and the implementation of new technologies and applications, the 635,000 projected growth in jobs also ranks this industry among the economy's largest growing.⁷

The importance of computer systems design and related services industry can also be realized by its output growth position. As table 5 shows, this industry is one of the fastest growing, with a projected output growth rate of 9.0 percent annually. This projected growth rate is slightly higher than the 8.8-percent average annual rate of increase posted during the 1992–2002 period.

Employment in management, scientific, and technical consulting services is expected to increase from 732,000 in 2002 to 1.1 million in 2012—an annual rate of 4.5 percent and among the five fastest in the economy. Attributed to continued economic development and growing business complexity, businesses will continue to need advice on planning and logistics, implementation of new technologies, and compliance with government tax, environmental, and employee benefits and workplace safety laws and regulations.

Health services. The gradual aging of the population, coupled with advances in medical technologies that increase

life expectancies, will place health services as a dominant source of projected employment growth. This sector, comprising mostly health practitioners offices, private hospitals, and nursing and residential care facilities, is expected to account for 1 out of every 6 new jobs created by 2012. The resulting 3.5 million additional workers will be spread throughout this large and diverse sector.

Of the 241.6 million people aged 16 and older, 32.4 percent or 78.2 million are projected to be 55 or older by 2012. Their projected 2.7 percent annual growth rate is more than double the average annual increases for the population as a whole. The reality of an aging population will result in employment in nursing care and residential mental health facilities, which include hospices, nursing and convalescent homes, to grow by 559,000 and reach 2.6 million in 2012. However, this trend will be eclipsed by potential Government budget constraints, a continued shift towards less expensive home health care and assisted living, and a healthier elderly population.⁸ Community care facilities for the elderly and residential care facilities (not elsewhere classified), which provide assisted living services, is expected to grow at an average annual rate of 4.5 percent—third fastest in the economy. Growth in these types of facilities reflects the desire of many elderly to maintain an independent lifestyle. Employment in this industry is expected to expand by 382,000 to reach above the 1.0 million mark by 2012.

Echoing the same rationale of maintained independence and nursing home avoidance, health care for the elderly that is provided at their home is expected to be the main driver behind the aggressive growth in ambulatory health care services—almost 670,000 additional jobs added at an average annual rate of 3.9 percent from 2002 to 2012.

Employment growth in private hospitals, facing industry cost pressures and increased utilization of clinics and other alternative care sites, will be the slowest within the health services industry. However, due to this industry's relatively large size, private hospitals are projected to be the fourteenth largest source of employment growth in 2012—adding 632,000 jobs and reaching a total employment level of 4.8 million. Spurred to reduce costs, hospitals are increasingly providing services on an outpatient or ambulatory basis, limiting unnecessary or low-priority services, and stressing preventative care.⁹ These trends, in turn, will provide the impetus for the aggressive growth that is expected for offices of health practitioners and the outpatient care center portion of the ambulatory health care services industry. Offices of health practitioners, providing medical, surgical, and dental services outside the traditional hospital setting are expected to grow at a 3.3-percent average annual rate—significantly faster than the economy as a whole. The 1.2 million new jobs expected to be generated by offices of health practitioners rank this industry among the largest sources of employment growth in

the economy. Reflecting the growing demand for services provided by offices of health practitioners, rising expenditures will also rank this industry among the largest in terms of output growth—consumers are expected to demand \$468.9 billion by 2012, an increase of \$136.6 billion over its 2002 level.

Social assistance. Employment within the social assistance sector, surpassing the 2 million mark in 2002, grew at a staggering 5.1 percent from 1992 to 2002—almost triple the employment growth rate for the overall economy. Even though that rate is expected to slow to 3.8 percent over the projected period, this sector, which provides diverse services ranging from community food, housing, and emergency relief services to child daycare services, is expected to be responsible for generating almost a million more jobs. This sector is also expected to maintain its robust historical 4.1 percent output growth rate over the projected period.

Leading this sector in terms of employment size and growth, employment in the individual, family, community, and vocational rehabilitation services industry is projected to increase at a 3.9-percent annual rate, to 1.9 million jobs in 2012 from 1.3 million jobs in 2002. This reflects the continued expansion of services for the elderly and families in crisis, as well as an increased emphasis on earlier and better integration of the physically disabled and mentally ill into society.

As the increase in the population of women of childbearing age was accompanied by a slight increase in the proportion of such women in the labor force, demand for child daycare services, the other industry within this sector, grew at a staggering pace—5.1 percent annually from 1992 to 2002. Even though these demographic changes are expected to abate over the projected 2002–12 period, government increases in funding and promotion, welfare reform legislation that require more welfare recipients to work, and an increasing amount of employer-operated daycare centers will keep this industry among the fastest growing in terms of projected employment. Employment in child daycare services is expected to increase by 316,000 jobs to 1.1 million by 2012.

