Employment outlook: 2010–2020

Industry employment and output projections to 2020

The health care and social assistance sector and the professional and business services sector will account for almost half the projected job growth from 2010 to 2020; construction is projected to rebound from the most recent recession and add jobs, while employment in manufacturing is expected to decline over the period

Richard Henderson

This release of the Bureau of Labor Statistics (BLS) projections, which are published every 2 years, is the second since the recession that began in December 2007.[1] The characteristics and impacts of a recession are usually understood only in retrospect. Industries are affected differently, and the recovery for each industry can occur at different paces and along different paths. These recovery paths for an industry are greatly influenced by a recession's impact on the industry. The latest recession severely affected the construction industry, while the health care sector seemed unaffected. The biennial BLS projections assume that the economy is at or near full employment. This article will present the industry-level perspective of the BLS employment projections within that context.

BLS projects that total employment in the United States will rise 20.5 million between 2010 and 2020, from about 143.1 million to 163.5 million.[2] The annual growth rate of 1.3 percent reverses the 0.2-percent annual rate of decline that occurred during the 2000–2010 period, in which 3.2 million jobs were lost. The majority of the growth in employment can be attributed to an increase in the number of nonagricultural wage and salary workers, who will account for about 9 out of 10 projected jobs in the upcoming period. This employment growth will add 19.7 million jobs and is expected to reach 150.2 million in 2020.[3] The number of agricultural workers, which includes self-employed people, unpaid family workers, and wage and salary workers, is expected to decline by 130,200. The remaining growth is accounted for by a projected increase of 776,800 nonagricultural self-employed and unpaid family workers, whose employment is projected to rise to more than 9.7 million by 2020. (See table 1.)

Real output is projected to increase from $23.2 trillion to $30.9 trillion (in chain-weighted 2005 dollars),[4] an annual growth rate of 2.9 percent during the 2010–2020 period. This growth rate is faster than the 1.0-percent annual growth rate experienced during the 2000–2010 period. The majority of output growth is projected to come from the service-providing sectors. Real output in these sectors is expected to rise from $16.2 trillion to $21.6 trillion, 2.9 percent per year, over the 2010–2020 period. This growth rate is faster than the 1.8-percent-per-year rate of increase seen in the 2000–2010 period. The service-providing sectors are expected to increase their share of nominal output from 69.4 percent in 2010 to 71.1 percent in 2020. The goods-producing sectors, excluding agriculture, are projected to increase their real output by $1.8 trillion to reach $7.4 trillion in 2020, an annual increase of 2.9 percent. This growth rate is faster than the 1.1-percent annual rate of decline expe-

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Table 1. Employment, by major industry sector, 2000, 2010, and projected 2020

Industry sector	Thousands of jobs			Change		Percent distribution			Annual rate of change	
	2000	2010	2020	2000–2010	2010–2020	2000	2010	2020	2000–2010	2010–2020
Total[1]	146,236.3	143,068.1	163,536.1	–3,168.2	20,468.0	100.0	100.0	100.0	–0.2	1.3
Nonagriculture wage and salary[2]	132,425.0	130,435.6	150,176.8	–1,989.4	19,741.2	90.6	91.2	91.8	–.2	1.4
Goods producing, excluding agriculture	24,569.7	17,705.5	19,496.8	–6,864.2	1,791.3	16.8	12.4	11.9	–3.2	1.0
Mining	520.4	655.9	680.7	135.5	24.8	.4	.5	.4	2.3	.4
Construction	6,786.4	5,525.6	7,365.1	–1,260.8	1,839.5	4.6	3.9	4.5	–2.0	2.9
Manufacturing	17,262.9	11,524.0	11,450.9	–5,738.9	–73.1	11.8	8.1	7.0	–4.0	–.1
Service providing	107,855.3	112,730.1	130,680.1	4,874.8	17,950.0	73.8	78.8	79.9	.4	1.5
Utilities	601.3	551.8	516.1	–49.5	–35.7	.4	.4	.3	–.9	–.7
Wholesale trade	5,933.5	5,456.1	6,200.2	–477.4	744.1	4.1	3.8	3.8	–.8	1.3
Retail trade	15,279.8	14,413.7	16,182.2	–866.1	1,768.5	10.4	10.1	9.9	–.6	1.2
Transportation and warehousing	4,410.3	4,183.3	5,036.2	–227.0	852.9	3.0	2.9	3.1	–.5	1.9
Information	3,630.6	2,710.9	2,851.2	–919.7	140.3	2.5	1.9	1.7	–2.9	.5
Financial activities	7,687.5	7,630.2	8,410.6	–57.3	780.4	5.3	5.3	5.1	–.1	1.0
Professional and business services	16,666.1	16,688.0	20,497.0	21.9	3,809.0	11.4	11.7	12.5	.0	2.1
Educational services	2,390.6	3,149.6	3,968.8	759.0	819.2	1.6	2.2	2.4	2.8	2.3
Health care and social assistance	12,718.3	16,414.5	22,053.9	3,696.2	5,639.4	8.7	11.5	13.5	2.6	3.0
Leisure and hospitality	11,861.6	13,019.6	14,362.3	1,158.0	1,342.7	8.1	9.1	8.8	.9	1.0
Other services	5,885.7	6,031.3	6,850.7	145.6	819.4	4.0	4.2	4.2	.2	1.3
Federal government	2,865.0	2,968.0	2,596.0	103.0	–372.0	2.0	2.1	1.6	.4	–1.3
State and local government	17,925.0	19,513.1	21,154.8	1,588.1	1,641.7	12.3	13.6	12.9	.9	.8
Agriculture, forestry, fishing, and hunting[3]	2,396.2	2,135.5	2,005.3	–260.7	–130.2	1.6	1.5	1.2	–1.1	–.6
Agriculture wage and salary	1,354.0	1,282.1	1,236.1	–71.9	–46.0	.9	.9	.8	–.5	–.4
Agriculture self-employed and unpaid family workers	1,042.2	853.4	769.3	–188.8	–84.1	.7	.6	.5	–2.0	–1.0
Nonagriculture self-employed and unpaid family workers	9,313.7	8,943.8	9,720.6	–369.9	776.8	6.4	6.3	5.9	–.4	.8
Secondary wage and salary jobs in agriculture and private household industries[4]	141.7	111.6	112.4	–30.1	1.1	.1	.1	.1	–2.4	.1
Secondary jobs as a self-employed or unpaid family worker[5]	1,959.4	1,441.7	1,521.7	–517.7	80.0	1.3	1.0	.9	–3.0	.5

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

[2] Includes wage and salary data from the Current Employment Statistics survey, except for data on private households, which are from the Current Population Survey. Logging workers are excluded.

[3] Includes agriculture, forestry, fishing, and hunting data from the Current Population Survey, except for data on logging, which are from the Current Employment Statistics survey. Government wage and salary workers are excluded.

[4] Because of methodological changes, data are not comparable to previously published data for the categories of secondary workers.

[5] Wage and salary workers who hold a secondary job as a self-employed or unpaid family worker. Workers who hold a secondary wage and salary job in agricultural production, forestry, fishing, and private household industries.

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections Program.

rienced during the 2000–2010 period. The share of nominal output for the goods-producing sectors, excluding agriculture, is expected to fall from 24.3 percent to 22.7 percent over the 2010–2020 period. Real output in the agriculture, forestry, fishing, and hunting sector is expected to increase from $301.4 billion in 2010 to $365.1 billion in 2020, a 1.9-percent annual growth rate, which is higher than the 0.5-percent annual growth rate experienced during the previous period. The share of nominal output for the agricultural sector is projected to fall from 1.4 percent in 2010 to 1.1 percent in 2020. (See table 2.)

The macroeconomic factors, which include the labor

force, gross domestic product (GDP) and its components, and labor productivity, affect the growth in total employment. The BLS projections for 2010–2020 have GDP increasing from $13.1 trillion to $17.5 trillion, an annual growth rate of 3.0 percent, up from the 1.6 percent rate experienced during the 2000–2010 period. The labor force is projected to increase from 153.9 million to 164.4 million, a rate of 0.7 percent per year, slightly slower than the 0.8- percent rate seen in the previous period. Nonfarm labor productivity is projected to increase 2.0 percent annually during the 2010–2020 period, slower than the 2.5-percent growth that occurred during the previous decade. These macroeconomic constraints, along with the industry models, help shape the final projections of industry employment and output.[5]

The recession that began in December 2007 and ended in June 2009 contributed to the decline in employment at the end of the 2000–2010 period. While this loss of employment is not part of the analysis of this article, one should keep in mind that these declines in employment may cause some industries to have uncharacteristically high levels of employment growth for the 2010–2020 period because of the low starting levels for employment in 2010.[6] (See chart 1.)

