

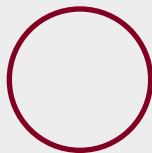
Ohio

Department of
Job and Family Services

TO STRENGTHEN OHIO'S FAMILIES THROUGH THE DELIVERY OF INTEGRATED SOLUTIONS TO TEMPORARY CHALLENGES

2018 Ohio Job Outlook

Employment Projections



Job Outlook to 2018

	Page
Preface	1
Overview	1
Gambling Industry Exception	2
Ohio Economic Trends	3
Ohio Labor Force	4
Ohio Industry Employment	8
Major Industries	9
Specific Industries' High Growth	10
Most New Jobs	11
Replacement Needs	11
High Employment Prospects	12
Self-Employed	12
Ohio Occupational Employment	13
Type of Work	14
New Jobs	15
High Growth Rates	15
Annual Openings	16
Education and Training Level	18
High Employment Prospects	18
Technical Notes	20
Additional Information	20
Appendix Tables	
A - Labor Force Estimates	A-1
B - Detailed Industry Table	B-1
C - Self-Employed Occupations	C-1
D - Occupations - Intermediate Aggregation	D-1
E - Detailed Occupation Table	E-1
F - Education & Training Level, Aggregated Occupations	F-1

Job Outlook to 2018

Preface

The Bureau of Labor Market Information has been developing projections of the Ohio economy for several decades. People who use the outlook information include individuals planning their careers and choosing among the wide variety of education and training options available to them; educational program planners developing curricula and courses of training; administrators and legislators responsible for government policies; and business executives planning marketing and personnel strategies. The changing industrial structure of the economy will be affecting the number of jobs available by occupation. Information about such change is important to people making decisions about their own future or the future of where they work.

Employment projections are estimates of employers' future needs for workers who have the skills to produce goods and services their customers want. Occupational projections incorporate analytical decisions made at the national level regarding the effects of technological change, organizational structure, and shifts in demand. State models used to develop these projections make use of the Bureau of Labor Statistics' techniques to translate the demand for goods and services into jobs. Individual industries are analyzed according to whether the goods or services are destined for a local market, such as grocery stores or restaurants, or for export, either outside Ohio or overseas. The 2001 recession had a greater and longer lasting effect on Ohio than the nation as a whole and most other states. There was only a partial recovery before the recession that started in December 2007. These projections for Ohio are based on the most current data available at the time of their production.

This report highlights the demand for employment in Ohio to 2018. More detailed information on the projected demand for industry and occupational employment, a slide show and a high employment prospects table by education and training level are available at <http://ohiolmi.com/proj/projections.htm>. The slide show and "Labor Force Table" for Ohio also document the continued aging of the Ohio workforce.

Overview

What Ohio employment will be like in the next ten years is a consequence of what the United State's future is going to be. While the future is obviously unknown, the recent past is an indicator of what might happen. Since 2003, Ohio's unemployment rate has been higher than the U.S. rate. Before that, Ohio's rate tended to be slightly lower. Because Ohio's population and income are expected to grow more slowly than is expected nationally, overall employment in Ohio is projected to grow at a slower rate than nationally. Over the 2008-2018 period, the Ohio economy is projected to create nearly 250,000 new jobs, primarily in service-providing industries.

This report highlights findings on three aspects of Ohio's future outlook. In the first section, economic trends, we look at population and income and how these factors affect demand for products and services in terms of Ohio's relationship to the national economy. The next section presents projected changes in industry employment. The outlook for specific occupations or jobs is the focus of the final section. In this section, attention is paid not only to the growth or decline of each occupation, but also to the number of annual openings and the average hourly wage. Educational levels are discussed in terms of education and training level needed for entry into an

occupation. This section also presents the occupations that have high prospects, based on wages and annual openings, between now and 2018.

Although the labor market in Ohio is still feeling the effects of both the 2001 and 2007 recessions, employment is projected to increase at a slow rate. On average, between 2008 and 2018 the Ohio economy is expected to have over 166,000 annual openings. Most job openings will result from the need to replace workers who leave the labor force, usually upon retirement or transfer to another occupation. Over three out of every four openings in Ohio are expected to be due to replacement needs. Therefore, even declining occupations may provide substantial opportunities for employment.

In general, the Ohio economy will provide jobs for workers at all educational levels, but individuals with more education and training will enjoy better job opportunities. Growth rates over the 2008-2018 period are 9.8 percent for those occupations requiring any level of postsecondary training, compared with 2.1 percent for those occupations that usually require only on-the-job training or experience in a related occupation. The slowest growth rate, almost negligible, is projected for occupations that generally require moderate-term on-the-job training. This reflects the concentration of many production occupations in declining manufacturing industries.

An Exception

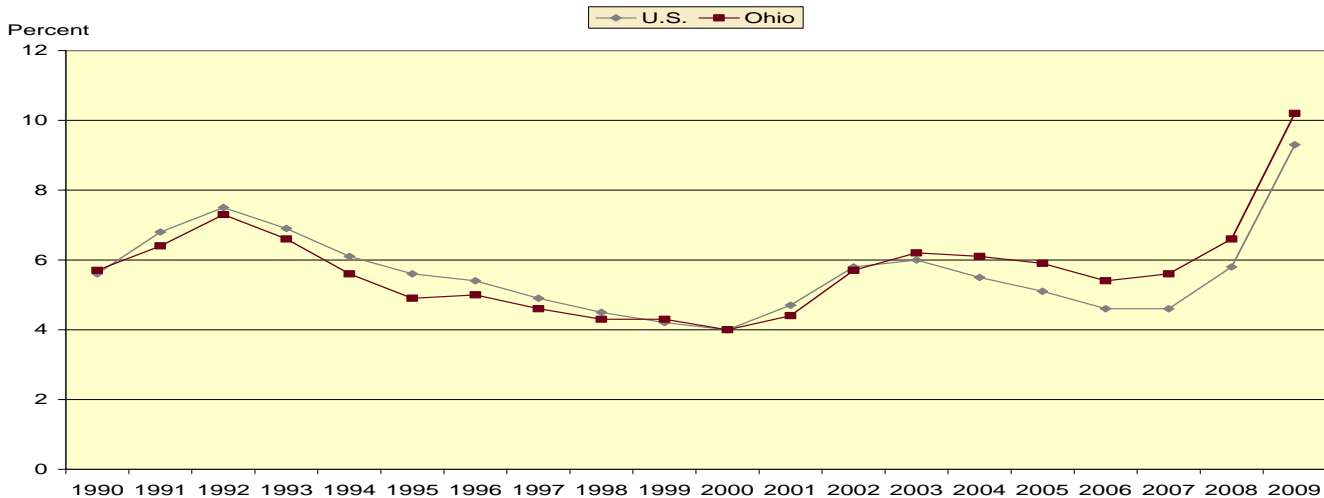
Gambling Industry

On November 3, 2009, Ohio approved the building of four Casinos in Ohio. This report does not attempt to quantify how many new jobs will be added to the labor market in 2018. Because of the lack of historical data, it is not possible to project employment for these casinos at this time.

Ohio Economic Trends

The recession which started in December 2007 and officially ended in July 2009 was especially hard on the Ohio job market. Average employment in 2009 was lower than it has been in any year since 1995. The number of Ohioans unemployed and the unemployment rate was higher than any time since 1983: 611,200 and 10.2 percent, respectively. Since 2003, Ohio's unemployment rate has been higher than the U.S. rate and the gap has been widening.

Ohio and United States Unemployment Rate, 1990-2009



The need for workers stems from the demand for goods and services. The value of output in goods and services is measured by Gross Domestic Product (GDP) for the nation and Gross State Product (GSP) for Ohio. In 2008, Ohio ranked eighth in the country in Gross State Product, and it accounted for 3.3 percent of the U.S. Gross Domestic Product.¹ From 2007 to 2008, Ohio real GSP fell 0.7 percent while real GDP increased 0.7 percent. Ohio ranked 46th in GSP growth among the states and the District of Columbia.

Changes in demand for specific goods and services affect the quantity of goods and service produced. At the local level, demand is affected by population and income. Ohio's population and per capita income have been growing more slowly than the national average. From 2000 to 2009, the national population grew 9.1 percent, but Ohio's population grew only 1.7 percent. For the same period, U.S. per capita personal income increased 29.1 percent, while Ohio per capita personal income increased 23.3 percent. This means Ohio demand for goods and services is lower than average, which leads to lower employment growth.

In addition, Ohio has been hurt by declines in manufacturing employment, especially in motor vehicle and motor vehicle parts manufacturing. In 2009, Ohio's concentration of employment in manufacturing was 36 percent above the national average; its concentration of employment in the motor vehicle and motor vehicle parts manufacturing industries were 274 percent and 338 percent above the national average. From 2001 to 2007, Ohio lost more than 180,000 manufacturing jobs.²

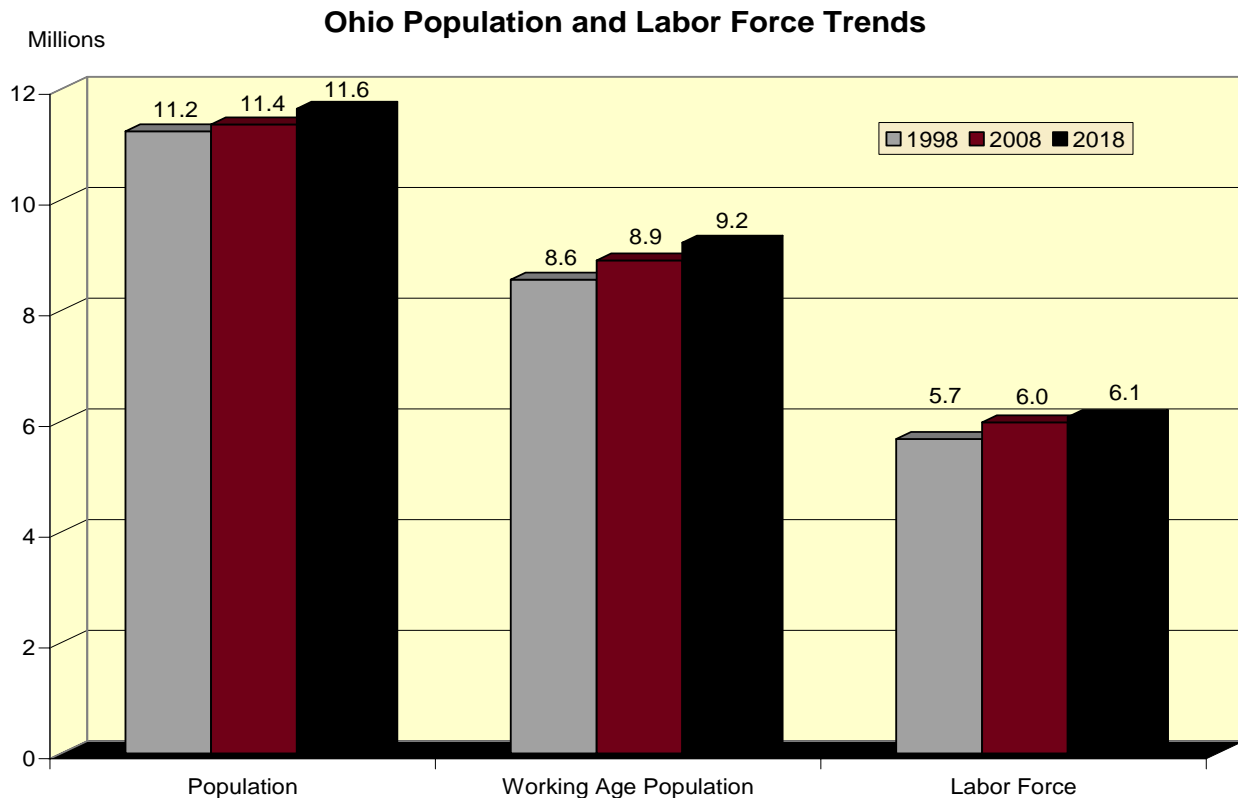
¹ Bureau of Economic Analysis, BEA News, June 2, 2009.

² Bureau of Economic Analysis, Regional Economic Accounts, Per Capita income, downloaded June 2010.

Ohio Labor Force

The workers available to fill all of the jobs in the economy are called the labor force. The labor force comprises all individuals 16 years of age or older who are either working or looking for work.

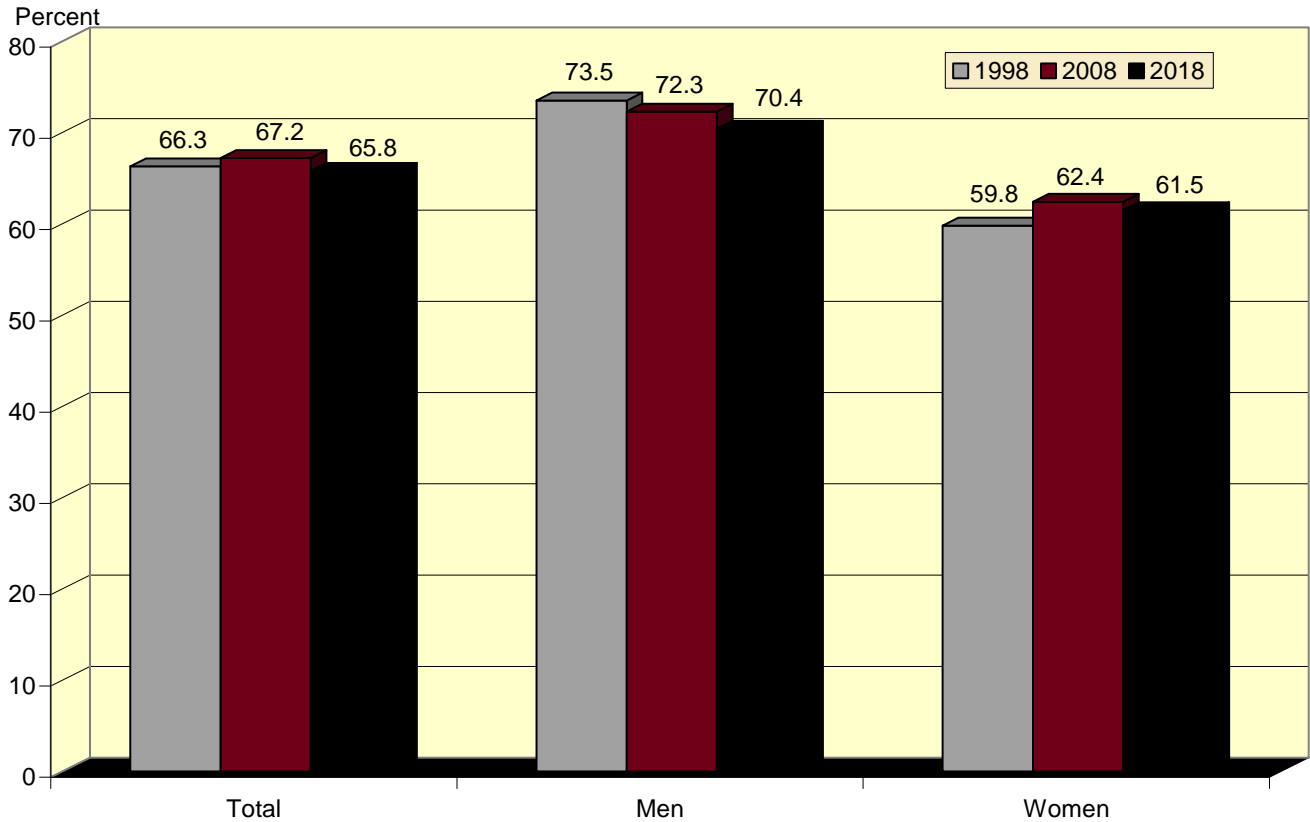
Several factors affect the size and demographic composition of the labor force. The most important factor is the size of the civilian noninstitutional population 16 years of age and older; population size is affected by birth rates, death rates and migration. The projected population for 2018 was based on Population Projections by Age and Sex: 2005-2030 as published by the Ohio Department of Development on their website: <http://development.ohio.gov/>



For a given population group, the proportion of individuals working or looking for work - that is, the labor force participation rate - is the major determinant of labor force size. This rate varies significantly by age and sex. For example, young and older people have lower participation rates than do those in their thirties and forties, because many young people attend school and many older people retire. Changes in Ohio labor force participation rates were based on trends in Ohio rates and projections of national projection rates by age and sex, published in the November 2009 issue of the Bureau of Labor Statistics' *Monthly Labor Review*.

The future supply of the labor force is projected to increase by 93,000 over the 2008-2018 period from 5,981,000 to 6,074,000. This represents an estimated 1.6 percent increase, down from the calculated 5.3 percent increase over the previous 10-year period, 1998-2008.

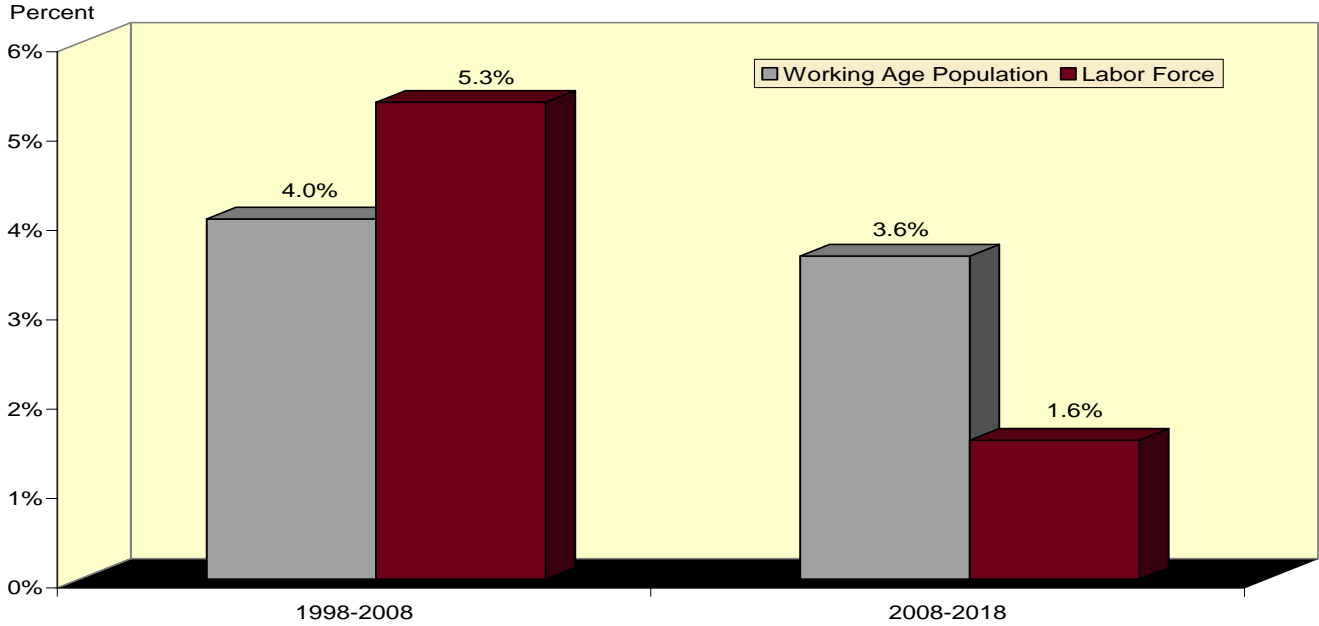
Ohio Labor Force Participation Rate Trends by Sex



Ohio Labor Force Estimates*: 1998, 2008 and 2018					
		Civilian Noninstitutional Population 16 and Over	Civilian Labor Force	Labor Force Participation Rate	Share
1998	Total	8,561,000	5,678,000	66.3%	100.0%
	Males	4,081,000	3,001,000	73.5%	52.9%
	Females	4,480,000	2,677,000	59.8%	47.1%
2008	Total	8,906,000	5,981,000	67.2%	100.0%
	Males	4,277,000	3,094,000	72.3%	51.7%
	Females	4,630,000	2,887,000	62.4%	48.3%
2018	Total	9,228,000	6,074,000	65.8%	100.0%
	Males	4,469,000	3,147,000	70.4%	51.8%
	Females	4,760,000	2,927,000	61.5%	48.2%

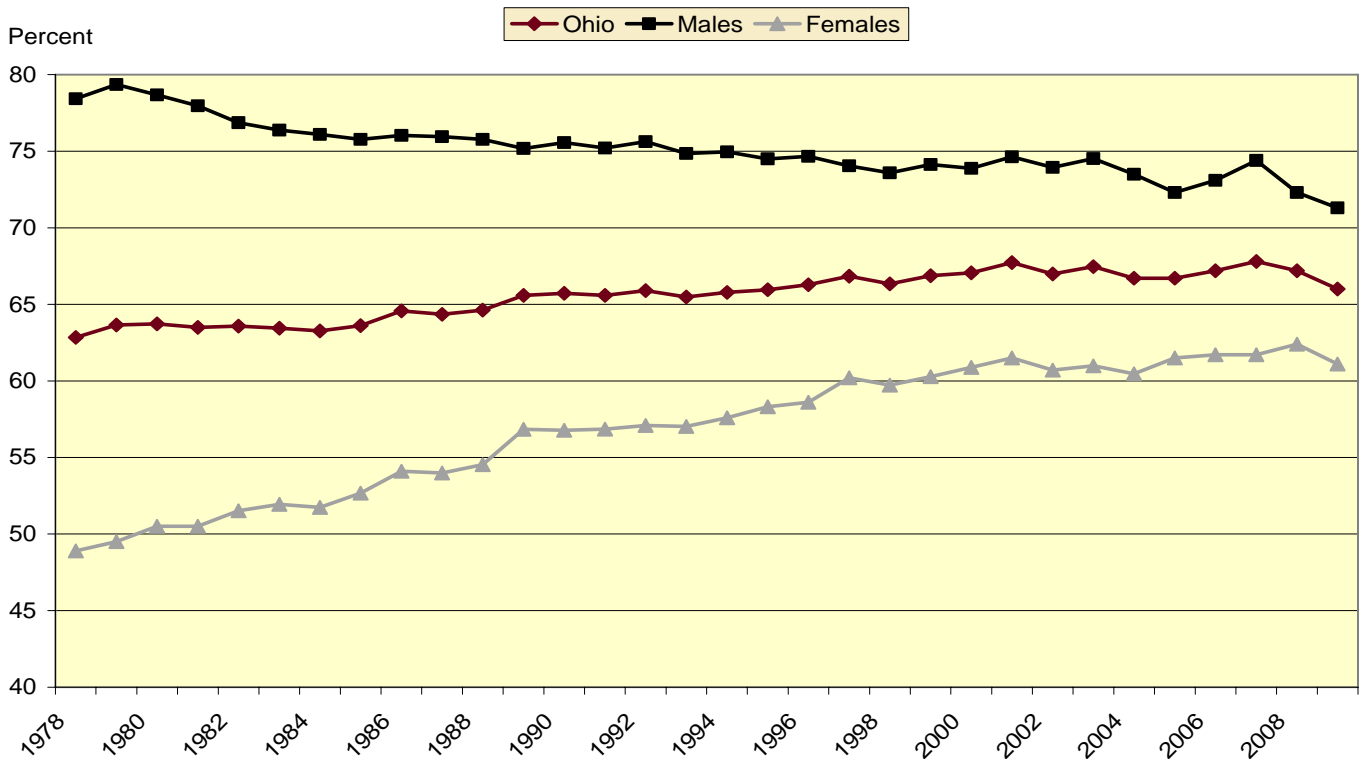
*Source: *Geographic Profile of Employment & Unemployment*, 1998 and 2008, U.S. Department of Labor, Bureau of Labor Statistics.