Leisure and hospitality. Employment in leisure and hospitality industries increased by 2.5 million over the 1992–2002 period, posting an above average 2.4-percent annual growth rate. The projected 2002–2012 employment increase of 2.1 million translates into 14.1 million total jobs, and represents a slower annual growth rate of 1.7 percent. Primarily including food services and drinking places, this sector will continue to play a prominent job creation role in the economy—approximately 10 percent of new jobs are expected to be stimulated by this diverse industry group. Real output for this sector is expected to be maintained at its historical 3.0 percent annual pace, reaching \$797.2 billion by 2012.

Jobs in food services and drinking places are projected to

increase by 1.3 million from the 2002 level of 8.4 million to arrive at the 2012 level of 9.8 million. On an annual average basis, the projected employment growth rate of 1.5 percent is slower than 2.4 percent rate and 1.8 million jobs posted during the 1992–2002 period. Demographic factors such as increases in population, personal incomes, leisure time, and dual-income families will still contribute to this industry being the fifth largest source of employment growth by 2012. Output for food services and drinking places is projected to keep close pace with its 1992–2002 historical growth rate of 2.7 percent.

The amusement, gambling, and recreation industry, which includes a diverse group of casinos, amusement parks, and fitness clubs, is expected to be one of the fastest and largest sources of employment growth by 2012. Reflecting increasing personal incomes, leisure time, and awareness of the health benefits of physical fitness, the strong gain in jobs for this industry is an expected 410,000, rising to 1.7 million from the 2002 level of 1.3 million. Output is projected to grow at a rapid 4.2-percent annual rate, making this a \$126.0 billion industry by 2012.

Wholesale and retail trade. Wholesale trade is projected to add 638,000 jobs to its 2002 level of 5.6 million, to reach 6.3 million by 2012. Due in part to its relative size, the wholesale trade industry ranks as one of the main sources of employment growth over the projected period. The annual employment growth rate of 1.1 percent is comparable to the industry's annual growth rate over the previous decade. Hedging the growth in employment, the wholesale trade industry is expected to continue its consolidation trends because of globalization, and cost pressures. In addition, productivity-enhancing technology such as e-commerce will further constrain the pace of employment growth. However, the expansion of customer services should increase demand for this industry's supply and distribution services. Real output for wholesale trade is expected to increase by 4.7 percent annually through 2012, expanding by almost \$600 billion to \$1.6 trillion. This gives this industry the distinction of being the second largest source of projected output growth and one of the economy's fastest.

The retail trade industry is the Nation's largest employer, with about 15.0 million jobs in 2002. Even though the projected employment annual growth rate of 1.3 percent represents a slowdown relative to the past decade, this industry, by adding 2.1 million new jobs and reaching 17.1 million by 2012, will continue to be the dominant source of employment. Real output for retail trade is expected to grow to \$1.4 trillion in 2012 from \$1.0 trillion in 2002, or at an average annual rate of 3.4 percent.

Government. Employment in the public sector is projected to increase by 2.5 million from its 2002 level of 21.5 million

Table 4. Industries with the fastest growing and most rapidly declining wage and salary employment, 2002–12

2002 NAICS	Industry description	Thousands of jobs		Change	Average annual rate of change
		2002	2012	2002–12	2002–12
Fastest growing					
5112	Software publishers	256.0	429.7	173.7	5.3
5416	Management, scientific, and technical consulting services	731.8	1,137.4	405.6	4.5
6233, 6239	Community care facilities for the elderly and residential care facilities, n.e.c.	695.3	1,077.6	382.3	4.5
5415	Computer systems design and related services	1,162.7	1,797.7	635.0	4.5
5613	Employment services	3,248.8	5,012.3	1,763.5	4.4
6241–3	Individual, family, community, and vocational rehabilitation services	1,269.3	1,866.6	597.3	3.9
6214–6,6219	Ambulatory health care services except offices of health practitioners	1,443.6	2,113.4	669.8	3.9
2213	Water, sewage, and other systems	48.5	71.0	22.5	3.9
516, 518, 519	Internet services, data processing, and other information services	528.8	773.1	244.3	3.9
6244	Child day care services	734.2	1,050.3	316.1	3.6
5324	Commercial and industrial machinery and equipment rental and leasing	102.2	142.8	40.6	3.4
6211–3	Offices of health practitioners	3,189.9	4,418.8	1,228.9	3.3
5322, 5323	Consumer goods rental and general rental centers	352.9	484.2	131.3	3.2
5152, 5175	Cable and other subscription programming and program distribution	220.9	299.8	78.9	3.1
713	Amusement, gambling, and recreation industries	1,307.6	1,717.3	409.7	2.8
485	Transit and ground passenger transportation	371.5	487.7	116.2	2.8
5414	Specialized design services	122.9	160.8	37.9	2.7
5611, 2	Office administrative and facilities support services	390.3	507.6	117.3	2.7
512	Motion picture and sound recording industries	387.1	503.1	116.0	2.7
61	Educational services	2,650.6	3,409.8	759.2	2.6
Most rapidly declining					
3152	Cut and sew apparel manufacturing	281.8	77.1	-204.7	-12.2
3151	Apparel knitting mills	49.6	20.0	-29.6	-8.7
3133	Textile and fabric finishing and fabric coating mills	82.4	40.1	-42.3	-6.9
3161	Leather and hide tanning and finishing	8.6	4.5	-4.1	-6.3
313	Textile mills	293.2	156.9	-136.3	-6.1
3169	Other leather and allied product manufacturing	19.9	10.8	-9.1	-5.9
3132	Fabric mills	146.6	79.6	-67.0	-5.9
3159	Apparel accessories and other apparel manufacturing	26.2	15.1	-11.1	-5.4
3131	Fiber, yarn, and thread mills	64.2	37.2	-27.0	-5.3
3122	Tobacco manufacturing	33.2	20.2	-13.0	-4.8
2122	Metal ore mining	29.4	18.0	-11.4	-4.8
NA	Federal Government enterprises, n.e.c.	51.9	32.4	-19.5	-4.6
2121	Coal mining	74.9	52.3	-22.6	-3.5
3259	Other chemical product and preparation manufacturing	112.4	79.4	-33.0	-3.4
3311	Iron and steel mills and ferroalloy manufacturing	107.1	76.0	-31.1	-3.4
211	Oil and gas extraction	122.5	88.4	-34.1	-3.2
3341	Computer and peripheral equipment manufacturing	249.8	182.1	-67.7	-3.1
1131–2, 114	Forestry, fishing, hunting, and trapping	67.6	50.4	-17.2	-2.9
3221	Pulp, paper, and paperboard mills	168.2	126.4	-41.8	-2.8
3252	Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	114.3	88.5	-25.8	-2.5