Sector highlights

Service-providing sectors are expected to have the most job growth, with the number of wage and salary workers increasing from 112.7 million to 130.7 million, an annual growth rate of 1.5 percent, between 2010 and 2020. This growth rate is faster than the 0.4 percent experienced during the 2000–2010 period. The health care and social assistance sector[7] is projected to have the largest growth,

Table 2. Output, by major industry sector (gross duplicated output), 2000, 2010, and projected 2020

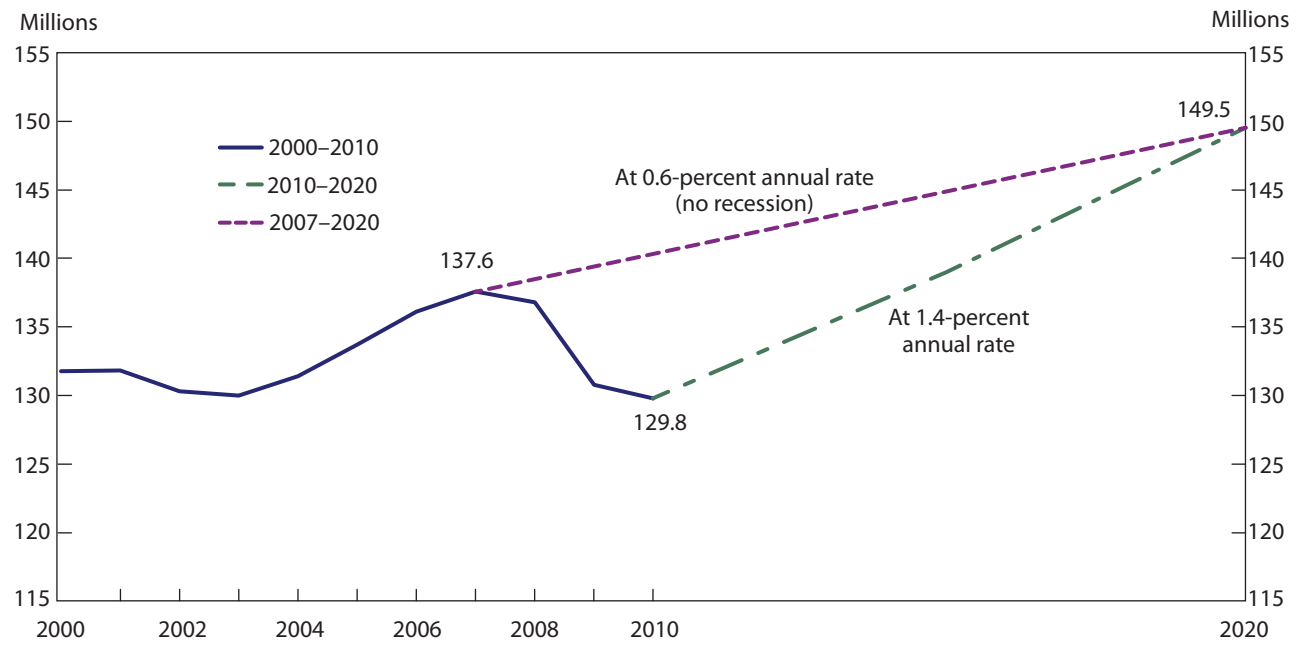
Industry sector	Billions of chained 2005 dollars			Annual rate of change		Billions of dollars			Percent distribution		
	2000	2010	2020	2000–2010	2010–2020	2000	2010	2020	2000	2010	2020
Total	20,979.4	23,171.3	30,876.3	1.0	2.9	18,303.6	26,273.6	43,000.3	100.0	100.0	100.0
Goods producing, excluding agriculture	6,218.3	5,565.8	7,385.6	–1.1	2.9	5,279.8	6,390.9	9,769.0	28.8	24.3	22.7
Mining	393.2	388.1	441.0	–.1	1.3	201.2	417.9	641.1	1.1	1.6	1.5
Construction	1,240.0	814.7	1,183.3	–4.1	3.8	937.9	932.5	1,540.2	5.1	3.5	3.6
Manufacturing	4,585.1	4,363.0	5,723.3	–.5	2.8	4,140.6	5,040.6	7,587.6	22.6	19.2	17.6
Service providing	13,525.9	16,165.8	21,600.5	1.8	2.9	11,960.8	18,242.0	30,563.4	65.3	69.4	71.1
Utilities	478.2	354.2	431.7	–3.0	2.0	371.9	429.0	644.0	2.0	1.6	1.5
Wholesale trade	896.7	1,176.4	1,648.9	2.8	3.4	883.1	1,213.5	1,836.6	4.8	4.6	4.3
Retail trade	1,019.1	1,165.0	1,671.0	1.3	3.7	988.8	1,208.1	2,029.3	5.4	4.6	4.7
Transportation and warehousing	640.1	709.4	977.6	1.0	3.3	588.0	820.4	1,365.6	3.2	3.1	3.2
Information	950.9	1,196.4	1,893.0	2.3	4.7	922.2	1,281.2	2,407.4	5.0	4.9	5.6
Financial activities	2,687.2	3,329.5	4,568.5	2.2	3.2	2,378.9	3,761.4	6,489.4	13.0	14.3	15.1
Professional and business services	1,934.6	2,355.0	3,372.1	2.0	3.7	1,729.0	2,667.4	5,056.6	9.4	10.2	11.8
Educational services	201.6	198.5	235.5	–.2	1.7	142.6	260.7	387.8	.8	1.0	.9
Health care and social assistance	1,142.2	1,525.9	2,025.9	2.9	2.9	973.0	1,763.2	3,145.1	5.3	6.7	7.3
Leisure and hospitality	754.8	870.2	1,123.9	1.4	2.6	654.4	996.4	1,664.6	3.6	3.8	3.9
Other services	514.0	514.5	652.3	.0	2.4	434.0	591.7	947.5	2.4	2.3	2.2
Federal government	732.3	1,012.1	938.9	3.3	–.7	597.9	1,158.6	1,345.8	3.3	4.4	3.1
State and local government	1,574.3	1,758.6	2,120.4	1.1	1.9	1,297.2	2,090.3	3,243.7	7.1	8.0	7.5
Agriculture, forestry, fishing, and hunting	285.4	301.4	365.1	.5	1.9	243.1	368.2	485.7	1.3	1.4	1.1
Special industries[1]	949.8	1,138.3	1,521.1	1.8	2.9	820.0	1,272.6	2,182.2	4.5	4.8	5.1
Residual[2]	.0	.0	4.0								

[1] Consist of nonproducing accounting categories to reconcile the Bureau of Economic Analysis input–output system with NIPA accounts.

[2] Residual is shown for the higher level only. As a byproduct of chain-weighting, subcategories do not necessarily add to higher level categories.

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections Program.

Chart 1. Total nonfarm wage and salary employment, 2000–2010 and projected to 2020



NOTE: BLS does not project specific data for each of the years between 2010 and 2020. Interim years to the 2020 projection point are expressed by a dashed straight line only.

SOURCE: U.S. Bureau of Labor Statistics, Current Employment Statistics (historical data) and Employment Projections Program (2020 data).

5.6 million jobs, and the fastest growth rate, 3.0 percent, of all the major service-providing sectors, as well as all the other major sectors. (See table 1.) The information sector is projected to have the fastest growth rate in real output for all major sectors, 4.7 percent per year, increasing from nearly $1.2 trillion in 2010 to almost $1.9 trillion in 2020. (See table 2.)

Goods-producing sectors are projected to add almost 1.8 million jobs over the 2010–2020 period, an annual increase of 1.0 percent. Within the goods-producing sectors, construction is expected to add the most jobs, 1.8 million, over the projection period, reaching nearly 7.4 million. Productivity gains will help output in the goods-producing sector to increase 2.9 percent annually, to reach almost $7.4 trillion by 2020. Construction also is projected to have the most rapid employment growth in the goods-producing sector, an annual rate of 2.9 percent. (See table 1.) In addition, the construction sector is projected to have the fastest real output growth rate, 3.8 percent per year, among the goods-producing sectors. Still, despite this rapid growth, the construction sector is not projected to return to its prerecession levels of employment and output. Manufacturing is the dominant industry within the goods-producing sectors and is expected to experience an increase in real output from $4.4 trillion to $5.7 trillion, a 2.8-percent annual increase, higher than the prerecession level of real output. (See table 2.)

Service-providing sectors

Health care and social assistance. Real output in the health care and social assistance sector is projected to grow at the same rate as the overall rate of the economy, 2.9 percent, to reach $2.0 trillion in 2020. (See table 2.) This growth rate is the same as that seen in the previous decade. However, employment in the health care and social assistance sector is projected to generate the largest number of jobs, 5.6 million, at an annual rate of 3.0 percent. This increase is the largest and fastest among all major sectors. (See table 1.) The projected change in demographics is largely driving the growth in the number of jobs being added in the sector. The number of people 65 years and older is projected to increase from 40.2 million in 2010 to 54.8 in 2020; this age group will account for 16.1 percent of the population in 2020, up from 13.0 percent in 2010.[8] In addition, increasing cost pressures are expected to shift demand from higher cost hospitals and long-term care services to lower cost health practitioners, home health care services, and clinical services.[9]

Home health care services, which provides in-home

care such as nursing and physical therapy, has the fastest growing employment of all industries and one of the largest increases in employment. It is projected to grow at 6.1 percent per year, adding 871,800 jobs and reaching almost 2.0 million jobs over the 2010–2020 period. (See tables 3 and 4.) Real output in home health care services is expected to grow at 4.3 percent per year (an increase of $25.7 billion) from 2010 to 2020, making the industry one of the fastest growing in terms of real output over the period. Output is expected to reach $74.4 billion in 2020. (See table 5.) The strong growth in employment and output reflects an aging population and the lower costs of home healthcare settings rather than the higher costs of inpatient facilities.[10]

The industry of offices of health practitioners, which includes offices of physicians, of dentists, and of other health practitioners such as chiropractors and optometrists, is expected to be one of the industries with the largest employment and real output increases over the 2010–2020 period. (See tables 4 and 6.) The industry is expected to add 1.4 million jobs, 3.2 percent annually, reaching 5.2 million by 2020. Real output is expected to grow by $179.2 billion, to reach $692.7 billion by 2020. Technological advances, cost pressures, and the increased number of people 65 years and older seeking medical care will shift services from inpatient facilities to the offices of health practitioners.

Nursing and residential care facilities provide assisted-living services, including nursing, rehabilitation, and other related personal care, to those who need continuous care but do not require hospital services. Nursing and residential care facilities are projected to add 822,000 jobs, to reach a level of almost 4.0 million by 2020. This industry is among those with the largest increases in employment. (See table 4.) By 2020, real output in the industry is expected to reach $221.7 billion, an increase of $52.4 billion, representing an annual growth rate of 2.7 percent. The increasing population of elderly people seeking to maintain some level of independence and improvements in technology allowing younger patients shorter rehabilitation stays will drive growth in the industry.

