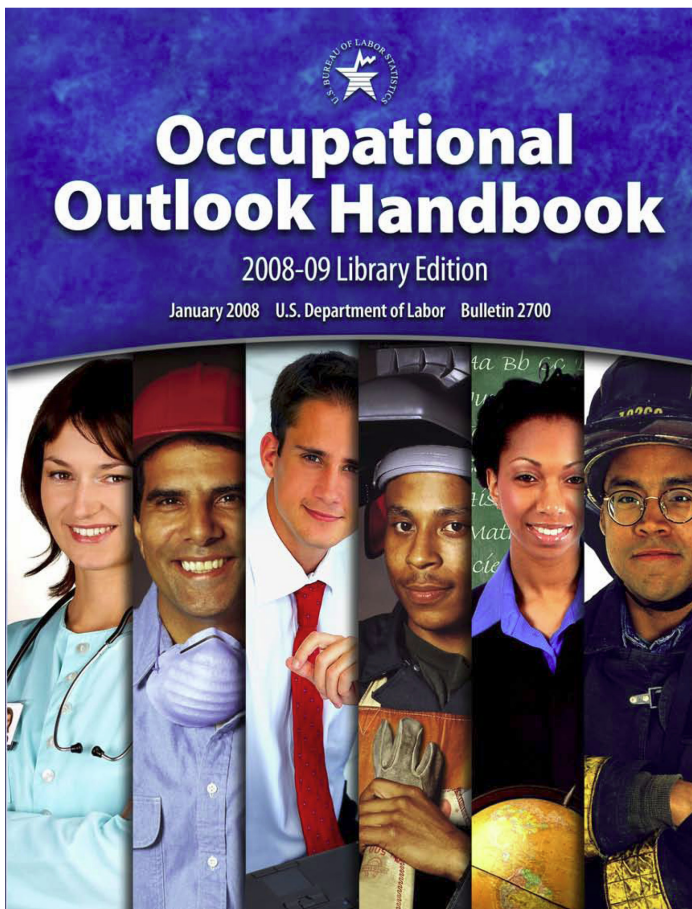


# Management, Business, and Financial Occupations



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Occupational Outlook Handbook, 2008-09 Edition

U.S. Department of Labor  
Bureau of Labor Statistics



## Occupations Included in this Reprint

Accountants and auditors  
Administrative services managers  
Advertising, marketing, promotions, public relations,  
and sales managers  
Appraisers and assessors of real estates  
Budget analysts  
Claims adjusters, appraisers, examiners, and  
investigators  
Computer and information systems managers  
Construction managers  
Cost estimators  
Education administrators  
Engineering and natural sciences managers  
Farmers, ranchers, and agricultural managers  
Financial analysts and personal financial advisors  
Financial managers  
Food service managers  
Funeral directors  
Human resources, training, and labor relations  
managers and specialists  
Industrial production managers  
Insurance underwriters  
Loan officers  
Lodging managers  
Management analysts  
Medical and health services managers  
Meeting and convention planners  
Property, real estate, and community association  
managers  
Purchasing managers, buyers, and purchasing  
agents  
Tax examiners, collectors, and revenue agents  
Top executives

## Accountants and Auditors

(O\*NET 13-2011.00, 13-2011.01, 13-2011.02)

### Significant Points

- Most jobs require at least a bachelor's degree in accounting or a related field.
- Opportunities will be best for jobseekers who have a master's degree, obtain certification or licensure or who are proficient in the use of accounting and auditing computer software.
- Faster-than-average growth of accountant and auditor jobs will result from an increase in the number of businesses, changing financial laws and regulations, and greater scrutiny of company finances.

### Nature of the Work

Accountants and auditors help to ensure that the Nation's firms are run efficiently, its public records kept accurately, and its taxes paid properly and on time. They analyze and communicate financial information for various entities such as companies, individual clients, and government. Beyond carrying out the fundamental tasks of the occupation—preparing, analyzing, and verifying financial documents in order to provide information to clients—many accountants also offer budget analysis, financial and investment planning, information technology consulting, and limited legal services.

Specific job duties vary widely among the four major fields of accounting and auditing: *public*, *management*, *government accounting*, and *internal auditing*.

*Public accountants* perform a broad range of accounting, auditing, tax, and consulting activities for their clients, which may be corporations, governments, nonprofit organizations, or individuals. For example, some public accountants concentrate on tax matters, such as advising companies about the tax advantages and disadvantages of certain business decisions and preparing individual income tax returns. Others offer advice in areas such as compensation or employee health care benefits, the design of accounting and data-processing systems, and the selection of controls to safeguard assets. Still others audit clients' financial statements and inform investors and authorities that the statements have been correctly prepared and reported. These accountants are also referred to as *external auditors*. Public accountants, many of whom are Certified Public Accountants (CPAs), generally have their own businesses or work for public accounting firms.

Some public accountants specialize in forensic accounting—investigating and interpreting white-collar crimes such as securities fraud and embezzlement, bankruptcies and contract disputes, and other complex and possibly criminal financial transactions, including money laundering by organized criminals. Forensic accountants combine their knowledge of accounting and finance with law and investigative techniques to determine whether an activity is illegal. Many forensic accountants work closely with law enforcement personnel and lawyers

during investigations and often appear as expert witnesses during trials.

In response to recent accounting scandals, new Federal legislation restricts the nonauditing services that public accountants can provide to clients. If an accounting firm audits a client's financial statements, that same firm cannot provide advice on human resources, technology, investment banking, or legal matters, although accountants may still advise on tax issues. Accountants may also advise other clients in these areas and may provide advice within their own firm.

*Management accountants*—also called cost, managerial, industrial, corporate, or private accountants—record and analyze the financial information of the companies for which they work. Among their other responsibilities are budgeting, performance evaluation, cost management, and asset management. Usually, management accountants are part of executive teams involved in strategic planning or the development of new products. They analyze and interpret the financial information that corporate executives need in order to make sound business decisions. They also prepare financial reports for other groups, including stockholders, creditors, regulatory agencies, and tax authorities. Within accounting departments, management accountants may work in various areas, including financial analysis, planning and budgeting, and cost accounting.

*Government accountants and auditors* work in the public sector, maintaining and examining the records of government agencies and auditing private businesses and individuals whose activities are subject to government regulations or taxation. Accountants employed by Federal, State, and local governments ensure that revenues are received and expenditures are made in accordance with laws and regulations. Those employed by the Federal Government may work as Internal Revenue Service agents or in financial management, financial institution examination, or budget analysis and administration.

*Internal auditors* verify the effectiveness of their organization's internal controls and check for mismanagement, waste, or fraud. They examine and evaluate their firms' financial and information systems, management procedures, and internal controls to ensure that records are accurate and controls are adequate. They also review company operations, evaluating their



Many accountants produce extensive financial reports for a company's recordkeeping.

efficiency, effectiveness, and compliance with corporate policies and government regulations. Because computer systems commonly automate transactions and make information readily available, internal auditors may also help management evaluate the effectiveness of their controls based on real-time data, rather than personal observation. They may recommend and review controls for their organization's computer systems, to ensure their reliability and integrity of the data.

Internal auditors may also have specialty titles, such as information technology auditors, environmental auditors, and compliance auditors.

Technology is rapidly changing the nature of the work of most accountants and auditors. With the aid of special software packages, accountants summarize transactions in the standard formats of financial records and organize data in special formats employed in financial analysis. These accounting packages greatly reduce the tedious work associated with data management and recordkeeping. Computers enable accountants and auditors to be more mobile and to use their clients' computer systems to extract information from databases and the Internet. As a result, a growing number of accountants and auditors with extensive computer skills specialize in correcting problems with software or in developing software to meet unique data management and analytical needs. Accountants also are beginning to perform more technical duties, such as implementing, controlling, and auditing computer systems and networks and developing a business's technology plans.

Accountants also act as personal advisors. They not only provide clients with accounting and tax help, but also help them develop personal budgets, manage assets and investments, plan for retirement, and recognize and reduce their exposure to risks. This role is in response to clients' demands for a single trustworthy individual or firm to meet all of their financial needs. However, accountants are restricted from providing these services to clients whose financial statements they also prepare. (See financial analysts and personal financial advisors elsewhere in the *Handbook*.)

**Work environment.** Most accountants and auditors work in a typical office setting. Some may be able to do part of their work at home. Accountants and auditors employed by public accounting firms, government agencies, and organizations with multiple locations may travel frequently to perform audits at branches, clients' places of business, or government facilities.

Most accountants and auditors usually work a standard 40-hour week, but many work longer hours, particularly if they are self-employed and have numerous clients. Tax specialists often work long hours during the tax season.

### **Training, Other Qualifications, and Advancement**

Most accountants and auditors need at least a bachelor's degree in business, accounting, or a related field. Many accountants and auditors choose to obtain certification to help advance their careers, such as becoming a Certified Public Accountant (CPA).

**Education and training.** Most accountant and auditor positions require at least a bachelor's degree in accounting or a related field. Beginning accounting and auditing positions in the Federal Government, for example, usually require 4 years

of college (including 24 semester hours in accounting or auditing) or an equivalent combination of education and experience. Some employers prefer applicants with a master's degree in accounting, or with a master's degree in business administration with a concentration in accounting. Some universities and colleges are now offering programs to prepare students to work in growing specialty professions such as internal auditing. Many professional associations offer continuing professional education courses, conferences, and seminars.

Some graduates of junior colleges or business or correspondence schools, as well as bookkeepers and accounting clerks who meet the education and experience requirements set by their employers, can obtain junior accounting positions and advance to accountant positions by demonstrating their accounting skills on the job.

Most beginning accountants and auditors may work under supervision or closely with an experienced accountant or auditor before gaining more independence and responsibility.

**Licensure and certification.** Any accountant filing a report with the Securities and Exchange Commission (SEC) is required by law to be a Certified Public Accountant (CPA). This may include senior level accountants working for or on behalf of public companies that are registered with the SEC. CPAs are licensed by their State Board of Accountancy. Any accountant who passes a national exam and meets the other requirements of the State where they practice can become a CPA. The vast majority of States require CPA candidates to be college graduates, but a few States will substitute a number of years of public accounting experience for a college degree.

As of 2007, 42 States and the District of Columbia required CPA candidates to complete 150 semester hours of college coursework—an additional 30 hours beyond the usual 4-year bachelor's degree. Several other States have adopted similar legislation that will become effective before 2009. Colorado, Delaware, New Hampshire, and Vermont are the only States that do not have any immediate plans to require the 150 semester hours. In response to this trend, many schools have altered their curricula accordingly, with most programs offering master's degrees as part of the 150 hours. Prospective accounting majors should carefully research accounting curricula and the requirements of any States in which they hope to become licensed.

All States use the four-part Uniform CPA Examination prepared by the American Institute of Certified Public Accountants (AICPA). The CPA examination is rigorous, and less than one-half of those who take it each year pass every part they attempt on the first try. Candidates are not required to pass all four parts at once, but most States require candidates to pass all four sections within 18 months of passing their first section. The CPA exam is now computerized and is offered 2 months out of every quarter at various testing centers throughout the United States. Most States also require applicants for a CPA certificate to have some accounting experience; however requirements vary by State or jurisdiction.

Nearly all States require CPAs and other public accountants to complete a certain number of hours of continuing professional education before their licenses can be renewed. The professional associations representing accountants sponsor numerous



courses, seminars, group study programs, and other forms of continuing education.

**Other qualifications.** Previous experience in accounting or auditing can help an applicant get a job. Many colleges offer students the opportunity to gain experience through summer or part-time internship programs conducted by public accounting or business firms. In addition, as many business processes are now automated, practical knowledge of computers and their applications is a great asset for jobseekers in the accounting and auditing fields.

People planning a career in accounting and auditing should have an aptitude for mathematics and be able to analyze, compare, and interpret facts and figures quickly. They must be able to clearly communicate the results of their work to clients and managers both verbally and in writing. Accountants and auditors must be good at working with people, business systems, and computers. At a minimum, accountants and auditors should be familiar with basic accounting and computer software packages. Because financial decisions are made on the basis of their statements and services, accountants and auditors should have high standards of integrity.

**Certification and advancement.** Professional recognition through certification, or a designation other than the CPA, provides a distinct advantage in the job market. Certification can attest to professional competence in a specialized field of accounting and auditing. Accountants and auditors can seek credentials from a wide variety of professional societies.

The Institute of Management Accountants confers the Certified Management Accountant (CMA) designation upon applicants who complete a bachelor's degree or who attain a minimum score or higher on specified graduate school entrance exams. Applicants must have worked at least 2 years in management accounting, pass a four-part examination, agree to meet continuing education requirements, and comply with standards of professional conduct. The exam covers areas such as financial statement analysis, working-capital policy, capital structure, valuation issues, and risk management.

The Institute of Internal Auditors offers the Certified Internal Auditor (CIA) designation to graduates from accredited colleges and universities who have worked for 2 years as internal auditors and have passed a four-part examination. The IIA also offers the designations of Certified in Control Self-Assessment (CCSA), Certified Government Auditing Professional (CGAP), and Certified Financial Services Auditor (CFSA) to those who pass the exams and meet educational and experience requirements.

The ISACA, formerly known as the Information Systems Audit and Control Association, confers the Certified Information Systems Auditor (CISA) designation upon candidates who pass an examination and have 5 years of experience auditing information systems. Information systems experience, financial or operational auditing experience, or related college credit hours can be substituted for up to 2 years information systems auditing, control or security experience.

The Accreditation Council for Accountancy and Taxation, a satellite organization of the National Society of Accountants, confers four designations: Accredited Business Accountant (ABA), Accredited Tax Advisor (ATA), Accredited Tax Pre-

parer (ATP), and Elder Care Specialist (ECS)—on accountants specializing in tax preparation for small and medium-sized businesses. Candidates for the ABA must pass an exam; candidates for the other designations must complete the required coursework and in some cases pass an exam.

The Association of Certified Fraud Examiners offers the Certified Fraud Examiner (CFE) designation for forensic or public accountants involved in fraud prevention, detection, deterrence, and investigation. To obtain the designation, individuals must have a bachelor's degree, 2 years of relevant experience, pass a four-part examination, and abide by a code of professional ethics. Related work experience may be substituted for the educational requirement.

The Association of Government Accountants grants the Certified Government Financial Manager (CGFM) designation for accountants, auditors, and other government financial workers at the Federal, State, and local levels. Candidates must have a minimum of a bachelor's degree, 24 hours of study in financial management, 2 years of experience in government, and passing scores on a series of three exams. The exams cover topics in governmental environment; governmental accounting, financial reporting, and budgeting; and financial management and control.

For those accountants with their CPA, the AICPA offers the option to receive any or all of the Accredited in Business Valuation (ABV), Certified Information Technology Professional (CITP), or Personal Financial Specialist (PFS) designations. CPA's with these designations demonstrate a level of expertise in these areas in which accountants practice ever more frequently. The business valuation designation requires a written exam and the completion of a minimum of 10 business valuation projects that demonstrate a candidate's experience and competence. The technology designation requires the achievement of a set number of points awarded for business technology experience and education. Candidates for the personal financial specialist designation also must achieve a certain level of points based on experience and education, pass a written exam, and submit references.

Many senior corporation executives have a background in accounting, internal auditing, or finance. Beginning public accountants often advance to positions with more responsibility in 1 or 2 years and to senior positions within another few years. Those who excel may become supervisors, managers, or partners; open their own public accounting firm; or transfer to executive positions in management accounting or internal auditing in private firms.

Management accountants often start as cost accountants, junior internal auditors, or trainees for other accounting positions. As they rise through the organization, they may advance to accounting manager, chief cost accountant, budget director, or manager of internal auditing. Some become controllers, treasurers, financial vice presidents, chief financial officers, or corporation presidents.

Public accountants, management accountants, and internal auditors usually have much occupational mobility. Practitioners often shift into management accounting or internal auditing from public accounting, or between internal auditing and management accounting. It is less common for accountants and

## Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Accountants and auditors.....	13-2011	1,274,000	1,500,000	226,000	18

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

auditors to move from either management accounting or internal auditing into public accounting. Additionally, because they learn about and review the internal controls of various business units within a company, internal auditors often gain the experience needed to become upper-level managers.

### Employment

Accountants and auditors held about 1.3 million jobs in 2006. They worked throughout private industry and government, but 21 percent of wage and salary accountants worked for accounting, tax preparation, bookkeeping, and payroll services firms. Approximately 10 percent of accountants or auditors was self-employed.

Many management accountants, internal auditors, or government accountants and auditors are not CPAs; however, a large number are licensed CPAs. Most accountants and auditors work in urban areas, where public accounting firms and central or regional offices of businesses are concentrated.

Some individuals with backgrounds in accounting and auditing are full-time college and university faculty; others teach part time while working as self-employed accountants or as accountants for private industry or government. (See teachers—postsecondary elsewhere in the *Handbook*.)

### Job Outlook

Strong growth of accountants and auditor jobs over the 2006-16 decade is expected to result from stricter accounting and auditing regulations, along with an expanding economy. The best job prospects will be for accountants and auditors who have a college degree or any certification, but especially a CPA.

**Employment change.** Employment of accountants and auditors is expected to grow by 18 percent between 2006 and 2016, which is faster than the average for all occupations. This occupation will have a very large number of new jobs arise, almost 226,000 over the projections decade. An increase in the number of businesses, changing financial laws, and corporate governance regulations, and increased accountability for protecting an organization's stakeholders will drive growth.

As the economy grows, the number of business establishments will increase, requiring more accountants and auditors to set up books, prepare taxes, and provide management advice. As these businesses grow, the volume and complexity of information reviewed by accountants and auditors regarding costs, expenditures, taxes, and internal controls will expand as well. The globalization of business also has led to more demand for accounting expertise and services related to international trade and accounting rules and international mergers and acquisitions.

An increased need for accountants and auditors also will arise from changes in legislation related to taxes, financial reporting standards, business investments, mergers, and other financial

events. As a result of accounting scandals at several large corporations, Congress passed the Sarbanes-Oxley Act of 2002 in an effort to curb corporate accounting fraud. This legislation requires public companies to maintain well-functioning internal controls to ensure the accuracy and reliability of their financial reporting. It also holds the company's chief executive personally responsible for falsely reporting financial information.

These changes are expected to lead to increased scrutiny of company finances and accounting procedures and should create opportunities for accountants and auditors, particularly CPAs, to audit financial records more thoroughly. Management accountants and internal auditors increasingly will also be needed to discover and eliminate fraud before audits, and ensure that important processes and procedures are documented accurately and thoroughly. Also, efforts to make government agencies more efficient and accountable will increase demand for government accountants.

Increased focus on and numbers of financial crimes such as embezzlement, bribery, and securities fraud will increase the demand for forensic accountants to detect illegal financial activity by individuals, companies, and organized crime rings. Computer technology has made these crimes easier to commit, and they are on the rise. At the same time, the development of new computer software and electronic surveillance technology has made tracking down financial criminals easier, thus increasing the ease, and likelihood of, discovery. As success rates of investigations grow, demand for forensic accountants will increase.

The changing role of accountants and auditors also will spur job growth, although this will be slower than in the past because of changes in the law. Federal legislation now prohibits accountants from providing many types of management and consulting services to clients whose books they audit. However, accountants will still be able to advise clients that are not publicly traded companies and those they do not audit.

Also, the increasing popularity of tax preparation firms and computer software will shift accountants away from tax preparation. As computer programs continue to simplify some accounting-related tasks, clerical staff will increasingly handle many routine calculations.

**Job prospects.** Overall, job opportunities for accountants and auditors should be favorable. Those who earn a CPA should have excellent job prospects. After most States instituted the 150-hour rule for CPAs, enrollment in accounting programs declined. However, enrollment is again growing as more students have become attracted to the profession by the attention from the accounting scandals.

In the aftermath of the accounting scandals, professional certification is even more important to ensure that accountants' credentials and knowledge of ethics are sound. Regardless of specialty, accountants and auditors who have earned profes-

sional recognition through certification or licensure should have the best job prospects. Applicants with a master’s degree in accounting or a master’s degree in business administration with a concentration in accounting also will have an advantage.

Individuals who are proficient in accounting and auditing computer software or have expertise in specialized areas—such as international business, specific industries, or current legislation—may have an advantage in getting some accounting and auditing jobs. In addition, employers increasingly seek applicants with strong interpersonal and communication skills. Many accountants work on teams with others who have different backgrounds, so they must be able to communicate accounting and financial information clearly and concisely. Regardless of qualifications, however, competition will remain keen for the most prestigious jobs in major accounting and business firms.

In addition to openings from job growth, the need to replace accountants and auditors who retire or transfer to other occupations will produce numerous job openings in this large occupation.

**Earnings**

Median annual earnings of wage and salary accountants and auditors were \$54,630 in May 2006. The middle half of the occupation earned between \$42,520 and \$71,960. The top 10 percent earned more than \$94,050, and the bottom 10 percent earned less than \$34,470. Median annual earnings in the industries employing the largest numbers of accountants and auditors were as follows:

Accounting, tax preparation, bookkeeping, and payroll services.....	\$57,020
Management of companies and enterprises .....	55,560
Local government .....	50,120
Depository credit intermediation .....	49,380
State government.....	47,200

According to a salary survey conducted by the National Association of Colleges and Employers, bachelor’s degree candidates in accounting received starting offers averaging \$46,718 a year in 2006; master’s degree candidates in accounting were offered \$49,277 initially.

According to a 2007 salary survey conducted by Robert Half International, a staffing services firm specializing in accounting and finance, general accountants and internal auditors with up to 1 year of experience earned between \$31,500 and \$48,250 a year. Those with 1 to 3 years of experience earned between \$36,000 and \$60,000. Senior accountants and auditors earned between \$43,250 and \$79,250, managers between \$51,250 and \$101,500, and directors of accounting and internal auditing between \$68,000 and \$208,000. The variation in salaries reflects differences in size of firm, location, level of education, and professional credentials.

In the Federal Government, the starting annual salary for junior accountants and auditors was \$28,862 in 2007. Candidates who had a superior academic record might start at \$35,752, while applicants with a master’s degree or 2 years of professional experience usually began at \$43,731. Beginning salaries were slightly higher in selected geographic areas where the prevailing local pay level was higher. Accountants employed

by the Federal Government in nonsupervisory, supervisory, and managerial positions averaged \$78,665 a year in 2007; auditors averaged \$83,322.

Wage and salary accountants and auditors usually receive standard benefits, including health and medical insurance, life insurance, a 401(k) plan, and paid annual leave. High-level senior accountants may receive additional benefits, such as the use of a company car and an expense account.

**Related Occupations**

Accountants and auditors design internal control systems and analyze financial data. Others for whom training in accounting is valuable include budget analysts; cost estimators; loan officers; financial analysts and personal financial advisors; tax examiners, collectors, and revenue agents; bill and account collectors; and bookkeeping, accounting, and auditing clerks. Recently, some accountants have assumed the role of management analysts and are involved in the design, implementation, and maintenance of accounting software systems. Others who perform similar work include computer programmers, computer software engineers, and computer support specialists and systems administrators.

**Sources of Additional Information**

Information on accredited accounting programs can be obtained from:

➤ AACSB International—Association to Advance Collegiate Schools of Business, 777 South Harbour Island Blvd., Suite 750, Tampa FL 33602-5730. Internet:

**<http://www.aacsb.edu/accreditation/AccreditedMembers.asp>**

Information about careers in certified public accounting and CPA standards and examinations may be obtained from:

➤ American Institute of Certified Public Accountants, 1211 Avenue of the Americas, New York, NY 10036.

Internet: **<http://www.aicpa.org>**

➤ The Uniform CPA Examination, 1211 Avenue of the Americas, New York, NY 10036. Internet: **<http://www.cpa-exam.org>**

Information on CPA licensure requirements by State may be obtained from:

➤ National Association of State Boards of Accountancy, 150 Fourth Ave. North, Suite 700, Nashville, TN 37219-2417.

Internet: **<http://www.nasba.org>**

Information on careers in management accounting and the CMA designation may be obtained from:

➤ Institute of Management Accountants, 10 Paragon Dr., Montvale, NJ 07645-1718. Internet: **<http://www.imanet.org>**

Information on the Accredited in Accountancy, Accredited Business Accountant, Accredited Tax Advisor, or Accredited Tax Preparer designation may be obtained from:

➤ Accreditation Council for Accountancy and Taxation, 1010 North Fairfax St., Alexandria, VA 22314.-1574.

Internet: **<http://www.acatcredentials.org>**

Information on the Certified Fraud Examiner designation may be obtained from:

➤ Association of Certified Fraud Examiners, 716 West Ave, Austin, TX 78701-2727.

Information on careers in internal auditing and the CIA designation may be obtained from:



► The Institute of Internal Auditors, 247 Maitland Ave., Altamonte Springs, FL 32701-4201.

Internet: <http://www.theiia.org>

Information on careers in information systems auditing and the CISA designation may be obtained from:

► ISACA, 3701 Algonquin Rd., Suite 1010, Rolling Meadows, IL 60008. Internet: <http://www.isaca.org>

Information on careers in government accounting and the CGFM designation may be obtained from:

► Association of Government Accountants, 2208 Mount Vernon Ave., Alexandria, VA 22301.

Internet: <http://www.agacgfm.org>

Information on obtaining positions as an accountant or auditor with the Federal Government is available from the Office of Personnel Management through USAJOBS, the Federal Government's official employment information system. This resource for locating and applying for job opportunities can be accessed through the Internet at <http://www.usajobs.opm.gov> or through an interactive voice response telephone system at (703) 724-1850 or TDD (978) 461-8404. These numbers are not toll free, and charges may result. For advice on how to find and apply for Federal jobs, see the *Occupational Outlook Quarterly* article "How to get a job in the Federal Government," online at:

<http://www.bls.gov/opub/ooq/2004/summer/art01.pdf>

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## Administrative Services Managers

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### Significant Points

- Applicants will face keen competition for the limited number of top-level management jobs, but competition should be less severe for lower-level management jobs; demand should be strong for facility managers.
- Administrative services managers work throughout private industry and government and have a wide range of responsibilities, experience, earnings, and education.
- Like other managers, administrative services managers should be analytical, detail-oriented, flexible, decisive, and have good leadership and communication skills.

### Nature of the Work

Administrative services managers coordinate and direct the many support services that allow organizations to operate efficiently. They perform a broad range of duties. They might, for example, oversee secretarial and reception services, administration, payroll, conference planning and travel, information and data processing, mail, materials scheduling and distribution, printing and reproduction, records management, telecommunications management, security, parking, energy consumption, and personal property procurement, supply, recycling, and disposal. They manage support services for organizations as

diverse as insurance companies, computer manufacturers, and government offices.

Specific duties for these managers vary by degree of responsibility and authority. First-line administrative services managers directly supervise a staff that performs various support services. Mid-level managers, on the other hand, develop departmental plans, set goals and deadlines, implement procedures to improve productivity and customer service, and define the responsibilities of supervisory-level managers. Some mid-level administrative services managers oversee first-line supervisors from various departments, including the clerical staff. Mid-level managers also may be involved in the hiring and dismissal of employees, but they generally have no role in the formulation of personnel policy. Some of these managers advance to upper level positions, such as vice president of administrative services, which are discussed in the *Handbook* statement on top executives.

In small organizations, a single administrative services manager may oversee all support services. In larger ones, however, first-line administrative services managers often report to mid-level managers who, in turn, report to owners or top-level managers, sometimes called director of administration, or vice president of administration.

The nature of managerial jobs varies as significantly as the range of administrative services required by organizations. For



*Administrative services managers coordinate and direct support services that allow organizations to operate efficiently.*

example, *administrative services managers* who work as contract administrators oversee the preparation, analysis, negotiation, and review of contracts related to the purchase or sale of equipment, materials, supplies, products, or services. In addition, some administrative services managers acquire, distribute, and store supplies, while others dispose of surplus property or oversee the disposal of unclaimed property.