NOTE: n.e.c. = not elsewhere classified.

through 2012. This reflects an annual growth rate of 1.1 percent, slower than the total nonfarm wage and salary increase of 1.5 percent. Federal Government employment is projected to maintain its 2002 level of 2.8 million, adding only 12,000 jobs by 2012. Job growth generated by increased homeland security needs is expected to be offset by other Federal agency

budgetary constraints, the growing use of private contractors, and the transfer of some functions to State and local government. The expected stabilizing outcome is a divergence from this sector's historical employment declines of 1.2 percent annually from 1992–2002.

State and local government employment is projected to

Table 5. Industries with the fastest growing and most rapidly declining output growth, 2002–12

2002 NAICS	Industry description	Billions of chained (1996) dollars		Change	Average annual rate of change
		2002	2012	2002–12	2002–12
Fastest growing					
3341	Computer and peripheral equipment manufacturing	262.8	2,292.7	2,029.9	24.2
3342	Communications equipment manufacturing	100.0	268.1	168.1	10.4
516, 518, 519	Internet services, data processing, and other information services	86.9	232.6	145.7	10.3
5415	Computer systems design and related services	127.1	302.2	175.1	9.0
5112	Software publishers	102.2	228.8	126.6	8.4
512	Motion picture and sound recording Industries	92.8	177.8	85.0	6.7
3362	Motor vehicle body and trailer manufacturing	22.1	38.5	16.4	5.7
5417, 5419	Scientific research and development and other professional, scientific, and technical services	166.4	283.7	117.3	5.5
3391	Medical equipment and supplies manufacturing	54.8	91.2	36.4	5.2
3339	Other general purpose machinery manufacturing	50.8	84.3	33.4	5.2
5418	Advertising and related services	66.8	110.6	43.8	5.2
5613	Employment services	104.4	171.7	67.3	5.1
3335	Metalworking machinery manufacturing	23.3	37.6	14.4	4.9
8131–3	Religious, grantmaking and giving services, and social advocacy organizations	66.2	107.0	40.8	4.9
481	Air transportation	142.2	229.5	87.3	4.9
517, except 5175	Telecommunications, except cable and other programming distribution	400.6	644.7	244.0	4.9
3353	Electrical equipment manufacturing	28.6	45.5	16.9	4.7
42	Wholesale trade	1,025.3	1,622.5	597.2	4.7
6214-6,6219	Ambulatory health care services except offices of health practitioners	120.2	188.3	68.1	4.6
3321	Forging and stamping	22.8	35.5	12.8	4.5
Most rapidly declining					
3151	Apparel knitting mills	6.4	2.3	-4.1	-9.7
3152	Cut and sew apparel manufacturing	39.8	17.1	-22.7	-8.1
3169	Other leather and allied product manufacturing	2.1	1.0	-1.2	-7.7
3161	Leather and hide tanning and finishing	2.6	1.2	-1.4	-7.7
3133	Textile and fabric finishing and fabric coating mills	12.2	6.5	-5.6	-6.0
3251	Basic chemical manufacturing	97.5	75.6	-21.9	-2.5
3131	Fiber, yarn, and thread mills	10.5	8.2	-2.4	-2.5
3159	Apparel accessories and other apparel manufacturing	3.8	3.3	-.6	-1.5
2121	Coal mining	26.2	23.4	-2.8	-1.1
211	Oil and gas extraction	87.4	79.6	-7.8	-9
2123	Nonmetallic mineral mining and quarrying	17.5	16.7	-.8	-.5
3221	Pulp, paper, and paperboard mills	67.7	64.7	-3.0	-.5
3252	Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	56.4	54.0	-2.4	-.4
3132	Fabric mills	22.1	21.1	-.9	-.4
3122	Tobacco manufacturing	34.2	33.1	-1.0	-.3
3314	Nonferrous metal (except aluminum) production and processing	21.8	21.1	-.6	-.3