Employment growth in hospitals, which are facing increasingly higher industry costs as well as cheaper alternatives, is expected to increase at an annual rate of 1.7 percent during the projection period, the same as the 2000–2010 period. While this employment growth is the slowest in the health care and social assistance sector, private hospitals have a large employment base, so the growth represents an increase of 878,300 jobs, to reach 5.6 million by 2020. This employment increase is one of the largest among all industries. (See table 4.) Real output also is projected to have one of the largest increases, $129.4 billion, a 2.3-percent annual growth rate, to reach $637.7 billion. (See table 6.) The shift of services from hospitals, which are more expensive, to lower cost outpatient or home health services will slow the growth rate in employment relative to other healthcare services.[11]

Employment in the individual and family services industry, which provides a variety of social assistance to children, elderly people, people with disabilities, and others, is projected to increase 5.5 percent annually, the second-fastest employment growth over the 2010–2020 period. (See table 3.) This industry will add 851,400 jobs, one of the largest projected increases among all industries, to reach an employment level of nearly 2.1 million in 2020. (See table 4.) Real output in individual and family services is expected to grow at an annual rate of 3.2 percent, an increase of $23.9 billion, to reach $88.9 billion in 2020. Output and employment growth are again driven by the cost pressures that shift services from more costly inpatient facilities to less costly individual and family service providers.[12]

Because of cost reduction measures, employment in the outpatient, laboratory, and other ambulatory care industry is projected to grow 3.2 percent annually, one of the fastest rates, adding 394,100 jobs and making it one of the largest growing industries. (See tables 3 and 4.) Real output also is expected to be among the fastest growing, up 4.0 percent annually, or $69.4 billion, to reach $215.5 billion by 2020. (See table 5.)

Professional and business services. Strong demand for these services is expected to increase real output in this sector from $2.4 trillion to $3.4 trillion, or 3.7 percent per year, over the 2010–2020 period. (See table 2.) Employment in professional and business services is projected to add 3.8 million jobs (second largest among all major sectors), to reach 20.5 million in 2020. The 2.1-percent annual growth rate of employment is larger than the zero-percent growth rate experienced during the 2000–2010 period. (See table 1.)

The management, scientific, and technical consulting services industry is responsible for the majority of the employment growth in professional and business services. Employment is projected to increase by 575,600 jobs, or 4.7 percent annually, reaching a level of 1.6 million by 2020. This industry is expected to have one of the largest and fastest employment increases of all industries. (See tables 3 and 4.) Businesses' increasing use of consulting services to keep pace with the latest technologies, government regulations, and management and production

Table 3. Industries with the fastest growing and most rapidly declining wage and salary employment, 2010–2020

2007 NAICS code	Industry description	Sector	Thousands of jobs		Change, 2000–2010	Annual rate of change, 2010–2020
			2010	2020		
	Fastest growing					
6216	Home health care services	Health care and social assistance	1,080.6	1,952.4	871.8	6.1
6241	Individual and family services	Health care and social assistance	1,215.0	2,066.4	851.4	5.5
5416	Management, scientific, and technical consulting services	Professional and business services	991.4	1,567.0	575.6	4.7
3212	Veneer, plywood, and engineered wood product manufacturing	Manufacturing	64.7	94.9	30.2	3.9
5415	Computer systems design and related services	Professional and business services	1,441.5	2,112.8	671.3	3.9
3273	Cement and concrete product manufacturing	Manufacturing	171.8	236.1	64.3	3.2
6214, 6215, 6219	Outpatient, laboratory, and other ambulatory care services	Health care and social assistance	1,077.1	1,471.2	394.1	3.2
6211, 6212, 6213	Offices of health practitioners	Health care and social assistance	3,818.2	5,209.6	1,391.4	3.2
5112	Software publishers	Information	259.8	351.6	91.8	3.1
23	Construction	Construction	5,525.6	7,365.1	1,839.5	2.9
5324	Commercial and industrial machinery and equipment rental and leasing	Financial activities	113.5	151.2	37.7	2.9
5419	Other professional, scientific, and technical services	Professional and business services	573.1	760.2	187.1	2.9
5612	Facilities support services	Professional and business services	134.0	177.6	43.6	2.9
6242, 6243	Community and vocational rehabilitation services	Health care and social assistance	557.5	738.4	180.9	2.9
533	Lessors of nonfinancial intangible assets (except copyrighted works)	Financial activities	25.2	33.4	8.2	2.9
6114–7	Other educational services	Educational services	604.2	787.1	182.9	2.7
8111	Automotive repair and maintenance	Leisure and hospitality	799.7	1,037.2	237.5	2.6
8132, 8133	Grantmaking and giving services and social advocacy organizations	Other services	394.5	510.7	116.2	2.6
3211	Sawmills and wood preservation	Manufacturing	81.3	105.1	23.8	2.6
6244	Child day care services	Health care and social assistance	851.8	1,101.3	249.5	2.6
	Most rapidly declining					
3151	Apparel knitting mills	Manufacturing	157.7	66.1	–91.6	–8.3
3161, 3169	Leather and hide tanning and finishing, and other leather and allied product manufacturing	Manufacturing	27.8	12.7	–15.1	–7.6
491	Postal Service	Federal government	656.4	474.6	–181.8	–3.2
3342	Communications equipment manufacturing	Manufacturing	118.0	85.7	–32.3	–3.1
3341	Computer and peripheral equipment manufacturing	Manufacturing	161.6	117.5	–44.1	–3.1
486	Pipeline transportation	Transportation and warehousing	42.4	32.6	–9.8	–2.6
2122	Metal ore mining	Mining	36.4	28.1	–8.3	–2.5
3253	Pesticide, fertilizer, and other agricultural chemical manufacturing	Manufacturing	35.3	27.5	–7.8	–2.5
NA	Federal enterprises except the Postal Service and electric utilities	Federal government	76.6	60.2	–16.4	–2.4
3399	Other miscellaneous manufacturing	Manufacturing	266.0	210.3	–55.7	–2.3
3259	Other chemical product and preparation manufacturing	Manufacturing	82.9	68.6	–14.3	–1.9
3335	Metalworking machinery manufacturing	Manufacturing	153.2	130.5	–22.7	–1.6
3272	Glass and glass product manufacturing	Manufacturing	80.7	68.8	–11.9	–1.6
3251	Basic chemical manufacturing	Manufacturing	142.4	121.6	–20.8	–1.6
3353	Electrical equipment manufacturing	Manufacturing	136.3	116.9	–19.4	–1.5
3221	Pulp, paper, and paperboard mills	Manufacturing	112.7	97.4	–15.3	–1.4
3131	Fiber, yarn, and thread mills	Manufacturing	237.8	206.1	–31.7	–1.4
3311	Iron and steel mills and ferroalloy manufacturing	Manufacturing	85.4	74.3	–11.1	–1.4
324	Petroleum and coal products manufacturing	Manufacturing	114.0	100.0	–14.0	–1.3
5111	Newspaper, periodical, book, and directory publishers	Information	501.3	439.7	–61.6	–1.3

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections Program.

Table 4. Industries with the largest wage and salary employment growth and declines, 2010–2020

2007 NAICS code	Industry description	Sector	Thousands of jobs		Change, 2000–2010	Annual rate of change, 2010–2020
			2010	2020		
	Largest growth					
23	Construction	Construction	5,525.6	7,365.1	1,839.5	2.9
44, 45	Retail trade	Retail trade	1,4413.7	16,182.2	1,768.5	1.2
6211, 6212, 6213	Offices of health practitioners	Health care and social assistance	3,818.2	5,209.6	1,391.4	3.2
622	Hospitals	Health care and social assistance	4,685.3	5,563.6	878.3	1.7
6216	Home health care services	Health care and social assistance	1,080.6	1,952.4	871.8	6.1
722	Food services and drinking places	Leisure and hospitality	9,351.8	10,212.2	860.4	.9
6241	Individual and family services	Health care and social assistance	1,215.0	2,066.4	851.4	5.5
623	Nursing and residential care facilities	Health care and social assistance	3,129.0	3,951.0	822.0	2.4
42	Wholesale trade	Wholesale trade	5,456.1	6,200.2	744.1	1.3
NA	General local government educational services compensation	State and local government	8,010.4	8,751.4	741.0	.9
5415	Computer systems design and related services	Professional and business services	1,441.5	2,112.8	671.3	3.9
5613	Employment services	Professional and business services	2,716.7	3,348.0	631.3	2.1
5416	Management, scientific, and technical consulting services	Professional and business services	991.4	1,567.0	575.6	4.7
6112, 6113	Junior colleges, colleges, universities, and professional schools	Educational services	1,694.0	2,171.1	477.1	2.5
6214, 6215, 6219	Outpatient, laboratory, and other ambulatory care services	Health care and social assistance	1,077.1	1,471.2	394.1	3.2
5413	Architectural, engineering, and related services	Professional and business services	1,276.6	1,635.1	358.5	2.5
5617	Services to buildings and dwellings	Professional and business services	1,742.5	2,044.8	302.3	1.6
484	Truck transportation	Transportation and warehousing	1,244.0	1,544.0	300.0	2.2
NA	General state government educational services compensation	State and local government	2,377.1	2,661.7	284.6	1.1
6244	Child day care services	Health care and social assistance	851.8	1,101.3	249.5	2.6
	Largest declines					
491	Postal Service	Federal government	656.4	474.6	–181.8	–3.2
NA	General federal nondefense government compensation	Federal government	1667.5	1545.7	–121.8	–.8
3151	Apparel knitting mills	Manufacturing	157.7	66.1	–91.6	–8.3
5111	Newspaper, periodical, book, and directory publishers	Information	501.3	439.7	–61.6	–1.3
3399	Other miscellaneous manufacturing	Manufacturing	266.0	210.3	–55.7	–2.3
NA	General federal defense government compensation	Federal government	545.5	496.0	–49.5	–.9
3341	Computer and peripheral equipment manufacturing	Manufacturing	161.6	117.5	–44.1	–3.1
3345	Navigational, measuring, electromedical, and control instruments manufacturing	Manufacturing	406.0	363.2	–42.8	–1.1
111	Crop production	Agriculture, forestry, fishing, and hunting	629.5	589.3	–40.2	–.7
8123	Drycleaning and laundry services	Other services	302.1	265.7	–36.4	–1.3
2211	Electric power generation, transmission and distribution	Utilities	396.9	361.4	–35.5	–.9
NA	State government enterprises	State and local government	517.8	484.6	–33.2	–.7
3344	Semiconductor and other electronic component manufacturing	Manufacturing	369.7	336.9	–32.8	–.9
3342	Communications equipment manufacturing	Manufacturing	118.0	85.7	–32.3	–3.1
323	Printing and related support activities	Manufacturing	486.9	454.7	–32.2	–.7
3131	Fiber, yarn, and thread mills	Manufacturing	237.8	206.1	–31.7	–1.4
512	Motion picture, video, and sound recording industries	Information	372.0	347.0	–25.0	–.7
3335	Metalworking machinery manufacturing	Manufacturing	153.2	130.5	–22.7	–1.6
3251	Basic chemical manufacturing	Manufacturing	142.4	121.6	–20.8	–1.6
3363	Motor vehicle parts manufacturing	Manufacturing	415.1	394.9	–20.2	–.5

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections Program.