Growth of Ohio Population and Labor Force 1998-2008 and 2008-2018

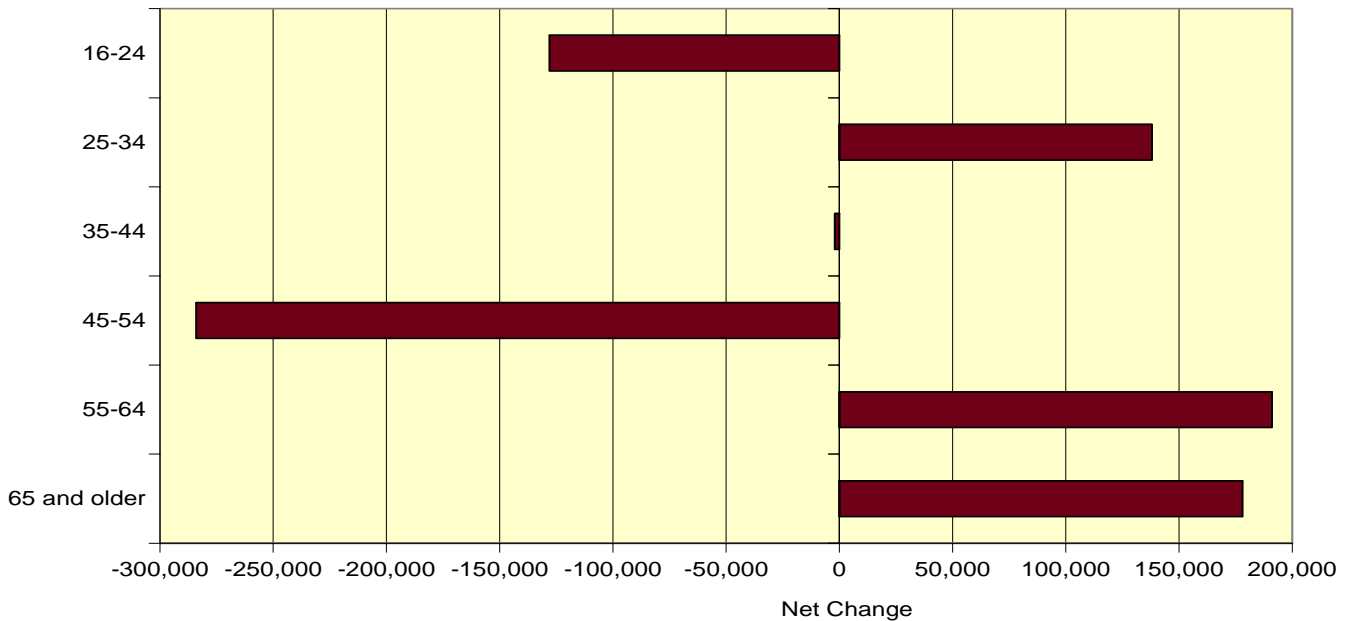


Labor Force participation is expected to fall from 67.2 percent of the working age population in 2008 to 65.8 percent by 2018. This decline is expected because of the retiring of the baby boomers. The participation rates of both men and women are declining. However, after a history of the women's proportion of the labor force increasing, their share is expected to remain what it was in 2009: 48.2 percent.

Labor Force Participation Rates 1978-2009



Change in Labor Force by Age Groups, 2008-2018



As stated earlier, the demographic composition of the Ohio labor force is changing due to the population's aging. The chart above shows the significant growth in the two oldest age groups. Workers 55 and older are expected to grow by 369,000 (34.0 percent). It also shows the decline of the youngest workers: 128,000 (-13.9 percent). The groups in between can be thought of as 'prime age' workers - those 25 to 54 years of age. Adding the prime aged groups together yields a decline of 148,000 workers (-3.7 percent).

From another perspective, workers 55 and older were 18.1 percent of the labor force in 2008, but are expected to grow to 29.9 percent by 2018. (In 1998, they comprised only 12.2 percent.) Prime age workers, 66.4 percent of the labor force in 2008, are projected to decline to 63.0 percent in 2018. Younger workers are projected to drop to 13.1 percent in 2018 from 15.4 percent in 2008.

Estimated participation rates for these three groups are shown in the table below. It shows how the participation rates of the youngest age group, those aged 16 to 24, have steadily decreased, while participation among those 55 and older has increased and the prime working age population has remained relatively constant.

Ohio Labor Force Participation Rates for Young, Prime-Age and Older Workers

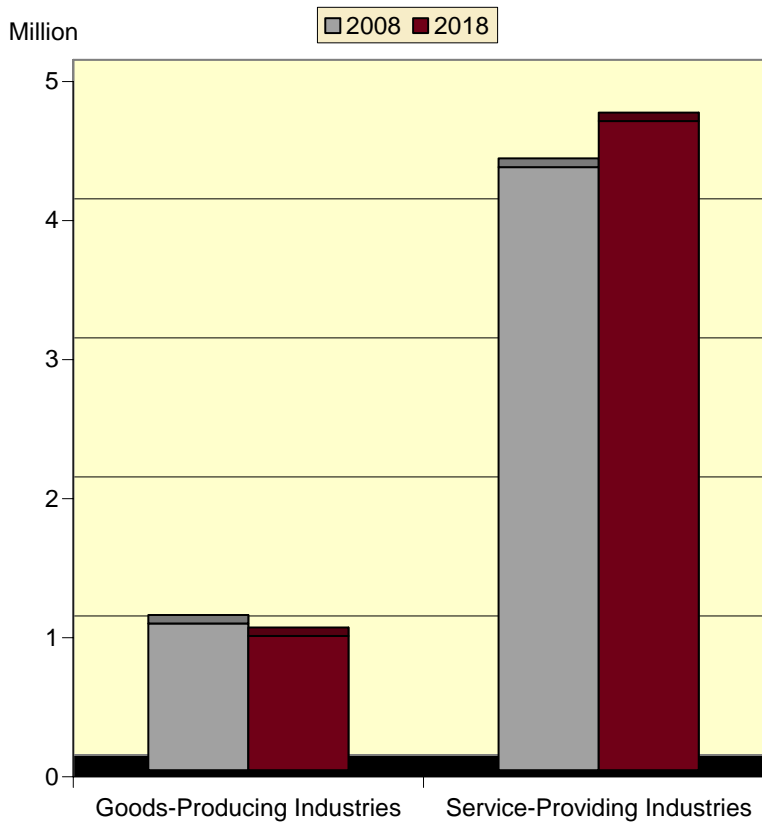
Age	1998	2008	2018
Total	66.3%	67.2%	65.8%
16-24	68.7%	63.2%	61.3%
25-54	84.4%	84.5%	84.8%
55+	28.8%	39.5%	42.5%

See Appendix Table A for the complete labor force picture by sex and age group for 1998, 2008 and 2018.

Ohio Industry Employment

Over the 2008-2018 period, the Ohio economy is projected to create nearly 250,000 new jobs, primarily in service-providing industries. All goods and services are classified into an industry based on their types. For example, factories assembling cars are in the motor vehicle manufacturing industry, and supermarkets are in the grocery store industry. For analytical purposes, industries fall into either the goods-producing or the service-providing sectors.

Ohio Employment by Sector



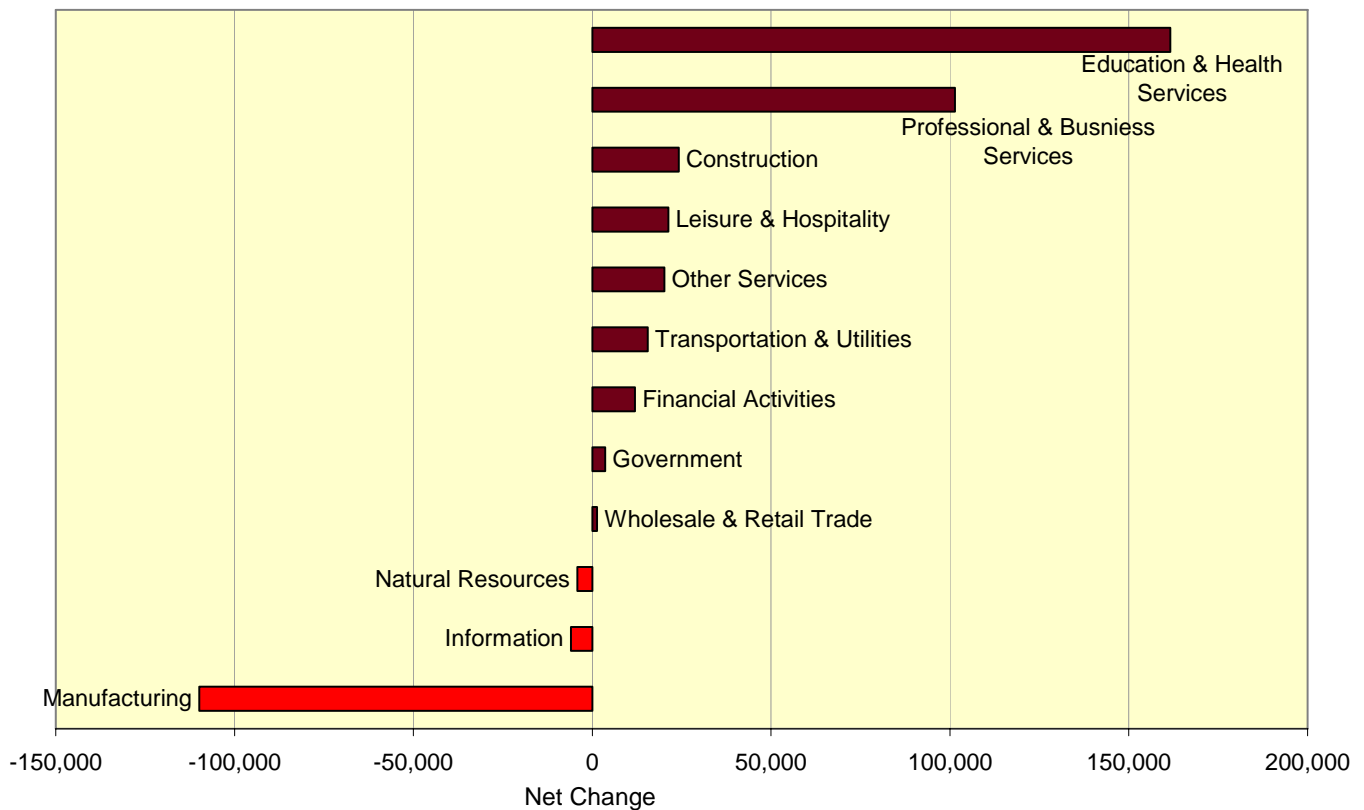
Industries are classified using the North American Industry Classification System (NAICS). The divisions within the goods-producing sector are natural resources, including agriculture and mining; construction; and manufacturing. In the service-providing sector, the divisions are wholesale and retail trade; transportation and utilities; information; financial activities; professional and business services; education and health services; leisure and hospitality; other services; and government.

Changes in demand for an industry's products, due to shifts in consumer preferences or government priorities, constitute the most important cause of differences in employment growth rates among industries. Technological change is another factor affecting industry employment. For example, automated equipment in manufacturing plants enables fewer workers to produce more goods, and its use is a major reason for declining employment in manufacturing.

Major Industries

The number of jobs for Ohioans is anticipated to rise from 5.726 million in 2008 to 5.975 million by 2018. Service-providing industries will account for almost all of the job growth; construction is the only goods-producing industry expected to add jobs. Education and health services will add 45 percent of the new jobs, while more than one in four new jobs will be gained in professional and business services. Large numbers of new jobs are also projected in construction; leisure and hospitality; and other services. Transportation and utilities; and financial activities are each projected to add more than 10,000 new jobs by 2018. Also growing are government; and wholesale and retail trade. Manufacturing, natural resources, and information are all projected to lose employment.

Ohio Employment Outlook by Major Industry, 2008-2018



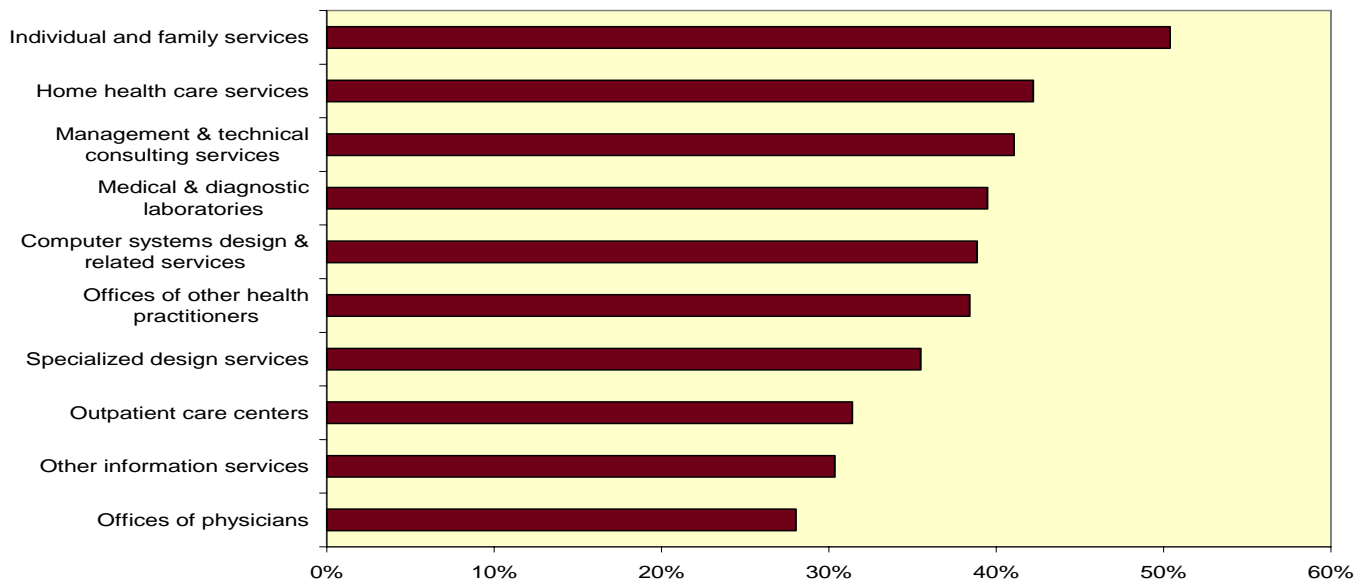
In Ohio, over two-thirds of manufacturing employment is in production of durable goods, such as machinery, motor vehicles and steel. Ohio also has a higher concentration of employment in manufacturing than most other states. The downside to having generally high-paying manufacturing jobs is that they are more negatively impacted by business cycles. The motor vehicle and parts industries, which make up a large portion of Ohio's manufacturing industry, has experienced downsizing, plant closings and restructuring, and as such manufacturing employment is projected to continue trending downward.

Ohio Employment Projections Report by Major Industry

Industry Title	2008 Annual Employment	2018 Projected Employment	Change in Employment 2008-2018	Percent Change 2008-2018
Total	5,726,100	5,975,100	249,000	4.3%
Goods-Producing Industries	1,054,600	964,600	-90,000	-8.5%
Natural Resources, inc. Agriculture and Mining	104,100	99,900	-4,200	-4.0%
Construction	211,500	235,700	24,200	11.4%
Manufacturing	739,000	629,100	-109,900	-14.9%
Service-Providing Industries	4,337,100	4,667,800	330,700	7.6%
Wholesale and Retail Trade	825,800	827,100	1,300	0.2%
Transportation and Utilities	209,900	225,400	15,500	7.4%
Information	86,100	80,100	-6,000	-7.0%
Financial Activities	289,500	301,300	11,800	4.1%
Professional and Business Services	667,400	768,800	101,400	15.2%
Educational and Health Services	794,300	955,900	161,600	20.3%
Leisure and Hospitality	492,100	513,400	21,300	4.3%
Other services, except public administration	220,700	240,900	20,200	9.2%
Government	751,400	755,000	3,600	0.5%
Self-employed, private household and unpaid family workers	334,400	342,700	8,300	2.5%

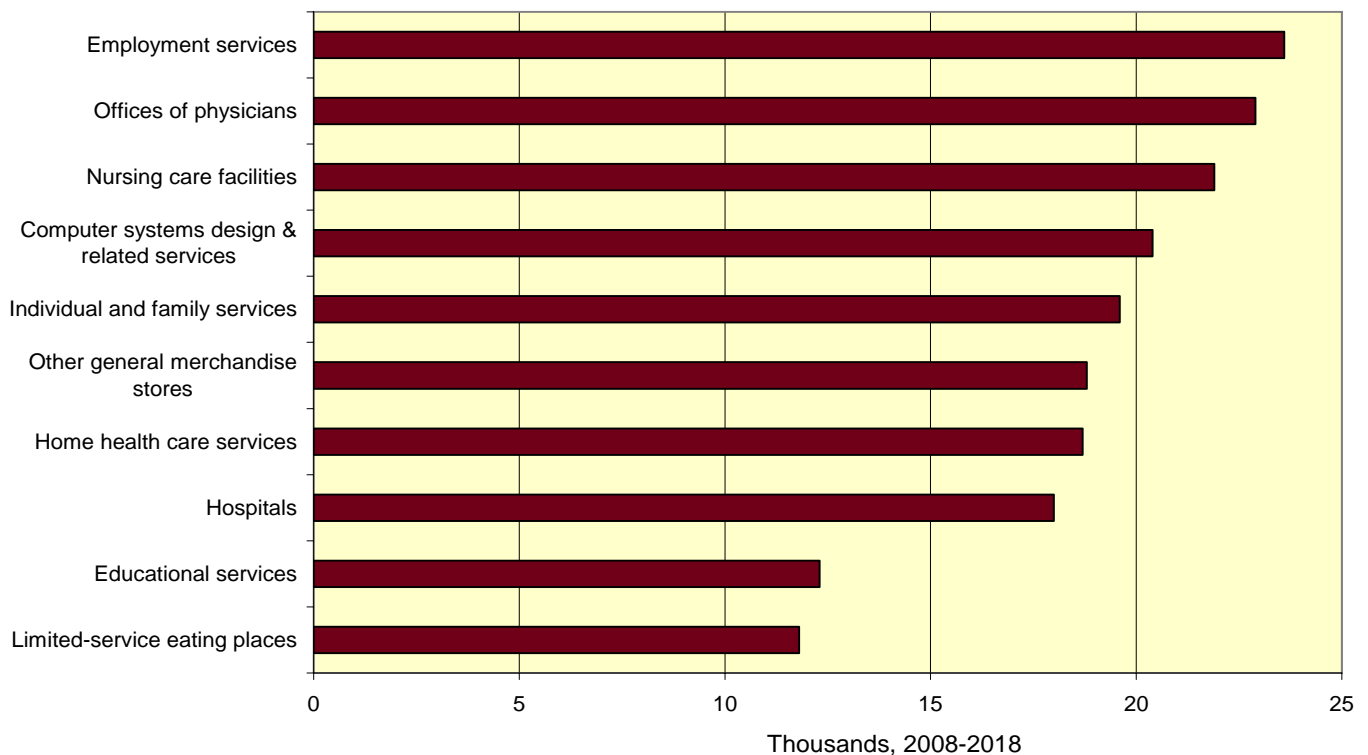
Specific Industries' High Growth: At a more detailed level, the fastest growing industry is expected to be individual and family services with a 50 percent growth expected between 2008 and 2018. The next two are healthcare-related. Demand for health care and social assistance will increase because of the growth of the older population. Unlike in some past projections, only one of the top ten fastest-growing industries is computer related. This is computer system design, ranked fifth.

Ohio Industries with the Fastest Job Growth



Most New Jobs: Industries with rapid job growth offer good job prospects. For example, nursing care facilities and employment services both employ more than 100,000 people and are projected to grow more than 15 percent. Large industries with more moderate growth may also offer many job opportunities. This can best be illustrated by private hospitals, which employ over 225,000 but have a projected growth rate of less than 8 percent less and are expected to add 18,000 new jobs between 2008 and 2018. Hospitals are part of the almost 150,000 new jobs being added in private health care, which also includes 22,900 jobs in the offices of physicians, 21,900 jobs in nursing care facilities, 19,600 jobs in individual and family services, and 18,700 jobs in home health care services. Other industries with a large number of new jobs are computer system design (20,400), other general merchandise stores (18,800), building equipment contractors (14,600) and private education (12,300). The ten industries that have the most new jobs are displayed below. They account for over half of the approximate 365,000 new jobs expected to be added over the next ten years. Please see Appendix Table B for a complete list of all industries with employment of at least 5,000.

Ohio Industries Adding the Most New Jobs



Replacement Needs: Plant closings, changes in business practices (such as outsourcing or relocating production) and productivity increases are having a significant impact on Ohio's manufacturing employment. While employment in Ohio's manufacturing sector will continue to experience structural losses, there will still be many job openings due to the need to replace retiring workers. The employees that remain in manufacturing will tend to be more highly skilled and productive. As workers of the baby-boom generation begin to retire in larger numbers, the biggest challenge for Ohio's employers will be finding skilled, well-trained workers.³

³ *Ohio's Graying Labor Force: Aging through 2016*, The Ohio Department of Job and Family Services, Bureau of Labor Market Information, February 2008.

High Employment Prospects: There are some industries that are expected to have both a high rate of growth and a large number of annual openings. The next table presents these industries with high employment prospects, half of which are health-related industries.

Ohio Industries with High Employment Prospects*					
NAICS Code	Industry Title	2008 Annual Employment	2018 Projected Employment	Change in Employment 2008-2018	Percent Change 2008-2018
6211	Offices of physicians	81,700	104,600	22,900	28.0%
5415	Computer systems design & related services	52,500	72,900	20,400	38.9%
6241	Individual and family services	38,900	58,500	19,600	50.4%
4529	Other general merchandise stores	72,500	91,300	18,800	25.9%
6216	Home health care services	44,300	63,000	18,700	42.2%
6213	Offices of other health practitioners	27,600	38,200	10,600	38.4%
5416	Management & technical consulting services	24,600	34,700	10,100	41.1%
6214	Outpatient care centers	25,800	33,900	8,100	31.4%
8121	Personal care services	30,000	38,000	8,000	26.7%

*Industries expected to have the most new jobs and growth rates of at least 25 percent.

Self-Employed

In the major industry table presented on page 10, self-employed, private household and unpaid family workers are listed as growing by 2.5 percent. The self-employed are 90 percent of this group. These workers are not part of the industries delineated in the rest of the table. Appendix Table C provides a list of the 55 occupations that have at least 1,000 self-employed workers. Within these occupations, the percentage of self-employed ranges from less than one percent for cashiers; and for hand laborers, freight, stock and material movers to 93.5 percent for door-to-door salesmen, news, street vendors and related workers. There are six more occupations where greater than half of the people employed in that occupation are self-employed: writers and authors (65.5 %); construction managers (57.0 %); art directors (56.5 %); photographers (56.3 %); real estate sales agents (54.1 %); and massage therapists (53.1 %).