increase from the 1992 level of 18.7 million to 21.2 million jobs by 2012. The annual rate of growth is expected to slow from 1.8 percent posted between 1992 and 2002 to 1.3 percent through 2012. Driving this growth is the expected 1.7 million jobs from State and local government education, which accounts for more than half of all State and local government employment. Even though flat enrollments for preschool, elementary, and secondary classes are projected, proposed government reforms such as universal preschool, all-day kin-

dergarten, and reduced class size should buoy the employment demand for this segment of State and local government education. Rising enrollments in post-secondary education, spurred by children of the baby boomers reaching college age and a general demand for continued career and skills training, therefore, will be the main catalyst for this industry’s overall employment growth.¹⁰

Output for State and local hospitals is expected to moderately grow at 1.5 percent annually as these hospitals continue

Table 6. Industries with the largest wage and salary employment growth and declines, 2002–12

2002 NAICS	Industry description	Thousands of jobs		Change	Average annual rate of change
		2002	2012	2002–12	2002–12
Largest growth					
44–45	Retail trade	15,047.2	17,129.2	2,082.0	1.3
5613	Employment services	3,248.8	5,012.3	1,763.5	4.4
NA	State and local government education	9,876.0	11,606.0	1,730.0	1.6
722	Food services and drinking places	8,411.7	9,749.0	1,337.3	1.5
6211–3	Offices of health practitioners	3,189.9	4,418.8	1,228.9	3.3
23	Construction	6,731.7	7,745.4	1,013.7	1.4
61	Educational services	2,650.6	3,409.8	759.2	2.6
6214–6,6219	Ambulatory health care services except offices of health practitioners	1,443.6	2,113.4	669.8	3.9
NA	State and local general government, n.e.c.	6,838.4	7,508.1	669.7	.9
42	Wholesale trade	5,641.1	6,279.3	638.2	1.1
5415	Computer systems design and related services	1,162.7	1,797.7	635.0	4.5
622	Hospitals	4,153.1	4,785.0	631.9	1.4
6241–3	Individual, family, community, and vocational rehabilitation services	1,269.3	1,866.6	597.3	3.9
6231–2	Nursing care and residential mental health facilities	2,047.8	2,607.1	559.3	2.4
484, 492	Truck transportation and couriers and messengers	1,897.1	2,404.3	507.2	2.4
5614, 5616, 5619	Business support and investigation and security services and support services, n.e.c.	1,772.3	2,260.8	488.5	2.5
8131–3	Religious, grantmaking and giving services, and social advocacy organizations	1,944.2	2,372.0	427.8	2.0
713	Amusement, gambling, and recreation industries	1,307.6	1,717.3	409.7	2.8
5416	Management, scientific, and technical consulting services	731.8	1,137.4	405.6	4.5
5617	Services to buildings and dwellings	1,597.3	1,980.2	382.9	2.2
Largest declines					
111,112	Agricultural products	1,955.4	1,631.8	–323.6	–1.8
3152	Cut and sew apparel manufacturing	281.8	77.1	–204.7	–12.2
3364	Aerospace product and parts manufacturing	468.3	385.7	–82.6	–1.9
3344	Semiconductor and other electronic component manufacturing	531.4	452.0	–79.4	–1.6
3341	Computer and peripheral equipment manufacturing	249.8	182.1	–67.7	–3.1
3132	Fabric mills	146.6	79.6	–67.0	–5.9
3345	Navigational, measuring, electromedical, and control instruments manufacturing	450.6	395.6	–55.0	–1.3
814	Private households	757.0	702.7	–54.3	–.7
3133	Textile and fabric finishing and fabric coating mills	82.4	40.1	–42.3	–6.9
3221	Pulp, paper, and paperboard mills	168.2	126.4	–41.8	–2.8
491	Postal Service	844.8	807.0	–37.8	–.5
211	Oil and gas extraction	122.5	88.4	–34.1	–3.2
3259	Other chemical product and preparation manufacturing	112.4	79.4	–33.0	–3.4
5615	Travel arrangement and reservation services	258.0	225.9	–32.1	–1.3
3311	Iron and steel mills and ferroalloy manufacturing	107.1	76.0	–31.1	–3.4
2211	Electric power generation, transmission, and distribution	435.7	404.7	–31.0	–.7
3251	Basic chemical manufacturing	170.5	139.8	–30.7	–2.0
3222	Converted paper product manufacturing	381.6	351.1	–30.5	–.8
3151	Apparel knitting mills	49.6	20.0	–29.6	–8.7
3131	Fiber, yarn, and thread mills	64.2	37.2	–27.0	–5.3