Table 5. Industries with the fastest growing and most rapidly declining output, 2010–2020

2007 NAICS code	Industry description	Sector	Billions of chained 2005 dollars		Change, 2000–2010	Annual rate of change, 2010–2020
			2010	2020		
	Fastest growing					
3341	Computer and peripheral equipment manufacturing	Manufacturing	132.3	513.0	380.7	14.5
5112	Software publishers	Information	156.9	368.2	211.3	8.9
3344	Semiconductor and other electronic component manufacturing	Manufacturing	143.8	290.0	146.1	7.3
5415	Computer systems design and related services	Professional and business services	258.5	466.5	208.0	6.1
518, 519	Data processing, hosting, related services, and other information services	Information	168.2	303.2	135.0	6.1
3342	Communications equipment manufacturing	Manufacturing	62.8	105.7	42.8	5.3
533	Lessors of nonfinancial intangible assets (except copyrighted works)	Financial activities	134.1	219.6	85.5	5.1
55	Management of companies and enterprises	Professional and business services	318.8	494.7	175.8	4.5
523	Securities, commodity contracts, and other financial investments and related activities	Financial activities	410.7	636.6	226.0	4.5
6216	Home health care services	Health care and social assistance	48.7	74.4	25.7	4.3
3331	Agriculture, construction, and mining machinery manufacturing	Manufacturing	47.8	72.5	24.7	4.3
517	Telecommunications	Information	511.3	774.7	263.4	4.2
3346	Manufacturing and reproducing magnetic and optical media	Manufacturing	7.3	11.1	3.7	4.2
492	Couriers and messengers	Transportation and warehousing	73.9	110.9	37.0	4.1
3333	Commercial and service industry machinery manufacturing	Manufacturing	21.0	31.2	10.1	4.0
3365	Railroad rolling stock manufacturing	Manufacturing	10.6	15.7	5.1	4.0
6214, 6215, 6219	Outpatient, laboratory, and other ambulatory care services	Health care and social assistance	146.1	215.5	69.4	4.0
487, 488	Scenic and sightseeing transportation and support activities for transportation	Transportation and warehousing	63.1	93.0	29.9	4.0
5416	Management, scientific, and technical consulting services	Professional and business services	166.7	242.9	76.1	3.8
5613	Employment services	Professional and business services	157.7	229.3	71.6	3.8
23	Construction	Construction	814.7	1,183.3	368.7	3.8
5321	Automotive equipment rental and leasing	Financial activities	49.7	72.0	22.3	3.8
3259	Other chemical product and preparation manufacturing	Manufacturing	47.3	68.4	21.1	3.8
	Most rapidly declining					
3151	Apparel knitting mills	Manufacturing	14.8	7.1	–7.7	–7.1
3161, 3169	Leather and hide tanning and finishing, and other leather and allied product manufacturing	Manufacturing	4.4	3.2	–1.3	–3.3
NA	General federal nondefense government compensation	Federal government	147.0	128.7	–18.3	–1.3
NA	General federal nondefense government consumption of fixed capital	Federal government	31.3	27.4	–3.9	–1.3
3131	Fiber, yarn, and thread mills	Manufacturing	44.1	39.9	–4.2	–1.0
NA	General federal nondefense government except compensation and consumption of fixed capital	Federal government	138.5	127.2	–11.3	–.8
491	Postal service	Federal government	62.0	57.5	–4.6	–.8
NA	General federal defense government compensation	Federal government	241.6	225.0	–16.5	–.7
NA	General federal defense government consumption of fixed capital	Federal government	83.1	77.4	–5.7	–.7
NA	General federal defense government except compensation and consumption of fixed capital	Federal government	288.6	272.0	–16.6	–.6
NA	General state government hospitals compensation	State and local government	29.7	28.2	–1.5	–.5
3112	Tobacco manufacturing	Manufacturing	54.3	52.0	–2.2	–.4
114	Fishing, hunting, and trapping	Agriculture, forestry, fishing, and hunting	6.3	6.1	–.2	–.3

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections Program.

Table 6. Industries with the largest output growth and declines, 2010–2020

2007 NAICS code	Industry description	Sector	Billions of chained 2005 dollars		Change, 2000–2010	Annual rate of change, 2010–2020
			2010	2020		
	Largest growth					
44, 45	Retail trade	Retail trade	1,165.0	1,671.0	506.0	3.7
42	Wholesale trade	Wholesale trade	1,176.4	1,648.9	472.5	3.4
521, 522	Monetary authorities, credit intermediation, and related activities	Financial activities	917.0	1,303.3	386.3	3.6
3341	Computer and peripheral equipment manufacturing	Manufacturing	132.3	513.0	380.7	14.5
23	Construction	Construction	814.7	1,183.3	368.7	3.8
531	Real estate	Financial activities	1,016.8	1,334.2	317.3	2.8
517	Telecommunications	Information	511.3	774.7	263.4	4.2
523	Securities, commodity contracts, and other financial investments and related activities	Financial activities	410.7	636.6	226.0	4.5
5112	Software publishers	Information	156.9	368.2	211.3	8.9
5415	Computer systems design and related services	Professional and business services	258.5	466.5	208.0	6.1
6211, 6212, 6213	Offices of health practitioners	Health care and social assistance	513.4	692.7	179.2	3.0
55	Management of companies and enterprises	Professional and business services	318.8	494.7	175.8	4.5
3344	Semiconductor and other electronic component manufacturing	Manufacturing	143.8	290.0	146.1	7.3
518, 519	Data processing, hosting, related services, and other information services	Information	168.2	303.2	135.0	6.1
722	Food services and drinking places	Leisure and hospitality	480.6	615.3	134.7	2.5
622	Hospitals	Health care and social assistance	508.3	637.7	129.4	2.3
NA	General state and local governments except compensation and consumption of fixed capital	State and local government	534.9	656.1	121.2	2.1
5241	Insurance carriers	Financial activities	440.6	545.6	105.0	2.2
324	Petroleum and coal products manufacturing	Manufacturing	440.5	542.6	102.0	2.1
5413	Architectural, engineering, and related services	Professional and business services	263.8	365.6	101.8	3.3
	Largest declines					
NA	General federal nondefense government compensation	Federal government	147.0	128.7	–18.3	–1.3
NA	General federal defense government except compensation and consumption of fixed capital	Federal government	288.6	272.0	–16.6	–.6
NA	General federal defense government compensation	Federal government	241.6	225.0	–16.5	–.7
NA	General federal nondefense government except compensation and consumption of fixed capital	Federal government	138.5	127.2	–11.3	–.8
3151	Apparel knitting mills	Manufacturing	14.8	7.1	–7.7	–7.1
NA	General federal defense government consumption of fixed capital	Federal government	83.1	77.4	–5.7	–.7
491	Postal Service	Federal government	62.0	57.5	–4.6	–.8
3131	Fiber, yarn, and thread mills	Manufacturing	44.1	39.9	–4.2	–1.0
NA	General federal nondefense government consumption of fixed capital	Federal government	31.3	27.4	–3.9	–1.3
3122	Tobacco manufacturing	Manufacturing	54.3	52.0	–2.2	–.4
NA	General state government hospitals compensation	State and local government	29.7	28.2	–1.5	–.5
3161, 3169	Leather and hide tanning and finishing, and other leather and allied product manufacturing	Manufacturing	4.4	3.2	–1.3	–3.3
114	Fishing, hunting, and trapping	Agriculture, forestry, fishing, and hunting	6.3	6.1	–.2	–.3

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections Program.

techniques will increase the demand for workers in the industry. Services of consultants can be a lower cost alternative, because consultants can be hired temporarily and as needed. Real output in the management, scientific, and technical consulting services industry is projected to rise by $76.1 billion, a 3.8-percent annual increase, to reach $242.9 billion by 2020, making it one of the industries with the fastest projected real output growth. (See table 5.)

Employment in the computer systems design and related services industry is projected to add 671,300 jobs, to reach an employment level of 2.1 million by 2020, making this industry one of the largest growing ones. (See table 4.) Employment in computer systems design and related services also is projected to grow at 3.9 percent per year, making this industry one of the fastest growing. (See table 3.) The demand for increased network and computer systems security, mobile technologies, and custom programming services, as well as the health care industry's ongoing move to electronic records, will drive the employment growth in this industry. The computer systems design and related services industry also is expected to be among those with the largest and fastest increases in real output, which is projected to increase by $208.0 billion, to reach $466.5 billion in 2020, an annual growth rate of 6.1 percent. (See tables 5 and 6.)

The employment services industry, which comprises employment placement agencies, temporary help services, and professional employer organizations, is projected to add 631,300 jobs, an annual rate of increase of 2.1 percent, and reach 3.3 million by 2020, placing this industry among those with the largest projected employment growth. (See table 4.) The industry also is projected to be among those with the fastest real output growth rate, 3.8 percent annually, increasing by $71.6 billion, to reach $229.3 billion by 2020. (See table 5.) The demand for information technology, healthcare, and temporary help services is driving growth in this industry.