Administrative services managers who work as *facility managers* plan, design, and manage buildings, grounds, equipment, and supplies, in addition to people. This task requires integrating the principles of business administration, information technology, architecture, engineering, and behavioral science. Although the specific tasks assigned to facility managers vary substantially depending on the organization, the duties fall into several categories, relating to operations and maintenance, real estate, project planning and management, leadership and communication, finance, quality assessment, facility function, technology integration, and management of human and environmental factors. Tasks within these broad categories may include space and workplace planning, budgeting, purchase and sale of real estate, lease management, renovations, or architectural planning and design. Facility managers may suggest and oversee renovation projects for a variety of reasons, ranging from improving efficiency to ensuring that facilities meet government regulations and environmental, health, and security standards. For example, they may influence a building renovation project toward a greater use of “green” energy—electricity generated from alternative and cost efficient energy sources, such as solar panels or fuel cells. Additionally, facility managers continually monitor the facility to ensure that it remains safe, secure, and well-maintained. Often, the facility manager is responsible for directing staff, including maintenance, grounds, and custodial workers.

**Work environment.** Administrative services managers generally work in comfortable offices. Managers involved in contract administration and personal property procurement, use, and disposal may travel between their home office, branch offices, vendors’ offices, and property sales sites. Also, facility managers who are responsible for the design of workspaces may spend time at construction sites and may travel between different facilities while monitoring the work of maintenance and custodial staffs. However, new technology has increased the number of managers who telecommute from home or other offices, and teleconferencing has reduced the need for travel. Facility managers also may spend time outdoors, supervising and handling a variety of issues related to groundskeeping, landscaping, construction, security, and parking.

Most administrative services managers work a standard 40-hour week. However, uncompensated overtime frequently is required to resolve problems and meet deadlines. Facility managers often are “on call” to address a variety of problems that can arise in a facility during nonwork hours.

### **Training, Other Qualifications, and Advancement**

Education and experience requirements for these managers vary widely, depending on the size and complexity of the organization. In small organizations, experience may be the only requirement needed to enter a position as an office manager.

When an opening in administrative services management occurs, the office manager may be promoted to the position based on past performance. In large organizations, however, administrative services managers normally are hired from outside and each position has formal education and experience requirements. Some administrative services managers have advanced degrees.

**Education and training.** Specific requirements vary by job responsibility. For first-line administrative services managers of secretarial, mailroom, and related support activities, many employers prefer to hire people who have an associate degree in business or management, although a high school diploma may suffice when combined with appropriate experience.

For managers of audiovisual, graphics, and other technical activities, postsecondary technical school training is preferred. Managers of highly complex services, such as contract administration, generally need at least a bachelor’s degree in business, human resources, or finance. Regardless of major, the curriculum should include courses in office technology, accounting, business mathematics, computer applications, human resources, and business law.

Most facility managers have an undergraduate or graduate degree in engineering, architecture, construction management, business administration, or facility management. Many have a background in real estate, construction, or interior design, in addition to managerial experience.

Whatever the manager’s educational background, it must be accompanied by related work experience reflecting their ability. For this reason, many administrative services managers have advanced through the ranks of their organization, acquiring work experience in various administrative positions before assuming first-line supervisory duties. All managers who oversee departmental supervisors should be familiar with office procedures and equipment. Managers of personal property acquisition and disposal need experience in purchasing and sales, and knowledge of a variety of supplies, machinery, and equipment. Managers concerned with supply, inventory, and distribution should be experienced in receiving, warehousing, packaging, shipping, transportation, and related operations. Contract administrators may have worked as contract specialists, cost analysts, or procurement specialists. Managers of unclaimed property often have experience in insurance claims analysis and records management.

**Other qualifications.** Persons interested in becoming administrative services managers should have good leadership and communication skills and be able to establish effective working relationships with many different people, ranging from managers, supervisors, and professionals, to clerks and blue-collar workers. They should be analytical, detail-oriented, flexible, and decisive. They must be able to coordinate several activities at once, quickly analyze and resolve specific problems, and cope with deadlines.

**Certification and advancement.** Most administrative services managers in small organizations advance by moving to other management positions or to a larger organization. Advancement is easier in large firms that employ several levels of administrative services managers. Attainment of the Certified Manager (CM) designation offered by the Institute of



**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Administrative services managers .....	11-3011	247,000	276,000	29,000	12

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

Certified Professional Managers (ICPM), through education, work experience, and successful completion of examinations, can enhance a manager’s advancement potential. In addition, a master’s degree in business administration or a related field enhances a first-level manager’s opportunities to advance to a mid-level management position, such as director of administrative services, and eventually to a top-level management position, such as executive vice president for administrative services. Those with enough money and experience can establish their own management consulting firm.

Advancement of facility managers is based on the practices and size of individual companies. Some facility managers transfer from other departments within the organization or work their way up from technical positions. Others advance through a progression of facility management positions that offer additional responsibilities. Completion of the competency-based professional certification program offered by the International Facility Management Association can give prospective candidates an advantage. In order to qualify for this Certified Facility Manager (CFM) designation, applicants must meet certain educational and experience requirements. People entering the profession also may obtain the Facility Management Professional (FMP) credential, a stepping stone to the CFM.

**Employment**

Administrative services managers held about 247,000 jobs in 2006. About 65 percent worked in service-providing industries, including Federal, State, and local government; health care; finance and insurance; professional, scientific, and technical services; administrative and support services; and educational services, public and private. Most of the remaining managers worked in wholesale and retail trade, in management of companies and enterprises, or in manufacturing.

**Job Outlook**

The number of jobs is projected to grow as fast as average for all occupations. Applicants will face keen competition for the limited number of top-level management jobs through 2016. Better opportunities are expected for lower-level management jobs. Demand should be strong for facility managers.

**Employment change.** Employment of administrative services managers is projected to grow 12 percent over the 2006-16 decade, about as fast as the average for all occupations. Demand should be strong for facility managers because businesses increasingly realize the importance of maintaining, securing, and efficiently operating their facilities, which are very large investments for most organizations. Cost-cutting measures to improve profitability, streamline operations, and compete globally will continue to be addressed by many public and private organizations, resulting in more firms outsourcing facility man-

agement services or hiring qualified facility managers who are capable achieving these goals in-house.

Administrative services managers employed in management services and management consulting should be in demand. The proliferation of facility management outsourcing should result in employment growth in facilities management firms as companies increasingly look to outside specialists to handle the myriad of tasks that have become increasingly complex and expensive. Some of the services outsourced include food service, space planning and design, janitorial, power plant, grounds, office, safety, property, video surveillance, maintenance and repairs, and parking management.

**Job prospects.** Applicants will face keen competition for the limited number of top-level management jobs; competition should be less severe for lower-level management jobs.

Despite average job growth, continuing corporate restructuring and increasing use of office technology may result in a more streamlined organizational structure with fewer levels of management, reducing the need for some middle management positions. This should adversely affect administrative services managers who oversee first-line managers. However, the effects of these changes on employment should be less severe for facility managers and other administrative services managers who have a wide range of responsibilities, than for other middle managers who specialize in certain functions. In addition to new administrative services management jobs created over the 2006-16 projection period, many job openings will stem from the need to replace workers who transfer to other jobs, retire, or leave the occupation for other reasons.

Job opportunities may vary from year to year because the strength of the economy affects demand for administrative services managers. Industries least likely to be affected by economic fluctuations tend to be the most stable places for employment.

**Earnings**

Earnings of administrative services managers vary greatly depending on the employer, the specialty, and the geographic area. In general, however, median annual earnings of wage and salary administrative services managers in May 2006 were \$67,690. The middle 50 percent earned between \$48,200 and \$90,350. The lowest 10 percent earned less than \$34,970, and the highest 10 percent earned more than \$117,610. Median annual earnings in the industries employing the largest numbers of these managers were:

Management of companies and enterprises .....	\$77,040
General medical and surgical hospitals.....	72,210
State government.....	68,410
Local government .....	67,050
Colleges, universities, and professional schools .....	64,810

In the Federal Government, industrial specialists averaged \$74,042 a year in 2007. Corresponding averages were \$73,455 for facility operations services managers, \$72,730 for industrial property managers, \$65,351 for property disposal specialists, \$71,948 for administrative officers, and \$63,756 for support services administrators.

### Related Occupations

Administrative services managers direct and coordinate support services and oversee the purchase, use, and disposal of personal property. Occupations with similar functions include office and administrative support worker supervisors and managers; cost estimators; property, real estate, and community association managers; purchasing managers, buyers, and purchasing agents; and top executives.

### Sources of Additional Information

For information about careers and education and degree programs in facility management, as well as the Certified Facility Manager designation, contact:

► International Facility Management Association, 1 East Greenway Plaza, Suite 1100, Houston, TX 77046-0194. Internet: <http://www.ifma.org>

For information about the Certified Manager (CM) designation, contact:

► Institute of Certified Professional Managers, James Madison University, MSC 5504, Harrisonburg, VA 22807.

For information on training and classes for professional office management personnel, contact:

► Association of Professional Office Managers, 1 Research Court, Suite #450, Rockville, MD 20850.

Internet: <http://www.apomonline.org>

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## Advertising, Marketing, Promotions, Public Relations, and Sales Managers

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(O\*NET 11-2011.00, 11-2021.00, 11-2022.00, 11-2031.00)

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### Significant Points

- Keen competition is expected for these highly coveted jobs.
- College graduates with related experience, a high level of creativity, strong communication skills, and computer skills should have the best job opportunities.
- High earnings, substantial travel, and long hours, including evenings and weekends, are common.
- Because of the importance and high visibility of their jobs, these managers often are prime candidates for advancement to the highest ranks.

### Nature of the Work

Advertising, marketing, promotions, public relations, and sales managers coordinate their companies' market research, marketing strategy, sales, advertising, promotion, pricing, product de-

velopment, and public relations activities. In small firms, the owner or chief executive officer might assume all advertising, promotions, marketing, sales, and public relations responsibilities. In large firms, which may offer numerous products and services nationally or even worldwide, an executive vice president directs overall advertising, marketing, promotions, sales, and public relations policies. (Executive vice presidents are included in the *Handbook* statement on top executives.)

**Advertising managers.** Advertising managers oversee advertising and promotion staffs, which usually are small, except in the largest firms. In a small firm, managers may serve as liaisons between the firm and the advertising or promotion agency to which many advertising or promotional functions are contracted out. In larger firms, advertising managers oversee in-house account, creative, and media services departments. The *account executive* manages the account services department, assesses the need for advertising and, in advertising agencies, maintains the accounts of clients. The creative services department develops the subject matter and presentation of advertising. The *creative director* oversees the copy chief, art director, and associated staff. The *media director* oversees planning groups that select the communication media—for example, radio, television, newspapers, magazines, the Internet, or outdoor signs—to disseminate the advertising.

**Marketing managers.** Marketing managers develop the firm's marketing strategy in detail. With the help of subordinates, including *product development managers* and *market research managers*, they estimate the demand for products and services offered by the firm and its competitors. In addition, they identify potential markets—for example, business firms, wholesalers, retailers, government, or the general public. Marketing managers develop pricing strategy to help firms maximize profits and market share while ensuring that the firm's customers are satisfied. In collaboration with sales, product development, and other managers, they monitor trends that indicate the need for new products and services, and they oversee product development. Marketing managers work with advertising and promotion managers to promote the firm's products and services and to attract potential users.

**Promotions managers.** Promotions managers supervise staffs of promotions specialists. These managers direct promotions programs that combine advertising with purchase incentives to increase sales. In an effort to establish closer contact with purchasers—dealers, distributors, or consumers—promotions programs may use direct mail, telemarketing, television or radio advertising, catalogs, exhibits, inserts in newspapers, Internet advertisements or Web sites, in-store displays or product endorsements, and special events. Purchasing incentives may include discounts, samples, gifts, rebates, coupons, sweepstakes, and contests.

**Public relations managers.** Public relations managers supervise public relations specialists. (See the *Handbook* statement on public relations specialists.) These managers direct publicity programs to a targeted audience. They often specialize in a specific area, such as crisis management, or in a specific industry, such as health care. They use every available communication medium to maintain the support of the specific group upon whom their organization's success depends, such as consumers,

stockholders, or the general public. For example, public relations managers may clarify or justify the firm's point of view on health or environmental issues to community or special-interest groups.

Public relations managers also evaluate advertising and promotions programs for compatibility with public relations efforts and serve as the eyes and ears of top management. They observe social, economic, and political trends that might ultimately affect the firm, and they make recommendations to enhance the firm's image on the basis of those trends.

Public relations managers may confer with labor relations managers to produce internal company communications—such as newsletters about employee-management relations—and with financial managers to produce company reports. They assist company executives in drafting speeches, arranging interviews, and maintaining other forms of public contact; oversee company archives; and respond to requests for information. In addition, some of these managers handle special events, such as the sponsorship of races, parties introducing new products, or other activities that the firm supports in order to gain public attention through the press without advertising directly.

**Sales managers.** Sales managers direct the firm's sales program. They assign sales territories, set goals, and establish training programs for the sales representatives. (See the *Handbook* statement on sales representatives, wholesale and manufacturing). Sales managers advise the sales representatives on ways to improve their sales performance. In large, multi-product firms, they oversee regional and local sales managers and their staffs. Sales managers maintain contact with dealers and distributors. They analyze sales statistics gathered by their staffs to determine sales potential and inventory requirements and to monitor customers' preferences. Such information is vital in the development of products and the maximization of profits.

**Work environment.** Advertising, marketing, promotions, public relations, and sales managers work in offices close to those of top managers. Working under pressure is unavoidable when schedules change and problems arise, but deadlines and goals must still be met.



*These managers have a wide range of educational backgrounds.*

Substantial travel may be involved. For example, attendance at meetings sponsored by associations or industries often is mandatory. Sales managers travel to national, regional, and local offices and to the offices of various dealers and distributors. Advertising and promotions managers may travel to meet with clients or representatives of communications media. At times, public relations managers travel to meet with special-interest groups or government officials. Job transfers between headquarters and regional offices are common, particularly among sales managers.

Long hours, including evenings and weekends are common. In 2006, about two-thirds of advertising, marketing, and public relations managers worked more than 40 hours a week.

### **Training, Other Qualifications, and Advancement**

A wide range of educational backgrounds is suitable for entry into advertising, marketing, promotions, public relations, and sales managerial jobs, but many employers prefer those with experience in related occupations.

**Education and training.** For marketing, sales, and promotions management positions, some employers prefer a bachelor's or master's degree in business administration with an emphasis on marketing. Courses in business law, management, economics, accounting, finance, mathematics, and statistics are advantageous. Additionally, the completion of an internship while the candidate is in school is highly recommended. In highly technical industries, such as computer and electronics manufacturing, a bachelor's degree in engineering or science, combined with a master's degree in business administration, is preferred.

For advertising management positions, some employers prefer a bachelor's degree in advertising or journalism. A course of study should include, for example, marketing, consumer behavior, market research, sales, communication methods and technology, and visual arts, and art history and photography.

For public relations management positions, some employers prefer a bachelor's or master's degree in public relations or journalism. The applicant's curriculum should include courses in advertising, business administration, public affairs, public speaking, political science, and creative and technical writing.

Most advertising, marketing, promotions, public relations, and sales management positions are filled by promoting experienced staff or related professional personnel. For example, many managers are former sales representatives, purchasing agents, buyers, or product, advertising, promotions, or public relations specialists. In small firms, where the number of positions is limited, advancement to a management position usually comes slowly. In large firms, promotion may occur more quickly.

**Other qualifications.** Familiarity with word-processing and database applications is important for most positions. Computer skills are vital because marketing, product promotion, and advertising on the Internet are increasingly common. Also, the ability to communicate in a foreign language may open up employment opportunities in many rapidly growing areas around the country, especially cities with large Spanish-speaking populations.



**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Advertising, marketing, promotions, public relations, and sales managers .....	11-2000	583,000	651,000	68,000	12
Advertising and promotions managers .....	11-2011	47,000	50,000	3,000	6
Marketing and sales managers .....	11-2020	486,000	542,000	57,000	12
Marketing managers.....	11-2021	167,000	192,000	24,000	14
Sales managers.....	11-2022	318,000	351,000	33,000	10
Public relations managers .....	11-2031	50,000	58,000	8,400	17

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

Persons interested in becoming advertising, marketing, promotions, public relations, and sales managers should be mature, creative, highly motivated, resistant to stress, flexible, and decisive. The ability to communicate persuasively, both orally and in writing, with other managers, staff, and the public is vital. These managers also need tact, good judgment, and exceptional ability to establish and maintain effective personal relationships with supervisory and professional staff members and client firms.

**Certification and advancement.** Some associations offer certification programs for these managers. Certification—an indication of competence and achievement—is particularly important in a competitive job market. While relatively few advertising, marketing, promotions, public relations, and sales managers currently are certified, the number of managers who seek certification is expected to grow. Today, there are numerous management certification programs based on education and job performance. In addition, The Public Relations Society of America offers a certification program for public relations practitioners based on years of experience and performance on an examination.

Although experience, ability, and leadership are emphasized for promotion, advancement can be accelerated by participation in management training programs conducted by larger firms. Many firms also provide their employees with continuing education opportunities—either in-house or at local colleges and universities—and encourage employee participation in seminars and conferences, often held by professional societies. In collaboration with colleges and universities, numerous marketing and related associations sponsor national or local management training programs. Course subjects include brand and product management, international marketing, sales management evaluation, telemarketing and direct sales, interactive marketing, promotion, marketing communication, market research, organizational communication, and data-processing systems procedures and management. Many firms pay all or part of the cost for employees who successfully complete courses.

Because of the importance and high visibility of their jobs, advertising, marketing, promotions, public relations, and sales managers often are prime candidates for advancement to the highest ranks. Well-trained, experienced, and successful managers may be promoted to higher positions in their own or another firm; some become top executives. Managers with extensive experience and sufficient capital may open their own businesses.

**Employment**

Advertising, marketing, promotions, public relations, and sales managers held about 583,000 jobs in 2006. The following tabulation shows the distribution of jobs by occupational specialty:

Sales managers.....	318,000
Marketing managers.....	167,000
Public relations managers .....	50,000
Advertising and promotions managers .....	47,000

These managers were found in virtually every industry. Sales managers held more than half of the jobs; most were employed in wholesale trade, retail trade, manufacturing, and finance and insurance industries. Marketing managers held more than a fourth of the jobs; the professional, scientific, and technical services, and the finance and insurance industries employed almost one-third of marketing managers. About one-fourth of advertising and promotions managers worked in the professional, scientific, and technical services industries and the wholesale trade. Most public relations managers were employed in service-providing industries, such as professional, scientific, and technical services; educational services, public and private; finance and insurance; and health care and social assistance.

**Job Outlook**

Average job growth is projected, but keen competition is expected for these highly coveted jobs.

**Employment change.** Employment of advertising, marketing, promotions, public relations, and sales managers is expected to increase by 12 percent through 2016—about as fast as the average for all occupations. Job growth will be spurred by intense domestic and global competition in products and services offered to consumers and increasing activity in television, radio, and outdoor advertising.

Projected employment growth varies by industry. For example, employment is projected to grow much faster than average in scientific, professional, and related services—such as computer systems design and related services, and advertising and related services—as businesses increasingly hire contractors for these services instead of additional full-time staff. By contrast, a decline in employment is expected in many manufacturing industries.

**Job prospects.** Advertising, marketing, promotions, public relations, and sales manager jobs are highly coveted and will be sought by other managers or highly experienced professionals,

resulting in keen competition. College graduates with related experience, a high level of creativity, and strong communication skills should have the best job opportunities. In particular, employers will seek those who have the computer skills to conduct advertising, marketing, promotions, public relations, and sales activities on the Internet.

**Earnings**

Median annual earnings in May 2006 were \$73,060 for advertising and promotions managers, \$98,720 for marketing managers, \$91,560 for sales managers, and \$82,180 for public relations managers.

Median annual earnings of wage and salary advertising and promotions managers in May 2006 in the advertising and related services industry were \$97,540.

Median annual earnings in the industries employing the largest numbers of marketing managers were:

Computer systems design and related services .....	\$119,540
Management of companies and enterprises .....	103,070
Management, scientific, and technical consulting services .....	100,200
Architectural, engineering, and related services .....	92,480
Depository credit intermediation .....	91,420

Median annual earnings in the industries employing the largest numbers of sales managers were:

Professional and commercial equipment and supplies merchant wholesalers .....	\$112,810
Wholesale electronic markets and agents and brokers .....	107,420
Automobile dealers .....	101,110
Management of companies and enterprises .....	98,240
Machinery, equipment, and supplies merchant wholesalers .....	93,450

Salary levels vary substantially, depending upon the level of managerial responsibility, length of service, education, size of firm, location, and industry. For example, manufacturing firms usually pay these managers higher salaries than nonmanufacturing firms. For sales managers, the size of their sales territory is another important determinant of salary. Many managers earn bonuses equal to 10 percent or more of their salaries.

According to a survey by the National Association of Colleges and Employers, starting salaries for marketing majors graduating in 2007 averaged \$40,161 and those for advertising majors averaged \$33,831.

**Related Occupations**

Advertising, marketing, promotions, public relations, and sales managers direct the sale of products and services offered by their firms and the communication of information about their firms' activities. Other workers involved with advertising, marketing, promotions, public relations, and sales include actors, producers, and directors; advertising sales agents; artists and related workers; demonstrators, product promoters, and models; market and survey researchers; public relations specialists; sales representatives, wholesale and manufacturing; and writers and editors.

**Sources of Additional Information**

For information about careers in advertising management, contact:

➤ American Association of Advertising Agencies, 405 Lexington Ave., New York, NY 10174-1801.

Internet: <http://www.aaaa.org>

Information about careers and professional certification in public relations management is available from:

➤ Public Relations Society of America, 33 Maiden Ln., New York, NY 10038-5150. Internet: <http://www.prsa.org>

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**Appraisers and Assessors of Real Estate**

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(O\*NET 13-2021.00, 13-2021.01, 13-2021.02)

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**Significant Points**

- Appraisers and assessors must meet licensing and/or certification requirements which vary by State, but generally include specific training requirements, a period of work as a trainee, and passing one or more examinations.
- More than 3 out of 10 were self-employed; salaried assessors worked primarily in local government, while salaried appraisers worked mainly for real estate firms.
- Employment is expected to grow faster than average.

**Nature of the Work**

Appraisers and assessors of real estate estimate the value of property for a variety of purposes, such as to assess property tax, to confirm adequate collateral for mortgages, to confirm or help set a good sales price, to settle an estate, or to aid in a divorce settlement. They often specialize in appraising or assessing a certain type of real estate such as residential buildings or commercial properties. However, they may be called on to estimate the value of any type of real estate, ranging from farmland to a major shopping center. Assessors estimate the value of all properties in a locality for property tax purposes whereas appraisers appraise properties one at a time.

Valuations of all types of real property are conducted using similar methods, regardless of the type of property or who employs the appraiser or assessor. Appraisers and assessors work in localities they are familiar with so they have knowledge of any environmental or other concerns that may affect the value of a property. They note any unique characteristics of the property and of the surrounding area, such as a specific architectural style of a building or a major highway located next to the parcel. They also take into account additional aspects of a property like the condition of the foundation and roof of a building or any renovations that may have been done. Additionally, they may take pictures to document a certain room or feature, in addition to taking pictures of the exterior of the building. After visiting the property, the appraiser or assessor will estimate the fair value of the property by taking into consideration such things as

comparable home sales, lease records, location, view, previous appraisals, and income potential.

Appraisers and assessors write detailed reports on their research and observations, stating the value of the parcel as well as the precise reasoning and methodology of how they arrived at the estimate. Writing reports has become faster and easier through the use of laptop computers, allowing them to access data and write at least some of the report on-site. Another computer technology that has affected this occupation is the electronic map of a given jurisdiction and its respective property distribution. Appraisers and assessors use these maps to obtain an accurate perspective on the property and buildings surrounding a property. Digital photos also are commonly used to document the physical appearance of a building or land at the time of appraisal.

*Appraisers* have independent clients and focus solely on valuing one property at a time. They primarily work on a client-to-client basis, and make appraisals for a variety of reasons. Real property appraisers often specialize by the type of real estate they appraise, such as residential properties, golf courses, or strip malls. In general, commercial appraisers have the ability to appraise any real property but may specialize only in property used for commercial purposes, such as stores or hotels. Residential appraisers focus on appraising homes or other residences and only value those that house 1 to 4 families. Other appraisers have a general practice and value any type of real property.

*Assessors* predominately work for local governments and are responsible for valuing properties for property tax assessment purposes. Most senior assessors are appointed or elected to their position. Unlike appraisers, assessors often value entire neighborhoods using mass appraisal techniques to value all the homes in a local neighborhood at one time. Although they do not usually focus on a single property they may assess a single property if the property owner challenges the assessment. They may use a computer-programmed automated valuation model specifically developed for their assigned jurisdictions. In most jurisdictions the entire community must be revalued annually or every few years. Depending on the size of the jurisdiction and the number of staff in an assessor's office, an appraisal firm, often called a revaluation firm, may do much of the work of valuing the properties in the jurisdiction. These results are then officially certified by the assessor.

When properties are reassessed, assessors issue notices of assessments and taxes that each property owner must pay. Assessors must be current on tax assessment procedures and must be able to defend the accuracy of their property assessments, either to the owner directly or at a public hearing, since assessors also are responsible for dealing with tax payers who want to contest their assigned property taxes. Assessors also keep a database of every parcel in their jurisdiction labeling the property owner, issued tax assessment, and size of the property, as well as property maps of the jurisdiction that detail the property distribution of the jurisdiction.

**Work environment.** Appraisers and assessors spend much of their time researching and writing reports. However, with the advancement of computers and other technologies, such as wireless Internet, time spent in the office has decreased as re-



*Appraisers and assessors of real estate may use photographs to help analyze a property.*

search can now be done in less time or on-site or at home. Records that once required a visit to a courthouse or city hall often can be found online. This has especially affected self-employed appraisers, often called independent fee appraisers, who make their own office hours, allowing them to spend much more time on-site doing research and less time in their office. Time spent on-site versus in the office also depends on the specialty. For example, residential appraisers tend to spend less time on office work than commercial appraisers, who could spend up to several weeks at one site analyzing documents and writing reports. Appraisers who work for private institutions generally spend most of their time inside the office, making on-site visits when necessary. Appraisers and assessors usually conduct on-site appraisal work alone.

Independent fee appraisers tend to work more than a standard 40 hour work week, in addition to working evenings and weekends writing reports. On-site visits usually occur during daylight hours, and according to the client's schedule. Assessors and privately employed appraisers, on the other hand, usually work a standard 40-hour work week. Occasionally they work an evening or Saturday, to speak with a concerned tax payer, for example. More than 10 percent of appraisers and assessors worked part time in 2006.

Most independent fee appraisers' offices are relatively small, consisting of either just themselves or a small staff. However, private institutions such as banks and mortgage broker offices may employ several appraisers in one office. The size of the office employing assessors depends on the size of the local government; in some States assessments are by counties whereas in other States assessments are made by municipalities or other local governments. Therefore a county assessor's office probably would employ more assessors than a small town, which may only employ a single assessor.

### **Training, Other Qualifications, and Advancement**

The requirements to become a fully qualified appraiser or assessor are complex and vary by State and, sometimes, by the value or type of property. In general, both appraisers and assessors must be licensed or certified requirements. Prospective appraisers and assessors should check with their State to determine the specific requirements.



**Education and training.** Currently, no formal degree requirements exist to become an appraiser or assessor. However, starting in 2008 all appraisers and assessors who need a license will be required to have a bachelor's degree or the equivalent in credit hours. Most practicing appraisers and assessors have at least a bachelor's degree, sometimes in a related field such as economics, finance, or real estate. The specific training courses necessary, however, are not commonly available as part of most bachelor's programs and must be taken separately, usually at community colleges or through appraisal- or assessor-related organizations.

Obtaining on-the-job training is also an essential part of becoming a fully qualified assessor or appraiser and is required for obtaining a license or certification. In the past, many appraisers obtained experience working in financial institutions or real estate offices. However, the current trend is for candidates to get their initial experience in the office of an independent fee appraiser.

Assessors tend to start out in an assessor's office that is willing to provide on-the-job training; smaller municipalities are often unable to provide this experience. An alternate source of experience for aspiring assessors is through a revaluation firm.