NOTE: n.e.c. = not elsewhere classified.

to provide services to trauma victims, the poor, and uninsured persons. Employment growth, however, will be limited—increasing by a meager 0.3 percent annually to 1.0 million jobs in 2012 from 995,000 in 2002. This will be due to productivity increases, the trend of some communities eliminating certain services, and more State government hospitals closing or being converted into community general hospitals, which are

usually private, not-for-profit institutions.¹¹

The rest of State and local government employment will grow as a consequence of the events surrounding September 11, 2001; the assumption of some Federal Government responsibilities; and an increasing population demanding more services. Budgetary constraints, reductions in Federal aid, and resistance to tax increases from citizens will work to impede this growth.

Table 7. Industries with the largest output growth and declines, 2002–2012

2002 NAICS	Industry description	Billions of chained (1996) dollars		Change	Average annual rate of change
		2002	2012	2002–12	2002–12
Largest growth					
3341	Computer and peripheral equipment manufacturing	262.8	2,292.7	2,029.9	24.2
42	Wholesale trade	1,025.3	1,622.5	597.2	4.7
44–45	Retail trade	1,013.1	1,420.0	406.9	3.4
521, 522, 525, 533	Credit intermediation and related activities, monetary authorities, and funds, trusts, and other financial vehicles	794.3	1,114.4	320.1	3.4
517, except 5175	Telecommunications, except cable and other programming distribution	400.6	644.7	244.0	4.9
531	Real estate	659.6	873.1	213.5	2.8
551	Management of companies and enterprises	468.3	668.9	200.6	3.6
NA	Owner-occupied dwellings	710.3	906.9	196.6	2.5
521, 5221	Monetary authorities and depository credit intermediation	408.2	584.5	176.3	3.7
523	Securities, commodity contracts, and other financial investments and related activities	350.1	525.9	175.8	4.2
5415	Computer systems design and related services	127.1	302.2	175.1	9.0
3342	Communications equipment manufacturing	100.0	268.1	168.1	10.4
516, 518, 519	Internet services, data processing, and other information services	86.9	232.6	145.7	10.3
5222, 5223, 525, 533	Nondepository credit intermediation and related support activities, funds, trusts, and lessors of nonfinancial intangible assets (except copyrighted works)	386.4	530.4	144.1	3.2
6211–3	Offices of health practitioners	332.3	468.9	136.6	3.5
23	Construction	718.7	851.8	133.1	1.7
5112	Software publishers	102.2	228.8	126.6	8.4
5417, 5419	Scientific research and development and other professional, scientific, and technical services	166.4	283.7	117.3	5.5
484, 492	Truck transportation and couriers and messengers	239.5	349.1	109.6	3.8
622	Hospitals	334.3	424.4	90.1	2.4
Largest declines					
3152	Cut and sew apparel manufacturing	39.8	17.1	–22.7	–8.1
3251	Basic chemical manufacturing	97.5	75.6	–21.9	–2.5
211	Oil and gas extraction	87.4	79.6	–7.8	–9
3133	Textile and fabric finishing and fabric coating mills	12.2	6.5	–5.6	–6.0
3151	Apparel knitting mills	6.4	2.3	–4.1	–9.7
3221	Pulp, paper, and paperboard mills	67.7	64.7	–3.0	–5
2121	Coal mining	26.2	23.4	–2.8	–1.1
3252	Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	56.4	54.0	–2.4	–4
3131	Fiber, yarn, and thread mills	10.5	8.2	–2.4	–5
3161	Leather and hide tanning and finishing	2.6	1.2	–1.4	–7.7
3169	Other leather and allied product manufacturing	2.1	1.0	–1.2	–7.7
3122	Tobacco manufacturing	34.2	33.1	–1.0	–3
3132	Fabric mills	22.1	21.1	–9	–4
2123	Nonmetallic mineral mining and quarrying	17.5	16.7	–8	–5
3314	Nonferrous metal (except aluminum) production and processing	21.8	21.1	–6	–3
3159	Apparel accessories and other apparel manufacturing	3.8	3.3	–6	–1.5

Goods-producing sector

Agriculture. Being the industry with the largest projected declines in employment, farms are expected to repeat their historical trend by shedding an additional 324,000 jobs and settling at 1.6 million workers by 2012. The agriculture sector as a whole is projected to experience the largest declines in employment for any major sector, 340,000 at a 1.6-percent annual rate. Real output, however, is projected to expand annually by 1.6 percent to \$351.6 billion in 2012, up from \$299.6

billion in 2002. The persistent dichotomy between farm employment and production is due predominately to continued productivity growth, which is facilitated by industry consolidations and more efficient farm machinery. The negative trends in employment is expected to be moderated somewhat by the rising demand for organic farm produce, increases in the number of farmer-owned and -operated cooperatives, and targeted government assistance, which all bode relatively well for small- to medium-sized farms. Support activities for agriculture and forestry, which include such services as farm man-

agement, cultivation, and harvesting, is expected to be the only agriculture component posting employment gains. Employment, rising by a modest 0.7-percent rate between 2002 and 2012, is expected to reach 133,000 by 2012.