Ohio Occupational Employment

The previous section presented the outlook for labor demand in Ohio by industry. Because the mix of occupations is different within each industry, the demand for the occupations concentrated in an industry rises or falls with the fortunes of that industry. In this way, the economy's occupational and industry structure have a close relationship. The occupational and industry structure, also known as a staffing pattern, has an effect even for those occupations, such as secretaries or computer programmers, that exist in almost all industries. Within Ohio in 2008, 796 occupations had at least one employee. Presented within this report are 704 occupations. The remaining 92 occupations were either confidential or too small (under 100) to be published.

Although the labor market in Ohio was still feeling the effects of the 2001 recession when the 2007 recession hit, employment is expected to grow by 2018, but at a slow pace. On average, between 2008 and 2018, the Ohio economy is expected to have almost 167,000 annual openings. Most job openings will result from the need to replace workers who leave the labor force, usually upon retirement, or transfer to another occupation. More than three out of four of the openings in Ohio are expected to be replacement needs.

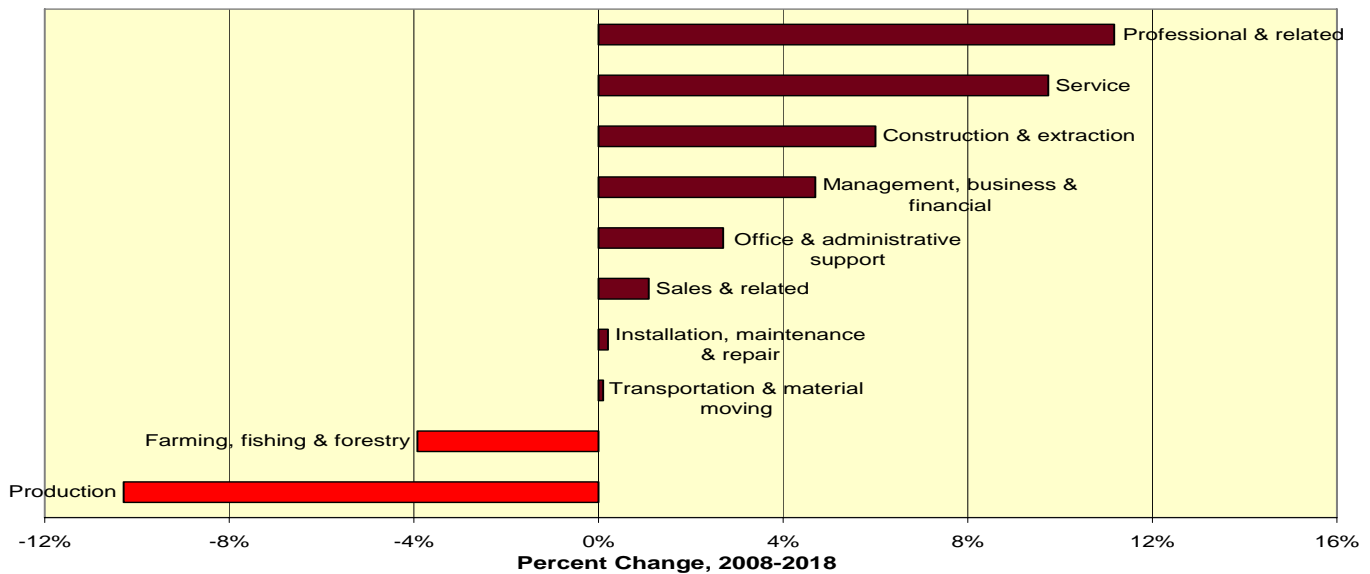
Identifying occupations that have more favorable job prospects is important in career decision-making. This section presents the job outlook in Ohio by type of work and by education and training level. Changes in technology, business practices, and operations affect how employers structure staffing to improve productivity. For example, technological advances will continue to reduce the need for telephone operators; word processors and typists; travel agents; and order clerks. In general, the Ohio economy will provide jobs for workers at all educational levels, but individuals with more education and training will enjoy better job opportunities.

This report uses the Standard Occupational Classification (SOC) system to classify occupations. Within this report, reference is made to detailed (or specific) occupations, major groups and intermediate groups. Every occupation is given a six-digit code, the first two of which put them in one of 22 major groups. (The 23rd group, Military Occupations, is not used by Ohio). When the 22 occupational groups are too many to analyze, intermediate aggregation, with 10 categories are used. Intermediate aggregation is a combination of major groups.

Type of Work

We group occupations by type of work performed to gain a better understanding of broad occupational employment trends. Two groups, professional and related occupations; and service, are the largest categories in terms of current employment and projected job growth.

Ohio Rate of Employment Change by Major Occupational Group



Together these two groups—on opposite ends of the educational attainment and earnings spectrum—are expected to provide 125,270 and 110,860 new jobs respectively. Two other major groups are expected to grow faster than the statewide average of 4.5 percent: construction and extraction occupations, 6.0 percent; and management, business and financial occupations, 4.7 percent. Slow-growing occupational groups are office and administrative support occupations; and sales and related occupations. Barely any growth is expected in installation, maintenance and repair occupations; and transportation and material moving occupations. Farming, fishing and forestry occupations; and production occupations are expected to decline.

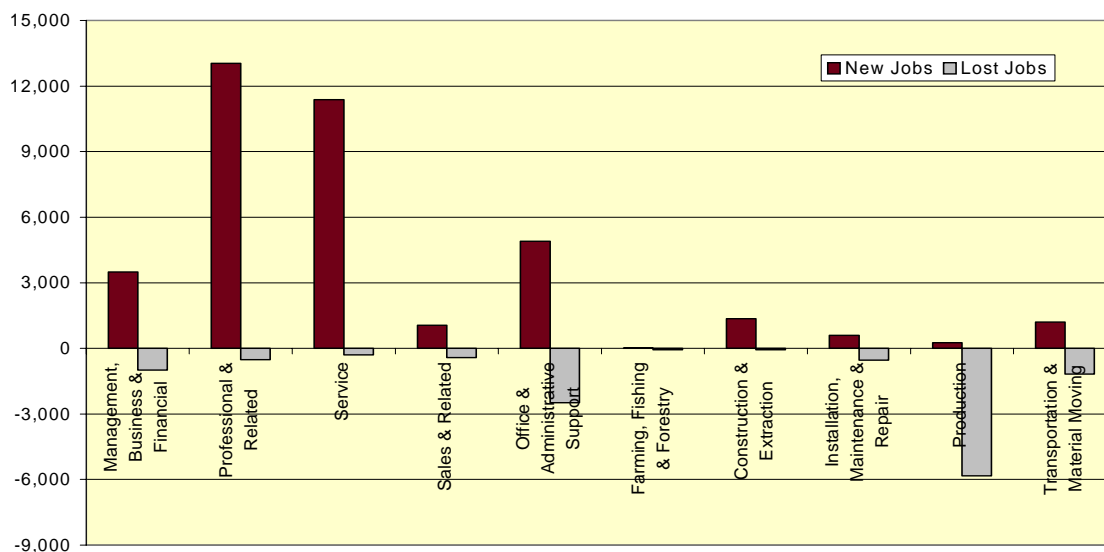
Ohio Occupational Employment Projections by Occupational Group

Occupational Title	Employment		Change in Employment		Total Annual Openings
	2008 Annual	2018 Projected	2008-2018	Percent	
Total, All Occupations	5,726,100	5,975,100	249,000	4.3%	166,269
Management, Business & Financial	537,640	562,660	25,020	4.7%	13,956
Professional & Related	1,121,540	1,246,810	125,270	11.2%	37,287
Service	1,138,030	1,248,890	110,860	9.7%	39,806
Sales & Related	600,140	606,460	6,320	1.1%	18,807
Office and Administrative Support	892,470	916,530	24,060	2.7%	23,423
Farming, Fishing, & Forestry	15,530	14,920	-610	-3.9%	417
Construction & Extraction	216,510	229,410	12,900	6.0%	5,259
Installation, Maintenance & Repair	224,670	225,210	540	0.2%	4,932
Production	540,890	482,180	-58,710	-10.9%	10,697
Transportation & Material Moving	438,660	439,030	370	0.1%	11,685

When making a career decision, it is important to look at both the employment growth rate and total job openings to assess future job prospects. In general, jobs with fast growth rates offer good job opportunities. However, large, slowly or moderately growing occupations often provide many more job openings than small, fast-growing occupations. For example, physicians assistants are expected to grow by one-third with 99 job openings a year, while cashiers are expected to grow by less than one percent, but will provide 6,230 openings per year.

New Jobs: New jobs at the occupational group level can be analyzed in two ways, either net job change or new jobs created. Most occupational groups will have net job growth. Even the production occupations group, projected to lose 5,570 jobs annually, has a few individual occupations that are growing. The following chart shows both the projected new jobs and the projected job losses by occupational group.⁴

**Ohio, Major Occupational Group, 2008-2018
New and Lost Jobs, Projected Annual Change**

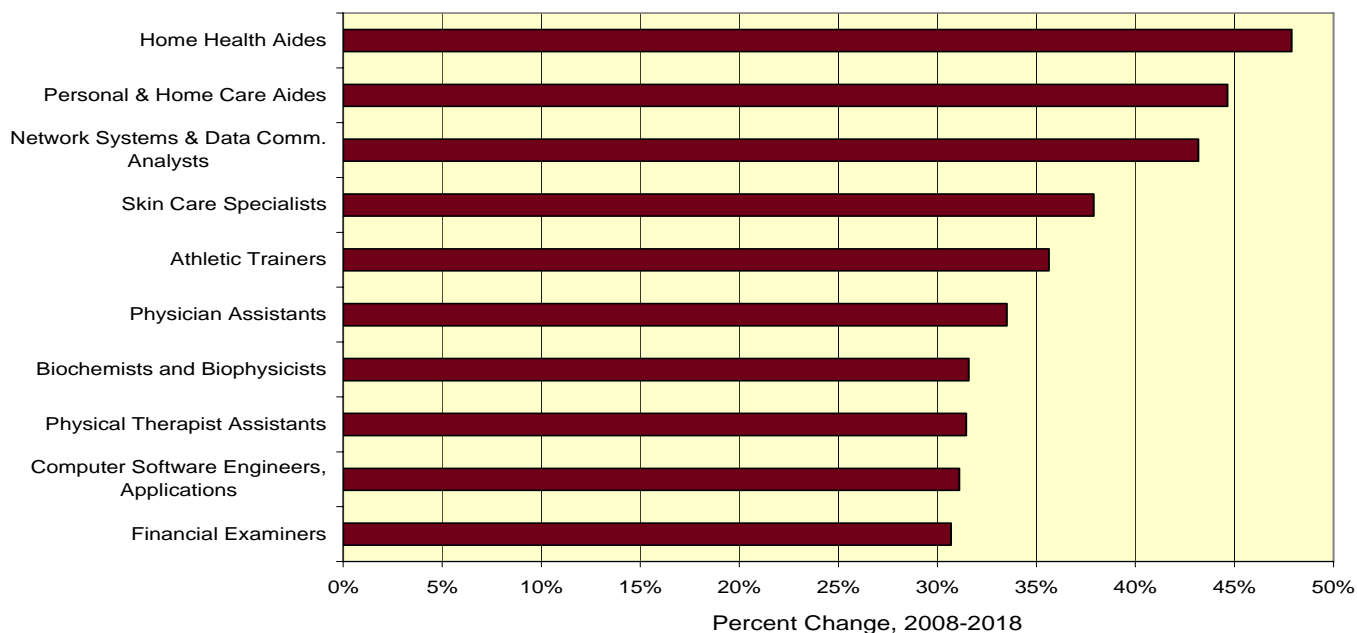


High Growth Rates: Home health aides top the list of fastest growing occupations, see next page. Also on the list are three other healthcare occupations: athletic trainers, physicians assistants and physical therapist assistants. Overall healthcare occupations (both practitioners and support) are projected to grow by 20.7 percent. Another fast growing group is computer and mathematical occupations, which is expected to grow by 17.5 percent. Leading the way here are network systems and data communication analysts; and computer software engineers, applications. Personal care and service occupations also are projected to grow at a high rate – 14.5 percent. Personal and home care aides and skin care specialists are both in the top ten fastest growing occupations. The next highest occupational group is community and social service occupations, projected to grow by 11.7 percent. Within this group, the highest specific occupation is mental health counselors, which is the 27th fastest growing occupation. Another fast growing occupational group is business and financial operations – 10.5 percent, with financial examiners, an example of these occupations. The other occupation on this fastest growing list is biochemists and biophysicists, which is part of life, physical and social science occupations. This group is expected to grow by 10.1 percent. All of the occupations on this fastest growing list are projected to grow by at least 30 percent and are in major groups that are projected to grow by at least 10 percent, which

⁴ Occupations can be grouped in many ways. The chart and table in the Type of Work section uses intermediate aggregation. Appendix Table D shows both the intermediate and major groupings.

is more than twice the statewide growth rate of 4.3 percent. (The only other occupation projected to grow by 30.0 percent or more is another healthcare occupation: occupational therapist assistants. This occupation was projected to grow by 30.0 percent.)

Fastest Growing Jobs in Ohio



Annual Openings: New job growth is one component of occupational demand, but a larger source of job openings is net replacement needs. More than three-fourths of the job openings are expected to result from the need to replace workers who leave the labor force or transfer to another occupation. Therefore, even declining occupations may provide substantial opportunities for employment. Many of the occupations on the most annual openings list have high employment, high replacement needs, and tend to be less skilled. Many of these jobs are entry level and a worker can expect occupational mobility as they achieve more education and training.

Within Ohio and nationally, sales occupations are at the top of the list in terms of occupations with the most annual job openings. Two of the top four detailed occupations are cashiers and retail salespersons. Also with two of the top four detailed occupations are food service occupations, with waiters and waitresses, ranked second, and combination food preparation and serving workers, including fast food, ranked third. Additionally, in the top ten are two healthcare occupations, registered nurses (5th) and home health aides (8th). Rounding out the top ten are laborers, freight, stock, material movers, hand; customer service representatives; truck drivers, and general office clerks. Team assemblers, teachers, stock clerks, janitors and cleaners; child care workers, and accountants are examples of other occupations with many annual openings. Please see the table on the next page for the 30 occupations with the most annual openings.

Not surprisingly, occupations with a large number of annual openings closely correlate with high employment. Retail salespersons have the most employment followed by combined food prep & serving; cashiers; laborers and freight; registered nurses and office clerks. Each of these occupations had a 2008 employment of at least 100,000.

Most health occupations are growing and have a large number of annual openings. Therefore, they will account for many job opportunities for Ohioans, in large part because of the need to care for an aging population with a longer life expectancy combined with medical advances that make new treatments available.

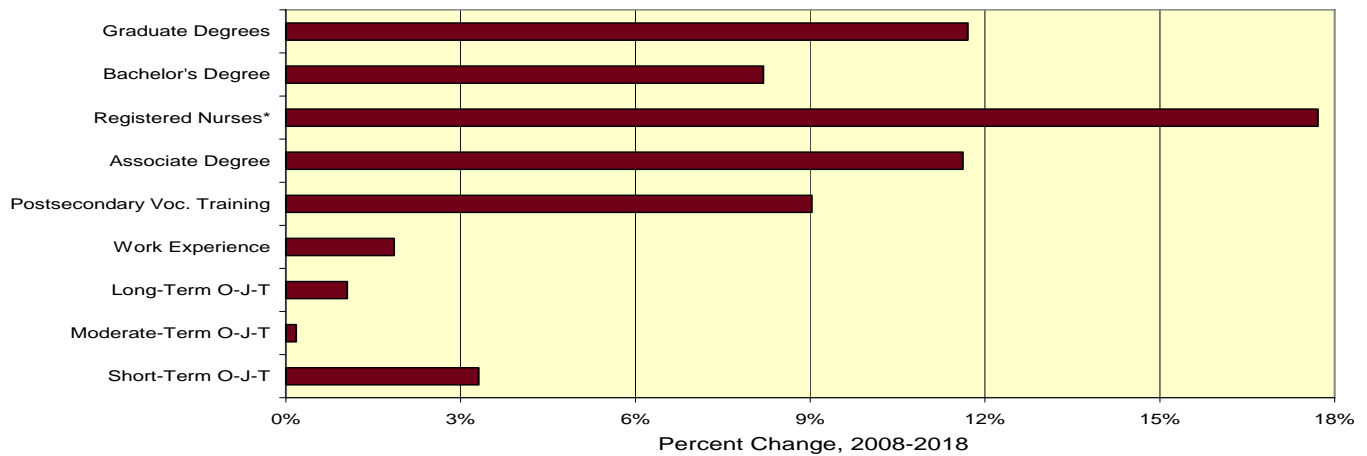
Replacement needs alone start adding up. Even when an occupation is declining, there may be a large number of annual openings needed to replace existing workers. Four of the occupations within the top 30 listed below are declining. They are laborers, freight, stock, material movers, hand; janitors and cleaners; team assemblers; and first-line supervisors/managers of retail sales workers. Declining occupations are expected to account for almost 37,000 annual openings. For a complete list of occupations with employment of at least 100, please see Appendix Table E.

Occupations in Ohio with the Most Annual Openings, 2008-2018		
Occupational Title	Annual Openings	Avg. Wage May 09
Cashiers	6,230	\$8.75
Waiters and Waitresses	5,413	\$8.99
Comb. Food Preparation & Serving Workers, inc. Fast Food	4,794	\$8.31
Retail Salespersons	4,457	\$11.46
Registered Nurses	4,175	\$28.72
Laborers and Freight, Stock, and Material Movers, Hand	3,883	\$12.40
Customer Service Representatives	3,644	\$15.56
Home Health Aides	3,487	\$9.78
Truck Drivers, Heavy and Tractor-Trailer	2,271	\$18.84
Office Clerks, General	2,131	\$13.02
Stock Clerks and Order Fillers	2,110	\$11.08
Licensed Practical & Licensed Vocational Nurses	2,022	\$19.19
Nursing Aides, Orderlies, and Attendants	1,949	\$11.57
Janitors & Cleaners, except Maids & Housekeeping Cleaners	1,781	\$11.71
Secondary School Teachers, except Special & Vocational Ed.	1,676	\$54,530*
Sales Rep., Wholesale & Mfg, ex. Tech. & Scientific Products	1,646	\$28.29
Accountants and Auditors	1,509	\$30.21
Child Care Workers	1,428	\$10.59
Team Assemblers	1,375	\$14.63
First-Line Supervisors/Managers of Office & Admin. Support	1,340	\$23.09
Medical Secretaries	1,278	\$13.72
Elementary School Teachers, except Special Education	1,275	\$51,970*
First-Line Supervisors/Managers of Retail Sales Workers	1,265	\$18.01
Bookkeeping, Accounting, and Auditing Clerks	1,221	\$15.87
Receptionists and Information Clerks	1,179	\$11.50
Maintenance and Repair Workers, General	1,139	\$17.38
Hosts & Hostesses, Restaurant, Lounge & Coffee Shop	1,136	\$8.52
Food Preparation Workers	1,124	\$9.68
Landscaping and Groundskeeping Workers	1,011	\$11.20
Hairdressers, Hairstylists and Cosmetologists	999	\$11.78
*Annual earnings, typically for a 9 1/2 month school year for elementary and secondary teachers.		

Education and Training Level

In general, the Ohio economy will provide jobs for workers at all educational levels, but individuals with more education and training will tend to enjoy better job opportunities. Growth rates over the 2008-2018 period will range from 0.2 percent for occupations requiring moderate-term on-the-job training to 17.7 percent for registered nurses. (Registered nurses, with its multiple possible training paths, are listed separately.)

Ohio Employment Growth by Education and Training Level



*Training Requirement for registered nurses (RNs) can be met through associate degree, three-year diploma, or bachelor's degree programs. Each occupation is given a single education and training code; RNs are coded as an associate degree occupation. The high employment/high growth of RNs caused a distortion for associate degree occupations. For these reasons, RNs are listed separately.

Education will play a bigger role in the Ohio workplace. All categories that generally require at least postsecondary training are projected to grow faster than the 4.3 percent average for all occupations. Occupations with some level of postsecondary training are projected to grow by 9.8 percent compared with 2.1 percent for those occupations without this education. Occupations that generally require moderate-term on-the-job training are projected to grow the slowest, reflecting the concentration of many production occupations in declining manufacturing industries. Appendix Table F shows this concentration. The table which compares education and training level by occupational group, also shows that all occupations that require at least a master's degree are in the professional and related occupational group.

High Employment Prospects

A high prospect occupation is defined as an occupation that pays at least the median wage in Ohio (\$15.30 an hour) and has at least 500 annual openings. Declining occupations are still considered high employment prospects if the estimated number of annual replacement openings is larger than the annual decline in employment. The final table, on the next page, provides a sample of occupations that have high employment prospects in the State of Ohio by education and training level. The best example of a high prospect occupation is a registered nurse, which is projected to have 4,175 annual openings and had an average salary in 2009 of \$28.72 an hour. Other examples are truck drivers; customer service representatives; construction trades; and teachers. An example of a declining occupation on this list is Industrial Production Managers, which is projected to decline by 1,550 jobs over the 10 years. This translates into approximately 155 jobs lost annually, but there will be 388 replacement needs.⁵

⁵ For a complete list of high prospects, please visit our website: <http://ohiolmi.com/proj/projections.htm>.

Occupations with High Employment Prospects in Ohio		
Title	Annual Openings 2008-2018	Avg. Wage May 2009
Short-Term On-the-Job Training		
Truck Drivers, Heavy and Tractor-Trailer	2,271	\$18.84
Moderate-Term On-the-Job Training		
Customer Service Representatives	3,644	\$15.56
Bookkeeping, Accounting, and Auditing Clerks	1,221	\$15.87
Maintenance and Repair Workers, General	1,139	\$17.38
Construction Laborers	552	\$18.50
Long-Term On-the-Job Training		
Fire Fighters	796	\$19.79
Carpenters	789	\$19.39
Electricians	681	\$23.16
Police and Sheriff's Patrol Officers	641	\$25.11
Occupations Requiring Work Experience in a Related Occupation		
Sales Rep., Wholesale & Mfg, ex. Tech./Sci. Products	1,646	\$28.29
First-Line Supervisors & Mgrs. of Office & Admin. Support	1,340	\$23.09
First-Line Supervisors & Mgrs. of Retail Sales Workers	1,265	\$18.01
Executive Secretaries & Administrative Assistants	924	\$19.90
Sales Rep., Wholesale & Mfg, Technical/Sci. Products	647	\$37.37
First-Line Supervisors & Mgrs. of Prod./Operating Workers	504	\$25.79
Occupations Requiring Postsecondary Vocational Award		
Licensed Practical & Licensed Vocational Nurses	2,022	\$19.19
Insurance Sales Agents	840	\$27.50
Automotive Service Technicians and Mechanics	547	\$17.35
Occupations Requiring an Associate Degree		
Registered Nurses	4,175	\$28.72
Computer Support Specialists	899	\$20.07
Occupations Requiring a Bachelor's Degree		
Secondary Sch. Teachers, except Special & Voc. Ed.	1,676	\$54,530**
Accountants and Auditors	1,509	\$30.21
Elementary School Teachers, except Special Education	1,275	\$51,970**
Computer Software Engineers, Applications	848	\$39.17
Network Systems & Data Communication Analysts	721	\$34.38
Computer Systems Analysts	676	\$37.42
Middle School Teachers, except Special & Voc. Ed.	579	\$50,620**
Occupations Requiring Work Experience plus a Bachelor's or Higher Degree		
General and Operations Managers	909	\$54.48
Management Analysts	599	\$37.46
*Training is met through a two-year associate degree, a three-year diploma or a four-year bachelor's degree		
**Annual earnings, typically for a 9 1/2 month school year for teachers		

Technical Notes

Projections of employment demand were made at the 4-digit industry level, based on the North American Industry Classification System (NAICS) using single-equation regression models. These models related Ohio industry employment to national industry employment and other key economic determinants for Ohio, especially income and population. National projections of industry demand, published in the November 2009 issue of The *Monthly Labor Review*, were a key input. The *Monthly Labor Review* is published by U.S. Department of Labor, Bureau of Labor Statistics (BLS).