Information. The information sector is projected to grow at 4.7 percent per year in real output, the fastest growth among all major sectors, increasing by $696.6 billion, to reach $1.9 trillion by 2020. (See table 2.) This growth rate is faster than the 2.3-percent-per-year growth rate that the information sector experienced during the 2000–2010 period, in which real output rose from $950.9 billion to nearly $1.2 trillion, an increase of almost $245.5 billion. Most of the expected output growth in 2010–2020 is being driven by the software publishers and the data processing, hosting, related services, and other information services industries, which are growing at 8.9 percent and 6.1 percent, respectively. While real output in the information sector is growing faster than the overall economy, employment in the sector is growing more slowly than the overall economy. Employment in the information sector is expected to grow at an annual rate of 0.5 percent, adding 140,300 jobs, to reach a level of 2.9 million by 2020. (See table 1.) The slower growth rate in employment over the 2010–2020 period is driven by the projected 1.3-percent-per-year decline in employment in the newspaper, periodical, book, and directory publishers industry, in which jobs have decreased by 61,600. This loss is due mostly to a decrease in circulation caused by the rise of available information on the Internet.

The software publishers industry is projected to grow from $156.9 billion to $368.2 billion in real output, an increase of $211.3 billion, making it one of the largest growing industries in real output. (See table 6.) The projected 8.9-percent real output growth rate also makes the software publishers industry the second-fastest-growing industry in real output. (See table 5.) Over the 2010–2020 period, employment is projected to increase 91,800, to reach 351,600, an annual growth rate of 3.1 percent, making this industry one of the fastest growing in employment. (See table 3.) With increasing technology, output will grow faster than employment. As more software services, such as cloud computing, word processing, and entering data into spreadsheets, become available through the Internet and the need grows for a more secure network, so will the demand for services of software publishers.

Real output in the data processing, hosting, related services, and other information services industry, which not only provides the infrastructure for hosting and data processing but also offers search engines, is projected to grow at an annual rate of 6.1 percent, making it one of the fastest growing industries. (See table 5.) Real output is expected to increase $135.0 billion, to reach $303.2 billion by 2020, also making the industry one of the largest growing. (See table 6.) Employment in this industry is projected to increase by 31,000, or 0.8 percent per year, to reach 414,500 by 2020. This increase is an improvement over the figure registered in the 2000–2010 period, when the industry lost 89,300 jobs, a 2.1-percent-per-year decline, but as of 2020, employment will still be below the 2000 level of 472,800 jobs. The creation of cloud storage that allows computer users to move storage offsite, as well as an increase in the amount of Web broadcasting and virtual meetings, lowering travel costs, will drive growth in this industry. Technological advances will increase productivity, which will slow the growth of employment in the industry.

Telecommunications is the industry with the largest employment in this sector, accounting for almost one-third of the sector's employment. Over the 2010–2020 period, telecommunications is projected to gain 73,800 jobs, a rate of 0.8 percent per year, reaching 973,500. Real output is expected to rise from $511.3 to $774.7 billion, an increase of $263.4 billion, a 4.2-percent annual growth rate, making this industry one of the largest and fastest growing. (See tables 5 and 6.) The replacement of copper wires with fiber-optic cables, new wireless communication that will increase download speeds, and new technologies will spur demand for both output and employment in this industry.

Financial activities. Real output in the financial activities sector is projected to rise from $3.3 trillion in 2010 to nearly $4.6 trillion in 2020, an increase of almost $1.3 trillion. (See table 2.) The annual growth rate of 3.2 percent for real output is faster than the growth rate of the economy, 2.9 percent per year, over the 2010–2020 period. The 3.2-percent growth rate also is faster than that posted by the industry in the 2000–2010 period, when real output grew at 2.2 percent per year. Employment in this sector is expected to increase by 780,400, to reach 8.4 million jobs by 2020. (See table 1.) The 1.0-percent growth rate for employment, during 2010–2020, is faster than the 0.1-percent decline the industry experienced during the previous period.

Real output in lessors of nonfinancial intangible assets, with a 5.1-percent growth rate, is projected to be the fastest growing industry in financial activities, and among the fastest growing of all industries, over the 2010–2020 period. (See table 5.) Real output is expected to increase by $85.5 billion, to reach $219.6 billion in 2020. Employment in this industry is projected to add 8,200 jobs, an annual rate of 2.9 percent, to reach 33,400 jobs by 2020, making the industry one of the fastest growing in employment. (See table 3.) The increase of 8,200 jobs is an improvement over the loss of 2,600 jobs, an annual decline of 1.0 percent, experienced during the 2000–2010 period. Increased demand for asset rights, trademarks, and franchising agreements will drive growth in the industry.

Real output in securities, commodity contracts, and other financial investments and related activities is projected to increase from $410.7 billion in 2010 to $636.6 billion in 2020. The increase of $226.0 billion, an annual growth rate of 4.5 percent, makes this industry one of the largest and fastest growing industries in real output. (See tables 5 and 6.) Employment in the industry is projected to add 201,400 jobs, which is the largest increase in jobs in the financial activities sector over the 2010–2020 period. This increase contrasts with the 3,600 jobs lost during the 2000–2010 period. Demand in the industry will rise as the number of people reaching retirement age and seeking advice on retirement options grows. Younger workers seeking advice on retirement options also will increase demand in this industry.

The monetary authorities, credit intermediation, and related activities industry is expected to increase its real output by $386.3 billion, reaching $1.3 trillion in 2020, making this increase the third largest in real output during the 2010–2020 period. (See table 6.) The 3.6-percent growth rate in real output over the period is slower than the 4.4-percent increase in real output experienced in 2000–2010. Employment in this industry is expected to rise from 2.6 million to almost 2.7 million, an increase of 85,200 jobs, an annual growth rate of 0.3 percent over the 2010–2020 period. This growth rate is an improvement over that seen in the 2000–2010 period, when job growth was stagnant.

The real estate industry is expected to have one of the largest increases in real output, from $1.0 trillion to more than $1.3 trillion, a gain of $317.3 billion. (See table 6.) The 2.8-percent annual growth rate experienced during the 2010–2020 period is an improvement over the 1.9-percent real output growth rate exhibited during the 2000–2010 period. The increase in output during the 2010–2020 period is due largely to the rebound in the construction industry and the housing market projected to occur over the 2010–2020 period.[13] Employment in the real estate industry also is expected to rebound, increasing from almost 1.4 million in 2010 to almost 1.6 million, an annual rate of 1.1 percent, during 2010–2020. The increase of 167,300 jobs is more than double the increase experienced during the 2000–2010 period.

Educational services. Employment in the educational services sector is projected to rise from 3.1 million in 2010 to almost 4.0 million in 2020, a difference of 819,200 jobs. (See table 1.) The expected 2.3-percent growth rate in employment during 2010–2020 is down slightly from the 2.8-percent growth rate experienced over the 2000–2010 period. Increasing enrollments in primary and secondary schools, along with a growing number of people seeking postsecondary education, will drive the increase in employment in educational services.[14] Real output in educational services is projected to increase by $37 billion, to reach $235.5 billion in 2020. (See table 2.) The 1.7-percent annual growth rate of real output during 2010–2020 contrasts with the 0.2-percent rate of decline experienced during the 2000–2010 period.

Employment in the industry titled "other educational services," which comprises business schools and computer and management training, technical and trade schools, other schools and instruction, and educational support services, is projected to increase 182,900, from 604,200 in 2010 to 787,100 in 2020, an annual rate of 2.7 percent, making this industry one of the fastest growing. (See table 3.) Real output in "other educational services" is projected to increase by $10.6 billion to $53.3 billion by 2020, an annual rate of 2.2 percent, which is higher than the 0.1-percent decline experienced during the previous decade. As the number of high school graduates increases and as a greater number of older workers seek additional training in their fields in order to keep pace with newer employees, the demand for other educational services will grow.

Employment in junior colleges, colleges, universities, and professional schools is projected to rise from nearly 1.7 million in 2010 to almost 2.2 million in 2020. The increase of 477,100 jobs, representing an annual growth rate of 2.5 percent, gives this industry one of the largest increases in employment. (See table 4.) Rising total enrollment in postsecondary-degree granting institutions will drive the increase in employment in this industry.[15] Real output in the industry is projected to increase by $23.2 billion, to reach $145.7 billion by 2020. The 1.7-percent annual growth rate of real output is higher than the zero-percent growth rate experienced during the 2000–2010 period.

Wholesale trade. Employment in the wholesale trade sector is projected to rise from almost 5.5 million in 2010 to 6.2 million in 2020. The employment increase of 744,100 represents one of the largest increases in employment among all industries. (See table 4.) While a large number of jobs are expected to be added, the 1.3-percent growth rate of employment is the same as the overall growth rate of employment for the economy. Much of the rise in employment is due to the recovery from the recession, employment having fallen from 5.9 million in 2000 to 5.5 million in 2010. The economy and domestic demand for goods influence employment in the wholesale trade industry. Real output in wholesale trade is expected to increase from almost $1.2 trillion to $1.6 trillion over the 2010–2020 period. (See table 6.) The increase in real output of $472.5 billion, or 3.4 percent per year, is the second-largest increase in real output for all industries during the 2010–2020 period. As the economy improves and demand for domestic goods increases, so will the demand for wholesale trade services.

Retail trade. Real output in the retail trade sector is projected to grow by $506.0 billion, to reach almost $1.7 trillion by 2020, making this increase the largest in real output among all industries. (See table 6.) Retail trade also is expected to increase employment by 1.8 million, to reach 16.2 million in 2020. This projected increase is the second largest among all industries. (See table 4.) The annual growth rate of 1.2 percent for employment is slightly lower than the overall growth rate of employment for the economy; the difference is attributable to the fact that retail trade is such a large industry in terms of employment. The increase in personal consumption expenditures, from $9.2 trillion in 2010 to $12.0 trillion in 2020, will drive employment and output growth in this industry.[16]

Leisure and hospitality. The leisure and hospitality sector is expected to gain 1.3 million jobs, to reach nearly 14.4 million, over the 2010–2020 period. (See table 1.) Two-thirds of the increase in employment is attributable to the food services and drinking places industry, in which employment is projected to increase from almost 9.4 million in 2010 to 10.2 million in 2020. The increase of 860,400 jobs is among the highest number of jobs added among all industries. (See table 4). The 0.9-percent annual increase in employment is lower than the 1.3 percent experienced during the 2000–2010 period. Real output in food services and drinking places is expected to grow by $134.7 billion, to reach $615.3 billion in 2020, making this increase one of the largest in real output. (See table 6.)