Mining. Jobs in the mining sector are projected to decline at a 1.3-percent annual rate and reach 451,000 in 2012. This represents a loss of 61,000 jobs and a continuation of its 1992–2002 historical declines. The persistent long-term employment reductions are due to technology driven productivity increases, industry consolidation, stringent environmental regulations, and international competition.¹² Real output is also expected to be reduced at an annual rate of 0.6 percent, contracting to its 1992 level of \$155 billion. Setting the pace for this sector’s employment declines, jobs in metal ore mining, which are subject to industry consolidations and labor saving technologies, are projected to decline at an average annual rate of 4.8 percent. However, because metals are used primarily as raw materials by other industries, the metal ore mining industry is influenced by the strength of the general economy and is expected to be the only production-based mining sector to experience increases in output.

This scenario is juxtaposed against the coal mining industry, which is expected to be one of the fastest declining industries, both in terms of employment and output. Employment is expected to contract by an average annual 3.5 percent, while output is projected to decline by 1.1 percent. Although coal mining is the cheapest, most abundant fossil fuel and accounts for half of this country’s electricity production, employment and production in this industry will be most influenced by how electric utility companies respond to stricter environmental regulations. As the costs of compliance increases, through, for example, the installation of costly cleaning and monitoring equipment, the demand for coal is expected to shrink. Therefore, output is expected to contract slightly ahead of its 1992 level of \$22 billion from its 2002 level of \$26 billion.

Accounting for the majority of this sector’s employment in 1992, the oil and gas extraction industry will reverse its relative prominence by declining from 182,000 jobs in 1992 to 88,000 by 2012. The 34,000 jobs lost at a 3.2-percent annual rate between 2002 and 2012 ranks this industry among the economy’s fastest and largest source of employment declines. Fluctuations in global oil and gas prices, strict environment regulations, limited access to Federal lands, and foreign competition will have a negative impact on this industry’s real output¹³—declining by an annual rate of 0.9 percent to \$80 billion by 2012.

Construction. The construction industry, which is projected to add more than a million jobs by 2012 at a 1.4-percent average rate of growth, is the goods-producing sector’s only source of employment growth. Reaching an employment level

of 7.8 million in 2012, the construction industry is also among the economy’s top-10 largest source of employment growth. Real output, however, is projected to increase at a tamer annual rate of 1.7-percent—slower than the 2.8-percent annual rate achieved during the previous decade and almost half the projected rate for the economy as a whole.

Delayed replacement or remodeling of industrial plants and greater demand for aging-population related nursing, extended care, and high-technology medical treatment facilities will propel nonresidential construction to lead this aggregate segment. However, technology enhancements will dampen demand for new commercial construction, as nontraditional work and retail environments such as teleconferencing, telecommuting, and electronic shopping continue to proliferate. Total nonresidential investment in structures is therefore expected to grow by 1.8 percent over the 2002–12 period.

Residential construction, closely tied to demographic factors will grow at a 2.1-percent pace throughout the 2002–12 period. As baby-boomers reach their peak earning years, the demand for upgraded homes, second homes, and assisted living housing will increase. In addition, as their children, the echo boomers, augment the younger age groups, and the number of immigrants increases, the demand for single-family housing and rental apartments also is projected to increase.

Manufacturing. This sector’s share of total employment is expected to continue to decline, while its share of total output is projected to be maintained—reversing its trend in the prior decade. Reflecting an average annual employment decline of 0.9 percent and an absolute job loss of 1.5 million from 1992 to 2002, manufacturing employment represented only 10.6 percent of total employment in 2002, down from almost 14 percent in 1992. During this decade, manufacturing employment peaked in 1998 at 17.5 million, up from 16.8 million in 1992. The projected, productivity-led declines in this sector’s employment, even though relatively moderate at 158,000, will slightly lower its share of total employment to 9.2 percent in 2012. This translates into 15.2 million wage and salary manufacturing jobs maintained in 2012. Even though the 15.3 million jobs counted in 2002 represents the trough of the 2001 recession, the 2.3 million jobs lost since 1998 are not expected to be recovered.

Up against the dramatic historical output gains in the service-providing sector, the 2.3-percent average annual increases and the \$773.4 billion worth of additional real output that was generated by the manufacturing sector between 1992 and 2002 was not enough for this sector to maintain its 25.9 percent nominal output share in 1992—dropping to 21.1 percent by 2002. However, due to somewhat moderate output growth expectations in the service-sector and an accelerated manufacturing output growth prospect over the projected period, manufacturing’s 2002 share of total nominal output is projected to be maintained. Consistent with overall economic

growth, real output for manufacturing is expected to increase at an average annual rate of 3.4 percent between 2002 and 2012—faster than the 1992–2002 historical 2.3 percent rate, and rivals the service-producing sector’s projected 3.5 percent annual growth rate. Led by productivity gains and strong demand by consumers, businesses, and exports, manufacturing output is expected to increase by \$1.5 trillion to reach \$5.4 trillion by 2012.