Occupational estimates were derived by creating an industry-occupation matrix with occupational data supplied by Ohio employers from the Occupational Employment Statistics (OES) surveys for 2006, 2007 and 2008 reflecting the Standard Occupational Classification (SOC) coding structure. These industry staffing patterns were adjusted for expected technological change and other factors from national data provided by the Bureau of Labor Statistics in projecting occupational demand.

Net annual replacement needs were computed from national rates calculated by BLS and as explained on their website: http://stats.bls.gov/emp/ep_replacements.htm. Although these rates have been found to provide reliable estimates of Ohio's replacement needs for specific occupations, there are many additional openings resulting from turnover.

The source of the wage estimates is the May 2009 Occupational Employment Statistics wage survey for Ohio. The analysis by education and training level is made possible by the classification of the OES occupations into eleven distinct categories by the staff at the Office of Economic Projections at the Bureau of Labor Statistics.

The accuracy of projections for individual industries and occupations is subject, of course, to error because of the many unknown factors that will affect the economy over the projection period. Furthermore, while occupational employment projections and related job outlook information can provide valuable inputs to the career decision-making process, they should not be the sole basis for a choice of career.

Additional Information

This report, more extensive tables, and a companion pamphlet, are available through the Ohio Department of Job and Family Services' Bureau of Labor Market Information's internet site at <http://ohiolmi.com/>. Printed copies of the companion pamphlet, *Occupational Trends* are available by contacting the Bureau of Labor Market Information at (614) 752-9494 or writing to ODJFS, Bureau of Labor Market Information, P.O. Box 1618, Columbus, Ohio 43216-1618.

December 2010

Appendix Table A
Ohio Labor Force Estimates, 1998-2008, and Projections to 2018, by Age and Sex

Age and Sex	1998				2008				2018			
	Civilian NI Pop. 16+	Civilian Labor Force			Civilian NI Pop. 16+	Civilian Labor Force			Civilian NI Pop. 16+	Civilian Labor Force		
		Number	Share	LFPR		Number	Share	LFPR		Number	Share	LFPR*
Total												
Total	8,561	5,678	100.0%	66.3%	8,906	5,981	100.0%	67.2%	9,228	6,074	100.0%	65.8%
16-24	1,344	923	16.3%	68.7%	1,460	923	15.4%	63.2%	1,297	795	13.1%	61.3%
16-19	637	367	6.5%	57.6%	702	332	5.6%	47.3%	585	257	4.2%	43.9%
20-24	707	556	9.8%	78.6%	758	591	9.9%	78.0%	712	538	8.9%	75.6%
25-34	1,605	1,372	24.2%	85.5%	1,364	1,155	19.3%	84.7%	1,528	1,293	21.3%	84.6%
35-44	1,770	1,513	26.6%	85.5%	1,538	1,300	21.7%	84.5%	1,482	1,298	21.4%	87.6%
45-54	1,435	1,177	20.7%	82.0%	1,798	1,517	25.4%	84.4%	1,502	1,233	20.3%	82.1%
55-64	955	555	9.8%	58.1%	1,331	852	14.2%	64.0%	1,533	1,043	17.2%	68.0%
65+	1,452	139	2.4%	9.6%	1,415	233	3.9%	16.5%	1,887	411	6.8%	21.8%
Male												
Total	4,081	3,001	52.9%	73.5%	4,277	3,094	51.7%	72.3%	4,469	3,147	51.8%	70.4%
16-24	665	465	8.2%	69.9%	732	462	7.7%	63.1%	661	405	6.7%	61.3%
16-19	308	179	3.2%	58.1%	358	155	2.6%	43.3%	299	119	2.0%	39.8%
20-24	357	286	5.0%	80.1%	374	307	5.1%	82.1%	362	286	4.7%	79.0%
25-34	776	734	12.9%	94.6%	660	596	10.0%	90.3%	778	681	11.2%	87.5%
35-44	870	810	14.3%	93.1%	770	703	11.8%	91.3%	744	699	11.5%	94.0%
45-54	702	631	11.1%	89.9%	850	757	12.7%	89.1%	747	642	10.6%	85.9%
55-64	456	289	5.1%	63.4%	658	454	7.6%	69.0%	741	527	8.7%	71.1%
65+	611	72	1.3%	11.8%	607	124	2.1%	20.4%	797	192	3.2%	24.1%
Female												
Total	4,480	2,677	47.1%	59.8%	4,630	2,887	48.3%	62.4%	4,760	2,927	48.2%	61.5%
16-24	678	457	8.0%	67.4%	728	461	7.7%	63.3%	637	390	6.4%	61.2%
16-19	329	188	3.3%	57.1%	345	177	3.0%	51.3%	287	138	2.3%	48.1%
20-24	349	269	4.7%	77.1%	383	284	4.7%	74.2%	350	252	4.1%	72.0%
25-34	830	638	11.2%	76.9%	703	560	9.4%	79.7%	749	611	10.1%	81.6%
35-44	900	703	12.4%	78.1%	769	598	10.0%	77.8%	737	599	9.9%	81.3%
45-54	734	545	9.6%	74.3%	948	760	12.7%	80.2%	754	591	9.7%	78.4%
55-64	498	266	4.7%	53.4%	673	399	6.7%	59.3%	791	517	8.5%	65.4%
65+	840	67	1.2%	8.0%	808	109	1.8%	13.5%	1,090	219	3.6%	20.1%

Note1: Civilian NI Pop. 16* is the civilian noninstitutional population 16 and over. This number and the civilian labor force number are in thousands.

Note 2: LFPR is the labor force participation rate which is the proportion of the civilian labor force to the civilian noninstitutional population for each cell. Both the share and the LFPR are based on unrounded data.

* LFPR projected for Ohio is an average of the Ohio historical trend and the projected national change for the U.S

Sources: Geographic Profile of Employment and Unemployment, 1998 and 2008, U.S. Department of Labor, Bureau of Labor Statistics.

Ohio Department of Job and Family Services, Bureau of Labor Market Information, September 2010.

Appendix Table B
Ohio - Industry Employment* Projections Report, 2008-2018

Code	Industry Title	2008 Annual Employment	2018 Projected Employment	Change in Employment 2008-2018	Percent Change 2008-2018
	Total	5,726,100	5,975,100	249,000	4.3%
	Agriculture, forestry, fishing and hunting	92,500	88,800	-3,700	-4.0%
	Mining	11,600	11,100	-500	-4.3%
212	Mining, except oil and gas	5,800	5,400	-400	-6.9%
22	Utilities	21,700	19,400	-2,300	-10.6%
2211	Power generation and supply	16,900	15,100	-1,800	-10.7%
	Construction	211,500	235,700	24,200	11.4%
236	Construction of buildings	50,300	56,100	5,800	11.5%
2361	Residential building construction	21,400	25,400	4,000	18.7%
2362	Nonresidential building construction	28,900	30,700	1,800	6.2%
237	Heavy and civil engineering construction	22,800	24,000	1,200	5.3%
2371	Utility system construction	10,700	11,000	300	2.8%
2373	Highway, street and bridge construction	9,400	10,200	800	8.5%
238	Specialty trade contractors	138,500	155,700	17,200	12.4%
2381	Building foundation and exterior contractors	28,800	32,400	3,600	12.5%
2382	Building equipment contractors	66,600	76,500	9,900	14.9%
2383	Building finishing contractors	23,200	25,000	1,800	7.8%
2389	Other specialty trade contractors	19,800	21,800	2,000	10.1%
	Manufacturing	739,000	629,000	-110,000	-14.9%
311	Food manufacturing	53,900	53,200	-700	-1.3%
3114	Fruit and vegetable preserving and specialty	11,500	11,800	300	2.6%
3115	Dairy product manufacturing	7,500	6,500	-1,000	-13.3%
3116	Animal slaughtering and processing	8,900	9,600	700	7.9%
3118	Bakeries and tortilla manufacturing	12,700	12,600	-100	-0.8%
3119	Other food manufacturing	6,600	6,200	-400	-6.1%
321	Wood product manufacturing	14,200	11,900	-2,300	-16.2%
3219	Other wood product manufacturing	10,500	8,500	-2,000	-19.0%
322	Paper manufacturing	23,100	16,800	-6,300	-27.3%
323	Printing and related support activities	28,900	23,300	-5,600	-19.4%
325	Chemical manufacturing	45,900	41,900	-4,000	-8.7%
3251	Basic chemical manufacturing	10,800	7,600	-3,200	-29.6%
3252	Resin, rubber, and artificial fibers mfg.	6,100	6,000	-100	-1.6%
3254	Pharmaceutical and medicine manufacturing	5,100	5,700	600	11.8%
3255	Paint, coating and adhesive manufacturing	7,200	6,600	-600	-8.3%
3256	Soap, cleaning compound and toiletry mfg.	8,400	8,400	0	0.0%
326	Plastics and rubber products manufacturing	60,400	50,200	-10,200	-16.9%
3261	Plastics product manufacturing	44,200	38,000	-6,200	-14.0%
3262	Rubber product manufacturing	16,200	12,200	-4,000	-24.7%
327	Nonmetallic mineral product manufacturing	28,700	26,300	-2,400	-8.4%
3272	Glass and glass product manufacturing	8,300	6,400	-1,900	-22.9%
3273	Cement and concrete product manufacturing	7,200	7,700	500	6.9%

*Selected industries with 5,000 or more employees.

Appendix Table B
Ohio - Industry Employment* Projections Report, 2008-2018

Code	Industry Title	2008 Annual Employment	2018 Projected Employment	Change in Employment 2008-2018	Percent Change 2008-2018
3279	Other nonmetallic mineral products	7,100	6,600	-500	-7.0%
331	Primary metal manufacturing	47,800	39,700	-8,100	-16.9%
3311	Iron and steel mills and ferroalloy mfg.	12,700	9,000	-3,700	-29.1%
3312	Steel product mfg. from purchased steel	8,800	8,300	-500	-5.7%
3315	Foundries	16,500	13,800	-2,700	-16.4%
332	Fabricated metal product manufacturing	115,500	101,600	-13,900	-12.0%
3321	Forging and stamping	12,700	10,700	-2,000	-15.7%
3323	Architectural and structural metals mfg.	19,100	17,900	-1,200	-6.3%
3324	Boiler, tank and shipping container mfg.	8,600	7,900	-700	-8.1%
3327	Machine shops and threaded product mfg.	26,600	24,200	-2,400	-9.0%
3328	Coating, engraving and heat treating metals	14,300	12,300	-2,000	-14.0%
3329	Other fabricated metal product manufacturing	25,100	21,400	-3,700	-14.7%
333	Machinery manufacturing	80,800	68,800	-12,000	-14.9%
3331	Ag., construction and mining machinery mfg.	5,800	5,400	-400	-6.9%
3332	Industrial machinery manufacturing	10,000	7,500	-2,500	-25.0%
3334	HVAC and commercial refrigeration equipment	8,300	5,800	-2,500	-30.1%
3335	Metalworking machinery manufacturing	23,600	21,600	-2,000	-8.5%
3339	Other general purpose machinery manufacturing	24,800	21,900	-2,900	-11.7%
334	Computer and electronic product manufacturing	22,300	14,900	-7,400	-33.2%
3345	Electronic instrument manufacturing	10,100	6,900	-3,200	-31.7%
335	Electrical equipment and appliance mfg.	30,900	24,800	-6,100	-19.7%
3352	Household appliance manufacturing	10,900	8,500	-2,400	-22.0%
3353	Electrical equipment manufacturing	9,700	7,700	-2,000	-20.6%
336	Transportation equipment manufacturing	122,300	94,300	-28,000	-22.9%
3361	Motor vehicle manufacturing	22,300	16,400	-5,900	-26.5%
3362	Motor vehicle body and trailer manufacturing	7,000	5,300	-1,700	-24.3%
3363	Motor vehicle parts manufacturing	72,400	51,500	-20,900	-28.9%
3364	Aerospace product and parts manufacturing	16,800	17,900	1,100	6.5%
337	Furniture and related product manufacturing	19,800	19,800	0	0.0%
3371	Household and institutional furniture mfg.	14,600	14,800	200	1.4%
339	Miscellaneous manufacturing	23,700	26,300	2,600	11.0%
3391	Medical equipment and supplies manufacturing	10,400	11,200	800	7.7%
3399	Other miscellaneous manufacturing	13,300	15,100	1,800	13.5%
	Wholesale trade	236,500	240,900	4,400	1.9%
423	Merchant wholesalers, durable goods	131,000	127,700	-3,300	-2.5%
4231	Motor vehicle and parts merchant wholesalers	14,400	13,300	-1,100	-7.6%
4233	Lumber and const. supply merchant wholesalers	7,000	7,200	200	2.9%
4234	Commercial equip. merchant wholesalers	25,000	22,600	-2,400	-9.6%
4235	Metal and mineral merchant wholesalers	10,400	10,000	-400	-3.8%
4236	Electric goods merchant wholesalers	12,900	12,000	-900	-7.0%
4237	Hardware and plumbing merchant wholesalers	11,100	11,900	800	7.2%

*Selected industries with 5,000 or more employees.

Appendix Table B
Ohio - Industry Employment* Projections Report, 2008-2018

Code	Industry Title	2008 Annual Employment	2018 Projected Employment	Change in Employment 2008-2018	Percent Change 2008-2018
4238	Machinery and supply merchant wholesalers	34,000	34,300	300	0.9%
424	Merchant wholesalers, nondurable goods	76,600	78,400	1,800	2.3%
4241	Paper and paper product merchant wholesalers	6,500	6,000	-500	-7.7%
4242	Druggists' goods merchant wholesalers	8,600	10,200	1,600	18.6%
4244	Grocery and related product wholesalers	25,200	27,900	2,700	10.7%
4246	Chemical merchant wholesalers	8,900	8,400	-500	-5.6%
4248	Alcoholic beverage merchant wholesalers	5,100	6,100	1,000	19.6%
4249	Misc. nondurable goods merchant wholesalers	13,900	12,500	-1,400	-10.1%
425	Electronic markets and agents and brokers	28,900	34,900	6,000	20.8%
	Retail trade	589,300	586,200	-3,100	-0.5%
441	Motor vehicle and parts dealers	72,500	65,100	-7,400	-10.2%
4411	Automobile dealers	45,200	37,200	-8,000	-17.7%
442	Furniture and home furnishings stores	16,900	15,800	-1,100	-6.5%
4421	Furniture stores	8,700	7,900	-800	-9.2%
4422	Home furnishings stores	8,200	7,900	-300	-3.7%
443	Electronics and appliance stores	19,600	18,900	-700	-3.6%
444	Building material and garden supply stores	48,000	48,900	900	1.9%
4441	Building material and supplies dealers	41,100	41,700	600	1.5%
4442	Lawn and garden equipment and supplies stores	6,900	7,200	300	4.3%
445	Food and beverage stores	107,900	108,000	100	0.1%
4451	Grocery stores	95,200	96,700	1,500	1.6%
4452	Specialty food stores	7,700	6,200	-1,500	-19.5%
4453	Beer, wine and liquor stores	5,000	5,000	0	0.0%
446	Health and personal care stores	38,800	44,000	5,200	13.4%
447	Gasoline stations	34,200	31,000	-3,200	-9.4%
448	Clothing and clothing accessories stores	46,500	43,800	-2,700	-5.8%
4481	Clothing stores	34,700	33,100	-1,600	-4.6%
4482	Shoe stores	5,700	5,300	-400	-7.0%
4483	Jewelry, luggage and leather goods stores	6,000	5,400	-600	-10.0%
451	Sporting goods, hobby, book and music stores	23,700	24,200	500	2.1%
452	General merchandise stores	125,700	133,300	7,600	6.0%
4521	Department stores	53,200	42,000	-11,200	-21.1%
4529	Other general merchandise stores	72,500	91,300	18,800	25.9%
453	Miscellaneous store retailers	33,900	31,500	-2,400	-7.1%
4532	Office supplies, stationery and gift stores	13,800	11,400	-2,400	-17.4%
4533	Used merchandise stores	5,300	6,200	900	17.0%
454	Nonstore retailers	21,500	21,600	100	0.5%
4541	Electronic shopping and mail-order houses	10,500	11,200	700	6.7%
	Transportation and warehousing	188,100	206,000	17,900	9.5%
481	Air transportation	12,500	13,800	1,300	10.4%
4811	Scheduled air transportation	7,100	7,200	100	1.4%

*Selected industries with 5,000 or more employees.

Appendix Table B
Ohio - Industry Employment* Projections Report, 2008-2018

Code	Industry Title	2008 Annual Employment	2018 Projected Employment	Change in Employment 2008-2018	Percent Change 2008-2018
4812	Nonscheduled air transportation	5,400	6,500	1,100	20.4%
484	Truck transportation	69,300	76,900	7,600	11.0%
4841	General freight trucking	54,600	61,000	6,400	11.7%
4842	Specialized freight trucking	14,700	15,900	1,200	8.2%
485	Transit and ground passenger transportation	8,000	8,800	800	10.0%
488	Support activities for transportation	18,700	20,900	2,200	11.8%
4885	Freight transportation arrangement	8,100	9,000	900	11.1%
492	Couriers and messengers	29,600	30,700	1,100	3.7%
493	Warehousing and storage	40,200	45,500	5,300	13.2%
	Information	86,100	80,100	-6,000	-7.0%
511	Publishing industries, except Internet	31,100	26,800	-4,300	-13.8%
515	Broadcasting, except Internet	7,800	7,900	100	1.3%
517	Telecommunications	31,200	28,000	-3,200	-10.3%
5171	Wired telecommunications carriers	22,800	20,000	-2,800	-12.3%
519	Other information services	5,600	7,300	1,700	30.4%
	Finance and insurance	226,000	234,200	8,200	3.6%
522	Credit intermediation and related activities	100,800	103,200	2,400	2.4%
5221	Depository credit intermediation	66,200	67,500	1,300	2.0%
5222	Nondepository credit intermediation	21,700	19,800	-1,900	-8.8%
5223	Activities related to credit intermediation	13,000	15,800	2,800	21.5%
523	Securities, commodity contracts and investments	16,300	16,600	300	1.8%
5231	Securities and commodity contracts brokerage	10,200	10,300	100	1.0%
524	Insurance carriers and related activities	106,700	112,200	5,500	5.2%
5241	Insurance carriers	72,100	71,700	-400	-0.6%
5242	Insurance agencies, brokerages and related	34,600	40,500	5,900	17.1%
	Real estate and rental and leasing	63,500	67,100	3,600	5.7%
531	Real estate	41,700	45,300	3,600	8.6%
5311	Lessors of real estate	18,200	18,400	200	1.1%
5312	Offices of real estate agents and brokers	7,300	8,500	1,200	16.4%
5313	Activities related to real estate	16,200	18,400	2,200	13.6%
532	Rental and leasing services	21,200	21,100	-100	-0.5%
5321	Automotive equipment rental and leasing	6,600	6,900	300	4.5%
5322	Consumer goods rental	9,400	9,000	-400	-4.3%
	Professional and technical services	250,500	306,000	55,500	22.2%
5411	Legal services	37,200	41,200	4,000	10.8%
5412	Accounting and bookkeeping services	33,400	39,000	5,600	16.8%
5413	Architectural and engineering services	42,400	48,100	5,700	13.4%
5414	Specialized design services	6,200	8,400	2,200	35.5%
5415	Computer systems design and related services	52,500	72,900	20,400	38.9%
5416	Management and technical consulting services	24,600	34,700	10,100	41.1%
5417	Scientific research and development services	15,400	18,700	3,300	21.4%

*Selected industries with 5,000 or more employees.

Appendix Table B
Ohio - Industry Employment* Projections Report, 2008-2018

Code	Industry Title	2008 Annual Employment	2018 Projected Employment	Change in Employment 2008-2018	Percent Change 2008-2018
5418	Advertising and related services	16,300	17,200	900	5.5%
5419	Other professional and technical services	22,600	25,800	3,200	14.2%
	Management of companies and enterprises	109,600	117,200	7,600	6.9%
	Administrative and waste services	307,300	345,600	38,300	12.5%
561	Administrative and support services	293,800	332,000	38,200	13.0%
5611	Office administrative services	15,700	17,800	2,100	13.4%
5613	Employment services	134,500	158,100	23,600	17.5%
5614	Business support services	37,700	44,100	6,400	17.0%
5616	Investigation and security services	22,900	23,800	900	3.9%
5617	Services to buildings and dwellings	64,000	71,600	7,600	11.9%
5619	Other support services	12,000	10,600	-1,400	-11.7%
562	Waste management and remediation services	13,400	13,600	200	1.5%
5622	Waste treatment and disposal	5,200	5,300	100	1.9%
	Educational services	90,000	102,300	12,300	13.7%
	Health care and social assistance	704,300	853,500	149,200	21.2%
621	Ambulatory Health Care Services	229,300	299,800	70,500	30.7%
6211	Offices of physicians	81,700	104,600	22,900	28.0%
6212	Offices of dentists	30,300	36,400	6,100	20.1%
6213	Offices of other health practitioners	27,600	38,200	10,600	38.4%
6214	Outpatient care centers	25,800	33,900	8,100	31.4%
6215	Medical and diagnostic laboratories	7,600	10,600	3,000	39.5%
6216	Home health care services	44,300	63,000	18,700	42.2%
6219	Other ambulatory health care services	11,900	13,000	1,100	9.2%
622	Hospitals	226,600	244,600	18,000	7.9%
623	Nursing and residential care facilities	166,000	199,000	33,000	19.9%
6231	Nursing care facilities	105,600	127,500	21,900	20.7%
6232	Residential mental health facilities	25,200	29,400	4,200	16.7%
6233	Community care facilities for the elderly	30,400	37,100	6,700	22.0%
624	Social assistance	82,500	110,200	27,700	33.6%
6241	Individual and family services	38,900	58,500	19,600	50.4%
6244	Child day care services	29,500	35,600	6,100	20.7%
	Arts, entertainment and recreation	63,700	65,800	2,100	3.3%
711	Performing arts and spectator sports	13,300	14,700	1,400	10.5%
712	Museums, historical sites, zoos and parks	5,600	6,400	800	14.3%
713	Amusements, gambling, and recreation	44,800	44,600	-200	-0.4%
7139	Other amusement and recreation industries	39,800	40,000	200	0.5%
	Accommodation and food services	428,400	447,600	19,200	4.5%
721	Accommodation	35,000	35,400	400	1.1%
7211	Traveler accommodation	33,200	33,400	200	0.6%
722	Food services and drinking places	393,400	412,200	18,800	4.8%
7221	Full-service restaurants	174,800	183,600	8,800	5.0%

*Selected industries with 5,000 or more employees.