Utilities. The utilities sector is one of the two service-providing sectors (federal government is the other) that are projected to decrease in employment over the 2010–2020 period. The sector is expected to lose 35,700 jobs, falling to 516,100 by 2020, an annual rate of decline of 0.7 percent. (See table 1.) This rate is slower than that posted during the 2000–2010 period, when the sector shed 49,500 jobs, representing a 0.9-percent decline, and fell from 601,300 to 551,800. While employment is expected to fall in the utilities sector, real output is expected to rise from $354.2 billion to $431.7 billion, an increase of $77.5 billion, or 2.0 percent per year.

Water, sewage, and other systems is the only industry in the utilities sector projected to see an employment increase. Employment is expected to rise from 46,900 to 59,000, adding 12,100 jobs over the 2010–2020 period. With a growing population and an increasing number of Environmental Protection Agency (EPA) regulations, as well as state regulations, the demand for workers will rise in this industry. Over the coming decade, real output in the industry is expected to increase by $2.5 billion,

a 2.5-percent annual growth rate, to reach $11.5 billion. This increase contrasts with the drop in real output over the previous decade, from $10.3 to $9.0 billion, a loss of $1.3 billion.

Employment in electric power generation, transmission, and distribution is expected to decrease more than employment in any other industry in the utilities sector. The industry is projected to lose 35,500 jobs, falling to 361,400, a 0.9-percent decline, over the 2010–2020 period. The decline continues the downward trend in employment in the industry, employment having fallen by 37,500, to 396,900, over the 2000–2010 period, also a 0.9-percent decline. New technologies, along with newer and larger facilities, have led to more efficient plants that require fewer workers. While employment continues to fall, real output in the electric power generation, transmission, and distribution industry is projected to rise from $236.7 billion in 2010 to $299.9 billion in 2020. The increase of $63.2 billion represents a growth rate of 2.4 percent over the coming decade, contrasting with the 3.0-percent decline the industry experienced during the 2000–2010 period.

Federal government. The federal government is expected to be the only sector to experience a decrease in real output over the 2010–2020 period, with real output expected to fall by $73.2 billion, from $1.0 trillion in 2010 to $938.9 billion in 2020. (See table 2.) The decline contrasts with the $267.7 billion rise in real output for the sector, from $732.3 billion in 2000 to $1.0 trillion in 2020. Employment in the federal government is projected to fall from almost 3.0 million jobs in 2010 to nearly 2.6 million jobs in 2020. (See table 1.) The expected loss of 372,000 jobs is larger than that of any other sector. The increased pressure to reduce the government budget deficit will be one of the major contributors to the loss of employment and output.

The Postal Service is expected to be responsible for almost half of the decrease in employment in the federal government sector. The agency is projected to lose 181,800 jobs, to fall to 474,600, an annual decline of 3.2 percent, over the 2010–2020 period, the third-fastest and the largest decline in employment of any industry. (See tables 4 and 5.) The Postal Service also is projected to decrease by $4.6 billion in real output, down to $57.5 billion, a rate of decline of 0.8 percent, making this industry one of the fastest declining ones. (See table 5.) With the more widespread use of email, online payment of bills, and a decrease in the circulation of magazines, consumers are moving away from services that the Postal Service industry provides.

General federal nondefense government compensation, which is government spending to produce goods and services by federal nondefense civilian employees, is projected to shed 121,800 jobs between 2010 and 2020, an annual rate of decline of 0.8 percent. This loss of employment is the second-largest for all industries. (See table 4.) Pressure to reduce the budget deficit and curb government spending, as well as to shrink the government workforce, will decrease employment in the industry. Real output in general federal nondefense government compensation is expected to decrease slightly, from $147.0 billion in 2010 to $128.7 billion in 2020, an annual rate of decline of 1.3 percent.

State and local government. Employment in the state and local government sector is projected to increase from 19.5 million in 2010 to almost 21.2 million in 2020. (See table 1.) This employment increase, of slightly more than 1.6 million jobs for this sector, is one of the largest increases in employment for all major sectors. Real output in the state and local government sector also is expected to increase in 2020, rising from almost $1.8 trillion in 2010 to more than $2.1 trillion. (See table 2.)

Employment in state and local educational services will account for almost two-thirds of the increase in employment in the state and local government sector over the 2010–2020 period. Employment in local government educational services will increase from 8.0 million in 2010 to just less than 8.8 million in 2020. The addition of 741,000 jobs, representing an annual growth rate of 0.9 percent, is one of the largest increases in employment among all industries. (See table 4.) Rising enrollment in primary and secondary schools and the increasing assimilation of those with disabilities into regular instruction will drive employment gains for both teachers and aides.[17] Employment in state educational services is expected to increase from almost 2.4 million to almost 2.7 million. The employment increase of 284,600 is one of the largest projected for the decade. (See table 4.) The increased enrollment in postsecondary institutions, which is due to the increased number of high school graduates and older workers seeking to improve their skills, will drive most of this employment growth.

Goods-producing sectors

The goods-producing sectors, which together comprise agriculture, mining, construction, and manufacturing, are projected to add almost 1.7 million jobs, increasing from 19.8 million to 21.5 million from 2010 to 2020. (See

table 1.) Although employment is rising in those sectors, employment in the service-providing sectors is increasing more rapidly, so the goods-producing sectors percentage of total employment is projected to fall from 13.9 percent to 13.1 percent during the period. Real output in the goods-producing sector is expected to grow at 2.8 percent, which is slightly lower than the overall economy. (See table 2.) While real output is expected to grow at a rate just less than that of the overall economy, the percentage of total nominal output is projected to fall from 25.7 percent in 2010 to 23.8 percent in 2020. Again, this decline is due to the service-providing sectors growing more rapidly than the goods-producing sectors.

Agriculture, forestry, fishing, and hunting. This sector contains more self-employed and unpaid family workers than wage and salary workers. Over the 2010–2020 decade, employment of self-employed and unpaid family workers is expected to decrease by 84,100, down to 769,300 in 2020, a 1.0-percent decline from the 2010 figure. Wage and salary employment is projected to fall from almost 1.3 million in 2010 to just more than 1.2 million in 2020, a decrease of 46,000, or a 0.4-percent decline. Total employment in this sector is expected to fall by 130,200, a 0.6-percent decline. Real output is projected to rise from $301.4 billion in 2010 to $365.1 billion in 2020, an increase of $63.7 billion. The projected annual increase in real output of 1.9 percent from 2010 to 2020 is larger than the 0.5-percent increase experienced during the 2000–2010 period.

Wage and salary employment in the crop production industry is expected to fall by 40,200, from 629,500 in 2010 to 589,300 in 2020, one of the largest declines in employment among all industries. (See table 4.) Still, while employment is projected to fall, real output is projected to rise from $123.1 billion in 2010 to $143.2 billion in 2020, an increase of $20.1 billion, at an annual rate of 1.5 percent, which is greater than the 0.1-percent decline the industry experienced during the 2000–2010 period. The expansion of the U.S. biofuels industry and increased demand for biofuels by the United States, Brazil, and the European Union (where biofuels are exported) will help drive demand in this industry. Rising demand for these crops will increase the price of the crops over the 2010–2020 decade.[18]

Employment in the animal production industry also is expected to fall, from 832,500 in 2010 to 785,100 in 2020, a decrease of 47,400, an annual rate of decline of 0.6 percent. Real output in this industry is expected to increase by $36.4 billion, an annual rate of 2.4 percent, to reach $175.4 billion by 2020. While output in the industry is growing, higher prices for feed used in raising livestock may initially mute some of the growth.[19]

The forestry industry is the only industry within the agriculture, forestry, fishing, and hunting sector that is projected to have employment growth over the next decade. Employment is expected to rise from 14,700 in 2010 to 19,200 in 2020, increasing at an annual rate of 2.7 percent, which is faster than the 0.6-percent growth rate experienced during the 2000–2010 period. Real output also is expected to grow in the forestry industry, increasing by $2.2 billion, to reach $9.8 billion in 2020. The 2.5-percent annual growth rate in real output registered in 2010–2020 is slightly faster than the 2.3-percent growth rate experienced during the 2000–2010 period.

Mining. Employment in the mining sector is projected to rise from 655,900 in 2010 to 680,700 in 2020, an increase of 24,800. The annual growth rate for employment of 0.4 percent during the 2010–2020 period is slower than the 2.3-percent rate experienced during the 2000–2010 period. (See table 1.) Employment in the industry is closely related to trends in the price of the goods being mined and to increasing energy efficiency as prices rise. Real output in mining also is expected to rise, by $52.9 billion, an annual rate of increase of 1.3 percent, to reach $441.0 billion by 2020. (See table 2.) This growth rate is faster than the 0.1-percent rate of decline that the industry experienced during the previous period.

The oil and gas extraction industry will account for almost all the employment gains in the mining sector, with employment rising from 158,900 in 2010 to 182,100 in 2020. The employment gain of 23,200 experienced during the 2010–2020 period, a rate of increase of 1.4 percent per year, is less than the employment increase of 34,000 seen from 2000 to 2010. Real output in this industry is projected to rise by $9.0 billion, an annual rate of increase of 0.4 percent. Further increases in shale gas production, in which the new technologies of horizontal drilling and hydraulic fracturing made production more economical, are expected over the next decade.[20] The increased demand for oil and gas will spur further exploration for oil and gas reserves. Some factors, such as increased environmental regulations, may slow growth.