The industry manufacturing groups that will lead the pace of output growth are: computer and electronic products manufacturing (11.8 percent); plastics and rubber products manufacturing (4.1 percent); machinery manufacturing (4.0 percent); and fabricated metal products manufacturing (3.4 percent). The industry groups that will contribute the strongest drags on employment are: apparel manufacturing (–11.0 percent); textile mills (6.1 percent); and leather and allied product manufacturing (4.0 percent). These industries are also projected to be the only manufacturing sources with declining output.

The computer and electronic products manufacturing group, which includes computer, communications, semiconductor, and navigational production, highlights the dichotomist relationship between the growth of manufacturing output and the productivity led declines in employment. For example, with a 24.2-percent projected growth rate, the computer and peripheral equipment manufacturing industry has the fastest growing real output of any detailed industry for which BLS prepares projections. Reaching \$2.3 trillion by 2012, a \$2.0 trillion increase over its 2002 output level, this industry is also the economy’s largest source of projected output growth. (See table 7.) However, due to the introduction of new technology and automated manufacturing processes, this industry’s employment is expected to exceed its 2.7 percent historical rate of decline, and lose 68,000 jobs over its 2002 level of 250,000.¹⁴

Communication equipment, with a projected output level of \$268 billion, is this group’s second largest industry. Growing demand for wireless phones as quality and services improve, along with enhanced wireless computer applications and evolving forms of Internet connectivity will expand the output for the communications equipment industry annually by 10.4 percent, the economy’s second fastest rate.

Real output for the plastics and rubber manufacturing group is projected to increase by \$8.2 billion to reach \$244.6 billion in 2012. Employment is expected to reach 991,000 by 2012—a 138,000 increase from the 2002 level. The resulting 1.5-percent average annual rate of growth in employment makes plastics and rubber manufacturing the fastest and largest growing group within the manufacture sector. Plastics product manufacturing, the dominant industry within this group, primarily molds plastics for manufacturing industries. Many of the most rapidly growing industries in the economy, including construction and industries manufacturing elec-

tronics, computers, communication equipment, and motor vehicles, use plastic products as an intermediate input in production. Demand by these industries will sustain employment and output growth in the plastics products industry throughout the projected period.

The industries within the apparel and textile mill groups are all among the most rapidly declining industries in terms of employment over the 2002–12 period. Because of its labor-intensive nature, import competition and changing trade regulations are the most important factors behind the apparel industry’s projected employment declines of 246,000, to 112,000 in 2012—greater than any other industry’s reduction except agriculture. Transforming textile mill fabrics into clothing and accessories, this industry’s output is also projected to decline by 7.6 percent annually, which is the economy’s most aggressive pace. Real output is expected to contract from \$50.0 billion in 2002 to \$22.8 billion in 2012 as new automation, fierce retailer cost-cutting pressures, and consolidations all negatively influence this industry. Echoing the decline of the domestic apparel industry, the textile mills group will experience similar downward trends in employment and output. Employment, projected to contract almost by half, is expected to decline by 136,000 to 157,000 in 2012, while real output declines by 2.2 percent annually, to \$35.8 billion in 2012.

In 1992 and 2002, the largest share of nominal manufacturing output, more than 15 percent, was produced by the transportation equipment manufacturing group. By 2012, even though the percent share commanded by the computer electronic production manufacturing industry will run a close second, transportation equipment manufacturing will maintain its relative dominance. Highlighting this fact, transportation equipment manufacturing, which includes motor vehicle, aerospace, railroad, and shipbuilding is the largest manufacturer employer, with about 1.8 million workers in 2002. Amid a relatively small drop in employment over the projected period, this industry group will continue to be manufacturing’s dominant source of employment. Jobs in aerospace product and parts manufacturing, the principal employment sector within transportation equipment manufacturing, is projected to decline by 83,000 workers to 386,000 by 2012. Real output for the aerospace product and parts industry, which produces aircraft, guided missiles, and space vehicles, declined from \$138 billion in 1992 to \$116 billion in 2002. The continued attention given to the Nation’s security will increase the demand for military aircraft and equipment. However, output is expected to maintain its 2002 level as import competition intensifies.