**Licensure.** Federal law requires that any appraiser involved in a Federally-related transaction with a loan amount of \$250,000 or more must have a State-issued license or certification. Licensing requirements vary by State, but they typically include specific training requirements, a period of work as a trainee, and passing one or more examinations.

All States also are required to conform, at a minimum, to the licensing and certification requirements established by the Appraisal Qualifications Board (AQB) of The Appraisal Foundation, a Congressionally-authorized organization dedicated to this purpose. The AQB requires that appraisers pass a Foundation-approved State examination as well as meet education and experience requirements. The education requirements include a course and examination on the Uniform Standards of Professional Appraisal Practice (USPAP) set forth by the Appraisal Standards Board (ASB) of The Appraisal Foundation.

Although Federal standards do not require an appraisal license for appraisers valuing real property with loan amounts of less than \$250,000, many States require any practicing appraiser to obtain a license or certification, regardless of transaction value. In addition, many States have different, more stringent requirements for licensure than those set forth by the AQB.

One State-issued appraiser license is the State Certified General Real Property Appraiser license, which allows an appraiser to value any type of real property regardless of value. Another State-issued license is the State Certified Residential Real Property Appraiser license, which allows an appraiser to value any residential unit of 1 to 4 families regardless of value, and any other type of property with a value of up to \$250,000. An additional license, which is recommended or used by many States, is the State Licensed Residential Appraiser license, which permits its holder to appraise commercial property up to \$250,000 and 1 to 4 family residential units worth up to \$1 million.

Starting in 2008, several new educational requirements enacted by the AQB for State Licensure will take effect. For the State Licensed Residential Appraiser license, which is available

or required in a majority of States, the candidate must obtain 150 qualifying education hours, 15 of which must be on the National USPAP Course, and at least 2,000 hours of on-the-job training. For the State Certified Residential Appraiser and the State Certified General Appraiser licenses, the required education hours are much more rigorous, at 200 hours and 300 hours, respectively. In addition, all candidates must pass an examination. Also starting in 2008, individuals wishing to become State certified appraisers will need to either possess a college degree or complete a specified number of hours in certain college-level courses. Requirements vary by State so candidates should contact their appropriate State agency to see what specific criteria are mandated.

In many States, those working on their appraiser requirements for licensure are classified as a "trainee." Some of these States have their own training programs while others use the AQB's recommended program. The program varies by State but usually requires at least 75 hours of specified appraisal education, 15 of which must be on the National USPAP Course, before applying for a trainee position. The number of additional courses a trainee must take depends on the State requirements for the license they wish to obtain.

The qualifications necessary to become an assessor also vary by State, but often are similar to the requirements for becoming an appraiser. In most States, the State assessor board sets education and experience requirements that must be met to obtain a certificate to practice as an assessor. A few States have no State-wide requirements; rather, standards are set by each locality.

States mandating assessor certification have requirements similar to those for appraisers. Some States also have more than one level of certification. All candidates must attend State-approved schools and facilities and take basic appraisal courses. Although appraisers value one property at a time while an assessor typically values many, the methods and techniques used are the same. As a result, the main courses assessors take are the same as those for appraisers. In addition, there usually is a set number of on-the-job hours that must be completed and all assessor candidates in these States must pass an examination. In some States, assessors must abide by the USPAP standards and are strongly encouraged to follow these standards in most other States. For those States not requiring certificates, the hiring assessor's office usually will require the candidate to take basic appraisal courses, complete on-the-job training, and accrue a sufficient number of work hours to meet the requirements for appraisal licenses or certificates. Many assessors also possess a State appraisal license.

For both appraisers and assessors, continuing education is necessary to maintain a license or certification. The minimum continuing education requirement for appraisers, as set by the AQB, is 14 hours per year. Appraisers must also complete a 7 hour National USPAP Update Course every 2 years. Some States have further requirements. Continuing education can be obtained in any State-approved school or facility, as well as recognized seminars and conferences held by associations or related organizations. Assessors also must fulfill a continuing education requirement in most States, but the amount varies by State.

## Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Appraisers and assessors of real estate .....	13-2021	101,000	118,000	17,000	17

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

**Other qualifications.** Appraisers and assessors must possess good analytical skills, mathematical skills, and the ability to pay attention to detail. They also must work well with people and alone. Since they will work with the public, politeness is a must, along with the ability to listen and thoroughly answer any questions about their work.

**Certification and advancement.** Many appraisers and assessors choose to become a designated member of a regional or nationally recognized appraiser or assessor association. Designations are particularly useful in States or types of practices where a license is not mandatory or a certificate has not been established. Designations are another way for appraisers or assessors to establish themselves in the profession, and are recognizable credentials to show employers and potential clients a higher level of education and experience. Obtaining a designation usually requires 5 to 10 years of training and experience, often more than the minimum licensing requirements of the AQB. Many appraisers and assessors start with getting their license or certificate and work their way up to a designation. Many appraisal associations have a membership category specifically for trainees, who then can receive full membership after licensure. Since States differ greatly on the requirements to become an assessor, licensure is not necessarily required for membership or designations; however, the imposed designation qualifications tend to be very stringent.

Advancement within the occupation comes with experience. The higher the level of appraiser licensure, for example, the higher the fees an independent fee appraiser may charge. Staying in one particular region or focusing on one type of appraising specialty also will help to establish one's business, reputation, and expertise. Assessors often have a career progression within their office, starting as a trainee and eventually ending up appointed or elected as a senior appraiser or supervisor.

### Employment

In 2006, appraisers and assessors of real estate held about 101,000 jobs. Most appraisers and assessors work full-time. More than 3 out of 10 were self-employed; virtually all were appraisers. Employment was concentrated in areas with high levels of real estate activity, such as major metropolitan areas. Assessors are more uniformly spread throughout the country than appraisers because every locality has at least one assessor.

About 25 percent worked in local government; almost all were assessors. Another 30 percent, mainly appraisers, worked for real estate firms, while a relatively small number worked for financial institutions, such as banks and credit unions.

### Job Outlook

Employment of appraisers and assessors of real estate is expected to grow faster than average for all occupations. Job op-

portunities should be favorable for those who meet licensing qualifications and have several years of experience.

**Employment change.** Employment of appraisers and assessors of real estate is expected to grow by 17 percent, which is faster than the average for all occupations, over the 2006-16 decade. Employment of appraisers will grow with increases in the level of real estate activity. Additionally, more appraisers will be hired to help with litigation claims, probate cases, foreclosures, business valuations, and divorce settlements. Employment of assessors will grow with the increase in the amount of real property to be assessed. However, employment will be held down to a certain extent by productivity increases brought about by the increased use of computers and other technologies, which make for faster valuations and allow appraisers to take on more customers and each assessor to assess more properties.

Independent fee appraisers will see the strongest growth because banks and other financial institutions increasingly are contracting work out to them to make loan appraisals on a case-by-case basis. The increased use of automated valuation models to conduct appraisals for loan and mortgage purposes also will shift work out of the financial sector. Additionally, more work is being done in service sectors of the economy, such as in the legal and accounting sectors.

**Job prospects.** Employment opportunities should be best in areas with active real estate markets, such as the East and West coasts and major cities and suburbs. Although opportunities for established appraisers and assessors are expected to be good in these areas, those wishing to enter the occupation may have difficulty locating a trainee position because traditional sources of training positions increasingly are prefer not to take on new trainees.

The cyclical nature of the real estate market also will have a direct effect on the job prospects of appraisers, especially those who appraise residential properties. In times of recession, fewer people buy or sell real estate, causing a decrease in the demand for appraisers. As a result, opportunities will be best for appraisers who are able to switch specialties and appraise different types of properties.

Because assessors are needed in every local or State jurisdiction to make assessments for property tax purposes regardless of the state of the local economy, assessors are less affected by economic and real estate market fluctuations than are appraisers. In addition to growth openings, there should be numerous openings because of the need to replace the many appraisers and assessors who are expected to retire or decrease their working hours over the projection period.

### Earnings

Median annual earnings of wage and salary appraisers and assessors of real estate were \$44,460 in May 2006. The middle 50 percent earned between \$32,080 and \$64,460. The lowest

10 percent earned less than \$24,000 and the highest 10 percent earned more than \$86,140. Median annual earnings of those working for local governments were \$40,650. Median annual earnings of those working for real estate firms were \$44,120. Generally, those working in urban and coastal regions earned more than those working in rural locations.

### Related Occupations

Other occupations that involve the inspection of real estate include construction and building inspectors, real estate brokers and sales agents, and urban and regional planners. Appraisers and assessors must also place a monetary value on properties. Occupations also involved in valuing items include claims adjusters, appraisers, examiners and investigators, as well as cost estimators.

### Sources of Additional Information

For more information on licensure requirements, contact:

➤ The Appraisal Foundation, 1155 15th Street NW., Suite 1111, Washington, DC 20005.

Internet: <http://www.appraisalfoundation.org>

For more information on individual State licensure requirements, contact:

➤ Appraisal Subcommittee (ASC), 2000 K Street, NW., Suite 310; Washington, D.C. 20006. Internet: <http://www.asc.gov>

For more information on appraisers of real estate, contact:

➤ American Society of Appraisers, 555 Herndon Pkwy., Suite 125, Herndon, VA 20170. Internet: <http://www.appraisers.org>

➤ Appraisal Institute, 550 W. Van Buren St., Suite 1000, Chicago, IL 60607. Internet: <http://www.appraisalinstitute.org>

➤ National Association of Independent Fee Appraisers, 401 N. Michigan Ave. Suite 2200, Chicago, IL 60611.

➤ National Association of Real Estate Appraisers, 1224 North Nokomis NE., Alexandria, MN 56308.

For more information on assessors of real estate, contact:

➤ International Association of Assessing Officers, 314 W 10th St., Kansas City, MO 64105. Internet: <http://www.iaao.org>

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## Budget Analysts

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(O\*NET 13-2031.00)

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### Significant Points

- Good job opportunities are expected.
- A bachelor's degree generally is the minimum educational requirement, but many employers prefer or require a master's degree.
- About 44 percent of all budget analysts work in Federal, State, and local governments.

### Nature of the Work

Efficiently distributing limited financial resources is an important challenge in all organizations. In most large and complex organizations, this task would be nearly impossible without budget analysts. These workers develop, analyze, and execute

budgets, which are used to allocate current resources and estimate future financial needs.

Budget analysts work in private industry, nonprofit organizations, and the public sector. In private sector firms, a budget analyst's main responsibility is to examine the budget and seek new ways to improve efficiency and increase profits. In nonprofit and governmental organizations, which usually are not concerned with profits, analysts try to find the most efficient way to distribute funds and other resources among various departments and programs.

In recent years, as limited funding has led to downsizing and restructuring throughout private industry and government, budget analysts have seen their role broadened. In addition to managing an organization's budget, they are often involved in program performance evaluation, policy analysis, and the drafting of budget-related legislation. At times, they also conduct training sessions for company or government agency personnel regarding new budget procedures.

At the beginning of each budget cycle, managers and department heads submit proposed operational and financial plans to budget analysts for review. These plans outline the organization's programs, estimate the financial needs of these programs, and propose funding initiatives to meet those needs.

Analysts examine budget estimates and proposals for completeness; accuracy; and conformance with established procedures, regulations, and organizational objectives. Sometimes they employ cost-benefit analyses to review financial requests, assess program tradeoffs, and explore alternative funding methods. They also examine past budgets and research economic and financial developments that affect the organization's spending. This process enables analysts to evaluate proposals in terms of the organization's priorities and financial resources.

After the initial review process, budget analysts consolidate individual departmental budgets into operating and capital bud-



*Almost half of all budget analysts work in Federal, State, and local governments.*



**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Budget analysts .....	13-2031	62,000	66,000	4,400	7

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

get summaries. These summaries contain statements that argue for or against funding requests. Budget summaries are then submitted to senior management, or, as is often the case in State and local governments, to appointed or elected officials. Budget analysts then help the chief operating officer, agency head, or other top managers analyze the proposed plan and devise possible alternatives if the projected results are unsatisfactory. The final decision to approve the budget usually is made by the organization head in a private firm, or, in government, by elected officials such as State legislators.

Throughout the year, analysts periodically monitor the budget by reviewing reports and accounting records to determine if allocated funds have been spent as specified. If deviations appear between the approved budget and actual performance, budget analysts may write a report explaining the variations and recommending revised procedures. To avoid or alleviate deficits, budget analysts may recommend program cuts or a reallocation of excess funds. They also inform program managers and others within the organization of the status and availability of funds in different accounts. Before new programs begin or existing programs are changed, a budget analyst must assess the program's efficiency and effectiveness. Analysts also may be involved in long-range financial planning.

Financial software has greatly increased the amount of data and information that budget analysts can consider. The analysts also make extensive use of spreadsheet, database, and word-processing software.

**Work environment.** Budget analysts usually work in a comfortable office setting. They spend the majority of their time working independently, compiling and analyzing data and preparing budget proposals. Some budget analysts travel to obtain budget details first-hand or to personally verify funding allocation.

The schedules of budget analysts vary throughout the budget cycle, and many are required to work additional hours during the initial development, midyear reviews, and final reviews of budgets. In 2006, about 65 percent of budget analysts worked between 35 and 44 hours per week, while about 17 percent worked more than 44 hours per week, and about 10 percent worked fewer than 35 hours per week. The pressures of deadlines and tight work schedules can be stressful.

**Training, Other Qualifications, and Advancement**

A bachelor's degree usually is the minimum educational requirement for budget analyst jobs, but some organizations prefer or require a master's degree. Entry-level budget analysts usually begin with limited responsibilities but can be promoted to intermediate-level positions within 1 to 2 years, and to senior positions with additional experience.

**Education and training.** Private firms and government agencies generally require budget analysts to have at least a

bachelor's degree, but many prefer or require a master's degree. Within the Federal Government, a bachelor's degree in any field is sufficient for an entry-level budget analyst position, but master's degrees are preferred. State and local governments have varying requirements, but a bachelor's degree in one of many areas, including accounting, finance, business, public administration, economics, statistics, political science, or sociology, is a common requirement. Many States, especially larger, more urban States, require a master's degree. Many government employers prefer candidates with strong analytic and policy analysis backgrounds that may be obtained through such majors as political science, economics, public administration, or public finance.

Some firms prefer candidates with a degree in business because business courses emphasize both quantitative and analytical skills, which are equally important in budget analysis. Sometimes a degree in a field closely related to that of the employing industry or organization, such as engineering, may be preferred. Because developing a budget requires strong numerical and analytical skills, courses in statistics or accounting are helpful, regardless of the prospective budget analyst's major field of study. Occasionally, budget-related or finance-related work experience can be substituted for formal education.

Entry-level budget analysts in the Federal Government receive extensive on-the-job and classroom training. In most other organizations, however, budget analysts usually learn the job by working through one complete budget cycle. During the cycle, which typically lasts 1 year, analysts become familiar with the various steps involved in the budgeting process. Many budget analysts also take professional development classes throughout their careers.

**Other qualifications.** Budget analysts must abide by strict ethical standards. Integrity, objectivity, and confidentiality are all essential when dealing with financial information, and budget analysts must avoid any personal conflicts of interest. Most budget analysts also need mathematical skills and should be able to use software packages, including spreadsheet, database, data-mining, financial analysis, and graphics programs. Strong oral and written communication skills also are essential, because budget analysts must prepare, present, and defend budget proposals to decision makers. In addition, budget analysts must be able to work under strict time constraints.

**Certification and advancement.** Entry-level budget analysts usually begin with limited responsibilities, working under close supervision. Capable entry-level analysts can be promoted to intermediate-level positions within 1 to 2 years, and to senior positions with additional experience. Because of the importance and high visibility of their jobs, senior budget analysts are prime candidates for promotion to management positions in various parts of their organizations, or with other organizations with which they have worked.

Some government budget analysts employed at the Federal, State, or local level may earn the Certified Government Financial Manager designation granted by the Association of Government Accountants. Other government financial officers also may earn this designation. To do so, candidates must have a minimum of a bachelor's degree, 24 credit hours of study in financial management, and 2 years of government work experience in financial management. They also must pass a series of three exams that cover topics on the government; governmental accounting, financial reporting, and budgeting; and financial management and control. To maintain the designation, individuals must complete 80 hours of continuing professional education every 2 years.

### Employment

Budget analysts held 62,000 jobs throughout private industry and government in 2006. Federal, State, and local governments are major employers, accounting for 44 percent of budget analyst jobs. Many other budget analysts worked in manufacturing; financial services; management services; professional, scientific, and technical services; and schools.

### Job Outlook

Budget analyst jobs are expected to increase about as fast as the average, and job prospects should generally be good, especially for applicants with a master's degree.

**Employment change.** Employment of budget analysts is expected to increase by 7 percent between 2006 and 2016, which is about as fast as the average for all occupations. Employment growth will be driven by the continuing demand for sound financial analysis in both the public and the private sectors.

As businesses and other organizations become more complex and specialized, budget planning and financial control will demand greater attention. In recent years, computer applications used in budget analysis have become increasingly sophisticated, allowing more data to be processed in a shorter time. As a result, budget analysts have seen their workload broadened, and they are expected to produce more than they have in the past.

Budget analysts will also continue to acquire new responsibilities in other areas, such as policy analysis and performance evaluation, which make them more important to their organizations.

**Job prospects.** Good job prospects are expected for budget analysts over the 2006-16 decade. Job openings should result from employment growth and from the need to replace workers who retire or leave the occupation for other reasons. Candidates with a master's degree are expected to have the best opportunities. Familiarity with spreadsheet, database, data-mining, financial-analysis, and graphics software packages also should enhance a jobseeker's prospects.

Because of the importance of financial analysis, and because financial and budget reports must be completed during all phases of the business cycle, budget analysts usually are less vulnerable to layoffs than many other types of workers.

### Earnings

Salaries of budget analysts vary widely by experience, education, and employer. Median annual earnings of wage-and-salary budget analysts in May 2006 were \$61,430. The middle

50 percent earned between \$49,070 and \$77,000. The lowest 10 percent earned less than \$40,070, and the highest 10 percent earned more than \$93,080. Median annual earnings in the industries employing the largest numbers of budget analysts were:

Management of companies and enterprises .....	\$65,280
Federal Government.....	65,240
State government.....	55,990
Local government .....	55,120
Colleges, universities, and professional schools .....	51,270

In the Federal Government, budget analysts usually start as trainees, earning \$28,862 or \$35,752 per year in 2007. Candidates with a master's degree began at \$43,731. Beginning salaries were slightly higher in areas where the prevailing local pay level was higher. The average annual salary in 2007 for budget analysts employed by the Federal Government was \$71,267.

According to a 2007 survey conducted by Robert Half International—a staffing services firm specializing in accounting and finance—starting salaries of financial, budget, treasury, and cost analysts in small companies ranged from \$32,750 to \$39,250. In large companies, starting salaries ranged from \$36,500 to \$43,750.

### Related Occupations

Budget analysts analyze and interpret financial data, make recommendations for the future, and assist in the implementation of new ideas and financial strategies. Other workers who have similar duties include accountants and auditors, cost estimators, economists, financial analysts and personal financial advisors, financial managers, loan officers, and management analysts.

### Sources of Additional Information

Information about career opportunities as a budget analyst may be available from your State or local employment service.

Information on careers and certification in government financial management may be obtained from:

► Association of Government Accountants, 2208 Mount Vernon Ave., Alexandria, VA 22301.

Internet: <http://www.agacgfm.org>

Information on careers in budget analysis at the State government level may be obtained from:

► National Association of State Budget Officers, Hall of the States Building, Suite 642, 444 North Capitol St.NW., Washington, DC 20001. Internet: <http://www.nasbo.org>

Information on obtaining budget analyst positions with the Federal Government is available from the Office of Personnel Management through USAJOBS, the Federal Government's official employment information system. This resource for locating and applying for job opportunities can be accessed through the Internet at <http://www.usajobs.opm.gov> or through an interactive voice response telephone system at (703) 724-1850. This number is not toll free, and charges may result. For advice on how to find and apply for Federal jobs, see the *Occupational Outlook Quarterly* article "How to get a job in the Federal Government," online at:

<http://www.bls.gov/opub/ooq/2004/summer/art01.pdf>

## Claims Adjusters, Appraisers, Examiners, and Investigators

(O\*NET 13-1031.00, 13-1031.01, 13-1031.02, 13-1032.00)

### Significant Points

- Employment is expected to increase moderately, but many job openings will arise from the need to replace workers who retire or leave for other reasons.
- Licensing and continuing education requirements vary by State.
- College graduates have the best opportunities; competition will be keen for jobs as investigators because this occupation attracts many qualified people.

### Nature of the Work

Individuals and businesses purchase insurance policies to protect against monetary losses. In the event of a loss, policyholders submit claims, or requests for payment, seeking compensation for their loss. Adjusters, appraisers, examiners, and investigators deal with those claims. They work primarily for property and casualty insurance companies, for whom they handle a wide variety of claims alleging property damage, liability, or bodily injury. Their main role is to investigate the claims, negotiate settlements, and authorize payments to claimants, all the while mindful not to violate the claimant's rights under Federal and State privacy laws. They must determine whether the customer's insurance policy covers the loss and how much of the loss should be paid to the claimant. Although many adjusters, appraisers, examiners, and investigators have overlapping functions and may even perform the same tasks, the insurance industry generally assigns specific roles to each of these claims workers.

*Adjusters* plan and schedule the work required to process a claim. They might, for example, handle the claim filed after an automobile accident or after a storm damages a customer's home. Adjusters investigate claims by interviewing the claimant and witnesses, consulting police and hospital records, and inspecting property damage to determine the extent of the company's liability. Adjusters may consult with other professionals, such as accountants, architects, construction workers, engineers, lawyers, and physicians, who can offer a more expert evaluation of a claim. The information gathered—including photographs and statements, either written, audio, or on video tape—is set down in a report that is then used to evaluate the associated claim. When the policyholder's claim is legitimate, the claims adjuster negotiates with the claimant and settles the claim. When claims are contested, adjusters will work with attorneys and expert witnesses to defend the insurer's position.

Many companies centralize claims adjustment in a claims center, where the cost of repair is estimated and a check is issued immediately. More complex cases, usually involving bodily injury, are referred to senior adjusters. Some adjusters work with multiple types of insurance, but most specialize in homeowner claims, business losses, automotive damage, or workers' compensation.

Claimants can opt not to rely on the services of their insurance company's adjuster and may instead choose to hire a public adjuster. These workers assist clients in preparing and presenting claims to insurance companies and in trying to negotiate a fair settlement. They perform the same services as adjusters who work directly for companies, but they work in the best interests of the client, rather than the insurance company. Independent adjusters are also self-employed and are typically hired by an insurance carrier on a freelance or contractual basis. Insurance companies may choose to hire independent adjusters in lieu of hiring them as regular employees.

*Claims examiners* within property and casualty insurance firms may have duties similar to those of an adjuster, but often their primary job is to review the claims submitted in order to ensure that proper guidelines have been followed. They may assist adjusters with complex and complicated claims or when a disaster suddenly greatly increases the volume of claims.

Most claims examiners work for life or health insurance companies. In health insurance companies, examiners review health-related claims to see whether costs are reasonable given the diagnosis. Examiners use guides with information on the average period of disability, the expected treatments, and the average hospital stay for the various ailments. Examiners check claim applications for completeness and accuracy, interview medical specialists, and consult policy files to verify the information reported in a claim. Examiners will then either authorize the appropriate payment or refer the claim to an investigator for a more thorough review. Claims examiners usually specialize in group or individual insurance plans and in hospital, dental, or prescription drug claims.

In life insurance, claims examiners review the causes of death, particularly in the case of an accident, because most life insurance policies pay additional benefits if a death is accidental. Claims examiners also may review new applications for life insurance to make sure that the applicants have no serious illnesses that would make them a high risk to insure and thus disqualify them from obtaining insurance.

Another occupation that plays an important role in the accurate settlement of claims is that of the *appraiser*, whose role is to estimate the cost or value of an insured item. The majority of appraisers employed by insurance companies and independent



*Auto damage appraisers may document the state of the automobile in their loss estimation reports.*



adjusting firms are *auto damage appraisers*. These appraisers inspect damaged vehicles after an accident and estimate the cost of repairs. This information is then relayed to the adjuster, who incorporates the appraisal into the settlement. Auto damage appraisers are valued by insurance companies because they can provide an unbiased judgment of repair costs. Otherwise, the companies would have to rely on auto mechanics' estimates, which might be unreasonably high.

Many claims adjusters and auto damage appraisers are equipped with laptop computers from which they can download the necessary forms and files from insurance company databases. They also may use digital cameras, which allow photographs of the damage to be sent to the company via the Internet. Many also input information about the damage directly into their computers, where software programs produce estimates of damage on standard forms. These new technologies allow for faster and more efficient processing of claims.

When adjusters or examiners suspect fraud, they refer the claim to an investigator. *Insurance investigators* in an insurance company's special investigative unit handle claims in which the company suspects fraudulent or criminal activity, such as arson, falsified workers' disability claims, staged accidents, or unnecessary medical treatments. The severity of insurance fraud cases can vary greatly, from claimants simply overstating the damage to a vehicle to complicated fraud rings responsible for many claimants and supported by dishonest doctors, lawyers, and even insurance personnel.

Investigators usually start with a database search to obtain background information on claimants and witnesses. Investigators can access certain personal information and identify Social Security numbers, aliases, driver's license numbers, addresses, phone numbers, criminal records, and past claims histories to establish whether a claimant has ever attempted insurance fraud. Then, investigators may visit claimants and witnesses to obtain a recorded statement, take photographs, and inspect facilities, such as doctors' offices, to determine whether the doctors have a proper license. Investigators often consult with legal counsel and can be expert witnesses in court cases.

Often, investigators also perform surveillance work. For example, in a case involving fraudulent workers' compensation claims, an investigator may covertly observe the claimant for several days or even weeks. If the investigator observes the subject performing an activity that is ruled out by injuries stated in a workers' compensation claim, the investigator will take video or still photographs to document the activity and report it to the insurance company.

**Work environment.** Working environments of claims adjusters, appraisers, examiners, and investigators vary greatly. Many claims adjusters and auto damage appraisers, often work outside the office, inspecting damaged buildings and automobiles. Adjusters who inspect damaged buildings must be wary of potential hazards such as collapsed roofs and floors, as well as weakened structures.

Adjusters report to the office every morning to get their assignments, while others simply call in from home and spend their days traveling to claim sites. New technology, such as laptop computers and cellular telephones, is making telecommuting easier for claims adjusters and auto damage appraisers.

Many adjusters work inside their office only a few hours a week, while others conduct their business entirely out of their home and automobile. Occasionally, experienced adjusters must be away from home for days—for example, when they travel to the scene of a disaster such as a tornado, hurricane, or flood—to work with local adjusters and government officials.

Most claims examiners employed by life and health insurance companies work a standard 5-day, 40-hour week in a typical office environment. In contrast, adjusters often must arrange their work schedules to accommodate evening and weekend appointments with clients. This sometimes results in adjusters working irregular schedules or more than 40 hours a week, especially when they have a lot of claims to investigate. Adjusters often are called to work in the event of emergencies and may have to work 50 or 60 hours a week until all claims are resolved.

Appraisers spend much of their time offsite at automotive body shops estimating vehicle damage costs. The remaining time may be spent working in the office. Many independent appraisers work from home, which has been made easier through new computer software valuation programs. Auto damage appraisers typically work regular hours, and rarely work on the weekends. Self-employed appraisers also have the flexibility to make their own hours, as many appraisals are done by appointment.

Some days, investigators will spend all day in the office, searching databases, making telephone calls, and writing reports. Other times, they may be away, performing surveillance activities or interviewing witnesses. Some of the work can involve confrontation with claimants and others involved in a case, so the job can be stressful and dangerous. Insurance investigators often work irregular hours because of the need to conduct surveillance and contact people who are not available during normal working hours. Early morning, evening, and weekend work is common.

### **Training, Other Qualifications, and Advancement**

Training and entry requirements vary widely for claims adjusters, appraisers, examiners, and investigators. Although many in these occupations do not have a college degree, most companies prefer to hire college graduates.