Appendix Table B
Ohio - Industry Employment* Projections Report, 2008-2018

Code	Industry Title	2008 Annual Employment	2018 Projected Employment	Change in Employment 2008-2018	Percent Change 2008-2018
7222	Limited-service eating places	189,400	201,200	11,800	6.2%
7223	Special food services	13,500	13,800	300	2.2%
7224	Drinking places, alcoholic beverages	15,800	13,700	-2,100	-13.3%
	Other services, except public administration	220,700	240,900	20,200	9.2%
811	Repair and maintenance	44,500	43,600	-900	-2.0%
8111	Automotive repair and maintenance	31,500	30,700	-800	-2.5%
8113	Commercial machinery repair and maintenance	7,800	8,000	200	2.6%
812	Personal and laundry services	57,800	66,400	8,600	14.9%
8121	Personal care services	30,000	38,000	8,000	26.7%
8122	Death care services	7,000	7,100	100	1.4%
8123	Drycleaning and laundry services	13,600	13,300	-300	-2.2%
8129	Other personal services	7,200	8,000	800	11.1%
813	Membership associations and organizations	118,400	131,000	12,600	10.6%
8131	Religious organizations	70,800	79,100	8,300	11.7%
8134	Civic and social organizations	21,900	25,200	3,300	15.1%
8139	Professional and similar organizations	16,900	17,300	400	2.4%
	Government	751,400	755,000	3,600	0.5%
	Federal government	77,400	75,000	-2,400	-3.1%
	Postal service	29,400	24,900	-4,500	-15.3%
	Federal government, except postal service	48,000	50,100	2,100	4.4%
	State government	132,100	132,100	0	0.0%
	State government, education	57,500	59,400	1,900	3.3%
	State government, hospitals	13,000	13,200	200	1.5%
	State government, except educ. & hospitals	61,700	59,500	-2,200	-3.6%
	Local government	542,000	547,800	5,800	1.1%
	Local government, education	284,900	290,600	5,700	2.0%
	Local government, hospitals	16,000	14,700	-1,300	-8.1%
	Local government, except educ. & hospitals	241,100	242,500	1,400	0.6%
	Self-employed, private household and unpaid family	334,400	342,700	8,300	0.3%

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, November 2010.

Appendix Table C
Occupations with at Least 1,000 Self-Employed, 2008

Occupation	2008 Employment	Self- Employed	Percent Self- Employed*
First-Line Supervisors/Managers of Retail Sales Workers	58,960	16,070	27.3%
Hairdressers, Hairstylists and Cosmetologists	31,320	12,400	39.6%
Child Care Workers	37,330	10,820	29.0%
Carpenters	37,270	10,650	28.6%
Construction Managers	15,520	8,850	57.0%
Landscaping and Groundskeeping Workers	43,170	8,320	19.3%
First-Line Supervisors/Managers of Non-Retail Sales Workers	19,070	7,910	41.5%
Insurance Sales Agents	27,580	5,450	19.8%
Truck Drivers, Heavy and Tractor-Trailer	75,880	5,420	7.1%
Management Analysts	23,230	5,310	22.9%
Construction Laborers	28,050	5,260	18.8%
Door-To-Door Sales, News/Street Vendors, & Related Workers	4,950	4,630	93.5%
Lawyers	19,860	4,610	23.2%
Retail Salespersons	155,890	4,560	2.9%
Janitors & Cleaners, ex. Maids/Housekeeping Cleaners.	94,230	4,510	4.8%
Musicians and Singers	9,050	4,510	49.8%
Food Service Managers	11,680	4,440	38.0%
Painters, Construction and Maintenance	10,400	4,270	41.1%
Automotive Service Technicians and Mechanics	28,640	3,970	13.9%
Bookkeeping, Accounting, and Auditing Clerks	73,730	3,930	5.3%
Photographers	5,930	3,340	56.3%
First-Line Supervisors/Managers of Landscaping/Lawn Service/Groundskeeping	6,970	3,240	46.5%
Accountants and Auditors	45,900	3,210	7.0%
Real Estate Sales Agents	5,620	3,040	54.1%
Truck Drivers, Light or Delivery Services	40,640	2,880	7.1%
First-Line Supervisors/Managers of Construction Trades/ Extraction Workers	17,020	2,840	16.7%
Physicians and Surgeons	27,993	2,829	10.1%
Property, Real Estate & Community Association Managers	6,460	2,710	42.0%
Maids and Housekeeping Cleaners	40,030	2,460	6.1%
Graphic Designers	10,430	2,430	23.3%
First-Line Supervisors/Managers of Personal Service Workers	6,880	2,350	34.2%
Electricians	26,660	2,130	8.0%

Appendix Table C
Occupations with at Least 1,000 Self-Employed, 2008

Occupation	2008 Employment	Self- Employed	Percent Self- Employed*
Sales Representatives, Wholesale/Manufacturing, except Technical./Scientific Products.	66,060	2,070	3.1%
Network Systems & Data Comm. Analysts	11,790	2,010	17.0%
Massage Therapists	3,690	1,960	53.1%
Taxi Drivers and Chauffeurs	7,850	1,830	23.3%
Securities/Commodities/Financial Serv. Sales Agents	12,940	1,740	13.4%
Plumbers, Pipefitters and Steamfitters	15,780	1,690	10.7%
Writers and Authors	2,550	1,670	65.5%
Driver/Sales Workers	22,880	1,610	7.0%
Art Directors	2,830	1,600	56.5%
Heating, AC, & Refrigeration Mechanics/Installers	11,430	1,550	13.6%
Nonfarm Animal Caretakers	6,550	1,530	23.4%
First-Line Supervisors/Managers of Production/Operating Workers	37,380	1,480	4.0%
First-Line Supervisors/Managers of Housekeeping & Janitorial Workers	7,140	1,470	20.6%
Clinical, Counseling and School Psychologists	4,510	1,380	30.6%
Recreation Workers	16,750	1,310	7.8%
Brickmasons and Blockmasons	5,370	1,300	24.2%
Personal Financial Advisors	4,910	1,280	26.1%
Coaches and Scouts	8,730	1,240	14.2%
Cashiers	137,670	1,220	0.9%
Nursing Aides, Orderlies, and Attendants	75,910	1,150	1.5%
Laborers/Freight/Stock/Material Movers, Hand	120,650	1,140	0.9%
Self-Enrichment Education Teachers	7,280	1,100	15.1%
Roofers	5,450	1,010	18.5%

*The percent of all occupations that were self-employed was 5.3%.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, November 2010.

Appendix Table D
Ohio - Occupational Employment Projections by Major Occupational Group, 2008-2018
Intermediate Aggregation - Breakdown of Annual Openings

Occupational Title	Employment		Change in Employment		Annual Openings		
	2008 Annual	2018 Projected	2008-2018	Percent	Growth	Replacements	Total
Total, All Occupations	5,726,100	5,975,100	372,850	4.3%	37,285	128,984	166,269
Management, Business & Financial Occupations	537,640	562,660	34,958	4.7%	3,496	10,460	13,956
Management Occupations	296,650	296,290	9,085	-0.1%	909	5,544	6,453
Business and Financial Operations Occupations	240,990	266,370	25,873	10.5%	2,587	4,916	7,503
Professional & Related Occupations	1,121,530	1,246,810	130,431	11.2%	13,044	24,244	37,288
Computer and Mathematical Occupations	130,300	153,150	23,928	17.5%	2,393	2,371	4,764
Architecture and Engineering Occupations	91,550	93,670	3,714	2.3%	371	2,003	2,374
Life, Physical, and Social Science Occupations	41,150	45,300	4,607	10.1%	461	1,223	1,684
Community and Social Services Occupations	109,160	121,980	12,819	11.7%	1,282	2,347	3,629
Legal Occupations	37,460	39,250	2,279	4.8%	228	622	850
Education, Training, and Library Occupations	302,470	325,250	22,801	7.5%	2,280	6,858	9,138
Arts, Design, Entertainment, Sports, & Media Occ.	82,600	86,850	5,747	5.1%	575	2,057	2,632
Healthcare Practitioners and Technical Occupations	326,850	381,360	54,536	16.7%	5,454	6,763	12,217
Service Occupations	1,138,030	1,248,890	113,796	9.7%	11,380	28,426	39,806
Healthcare Support Occupations	201,960	257,080	55,446	27.3%	5,545	2,201	7,746
Protective Service Occupations	117,200	120,680	3,800	3.0%	380	3,415	3,795
Food Preparation and Serving Related Occupations	472,430	498,330	26,326	5.5%	2,633	15,904	18,537
Building & Grounds Cleaning & Maintenance Occup.	195,230	199,690	6,133	2.3%	613	3,243	3,856
Personal Care and Service Occupations	151,210	173,120	22,091	14.5%	2,209	3,663	5,872
Sales and Related Occupations	600,140	606,460	10,535	1.1%	1,054	17,753	18,807
Office and Administrative Support Occupations	892,470	916,530	49,017	2.7%	4,902	18,521	23,423
Farming, Fishing, and Forestry Occupations	15,530	14,920	52	-3.9%	5	412	417
Construction and Extraction Occupations	216,510	229,410	13,509	6.0%	1,351	3,908	5,259
Installation, Maintenance, and Repair Occupations	224,670	225,210	5,933	0.2%	593	4,339	4,932
Production Occupations	540,890	485,180	2,554	-10.3%	255	10,442	10,697
Transportation and Material Moving Occupations	438,660	439,030	12,065	0.1%	1,207	10,478	11,685

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, November 2010.

Appendix Table E
Ohio - Occupational Employment* Projections Report, 2008-2018

Code	Occupational Title**	Employment		Change in Employment		Total Annual Openings	Average Wage May 09	Education Training Level+
		2008 Annual	2018 Projected	2008 - 2018	Percent			
00-0000	Total, All Occupations	5,726,100	5,975,100	249,000	4.3%	166,269	\$19.37	NA
11-0000	Management Occupations	296,650	296,290	-360	-0.1%	6,453	\$48.03	NA
11-1021	General and Operations Managers	31,370	28,620	-2,750	-8.8%	909	\$54.48	4
11-2011	Advertising and Promotions Managers	910	820	-90	-9.9%	21	\$42.91	4
11-2021	Marketing Managers	3,960	4,160	200	5.1%	105	\$54.80	4
11-2022	Sales Managers	11,890	12,900	1,010	8.5%	357	\$53.10	4
11-2031	Public Relations Managers	1,220	1,320	100	8.2%	39	\$46.07	4
11-3011	Administrative Services Managers	9,350	9,950	600	6.4%	256	\$48.99	4
11-3021	Computer and Information Systems Managers	9,760	10,990	1,230	12.6%	282	\$53.76	4
11-3031	Financial Managers	15,860	16,220	360	2.3%	321	\$53.10	4
11-3041	Compensation and Benefits Managers	960	960	0	0.0%	20	\$42.44	4
11-3042	Training and Development Managers	710	750	40	5.6%	19	\$44.57	4
11-3049	Human Resources Managers, All Other	2,380	2,520	140	5.9%	65	\$50.03	4
11-3051	Industrial Production Managers	11,070	9,520	-1,550	-14.0%	388	\$44.49	8
11-3061	Purchasing Managers	2,400	2,250	-150	-6.3%	68	\$43.09	4
11-3071	Transportation, Storage, & Distribution Managers	4,370	4,090	-280	-6.4%	120	\$41.31	8
11-9011	Farm, Ranch, and Other Agricultural Managers	3,560	3,660	100	2.8%	82	\$28.44	4
11-9012	Farmers and Ranchers	75,170	72,190	-2,980	-4.0%	460	NA	9
11-9021	Construction Managers	15,520	17,080	1,560	10.1%	277	\$47.89	5
11-9031	Education Admin., Pre & Child Care Center/Prog.	2,150	2,400	250	11.6%	89	\$21.42	4
11-9032	Education Admin., Elem. & Secondary School	7,710	7,810	100	1.3%	241	\$87,510++	4
11-9033	Education Administrators, Postsecondary	2,390	2,310	-80	-3.3%	72	\$51.34	4
11-9039	Education Administrators, All Other	710	780	70	9.9%	28	\$43.57	4
11-9041	Engineering Managers	6,240	6,070	-170	-2.7%	127	\$52.52	4
11-9051	Food Service Managers	11,680	11,850	170	1.5%	244	\$22.48	8
11-9061	Funeral Directors	1,310	1,390	80	6.1%	34	\$29.84	6
11-9081	Lodging Managers	1,790	1,800	10	0.6%	39	\$23.05	8
11-9111	Medical and Health Services Managers	12,610	14,270	1,660	13.2%	406	\$39.96	4
11-9121	Natural Sciences Managers	960	1,070	110	11.5%	39	\$54.05	4
11-9131	Postmasters and Mail Superintendents	940	770	-170	-18.1%	19	\$30.12	8
11-9141	Property, Real Estate & Community Assn Mgrs	6,460	6,740	280	4.3%	139	\$31.53	5
11-9151	Social and Community Service Managers	4,860	5,360	500	10.3%	162	\$30.15	5
11-9199	Managers, All Other	22,560	23,040	480	2.1%	630	\$48.36	8
13-0000	Business and Financial Operations Occupations	240,990	266,370	25,380	10.5%	7,503	\$29.07	NA
13-1011	Agents/Business Mgrs. Artist/Performer/Athlete	440	470	30	6.8%	13	\$30.41	4
13-1021	Purchasing Agents and Buyers, Farm Products	200	200	0	0.0%	5	\$24.82	9
13-1022	Wholesale & Retail Buyers, ex. Farm Products	4,320	4,060	-260	-6.0%	108	\$24.48	9
13-1023	Purchasing Agents, ex. Whole., Retail, & Farm	12,640	13,430	790	6.3%	412	\$27.50	9
13-1031	Claims Adjusters, Examiners and Investigators	9,620	10,240	620	6.4%	306	\$27.94	9
13-1032	Insurance Appraisers, Auto Damage	340	350	10	2.9%	10	\$25.96	7
13-1041	Compl. Off., ex. Agric, Con, Hlth/Safety, & Trans.	8,080	9,910	1,830	22.6%	269	\$25.77	9
13-1051	Cost Estimators	10,170	12,020	1,850	18.2%	411	\$29.40	5
13-1061	Emergency Management Specialists	520	640	120	23.1%	24	\$26.03	8
13-1071	Employment, Recruitment & Placement Specialists	7,450	9,210	1,760	23.6%	370	\$24.75	5
13-1072	Comp., Benefits & Job Analysis Specialists	4,330	5,040	710	16.4%	184	\$26.00	5
13-1073	Training and Development Specialists	9,180	10,890	1,710	18.6%	411	\$25.71	5
13-1079	Human Resource/Training/Labor Rel. Spec., AO	16,130	17,760	1,630	10.1%	584	\$22.30	5
13-1081	Logisticians	4,190	4,770	580	13.8%	151	\$33.48	5
13-1111	Management Analysts	23,230	25,230	2,000	8.6%	599	\$37.46	4
13-1121	Meeting and Convention Planners	1,290	1,290	0	0.0%	29	\$19.21	5
13-1199	Business Operations Specialists, All Other	33,930	34,960	1,030	3.0%	857	\$29.25	5
13-2011	Accountants and Auditors	45,900	53,230	7,330	16.0%	1,509	\$30.21	5
13-2021	Appraisers and Assessors of Real Estate	2,210	2,270	60	2.7%	46	\$27.13	6
13-2031	Budget Analysts	1,830	1,950	120	6.6%	45	\$32.87	5
13-2041	Credit Analysts	1,920	2,060	140	7.3%	49	\$27.98	5
13-2051	Financial Analysts	7,310	8,280	970	13.3%	230	\$35.19	5
13-2052	Personal Financial Advisors	4,910	5,970	1,060	21.6%	159	\$42.64	5
13-2053	Insurance Underwriters	6,030	5,850	-180	-3.0%	176	\$29.20	5
13-2061	Financial Examiners	880	1,150	270	30.7%	43	\$36.46	5

*Occupations with 100 or more workers.

**See page E-13.

+See page E-13 for Education and Training Levels.

++Annual earnings, typically 9 1/2 months for school teachers.

Appendix Table E
Ohio - Occupational Employment* Projections Report, 2008-2018

Code	Occupational Title**	Employment		Change in Employment		Total Annual Openings	Average Wage May 09	Education Training Level+
		2008 Annual	2018 Projected	2008 - 2018	Percent			
13-2071	Loan Counselors	1,070	1,230	160	15.0%	28	\$19.09	5
13-2072	Loan Officers	10,870	11,670	800	7.4%	199	\$26.57	10
13-2081	Tax Examiners, Collectors & Revenue Agents	2,260	2,330	70	3.1%	87	\$28.61	5
13-2082	Tax Preparers	3,340	3,300	-40	-1.2%	55	\$15.60	10
13-2099	Financial Specialists, All Other	6,410	6,640	230	3.6%	140	\$31.45	5
15-0000	Computer and Mathematical Occupations	130,300	153,150	22,850	17.5%	4,764	\$33.03	NA
15-1011	Computer and Information Scientists, Research	810	1,010	200	24.7%	38	\$48.39	2
15-1021	Computer Programmers	14,220	13,150	-1,070	-7.5%	268	\$33.37	5
15-1031	Computer Software Engineers, Applications	21,470	28,140	6,670	31.1%	848	\$39.17	5
15-1032	Comp. Software Engineers, Systems Software	10,170	12,650	2,480	24.4%	334	\$39.97	5
15-1041	Computer Support Specialists	22,090	24,960	2,870	13.0%	899	\$20.07	6
15-1051	Computer Systems Analysts	19,140	21,770	2,630	13.7%	676	\$37.42	5
15-1061	Database Administrators	4,040	4,750	710	17.6%	138	\$33.36	5
15-1071	Network and Computer Systems Administrators	15,910	18,250	2,340	14.7%	499	\$29.96	5
15-1081	Network Systems & Data Comm. Analysts	11,790	16,880	5,090	43.2%	721	\$34.38	5
15-1099	Computer Specialists, All Other	7,920	8,640	720	9.1%	243	\$34.61	6
15-2011	Actuaries	1,040	1,160	120	11.5%	43	\$43.46	4
15-2031	Operations Research Analysts	1,010	1,060	50	5.0%	34	\$35.72	3
15-2041	Statisticians	610	640	30	4.9%	21	\$34.46	3
17-0000	Architecture and Engineering Occupations	91,550	93,670	2,120	2.3%	2,374	\$32.63	NA
17-1011	Architects, except Landscape and Naval	3,890	4,230	340	8.7%	100	\$34.74	5
17-1012	Landscape Architects	320	360	40	12.5%	9	\$28.01	5
17-1021	Cartographers and Photogrammetrists	310	350	40	12.9%	12	\$24.28	5
17-1022	Surveyors	1,230	1,310	80	6.5%	39	\$28.03	5
17-2031	Biomedical Engineers	360	580	220	61.1%	29	\$38.08	5
17-2041	Chemical Engineers	1,970	1,900	-70	-3.6%	48	\$41.21	5
17-2051	Civil Engineers	6,980	8,090	1,110	15.9%	229	\$35.13	5
17-2061	Computer Hardware Engineers	590	620	30	5.1%	19	\$41.46	5
17-2071	Electrical Engineers	4,950	4,700	-250	-5.1%	114	\$35.65	5
17-2072	Electronics Engineers, except Computer	3,360	3,260	-100	-3.0%	77	\$41.22	5
17-2081	Environmental Engineers	1,260	1,470	210	16.7%	47	\$40.35	5
17-2111	Health & Safety Engineers, ex. Mining Safety	880	870	-10	-1.1%	23	\$35.41	5
17-2112	Industrial Engineers	13,170	13,550	380	2.9%	374	\$34.46	5
17-2131	Materials Engineers	1,780	1,940	160	9.0%	58	\$41.51	5
17-2141	Mechanical Engineers	13,480	13,270	-210	-1.6%	346	\$33.90	5
17-2151	Mining & Geological Engineers, Inc Mining Safety Eng.	120	120	0	0.0%	2	\$35.84	5
17-2161	Nuclear Engineers	990	1,010	20	2.0%	22	\$41.97	5
17-2171	Petroleum Engineers	380	470	90	23.7%	17	\$46.31	5
17-2199	Engineers, All Other	5,500	5,590	90	1.6%	123	\$40.19	5
17-3011	Architectural and Civil Drafters	2,850	2,900	50	1.8%	66	\$20.84	7
17-3012	Electrical and Electronics Drafters	1,100	1,090	-10	-0.9%	24	\$25.94	7
17-3013	Mechanical Drafters	3,810	3,560	-250	-6.6%	82	\$22.19	7
17-3019	Drafters, All Other	730	710	-20	-2.7%	16	\$22.35	7
17-3021	Aerospace Engineering & Operations Tech.	150	150	0	0.0%	3	\$24.53	6
17-3022	Civil Engineering Technicians	2,050	2,270	220	10.7%	61	\$22.40	6
17-3023	Electrical & Electronic Engineering Technicians	3,830	3,510	-320	-8.4%	72	\$24.90	6
17-3024	Electro-Mechanical Technicians	380	350	-30	-7.9%	7	\$23.03	6
17-3025	Environmental Engineering Technicians	680	740	60	8.8%	19	\$20.34	6
17-3026	Industrial Engineering Technicians	3,730	3,550	-180	-4.8%	71	\$22.66	6
17-3027	Mechanical Engineering Technicians	2,560	2,440	-120	-4.7%	49	\$22.47	6
17-3029	Engineering Technicians, Exc. Drafters, AO	3,690	3,780	90	2.4%	79	\$27.08	6
17-3031	Surveying and Mapping Technicians	1,540	1,720	180	11.7%	46	\$18.68	10
19-0000	Life, Physical, and Social Science Occupations	41,150	45,300	4,150	10.1%	1,684	\$28.97	NA
19-1011	Animal Scientists	110	120	10	9.1%	5	\$24.75	2
19-1012	Food Scientists and Technologists	700	810	110	15.7%	36	\$31.15	5
19-1013	Soil and Plant Scientists	280	310	30	10.7%	13	\$26.54	5
19-1021	Biochemists and Biophysicists	760	1,000	240	31.6%	48	\$33.07	2
19-1022	Microbiologists	320	340	20	6.3%	12	\$31.98	2

*Occupations with 100 or more workers.