Motor vehicle manufacturing production, the principal sector within transportation equipment manufacturing, in terms of output, stood at \$236 billion in 2002. Facilitated by healthy productivity gains, output is expected to increase by 3.1 percent annually to \$319 billion by 2012. This, however, represents a marginal

slowdown from the 3.6-percent growth experienced over the last decade. Output growth will be limited due to the anticipated slowdown in the growth of the driving age population, competition from foreign producers, improvements in vehicle quality that extend longevity, and safety and environmental regulations that increase production costs. Motor vehicle manufacturing employment in 2002 was 267,000—approximately the same level as that in 1992, and is expected to decline slightly by 0.6 percent annually from 2002 to 2012. The resulting decline to 251,000 jobs by 2012 will be a consequence of companies continuing to absorb productivity-enhancing technologies such as robotics, computers, and factory automation.

THE BLS PROJECTION for the goods-producing sector speaks for the economy as a whole: strong productivity led output gains, coupled with relatively marginal employment increases. Even though the service-providing industries will remain the economy's most dominant sector, the pace of output growth will be on par with its goods-providing counterpart. This represents a significant divergence from the service-providing sector's historical stronger rate of growth. Business fixed investment, the GDP component with the fastest growth rate, is expected to be the main catalyst behind this caveat. Even though demand from personal consumption will remain the

dominant source of output and employment generated in 2012, purchases of new construction and equipment by businesses will be responsible for the accelerated pace of the goods-producing sector's projected output.

Furthermore, as the service-providing sector's pace of employment growth is expected to slightly decelerate, the goods-producing sector will witness a marginal expansion. This is a result of the manufacturing sector stabilizing its previously persistent employment declines and the positive job growth posted by the construction industry. Machinery, fabricated metal, and transportation equipment manufacturing are all large sectors that highlight this expected manufacturing phenomenon. Reflecting an ever-evolving economy, the desire by businesses to enhance productivity, and an aging population, the service-providing sector's most influential industries are professional and business services, and education and health services.

Mirroring trends in many industrialized countries, the latest round of BLS projections sets productivity gains as the medium through which output outpaces the projected growth in the labor force. In addition, its main themes are expected to be an economy that is dominated by the service-providing sector in terms of employment and output share, but witnesses significant gains in the goods-producing sector's rate of growth. □

Notes

¹ This article uses the gross duplicated output concept. Gross duplicated output measures not only GDP, or all final demand purchases of new goods and services, but also all new goods and services produced as intermediate goods for use in further production. Real output is measured as a 1996 based chain-weighted Fisher index and is used for historical rate of growth comparisons. Real output on an industry basis does not add to their higher level aggregates because of chain weighting. See Charles Steindel, "Chain-weighting: The New Approach to Measuring GDP," *Current Issues in Economics and Finance*, Federal Reserve Board of New York, December 1995.

² Providing a more accurate measure of the relative importance of aggregated sectors of the economy, current-dollar output estimates were used in lieu of chain-weighted measures. See J. Steven Landefeld, Brent R. Moulton, and Cindy M. Vojtech, "Chained-Dollar Indexes: Issues, Tips on Their Use, and Upcoming Changes," *Survey of Current Business*, US Department of Commerce, November 2003, pp. 8–16.

³ For further discussion on these factors, see the articles by Mitra Tossi, pp. 37–57; and Betty Su, pp. 23–36, this issue.

⁴ This is the first set of BLS projections developed from the 2002 North American Industrial Classification System (NAICS); past projections utilized the 1987 Standard Industrial Classification System (SIC).

⁵ The Business Cycle Dating Committee, National Bureau of Economic Research, determined in July 2003 that the 2001 recession began in March 2001 and ended in November 2001.

⁶ For more in-depth reading on the comparison of manufacturing productivities across countries, see Aaron E. Cobet and Gregory A. Wilson, "Comparing 50 years of labor productivity in U.S. and for-

eign manufacturing," *Monthly Labor Review*, June 2002, pp. 51–65.

⁷ Also, see "Digital Economy 2002" (Department of Commerce, Economics and Statistics Administration, February 2002).

⁸ For more information on nursing care and residential mental health facilities see, A. Jones, "The National Nursing Home Survey: 1999 Summary" vol. 13, no. 152 (Department of Health and Human Services, National Center for Health Statistics, Vital Health Statistics, 2002).

⁹ For more information on trends affecting hospitals see, *Trend Watch Chartbook 2003* (The American Hospital Association, Washington, DC, July 2003).

¹⁰ See Debra E. Gerald and William J. Hussar, "Projections of Education Statistics to 2012" (U.S. Department of Education, National Center for Education Statistics, Washington, DC, August 2002).

¹¹ *Trend Watch Chartbook 2003*, July 2003.

¹² Also see *International Energy Outlook* (Department of Energy, Energy Information Administration, January 2002) and R. F. Balazik, L. McCartan, D.E. Morse, and S. F. Sibley, "Annual Review 2001," *Mining Engineering*, May 2002.

¹³ For further information on the oil and gas extraction industry, see "Annual Energy Outlook 2002" (Department of Energy, Energy Information Administration, January 2002.)

¹⁴ Also see Christopher Kask and Edward Sieber, "Productivity growth in 'high-tech' manufacturing industries," *Monthly Labor Review*, March 2002, pp. 16–31.