**Education and training.** There are no formal education requirements for any of these occupations, and a high school degree is typically the minimal requirement needed to obtain employment. However, most employers prefer to hire college graduates or people who have some postsecondary training.

No specific college major is recommended, but a variety of degrees can be an asset. For example, a claims adjuster who has a business or an accounting background might be suited to specialize in claims of financial loss due to strikes, breakdowns of equipment, or damage to merchandise. College training in architecture or engineering is helpful in adjusting industrial claims, such as those involving damage from fires or other accidents. A legal background can be beneficial to someone handling workers' compensation and product liability cases. A medical background is useful for those examiners working on medical and life insurance claims.

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Claims adjusters, appraisers, examiners, and investigators .....	13-1030	319,000	347,000	29,000	9
Claims adjusters, examiners, and investigators.....	13-1031	305,000	332,000	27,000	9
Insurance appraisers, auto damage .....	13-1032	13,000	15,000	1,700	13

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

The following tabulation presents the 2006 percent distribution of all claims adjusters, appraisers, examiners, and investigators by their highest level of educational attainment:

	Percent
High school graduate or less .....	22
Some college, no degree .....	17
Associate's degree.....	12
Bachelor's degree.....	45
Graduate degree .....	5

For auto damage appraiser jobs, firms typically prefer to hire people who also have experience as an estimator or as a manager of an auto body repair shop. Also, an appraiser must know how to repair vehicles in order to identify and estimate damage. Technical skills are essential. While auto damage appraisers do not require a college education, most companies prefer to hire persons with formal training. Many vocational colleges offer 2-year programs in auto body repair and teach students how to estimate the costs to repair damaged vehicles.

For investigator jobs, most insurance companies prefer to hire people trained as law enforcement officers, private investigators, claims adjusters, or examiners because these workers have good interviewing and interrogation skills.

Beginning claims adjusters, appraisers, examiners, and investigators work on small claims under the supervision of an experienced workers. As they learn more about claims investigation and settlement, they are assigned larger, more complex claims. Trainees take on more responsibility as they demonstrate competence in handling assignments and progress in their coursework. Auto damage appraisers may also receive some on-the-job training, which may last several months. They may work under close supervision while estimating damage costs until their employer decides they are ready to perform estimates on their own.

Continuing education is very important for claims adjusters, appraisers, examiners, and investigators because Federal and State laws and court decisions affect how claims are handled or who is covered by insurance policies. Also, examiners working on life and health claims must be familiar with new medical procedures and prescription drugs. Examiners working on auto claims must be familiar with new car models and repair techniques.

Many companies offer training sessions to inform their employees of industry changes, and a number of schools and associations give courses and seminars on various topics having to with claims. Correspondence courses via the Internet are also making long-distance learning possible.

**Licensure.** Licensing requirements for claims adjusters, appraisers, examiners, and investigators vary by State. Some States have few requirements, while others require either the completion of preclicensing education, a satisfactory score on a licensing exam, or both. Earning a voluntary professional designation can sometimes substitute for completing an exam. In some States, claims adjusters employed by insurance companies can work under the company license and need not become licensed themselves. Public adjusters may need to meet separate or additional requirements. For example, some States require public adjusters to file a surety bond.

Some States that require licensing also require a certain number of continuing education credits per year in order to renew the license. Workers can fulfill their continuing education requirements by attending classes or workshops, by writing articles for claims publications, or by giving lectures and presentations.

**Other qualifications.** Claims adjusters, appraisers, and examiners often work closely with claimants, witnesses, and other insurance professionals, so they must be able to communicate effectively with others. Knowledge of computer applications also is very helpful. In addition, a valid driver's license and a good driving record are required for workers who must travel on the job. Some companies require applicants to pass a series of written aptitude tests designed to measure their communication, analytical, and general mathematical skills.

When hiring investigators, employers look for individuals who have ingenuity and who are persistent and assertive. Investigators should not be afraid of confrontation, should communicate well, and should be able to think on their feet. Good interviewing and interrogation skills also are important and usually are acquired in earlier careers in law enforcement.

**Certification and advancement.** Employees who demonstrate competence in claims work or administrative skills may be promoted to more responsible managerial or administrative jobs. Similarly, claims investigators may rise to become supervisor or manager of the investigations department. Once they achieve expertise, many choose to start their own independent adjusting or auto damage appraising firms.

Numerous examiners and adjusters also earn professional certifications and designations to demonstrate their professional expertise. Although requirements for these designations vary, many entail at least 5 to 10 years of experience in the claims field and the successful completion of an examination; in addition, a certain number of continuing education credits must be earned each year to retain the designation.

**Employment**

Adjusters, appraisers, examiners, and investigators held about 319,000 jobs in 2006. Insurance carriers, agencies, broker-

ages, and related industries, such as private claims adjusting companies, employed more than 7 out of 10 claims adjusters, appraisers, examiners, and investigators. Less than 5 percent of these jobs were held by auto damage insurance appraisers. Relatively few adjusters, appraisers, examiners, and investigators were self-employed.

### Job Outlook

Despite average job growth, keen competition for claims adjuster, appraiser, examiner, and investigator jobs is expected, especially in smaller, privately owned companies. For claims adjusters, opportunities will be best for those who have a license and related experience. For appraiser jobs, opportunities will be best for those who have some vocational training and previous auto body repair experience.

**Employment change.** Employment of claims adjusters, appraisers, examiners, and investigators is expected to grow by 9 percent over the 2006-16 decade, which is about as fast as the average for all occupations. Many insurance carriers are downsizing their claims staff in an effort to contain costs. Larger companies are relying more on customer service representatives in call centers, for example, to handle the recording of the necessary details of the claim, allowing adjusters to spend more of their time investigating claims. New technology is reducing the amount of time it takes for an adjuster to complete a claim, thereby increasing the number of claims that one adjuster can handle. The demand for these jobs will increase regardless of new technology, however, because they cannot be easily automated. Additionally, a growing need for adjusters, appraisers, examiners, and investigators will stem from more insurance policies being sold to accommodate a growing population. Further, as the elderly population increases, there will be a greater need for health care, resulting in more health insurance claims.

Employment of insurance investigators is not expected to grow significantly, despite the expected increase in the number of claims in litigation and the number and complexity of insurance fraud cases. Technology, such as the Internet, reduces the amount of time it takes investigators to perform background checks, allowing them to handle more cases. However, adjusters are still needed to contact policyholders, inspect damaged property, and consult with experts.

As with claims adjusters, examiners, and investigators, employment of auto damage appraisers should grow by 13 percent, which is also about as fast as the average for all occupations. Insurance companies and agents continue to sell growing numbers of auto insurance policies, leading to more claims being filed that require the attention of an auto damage appraiser. The work of auto damage appraisers is also not easily automated because most appraisals require an onsite inspection, but new technology is making them somewhat more efficient. In addition, some insurance companies are opening their own repair facilities, which may reduce the need for auto damage appraisers.

**Job prospects.** Numerous job openings also will result from job growth and the need to replace workers who transfer to other occupations or leave the labor force. Overall, college graduates and those with previous related experience will have the best opportunities for jobs as claims adjusters, examiners, and

investigators. Auto damage appraisers with related vocational training and auto body shop experience will also have good prospects. People entering these occupations with no previous experience or formal training may find more opportunities working directly for an insurance carrier.

Competition for investigator jobs will remain keen because the occupation attracts many qualified people, including retirees from law enforcement, the military, and experienced claims adjusters and examiners who choose to get an investigator license. Heightened media and public awareness of insurance fraud also may attract qualified candidates to this occupation.

### Earnings

Earnings of claims adjusters, appraisers, examiners, and investigators vary significantly. Median annual earnings were \$50,660 in May 2006 for wage and salary workers. The middle 50 percent earned between \$38,520 and \$65,210. The lowest 10 percent earned less than \$30,890, and the highest 10 percent earned more than \$79,170.

Median annual earnings of wage and salary auto damage insurance appraisers were \$49,180 in May 2006. The middle 50 percent earned between \$40,870 and \$57,830. The lowest 10 percent earned less than \$34,220, and the highest 10 percent earned more than \$68,420.

Many claims adjusters, especially those who work for insurance companies, receive additional bonuses or benefits as part of their job. Adjusters often are furnished a laptop computer, a cellular telephone, and a company car, or are reimbursed for the use of their own vehicle for business purposes.

### Related Occupations

Property-casualty insurance adjusters and life and health insurance examiners must determine the validity of a claim and negotiate a settlement. They also are responsible for determining how much to reimburse the client. Occupations similar to those of claims adjusters, appraisers, examiners, and investigators include cost estimators; bill and account collectors; medical records and health information technicians; billing and posting clerks; credit authorizers, checkers, and clerks; and bookkeeping, accounting, and auditing clerks.

In determining the validity of a claim, insurance adjusters must inspect the damage in order to assess the magnitude of the loss. Workers who perform similar duties include fire inspectors and investigators and construction and building inspectors.

To ensure that company practices and procedures are followed, property and casualty examiners review insurance claims to which a claims adjuster has already proposed a settlement. Others in occupations that review documents for accuracy and compliance with a given set of rules and regulations are tax examiners, collectors, and revenue agents, as well as accountants and auditors.

Like automotive body and related repairers and automotive service technicians and mechanics, auto damage appraisers must be familiar with the structure and functions of various automobiles and their parts. They must also be familiar with techniques to estimate value, which is a requirement similar to appraisers and assessors of real estate.



Insurance investigators detect and investigate fraudulent claims and criminal activity. Their work is similar to that of private detectives and investigators.

### Sources of Additional Information

General information about a career as a claims adjuster, appraiser, examiner, or investigator is available from the home offices of many insurance companies.

Information about licensing requirements for claims adjusters may be obtained from the department of insurance in each State.

Information about the property-casualty insurance field can be obtained by contacting:

► Insurance Information Institute, 110 William St., New York, NY 10038. Internet: <http://www.iii.org>

Information about the health insurance field can be obtained by contacting:

► National Association of Health Underwriters, 2000 North 14th Street, Suite 450, Arlington, VA 22201.

Internet: <http://www.nahu.org>

For information about professional designation and training programs, contact any of the following organizations:

► American College, 270 South Bryn Mawr Ave., Bryn Mawr, PA 19010–2196.

Internet: <http://www.theamericancollege.edu>

► American Institute for Chartered Property Casualty Underwriters and the Insurance Institute of America, 720 Providence Rd., P.O. Box 3016, Malvern, PA 19355–0716.

Internet: <http://www.aicpcu.org>

► International Claim Association, 1255 23rd St. NW., Washington, DC 20037. Internet: <http://www.claim.org>

► LOMA, 2300 Windy Ridge Parkway, Suite 600, Atlanta, GA 30339-8443. Internet: <http://www.loma.org>

Information on careers in auto damage appraising can be obtained from:

► Independent Automotive Damage Appraisers Association, P.O. Box 12291 Columbus, GA 31917–2291.

Internet: <http://www.iada.org>

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## Computer and Information Systems Managers

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(O\*NET 11-3021.00)

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### Significant Points

- Employment of computer and information systems managers is expected to grow faster than the average for all occupations through the year 2016.
- Many managers possess advanced technical knowledge gained from working in a computer occupation.
- Job opportunities will be best for applicants with a strong understanding of business and good communication skills.

### Nature of the Work

In the modern workplace, it is imperative that technology works both effectively and reliably. Computer and information systems managers play a vital role in the implementation of technology within their organizations. They do everything from helping to construct a business plan to overseeing network security to directing Internet operations.

Computer and information systems managers plan, coordinate, and direct research and facilitate the computer-related activities of firms. They help determine both technical and business goals in consultation with top management and make detailed plans for the accomplishment of these goals. This requires a strong understanding of both technology and business practices.

Computer and information systems managers direct the work of systems analysts, computer programmers, support specialists, and other computer-related workers. They plan and coordinate activities such as installation and upgrading of hardware and software, programming and systems design, development of computer networks, and implementation of Internet and intranet sites. They are increasingly involved with the upkeep, maintenance, and security of networks. They analyze the computer and information needs of their organizations from an operational and strategic perspective and determine immediate and long-range personnel and equipment requirements. They assign and review the work of their subordinates and stay abreast of the latest technology to ensure the organization does not lag behind competitors.

The duties of computer and information systems managers vary greatly. *Chief technology officers (CTOs)*, for example, evaluate the newest and most innovative technologies and determine how these can help their organizations. The chief technology officer often reports to the organization's chief information officer, manages and plans technical standards, and tends to the daily information technology issues of the firm. (Chief information officers are covered in a separate *Handbook* statement on top executives.) Because of the rapid pace of technological change, chief technology officers must constantly be on the lookout for developments that could benefit their organizations. Once a useful tool has been identified, the CTO must determine an implementation strategy and sell that strategy to management.

*Management information systems (MIS) directors* or *information technology (IT) directors* manage computing resources for their organizations. They often work under the chief information officer and plan and direct the work of subordinate information technology employees. These managers ensure the availability, continuity, and security of data and information technology services in their organizations. In this capacity, they oversee a variety of user services such as an organization's help desk, which employees can call with questions or problems. MIS directors also may make hardware and software upgrade recommendations based on their experience with an organization's technology.

*Project managers* develop requirements, budgets, and schedules for their firms' information technology projects. They coordinate such projects from development through implementation, working with internal and external clients, vendors, con-



*Computer and information systems managers supervise other information technology employees.*

sultants, and computer specialists. These managers are increasingly involved in projects that upgrade the information security of an organization.

**Work environment.** Computer and information systems managers spend most of their time in offices. Most work at least 40 hours a week and some may have to work evenings and weekends to meet deadlines or solve unexpected problems. Some computer and information systems managers may experience considerable pressure in meeting technical goals with short deadlines or tight budgets. As networks continue to expand and more work is done remotely, computer and information systems managers have to communicate with and oversee offsite employees using modems, laptops, e-mail, and the Internet.

Like other workers who spend most of their time using computers, computer and information systems managers are susceptible to eyestrain, back discomfort, and hand and wrist problems such as carpal tunnel syndrome.

### **Training, Other Qualifications, and Advancement**

Computer and information systems managers are generally experienced workers who have both technical expertise and an understanding of business and management principles. A strong educational background and experience in a variety of technical fields is needed.

**Education and training.** A bachelor's degree usually is required for management positions, although employers often prefer a graduate degree, especially an MBA with technology as a core component. This degree differs from a traditional MBA in that there is a heavy emphasis on information technology in addition to the standard business curriculum. This preparation is becoming important because more computer and information systems managers are making important technology decisions as well as business decisions for their organizations.

Some universities offer degrees in management information systems. These degrees blend technical subjects with business, accounting, and communications courses. A few computer and information systems managers attain their positions with only an associate or trade school degree, but they must have sufficient experience and must have acquired additional skills on the job. To aid their professional advancement, many managers

with an associate degree eventually earn a bachelor's or master's degree while working.

**Certification and other qualifications.** Computer and information systems managers need a broad range of skills. Employers look for managers who have experience with the specific software or technology used on the job, as well as a background in either consulting or business management. The expansion of electronic commerce has elevated the importance of business insight and, consequently, many computer and information systems managers are called on to make important business decisions. Managers need a keen understanding of people, management processes, and customers' needs.

Advanced technical knowledge is essential for computer and information systems managers, who must understand and guide the work of their subordinates yet also explain the work in nontechnical terms to senior managers and potential customers. Therefore, many computer and information systems managers have worked as a systems analyst, for example, or as a computer support specialist, programmer, or other information technology professional.

Although certification is not necessarily required for most computer and information systems manager positions, there is a wide variety of certifications available that may be helpful in getting a job. These certifications are often product-specific, and are generally administered by software or hardware companies rather than independent organizations.

As computer systems become more closely connected with day-to-day operations of businesses, computer and information systems managers are also expected to be aware of business practices. They must possess strong interpersonal, communication, and leadership skills because they are required to interact not only with staff members, but also with other people inside and outside their organizations. They must possess team skills to work on group projects and other collaborative efforts. They also must have an understanding of how a business functions, how it earns revenue, and how technology relates to the core competencies of the business. As a result, many firms now prefer to give these positions to people who have spent time outside purely technical fields.

**Advancement.** Computer and information systems managers may advance to progressively higher leadership positions in the information technology department. A project manager might, for instance, move up to the chief technology officer position and then to chief information officer. On occasion, some may become managers in non-technical areas such as marketing, human resources, or sales because in high technology firms an understanding of technical issues is helpful in those areas.

### **Employment**

Computer and information systems managers held about 264,000 jobs in 2006. About 1 in 4 computer managers worked in service-providing industries, mainly in computer systems design and related services. This industry provides services related to the commercial use of computers on a contract basis, including custom computer programming services; computer systems integration design services; computer facilities management services, including computer systems or data-processing facilities support services; and other computer-related services, such as

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Computer and information systems managers.....	11-3021	264,000	307,000	43,000	16

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

disaster recovery services and software installation. Other large employers include insurance and financial firms, government agencies, and manufacturers.

**Job Outlook**

The increasing use of technology in the workplace is projected to lead to faster than average growth in this occupation. Due to employment increases and because of the high demand for technical workers, prospects should be excellent for qualified job candidates.

**Employment change.** Employment of computer and information systems managers is expected to grow 16 percent over the 2006-16 decade, which is faster than the average for all occupations. New applications of technology in the workplace will continue to drive demand for workers, fueling the need for more managers.

Despite the downturn in the technology sector in the early part of the decade, the outlook for computer and information systems managers remains strong. To remain competitive, firms will continue to install sophisticated computer networks and set up more complex intranets and websites. Keeping a computer network running smoothly is essential to almost every organization.

Because so much business is carried out over computer networks, security will continue to be an important issue for businesses and other organizations. Although software developers continue to improve their products to remove vulnerabilities, attackers are becoming ever more complex in their methods. Organizations need to understand how their systems are vulnerable and how to protect their infrastructure and Internet sites from hackers, viruses, and other attacks. The emergence of security as a key concern for businesses should lead to strong growth for computer managers. Firms will increasingly hire security experts to fill key leadership roles in their information technology departments because the integrity of their computing environments is of utmost importance. As a result, there will be a high demand for managers proficient in computer security issues.

With the explosive growth of electronic commerce and the capacity of the Internet to create new relationships with customers, the role of computer and information systems managers will continue to evolve. Workers who have experience in web applications and Internet technologies will become increasingly vital to their companies.

Opportunities for those who wish to become computer and information systems managers should be closely related to the growth of the occupations they supervise and the industries in which they are found. (See the statements on computer programmers, computer software engineers, computer support specialists and systems administrators, computer systems analysts,

and computer scientists and database administrators elsewhere in the *Handbook*.)

**Job prospects.** Prospects for qualified computer and information systems managers should be excellent. Fast-paced occupational growth and the limited supply of technical workers will lead to a wealth of opportunities for qualified individuals. While technical workers remain relatively scarce in the United States, the demand for them continues to rise. This situation was exacerbated by the economic downturn in the early 2000s, when many technical professionals lost their jobs. Since then, many workers have chosen to avoid this work since it is perceived to have poor prospects.

Workers with specialized technical knowledge and strong communications skills will have the best prospects. People with management skills and an understanding of business practices and principles will have excellent opportunities, as companies are increasingly looking to technology to drive their revenue.

**Earnings**

Earnings for computer and information systems managers vary by specialty and level of responsibility. Median annual earnings of these managers in May 2006 were \$101,580. The middle 50 percent earned between \$79,240 and \$129,250. Median annual earnings in the industries employing the largest numbers of computer and information systems managers in May 2006 were as follows:

Computer systems design and related services.....	\$109,130
Management of companies and enterprises .....	105,980
Data processing, hosting, and related services.....	105,200
Insurance carriers .....	102,180
Colleges, universities, and professional schools.....	83,280

The Robert Half Technology 2007 Salary Guide lists the following annual salary ranges for various computer and information systems manager positions: Chief Technology Officer (CTO), \$101,000-\$157,750; Chief Security Officer, \$97,500-\$141,000; Vice President of Information Technology, \$107,500-\$157,750; Information Technology Manager, Technical Services Manager, \$62,500-\$88,250.

In addition, computer and information systems managers, especially those at higher levels, often receive employment-related benefits, such as expense accounts, stock option plans, and bonuses.

**Related Occupations**

The work of computer and information systems managers is closely related to that of computer programmers, computer software engineers, computer systems analysts, computer scientists and database administrators, and computer support specialists and systems administrators. Computer and information



systems managers also have some high-level responsibilities similar to those of top executives.

### Sources of Additional Information

For information about a career as a computer and information systems manager, contact:

➤ Association of Information Technology Professionals, 401 North Michigan Ave., Suite 2400, Chicago, IL 60611.

Internet: <http://www.aitp.org>

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## Construction Managers

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(O\*NET 11-9021.00)

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### Significant Points

- Construction managers must be available—often 24 hours a day—to deal with delays, bad weather, or emergencies at the jobsite.
- Employers prefer jobseekers who combine construction industry work experience with a bachelor's degree in construction science, construction management, or civil engineering.
- Although certification is not required, there is a growing movement toward certification of construction managers.
- Excellent job opportunities are expected.

### Nature of the Work

Construction managers plan, direct, and coordinate a wide variety of construction projects, including the building of all types of residential, commercial, and industrial structures, roads, bridges, wastewater treatment plants, and schools and hospitals. Construction managers may oversee an entire project or just part of one. They schedule and coordinate all design and construction processes, including the selection, hiring, and oversight of specialty trade contractors, but they usually do not do any actual construction of the structure.

Construction managers are salaried or self-employed managers who oversee construction supervisors and workers. They are often called project managers, constructors, construction superintendents, project engineers, program managers, construction supervisors, or general contractors. Construction managers may be owners or salaried employees of a construction management or contracting firm, or may work under contract or as a salaried employee of the property owner, developer, or contracting firm overseeing the construction project.

These managers coordinate and supervise the construction process from the conceptual development stage through final construction, making sure that the project gets done on time and within budget. They often work with owners, engineers, architects, and others who are involved in the construction process. Given the designs for buildings, roads, bridges, or other projects, construction managers oversee the planning, scheduling, and implementation of those designs.

Large construction projects, such as an office building or industrial complex, are often too complicated for one person to manage. These projects are divided into many segments: site preparation, including land clearing and earth moving; sewage systems; landscaping and road construction; building construction, including excavation and laying of foundations and erection of the structural framework, floors, walls, and roofs; and building systems, including fire-protection, electrical, plumbing, air-conditioning, and heating. Construction managers may be in charge of one or more of these activities.

Construction managers determine the best way to get materials to the building site and the most cost-effective plan and schedule for completing the project. They divide all required construction site activities into logical steps, budgeting the time required to meet established deadlines. This may require sophisticated estimating and scheduling techniques and use of computers with specialized software. (See the section on cost estimators elsewhere in the *Handbook*.)

They also oversee the selection of general contractors and trade contractors to complete specific pieces of the project—which could include everything from structural metalworking and plumbing to painting and carpet installation. Construction managers determine the labor requirements and, in some cases, supervise or monitor the hiring and dismissal of workers. They oversee the performance of all trade contractors and are responsible for ensuring that all work is completed on schedule.

Construction managers direct and monitor the progress of construction activities, sometimes through construction supervisors or other construction managers. They oversee the delivery and use of materials, tools, and equipment; worker productivity and safety; and the quality of construction. They are responsible for obtaining all necessary permits and licenses and, depending upon the contractual arrangements, direct or monitor compliance with building and safety codes, other regulations, and requirements set by the project's insurers.

**Work environment.** Working out of a main office or out of a field office at the construction site, construction managers monitor the overall construction project. Decisions regarding daily construction activities generally are made at the jobsite. Managers may travel extensively when the construction site



*Construction managers must be available—often 24 hours a day—to deal with delays, bad weather, or emergencies at the job site.*

is not close to their main office or when they are responsible for activities at two or more sites. Management of overseas construction projects usually entails temporary residence in another country.

Often “on call” 24 hours a day, construction managers deal with delays, the effects of bad weather, or emergencies at the site. Most work more than a standard 40-hour week because construction may proceed around-the-clock. They may need to work this type of schedule for days or weeks to meet special project deadlines, especially if there are delays.

Although the work usually is not considered inherently dangerous, construction managers must be careful while performing onsite services.

### **Training, Other Qualifications, and Advancement**

Employers increasingly prefer to hire construction managers with a bachelor’s degree in construction science, construction management, building science, or civil engineering, although it is also possible for experienced construction workers to move up to become construction managers. In addition to having education and experience, construction managers must understand contracts, plans, specifications, and regulations.

**Education and training.** For construction manager jobs, employers increasingly prefer to hire individuals who have a bachelor’s degree in construction science, construction management, building science, or civil engineering, plus work experience. Practical construction experience is very important, whether gained through an internship, a cooperative education program, a job in the construction trades, or another job in the industry. Traditionally, people advanced to construction management positions after having substantial experience as construction craftworkers—carpenters, masons, plumbers, or electricians, for example—or after having worked as construction supervisors or as owners of independent specialty contracting firms. However, as construction processes become increasingly complex, employers are placing more importance on specialized education after high school.

About 105 colleges and universities offer bachelor’s degree programs in construction science, building science, and construction engineering. These programs include courses in project control and development, site planning, design, construction methods, construction materials, value analysis, cost estimating, scheduling, contract administration, accounting, business and financial management, safety, building codes and standards, inspection procedures, engineering and architectural sciences, mathematics, statistics, and information technology. Graduates from 4-year degree programs usually are hired as assistants to project managers, field engineers, schedulers, or cost estimators. An increasing number of graduates in related fields—engineering or architecture, for example—also enter construction management, often after acquiring substantial experience on construction projects.

About 60 colleges and universities offer a master’s degree program in construction management or construction science. Master’s degree recipients, especially those with work experience in construction, typically become construction managers in very large construction or construction management companies. Often, individuals who hold a bachelor’s degree in an un-

related field seek a master’s degree in construction management or construction science to work in the construction industry. Some construction managers obtain a master’s degree in business administration or finance to further their career prospects. Doctoral degree recipients usually become college professors or conduct research.

A number of 2-year colleges throughout the country offer construction management or construction technology programs. Many individuals also attend training and educational programs sponsored by industry associations, often in collaboration with postsecondary institutions.

**Other qualifications.** Construction managers should be flexible and work effectively in a fast-paced environment. They should be decisive and work well under pressure, particularly when faced with unexpected occurrences or delays. The ability to coordinate several major activities at once, while analyzing and resolving specific problems, is essential, as is an understanding of engineering, architectural, and other construction drawings. Familiarity with computers and software programs for job costing, online collaboration, scheduling, and estimating also is important.

Good oral and written communication skills also are important, as are leadership skills. Managers must be able to establish a good working relationship with many different people, including owners, other managers, designers, supervisors, and craftworkers. The ability to converse fluently in Spanish is increasingly an asset because Spanish is the first language of many workers in the construction industry.

**Certification and advancement.** There is a growing movement toward certification of construction managers. Although certification is not required to work in the construction industry, it can be valuable because it provides evidence of competence and experience. Both the American Institute of Constructors and the Construction Management Association of America have established voluntary certification programs for construction managers. Requirements combine written examinations with verification of education and professional experience. The American Institute of Constructors awards the Associate Constructor (AC) and Certified Professional Constructor (CPC) designations to candidates who meet its requirements and pass the appropriate construction examinations. The Construction Management Association of America awards the Certified Construction Manager (CCM) designation to workers who have the required experience and who pass a technical examination. Applicants for this designation also must complete a self-study course that covers the professional role of a construction manager, legal issues, allocation of risk, and other topics related to construction management.

Advancement opportunities for construction managers vary depending upon an individual’s performance and the size and type of company for which they work. Within large firms, managers may eventually become top-level managers or executives. Highly experienced individuals may become independent consultants; some serve as expert witnesses in court or as arbitrators in disputes. Those with the required capital may establish their own construction management services, specialty contracting, or general contracting firm.

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Construction managers.....	11-9021	487,000	564,000	77,000	16

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

**Employment**

Construction managers held 487,000 jobs in 2006. About 57 percent were self-employed, many as owners of general or specialty trade construction firms. Most salaried construction managers were employed in the construction industry, 13 percent by specialty trade contractor businesses—for example, plumbing, heating, air-conditioning, and electrical contractors—9 percent in residential building construction; and 9 percent in nonresidential building construction. Others were employed by architectural, engineering, and related services firms and by local governments.