The nonmetallic mineral mining and quarrying industry is the other industry in the mining sector that is projected to increase employment over the 2010–2020 period. Employment is expected to grow from 85,900 in 2010 to 97,500 in 2020, a difference of 11,600. The annual growth rate of 1.3 percent over the decade contrasts with the

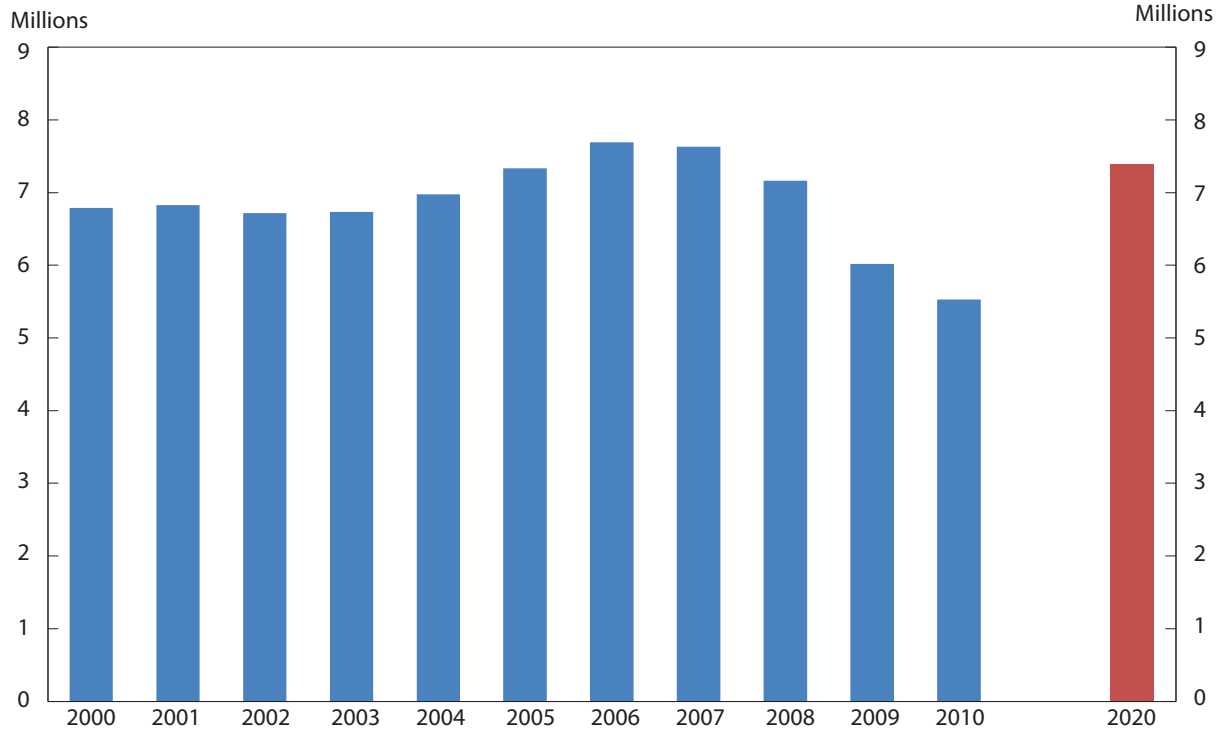
2.9-percent decline during the 2000–2010 period. Real output in the nonmetallic mineral mining and quarrying industry also is projected to increase, by $8.7 billion, to reach $33.7 billion by 2020. The annual increase in real output of 3.0 percent projected for the 2010–2020 period is higher than the 1.1-percent rise experienced during the previous period. As the construction sector rebounds, demand will increase for nonmetallic minerals such as granite and gravel and other materials used in residential and nonresidential construction. (See next sections.)

The coal mining and metal ore mining industries are both projected to decrease in employment by 3,100 and 8,300 jobs, respectively. However, both industries are projected to increase in real output. Coal mining is expected to increase from $20.9 billion in 2010 to $27.7 billion in 2020, a difference of $6.8 billion. The 2.9-percent growth rate during the 2010–2020 period contrasts with the 3.9-percent decline experienced during the 2000–2010 period. Coal is still the main source of electric power generation, and as the demand for more power increases, so will the demand for coal. Real output in metal ore mining is projected to increase by $2.3 billion, to reach $8.8 billion in 2020. The 3-percent growth rate of the industry period projected for the next decade contrasts with the 10-percent decline experienced during the previous 10 years.

Construction. Employment in the construction sector is projected to increase from more than 5.5 million in 2010 to nearly 7.4 million in 2020. (See table 1.) The increase of 1.8 million jobs, an annual rate of growth of 2.9 percent, is the largest increase in employment among all industries. (See table 4.) In 2006, the construction industry had 7.7 million wage and salary jobs. While the number of jobs projected to be added in the industry between 2010 and 2020 is large, the number still is projected to be below that held in 2006. (See chart 2.)

The construction industry was hit particularly hard by the recession, causing the annual employment for the wage and salary workers to fall by 2.1 million jobs for the 2007–2010 period. This fall represents a 10-percent annual rate of decline. The relatively low starting point for 2010 contributes to the large change and relatively fast growth rate of employment projected for 2010–2020. During the earlier 2000–2010 period, the share of total employment held by construction fell from 4.6 percent to 3.9 percent. Because the employment rate in the construction industry is expected to grow faster than the overall employment rate, the percentage of all employees in the construction

Chart 2. Wage and salary employment in construction, 2000–2010 and projected 2020



SOURCE: U.S. Bureau of Labor Statistics, Current Employment Statistics (historical data) and Employment Projections Program (2020 data).

industry is expected to rise to 4.5 percent in 2020.

The construction industry is projected to experience one of the largest increases in real output, with the measure expected to rise by $368.7 billion, to reach almost $1.2 trillion in 2020. (See table 6.) This increase contrasts sharply with that seen in the 2000–2010 period, in which real output in construction fell from $1.2 trillion to $814.7 billion. Most of the loss in output during 2000–2010 can be attributed to the recession that started in December 2007.

The increase in residential investment and nonresidential structures investment during 2010–2020 will spur employment and output in the construction sector. Investment in nonresidential structures is expected to grow 3.2 percent per year between 2010 and 2020, contrasting with the 3.5-percent decrease experienced during the 2000–2010 period. Improving existing and aging infrastructure will play a large role in this increase. Residential investment is projected to grow at 7.0 percent per year over the 2010–2020 period, faster than the 5.5-percent decline seen during the previous period. Most of the growth in residential construction can be attributed to its low starting point due to the recession.[21]

Manufacturing. Employment in the manufacturing sector is projected to fall by 73,100, an annual rate of decline of 0.1 percent, down to just under 11.5 million in 2020. (See table 1.) Although employment is decreasing in this sector, the slight fall contrasts with the 5.7 million jobs lost between 2000 and 2010. Within the sector, 32 of the 77 industries are projected to increase employment. The increase in the volume of manufactured goods that are imported, as well as the increased productivity gains experienced in manufacturing industries, will drive some loss in jobs in the manufacturing sector.

In 2006, annual wage and salary employment in manufacturing stood at 14 million. By 2010, employment had fallen to just more than 11.5 million, or 8.1 percent of economywide employment. Combined with the projected loss of 73,100 jobs from 2010 to 2020 and the 18.0 million jobs expected to be gained in the service-providing sector, the share of employment held by the manufacturing sector is anticipated to fall to 7.0 percent by 2020. (See chart 3.)

Real output in the manufacturing sector is expected to grow from nearly $4.4 trillion in 2010 to $5.7 trillion in 2020. (See table 2.) This increase of almost $1.4 billion is greater than the $222.1 billion lost between 2000 and 2010. The 2.8-percent growth rate of real output during 2010–2020 is slightly lower than the 2.9 percent projected for the overall economy but is considerably faster than the 0.5-percent decline experienced during the previous period. Although manufacturing output is growing, its percentage of total output continues to fall, from 19.2 percent in 2010 to 17.6 percent in 2020. Of the 77 manufacturing industries, only 4 (apparel knitting mills; fiber, yarn, and thread mills; tobacco manufacturing; leather and hide tanning and finishing and all other leather and allied product manufacturing) are projected to decrease output during the 2010–2020 period.

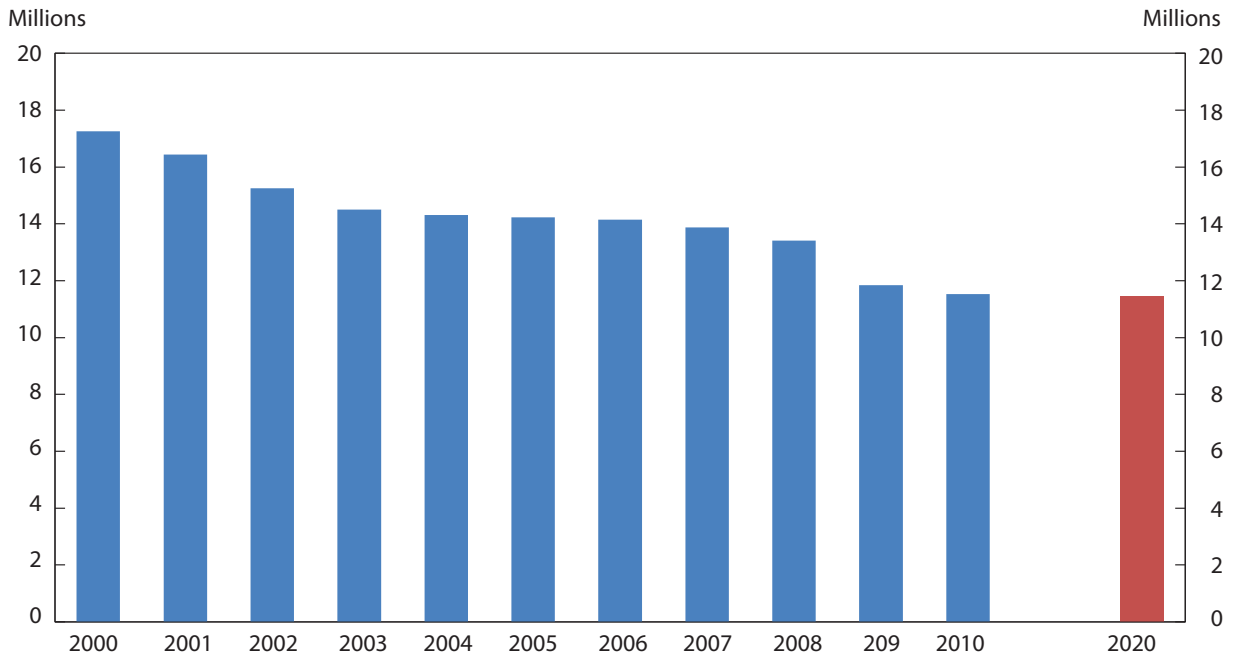
The computer and electronic product manufacturing subsector is projected to grow the fastest in output, with real output increasing from $465.7 billion in 2010 to $895.9 billion in 2020. The increase of $430.2 billion represents an annual rate of increase of 6.8 percent, faster than the 1.1 percent experienced during the 2000–2010 period. While output is increasing in this subsector, employment continues to fall. Employment is projected to fall by 156,700, down to 943,400 by 2020, an annual rate of decline of 1.5 percent, which is greater than the 4.9-percent decline experienced during the 2000–2010 period. Productivity improvements in this industry are driving the large increases in output and the decline in employment.