**See page E-13.

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Appendix Table E
Ohio - Occupational Employment* Projections Report, 2008-2018

Code	Occupational Title**	Employment		Change in Employment		Total Annual Openings	Average Wage May 09	Education Training Level+
		2008 Annual	2018 Projected	2008 - 2018	Percent			
19-1023	Zoologists and Wildlife Biologists	140	150	10	7.1%	6	\$25.34	5
19-1029	Biological Scientists, All Other	450	500	50	11.1%	20	\$31.52	2
19-1031	Conservation Scientists	350	350	0	0.0%	4	\$29.02	5
19-1032	Foresters	170	170	0	0.0%	2	\$25.55	5
19-1041	Epidemiologists	210	240	30	14.3%	7	\$27.89	3
19-1042	Medical Scientists, except Epidemiologists	1,780	2,290	510	28.7%	87	\$32.99	2
19-1099	Life Scientists, All Other	520	600	80	15.4%	19	\$34.92	5
19-2012	Physicists	390	430	40	10.3%	15	\$49.97	2
19-2021	Atmospheric and Space Scientists	170	170	0	0.0%	4	\$29.53	5
19-2031	Chemists	3,680	3,460	-220	-6.0%	122	\$32.61	5
19-2032	Materials Scientists	500	550	50	10.0%	22	\$37.48	5
19-2041	Environmental Scientists/Specialists, inc. Health	2,200	2,370	170	7.7%	80	\$31.25	3
19-2042	Geoscientists, ex. Hydrologists & Geographers	390	440	50	12.8%	16	\$30.50	3
19-2099	Physical Scientists, All Other	550	580	30	5.5%	17	\$46.15	5
19-3011	Economists	180	170	-10	-5.6%	5	\$37.61	3
19-3021	Market Research Analysts	8,780	10,780	2,000	22.8%	436	\$30.21	5
19-3022	Survey Researchers	650	730	80	12.3%	25	\$23.10	5
19-3031	Clinical, Counseling and School Psychologists	4,510	4,730	220	4.9%	150	\$38.69	2
19-3039	Psychologists, All Other	440	450	10	2.3%	14	\$38.04	3
19-3041	Sociologists	100	120	20	20.0%	4	\$25.68	3
19-3051	Urban and Regional Planners	680	730	50	7.4%	18	\$27.80	3
19-3099	Social Scientists & Related Workers, All Other	760	860	100	13.2%	48	\$33.82	3
19-4011	Agricultural and Food Science Technicians	990	1,050	60	6.1%	41	\$17.65	6
19-4021	Biological Technicians	2,340	2,610	270	11.5%	109	\$17.89	5
19-4031	Chemical Technicians	3,200	2,990	-210	-6.6%	64	\$20.23	6
19-4041	Geological and Petroleum Technicians	320	360	40	12.5%	15	\$23.14	6
19-4051	Nuclear Technicians	490	510	20	4.1%	19	\$27.20	6
19-4061	Social Science Research Assistants	490	530	40	8.2%	25	\$17.28	6
19-4091	Environ. Science & Protection Tech., inc. Health	1,340	1,500	160	11.9%	74	\$18.82	6
19-4092	Forensic Science Technicians	330	350	20	6.1%	16	\$26.47	5
19-4093	Forest and Conservation Technicians	260	260	0	0.0%	11	\$17.14	6
19-4099	Life, Physical, & Social Science Tech., All Other	1,270	1,320	50	3.9%	59	\$21.81	6
21-0000	Community and Social Services Occupations	109,160	121,980	12,820	11.7%	3,629	\$20.22	NA
21-1011	Substance Abuse & Behavioral Dis. Counselors	2,340	2,750	410	17.5%	88	\$19.29	5
21-1012	Educational, Vocational, & School Counselors	10,950	11,590	640	5.8%	286	\$27.53	3
21-1013	Marriage and Family Therapists	1,030	1,080	50	4.9%	26	\$21.38	3
21-1014	Mental Health Counselors	4,110	5,080	970	23.6%	180	\$20.99	3
21-1015	Rehabilitation Counselors	4,540	4,910	370	8.1%	129	\$19.71	3
21-1019	Counselors, All Other	490	500	10	2.0%	11	\$24.32	3
21-1021	Child, Family and School Social Workers	10,700	11,530	830	7.8%	352	\$18.39	5
21-1022	Medical and Public Health Social Workers	6,400	7,670	1,270	19.8%	288	\$21.88	5
21-1023	Mental Health & Substance Abuse Social Work.	4,990	5,860	870	17.4%	212	\$17.85	3
21-1029	Social Workers, All Other	5,880	6,090	210	3.6%	169	\$23.97	5
21-1091	Health Educators	1,860	2,020	160	8.6%	55	\$20.63	5
21-1092	Probation Officers & Correct. Treatment Spec.	3,270	3,550	280	8.6%	97	\$22.63	5
21-1093	Social and Human Service Assistants	12,460	14,080	1,620	13.0%	426	\$13.27	10
21-1099	Community & Social Service Specialists, All Other	4,930	5,530	600	12.2%	164	\$18.74	5
21-2011	Clergy	26,800	30,240	3,440	12.8%	874	NA	3
21-2021	Directors, Religious Activities and Education	6,620	7,450	830	12.5%	217	\$19.69	5
21-2099	Religious Workers, All Other	1,820	2,050	230	12.6%	52	\$11.76	5
23-0000	Legal Occupations	37,460	39,250	1,790	4.8%	850	\$37.33	NA
23-1011	Lawyers	19,860	20,750	890	4.5%	460	\$50.73	1
23-1021	Admin. Law Judges & Adjudicators & Hearing Officers	730	720	-10	-1.4%	14	\$37.85	4
23-1022	Arbitrators, Mediators, and Conciliators	190	190	0	0.0%	4	\$31.21	4
23-1023	Judges, Magistrate Judges and Magistrates	2,460	2,180	-280	-11.4%	46	\$41.85	4
23-2011	Paralegals and Legal Assistants	6,570	7,740	1,170	17.8%	192	\$21.25	6
23-2091	Court Reporters	670	780	110	16.4%	21	\$24.39	7
23-2092	Law Clerks	1,700	1,800	100	5.9%	35	\$17.18	5

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Appendix Table E
Ohio - Occupational Employment* Projections Report, 2008-2018

Code	Occupational Title**	Employment		Change in Employment		Total Annual Openings	Average Wage May 09	Education Training Level+
		2008 Annual	2018 Projected	2008 - 2018	Percent			
23-2093	Title Examiners, Abstractors and Searchers	3,080	2,890	-190	-6.2%	46	\$18.84	10
23-2099	Legal Support Workers, All Other	2,200	2,200	0	0.0%	33	\$24.05	10
25-0000	Education, Training, and Library Occupations	302,470	325,250	22,780	7.5%	9,138	\$23.51	NA
25-1011	Business Teachers, Postsecondary	3,180	3,420	240	7.5%	80	\$66,770++	2
25-1021	Computer Science Teachers, Postsecondary	1,290	1,390	100	7.8%	33	\$70,420++	2
25-1022	Mathematical Science Teachers, Postsecondary	1,970	2,120	150	7.6%	49	\$66,760++	2
25-1032	Engineering Teachers, Postsecondary	2,090	2,250	160	7.7%	53	\$88,930++	2
25-1042	Biological Science Teachers, Postsecondary	1,800	1,930	130	7.2%	44	\$81,650++	2
25-1051	Atmos., Earth, Marine & Space Sci. Teachers, PS	330	350	20	6.1%	8	\$78,870++	2
25-1052	Chemistry Teachers, Postsecondary	940	1,000	60	6.4%	22	\$72,530++	2
25-1053	Environmental Science Teachers, Postsecondary	190	200	10	5.3%	4	\$72,050++	2
25-1054	Physics Teachers, Postsecondary	550	590	40	7.3%	14	\$80,130++	2
25-1061	Anthropology & Archeology Teachers, Postsecondary	190	210	20	10.5%	5	\$73,170++	2
25-1062	Area/Ethnic/Cultural Studies Teachers, Postsecondary	290	310	20	6.9%	7	\$65,240++	2
25-1063	Economics Teachers, Postsecondary	540	580	40	7.4%	13	\$84,350++	2
25-1064	Geography Teachers, Postsecondary	230	240	10	4.3%	5	\$68,890++	2
25-1065	Political Science Teachers, Postsecondary	620	670	50	8.1%	16	\$70,500++	2
25-1066	Psychology Teachers, Postsecondary	1,210	1,300	90	7.4%	30	\$67,800++	2
25-1067	Sociology Teachers, Postsecondary	740	800	60	8.1%	19	\$65,080++	2
25-1069	Social Sciences Teachers, Postsecondary, All Other	140	150	10	7.1%	3	\$71,350++	2
25-1071	Health Specialties Teachers, Postsecondary	6,410	6,880	470	7.3%	159	\$84,210++	2
25-1072	Nursing Instructors and Teachers, Postsecondary	2,780	2,970	190	6.8%	67	\$63,110++	2
25-1081	Education Teachers, Postsecondary	2,680	2,880	200	7.5%	67	\$58,000++	2
25-1111	Criminal Justice/Law Enforcement Teachers, PS	610	650	40	6.6%	15	\$60,090++	2
25-1112	Law Teachers, Postsecondary	580	620	40	6.9%	14	\$101,900++	2
25-1113	Social Work Teachers, Postsecondary	570	610	40	7.0%	14	\$66,390++	2
25-1121	Art, Drama, and Music Teachers, Postsecondary	4,570	4,910	340	7.4%	114	\$63,820++	2
25-1122	Communications Teachers, Postsecondary	1,440	1,540	100	6.9%	35	\$63,020++	2
25-1123	English Language/Literature Teachers, Postsecondary	2,890	3,110	220	7.6%	72	\$62,820++	2
25-1124	Foreign Language/Literature Teachers, Postsecondary	1,310	1,400	90	6.9%	32	\$63,690++	2
25-1125	History Teachers, Postsecondary	1,010	1,080	70	6.9%	25	\$67,350++	2
25-1126	Philosophy and Religion Teachers, Postsecondary	1,010	1,090	80	7.9%	26	\$64,410++	2
25-1191	Graduate Teaching Assistants	850	910	60	7.1%	21	\$36,270++	2
25-1192	Home Economics Teachers, Postsecondary	290	310	20	6.9%	7	\$65,660++	2
25-1193	Recreation/Fitness Studies Teachers, Postsecondary	830	890	60	7.2%	21	\$52,670++	2
25-1194	Vocational Education Teachers, Postsecondary	3,320	3,570	250	7.5%	83	\$23.06	2
25-1199	Postsecondary Teachers, All Other	1,330	1,430	100	7.5%	33	\$66,400++	2
25-2011	Preschool Teachers, except Special Education	19,950	23,420	3,470	17.4%	747	\$10.64	7
25-2012	Kindergarten Teachers, ex. Special Education	4,010	4,410	400	10.0%	121	\$47,530++	5
25-2021	Elementary School Teachers, ex. Special Ed.	41,380	44,720	3,340	8.1%	1,275	\$51,970++	5
25-2022	Middle School Teachers, ex. Special & Voc. Ed.	19,090	20,540	1,450	7.6%	579	\$50,620++	5
25-2023	Vocational Education Teachers, Middle School	320	320	0	0.0%	7	\$58,530++	4
25-2031	Secondary Sch. Teachers, ex. Spec. & Voc. Ed.	51,920	53,590	1,670	3.2%	1,676	\$54,530++	5
25-2032	Vocational Education Teachers, Secondary Sch.	4,520	4,620	100	2.2%	142	\$59,350++	4
25-2041	Special Ed. Teachers, Pre./Kinder./Elem. Sch.	7,270	8,110	840	11.6%	273	\$49,900++	5
25-2042	Special Education Teachers, Middle School	5,350	5,900	550	10.3%	194	\$50,280++	5
25-2043	Special Education Teachers, Secondary School	9,070	9,580	510	5.6%	286	\$53,800++	5
25-3011	Adult Literacy, Remedial Ed., & GED Teachers	3,120	3,370	250	8.0%	73	\$23.27	5
25-3021	Self-Enrichment Education Teachers	7,280	9,190	1,910	26.2%	303	\$20.41	8
25-3099	Teachers and Instructors, All Other	17,060	18,440	1,380	8.1%	400	\$44,400++	5
25-4011	Archivists	100	100	0	0.0%	3	\$22.32	3
25-4012	Curators	360	430	70	19.4%	18	\$24.56	3
25-4013	Museum Technicians and Conservators	380	460	80	21.1%	19	\$21.62	5
25-4021	Librarians	6,260	6,260	0	0.0%	165	\$26.41	3
25-4031	Library Technicians	5,490	5,500	10	0.2%	248	\$14.79	7
25-9011	Audio-Visual Collections Specialists	620	640	20	3.2%	16	\$26.65	5
25-9021	Farm and Home Management Advisors	100	100	0	0.0%	2	\$19.69	5
25-9031	Instructional Coordinators	6,380	7,420	1,040	16.3%	244	\$29.73	3

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25-9041	Teacher Assistants	34,410	35,740	1,330	3.9%	861	\$25,700++	11
25-9099	Education, Training and Library Workers, AO	8,490	9,240	750	8.8%	262	\$13.97	5
27-0000	Arts, Design, Entertainment, Sports, & Media Occ.	82,600	86,850	4,250	5.1%	2,632	\$20.33	NA
27-1011	Art Directors	2,830	3,130	300	10.6%	93	\$39.77	4
27-1012	Craft Artists	630	560	-70	-11.1%	14	\$12.68	9
27-1013	Fine Artists, inc. Painters, Sculptors & Illustrators	560	580	20	3.6%	15	\$25.65	9
27-1014	Multi-Media Artists and Animators	1,010	1,020	10	1.0%	24	\$26.75	5
27-1019	Artists and Related Workers, All Other	440	440	0	0.0%	10	\$18.93	9
27-1021	Commercial and Industrial Designers	1,790	1,760	-30	-1.7%	55	\$27.67	5
27-1023	Floral Designers	3,210	2,590	-620	-19.3%	99	\$10.67	11
27-1024	Graphic Designers	10,430	11,090	660	6.3%	386	\$20.39	5
27-1025	Interior Designers	1,960	2,090	130	6.6%	73	\$20.27	6
27-1026	Merchandise Displayers and Window Trimmers	1,900	1,880	-20	-1.1%	58	\$13.18	10
27-1027	Set and Exhibit Designers	130	150	20	15.4%	6	\$27.02	5
27-1029	Designers, All Other	450	420	-30	-6.7%	14	\$17.01	5
27-2011	Actors	670	750	80	11.9%	24	\$11.67	9
27-2012	Producers and Directors	1,760	1,730	-30	-1.7%	55	\$28.14	4
27-2021	Athletes and Sports Competitors	440	440	0	0.0%	8	\$52,330++	9
27-2022	Coaches and Scouts	8,730	10,060	1,330	15.2%	300	\$30,420++	9
27-2023	Umpires, Referees and Other Sports Officials	440	470	30	6.8%	11	\$32,620++	9
27-2031	Dancers	210	220	10	4.8%	10	\$14.32	9
27-2032	Choreographers	920	930	10	1.1%	43	\$19.68	8
27-2041	Music Directors and Composers	2,050	2,270	220	10.7%	63	\$23.53	4
27-2042	Musicians and Singers	9,050	9,680	630	7.0%	246	\$26.28	9
27-2099	Entertain. & Perform., Sports & Rel. Work., AO	350	360	10	2.9%	9	\$13.19	9
27-3011	Radio and Television Announcers	1,560	1,430	-130	-8.3%	44	\$14.44	9
27-3012	Public Address System and Other Announcers	340	340	0	0.0%	10	\$12.61	10
27-3021	Broadcast News Analysts	280	290	10	3.6%	9	\$35.51	5
27-3022	Reporters and Correspondents	2,330	2,130	-200	-8.6%	64	\$17.26	5
27-3031	Public Relations Specialists	6,900	8,030	1,130	16.4%	276	\$25.22	5
27-3041	Editors	4,840	4,520	-320	-6.6%	127	\$21.98	5
27-3042	Technical Writers	1,460	1,570	110	7.5%	35	\$26.47	5
27-3043	Writers and Authors	2,550	2,840	290	11.4%	82	\$24.70	5
27-3091	Interpreters and Translators	1,160	1,330	170	14.7%	44	\$20.17	9
27-3099	Media and Communication Workers, All Other	780	800	20	2.6%	21	\$19.40	9
27-4011	Audio and Video Equipment Technicians	1,000	1,070	70	7.0%	37	\$18.02	7
27-4012	Broadcast Technicians	1,270	1,250	-20	-1.6%	38	\$17.60	6
27-4014	Sound Engineering Technicians	260	260	0	0.0%	8	\$20.06	7
27-4021	Photographers	5,930	6,260	330	5.6%	152	\$14.55	9
27-4031	Camera Operators, TV, Video & Motion Picture	750	760	10	1.3%	20	\$22.46	5
27-4032	Film and Video Editors	380	360	-20	-5.3%	9	\$20.32	5
27-4099	Media & Communication Equip. Workers, AO	280	280	0	0.0%	7	\$25.87	10
29-0000	Healthcare Practitioners and Technical Occupations	326,850	381,360	54,510	16.7%	12,217	\$31.81	NA
29-1011	Chiropractors	2,060	2,440	380	18.4%	74	\$48.53	1
29-1021	Dentists, General	4,010	4,250	240	6.0%	135	\$77.04	1
29-1023	Orthodontists	270	300	30	11.1%	10	\$105.27	1
29-1029	Dentists, All Other Specialists	250	270	20	8.0%	9	\$82.35	1
29-1031	Dietitians and Nutritionists	2,480	2,530	50	2.0%	88	\$24.68	5
29-1041	Optometrists	1,140	1,410	270	23.7%	65	\$61.08	1
29-1051	Pharmacists	11,720	13,310	1,590	13.6%	419	\$49.21	1
29-1061	Anesthesiologists	1,340	1,620	280	20.9%	52	\$110.00	1
29-1062	Family and General Practitioners	5,050	6,140	1,090	21.6%	198	\$78.79	1
29-1063	Internists, General	2,080	2,450	370	17.8%	74	\$79.99	1
29-1064	Obstetricians and Gynecologists	890	1,060	170	19.1%	33	\$89.22	1
29-1065	Pediatricians, General	1,600	1,880	280	17.5%	56	\$69.55	1
29-1066	Psychiatrists	790	910	120	15.2%	26	\$87.38	1
29-1067	Surgeons	2,120	2,570	450	21.2%	82	\$110.72	1
29-1069	Physicians and Surgeons, All Other	14,140	16,150	2,010	14.2%	450	\$91.36	1

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Code	Occupational Title**	Employment		Change in Employment		Total Annual Openings	Average Wage May 09	Education Training Level+
		2008 Annual	2018 Projected	2008 - 2018	Percent			
29-1071	Physician Assistants	1,910	2,550	640	33.5%	99	\$40.33	3
29-1081	Podiatrists	690	730	40	5.8%	16	\$61.45	1
29-1111	Registered Nurses	118,680	139,700	21,020	17.7%	4,175	\$28.72	6
29-1121	Audiologists	890	980	90	10.1%	27	\$27.51	1
29-1122	Occupational Therapists	4,270	5,130	860	20.1%	164	\$35.85	3
29-1123	Physical Therapists	7,650	9,440	1,790	23.4%	271	\$36.22	3
29-1124	Radiation Therapists	520	610	90	17.3%	18	\$32.95	6
29-1125	Recreational Therapists	940	970	30	3.2%	36	\$20.17	5
29-1126	Respiratory Therapists	5,310	6,160	850	16.0%	182	\$24.04	6
29-1127	Speech-Language Pathologists	5,090	5,860	770	15.1%	170	\$37.13	3
29-1129	Therapists, All Other	720	770	50	6.9%	20	\$25.79	5
29-1131	Veterinarians	2,070	2,630	560	27.1%	92	\$43.55	1
29-1199	Health Diagnosing & Treating Practitioners, AO	1,130	1,190	60	5.3%	27	\$39.18	5
29-2011	Medical and Clinical Laboratory Technologists	5,900	6,150	250	4.2%	137	\$24.98	5
29-2012	Medical and Clinical Laboratory Technicians	4,470	4,930	460	10.3%	131	\$18.47	6
29-2021	Dental Hygienists	7,100	8,880	1,780	25.1%	323	\$29.82	6
29-2031	Cardiovascular Technologists and Technicians	2,180	2,580	400	18.3%	72	\$22.91	6
29-2032	Diagnostic Medical Sonographers	2,490	2,880	390	15.7%	75	\$27.37	6
29-2033	Nuclear Medicine Technologists	1,040	1,140	100	9.6%	25	\$30.64	6
29-2034	Radiologic Technologists and Technicians	10,140	11,310	1,170	11.5%	264	\$23.91	6
29-2041	Emergency Medical Technicians & Paramedics	8,660	9,240	580	6.7%	235	\$13.45	7
29-2051	Dietetic Technicians	640	720	80	12.5%	24	\$17.50	7
29-2052	Pharmacy Technicians	14,830	18,690	3,860	26.0%	760	\$12.52	10
29-2053	Psychiatric Technicians	1,140	1,130	-10	-0.9%	29	\$15.67	7
29-2054	Respiratory Therapy Technicians	280	260	-20	-7.1%	7	\$20.03	7
29-2055	Surgical Technologists	3,440	4,150	710	20.6%	158	\$18.59	7
29-2056	Veterinary Technologists and Technicians	2,750	3,530	780	28.4%	147	\$14.13	6
29-2061	Licensed Practical & Licensed Vocat. Nurses	41,570	48,790	7,220	17.4%	2,022	\$19.19	7
29-2071	Medical Records & Health Info. Technicians	6,340	7,150	810	12.8%	210	\$15.31	6
29-2081	Opticians, Dispensing	3,160	3,310	150	4.7%	79	\$16.47	9
29-2091	Orthotists and Prosthetists	290	300	10	3.4%	7	\$36.00	5
29-2099	Health Technologists & Technicians, All Other	5,310	6,170	860	16.2%	194	\$18.87	7
29-9011	Occupational Health and Safety Specialists	2,280	2,380	100	4.4%	86	\$31.21	5
29-9012	Occupational Health and Safety Technicians	700	700	0	0.0%	23	\$22.04	6
29-9091	Athletic Trainers	870	1,180	310	35.6%	60	\$42,860++	5
29-9099	Healthcare Practitioners & Technical Workers, AO	1,270	1,450	180	14.2%	60	\$20.97	5
31-0000	Healthcare Support Occupations	201,960	257,080	55,120	27.3%	7,746	\$12.07	NA
31-1011	Home Health Aides	60,280	89,150	28,870	47.9%	3,487	\$9.78	11
31-1012	Nursing Aides, Orderlies, and Attendants	75,910	87,840	11,930	15.7%	1,949	\$11.57	7
31-1013	Psychiatric Aides	790	770	-20	-2.5%	8	\$15.83	11
31-2011	Occupational Therapist Assistants	2,430	3,160	730	30.0%	108	\$24.66	6
31-2012	Occupational Therapist Aides	140	180	40	28.6%	6	\$13.23	11
31-2021	Physical Therapist Assistants	4,800	6,310	1,510	31.5%	220	\$24.61	6
31-2022	Physical Therapist Aides	1,240	1,610	370	29.8%	55	\$11.69	11
31-9011	Massage Therapists	3,690	4,380	690	18.7%	118	\$15.23	7
31-9091	Dental Assistants	9,970	12,480	2,510	25.2%	438	\$15.54	10
31-9092	Medical Assistants	22,040	28,470	6,430	29.2%	889	\$13.16	10
31-9093	Medical Equipment Preparers	2,020	2,200	180	8.9%	41	\$13.90	11
31-9094	Medical Transcriptionists	4,470	4,840	370	8.3%	87	\$15.02	7
31-9095	Pharmacy Aides	2,110	1,810	-300	-14.2%	24	\$10.25	11
31-9096	Vet. Assistants & Laboratory Animal Caretakers	2,950	3,410	460	15.6%	79	\$10.29	11
31-9099	Healthcare Support Workers, All Other	9,130	10,480	1,350	14.8%	237	\$13.91	11
33-0000	Protective Service Occupations	117,200	120,680	3,480	3.0%	3,795	\$18.79	NA
33-1011	First-Line Supervisors/Mgrs of Correctional Officers	1,230	1,190	-40	-3.3%	45	\$27.46	8
33-1012	First-Line Superv./Mgrs of Police & Detectives	3,040	3,020	-20	-0.7%	133	\$34.40	8
33-1021	FL Sup/Mgrs of Fire Fighting & Prev. Workers	1,960	1,960	0	0.0%	99	\$31.10	8
33-1099	First-Line Sup/Mgrs, Protective Serv. Work., AO	1,900	1,910	10	0.5%	70	\$22.32	8
33-2011	Fire Fighters	19,730	21,630	1,900	9.6%	796	\$19.79	9