**Job Outlook**

Faster than average employment growth is expected. Additionally, excellent job opportunities will exist as the number of job openings exceeds the number of qualified applicants.

**Employment change.** Employment of construction managers is projected to increase by 16 percent during the 2006-16 decade, faster than the average for all occupations. More construction managers will be needed as the level of construction activity continues to grow. Population and business growth will result in more construction of residential homes, office buildings, shopping malls, hospitals, schools, restaurants, and other structures that require construction managers.

The increasing complexity of construction projects will also boost demand for specialized management-level personnel within the construction industry. Sophisticated technology and the proliferation of laws setting standards for buildings and construction materials, worker safety, energy efficiency, environmental protection, and the potential for adverse litigation have further complicated the construction process. Advances in building materials and construction methods; the need to replace portions of the Nation’s infrastructure; and the growing number of multipurpose buildings and energy-efficient structures will further add to the demand for more construction managers.

**Job prospects.** Excellent employment opportunities for construction managers are expected through 2016 because the number of job openings will exceed the number of qualified individuals seeking to enter the occupation. This situation is expected to continue even as college construction management programs expand to meet the current high demand for graduates. The construction industry often does not attract sufficient numbers of qualified job seekers because working conditions are considered poor.

In addition to job openings arising from employment growth, many additional openings should result annually from the need to replace workers who transfer to other occupations or leave the labor force for other reasons. A substantial number of seasoned managers are also expected to retire over the next decade, likely resulting in a large number of openings.

Prospects for individuals seeking construction manager jobs in construction management, architectural and engineering services, and construction contracting firms should be best for people who have a bachelor’s or higher degree in construction science, construction management, or civil engineering plus practical experience working in construction. Employers will increasingly prefer applicants with college degrees, internships, and a strong background in building technology. Construction managers will also have many opportunities to start their own firms.

Employment of construction managers, like that of many other construction workers, is sensitive to the fluctuations of the economy. Workers in these trades may experience periods of unemployment when the overall level of construction falls. On the other hand, shortages of these workers may occur in some areas during peak periods of building activity.

**Earnings**

Earnings of salaried construction managers and self-employed independent construction contractors vary depending upon the size and nature of the construction project, its geographic location, and economic conditions. In addition to typical benefits, many salaried construction managers receive bonuses and use of company motor vehicles.

Median annual earnings of wage and salary construction managers in May 2006 were \$73,700. The middle 50 percent earned between \$56,090 and \$98,350. The lowest paid 10 percent earned less than \$43,210, and the highest paid 10 percent earned more than \$135,780. Median annual earnings in the industries employing the largest numbers of construction managers were as follows:

Building equipment contractors.....	\$75,200
Electrical contractors .....	74,380
Nonresidential building construction.....	74,080
Foundation, structure, and building exterior contractors .....	71,640
Residential building construction.....	69,400

The earnings of self-employed workers are not included in these numbers.

According to a July 2007 salary survey by the National Association of Colleges and Employers, people with a bachelor’s degree in construction science/management received job offers averaging \$46,930 a year.

**Related Occupations**

Construction managers participate in the conceptual development of a construction project and oversee its organization, scheduling, and implementation. Other workers who perform similar functions include architects, except landscape and na-



val; civil engineers; cost estimators; landscape architects; and engineering and natural sciences managers.

### Sources of Additional Information

For information about constructor certification, contact:

➤ American Institute of Constructors, 717 Princess St., Alexandria, VA 22314. Internet: <http://www.aicnet.org>

For information about construction management and construction manager certification, contact:

➤ Construction Management Association of America, 7918 Jones Branch Dr., Suite 540, McLean, VA 22102.

Internet: <http://www.cmaanet.org>

Information on accredited construction science and management educational programs and accreditation requirements is available from:

➤ American Council for Construction Education, 1717 North Loop 1604 E, Suite 320, San Antonio, TX 78232.

Internet: <http://www.acce-hq.org>

➤ National Center for Construction Education and Research, P.O. Box 141104, Gainesville, FL 32614.

Internet: <http://www.nccer.org>

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## Cost Estimators

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(O\*NET 13-1051.00)

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### Significant Points

- About 62 percent of cost estimators work in the construction industry, and another 15 percent are employed in manufacturing industries.
- Voluntary certification can be valuable to cost estimators; some individual employers may require professional certification for employment.
- Very good employment opportunities are expected.
- In construction and manufacturing, job prospects should be best for those with industry work experience and a bachelor's degree in a related field.

### Nature of the Work

Accurately forecasting the scope, cost, and duration of future projects is vital to the survival of any business. Cost estimators develop the cost information that business owners or managers need to make a bid for a contract or to decide on the profitability of a proposed new product or project. They also determine which endeavors are making a profit.

Regardless of the industry in which they work, estimators compile and analyze data on all of the factors that can influence costs, such as materials, labor, location, duration of the project, and special machinery requirements, including computer hardware and software. Job duties vary widely depending on the type and size of the project.

The methods for estimating costs can differ greatly by industry. On a construction project, for example, the estimating process begins with the decision to submit a bid. After reviewing various preliminary drawings and specifications, the estimator

visits the site of the proposed project. The estimator needs to gather information on access to the site; the availability of electricity, water, and other services; and surface topography and drainage. The estimator usually records this information in a signed report that is included in the final project estimate.

After the site visit, the estimator determines the quantity of materials and labor the firm will need to furnish. This process, called the quantity survey or “takeoff,” involves completing standard estimating forms, filling in dimensions, numbers of units, and other information. A cost estimator working for a general contractor, for example, estimates the costs of all of the items that the contractor must provide. Although subcontractors estimate their costs as part of their own bidding process, the general contractor’s cost estimator often analyzes bids made by subcontractors. Also during the takeoff process, the estimator must make decisions concerning equipment needs, the sequence of operations, the size of the crew required, and physical constraints at the site. Allowances for wasted materials, inclement weather, shipping delays, and other factors that may increase costs also must be incorporated in the estimate.

After completing the quantity surveys, the estimator prepares a cost summary for the entire project, including the costs of labor, equipment, materials, subcontracts, overhead, taxes, insurance, markup, and any other costs that may affect the project. The chief estimator then prepares the bid proposal for submission to the owner.

Construction cost estimators also may be employed by the project’s architect or owner to estimate costs or to track actual costs relative to bid specifications as the project develops. Estimators often specialize in large construction companies employing more than one estimator. For example, one may estimate only electrical work and another may concentrate on excavation, concrete, and forms.

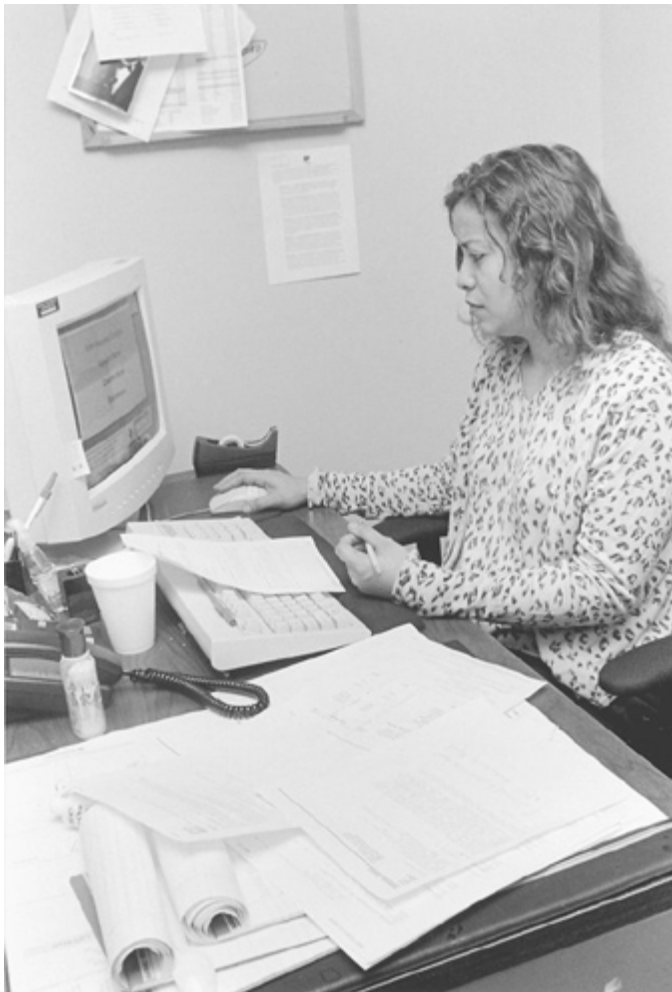
In manufacturing and other firms, cost estimators usually are assigned to the engineering, cost, or pricing department. The estimator’s goal is to accurately estimate the costs associated with making products. The job may begin when management requests an estimate of the costs associated with a major redesign of an existing product or the development of a new product or production process. When estimating the cost of developing a new product, for example, the estimator works with engineers, first reviewing blueprints or conceptual drawings to determine the machining operations, tools, gauges, and materials that would be required. The estimator then prepares a parts list and determines whether it is more efficient to produce or to purchase the parts. To do this, the estimator asks for price information from potential suppliers. The next step is to determine the cost of manufacturing each component of the product. Some high-technology products require a considerable amount of computer programming during the design phase. The cost of software development is one of the fastest growing and most difficult activities to estimate. As a result, some cost estimators now specialize in estimating only computer software development and related costs.

The cost estimator then prepares time-phase charts and learning curves. Time-phase charts indicate the time required for tool design and fabrication, tool “debugging”—finding and correcting all problems—manufacturing of parts, assembly, and test-

ing. Learning curves graphically represent the rate at which the performance of workers producing parts for the new product improves with practice. These curves are commonly called “cost reduction” curves, because many problems—such as engineering changes, rework, shortages of parts, and lack of operator skills—diminish as the number of units produced increases, resulting in lower unit costs.

Using all of this information, the estimator then calculates the standard labor hours necessary to produce a specified number of units. Standard labor hours are then converted to dollar values, to which are added factors for waste, overhead, and profit to yield the unit cost in dollars. The estimator then compares the cost of purchasing parts with the firm’s estimated cost of manufacturing them to determine which is cheaper.

Computers play an integral role in cost estimation because estimating often involves complex mathematical calculations and requires advanced mathematical techniques. For example, to undertake a parametric analysis (a process used to estimate costs per unit based on square footage or other specific requirements of a project), cost estimators use a computer database containing information on the costs and conditions of many other similar projects. Although computers cannot be used for the entire estimating process, they can relieve estimators of much of the drudgery associated with routine, repetitive, and time-consuming



*Cost estimators analyze data on factors that influence costs to determine whether a contract is viable.*

calculations. New and improved cost estimating software has led to more efficient computations, leaving estimators greater time to visit and analyze projects.

Operations research, production control, cost, and price analysts who work for government agencies may do significant amounts of cost estimating in the course of their regular duties. In addition, the duties of construction managers may include estimating costs. (For more information, see the statements on operations research analysts and construction managers elsewhere in the *Handbook*.)

**Work environment.** Although estimators spend most of their time in a comfortable office, construction estimators also visit worksites that can be dusty, dirty, and occasionally hazardous. Likewise, estimators in manufacturing spend time on the factory floor, where it also can be noisy and dirty. In some industries, frequent travel between a firm’s headquarters and its subsidiaries or subcontractors may be required.

Estimators normally work a 40-hour week, but overtime is common. Cost estimators often work under pressure and stress, especially when facing bid deadlines. Inaccurate estimating can cause a firm to lose a bid or to lose money on a job that was not accurately estimated.

### **Training, Other Qualifications, and Advancement**

Job entry requirements for cost estimators vary by industry. In the construction industry, employers increasingly prefer to hire cost estimators with a bachelor’s degree in construction science, construction management, or building science, although it is also possible for experienced construction workers to become cost estimators. Employers in manufacturing usually prefer someone with a bachelor’s degree in mathematics, statistics, or engineering.

**Education and training.** In the construction industry, employers increasingly prefer individuals with a degree in building science, construction management, or construction science, all of which usually include several courses in cost estimating. Most construction estimators also have considerable construction experience, gained through work in the industry, internships, or cooperative education programs. Applicants with a thorough knowledge of construction materials, costs, and procedures in areas ranging from heavy construction to electrical work, plumbing systems, or masonry work have a competitive edge.

In manufacturing industries, employers prefer to hire individuals with a degree in engineering, physical science, operations research, mathematics, or statistics or in accounting, finance, business, economics, or a related subject. In most industries, experience in quantitative techniques is important.

Many colleges and universities include cost estimating as part of bachelor’s and associate degree curriculums in civil engineering, industrial engineering, and construction management or construction engineering technology. In addition, cost estimating is often part of master’s degree programs in construction science or construction management. Organizations representing cost estimators, such as the Association for the Advancement of Cost Engineering (AACE International) and the Society of Cost Estimating and Analysis (SCEA), also sponsor educational and professional development programs. These programs help stu-

## Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Cost estimators.....	13-1051	221,000	262,000	41,000	19

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

dents, estimators-in-training, and experienced estimators learn about changes affecting the profession. Specialized courses and programs in cost-estimating techniques and procedures also are offered by many technical schools, community colleges, and universities.

Estimators also receive much training on the job because every company has its own way of handling estimates. Working with an experienced estimator, newcomers become familiar with each step in the process. Those with no experience reading construction specifications or blueprints first learn that aspect of the work. Then they may accompany an experienced estimator to the construction site or shop floor, where they observe the work being done, take measurements, or perform other routine tasks. As they become more knowledgeable, estimators learn how to tabulate quantities and dimensions from drawings and how to select the appropriate prices for materials.

**Other qualifications.** Cost estimators should have an aptitude for mathematics; be able to quickly analyze, compare, and interpret detailed but sometimes poorly defined information; and be able to make sound and accurate judgments based on this information. The ability to focus on details, while analyzing and overcoming larger obstacles, is essential. Assertiveness and self-confidence in presenting and supporting conclusions are also important, as are strong communications and interpersonal skills, because estimators may work as part of a team alongside managers, owners, engineers, and design professionals. Cost estimators also need knowledge of computers, including word-processing and spreadsheet packages. In some instances, familiarity with special estimation software or programming skills also may be required.

**Certification and advancement.** Voluntary certification can be valuable to cost estimators because it provides professional recognition of the estimator's competence and experience. In some instances, individual employers may even require professional certification for employment. Both AACE International and SCEA administer certification programs. To become certified, estimators usually must have between 2 and 8 years of estimating experience and must pass an examination. In addition, certification requirements may include the publication of at least one article or paper in the field.

For most estimators, advancement takes the form of higher pay and prestige. Some move into management positions, such as project manager for a construction firm or manager of the industrial engineering department for a manufacturer. Others may go into business for themselves as consultants, providing estimating services for a fee to government or to construction or manufacturing firms.

### Employment

Cost estimators held about 221,000 jobs in 2006. About 62 percent of estimators were in the construction industry, and another

15 percent were employed in manufacturing. The remainder worked in a wide range of other industries.

Cost estimators work throughout the country, usually in or near major industrial, commercial, and government centers and in cities and suburban areas undergoing rapid change or development.

### Job Outlook

Employment of cost estimators is expected to grow faster than average. Very good employment opportunities are expected.

**Employment change.** Employment is expected to grow by 19 percent between 2006 and 2016, which is faster than the average for all occupations. Employment growth in the construction industry, in which most cost estimators are employed, will account for the majority of new jobs in this occupation. Construction and repair of highways, streets, bridges, subway systems, airports, water and sewage systems, and electric power plants and transmission lines will stimulate demand for many more cost estimators. Similarly, increasing population and business growth will result in more construction of residential homes, office buildings, shopping malls, hospitals, schools, restaurants, and other structures that require cost estimators. As the population ages, the demand for nursing and extended-care facilities will also increase. The growing complexity of construction projects will also boost demand for cost estimators as a larger number of workers specialize in a particular area of construction.

**Job prospects.** Because there are no formal bachelor's degree programs in cost estimating, some employers have difficulty recruiting qualified cost estimators, resulting in very good employment opportunities. Job prospects in construction should be best for those who have a degree in construction science, construction management, or building science plus practical experience in the various phases of construction or in a specialty craft area. For cost estimating jobs in manufacturing, those with degrees in mathematics, statistics, engineering, accounting, business administration, or economics should have the best job prospects.

In addition to job openings arising from employment growth, many additional openings should result annually from the need to replace workers who transfer to other occupations due to the sometimes stressful nature of the work, or who retire or leave the occupation for other reasons.

Employment of cost estimators, like that of many other construction workers, is sensitive to the fluctuations of the economy. Workers in these trades may experience periods of unemployment when the overall level of construction falls. On the other hand, shortages of these workers may occur in some areas during peak periods of building activity.

### Earnings

Salaries of cost estimators vary widely by experience, education, size of firm, and industry. Median annual earnings of wage and



salary cost estimators in May 2006 were \$52,940. The middle 50 percent earned between \$40,320 and \$69,460. The lowest 10 percent earned less than \$31,600, and the highest 10 percent earned more than \$88,310. Median annual earnings in the industries employing the largest numbers of cost estimators were:

Nonresidential building construction .....	\$60,870
Building equipment contractors .....	56,170
Foundation, structure, and building exterior contractors.....	52,520
Residential building construction .....	52,460
Building finishing contractors .....	51,610

According to a July 2007 salary survey by the National Association of Colleges and Employers, those with bachelor's degrees in construction science/management received job offers averaging \$46,930 a year.

### Related Occupations

Other workers who quantitatively analyze information include accountants and auditors; budget analysts; claims adjusters, appraisers, examiners, and investigators; economists; financial analysts and personal financial advisors; insurance underwriters; loan officers; market and survey researchers; and operations research analysts. In addition, the duties of industrial production managers and construction managers also may involve analyzing costs.

### Sources of Additional Information

Information about career opportunities, certification, educational programs, and cost-estimating techniques may be obtained from the following organizations:

- Association for the Advancement of Cost Engineering (AACE International), 209 Prairie Ave., Suite 100, Morgantown, WV 26501. Internet: <http://www.aacei.org>
- Society of Cost Estimating and Analysis, 527 Maple Ave. East, Suite 301, Vienna, VA 22180. Internet: <http://www.sceaonline.net>

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## Education Administrators

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(O\*NET 11-9031.00, 11-9032.00, 11-9033.00, 11-9039.99)

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### Significant Points

- Many jobs require a master's or doctoral degree and experience in a related occupation, such as teaching or admissions counseling.
- Strong interpersonal and communication skills are essential because much of an administrator's job involves working and collaborating with others.
- Excellent opportunities are expected since a large proportion of education administrators is expected to retire over the next 10 years.

### Nature of the Work

Successful operation of an educational institution requires competent administrators. Education administrators provide

instructional leadership and manage the day-to-day activities in schools, preschools, day care centers, and colleges and universities. They also direct the educational programs of businesses, correctional institutions, museums, and job training and community service organizations. (College presidents and school superintendents are covered in the *Handbook* statement on general managers and top executives.)

Education administrators set educational standards and goals and establish the policies and procedures to achieve them. They also supervise managers, support staff, teachers, counselors, librarians, coaches, and other employees. They develop academic programs, monitor students' educational progress, train and motivate teachers and other staff, manage career counseling and other student services, administer recordkeeping, prepare budgets, and perform many other duties. They also handle relations with parents, prospective and current students, employers, and the community. In an organization such as a small day care center, one administrator may handle all these functions. In universities or large school systems, responsibilities are divided among many administrators, each with a specific function.

Educational administrators who manage elementary, middle, and secondary schools are called *principals*. They set the academic tone and actively work with teachers to develop and maintain high curriculum standards, develop mission statements, and set performance goals and objectives. Principals confer with staff to advise, explain, or answer procedural questions. They hire, evaluate, and help improve the skills of teachers and other staff. They visit classrooms, observe teaching methods, review instructional objectives, and examine learning materials. Principals must use clear, objective guidelines for teacher appraisals, because pay often is based on performance ratings.

Principals also meet and interact with other administrators, students, parents, and representatives of community organizations. Decision-making authority has increasingly shifted from school district central offices to individual schools. School principals have greater flexibility in setting school policies and goals, but when making administrative decisions they must pay attention to the concerns of parents, teachers, and other members of the community.

Preparing budgets and reports on various subjects, including finances and attendance, and overseeing the requisition and allocation of supplies also is an important responsibility of principals. As school budgets become tighter, many principals have become more involved in public relations and fundraising to secure financial support for their schools from local businesses and the community.

Principals must take an active role to ensure that students meet national, State, and local academic standards. Many principals develop partnerships with local businesses and school-to-work transition programs for students. Increasingly, principals must be sensitive to the needs of the rising number of non-English speaking and culturally diverse student body. In some areas, growing enrollments also are a cause for concern because they lead to overcrowding at many schools. When addressing problems of inadequate resources, administrators serve as advocates for the building of new schools or the repair of existing ones. During summer months, principals are responsible for planning

for the upcoming year, overseeing summer school, participating in workshops for teachers and administrators, supervising building repairs and improvements, and working to make sure the school has adequate staff for the school year.

Schools continue to be involved with students' emotional welfare as well as their academic achievement. As a result, principals face responsibilities outside the academic realm. For example, many schools have growing numbers of students from dual-income and single-parent families or students who are themselves teenage parents. To support these students and their families, some schools have established before- and after-school childcare programs or family resource centers, which also may offer parenting classes and social service referrals. With the help of community organizations, some principals have established programs to combat increases in crime, drug and alcohol abuse, and sexually transmitted diseases among students.

*Assistant principals* aid the principal in the overall administration of the school. Some assistant principals hold this position for several years, during which time they prepare for advancement to principal; others are assistant principals throughout their careers. They are primarily responsible for scheduling student classes, ordering textbooks and supplies, and coordinating transportation, custodial, cafeteria, and other support services. They usually handle student discipline and attendance problems, social and recreational programs, and health and safety matters. They also may counsel students on personal, educational, or vocational matters. With the advent of site-based management, assistant principals are playing a greater role in ensuring the academic success of students by helping to develop new curriculums, evaluating teachers, and dealing with school-community relations—responsibilities previously assumed solely by the principal. The number of assistant principals that a school employs may vary, depending on the number of students.

*Administrators* in school district central offices oversee public schools under their jurisdiction. This group includes those who direct subject-area programs such as English, music, vocational education, special education, and mathematics. They supervise instructional coordinators and curriculum specialists, and work with them to evaluate curriculums and teaching techniques and improve them. (Instructional coordinators are covered elsewhere in the *Handbook*.) Administrators also may oversee career counseling programs and testing that measures students' abilities and helps to place them in appropriate classes. Others may also direct programs such as school psychology, athletics, curriculum and instruction, and professional development. With site-based management, administrators have transferred primary responsibility for many of these programs to the principals, assistant principals, teachers, instructional coordinators, and other staff in the schools.

In preschools and childcare centers, which are usually much smaller than other educational institutions, the director or supervisor of the school or center often serves as the sole administrator. Their job is similar to that of other school administrators in that they oversee daily activities and operation of the schools, hire and develop staff, and make sure that the school meets required regulations and educational standards.

In colleges and universities, *provosts*, also known as *chief academic officers*, assist presidents, make faculty appointments and tenure decisions, develop budgets, and establish academic policies and programs. With the assistance of *academic deans* and *deans of faculty*, they also direct and coordinate the activities of deans of individual colleges and chairpersons of academic departments. Fundraising is the chief responsibility of the *director of development* and also is becoming an essential part of the job for all administrators.

*College or university department heads* or *chairpersons* are in charge of departments that specialize in particular fields of study, such as English, biological science, or mathematics. In addition to teaching, they coordinate schedules of classes and teaching assignments; propose budgets; recruit, interview, and hire applicants for teaching positions; evaluate faculty members; encourage faculty development; serve on committees; and perform other administrative duties. In overseeing their departments, chairpersons must consider and balance the concerns of faculty, administrators, and students.

Higher education administrators also direct and coordinate the provision of student services. *Vice presidents of student affairs* or *student life*, *deans of students*, and *directors of student services* may direct and coordinate admissions, foreign student services, health and counseling services, career services, financial aid, and housing and residential life, as well as social, recreational, and related programs. In small colleges, they may counsel students. In larger colleges and universities, separate administrators may handle each of these services. *Registrars* are custodians of students' records. They register students, record grades, prepare student transcripts, evaluate academic records, assess and collect tuition and fees, plan and implement commencement, oversee the preparation of college catalogs and schedules of classes, and analyze enrollment and demographic statistics. *Directors of admissions* manage the process of recruiting, evaluating, and admitting students, and work



*Most education administrators begin their careers as teachers.*

closely with *financial aid directors*, who oversee scholarship, fellowship, and loan programs. Registrars and admissions officers at most institutions need computer skills because they use electronic student information systems. For example, for those whose institutions present college catalogs, schedules, and other information on the Internet, knowledge of online resources, imaging, and other computer skills is important. *Athletic directors* plan and direct intramural and intercollegiate athletic activities, seeing to publicity for athletic events, preparation of budgets, and supervision of coaches. Other increasingly important administrators direct public relations, distance learning, and technology.

**Work environment.** Education administrators hold leadership positions with significant responsibility. Most find working with students extremely rewarding, but as the responsibilities of administrators have increased in recent years, so has the stress. Coordinating and interacting with faculty, parents, students, community members, business leaders, and State and local policymakers can be fast-paced and stimulating, but also stressful and demanding. Principals and assistant principals, whose varied duties include discipline, may find working with difficult students to be challenging. They are also increasingly being held accountable for ensuring that their schools meet recently imposed State and Federal guidelines for student performance and teacher qualifications.

About 1 in 3 education administrators work more than 40 hours a week and often supervise school activities at night and on weekends. Most administrators work year round, although some work only during the academic year.

### **Training, Other Qualifications, and Advancement**

Most education administrators begin their careers as teachers and prepare for advancement into education administration by completing a master's or doctoral degree. Because of the diversity of duties and levels of responsibility, educational backgrounds and experience vary considerably among these workers.

**Education and training.** Principals, assistant principals, central office administrators, academic deans, and preschool directors usually have held teaching positions before moving into administration. Some teachers move directly into principal positions; others first become assistant principals, or gain experience in other administrative jobs at either the school or district level in positions such as department head, curriculum specialist, or subject matter advisor. In some cases, administrators move up from related staff jobs such as recruiter, school counselor, librarian, residence hall director, or financial aid or admissions counselor.

In most public schools, principals, assistant principals, and school district administrators need a master's degree in education administration or educational leadership. Some principals and central office administrators have a doctorate or specialized degree in education administration. In private schools, some principals and assistant principals hold only a bachelor's degree, but the majority have a master's or doctoral degree.

Educational requirements for administrators of preschools and childcare centers vary depending on the setting of the program and the State of employment. Administrators who oversee

preschool programs in public schools are often required to have at least a bachelor's degree. Child care directors who supervise private programs are usually not required to have a degree; however, most States require a preschool education credential, which often includes some postsecondary coursework.

College and university academic deans and chairpersons usually advance from professorships in their departments, for which they need a master's or doctoral degree; further education is not typically necessary. Admissions, student affairs, and financial aid directors and registrars sometimes start in related staff jobs with bachelor's degrees—any field usually is acceptable—and obtain advanced degrees in college student affairs, counseling, or higher education administration. A Ph.D. or Ed.D. usually is necessary for top student affairs positions. Computer literacy and a background in accounting or statistics may be assets in admissions, records, and financial work.

Advanced degrees in higher education administration, educational leadership, and college student affairs are offered in many colleges and universities. Education administration degree programs include courses in school leadership, school law, school finance and budgeting, curriculum development and evaluation, research design and data analysis, community relations, politics in education, and counseling. The National Council for Accreditation of Teacher Education (NCATE) and the Educational Leadership Constituent Council (ELCC) accredit programs designed for elementary and secondary school administrators. Although completion of an accredited program is not required, it may assist in fulfilling licensure requirements.