Real output in the computer and peripheral equipment manufacturing industry is expected to grow from $132.3 billion in 2010 to $513.0 billion in 2020, an increase of $380.7 billion, one of the largest increases. (See table 6.) The 14.5-percent projected growth rate over the 2010–2020 period makes this industry the fastest in output growth. (See table 5.) Employment in the industry is expected to fall 44,100, down to 117,500 by 2020. The annual rate of decline of 3.1 percent during the projection period is slower than the 6.1-percent rate experienced during the previous period. The expected increase in productivity in this industry will produce large gains in output, while employment falls.

In the semiconductor and other electronic component manufacturing industry, real output is expected to increase $146.1 billion over the coming decade, one of the largest projected increases in output. (See table 6.) The anticipated 7.3-percent annual increase in output would make this industry the third-fastest-growing industry in terms of output during the 2010–2020 period. (See table 5.) By contrast, employment in semiconductor and other electronic component manufacturing is expected to decline by 32,800 over the same time span, an annual rate of 0.9 percent compared with the 5.9-percent decline seen during the 2000–2010 period. Increased demand for smartphone, tablet, and wireless technology will drive output growth in the industry.

The communications equipment manufacturing indus-

Chart 3. Wage and salary employment in manufacturing, 2000–2010 and projected 2020



SOURCE: U.S. Bureau of Labor Statistics, Current Employment Statistics (historical data) and Employment Projections Program (2020 data).

try is projected to increase its real output from $62.8 billion in 2010 to $105.7 billion in 2020. The increase of more than $42.8 billion, or 5.3 percent per year, makes this one of the fastest growing industries. (See table 5.) While output is growing fast, employment in this industry is projected to fall from 118,000 in 2010 to 85,700 in 2020. The decrease of 32,300 jobs, at an annual rate of 3.1 percent, is one of the fastest and largest decreases in employment. (See tables 3 and 4.) The aforementioned increased demand for smartphone applications and for wireless communications devices in general will drive output growth in the industry. The increase in productivity, due to technological advances, will drive the decrease in employment.

The transportation equipment manufacturing subsector had the largest percentage, 11.5 percent, of employees of any other manufacturing subsector in 2010. Employment growth in this subsector is expected to remain flat, increasing by only 3,000, to reach 1.3 million in 2020. The subsector's share of employment in the manufacturing sector also is projected to remain flat, at 11.6 percent. Although employment is projected to stay flat, real output in this subsector is projected to increase by $215.0 billion over the 2010–2020 period, in contrast to the $53.9 million lost during the previous period.

The railroad rolling stock manufacturing industry is projected to grow the fastest in employment and output in the transportation equipment manufacturing subsector. Employment is expected to increase from 20,100 to 24,600, an annual rate of 2.1 percent, during the 2010–2020 period. The projected employment for 2020 is below the employment level of 32,800 jobs in 2000, because this industry was hit hard by the recession. Real output in the industry is projected to grow at 4.0 percent per year, making railroad rolling stock manufacturing one of the fastest growing among all industries. (See table 5.) The replacement of aging railroads, railroad cars, railway equipment, subway cars, and tracks, as well as the maintenance of existing cars and tracks, will drive demand in this industry.

Motor vehicle manufacturing, motor vehicle body and trailer manufacturing, and motor vehicle parts manufacturing are all projected to experience strong output growth during the coming decade, with real output growing at 3.7 percent, 3.6 percent, and 3.2 percent, respectively. These and other industries can be found on the BLS website.[22] While motor vehicle manufacturing and motor vehicle body and trailer manufacturing are expected to grow slightly in employment, at rates of 0.9 percent and 0.6 percent, respectively, employment in motor vehicle parts manufacturing is projected to fall 0.5 percent per year between 2010 and 2020.

The apparel knitting mills industry and the leather and

hide tanning and finishing and other leather and allied product manufacturing industry are projected to decrease the fastest in employment among all industries. Apparel knitting mills employment is expected to fall from 157,700 in 2010 to 66,100 in 2020, a loss of 91,600, making this industry the fastest declining of all industries and one of the largest in terms of number of jobs lost. (See tables 3 and 4.) Employment in leather and hide tanning and finishing and other leather and allied product manufacturing industry is projected to decrease at 7.6 percent per year over the 2010–2020 period, making this decline in employment one of the fastest. (See table 3.)

Real output in apparel knitting mills also is projected to fall, by $7.7 billion, or 7.1 percent, one of the largest decreases in output, and the fastest decrease in output, of all industries. (See tables 5 and 6.) Real output in the leather and hide tanning and finishing and other leather and allied product manufacturing industry is expected to fall by $1.3 billion over the next decade, a 3.3-percent decline, one of the fastest of all industries and representing one of the largest decreases in employment of all industries. (See tables 5 and 6.) The large decreases in employment and output in these two industries can be attributed to import competition and the labor-intensive nature of the industries.

BLS PROJECTS THAT EMPLOYMENT AND OUTPUT GROWTH will improve in the 2010–2020 decade, compared with the 2000–2010 decade, in which a major economic recession took place. As a result of the recession, some industries began the new decade with low levels of employment and output and thus may have uncharacteristically high projected values.

The service-providing sectors will account for a large percentage of employment growth in the upcoming decade. The health care and social assistance sector and the professional and business services sectors will add more than a third of all the new jobs and will account for almost a fourth of total employment by 2020. The service-providing domain of the economy will grow slightly faster than the overall economy as a result of the growth in these sectors. Output in the service-providing domain also is expected to continue to increase its share of total output, reaching more than 70 percent, while growing at the same rate as the rest of the economy.

The goods-producing sectors will rebound from the dramatic employment loss experienced during the previous decade, some of which was caused by the recession. The increase in the number of construction jobs will lead the growth in employment in the goods-producing domain of the economy and will mitigate some of the job losses in other goods-producing sectors. The loss of manufacturing jobs also will slow, compared with the previous decade's loss of jobs in the same sector. □

Notes

[1] The National Bureau of Economic Research (NBER) is generally recognized as the official arbiter of recessions in the United States. The NBER identified the latest recession as starting in December 2007 and ending in June 2009. For more information, visit the NBER website on the Internet at **http://www.nber.org**.

[2] Total employment is the summation of the employment figures among all nonagricultural wage and salary workers; the data are from the BLS Current Employment Statistics survey, and self-employed, unpaid family workers, and agriculture, forestry, fishing, and hunting workers, which are from the Current Population Survey.

[3] Nonagricultural wage and salary employment data are from the Current Employment Statistics survey, except for private household employment data, which are from the Current Population Survey. Logging workers are excluded.

[4] Throughout this article, unless otherwise noted, output refers to real output in chain-weighted 2005 dollars.

[5] For more information on the projections for the macroeconomic variables, see Kathryn J. Byun and Christopher Frey, "The U.S. economy to 2020: recovery in uncertain times," this issue, pp. 21–42, **http://www.bls.gov/opub/mlr/2012/01/art2full.pdf**.

[6] For more information on the effects of the most recent recession, see Eleni Theodossiu and Steven F. Hipple, "Unemployment remains high in 2010," and John P. Eddlemon, "Payroll employment turns the corner in 2010," *Monthly Labor Review,* March 2011, pp. 3–22 and 23–32, respectively, **http://www.bls.gov/opub/mlr/2011/03/home.htm**.

[7] This set of BLS projections is based on the 2007 North American Industrial Classification System (NAICS). Within this article, sectors generally refer to two-digit NAICS categories, subsectors to three-digit NAICS categories, and industries to either two-, three-, or four-digit NAICS categories.

[8] "Projections of the Population by Selected Age Groups and Sex for the United States: 2008 to 2050" (U.S. Census Bureau, Population Division, Aug. 14, 2008), **http://www.census.gov/population/www/projections/summarytables.html.**

[9] "Projections of National Health Expenditures: Methodology and Model Specification" (Centers for Medicare and Medicaid Services, Jul. 28, 2011), **http://www.cms.gov/NationalHealthExpendData/03_NationalHealthAccountsProjected.asp.**

[10] *Ibid.*

[11] *Ibid.*

[12] *Ibid.*

[13] For more information on the housing market, see Byun and Frey, "The U.S. economy to 2020: recovery in uncertain times," this issue, pp. 21–42, **http://www.bls.gov/opub/mlr/2012/01/art2full.pdf**.

[14] For more information, see Tabitha M. Bailey and William J. Hussar, "Projections of Education Statistics to 2020" (U.S. Department of Education, National Center for Education Statistics, Washington, DC, September 2011).

[15] *Ibid*.

[16] For more information on the projections for the macroeconomic variables, see Byun and Frey, "The U.S. economy to 2020: recovery in uncertain times," this issue, pp. 21–42, **http://www.bls.gov/opub/mlr/2012/01/art2full.pdf**.

[17] For more information, see Bailey and Hussar, "Projections of Education Statistics to 2020."

[18] *USDA Agricultural Projections to 2020,* Report OCE-2011–1 (Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture, Interagency Agricultural Projections Committee, Long-term Projections Report).

[19] *Ibid*.

[20] See "Annual Energy Outlook 2011" (U.S. Department of Energy, April 2011), **http://www.eia.gov/oiaf/archive/aeo10/gas.html**.

[21] For more information on the projections for the macroeconomic variables, see Byun and Frey, "The U.S. economy to 2020: recovery in uncertain times," this issue, pp. 21–42, **http://www.bls.gov/opub/mlr/2012/01/art2full.pdf**.

[22] For more information, see the employment and output by detailed industry table on the Internet at **http://www.bls.gov/emp/ep_table_207.htm**.