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		2008 Annual	2018 Projected	2008 - 2018	Percent			
33-3011	Bailliffs	1,420	1,420	0	0.0%	32	\$18.54	10
33-3012	Correctional Officers and Jailers	13,880	13,680	-200	-1.4%	308	\$18.79	10
33-3021	Detectives and Criminal Investigators	2,750	2,850	100	3.6%	66	\$30.87	8
33-3041	Parking Enforcement Workers	230	210	-20	-8.7%	5	\$16.76	11
33-3051	Police and Sheriff's Patrol Officers	24,650	24,700	50	0.2%	641	\$25.11	9
33-9021	Private Detectives and Investigators	1,580	1,790	210	13.3%	53	\$21.03	8
33-9032	Security Guards	31,520	32,550	1,030	3.3%	751	\$12.20	11
33-9091	Crossing Guards	2,670	2,640	-30	-1.1%	72	\$10.47	11
33-9092	Lifeguards/Ski Patrol/Rec. Prot. Serv. Wrks	6,510	6,860	350	5.4%	475	\$8.60	11
33-9099	Protective Service Workers, All Other	3,030	3,160	130	4.3%	218	\$15.77	11
35-0000	Food Preparation and Serving Related Occupations	472,430	498,330	25,900	5.5%	18,537	\$9.46	NA
35-1011	Chefs and Head Cooks	1,860	1,800	-60	-3.2%	18	\$20.95	8
35-1012	FL Sup/Mgrs of Food Prep. & Serving Workers	29,300	29,980	680	2.3%	347	\$14.70	8
35-2011	Cooks, Fast Food	14,050	14,440	390	2.8%	399	\$8.76	11
35-2012	Cooks, Institution and Cafeteria	22,270	22,600	330	1.5%	603	\$12.21	10
35-2014	Cooks, Restaurant	32,560	34,100	1,540	4.7%	987	\$10.38	9
35-2015	Cooks, Short Order	8,060	7,720	-340	-4.2%	206	\$9.15	11
35-2021	Food Preparation Workers	27,870	29,130	1,260	4.5%	1,124	\$9.68	11
35-3011	Bartenders	21,070	21,540	470	2.2%	798	\$8.91	11
35-3021	Comb. Food Prep. & Serv. Work, inc. Fast Food	152,240	167,900	15,660	10.3%	4,794	\$8.31	11
35-3022	Counter Attend., Caf�/Food Concess/Coffee Sh.	12,560	13,040	480	3.8%	970	\$10.19	11
35-3031	Waiters and Waitresses	94,590	96,510	1,920	2.0%	5,413	\$8.99	11
35-3041	Food Servers, Nonrestaurant	10,190	11,440	1,250	12.3%	299	\$9.49	11
35-9011	Dining Room & Cafeteria Attend. & Bar Helpers	12,610	12,770	160	1.3%	563	\$8.91	11
35-9021	Dishwashers	15,110	16,500	1,390	9.2%	761	\$8.52	11
35-9031	Hosts & Hostesses, Rest./Lounge/Coffee Shop	15,340	16,020	680	4.4%	1,136	\$8.52	11
35-9099	Food Prep. & Serving Related Workers, AO	1,540	1,520	-20	-1.3%	77	\$9.77	11
37-0000	Building & Grounds Cleaning & Maintenance Occup.	195,230	199,690	4,460	2.3%	3,856	\$11.68	NA
37-1011	FL Sup/Mgrs of Housekping & Janitorial Workers	7,140	7,300	160	2.2%	90	\$17.09	8
37-1012	FL Sup/Mgrs of Lndscap./Lawn Ser/Groundskp	6,970	7,630	660	9.5%	142	\$20.95	8
37-2011	Janitors & Cleaners, ex. Maids/Hseking Clean.	94,230	93,040	-1,190	-1.3%	1,781	\$11.71	11
37-2012	Maids and Housekeeping Cleaners	40,030	39,540	-490	-1.2%	718	\$9.62	11
37-3011	Landscaping and Groundskeeping Workers	43,170	48,090	4,920	11.4%	1,011	\$11.20	11
37-3012	Pesticide Handlers/Sprayers/Applicators, Veg.	910	960	50	5.5%	16	\$14.05	10
37-3013	Tree Trimmers and Pruners	990	1,210	220	22.2%	34	\$14.94	11
37-3019	Grounds Maintenance Workers, All Other	320	320	0	0.0%	4	\$16.57	11
39-0000	Personal Care and Service Occupations	151,210	173,120	21,910	14.5%	5,872	\$11.25	NA
39-1021	First-Line Sup/Mgrs of Personal Serv. Workers	6,880	7,660	780	11.3%	265	\$17.34	8
39-2011	Animal Trainers	350	430	80	22.9%	15	\$13.91	10
39-2021	Nonfarm Animal Caretakers	6,550	7,580	1,030	15.7%	246	\$10.00	11
39-3021	Motion Picture Projectionists	310	260	-50	-16.1%	13	\$10.49	11
39-3031	Ushers, Lobby Attendants and Ticket Takers	1,810	1,730	-80	-4.4%	115	\$8.86	11
39-3091	Amusement and Recreation Attendants	8,520	8,570	50	0.6%	446	\$8.77	11
39-3092	Costume Attendants	120	130	10	8.3%	7	\$17.03	11
39-3093	Locker Room/Coatroom/Dressing Rm Attendants	680	680	0	0.0%	35	\$9.89	11
39-3099	Entertainment Attendants & Related Workers, All Other	1,520	1,630	110	7.2%	90	\$8.99	10
39-4011	Embalmers	410	410	0	0.0%	20	\$21.66	7
39-4021	Funeral Attendants	2,130	2,530	400	18.8%	141	\$11.18	11
39-5012	Hairdressers, Hairstylists and Cosmetologists	31,320	36,720	5,400	17.2%	999	\$11.78	7
39-5092	Manicurists and Pedicurists	2,430	2,790	360	14.8%	71	\$11.07	7
39-5093	Shampooers	530	590	60	11.3%	14	\$8.36	11
39-5094	Skin Care Specialists	950	1,310	360	37.9%	50	\$15.18	7
39-6011	Baggage Porters and Bellhops	680	720	40	5.9%	22	\$9.76	11
39-6012	Concierges	410	450	40	9.8%	15	\$12.49	10
39-6021	Tour Guides and Escorts	780	750	-30	-3.8%	33	\$10.77	10
39-6031	Flight Attendants	1,450	1,580	130	9.0%	46	\$37,670++	9
39-6032	Trans. Attendants, ex. Flight Attend./Bag Porters	670	720	50	7.5%	20	\$10.48	11
39-9011	Child Care Workers	37,330	40,690	3,360	9.0%	1,428	\$10.59	11

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39-9021	Personal and Home Care Aides	13,820	19,990	6,170	44.6%	790	\$9.91	11
39-9031	Fitness Trainers and Aerobics Instructors	6,850	7,940	1,090	15.9%	232	\$12.70	7
39-9032	Recreation Workers	16,750	18,540	1,790	10.7%	481	\$11.05	11
39-9041	Residential Advisors	2,600	2,630	30	1.2%	95	\$16.10	11
39-9099	Personal Care and Service Workers, All Other	3,010	3,590	580	19.3%	125	\$9.77	11
41-0000	Sales and Related Occupations	600,140	606,460	6,320	1.1%	18,807	\$16.39	NA
41-1011	First-Line Superv./Mgrs of Retail Sales Workers	58,960	58,680	-280	-0.5%	1,265	\$18.01	8
41-1012	First-Line Sup./Mgrs of Non-Retail Sales Workers	19,070	19,250	180	0.9%	413	\$36.48	8
41-2011	Cashiers	137,670	138,140	470	0.3%	6,230	\$8.75	11
41-2021	Counter and Rental Clerks	16,280	15,880	-400	-2.5%	435	\$11.62	11
41-2031	Retail Salespersons	155,890	156,980	1,090	0.7%	4,457	\$11.46	11
41-3011	Advertising Sales Agents	5,740	5,840	100	1.7%	124	\$21.59	10
41-3021	Insurance Sales Agents	27,580	29,580	2,000	7.3%	840	\$27.50	7
41-3031	Securities/Commodities/Fin. Serv. Sales Agents	12,940	13,570	630	4.9%	460	\$32.31	5
41-3041	Travel Agents	2,880	2,040	-840	-29.2%	22	\$13.36	7
41-3099	Sales Representatives, Services, All Other	17,270	19,010	1,740	10.1%	602	\$24.89	8
41-4011	Sales Rep., Wholesale & Mfg. Tech./Sci. Prod.	20,540	22,250	1,710	8.3%	647	\$37.37	8
41-4012	Sales Rep., Wholesale/Mfg, ex. Tech./Sci. Prod.	66,060	67,220	1,160	1.8%	1,646	\$28.29	8
41-9011	Demonstrators and Product Promoters	3,860	3,850	-10	-0.3%	111	\$10.91	10
41-9012	Models	140	150	10	7.1%	5	\$18.32	10
41-9021	Real Estate Brokers	1,760	1,900	140	8.0%	43	\$39.31	8
41-9022	Real Estate Sales Agents	5,620	6,460	840	14.9%	176	\$23.66	7
41-9031	Sales Engineers	2,470	2,520	50	2.0%	94	\$37.90	5
41-9041	Telemarketers	23,320	21,410	-1,910	-8.2%	586	\$10.51	11
41-9091	Door-To-Door Sales, News/St. Vendors, & Rel.	4,950	4,520	-430	-8.7%	90	\$11.05	11
41-9099	Sales and Related Workers, All Other	7,160	7,540	380	5.3%	198	\$19.81	10
43-0000	Office and Administrative Support Occupations	892,470	916,530	24,060	2.7%	23,423	\$15.21	NA
43-1011	First-Line Sup/Mgrs of Office & Admin. Support	47,700	50,340	2,640	5.5%	1,340	\$23.09	8
43-2011	Switchboard Operators, inc. Answering Service	5,010	4,290	-720	-14.4%	103	\$12.18	11
43-2021	Telephone Operators	310	300	-10	-3.2%	5	\$15.80	11
43-3011	Bill and Account Collectors	17,680	20,930	3,250	18.4%	658	\$14.70	11
43-3021	Billing & Posting Clerks & Machine Operators	23,840	26,390	2,550	10.7%	646	\$14.68	11
43-3031	Bookkeeping, Accounting, and Auditing Clerks	73,730	77,080	3,350	4.5%	1,221	\$15.87	10
43-3051	Payroll and Timekeeping Clerks	7,120	6,230	-890	-12.5%	169	\$16.92	10
43-3061	Procurement Clerks	2,980	2,980	0	0.0%	91	\$16.37	10
43-3071	Tellers	22,380	22,920	540	2.4%	975	\$11.31	11
43-4011	Brokerage Clerks	1,890	1,740	-150	-7.9%	54	\$18.00	10
43-4021	Correspondence Clerks	590	540	-50	-8.5%	17	\$16.91	11
43-4031	Court, Municipal, and License Clerks	7,400	7,370	-30	-0.4%	210	\$16.09	11
43-4041	Credit Authorizers, Checkers and Clerks	3,120	2,870	-250	-8.0%	88	\$16.23	11
43-4051	Customer Service Representatives	83,800	93,860	10,060	12.0%	3,644	\$15.56	10
43-4061	Eligibility Interviewers, Government Programs	3,590	3,590	0	0.0%	84	\$18.79	10
43-4071	File Clerks	7,280	5,450	-1,830	-25.1%	177	\$12.46	11
43-4081	Hotel, Motel and Resort Desk Clerks	6,950	7,610	660	9.5%	301	\$8.89	11
43-4111	Interviewers, except Eligibility and Loan	7,890	8,620	730	9.3%	261	\$13.10	11
43-4121	Library Assistants, Clerical	8,380	8,680	300	3.6%	378	\$12.16	11
43-4131	Loan Interviewers and Clerks	8,420	8,710	290	3.4%	237	\$15.69	11
43-4141	New Accounts Clerks	3,170	3,170	0	0.0%	90	\$14.42	8
43-4151	Order Clerks	10,250	7,420	-2,830	-27.6%	291	\$13.90	11
43-4161	Human Resources Assis., ex. Payroll & Timekp	5,340	4,720	-620	-11.6%	151	\$17.19	11
43-4171	Receptionists and Information Clerks	32,420	35,460	3,040	9.4%	1,179	\$11.50	11
43-4181	Reservation/Trans. Ticket Agents & Travel Clerks	3,010	3,010	0	0.0%	68	\$15.34	11
43-4199	Information and Record Clerks, All Other	10,050	8,470	-1,580	-15.7%	285	\$16.83	11
43-5011	Cargo and Freight Agents	2,160	2,670	510	23.6%	101	\$17.63	10
43-5021	Couriers and Messengers	3,260	3,270	10	0.3%	76	\$12.40	11
43-5031	Police, Fire, and Ambulance Dispatchers	4,350	4,730	380	8.7%	128	\$17.57	10
43-5032	Dispatchers, except Police, Fire and Ambulance	7,250	6,800	-450	-6.2%	149	\$17.73	10
43-5041	Meter Readers, Utilities	1,670	1,250	-420	-25.1%	46	\$16.79	11

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43-5051	Postal Service Clerks	2,590	2,040	-550	-21.2%	55	\$25.20	11
43-5052	Postal Service Mail Carriers	14,810	14,100	-710	-4.8%	462	\$23.57	11
43-5053	Postal Service Mail Sorters/Proc/Proc Mach. Op.	6,710	4,500	-2,210	-32.9%	62	\$23.27	11
43-5061	Production, Planning, and Expediting Clerks	13,090	12,640	-450	-3.4%	322	\$19.52	10
43-5071	Shipping, Receiving, and Traffic Clerks	35,080	31,210	-3,870	-11.0%	870	\$14.50	11
43-5081	Stock Clerks and Order Fillers	77,470	80,730	3,260	4.2%	2,110	\$11.08	11
43-5111	Weighers/Meas./Checkers/Samplers, Recordkp	2,130	1,750	-380	-17.8%	74	\$15.08	11
43-6011	Executive Secretaries & Administrative Assistants	47,800	50,600	2,800	5.9%	924	\$19.90	8
43-6012	Legal Secretaries	8,400	9,100	700	8.3%	183	\$17.90	6
43-6013	Medical Secretaries	36,880	44,690	7,810	21.2%	1,278	\$13.72	10
43-6014	Secretaries, except Legal, Medical & Executive	64,140	61,710	-2,430	-3.8%	864	\$14.66	10
43-9011	Computer Operators	3,670	2,890	-780	-21.3%	42	\$17.67	10
43-9021	Data Entry Keyers	13,520	12,280	-1,240	-9.2%	282	\$12.86	10
43-9022	Word Processors and Typists	3,210	2,850	-360	-11.2%	25	\$16.08	10
43-9031	Desktop Publishers	720	540	-180	-25.0%	12	\$16.57	7
43-9041	Insurance Claims and Policy Processing Clerks	12,550	12,560	10	0.1%	165	\$16.77	10
43-9051	Mail Clerks & Mail Machine Op., ex. Postal Serv.	5,240	4,610	-630	-12.0%	95	\$12.28	11
43-9061	Office Clerks, General	111,850	117,920	6,070	5.4%	2,131	\$13.02	11
43-9071	Office Machine Operators, except Computer	2,860	2,560	-300	-10.5%	95	\$13.26	11
43-9081	Proofreaders and Copy Markers	300	250	-50	-16.7%	5	\$14.60	11
43-9111	Statistical Assistants	1,020	1,040	20	2.0%	19	\$17.50	10
43-9199	Office & Administrative Support Workers, All Other	5,450	4,480	-970	-17.8%	125	\$16.70	11
45-0000	Farming, Fishing, and Forestry Occupations	15,530	14,920	-610	-3.9%	417	\$13.76	NA
45-1011	FL Sup/Mgrs of Farming/Fishing/Forestry Wrks.	1,290	1,320	30	2.3%	36	\$23.92	8
45-2011	Agricultural Inspectors	530	550	20	3.8%	13	\$22.42	8
45-2041	Graders and Sorters, Agricultural Products	330	310	-20	-6.1%	7	\$13.52	8
45-2091	Agricultural Equipment Operators	6,660	6,290	-370	-5.6%	180	\$15.41	11
45-2092	Farmworkers/Laborers, Crop/Nursery/Greenhse	3,530	3,530	0	0.0%	95	\$10.45	11
45-2093	Farmworkers, Farm and Ranch Animals	1,470	1,430	-40	-2.7%	40	\$11.40	11
45-4011	Forest and Conservation Workers	310	300	-10	-3.2%	8	\$13.28	10
45-4022	Logging Equipment Operators	640	490	-150	-23.4%	17	\$15.43	10
47-0000	Construction and Extraction Occupations	216,510	229,410	12,900	6.0%	5,259	\$21.16	NA
47-1011	First-Line Sup/Mgrs of Con. Trades/Extract. Work	17,020	18,610	1,590	9.3%	488	\$28.86	8
47-2011	Boilermakers	1,120	1,220	100	8.9%	34	\$30.14	9
47-2021	Brickmasons and Blockmasons	5,370	5,820	450	8.4%	181	\$24.04	9
47-2022	Stonemasons	200	210	10	5.0%	6	\$21.81	9
47-2031	Carpenters	37,270	40,520	3,250	8.7%	789	\$19.39	9
47-2041	Carpet Installers	1,250	1,120	-130	-10.4%	33	\$19.07	10
47-2042	Floor Layers, ex. Carpet, Wood, & Hard Tiles	560	520	-40	-7.1%	15	\$21.33	10
47-2043	Floor Sanders and Finishers	190	190	0	0.0%	5	\$16.23	10
47-2044	Tile and Marble Setters	840	900	60	7.1%	28	\$18.73	9
47-2051	Cement Masons and Concrete Finishers	5,290	5,630	340	6.4%	167	\$20.16	10
47-2061	Construction Laborers	28,050	31,690	3,640	13.0%	552	\$18.50	10
47-2071	Paving, Surfacing, & Tamping Equip. Operators	1,580	1,670	90	5.7%	35	\$19.22	10
47-2073	Operating Engineers & Other Con. Equip. Op.	10,860	11,440	580	5.3%	244	\$23.96	10
47-2081	Drywall and Ceiling Tile Installers	2,540	2,750	210	8.3%	49	\$17.02	10
47-2082	Tapers	630	680	50	7.9%	12	\$19.74	10
47-2111	Electricians	26,660	27,030	370	1.4%	681	\$23.16	9
47-2121	Glaziers	1,890	1,970	80	4.2%	77	\$20.44	9
47-2131	Insulation Workers, Floor, Ceiling and Wall	1,130	1,240	110	9.7%	48	\$18.64	10
47-2132	Insulation Workers, Mechanical	360	390	30	8.3%	15	\$21.50	10
47-2141	Painters, Construction and Maintenance	10,400	10,570	170	1.6%	195	\$18.99	10
47-2142	Paperhangers	270	220	-50	-18.5%	0	\$20.65	10
47-2151	Pipelayers	1,840	1,900	60	3.3%	43	\$20.65	11
47-2152	Plumbers, Pipefitters and Steamfitters	15,780	16,500	720	4.6%	390	\$23.51	9
47-2161	Plasterers and Stucco Masons	660	680	20	3.0%	13	\$18.55	9
47-2171	Reinforcing Iron and Rebar Workers	600	660	60	10.0%	16	\$24.81	9
47-2181	Roofers	5,450	5,580	130	2.4%	103	\$18.36	10

*Occupations with 100 or more workers.