**Licensure and certification.** Most States require principals to be licensed as school administrators. License requirements vary by State, but nearly all States require either a master's degree or some other graduate-level training. Some States also require candidates for licensure to pass a test. On-the-job training, often with a mentor, is increasingly required or recommended for new school leaders. Some States require administrators to take continuing education courses to keep their license, thus ensuring that administrators have the most up-to-date skills. The number and types of courses required to maintain licensure vary by State. Principals in private schools are not subject to State licensure requirements.

Nearly all States require child care and preschool center directors to be licensed. Licensing usually requires a number of years of experience or hours of coursework or both. Sometimes, it requires a college degree. Often, directors are also required to earn a general preschool education credential, such as the Child Development Associate credential (CDA) sponsored by the Council for Professional Recognition, or some other credential designed specifically for directors.

One credential specifically for directors is the National Administration Credential, offered by the National Child Care Association. The credential requires experience and training in child care center management.

There are usually no licensing requirements for administrators at postsecondary institutions.

**Other qualifications.** To be considered for education administrator positions, workers must first prove themselves in their current jobs. In evaluating candidates, supervisors look for leadership, determination, confidence, innovativeness, and



**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Education administrators .....	11-9030	443,000	496,000	53,000	12
Education administrators, preschool and child care center/ program .....	11-9031	56,000	69,000	13,000	24
Education administrators, elementary and secondary school .....	11-9032	226,000	243,000	17,000	8
Education administrators, postsecondary.....	11-9033	131,000	150,000	19,000	14
Education administrators, all other .....	11-9039	30,000	33,000	3,700	13

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

motivation. The ability to make sound decisions and to organize and coordinate work efficiently is essential. Because much of an administrator’s job involves interacting with others—such as students, parents, teachers, and the community—a person in such a position must have strong interpersonal skills and be an effective communicator and motivator. Knowledge of leadership principles and practices, gained through work experience and formal education, is important. A familiarity with computer technology is a necessity for principals, who are required to gather information and coordinate technical resources for their students, teachers, and classrooms.

**Advancement.** Education administrators advance through promotion to higher level administrative positions or by transferring to comparable positions at larger schools or systems. They also may become superintendents of school systems or presidents of educational institutions.

**Employment**

Education administrators held about 443,000 jobs in 2006. Of these, 56,000 were preschool or child care administrators, 226,000 were elementary or secondary school administrators, and 131,000 were postsecondary administrators. The great majority—over 80 percent—worked in public or private educational institutions. Most of the remainder worked in child daycare centers, religious organizations, job training centers, and businesses and other organizations that provided training for their employees.

**Job Outlook**

Employment of education administrators is projected to grow about as fast as average, as education and training take on greater importance in everyone’s lives. Job opportunities for many of these positions should be excellent because a large proportion of education administrators are expected to retire over the next 10 years.

**Employment change.** Employment of education administrators is expected to grow by 12 percent between 2006 and 2016, about as fast as the average for all occupations, primarily due to growth in enrollments of school-age children. Enrollment of students in elementary and secondary schools is expected to grow slowly over the next decade, which will limit the growth of principals and other administrators in these schools. However, the number of administrative positions will continue to increase as more administrative responsibilities are placed on individual schools, particularly related to monitoring student achievement. Preschool and childcare center administrators are expected to

experience substantial growth due to increasing enrollments in formal child care programs as fewer young children are cared for in private homes. Additionally, as more States implement or expand public preschool programs, more preschool directors will be needed.

The number of students at the postsecondary level is projected to grow more rapidly than other student populations, creating significant demand for administrators at that level. A significant portion of the growth will occur in the private and for-profit segments of higher education. Many of these schools cater to working adults who might not ordinarily participate in postsecondary education. These schools allow students to earn a degree, receive job-specific training, or update their skills in a convenient manner, such as through part-time programs or distance learning. As the number of these schools continues to grow, more administrators will be needed to oversee them.

**Job prospects.** Principals and assistant principals should have very favorable job prospects. A sharp increase in responsibilities in recent years has made the job more stressful and has discouraged some teachers from taking positions in administration. Principals are now being held more accountable for the performance of students and teachers, while at the same time they are required to adhere to a growing number of government regulations. In addition, overcrowded classrooms, safety issues, budgetary concerns, and teacher shortages in some areas all are creating additional stress for administrators. Many teachers feel that the increase in pay for becoming an administrator is not high enough to compensate for the greater responsibilities.

Opportunities may vary by region of the country. Enrollments are expected to increase the fastest in the West and South, where the population is growing faster, and to decline or remain stable in the Northeast and the Midwest. School administrators also are in greater demand in rural and urban areas, where pay is generally lower than in the suburbs.

Although competition among faculty for prestigious positions as academic deans and department heads is likely to remain keen, fewer applicants are expected for nonacademic administrative jobs, such as director of admissions or student affairs. Furthermore, many people are discouraged from seeking administrator jobs by the requirement that they have a master’s or doctoral degree in education administration—as well as by the opportunity to earn higher salaries in other occupations.

**Earnings**

In May 2006, elementary and secondary school administrators had median annual earnings of \$77,740; postsecondary school

administrators had median annual earnings of \$73,990, while administrators in preschool and childcare centers earned a median of \$37,740 per year. Salaries of education administrators depend on several factors, including the location and enrollment level in the school or school district.

According to a survey of public schools, conducted by the Educational Research Service, average salaries for principals and assistant principals in the 2006-07 school year were as follows:

Principals:	
Senior high school.....	\$92,965
Jr. high/middle school.....	87,866
Elementary school.....	82,414
Assistant principals:	
Senior high school.....	\$75,121
Jr. high/middle school.....	73,020
Elementary school.....	67,735

According to the College and University Professional Association for Human Resources, median annual salaries for selected administrators in higher education in 2006-07 were as follows:

Chief academic officer.....	\$140,595
Academic deans:	
Business.....	\$135,080
Arts and sciences.....	121,942
Graduate programs.....	120,120
Education.....	117,450
Nursing.....	112,497
Health-related professions.....	110,346
Continuing education.....	99,595
Occupational studies/vocational education.....	83,108

Other administrators:	
Chief development officer.....	\$125,000
Dean of students.....	80,012
Director, student financial aid.....	68,000
Registrar.....	66,008
Director, student activities.....	50,000

Benefits for education administrators are generally very good. Many get 4 or 5 weeks of vacation every year and have generous health and pension packages. Many colleges and universities offer free tuition to employees and their families.

**Related Occupations**

Education administrators apply organizational and leadership skills to provide services to individuals. Workers in related occupations include administrative services managers; office and administrative support worker supervisors and managers; and human resource, training, and labor relations managers and specialists. Education administrators also work with students and have backgrounds similar to those of counselors; librarians; instructional coordinators; teachers—preschool, kindergarten, elementary, middle, and secondary; and teachers—postsecondary.

**Sources of Additional Information**

For information on principals, contact:

➤ The National Association of Elementary School Principals, 1615 Duke St., Alexandria, VA 22314-3483.

Internet: <http://www.naesp.org>

➤ The National Association of Secondary School Principals, 1904 Association Drive, Reston, VA 20191-1537.

Internet: <http://www.nassp.org>

For a list of nationally recognized programs in elementary and secondary educational administration, contact:

➤ The Educational Leadership Constituent Council, 1904 Association Drive, Reston, VA 20191.

Internet: <http://www.npbea.org/ELCC/index.html>

For information on collegiate registrars and admissions officers, contact:

➤ American Association of Collegiate Registrars and Admissions Officers, One Dupont Circle NW., Suite 520, Washington, DC 20036-1171. Internet: <http://www.aacrao.org>

For information on professional development and graduate programs for college student affairs administrators, contact:

➤ NASPA, Student Affairs Administrators in Higher Education, 1875 Connecticut Ave. NW., Suite 418, Washington, DC 20009.

Internet: <http://www.naspa.org>

For information on the National Administrator Credential for child care directors, contact:

➤ National Child Care Association, 2025 M St NW., Suite 800, Washington, DC 20036. Internet: <http://www.nccanet.org>

For information on the Child Development Associate Credential, contact:

➤ Council for Professional Recognition, 2460 16th St., NW., Washington, DC 20009. Internet: <http://www.cdacouncil.org>

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## Engineering and Natural Sciences Managers

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(O\*NET 11-9041.00, 11-9121.00)

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**Significant Points**

- Most engineering and natural sciences managers have formal education and work experience as engineers, scientists, or mathematicians.
- Projected employment growth for engineering and natural sciences managers is closely related to growth in employment of the engineers and scientists they supervise and the industries in which they work.
- Opportunities will be best for workers with strong communication and business management skills.

**Nature of the Work**

Engineering and natural sciences managers plan, coordinate, and direct research, design, and production activities. They may supervise engineers, scientists, and technicians, along with support personnel. These managers use their knowledge of engineering and natural sciences to oversee a variety of activities. They determine scientific and technical goals within broad outlines provided by top executives, who are discussed elsewhere in the *Handbook*. These goals may include improv-

ing manufacturing processes, advancing scientific research, or developing new products. Managers make detailed plans to accomplish these goals. For example, they may develop the overall concepts of a new product or identify technical problems preventing the completion of a project.

To perform effectively, these managers also must apply knowledge of administrative procedures, such as budgeting, hiring, and supervision. They propose budgets for projects and programs and determine staff, training, and equipment needs. They hire and assign scientists, engineers, and support personnel to carry out specific parts of each project. They also supervise the work of these employees, check the technical accuracy of their work and the soundness of their methods, review their output, and establish administrative procedures and policies—including environmental standards, for example.

In addition, these managers use communication skills extensively. They spend a great deal of time coordinating the activities of their unit with those of other units or organizations. They confer with higher levels of management; with financial, production, marketing, and other managers; and with contractors and equipment and materials suppliers.

*Engineering managers* may supervise people who design and develop machinery, products, systems, and processes. They might also direct and coordinate production, operations, quality assurance, testing, or maintenance in industrial plants. Many are plant engineers, who direct and coordinate the design, installation, operation, and maintenance of equipment and machinery in industrial plants. Others manage research and development teams that produce new products and processes or improve existing ones.

*Natural sciences managers* oversee the work of life and physical scientists, including agricultural scientists, chemists, biologists, geologists, medical scientists, and physicists. These managers direct research and development projects and coordinate activities such as testing, quality control, and production. They may work on basic research projects or on commercial activities. Science managers sometimes conduct their own research in addition to managing the work of others.

**Work environment.** Engineering and natural sciences managers spend most of their time in an office. Some managers,



*Engineering and science managers must have well-developed business and communication skills.*

however, also may work in laboratories, where they may be exposed to the same conditions as research scientists, or in industrial plants, where they may be exposed to the same conditions as production workers. Most managers work at least 40 hours a week and may work much longer on occasion to meet project deadlines. Some may experience considerable pressure to meet technical or scientific goals on a short deadline or within a tight budget.

### **Training, Other Qualifications, and Advancement**

Strong technical knowledge is essential for engineering and natural sciences managers, who must understand and guide the work of their subordinates and explain the work in nontechnical terms to senior management and potential customers. Therefore, most managers have formal education and work experience as an engineer, scientist, or mathematician.

**Education and training.** These managers usually have education similar to that of the workers they supervise. Most engineering managers, for example, begin their careers as engineers, after completing a bachelor's degree in the field. Many engineers gain business management skills by completing a master's degree in engineering management (MEM) or business administration (MBA). Employers often pay for such training. In large firms, some courses required in these degree programs may be offered onsite. Typically, engineers who prefer to manage in technical areas pursue an MEM, and those interested in less technical management earn an MBA.

Similarly, many science managers begin their careers as scientists, such as chemists, biologists, geologists, or mathematicians. Most scientists and mathematicians engaged in basic research have a Ph.D. degree; some who work in applied research and other activities may have a bachelor's or master's degree. Graduate programs allow scientists to augment their undergraduate training with instruction in other fields, such as management or computer technology. Natural science managers interested in more technical management may earn traditional master's or Ph.D. degrees in natural sciences or master's degrees in science that incorporate business management skills. Those interested in more general management may pursue an MBA. Given the rapid pace of scientific developments, science managers must continuously upgrade their knowledge.

**Other qualifications.** Engineering and natural sciences managers must be specialists in the work they supervise. To advance to these positions, engineers and scientists generally must gain experience and assume management responsibility. To fill management positions, employers seek engineers and scientists who possess administrative and communication skills in addition to technical knowledge in their specialty. In fact, because engineering and natural sciences managers must effectively lead groups and coordinate projects, they usually need excellent communication and administrative skills.

**Advancement.** Engineering and natural sciences managers may advance to progressively higher leadership positions within their disciplines. Some may become managers in nontechnical areas such as marketing, human resources, or sales. In high technology firms, managers in nontechnical areas often must possess the same specialized knowledge as do managers in technical areas. For example, employers in an engineering



**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Engineering and natural sciences managers .....	—	228,000	246,000	18,000	8
Engineering managers.....	11-9041	187,000	201,000	14,000	7
Natural sciences managers .....	11-9121	41,000	45,000	4,600	11

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

firm may prefer to hire experienced engineers as sales workers because the complex services offered by the firm can be marketed only by someone with specialized engineering knowledge. Such sales workers could eventually advance to jobs as sales managers.

**Employment**

Engineering and natural sciences managers held about 228,000 jobs in 2006. Manufacturing industries employed 38 percent of engineering and natural sciences managers. Manufacturing industries with the largest employment are those which produce computer and electronic equipment and those which produce transportation equipment, including aerospace products and parts. Another 31 percent worked in professional, scientific, and technical services industries, primarily for firms providing architectural, engineering, and related services and firms providing scientific research and development services. Other large employers include Federal, State, and local government agencies.

**Job Outlook**

Employment of engineering and natural sciences managers is projected to grow about as fast as the average for all occupations, similar to the growth rate of engineers and life and physical scientists. Opportunities will be best for workers with strong communication and business management skills.

**Employment change.** Employment of engineering and natural sciences managers is expected to grow 8 percent over the 2006-16 decade, about as fast as the average for all occupations. Projected employment growth for engineering and natural sciences managers should be in line with growth of the engineers and scientists they supervise and the industries in which they work. Because many employers find it more efficient to contract engineering and science work to specialty firms, there should be strong demand for engineering managers in the scientific research and development services industry and for both engineering and natural science managers in the architectural, engineering, and related services industry.

**Job prospects.** Opportunities for engineering managers should be better in rapidly growing areas of engineering—such as environmental and biomedical engineering—than in more slowly growing areas—such as electronics and materials engineering. Opportunities for natural sciences managers should likewise be best in the rapidly growing medical and environmental sciences. (See the statements on engineers and life and physical scientists elsewhere in the *Handbook*.) Engineers and scientists with advanced technical knowledge and strong communication skills will be in the best position to become managers. Because engineering and natural sci-

ences managers are involved in the financial, production, and marketing activities of their firm, business management skills are also advantageous for those seeking management positions. In addition to those openings resulting from employment growth, job openings will result from the need to replace managers who retire or move into other occupations.

**Earnings**

Earnings for engineering and natural sciences managers vary by specialty and by level of responsibility. Median annual earnings of wage and salary engineering managers were \$105,430 in May 2006. The middle 50 percent earned between \$84,090 and \$130,170. Median annual earnings in the industries employing the largest numbers of engineering managers were:

Semiconductor and other electronic component manufacturing .....	\$120,740
Federal executive branch .....	116,140
Navigational, measuring, electromedical, and control instruments manufacturing .....	115,150
Aerospace product and parts manufacturing.....	111,020
Engineering services.....	103,570

Median annual earnings of wage and salary natural sciences managers were \$100,080 in May 2006. The middle 50 percent earned between \$77,320 and \$130,900. Median annual earnings in the industries employing the largest numbers of natural sciences managers were:

Research and development in the physical, engineering, and life sciences.....	\$120,780
Pharmaceutical and medicine manufacturing .....	111,070
Federal executive branch .....	96,100
Architectural, engineering, and related services .....	88,990
State government .....	65,570

In addition, engineering and natural sciences managers, especially those at higher levels, often receive more benefits—such as expense accounts, stock option plans, and bonuses—than do nonmanagerial workers in their organizations.

**Related Occupations**

The work of engineering and natural sciences managers is closely related to that of engineers; mathematicians; and physical and life scientists, including agricultural and food scientists, atmospheric scientists, biological scientists, conservation scientists and foresters, chemists and materials scientists, environmental scientists and hydrologists, geoscien-

tists, medical scientists, and physicists and astronomers. It also is related to the work of other managers, especially top executives.

### Sources of Additional Information

For information about a career as an engineering and natural sciences manager, contact the sources of additional information for engineers, life scientists, and physical scientists that are listed at the end of statements on these occupations elsewhere in the *Handbook*.

Additional information on science and engineering master's degrees is available from:

► Commission on Professionals in Science and Technology, 1200 New York Ave. NW., Suite 113, Washington, DC 20005.

Internet: <http://www.sciencemasters.org>

To learn more about managing scientists and engineers in research and development, see the *Occupational Outlook Quarterly* article, "Careers for scientists—and others—in scientific research and development," in print at many libraries and career centers. and online at:

<http://www.bls.gov/opub/ooq/2005/summer/art04.htm>

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## Farmers, Ranchers, and Agricultural Managers

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(O\*NET 11-9011.00 11-9011.01, 11-9011.02, 11-9011.03, 11-9012.00)

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### Significant Points

- Modern farming requires knowledge of new developments in agriculture, as well as work experience often gained through growing up on a farm or through postsecondary education.
- Overall employment is projected to decline because of increasing productivity and consolidation of farms.
- Horticulture and organic farming will provide better employment opportunities.
- Small-scale farming is a major growth area and offers the best opportunity for entering the occupation.

### Nature of the Work

American farmers, ranchers, and agricultural managers direct the activities of one of the world's largest and most productive agricultural sectors. They produce enough food and fiber to meet the needs of the United States and for export. *Farmers and ranchers* own and operate mainly family-owned farms. They also may lease land from a landowner and operate it as a working farm. *Agricultural managers* manage the day-to-day activities of one or more farms, ranches, nurseries, timber tracts, greenhouses, or other agricultural establishments for farmers, absentee landowners, or corporations. Their duties and responsibilities vary widely but focus on the business as-

pects of running a farm. On small farms, they may oversee the entire operation; on larger farms, they may oversee a single activity, such as marketing.

Farmers, ranchers, and agricultural managers make many managerial decisions. Farm output and income are strongly influenced by the weather, disease, fluctuations in prices of domestic and foreign farm products, and Federal farm programs. In crop-production operations, farmers and managers usually determine the best time to plant seed, apply fertilizer and chemicals, and harvest and market the crops. Many carefully plan the combination of crops they grow, so that if the price of one crop drops, they will have sufficient income from another crop to make up the loss. Farmers, ranchers, and managers monitor the constantly changing prices for their products. They use different strategies to protect themselves from unpredictable changes in the markets for agricultural products. If they plan ahead, they may be able to store their crops or keep their livestock to take advantage of higher prices later in the year. Those who participate in the risky futures market buy contracts on future production of agricultural goods. These contracts can minimize the risk of sudden price changes by guaranteeing a certain price for farmers' and ranchers' agricultural goods when they are ready to sell.

While most farm output is sold directly to food-processing companies, some farmers—particularly operators of smaller farms—may choose to sell their goods directly to consumers through farmers' markets. Some use cooperatives to reduce their financial risk and to gain a larger share of the prices consumers pay. For example, in community-supported agriculture, cooperatives sell shares of a harvest to consumers prior to the planting season, thus freeing the farmer from having to bear all the financial risks and ensuring the farmer a market for the produce of the coming season. Farmers, ranchers, and agricultural managers also negotiate with banks and other credit lenders to get the best financing deals for their equipment, livestock, and seed.

Like other businesses, farming operations have become more complex in recent years, so many farmers use computers to keep financial and inventory records. They also use computer databases and spreadsheets to manage breeding, dairy, and other farm operations.

The type of farm farmers, ranchers, and agricultural managers operate determines their specific tasks. On crop farms—farms growing grain, cotton, other fibers, fruit, and vegetables—farmers are responsible for preparing, tilling, planting, fertilizing, cultivating, spraying, and harvesting. After the harvest, they make sure that the crops are properly packaged, stored, and marketed. Livestock, dairy, and poultry farmers and ranchers feed and care for animals and keep barns, pens, coops, and other farm buildings clean and in good condition. They also plan and oversee breeding and marketing activities. Both farmers and ranchers operate machinery and maintain equipment and facilities, and both track technological improvements in animal breeding and seeds, and choose new or existing products.

The size of the farm or ranch often determines which of these tasks farmers and ranchers handle themselves. Operators of small farms usually perform all tasks, physical and



*Farmers need in-depth knowledge of many kinds of crops.*

administrative. They keep records for management and tax purposes, service machinery, maintain buildings, and grow vegetables and raise animals. Operators of large farms, by contrast, have employees who help with the physical work that small-farm operators do themselves. Although employment on most farms is limited to the farmer and 1 or 2 family workers or hired employees, some large farms have 100 or more full-time and seasonal workers. Some of these employees are in nonfarm occupations, working as truck drivers, sales representatives, bookkeepers, and computer specialists.

Agricultural managers usually do not plant, harvest, or perform other production activities; instead, they hire and supervise farm and livestock workers, who perform most daily production tasks. Managers may establish output goals; determine financial constraints; monitor production and marketing; hire, assign, and supervise workers; determine crop transportation and storage requirements; and oversee maintenance of the property and equipment.

Two types of farmers that are growing in importance are horticultural specialty farmers and aquaculture farmers. *Horticultural specialty farmers* oversee the production of fruits, vegetables, flowers, and ornamental plants used in landscaping, including turf. They also grow nuts, berries, and grapes for wine. *Aquaculture farmers* raise fish and shellfish in marine, brackish, or fresh water, usually in ponds, floating net pens, raceways, or recirculating systems. They stock, feed,

protect, and otherwise manage aquatic life sold for consumption or used for recreational fishing.

**Work environment.** The work of full-time farmers, ranchers, and agricultural managers is often strenuous; work hours are frequently long; and these workers rarely have days off during the planting, growing, and harvesting seasons. Nevertheless, for those who enter farming or ranching, the hard work is counterbalanced by their enjoyment of living in a rural area, working outdoors, being self-employed, and making a living off the land.

Farmers and farm managers on crop farms usually work from sunrise to sunset during the planting and harvesting seasons. The rest of the year, they plan next season's crops, market their output, and repair machinery.

On livestock-producing farms and ranches, work goes on throughout the year. Animals, unless they are grazing, must be fed and watered every day, and dairy cows must be milked two or three times a day. Many livestock and dairy farmers monitor and attend to the health of their herds, which may include assisting in the birthing of animals. Such farmers and farm managers rarely get the chance to get away, unless they hire an assistant or arrange for a temporary substitute.

Farmers and farm managers who grow produce and perishables have different demands on their time depending on the crop grown and the season. They may work very long hours during planting and harvesting season, but shorter hours at other times. Some farmers maintain cover crops during the cold months, which keep them busy beyond the typical growing season.

On very large farms, farmers and farm managers spend substantial time meeting farm supervisors in charge of various activities. Professional farm managers overseeing several farms may divide their time between traveling to meet farmers or landowners and planning the farm operations in their offices. As farming practices and agricultural technology become more sophisticated, farmers and farm managers are spending more time in offices and at computers, where they electronically manage many aspects of their businesses. Some farmers also attend conferences exchanging information, particularly during the winter months.

Farm work can be hazardous. Tractors and other farm machinery can cause serious injury, and workers must be constantly alert on the job. The proper operation of equipment and handling of chemicals are necessary to avoid accidents, safeguard health, and protect the environment.

### **Training, Other Qualifications, and Advancement**

Experience gained from growing up on or working on a family farm is the most common way farmers learn their trade. However, modern farming requires increasingly complex scientific, business, and financial decisions, so postsecondary education in agriculture is important even for people who were raised on farms.

**Education and training.** Most farmers receive their training on the job, often by being raised on a farm. However, the completion of a 2-year associate degree or a 4-year bachelor's degree at a college of agriculture is becoming increasingly important for farm managers and for farmers and ranchers who



expect to make a living at farming. A degree in farm management or in business with a concentration in agriculture is important.

Students should select the college most appropriate to their interests and location. All State university systems have at least one land-grant college or university with a school of agriculture. Common programs of study include agronomy, dairy science, agricultural economics and business, horticulture, crop and fruit science, and animal science. For students interested in aquaculture, formal programs are available and include coursework in fisheries biology, fish culture, hatchery management and maintenance, and hydrology.

Agricultural colleges teach technical knowledge of crops, growing conditions, and plant diseases. They also teach prospective ranchers and dairy farmers the basics of veterinary science and animal husbandry. Students also study how the environment is affected by farm operations, for example, how the various pesticides affect local animals.

New farmers, ranchers, and agricultural managers often spend time working under an experienced farmer to learn how to apply the skills learned through academic training. Those without academic training often take many years to learn how weather, fertilizers, seed, feeding or breeding affect the growth of crops or the raising of animals in addition to other aspects of farming. A small number of farms offer formal apprenticeships to help young people learn the practical skills of farming and ranching.

**Other qualifications.** Farmers, ranchers, and agricultural managers need managerial skills to organize and operate a business. A basic knowledge of accounting and bookkeeping is essential in keeping financial records, and knowledge of credit sources is vital for buying seed, fertilizer, and other needed inputs. Workers must also be familiar with complex safety regulations and requirements of governmental agricultural support programs. Computer skills are becoming increasingly important, especially on large farms, where computers are widely used for recordkeeping and business analysis. In addition, skills in personnel management, communication, and conflict resolution are important in the operation of a farm or ranch business.

Mechanical aptitude and the ability to work with tools of all kinds also are valuable skills for a small-farm operator, who often maintains and repairs machinery or farm structures.

**Certification and advancement.** Because of rapid changes in the industry, farmers, ranchers, and agricultural managers need to stay informed about continuing advances in agricultural methods, both in the United States and abroad. They need to monitor changes in governmental regulations that may affect production methods or markets for particular crops.

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Agricultural managers.....	11-9010	1,317,000	1,230,000	-87,000	-7
Farm, ranch, and other agricultural managers.....	11-9011	258,000	261,000	2,900	1
Farmers and ranchers .....	11-9012	1,058,000	969,000	-90,000	-8

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

Besides print journals that inform the agricultural community, farmers and managers use the Internet for quick access to the latest developments in areas such as agricultural marketing, legal arrangements, and growing crops, vegetables, and livestock.

Agricultural managers can enhance their professional status through voluntary certification as an Accredited Farm Manager (AFM) by the American Society of Farm Managers and Rural Appraisers. Accreditation requires several years of farm management experience, the appropriate academic background—a bachelor’s degree or, preferably, a master’s degree in a field of agricultural science—and the passing of courses and examinations related to the business, financial, and legal aspects of farm and ranch management.

**Employment**

Farmers, ranchers, and agricultural managers held nearly 1.3 million jobs in 2006. About 80 percent are self-employed farmers and ranchers, and the remainder is agricultural managers. Most farmers, ranchers, and agricultural managers oversee crop-production activities, while others manage livestock and dairy production. Most farmers and ranchers operate small farms on a part-time basis.

The soil, topography of the land, and climate often determine the type of farming and ranching done in a particular area. California, Texas, Iowa, Nebraska, and Kansas are the leading agricultural States in terms of agricultural output measured in dollars. Texas, Missouri, Iowa, Kentucky, and Tennessee are the leading agricultural States in terms of numbers of farms.

**Job Outlook**

The long-term trend toward the consolidation of farms into fewer and larger ones is expected to continue over the 2006–16 decade and to result in a continued, moderate decline in employment of self-employed farmers and ranchers and little or no change in employment of salaried agricultural managers. Nevertheless, a number of jobs will be available due to the need to replace the large number of farmers expected to retire or leave the profession over the next decade.

**Employment change.** Employment of self-employed farmers is expected to decline moderately by 8 percent over the 2006–2016 decade. The continuing ability of the agriculture sector to produce more with fewer workers will cause some farmers to go out of business as market pressures leave little room for the marginally successful farmer. As land, machinery, seed, and chemicals become more expensive, only well-capitalized farmers and corporations will be able to buy many of the farms that become available. These larger, more pro-

ductive farms are better able to withstand the adverse effects of climate and price fluctuations on farm output and income. Larger farms also have advantages in obtaining government subsidies and payments because these payments are usually based on acreage owned and per-unit production.

In contrast, agricultural managers are projected to gain jobs, growing by 1 percent—effectively little or no change in the occupation. Owners of large tracts of land, who often do not live on the property they own, increasingly will seek the expertise of agricultural managers to run their farms and ranches in a business-like manner.

Despite the expected continued consolidation of farmland and the projected decline in overall employment of this occupation, an increasing number of small-scale farmers have developed successful market niches that involve personalized, direct contact with their customers. Many are finding opportunities in organic food production, which is the fastest growing segment in agriculture. Others use farmers' markets that cater directly to urban and suburban consumers, allowing the farmers to capture a greater share of consumers' food dollars. Some small-scale farmers belong to collectively owned marketing cooperatives that process and sell their product. Other farmers participate in community-supported agriculture cooperatives that allow consumers to directly buy a share of the farmer's harvest.

Aquaculture may continue to provide some new employment opportunities over the 2006–16 decade. Concerns about overfishing and the depletion of the stock of some wild fish species will likely lead to more restrictions on deep-sea fishing, even as public demand for the consumption of seafood continues to grow. This has spurred the growth of aquaculture farms that raise selected aquatic species—such as shrimp, salmon, trout, and catfish—in pens or ponds. Aquaculture has increased even in landlocked States, as farmers attempt to diversify.

**Job prospects.** Job prospects are expected to be favorable for those who want to go into farming. With fewer people wanting to become farmers and a large number of farmers expected to retire or give up their farms in the next decade, there will be some opportunities to own or lease a farm. The market for agricultural products is projected to be good for most products over the next decade, and thus many farmers who retire will need to be replaced. Farmers who produce corn used to produce ethanol will be in particular demand as ethanol plays a greater role in energy production as fuel for automobiles. Farmers who grow crops used in landscaping, such as trees, shrubs, turf, and other ornamentals, also will have better job prospects, as people put more money into landscaping their homes and businesses.

### Earnings

Incomes of farmers and ranchers vary greatly from year to year, because prices of farm products fluctuate with weather conditions and the other factors that influence the quantity and quality of farm output and the demand for those products. A farm that shows a large profit one year may show a loss the following year. According to the U.S. Department of Agriculture, the average net cash farm business income for farm

operator households in 2005 was \$15,603. This figure, however, does not reflect that farmers often receive government subsidies or other payments that supplement their incomes and reduce some of the risk of farming. Additionally, most farmers—primarily operators of small farms—have income from off-farm business activities or careers, often greater than that of their farm income.

Full-time, salaried farm managers had median weekly earnings of \$1,001 in May 2006. The middle half earned between \$766 and \$1,382. The highest paid 10 percent earned more than \$1,924, and the lowest paid 10 percent earned less than \$572.

Self-employed farmers must procure their own health and life insurance. As members of farm organizations, they may receive group discounts on health and life insurance premiums.

### Related Occupations

Farmers, ranchers, and agricultural managers strive to improve the quality of agricultural products and the efficiency of farms. Others whose work relates to agriculture include agricultural engineers, agricultural and food scientists, agricultural workers, and purchasing agents and buyers of farm products.

### Sources of Additional Information

For general information about farming and agricultural occupations, contact either of the following organizations:

➤ Center for Rural Affairs, P.O. Box 406, Walthill, NE 68067. Internet: <http://www.cfra.org>

➤ National FFA Organization, The National FFA Center, Attention Career Information Requests, P.O. Box 68690, Indianapolis, IN 46268. Internet: <http://www.ffa.org>

For information about certification as an accredited farm manager, contact:

➤ American Society of Farm Managers and Rural Appraisers, 950 Cherry St., Suite 508, Denver, CO 80222. Internet: <http://www.asfmra.org>

For information on the USDA's program to help small farmers get started, contact:

➤ Small Farm Program, U.S. Department of Agriculture, Cooperative State, Research, Education, and Extension Service, Stop 2220, Washington, DC 20250. Internet: <http://www.csrees.usda.gov/smallfarms.cfm>

For information about organic farming, horticulture, and internships, contact:

➤ Alternative Farming System Information Center, NAL, 10301 Baltimore Ave., Room 132, Beltsville, MD 20705. Internet: <http://www.nal.usda.gov>

➤ ATTRA, National Sustainable Agriculture Information Service, P.O. Box 3657, Fayetteville, AR 72702.

Internet: <http://www.attra.ncat.org>

To learn more about how technological and other changes are affecting agricultural careers, see the *Occupational Outlook Quarterly* article "Farming in the 21st century: A modern business in the modern world," in print at many libraries and career centers and online at:

<http://www.bls.gov/opub/ooq/2005/spring/art02.pdf>

## Financial Analysts and Personal Financial Advisors

(O\*NET 13-2051.00, 13-2052.00)

### Significant Points

- Good interpersonal skills and an aptitude for working with numbers are among the most important qualifications for financial analysts and personal financial advisors.
- Keen competition is anticipated for these highly paid positions, despite rapid job growth; those who have earned a professional designation or an MBA are expected to have the best opportunities.
- Almost one third of personal financial advisors are self-employed.

### Nature of the Work

Financial analysts and personal financial advisors provide analysis and guidance to businesses and individuals in making investment decisions. Both types of specialists gather financial information, analyze it, and make recommendations. However, their job duties differ because of the type of investment information they provide and their relationships with investors.

*Financial analysts* assess the economic performance of companies and industries for firms and institutions with money to invest. Also called *securities analysts* and *investment analysts*, they work for investment banks, insurance companies, mutual and pension funds, securities firms, the business media, and other businesses, helping them make investment decisions or recommendations. Financial analysts read company financial statements and analyze commodity prices, sales, costs, expenses, and tax rates in order to determine a company's value and to project its future earnings. They often meet with company officials to gain a better insight into the firm's prospects and to determine its managerial effectiveness.

Financial analysts can usually be divided into two basic types: those who work on the *buy side* and those who work on the *sell side*. Analysts on the buy side work for companies that have a great deal of money to invest. These companies, called institutional investors, include mutual funds, hedge funds, insurance companies, independent money managers, and charitable organizations, such as universities and hospitals, with large endowments. Buy side financial analysts work to devise investment strategies for a company's portfolio. Conversely, analysts on the sell side help securities dealers to sell their products. These companies include investment banks and securities firms. The business media also hire financial advisors that are supposed to be impartial, and as such occupy a role somewhere in the middle.

Financial analysts generally focus on a specific industry, region, or type of product. For example, an analyst may focus on the utilities industry, Latin America, or the options market. Firms with larger research departments may divide the

work even further so their analysts can maintain sharp focus. Within their areas of specialty, analysts assess current trends in business practices, products, and competition. They must keep abreast of new regulations or policies that may affect the investments they are watching and monitor the economy to determine its effect on earnings. Some experienced analysts called *portfolio managers* supervise a team of analysts and help guide a company in selecting the right mix of products, industries, and regions for their investment portfolio. Others who manage mutual funds or hedge funds perform a similar role and are generally called *fund managers*. Other analysts, called *risk managers*, analyze portfolio decisions and determine how to maximize profits through diversification and hedging.

Some financial analysts, called *ratings analysts*, evaluate the ability of companies or governments that issue bonds to repay their debts. On the basis of their evaluation, a management team assigns a rating to a company's or government's bonds, which helps them to decide whether to include them in a portfolio. Other financial analysts perform budget, cost, and credit analysis as part of their responsibilities.

Financial analysts use spreadsheet and statistical software packages to analyze financial data, spot trends, and develop forecasts. Analysts also use the data they find to measure the financial risks associated with making a particular investment decision. On the basis of their results, they write reports and make presentations, usually with recommendations to buy or sell particular investments.

*Personal financial advisors* assess the financial needs of individuals. Advisors use their knowledge of investments, tax laws, and insurance to recommend financial options to individuals. They help them to identify and plan to meet short- and long-term goals. Planners help clients with retirement and estate planning, funding the college education of children,



*Personal financial advisors often meet with their clients to help them make investment decisions.*



and general investment choices. Many also provide tax advice or sell life insurance. Although most planners offer advice on a wide range of topics, some specialize in areas such as retirement and estate planning or risk management.

Personal financial advisors usually work with many clients, and they often must find their own customers. Many personal financial advisors spend a great deal of their time making sales calls and marketing their services. Many advisors also meet potential clients by giving seminars or lectures or through business and social contacts. Finding clients and building a customer base is one of the most important aspects of becoming successful as a financial advisor.

Financial advisors begin work with a client by setting up a consultation. This is usually an in-person meeting where the advisor obtains as much information as possible about the client's finances and goals. The advisor then develops a comprehensive financial plan that identifies problem areas, makes recommendations for improvement, and selects appropriate investments compatible with the client's goals, attitude toward risk, and expectation or need for a return on the investment. Sometimes this plan is written, but more often it is in the form of verbal advice. Advisors sometimes meet with accountants or legal professionals for help.

Financial advisors usually meet with established clients at least once a year to update them on potential investments and adjust their financial plan to any life changes—such as marriage, disability, or retirement. Financial advisors also answer clients' questions regarding changes in benefit plans or the consequences of a change in their jobs or careers. Financial planners must educate their clients about risks and various possible scenarios so that the clients don't harbor unrealistic expectations.

Most personal financial advisors buy and sell financial products, such as securities and life insurance. Fees and commissions from the purchase and sale of securities and life insurance plans are one of the major sources of income for most personal financial advisors.

*Private bankers* or *wealth managers* are personal financial advisors who work for people who have a lot of money to invest. While most investors are simply saving for retirement or their children's college education, these individuals have large amounts of capital and often use the returns on their investments as a major source of income. Because they have so much capital, these clients resemble institutional investors and approach investing differently from the general public. Private bankers manage portfolios for these individuals using the resources of the bank, including teams of financial analysts, accountants, lawyers, and other professionals. Private bankers sell these services to wealthy individuals, generally spending most of their time working with a small number of clients. Unlike most personal financial advisors, private bankers meet with their clients regularly to keep them abreast of financial matters; they often have the responsibility of directly managing customers' finances.

**Work environment.** Financial analysts and personal financial advisors usually work in offices or their own homes. Financial analysts may work long hours, travel frequently to visit companies or potential investors, and face the pressure of

deadlines. Much of their research must be done after office hours because their days are filled with telephone calls and meetings.

Personal financial advisors usually work standard business hours, but they also schedule meetings with clients in the evenings or on weekends. Many also teach evening classes or hold seminars in order to bring in more clients. Some personal financial advisors spend a fair amount of their time traveling, usually to attend conferences and training sessions, but also occasionally to visit clients.

Private bankers also generally work during standard business hours, but because they work so closely with their clients, they may have to be available outside normal hours upon request.

### **Training, Other Qualifications, and Advancement**

Financial analysts and most personal financial advisors must have a bachelor's degree. Many also earn a master's degree in finance or business administration or get professional designations. Because the field is so specialized, workers frequently attend training and seminars to learn the latest developments.

**Education and training.** A bachelor's or graduate degree is required for financial analysts and is strongly preferred for personal financial advisors. Most companies require financial analysts to have at least a bachelor's degree in finance, business administration, accounting, statistics, or economics. Coursework in statistics, economics, and business is required, and knowledge of accounting policies and procedures, corporate budgeting, and financial analysis methods is recommended. A master's degree in finance or business administration also is desirable. Also useful are advanced courses in options pricing or bond valuation and knowledge of risk management.

Employers usually do not require a specific field of study for personal financial advisors, but a bachelor's degree in accounting, finance, economics, business, mathematics, or law provides good preparation for the occupation. Courses in investments, taxes, estate planning, and risk management are also helpful. Programs in financial planning are becoming more widely available in colleges and universities.

**Licensure.** The Financial Industry Regulatory Authority (FINRA) is the main licensing organization for the securities industry. Depending on an individual's work, many different licenses may be required, although buy side analysts are less likely to need licenses. The majority of these licenses require sponsorship by an employer, so companies do not expect individuals to have these licenses before starting a job. Experienced workers who change jobs will need to have their licenses renewed with the new company.

Almost all personal financial advisors need the Series 7 and Series 63 or 66 licenses. These licenses give their holders the right to act as a registered representative of a securities firm and to give financial advice. Because the Series 7 license requires sponsorship, self-employed personal financial advisors must maintain a relationship with a large securities firm. This relationship allows them to act as representatives of that firm in the buying and selling of securities.

If personal financial advisors choose to sell insurance, they need additional licenses issued by State licensing boards.

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Financial analysts and personal financial advisors .....	—	397,000	544,000	147,000	37
Financial analysts.....	13-2051	221,000	295,000	75,000	34
Personal financial advisors.....	13-2052	176,000	248,000	72,000	41

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

**Other qualifications.** Strong math, analytical, and problem-solving skills are essential qualifications for financial analysts. Good communication skills also are necessary, because these workers must present complex financial concepts and strategies. Self-confidence, maturity, and the ability to work independently are important as well. Financial analysts must be detail-oriented, motivated to seek out obscure information, and familiar with the workings of the economy, tax laws, and money markets. Financial analysts should also be very comfortable with computers, as they are frequently used in doing work. Although much of the software they use is proprietary, they must be comfortable working with spreadsheets and statistical packages.

Personal financial advisors need many of the same skills, but they must emphasize customer service. They need strong sales ability, including the ability to make customers feel comfortable. It is important for them to be able to present financial concepts to clients in easy-to-understand language. Personal financial advisors must also be able to interact casually with people from many different backgrounds. Some advisors have experience in a related occupation, such as accountant, auditor, insurance sales agent, or broker.

Private bankers work directly with wealthy individuals, so they must be polished and refined. They should be able to interact comfortably with people who may be well-known in the community.

**Certification and advancement.** Although not required, certifications can enhance professional standing and is recommended by many employers.

Financial analysts can earn the Chartered Financial Analyst (CFA) designation, sponsored by the CFA Institute. To qualify for this designation, applicants need a bachelor's degree and four years of work experience in a related field and must pass three examinations. The first exam is administered twice per year, while the second and third are administered annually. These exams cover subjects such as accounting, economics, securities analysis, financial markets and instruments, corporate finance, asset valuation, and portfolio management. Increasingly, personal financial advisors, sometimes called wealth managers, working with wealthy individuals have the CFA designation.

Personal financial advisors may obtain the Certified Financial Planner credential, often referred to as CFP. This certification, issued by the Certified Financial Planner Board of Standards, requires 3 years of relevant experience; the completion of education requirements, including a bachelor's degree; passing a comprehensive examination, and adherence to a code of ethics. The exams test the candidate's knowledge of the financial planning process, insurance and risk manage-

ment, employee benefits planning, taxes and retirement planning, and investment and estate planning. Candidates are also required to have a working knowledge of debt management, planning liability, emergency fund reserves, and statistical modeling.

Financial analysts advance by moving into positions where they are responsible for larger or more important products. They may also supervise teams of financial analysts. Eventually, they may become portfolio managers or fund managers, directing the investment portfolios of their companies or funds.

Personal financial advisors have several different paths to advancement. Many accumulate clients and manage more assets. Those who work in firms may move into managerial positions. Others may choose to open their own branch offices for large securities firms and serve as independent registered representatives for those firms. In most cases, employees of established firms are barred from keeping their clients after they leave a firm, so an advisor who leaves a firm to establish a new business must find new customers. Many newly independent personal financial advisors sell their services to family and friends, hoping to win business through referrals.

**Employment**

Financial analysts and personal financial advisors held 397,000 jobs in 2006, of which financial analysts held 221,000. Many financial analysts work at the headquarters of large financial institutions, most of which are based in New York City or other major financial centers. More than 2 out of 5 financial analysts worked in the finance and insurance industries, including securities and commodity brokers, banks and credit institutions, and insurance carriers. Others worked throughout private industry and government.

Personal financial advisors held 176,000 jobs in 2006. Jobs were spread throughout the country. Much like financial analysts, more than half worked in finance and insurance industries, including securities and commodity brokers, banks, insurance carriers, and financial investment firms. However, about 30 percent of personal financial advisors were self-employed, operating small investment advisory firms, usually in urban areas.

**Job Outlook**

Employment of financial analysts and personal financial advisors is expected to grow much faster than the average for all occupations. Growth will be especially strong for personal financial advisors, which are projected to be among the 10 fastest growing occupations. Despite strong job growth, keen

competition will continue for these well paid jobs, especially for new entrants.

**Employment change.** As the level of investment increases, overall employment of financial analysts and personal financial advisors is expected to increase by 37 percent during the 2006-16 decade, which is much faster than the average for all occupations.

Personal financial advisors are projected to grow by 41 percent, which is much faster than the average for all occupations, over the projections decade. Growing numbers of advisors will be needed to assist the millions of workers expected to retire in the next 10 years. As more members of the large baby boom generation reach their peak years of retirement savings, personal investments are expected to increase and more people will seek the help of experts. Many companies also have replaced traditional pension plans with retirement savings programs, so more individuals are managing their own retirements than in the past, creating jobs for advisors. In addition, people are living longer and must plan to finance longer retirements.

Deregulation of the financial services industry also is expected to continue to spur demand for personal financial advisors in the banking industry. In recent years, banks and insurance companies have been allowed to expand into the securities industry. Many firms are adding investment advice to their services and are expected to increase their hiring of personal financial advisors.

Employment of financial analysts is expected to grow by 34 percent between 2006 and 2016, which is also much faster than the average for all occupations. Primary factors for this growth are increasing complexity of investments and growth in the industry. As the number and type of mutual funds and the amount of assets invested in these funds increase, mutual fund companies will need more financial analysts to research and recommend investments.

**Job prospects.** Despite overall employment growth, competition for jobs is expected to be keen in these high-paying occupations. Growth in the industry will create many new positions, but there are still far more people who would like to enter the occupation. For those aspiring to financial analyst jobs, a strong academic background is absolutely essential. Good grades in courses such as finance, accounting, and economics are very important to employers. An MBA or certification is helpful in maintaining employment.

Personal financial advisors will also face competition, as many other services compete for customers. Many individuals enter the field by working for a bank or full-service brokerage. Most independent advisories fail within the first year of business, making self-employment challenging. Because the occupation requires sales, people who have strong selling skills will ultimately be most successful. A college degree and certification can lend credibility.

**Earnings.** Median annual earnings, including bonuses, of wage and salary financial analysts were \$66,590 in May 2006. The middle 50 percent earned between \$50,700 and \$90,690. The lowest 10 percent earned less than \$40,340, and the highest 10 percent earned more than \$130,130. The bonuses that many financial analysts receive in addition to their salary can

be a significant part of their total earnings. Usually, the bonus is based on how well their predictions compare to the actual performance of a benchmark investment.

Median annual earnings of wage and salary personal financial advisors were \$66,120 in May 2006. The middle 50 percent earned between \$44,130 and \$114,260. The lowest 10 percent earned less than \$32,340 and the highest 10 percent earned more than \$145,600. Personal financial advisors who work for financial services firms are generally paid a salary plus bonus. Advisors who work for financial investment or planning firms or who are self-employed either charge hourly fees for their services or opt to earn their money through fees on stock and insurance purchases. Advisors generally receive commissions for financial products they sell, in addition to charging a fee. Those who manage a client's assets may charge a percentage of those assets. Earnings of self-employed workers are not included in the medians given here.

### Related Occupations

Other jobs requiring expertise in finance and investment or in the sale of financial products include accountants and auditors, financial managers, insurance sales agents real estate brokers and sales agents, budget analysts, insurance underwriters, actuaries, and securities, commodities, and financial services sales agents.

### Sources of Additional Information

For general information on securities industry employment, contact:

► Financial Industry Regulatory Authority (FINRA), 1735 K St.NW., Washington, DC 20006.

Internet: <http://www.finra.org>

► Securities Industry and Financial Markets Association, 120 Broadway, 35th Floor, New York, NY 10271.

Internet: <http://www.sifma.org>

For information on financial analyst careers, contact:

► American Academy of Financial Management, 2 Canal St., Suite 2317, New Orleans, LA 70130.

Internet: <http://www.aafm.org>

► CFA Institute, P.O. Box 3668, 560 Ray C. Hunt Dr., Charlottesville, VA 22903.

Internet: <http://www.cfainstitute.org>

For information on personal financial advisor careers, contact:

► Certified Financial Planner Board of Standards, Inc., 1670 Broadway, Suite 600, Denver, CO 80202.

Internet: <http://www.cfp.net>

► Financial Planning Association, 4100 E. Mississippi Ave., Suite 400, Denver, CO 80246-3053.

Internet: <http://www.fpanet.org>

► Investment Management Consultants Association, 5619 DTC Parkway, Suite 500, Greenwood Village, CO 80111.

Internet: <http://www.imca.org>

For additional career information, see the *Occupational Outlook Quarterly* article "Financial analysts and personal financial advisors" in print at many libraries and career centers. and online:

<http://www.bls.gov/opub/ooq/2000/summer/art03.pdf>



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## Financial Managers

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(O\*NET 11-3031.00, 11-3031.01, 11-3031.02)

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### Significant Points

- Jobseekers are likely to face competition.
- About 3 out of 10 work in finance and insurance industries.
- A bachelor's degree in finance, accounting, or a related field is the minimum academic preparation, but employers increasingly seek graduates with a master's degree in business administration, economics, finance, or risk management.
- Experience may be more important than formal education for some financial manager positions—most notably, branch managers in banks.

### Nature of the Work

Almost every firm, government agency, and other type of organization has one or more financial managers. Financial managers oversee the preparation of financial reports, direct investment activities, and implement cash management strategies. Managers also develop strategies and implement the long-term goals of their organization.

The duties of financial managers vary with their specific titles, which include controller, treasurer or finance officer, credit manager, cash manager, risk and insurance manager, and manager of international banking. *Controllers* direct the preparation of financial reports, such as income statements, balance sheets, and analyses of future earnings or expenses, that summarize and forecast the organization's financial position. Controllers also are in charge of preparing special reports required by regulatory authorities. Often, controllers oversee the accounting, audit, and budget departments. *Treasurers* and *finance officers* direct the organization's budgets to meet its financial goals. They oversee the investment of funds, manage associated risks, supervise cash management activities, execute capital-raising strategies to support a firm's expansion, and deal with mergers and acquisitions. *Credit managers* oversee the firm's issuance of credit, establishing credit-rating criteria, determining credit ceilings, and monitoring the collections of past-due accounts.

*Cash managers* monitor and control the flow of cash receipts and disbursements to meet the business and investment needs of the firm. For example, cash flow projections are needed to determine whether loans must be obtained to meet cash requirements or whether surplus cash should be invested in interest-bearing instruments. *Risk and insurance managers* oversee programs to minimize risks and losses that might arise from financial transactions and business operations. They also manage the organization's insurance budget. Managers specializing in international finance develop financial and accounting systems for the banking transactions of multinational organizations. (Chief financial officers and other executives are included with top executives elsewhere in the *Handbook*.)

Financial institutions—such as commercial banks, savings and loan associations, credit unions, and mortgage and finance companies—employ additional financial managers who oversee various functions, such as lending, trusts, mortgages, and investments, or programs, including sales, operations, or electronic financial services. These managers may solicit business, authorize loans, and direct the investment of funds, always adhering to Federal and State laws and regulations.

Branch managers of financial institutions administer and manage all of the functions of a branch office. Job duties may include hiring personnel, approving loans and lines of credit, establishing a rapport with the community to attract business, and assisting customers with account problems. Branch managers also are becoming more oriented toward sales and marketing. As a result, it is important that they have substantial knowledge about all types of products that the bank sells. Financial managers who work for financial institutions must keep abreast of the rapidly growing array of financial services and products.

In addition to the preceding duties, all financial managers perform tasks unique to their organization or industry. For example, government financial managers must be experts on the government appropriations and budgeting processes, whereas health care financial managers must be knowledgeable about issues surrounding health care financing. Moreover, financial managers must be aware of special tax laws and regulations that affect their industry.

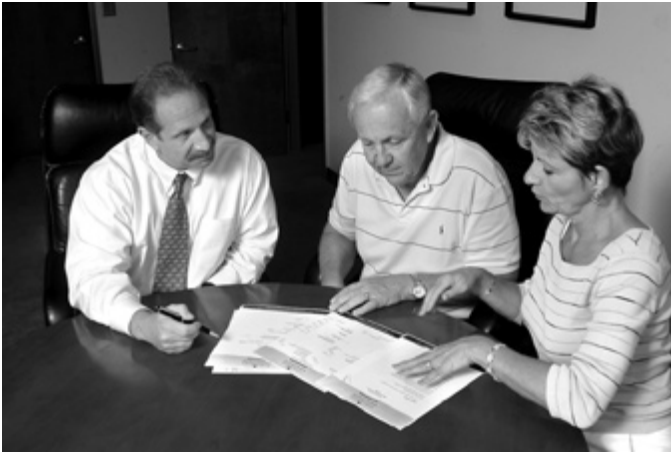
Financial managers play an increasingly important role in mergers and consolidations and in global expansion and related financing. These areas require extensive, specialized knowledge to reduce risks and maximize profit. Financial managers increasingly are hired on a temporary basis to advise senior managers on these and other matters. In fact, some small firms contract out all their accounting and financial functions to companies that provide such services.

The role of the financial manager, particularly in business, is changing in response to technological advances that have significantly reduced the amount of time it takes to produce financial reports. Financial managers now perform more data analysis and use it to offer senior managers ideas on how to maximize profits. They often work on teams, acting as business advisors to top management. Financial managers need to keep abreast of the latest computer technology to increase the efficiency of their firm's financial operations.

**Work environment.** Working in comfortable offices, often close to top managers and to departments that develop the financial data those managers need, financial managers typically have direct access to state-of-the-art computer systems and information services. They commonly work long hours, often up to 50 or 60 per week. Financial managers generally are required to attend meetings of financial and economic associations and may travel to visit subsidiary firms or to meet customers.

### Training, Other Qualifications, and Advancement

Most financial managers need a bachelor's degree, and many have a master's degree or professional certification. Bank



*Financial managers develop strategies for achieving the long-term goals of their organization.*

managers often have experience as loan officers. Financial managers also need strong interpersonal and business skills.

**Education and training.** A bachelor's degree in finance, accounting, economics, or business administration is the minimum academic preparation for financial managers. However, many employers now seek graduates with a master's degree, preferably in business administration, economics, finance, or risk management. These academic programs develop analytical skills and teach the latest financial analysis methods and technology.

Experience may be more important than formal education for some financial manager positions—most notably, branch managers in banks. Banks typically fill branch manager positions by promoting experienced loan officers and other professionals who excel at their jobs. Other financial managers may enter the profession through formal management training programs offered by the company. The American Institute of Banking, which is affiliated with the American Bankers Association, sponsors educational and training programs for bank officers at banking schools and educational conferences.

**Other qualifications.** Candidates for financial management positions need many different skills. Interpersonal skills are important because these jobs involve managing people and working as part of a team to solve problems. Financial managers must have excellent communication skills to explain complex financial data. Because financial managers work extensively with various departments in their firm, a broad understanding of business is essential.

Financial managers should be creative thinkers and problem-solvers, applying their analytical skills to business. They must be comfortable with the latest computer technology. Financial managers must have knowledge of international finance because financial operations are increasingly being affected by the global economy. Proficiency in a foreign language also may be important. In addition, a good knowledge of compliance procedures is essential because of the many recent regulatory changes.

**Certification and advancement.** Financial managers may broaden their skills and exhibit their competency by attaining professional certification. Many associations offer professional certification programs. For example, the CFA Institute

confers the Chartered Financial Analyst designation on investment professionals who have a bachelor's degree, pass three sequential examinations, and meet work experience requirements. The Association for Financial Professionals confers the Certified Treasury Professional credentials to those who pass a computer-based exam and have a minimum of 2 years of relevant experience. Continuing education is required to maintain these credentials. Also, financial managers who specialize in accounting sometimes earn the Certified Public Accountant (CPA) or the Certified Management Accountant (CMA) designation. The CMA is offered by the Institute of Management Accountants to its members who have a bachelor's degree and at least 2 years of work experience and who pass the institute's four-part examination and fulfill continuing education requirements. (See accountants and auditors elsewhere in the *Handbook* for additional information on CPA and CMA designations.)