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Appendix Table E
Ohio - Occupational Employment* Projections Report, 2008-2018

Code	Occupational Title**	Employment		Change in Employment		Total Annual Openings	Average Wage May 09	Education Training Level+
		2008 Annual	2018 Projected	2008 - 2018	Percent			
47-2211	Sheet Metal Workers	4,560	4,490	-70	-1.5%	109	\$21.78	9
47-2221	Structural Iron and Steel Workers	2,800	2,970	170	6.1%	63	\$25.19	9
47-3011	Helpers--Brick/Block/Stone/Tile & Marble Setters	1,060	1,200	140	13.2%	36	\$15.27	11
47-3012	Helpers--Carpenters	970	1,160	190	19.6%	39	\$12.61	11
47-3013	Helpers--Electricians	1,290	1,430	140	10.9%	41	\$12.27	11
47-3014	Helpers--Painters/Paper/Plasterers/Stucco Mas.	120	120	0	0.0%	3	\$13.86	11
47-3015	Helpers--Pipelayers/Plumbers/Pipefitters/Steamf	1,230	1,440	210	17.1%	47	\$12.84	11
47-3016	Helpers--Roofers	340	300	-40	-11.8%	7	\$12.55	11
47-3019	Helpers, Construction Trades, All Other	610	640	30	4.9%	16	\$12.75	11
47-4011	Construction and Building Inspectors	3,580	3,720	140	3.9%	88	\$23.46	8
47-4021	Elevator Installers and Repairers	1,650	1,630	-20	-1.2%	46	\$33.07	9
47-4031	Fence Erectors	1,230	1,300	70	5.7%	21	\$13.91	10
47-4041	Hazardous Materials Removal Workers	1,300	1,260	-40	-3.1%	35	\$16.66	10
47-4051	Highway Maintenance Workers	10,630	10,550	-80	-0.8%	288	\$17.45	10
47-4061	Rail-Track Laying & Maintenance Equip. Oper.	630	670	40	6.3%	21	\$20.04	10
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	1,240	1,310	70	5.6%	41	\$15.73	10
47-4099	Construction and Related Workers, All Other	1,850	1,890	40	2.2%	66	\$16.63	10
47-5011	Derrick Operators, Oil and Gas	280	280	0	0.0%	5	\$14.94	10
47-5012	Rotary Drill Operators, Oil and Gas	380	380	0	0.0%	7	\$17.28	10
47-5021	Earth Drillers, except Oil and Gas	430	450	20	4.7%	9	\$20.15	10
47-5041	Continuous Mining Machine Operators	420	380	-40	-9.5%	7	\$19.18	10
47-5042	Mine Cutting and Channeling Machine Operators	370	350	-20	-5.4%	6	\$15.62	10
47-5051	Rock Splitters, Quarry	120	100	-20	-16.7%	2	\$15.48	10
47-5071	Roustabouts, Oil and Gas	340	370	30	8.8%	9	\$13.46	10
47-5081	Helpers--Extraction Workers	310	280	-30	-9.7%	5	\$15.42	11
47-5099	Extraction Workers, All Other	160	160	0	0.0%	3	\$18.25	10
49-0000	Installation, Maintenance, and Repair Occupations	224,670	225,210	540	0.2%	4,932	\$19.85	NA
49-1011	FL Sup/Mgrs of Mechanics/Installers/Repairers	17,350	16,720	-630	-3.6%	454	\$28.56	8
49-2011	Computer, ATM, & Office Machine Repairers	5,060	4,480	-580	-11.5%	87	\$17.83	7
49-2021	Radio Mechanics	530	430	-100	-18.9%	9	\$17.50	7
49-2022	Telecomm. Equip. Install/Repair, ex. Line Install	6,880	6,460	-420	-6.1%	120	\$25.90	7
49-2091	Avionics Technicians	290	320	30	10.3%	8	\$26.83	7
49-2092	Electric Motor, Power Tool, & Related Repairers	810	810	0	0.0%	28	\$19.28	7
49-2093	Electrical/Electronics Install/Repair, Trans. Equip.	300	280	-20	-6.7%	5	\$21.38	7
49-2094	Electrical/Electronics Repair, Comm/Indus Equip.	3,050	2,810	-240	-7.9%	53	\$23.85	7
49-2095	Electrical/Electronics Repair, Pwrhse/Substa/Rly	1,230	1,370	140	11.4%	35	\$28.32	7
49-2096	Electronic Equipment Install/Repair, Motor Veh.	560	500	-60	-10.7%	10	\$15.63	7
49-2097	Electronic Home Entertainm Equip. Install/Repair	1,030	1,050	20	1.9%	20	\$16.00	7
49-2098	Security and Fire Alarm Systems Installers	1,980	2,200	220	11.1%	56	\$15.87	7
49-3011	Aircraft Mechanics and Service Technicians	2,220	2,230	10	0.5%	44	\$24.65	7
49-3021	Automotive Body and Related Repairers	7,160	6,500	-660	-9.2%	185	\$18.74	9
49-3022	Automotive Glass Installers and Repairers	370	350	-20	-5.4%	8	\$18.16	9
49-3023	Automotive Service Technicians and Mechanics	28,640	27,310	-1,330	-4.6%	547	\$17.35	7
49-3031	Bus & Truck Mechanics & Diesel Engine Spec.	13,450	13,600	150	1.1%	324	\$18.89	7
49-3041	Farm Equipment Mechanics	980	1,030	50	5.1%	24	\$15.18	9
49-3042	Mobile Heavy Equip. Mechanics, ex. Engines	3,710	3,900	190	5.1%	90	\$21.62	9
49-3043	Rail Car Repairers	1,050	1,090	40	3.8%	24	\$19.29	9
49-3051	Motorboat Mechanics	620	640	20	3.2%	15	\$15.27	9
49-3052	Motorcycle Mechanics	720	780	60	8.3%	21	\$14.61	9
49-3053	Outdoor Power Equip. & Other Sm Engine Mech.	1,270	1,320	50	3.9%	31	\$13.00	10
49-3093	Tire Repairers and Changers	3,380	3,350	-30	-0.9%	70	\$12.16	11
49-9011	Mechanical Door Repairers	520	560	40	7.7%	12	\$16.32	10
49-9012	Control & Valve Install/Repair, ex. Mech. Door	1,250	1,190	-60	-4.8%	19	\$24.55	10
49-9021	Heating, AC, & Refrigeration Mechanics/Installers	11,430	14,170	2,740	24.0%	458	\$22.25	7
49-9031	Home Appliance Repairers	1,310	1,280	-30	-2.3%	20	\$16.02	9
49-9041	Industrial Machinery Mechanics	15,020	15,120	100	0.7%	226	\$23.37	9
49-9042	Maintenance and Repair Workers, General	60,010	62,160	2,150	3.6%	1,139	\$17.38	10
49-9043	Maintenance Workers, Machinery	3,080	2,960	-120	-3.9%	47	\$19.30	10

*Occupations with 100 or more workers.

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Appendix Table E
Ohio - Occupational Employment* Projections Report, 2008-2018

Code	Occupational Title**	Employment		Change in Employment		Total Annual Openings	Average Wage May 09	Education Training Level+
		2008 Annual	2018 Projected	2008 - 2018	Percent			
49-9044	Millwrights	2,740	2,400	-340	-12.4%	55	\$27.38	9
49-9045	Refractory Materials Repairers, Except Brickmasons	150	130	-20	-13.3%	2	\$23.26	10
49-9051	Electrical Power-Line Installers and Repairers	3,900	3,800	-100	-2.6%	138	\$24.58	9
49-9052	Telecommunications Line Installers & Repairers	5,380	5,170	-210	-3.9%	83	\$20.54	9
49-9062	Medical Equipment Repairers	1,890	2,260	370	19.6%	92	\$23.74	6
49-9063	Musical Instrument Repairers and Tuners	240	220	-20	-8.3%	7	\$15.57	9
49-9064	Watch Repairers	180	150	-30	-16.7%	5	\$16.82	9
49-9069	Precision Instrument/Equipment Repairers, AO	670	640	-30	-4.5%	19	\$23.04	10
49-9091	Coin/Vending/Amusement Machine Serv/Repair	2,560	2,590	30	1.2%	88	\$12.79	10
49-9094	Locksmiths and Safe Repairers	610	620	10	1.6%	9	\$16.71	10
49-9095	Manufactured Building and Mobile Home Installers	130	120	-10	-7.7%	1	\$14.78	10
49-9097	Signal and Track Switch Repairers	470	440	-30	-6.4%	7	\$21.00	10
49-9098	Helpers--Installation/Maintenance/Repair Workers	3,610	3,610	0	0.0%	173	\$12.02	11
49-9099	Installation/Maintenance/Repair Workers, AO	6,070	6,060	-10	-0.2%	94	\$16.88	10
51-0000	Production Occupations	540,890	485,180	-55,710	-10.3%	10,697	\$16.43	NA
51-1011	FL Sup/Mgrs of Production/Operating Workers	37,380	32,870	-4,510	-12.1%	504	\$25.79	8
51-2021	Coil Winders, Tapers, and Finishers	830	590	-240	-28.9%	13	\$16.37	11
51-2022	Electrical & Electronic Equipment Assemblers	6,260	4,910	-1,350	-21.6%	97	\$14.00	11
51-2023	Electromechanical Equipment Assemblers	2,080	1,770	-310	-14.9%	32	\$14.63	11
51-2031	Engine and Other Machine Assemblers	5,680	4,440	-1,240	-21.8%	119	\$23.77	11
51-2041	Structural Metal Fabricators and Fitters	4,040	3,650	-390	-9.7%	85	\$16.97	10
51-2091	Fiberglass Laminators and Fabricators	910	790	-120	-13.2%	21	\$13.69	10
51-2092	Team Assemblers	61,070	54,600	-6,470	-10.6%	1,375	\$14.63	10
51-2099	Assemblers and Fabricators, All Other	25,390	22,960	-2,430	-9.6%	572	\$17.75	10
51-3011	Bakers	6,380	6,190	-190	-3.0%	164	\$11.37	9
51-3021	Butchers and Meat Cutters	4,890	4,970	80	1.6%	165	\$14.24	9
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	1,880	2,000	120	6.4%	72	\$10.90	11
51-3092	Food Batchmakers	4,160	4,530	370	8.9%	137	\$14.90	11
51-3093	Food Cooking Machine Operators and Tenders	1,470	1,490	20	1.4%	44	\$11.23	11
51-4011	Computer-Controlled Machine Tool Oper., M/P	13,270	12,720	-550	-4.1%	260	\$17.14	10
51-4012	Numerical Tool & Process Control Programmers	940	760	-180	-19.1%	18	\$21.71	8
51-4021	Extruding & Drawing Machine Setters, O/T, M/P	7,020	5,820	-1,200	-17.1%	137	\$16.12	10
51-4022	Forging Mach. Setters/Operators/Tenders, M/P	1,930	1,460	-470	-24.4%	38	\$17.41	10
51-4023	Rolling Machine Setters/Operators/Tenders, M/P	2,680	2,090	-590	-22.0%	53	\$16.71	10
51-4031	Cutting/Punching/Press Machine S/O/T, M/P	19,420	15,400	-4,020	-20.7%	383	\$14.67	10
51-4032	Drilling & Boring Machine Tool Setters, O/T, M/P	2,390	1,630	-760	-31.8%	20	\$16.33	10
51-4033	Grind/Lapping/Polish/Buf Mach.Tool S/O/T, M/P	7,200	5,670	-1,530	-21.3%	105	\$15.63	10
51-4034	Lathe & Turning Machine Tool Setters, O/T, M/P	3,880	2,750	-1,130	-29.1%	64	\$16.15	10
51-4035	Milling & Planing Machine Setters, O/T, M/P	1,630	1,320	-310	-19.0%	32	\$16.14	10
51-4041	Machinists	32,780	29,700	-3,080	-9.4%	432	\$17.88	9
51-4051	Metal-Refining Furnace Operators and Tenders	2,820	2,200	-620	-22.0%	55	\$19.54	10
51-4052	Pourers and Casters, Metal	1,500	1,190	-310	-20.7%	29	\$15.78	10
51-4061	Model Makers, Metal and Plastic	450	390	-60	-13.3%	3	\$20.59	9
51-4062	Patternmakers, Metal and Plastic	730	630	-100	-13.7%	4	\$19.38	9
51-4071	Foundry Mold and Coremakers	1,940	1,490	-450	-23.2%	40	\$14.90	10
51-4072	Molding/Coremaking/Casting Mach. S/O/T, M/P	13,450	11,470	-1,980	-14.7%	279	\$14.26	10
51-4081	Multiple Machine Tool Setters, O/T, M/P	5,130	4,100	-1,030	-20.1%	100	\$17.19	10
51-4111	Tool and Die Makers	8,690	7,190	-1,500	-17.3%	52	\$22.93	9
51-4121	Welders, Cutters, Solderers, and Brazers	15,660	14,250	-1,410	-9.0%	480	\$16.91	7
51-4122	Welding/Soldering/Brazing Machine Setters, O/T	7,320	5,970	-1,350	-18.4%	224	\$16.31	7
51-4191	Heat Treating Equip. Setters, O/T, M/P	2,340	1,920	-420	-17.9%	106	\$16.27	10
51-4192	Lay-Out Workers, Metal and Plastic	280	210	-70	-25.0%	6	\$17.61	10
51-4193	Plating & Coating Machine Setters, O/T, M/P	2,010	1,760	-250	-12.4%	54	\$13.83	10
51-4194	Tool Grinders, Filers, and Sharpeners	970	840	-130	-13.4%	30	\$16.92	10
51-4199	Metal Workers and Plastic Workers, All Other	9,390	7,630	-1,760	-18.7%	125	\$15.53	10
51-5011	Bindery Workers	2,330	1,740	-590	-25.3%	34	\$13.62	11
51-5012	Bookbinders	310	260	-50	-16.1%	5	\$14.87	10
51-5021	Job Printers	2,810	2,370	-440	-15.7%	10	\$15.39	9

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51-5022	Prepress Technicians and Workers	2,350	1,750	-600	-25.5%	30	\$17.68	7
51-5023	Printing Machine Operators	9,100	8,300	-800	-8.8%	191	\$16.15	10
51-6011	Laundry and Dry-Cleaning Workers	8,150	8,140	-10	-0.1%	142	\$9.91	10
51-6021	Pressers, Textile, Garment & Related Materials	2,300	2,040	-260	-11.3%	10	\$10.42	11
51-6031	Sewing Machine Operators	5,490	4,170	-1,320	-24.0%	30	\$11.58	10
51-6051	Sewers, Hand	280	280	0	0.0%	3	\$11.01	11
51-6052	Tailors, Dressmakers and Custom Sewers	1,750	1,810	60	3.4%	25	\$12.74	9
51-6062	Textile Cutting Machine Setters/Oper./Tenders	430	320	-110	-25.6%	8	\$13.39	10
51-6091	Extrud/Form Mach S/O/T, Synthetic/Glass Fibers	740	500	-240	-32.4%	8	\$16.02	10
51-6093	Upholsterers	1,790	1,760	-30	-1.7%	11	\$14.82	9
51-6099	Textile/Apparel/Furnishings Workers, All Other	240	190	-50	-20.8%	3	\$13.86	11
51-7011	Cabinetmakers and Bench Carpenters	4,990	5,050	60	1.2%	118	\$14.19	9
51-7021	Furniture Finishers	1,020	1,000	-20	-2.0%	23	\$12.77	9
51-7041	Sawing Mach. Setters/Operators/Tenders, Wood	1,630	1,480	-150	-9.2%	29	\$12.90	10
51-7042	Woodworking Machine Setters, O/T, ex. Sawing	3,390	3,300	-90	-2.7%	69	\$12.28	10
51-7099	Woodworkers, All Other	1,550	1,500	-50	-3.2%	35	\$11.58	10
51-8011	Nuclear Power Reactor Operators	180	220	40	22.2%	10	\$33.16	9
51-8012	Power Distributors and Dispatchers	320	320	0	0.0%	11	\$27.69	9
51-8013	Power Plant Operators	1,130	1,130	0	0.0%	39	\$28.17	9
51-8021	Stationary Engineers and Boiler Operators	1,720	1,610	-110	-6.4%	29	\$24.91	9
51-8031	Water/Liquid Waste Treatment Plant/System Op.	4,650	5,100	450	9.7%	145	\$20.03	9
51-8091	Chemical Plant and System Operators	1,330	1,150	-180	-13.5%	31	\$24.21	9
51-8092	Gas Plant Operators	570	540	-30	-5.3%	13	\$26.86	9
51-8093	Petroleum Pump System Oper./Refinery Oper./Gaugers	1,320	1,170	-150	-11.4%	30	\$26.88	9
51-8099	Plant and System Operators, All Other	320	310	-10	-3.1%	7	\$26.02	9
51-9011	Chemical Equipment Operators and Tenders	3,810	3,180	-630	-16.5%	32	\$22.39	10
51-9012	Sep./Filter/Clarify/Precipitating/Still Mach. S/O/T	1,290	1,350	60	4.7%	17	\$15.62	10
51-9021	Crushing/Grinding/Polishing Machine S/O/T	1,150	990	-160	-13.9%	20	\$15.62	10
51-9022	Grinding and Polishing Workers, Hand	2,400	2,280	-120	-5.0%	41	\$13.91	10
51-9023	Mixing/Blending Mach. Setter/Operator/Tenders	9,010	9,670	660	7.3%	220	\$17.08	10
51-9031	Cutters and Trimmers, Hand	930	740	-190	-20.4%	20	\$13.22	11
51-9032	Cutting/Slicing Mach. Setters/Operators/Tenders	3,620	3,300	-320	-8.8%	78	\$14.36	10
51-9041	Extrud/Form/Pressing/Compacting Mach. S/O/T	7,150	7,620	470	6.6%	194	\$14.25	10
51-9051	Furnace/Kiln/Oven/Drier/Kettle Oper./Tenders	2,280	1,970	-310	-13.6%	23	\$17.67	10
51-9061	Inspectors/Testers/Sorters/Samplers/Weighers	24,010	21,540	-2,470	-10.3%	402	\$16.76	10
51-9071	Jewelers & Precious Stone & Metal Workers	1,060	980	-80	-7.5%	22	\$17.04	7
51-9081	Dental Laboratory Technicians	1,710	1,800	90	5.3%	42	\$17.50	10
51-9082	Medical Appliance Technicians	420	450	30	7.1%	11	\$16.81	9
51-9083	Ophthalmic Laboratory Technicians	1,220	1,160	-60	-4.9%	24	\$13.46	10
51-9111	Packaging & Filling Machine Operators/Tenders	17,410	16,630	-780	-4.5%	292	\$14.29	11
51-9121	Coating/Painting/Spraying Machine Setters, O/T	6,890	6,400	-490	-7.1%	181	\$15.06	10
51-9122	Painters, Transportation Equipment	1,710	1,560	-150	-8.8%	45	\$18.99	10
51-9123	Painting, Coating, and Decorating Workers	1,580	1,560	-20	-1.3%	41	\$11.06	11
51-9131	Photographic Process Workers	780	700	-80	-10.3%	19	\$13.28	11
51-9132	Photographic Processing Machine Operators	1,660	1,130	-530	-31.9%	41	\$10.44	11
51-9141	Semiconductor Processors	810	540	-270	-33.3%	17	\$14.30	7
51-9191	Cementing/Gluing Machine Operators/Tenders	990	790	-200	-20.2%	24	\$14.83	10
51-9192	Cleaning/Washing/Metal Pickling Equipment O/T	1,820	1,670	-150	-8.2%	38	\$13.40	10
51-9194	Etchers and Engravers	650	590	-60	-9.2%	4	\$13.68	9
51-9195	Molders/Shapers/Casters, ex. Metal & Plastic	1,550	1,470	-80	-5.2%	77	\$15.27	10
51-9196	Paper Goods Mach. Setters/Operators/Tenders	5,720	4,460	-1,260	-22.0%	120	\$15.46	10
51-9198	Helpers--Production Workers	26,960	26,590	-370	-1.4%	472	\$12.24	11
51-9199	Production Workers, All Other	15,000	14,240	-760	-5.1%	347	\$16.24	10
53-0000	Transportation and Material Moving Occupations	438,660	439,030	370	0.1%	11,685	\$14.79	NA
53-1021	FL Sup/Mgrs of Help/Labor/Mat. Movers, Hand	8,720	8,710	-10	-0.1%	151	\$21.50	8
53-1031	FL Sup/Mgr of Trans/Mat.-Mov. Mach & Veh Op	9,000	8,420	-580	-6.4%	156	\$25.74	8
53-2011	Airline Pilots, Copilots & Flight Engineers	2,190	2,310	120	5.5%	86	\$99,810++	5
53-2021	Air Traffic Controllers	1,050	1,140	90	8.6%	45	\$54.97	9

*Occupations with 100 or more workers.

**See page E-13.

+See page E-13 for Education and Training Levels.

++Annual earnings, typically 9 1/2 months for school teachers.

Appendix Table E
Ohio - Occupational Employment* Projections Report, 2008-2018

Code	Occupational Title**	Employment		Change in Employment		Total Annual Openings	Average Wage May 09	Education Training Level+
		2008 Annual	2018 Projected	2008 - 2018	Percent			
53-3011	Ambulance Drivers & Attendants, except EMT	960	1,050	90	9.4%	26	\$9.49	10
53-3021	Bus Drivers, Transit and Intercity	5,510	5,530	20	0.4%	98	\$20.01	10
53-3022	Bus Drivers, School	9,000	9,530	530	5.9%	210	\$13.29	10
53-3031	Driver/Sales Workers	22,880	23,050	170	0.7%	426	\$11.79	11
53-3032	Truck Drivers, Heavy and Tractor-Trailer	75,880	85,010	9,130	12.0%	2,271	\$18.84	11
53-3033	Truck Drivers, Light or Delivery Services	40,640	40,920	280	0.7%	755	\$14.50	11
53-3041	Taxi Drivers and Chauffeurs	7,850	8,670	820	10.4%	221	\$9.86	11
53-3099	Motor Vehicle Operators, All Other	1,780	1,710	-70	-3.9%	31	\$13.28	11
53-4011	Locomotive Engineers	2,610	2,660	50	1.9%	89	\$21.89	10
53-4013	Rail Yard Engineers/Dinkey Operators/Hostlers	200	210	10	5.0%	7	\$15.30	10
53-4031	Railroad Conductors and Yardmasters	500	500	0	0.0%	17	\$24.78	10
53-4099	Rail Transportation Workers, All Other	900	840	-60	-6.7%	29	\$22.75	10
53-6021	Parking Lot Attendants	3,670	3,490	-180	-4.9%	132	\$9.02	11
53-6031	Service Station Attendants	3,140	2,940	-200	-6.4%	131	\$9.55	11
53-6041	Traffic Technicians	140	140	0	0.0%	5	\$21.12	11
53-6051	Transportation Inspectors	1,010	1,140	130	12.9%	37	\$24.63	8
53-6099	Transportation Workers, All Other	630	620	-10	-1.6%	23	\$16.67	11
53-7011	Conveyor Operators and Tenders	1,590	1,370	-220	-13.8%	46	\$16.23	11
53-7021	Crane and Tower Operators	2,320	1,960	-360	-15.5%	54	\$20.47	9
53-7031	Dredge Operators	140	130	-10	-7.1%	4	\$18.47	10
53-7032	Excavating & Loading Machine & Dragline Oper.	2,330	2,260	-70	-3.0%	68	\$16.75	10
53-7051	Industrial Truck and Tractor Operators	29,770	28,740	-1,030	-3.5%	887	\$14.83	11
53-7061	Cleaners of Vehicles and Equipment	12,140	11,220	-920	-7.6%	432	\$11.29	11
53-7062	Laborers/Freight/Stock/Material Movers, Hand	120,650	116,810	-3,840	-3.2%	3,883	\$12.40	11
53-7063	Machine Feeders and Offbearers	8,130	5,880	-2,250	-27.7%	92	\$12.97	11
53-7064	Packers and Packagers, Hand	51,590	49,940	-1,650	-3.2%	858	\$10.79	11
53-7073	Wellhead Pumpers	410	360	-50	-12.2%	12	\$16.70	10
53-7081	Refuse and Recyclable Material Collectors	6,330	6,480	150	2.4%	199	\$15.84	11
53-7121	Tank Car, Truck and Ship Loaders	290	250	-40	-13.8%	9	\$16.85	10
53-7199	Material Moving Workers, All Other	710	640	-70	-9.9%	8	\$15.92	10

+ Education/Training Levels

- 1 First Professional Degree
- 2 Doctoral Degree
- 3 Master's Degree
- 4 Bachelor's or Higher Degree, plus Work Experience
- 5 Bachelor's Degree
- 6 Associate Degree
- 7 Postsecondary Vocational Award
- 8 Work Experience in a Related Occupation
- 9 Long-Term On-The-Job Training
- 10 Moderate-Term On-The-Job Training
- 11 Short-Term On-The-Job Training
- NA Not Available/Applicable

****Abbreviations**

- AO = All Other
- FL Sup/Mgrs = First-Line Supervisors/Managers
- M/P = Metal and Plastic
- PS = Postsecondary
- O/T = Operators and Tenders
- S/O/T = Setters, Operators and Tenders

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, November 2010.

*Occupations with 100 or more workers.

**See page E-13.

+See page E-13 for Education and Training Levels.
 ++Annual earnings, typically 9 1/2 months for school teachers.

Appendix Table F
Ohio - 2008 Education and Training Level Employment for Aggregated Occupations

	First professional degree	Doctoral degree	Master's degree	Bachelor's or higher degree, plus work experience	Bachelor's degree	Associate degree	Postsecondary vocational training	Work experience in a related occupation	Long-term on-the-job training	Moderate-term on-the-job training	Short-term on-the-job training
Total	71,220	58,710	91,860	180,480	652,490	248,720	368,910	506,410	448,850	998,990	2,099,450
Management, Business & Financial				164,570	192,030	3,530	340	52,940	110,050	14,200	
Professional	71,220	58,710	91,860	15,910	442,860	227,480	96,900	8,200	34,090	36,700	37,610
Service						7,430	128,110	65,020	78,710	76,310	782,470
Sales					15,410		36,090	183,640		26,380	338,620
Office & Administrative Support						8,400	720	98,670		334,940	449,750
Farming, Fishing, & Forestry								2,360		1,290	11,880
Construction & Extraction								20,600	99,430	88,730	7,750
Installation, Maintenance & Repair						1,890	77,460	17,350	43,640	77,280	7,050
Production							27,200	38,320	79,390	318,760	77,230
Transportation & Material Moving					2,190		2,100	19,320	3,540	24,420	387,090

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, November 2010.

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