Continuing education is vital to financial managers, who must cope with the growing complexity of global trade, changes in Federal and State laws and regulations, and the proliferation of new and complex financial instruments. Firms often provide opportunities for workers to broaden their knowledge and skills by encouraging them to take graduate courses at colleges and universities or attend conferences related to their specialty. Financial management, banking, and credit union associations, often in cooperation with colleges and universities, sponsor numerous national and local training programs. Trainees prepare extensively at home and then attend sessions on subjects such as accounting management, budget management, corporate cash management, financial analysis, international banking, and information systems. Many firms pay all or part of the costs for employees who successfully complete the courses. Although experience, ability, and leadership are emphasized for promotion, advancement may be accelerated by this type of special study.

Because financial management is so important to efficient business operations, well-trained, experienced financial managers who display a strong grasp of the operations of various departments within their organization are prime candidates for promotion to top management positions. Some financial managers transfer to closely related positions in other industries. Those with extensive experience and access to sufficient capital may start their own consulting firms.

## Employment

Financial managers held about 506,000 jobs in 2006. Although they can be found in every industry, approximately 3 out of 10 were employed by finance and insurance establishments, such as banks, savings institutions, finance companies, credit unions, insurance carriers, and securities dealers. About 8 percent worked for Federal, State, or local government.

## Job Outlook

Employment growth for financial managers is expected to be about as fast as the average for all occupations. However, applicants will likely face strong competition for jobs. Those with a masters' degree and a certification will have the best opportunities.

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Financial managers .....	11-3031	506,000	570,000	64,000	13

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

**Employment change.** Employment of financial managers over the 2006-16 decade is expected to grow by 13 percent, which is about as fast as the average for all occupations. Regulatory reforms and the expansion and globalization of the economy will increase the need for financial expertise and drive job growth. As the economy expands, both the growth of established companies and the creation of new businesses will spur demand for financial managers. Employment of bank branch managers is expected to increase because banks are refocusing on the importance of their existing branches and are creating new branches to service a growing population. However, mergers, acquisitions, and corporate downsizing are likely to restrict the employment growth of financial managers to some extent.

The long-run prospects for financial managers in the securities and commodities industry should be favorable, because more people will be needed to handle increasingly complex financial transactions and manage a growing amount of investments. Financial managers also will be needed to handle mergers and acquisitions, raise capital, and assess global financial transactions. Risk managers, who assess risks for insurance and investment purposes, also will be in demand.

Some companies may hire financial managers on a temporary basis, to see the organization through a short-term crisis or to offer suggestions for boosting profits. Other companies may contract out all accounting and financial operations. Even in these cases, however, financial managers may be needed to oversee the contracts.

**Job prospects.** As with other managerial occupations, job-seekers are likely to face competition because the number of job openings is expected to be less than the number of applicants. Candidates with expertise in accounting and finance—particularly those with a master’s degree and or certification—should enjoy the best job prospects. Strong computer skills and knowledge of international finance are important; as are excellent communication skills because financial management involves working on strategic planning teams.

As banks expand the range of products and services they offer to include insurance and investment products, branch managers with knowledge in these areas will be needed. As a result, candidates who are licensed to sell insurance or securities will have the most favorable prospects. (See the *Handbook* statements on insurance sales agents; and securities, commodities, and financial services sales agents.)

**Earnings**

Median annual earnings of wage and salary financial managers were \$90,970 in May 2006. The middle 50 percent earned between \$66,690 and \$125,180. The lowest 10 percent earned less than \$50,290 while the top 10 percent earned more than

\$145,600. Median annual earnings in the industries employing the largest numbers of financial managers were:

Securities and commodity contracts intermediation .....	\$131,730
Management of companies and enterprises .....	105,410
Nondepository credit intermediation .....	86,340
Local government .....	72,790
Depository credit intermediation .....	72,580

According to a survey by Robert Half International, a staffing services firm specializing in accounting and finance professionals, directors of finance earned between \$79,000 and \$184,000 in 2007, and corporate controllers earned between \$61,250 and \$149,250.

Large organizations often pay more than small ones, and salary levels also can depend on the type of industry and location. Many financial managers in both public and private industry receive additional compensation in the form of bonuses, which, like salaries, vary substantially by size of firm. Deferred compensation in the form of stock options is becoming more common, especially for senior-level executives.

**Related Occupations**

Financial managers combine formal education with experience in one or more areas of finance, such as asset management, lending, credit operations, securities investment, or insurance risk and loss control. Workers in other occupations requiring similar training and skills include accountants and auditors; budget analysts; financial analysts and personal financial advisors; insurance sales agents; insurance underwriters; loan officers; securities, commodities, and financial services sales agents; and real estate brokers and sales agents.

**Sources of Additional Information**

For information about careers and certification in financial management, contact:

➤ Financial Management Association International, College of Business Administration, University of South Florida, Tampa, FL 33620. Internet: <http://www.fma.org>

For information about careers in financial and treasury management and the Certified Treasury Professional program, contact:

➤ Association for Financial Professionals, 7315 Wisconsin Ave., Suite 600 West, Bethesda, MD 20814.

Internet: <http://www.afponline.org>

For information about the Chartered Financial Analyst program, contact:

➤ CFA Institute, P.O. Box 3668, 560 Ray Hunt Dr., Charlottesville, VA 22903. Internet: <http://www.cfainstitute.org>

For information on The American Institute of Banking and its programs, contact:



➤ American Bankers Association, 1120 Connecticut Ave. NW., Washington, DC 20036.

For information about the Certified in Management Accounting designation, contact:

➤ Institute of Management Accountants, 10 Paragon Dr., Montvale, NJ, 07645. Internet: <http://www.imanet.org>

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## Food Service Managers

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(O\*NET 11-9051.00)

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### Significant Points

- Experience in food and beverage preparation and serving jobs is necessary for most food service manager positions.
- Food service managers coordinate a wide range of activities, but their most difficult task may be dealing with irate customers and uncooperative employees.
- Job opportunities for food service managers should be good as the number of outlets of restaurant chains increases to meet customer demand for convenience and value.

### Nature of the Work

Food service managers are responsible for the daily operations of restaurants and other establishments that prepare and serve meals and beverages to customers. Besides coordinating activities among various departments, such as kitchen, dining room, and banquet operations, food service managers ensure that customers are satisfied with their dining experience. In addition, they oversee the inventory and ordering of food, equipment, and supplies and arrange for the routine maintenance and upkeep of the restaurant's equipment and facilities. Managers generally are responsible for all of the administrative and human-resource functions of running the business, including recruiting new employees and monitoring employee performance and training.

Managers interview, hire, train, and when necessary, fire employees. Retaining good employees is a major challenge facing food service managers. Managers recruit employees at career fairs, contact schools that offer academic programs in hospitality or culinary arts, and arrange for newspaper advertising to attract additional applicants. Managers oversee the training of new employees and explain the establishment's policies and practices. They schedule work hours, making sure that enough workers are present to cover each shift. If employees are unable to work, managers may have to call in alternates to cover for them or fill in themselves when needed. Some managers may help with cooking, clearing tables, or other tasks when the restaurant becomes extremely busy.

Food service managers ensure that diners are served properly and in a timely manner. They investigate and resolve customers' complaints about food quality or service. They monitor orders in the kitchen to determine where backups may occur, and they work with the chef to remedy any delays in service. Managers direct the cleaning of the dining areas and the wash-

ing of tableware, kitchen utensils, and equipment to comply with company and government sanitation standards. Managers also monitor the actions of their employees and patrons on a continual basis to ensure the personal safety of everyone. They make sure that health and safety standards and local liquor regulations are obeyed.

In addition to their regular duties, food service managers perform a variety of administrative assignments, such as keeping employee work records, preparing the payroll, and completing paperwork to comply with licensing laws and tax, wage and hour, unemployment compensation, and Social Security laws. Some of this work may be delegated to an assistant manager or bookkeeper, or it may be contracted out, but most general managers retain responsibility for the accuracy of business records. Managers also maintain records of supply and equipment purchases and ensure that accounts with suppliers are paid.

Managers tally the cash and charge receipts received and balance them against the record of sales. They are responsible for depositing the day's receipts at the bank or securing them in a safe place. Finally, managers are responsible for locking up the establishment, checking that ovens, grills, and lights are off, and switching on alarm systems.

Technology influences the jobs of food service managers in many ways, enhancing efficiency and productivity. Many restaurants use computers to track orders, inventory, and the seating of patrons. Point-of-service (POS) systems allow servers to key in a customer's order, either at the table using a hand-held device, or from a computer terminal in the dining room, and send the order to the kitchen instantaneously so preparation can begin. The same system totals and prints checks, functions like a cash register, connects to credit card authorizers, and tracks sales. To minimize food costs and spoilage, many managers use inventory-tracking software to compare sales records with a record of the current inventory. Some establishments enter an inventory of standard ingredients and suppliers into their POS system. When supplies of particular ingredients run low, they can be ordered directly from the supplier using preprogrammed information. Computers also allow restaurant and food service managers to keep track of employee schedules and paychecks more efficiently.

Food service managers use the Internet to track industry news, find recipes, conduct market research, purchase supplies or equipment, recruit employees, and train staff. Internet access also makes service to customers more efficient. Many restaurants maintain Web sites that include menus and online promotions, provide information about the restaurant's location, and offer patrons the option of making a reservation.

In most full-service restaurants and institutional food service facilities, the management team consists of a *general manager*, one or more *assistant managers*, and an *executive chef*. The executive chef is responsible for all food preparation activities, including running kitchen operations, planning menus, and maintaining quality standards for food service. In limited-service eating places, such as sandwich shops, coffee bars, or fast-food establishments, managers, not executive chefs, are responsible for supervising routine food preparation operations. Assistant managers in full-service facilities generally oversee service in the dining rooms and banquet areas. In larger restaurants and



*Food service managers keep an inventory of food and supplies and perform other bookkeeping functions.*

fast-food or other food service facilities that serve meals daily and maintain longer business hours, individual assistant managers may supervise different shifts of workers. In smaller restaurants, formal titles may be less important, and one person may undertake the work of one or more food service positions. For example, the executive chef also may be the general manager or even sometimes an owner. (For additional information on these other workers, see material on top executives and chefs, cooks, and food preparation workers elsewhere in the *Handbook*.)

In restaurants where there are both food service managers and executive chefs, the managers often help the chefs select successful menu items. This task varies by establishment depending on the seasonality of menu items, the frequency with which restaurants change their menus, and the introduction of daily, weekly, or seasonal specials. Many restaurants rarely change their menus while others make frequent alterations. Managers or executive chefs select menu items, taking into account the likely number of customers and the past popularity of dishes. Other issues considered when planning a menu include whether there was any food left over from prior meals that should not be wasted, the need for variety, and the seasonal availability of foods. Managers or executive chefs analyze the recipes of the dishes to determine food, labor, and overhead costs, work out the portion size and nutritional content of each plate, and assign

prices to various menu items. Menus must be developed far enough in advance that supplies can be ordered and received in time.

Managers or executive chefs estimate food needs, place orders with distributors, and schedule the delivery of fresh food and supplies. They plan for routine services or deliveries, such as linen services or the heavy cleaning of dining rooms or kitchen equipment, to occur during slow times or when the dining room is closed. Managers also arrange for equipment maintenance and repairs, and coordinate a variety of services such as waste removal and pest control. Managers or executive chefs receive deliveries and check the contents against order records. They inspect the quality of fresh meats, poultry, fish, fruits, vegetables, and baked goods to ensure that expectations are met. They meet with representatives from restaurant supply companies and place orders to replenish stocks of tableware, linens, paper products, cleaning supplies, cooking utensils, and furniture and fixtures.

**Work environment.** Food service managers are among the first to arrive in the morning and the last to leave at night. Long hours—12 to 15 per day, 50 or more per week, and sometimes 7 days a week—are common. Managers of institutional food service facilities, such as school, factory, or office cafeterias, work more regular hours because the operating hours of these establishments usually conform to the operating hours of the business or facility they serve. However, hours for many managers are unpredictable.

Managers should be calm, flexible, and able to work through emergencies, such as a fire or flood, to ensure everyone's safety. They also should be able to fill in for absent workers on short notice. Managers often experience the pressures of simultaneously coordinating a wide range of activities. When problems occur, it is the manager's responsibility to resolve them with minimal disruption to customers. The job can be hectic, and dealing with irate customers or uncooperative employees can be stressful.

Managers also may experience the typical minor injuries of other restaurant workers, such as muscle aches, cuts, or burns. They might endure physical discomfort from moving tables or chairs to accommodate large parties, receiving and storing daily supplies from vendors, or making minor repairs to furniture or equipment.

### **Training, Other Qualifications, and Advancement**

Experience in the food services industry, whether as a cook, waiter or waitress, or counter attendant, is the most common training for food service managers. Many restaurant and food service manager positions, particularly self-service and fast-food, are filled by promoting experienced food and beverage preparation and service workers.

**Education and training.** Experience as a waiter or waitress, cook, or counter help is the most common way to enter the occupation. Executive chefs, in particular, need extensive experience working as chefs. Many food service management companies and national or regional restaurant chains recruit management trainees from 2- and 4-year college hospitality management programs, which require internships and real-life experience to graduate. Some restaurant chains prefer to hire

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Food service managers.....	11-9051	350,000	368,000	18,000	5

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

people with degrees in restaurant and institutional food service management, but they often hire graduates with degrees in other fields who have demonstrated experience, interest, and aptitude.

Postsecondary education is preferred for many food service manager positions, but it is not a significant qualification for many others: More than 40 percent of food service managers have a high school diploma or less; less than one-quarter have a bachelor's or graduate degree. However, a postsecondary degree is preferred by higher end full-service restaurants and for many corporate positions, such as managing a regional or national restaurant chain or franchise or overseeing contract food service operations at sports and entertainment complexes, school campuses, and institutional facilities. A college degree also is beneficial for those who want to own or manage their own restaurant.

Almost 1,000 colleges and universities offer 4-year programs in restaurant and hospitality management or institutional food service management; a growing number of university programs offer graduate degrees in hospitality management or similar fields. For those not interested in pursuing a 4-year degree, community and junior colleges, technical institutes, and other institutions offer programs in the field leading to an associate degree or other formal certification.

Both 2- and 4-year programs provide instruction in subjects such as nutrition, sanitation, and food planning and preparation, as well as accounting, business law and management, and computer science. Some programs combine classroom and laboratory study with internships providing on-the-job experience. In addition, many educational institutions offer culinary programs in food preparation. Such training can lead to careers as cooks or chefs and provide a foundation for advancement to executive chef positions.

Many larger food service operations will provide, or offer to pay for, technical training, such as computer or business courses, so that employees can acquire the business skills necessary to read spreadsheets or understand the concepts and practices of running a business. Generally, this requires a long-term commitment on the employee's part to both the employer and to the profession.

Most restaurant chains and food service management companies have rigorous training programs for management positions. Through a combination of classroom and on-the-job training, trainees receive instruction and gain work experience in all aspects of the operation of a restaurant or institutional food service facility. Areas include food preparation, nutrition, sanitation, security, company policies and procedures, personnel management, recordkeeping, and preparation of reports. Training on use of the restaurant's computer system is increasingly important as well. Usually, after 6 months or a

year, trainees receive their first permanent assignment as an assistant manager.

**Other qualifications.** Most employers emphasize personal qualities when hiring managers. Workers who are reliable, show initiative, and have leadership qualities are highly sought after for promotion. Other qualities that managers look for are good problem-solving skills and the ability to concentrate on details. A neat and clean appearance is important, because food service managers must convey self-confidence and show respect in dealing with the public. Because food service management can be physically demanding, good health and stamina are important.

Managers must be good communicators as they deal with customers, employees, and suppliers for most of the day. They must be able to motivate employees to work as a team, to ensure that food and service meet appropriate standards. Additionally, the ability to speak multiple languages is helpful to communicate with staff and patrons.

**Certification and advancement.** The certified Foodservice Management Professional (FMP) designation is a measure of professional achievement for food service managers, and although not a requirement for employment or necessary for advancement, voluntary certification can provide recognition of professional competence, particularly for managers who acquired their skills largely on the job. The National Restaurant Association Educational Foundation awards the FMP designation to managers who achieve a qualifying score on a written examination, complete a series of courses that cover a range of food service management topics, and meet standards of work experience in the field.

Willingness to relocate often is essential for advancement to positions with greater responsibility. Managers typically advance to larger or more prominent establishments or regional management positions within restaurant chains. Some may open their own food service establishments or franchise operation.

**Employment**

Food service managers held about 350,000 jobs in 2006. The majority of managers are salaried, but 45 percent are self-employed as owners of independent restaurants or other small food service establishments. Thirty-eight percent of all salaried jobs for food service managers are in full-service restaurants or limited-service eating places, such as fast-food restaurants and cafeterias. Other salaried jobs are in special food services—an industry that includes food service contractors who supply food services at institutional, governmental, commercial, or industrial locations, and educational services, primarily in elementary and secondary schools. A smaller number of salaried jobs are in hotels; amusement, gambling, and recreation industries; nursing care facilities; and hospitals. Jobs are located through-



out the country, with large cities and resort areas providing more opportunities for full-service dining positions.

**Job Outlook**

Food service manager jobs are expected to grow 5 percent, or more slowly than the average for all occupations through 2016. However, job opportunities should be good because, in addition to job growth, many more openings will arise from the need to replace managers who leave the occupation.

**Employment change.** Employment of food service managers is expected to grow 5 percent, or more slowly than the average for all occupations, during the 2006-16 decade. New eating and drinking places will open to meet the growing demand for convenience and value from a growing population, generating new employment opportunities for food service managers. Employment growth is projected to vary by industry. Most new jobs will be in full-service restaurants, but they are expected to decline among limited service restaurants. Manager jobs will also increase in special food services, an industry that includes food service contractors that provide food for schools, health care facilities, and other commercial businesses and in nursing and residential care for the elderly. Self-employment of these workers will generate nearly 30 percent of new jobs.

**Job prospects.** In addition to job openings from employment growth, the need to replace managers who transfer to other occupations or stop working will create good job opportunities. Although practical experience is an integral part of finding a food service management position, applicants with a degree in restaurant, hospitality or institutional food service management will have an edge when competing for jobs at upscale restaurants and for advancement in a restaurant chain or into corporate management.

**Earnings**

Median annual earnings of salaried food service managers were \$43,020 in May 2006. The middle 50 percent earned between \$34,210 and \$55,100. The lowest 10 percent earned less than \$27,400, and the highest 10 percent earned more than \$70,810. Median annual earnings in the industries employing the largest numbers of food service managers were as follows:

Traveler accommodation.....	\$48,890
Special food services.....	48,710
Full-service restaurants .....	45,650
Elementary and secondary schools .....	39,650
Limited-service eating places .....	39,070

In addition to receiving typical benefits, most salaried food service managers are provided free meals and the opportunity for additional training, depending on their length of service. Some food service managers, especially those in full-service restaurants, may earn bonuses depending on sales volume or revenue.

**Related Occupations**

Food service managers direct the activities of a hospitality-industry business and provide a service to customers. Other managers and supervisors in hospitality-oriented businesses include gaming managers, lodging managers, sales worker supervisors,

and first-line supervisors or managers of food preparation and serving workers.

**Sources of Additional Information**

Information about a career as a food service manager, 2- and 4-year college programs in restaurant and food service management, and certification as a Foodservice Management Professional is available from:

➤ National Restaurant Association Educational Foundation, 175 West Jackson Blvd., Suite 1500, Chicago, IL 60604-2702. Internet: <http://www.nraef.org>

Career information about food service managers, as well as a directory of 2- and 4-year colleges that offer courses or programs that prepare persons for food service careers is available from:

➤ National Restaurant Association, 1200 17th St.NW., Washington, DC 20036-3097. Internet: <http://www.restaurant.org>

General information on hospitality careers may be obtained from:

➤ The International Council on Hotel, Restaurant, and Institutional Education, 2810 North Parham Rd., Suite 230, Richmond, VA 23294. Internet: <http://www.chrie.org>

Additional information about job opportunities in food service management may be obtained from local employers and from local offices of State employment services agencies.

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**Funeral Directors**

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(O\*NET 11-9061.00)

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**Significant Points**

- Job opportunities should be good, particularly for those who also embalm.
- Some mortuary science graduates relocate to get a job.
- Funeral directors are licensed by the State in which they practice.
- Funeral directors need the ability to communicate easily and compassionately and to comfort people in a time of sorrow.

**Nature of the Work**

Funeral practices and rites vary greatly among cultures and religions. However, funeral practices usually share some common elements—removing the deceased to a mortuary, preparing the remains, performing a ceremony that honors the deceased and addresses the spiritual needs of the family, and carrying out final disposition of the deceased. Funeral directors arrange and direct these tasks for grieving families.

Funeral directors also are called morticians or undertakers. This career may not appeal to everyone, but those who work as funeral directors take great pride in their ability to provide comforting and appropriate services.

Funeral directors arrange the details and handle the logistics of funerals. They interview the family to learn their wishes about the funeral, the clergy or other people who will officiate, and the final disposition of the remains. Sometimes, the deceased leaves detailed instructions for his or her own funeral. Together with the family, funeral directors establish the location, dates, and times of wakes, memorial services, and burials. They arrange for a hearse to carry the body to the funeral home or mortuary. They also comfort the family and friends of the deceased.

Funeral directors prepare obituary notices and have them placed in newspapers, arrange for pallbearers and clergy, schedule the opening and closing of a grave with a representative of the cemetery, decorate and prepare the sites of all services, and provide transportation for the deceased, mourners, and flowers between sites. They also direct preparation and shipment of the body for out-of-State burial.

Most funeral directors also are trained, licensed, and practicing embalmers. Embalming is a sanitary, cosmetic, and preservative process through which the body is prepared for interment. If more than 24 hours elapse between death and interment, State laws usually require that the remains be refrigerated or embalmed.

When embalming a body, funeral directors wash the body with germicidal soap and replace the blood with embalming fluid to preserve the tissues. They may reshape and reconstruct bodies using materials such as clay, cotton, plaster of Paris, and wax. They also may apply cosmetics to provide a natural appearance, dress the body, and place it in a casket. Funeral directors maintain records such as embalming reports and itemized lists of clothing or valuables delivered with the body. In large funeral homes, an embalming staff of two or more, plus several apprentices may be employed.

Funeral services may take place in a home, house of worship, funeral home, or at the gravesite or crematory. Some services are not religious, but many are, reflecting the religion of the family. Funeral directors must be familiar with the funeral and burial customs of many faiths, ethnic groups, and fraternal organizations. For example, members of some religions seldom have the deceased embalmed or cremated.

Burial in a casket is the most common method of disposing of remains in this country, although entombment also occurs. Cremation, which is the burning of the body in a special furnace, is increasingly selected because it can be less expensive and is becoming more appealing, in part because memorial services can be held anywhere, and at any time, sometimes months later when all relatives and friends can come together. A funeral service followed by cremation need not be any different from a funeral service followed by a burial. Usually, cremated remains are placed in some type of permanent receptacle, or urn, before being committed to a final resting place. The urn may be buried, placed in an indoor or outdoor mausoleum or columbarium, or interred in a special urn garden that many cemeteries provide for cremated remains.

Funeral directors handle the paperwork involved with the person's death, including submitting papers to State authorities so that a formal death certificate may be issued and copies distributed to the heirs. They may help family members apply



*Funeral directors explain various details of burial options and arrange funerals.*

for veterans' burial benefits, and they notify the Social Security Administration of the death. Also, funeral directors may apply for the transfer of any pensions, insurance policies, or annuities on behalf of survivors.

Funeral directors also work with those who want to plan their own funerals in advance. This provides peace of mind by ensuring that the client's wishes will be taken care of in a way that is satisfying to the client and to the client's survivors.

Most funeral homes are small, family-run businesses, and many funeral directors are owner-operators or employees with managerial responsibilities. Funeral directors, therefore, are responsible for the success and the profitability of their businesses. Directors keep records of expenses, purchases, and services rendered; prepare and send invoices for services; prepare and submit reports for unemployment insurance; prepare Federal, State, and local tax forms; and prepare itemized bills for customers. Funeral directors increasingly use computers for billing, bookkeeping, and marketing. Some are beginning to use the Internet to communicate with clients who are planning their funerals in advance or to assist them by developing electronic obituaries and guest books. Directors strive to foster a cooperative spirit and friendly attitude among employees and a compassionate demeanor toward the families. Increasingly, funeral directors also are helping individuals adapt to changes in their lives following a death through aftercare services and support groups.

Most funeral homes have a chapel, one or more viewing rooms, a casket-selection room, and a preparation room. Many also have a crematory on the premises. Equipment may include a hearse, a flower car, limousines, and sometimes an ambulance. Funeral homes usually stock a selection of caskets and urns for families to purchase or rent.

**Work environment.** Funeral directors occasionally come into contact with bodies that had contagious diseases, but the possibility of infection is remote if health regulations are followed.

Funeral directors often work long, irregular hours, and the occupation can be highly stressful. Many are on call at all hours because they may be needed to remove remains in the middle of the night. Shift work sometimes is necessary because funeral home hours include evenings and weekends. In smaller funeral

## Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Funeral directors .....	11-9061	29,000	32,000	3,600	12

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

homes, working hours vary, but in larger establishments, employees usually work 8 hours a day, 5 or 6 days a week.

### Training, Other Qualifications, and Advancement

Funeral directors are licensed in all States. State licensing laws vary, but most require applicants to be 21 years old, have 2 years of formal education, serve a 1-year apprenticeship, and pass an examination.

**Education and training.** College programs in mortuary science usually last from 2 to 4 years. The American Board of Funeral Service Education accredits about 50 mortuary science programs. A few community and junior colleges offer 2-year programs, and a few colleges and universities offer both 2-year and 4-year programs. Mortuary science programs include courses in anatomy, physiology, pathology, embalming techniques, restorative art, business management, accounting and use of computers in funeral home management, and client services. They also include courses in the social sciences and in legal, ethical, and regulatory subjects such as psychology, grief counseling, oral and written communication, funeral service law, business law, and ethics.

Many State and national associations offer continuing education programs designed for licensed funeral directors. These programs address issues in communications, counseling, and management. More than 30 States have requirements that funeral directors receive continuing education credits to maintain their licenses.

Apprenticeships must be completed under the direction of an experienced and licensed funeral director. Some States require apprenticeships. Depending on State regulations, apprenticeships last from 1 to 3 years and may be served before, during, or after mortuary school. Apprenticeships provide practical experience in all facets of the funeral service, from embalming to transporting remains.

High school students can start preparing for a career as a funeral director by taking courses in biology and chemistry and participating in public speaking or debate clubs. Part-time or summer jobs in funeral homes also provide good experience. These jobs consist mostly of maintenance and cleanup tasks, such as washing and polishing limousines and hearses, but they can help students become familiar with the operation of funeral homes.

**Licensure.** All States require funeral directors to be licensed. Licensing laws vary by State, but most require applicants to be 21 years old, have 2 years of formal education that includes studies in mortuary science, serve a 1-year apprenticeship, and pass a qualifying examination. After becoming licensed, new funeral directors may join the staff of a funeral home.

Some States require all funeral directors to be licensed in embalming. Others have separate licenses for directors and embalmers, but in those States funeral directors who embalm

need to be licensed in embalming, and most workers obtain both licenses.

State board licensing examinations vary, but they usually consist of written and oral parts and include a demonstration of practical skills. People who want to work in another State may have to pass the examination for that State; however, some States have reciprocity arrangements and will grant licenses to funeral directors from another State without further examination. People interested in a career as a funeral director should contact their State licensing board for specific requirements.

**Other qualifications.** Funeral directors need composure, tact, and the ability to communicate easily and compassionately with the public. Funeral directors also should have the desire and ability to comfort people in a time of sorrow.

To show proper respect and consideration for the families and the dead, funeral directors must dress appropriately. The professions usually require short, neat haircuts and trim beards, if any, for men. Suits and ties for men and dresses for women are customary.

**Advancement.** Advancement opportunities generally are best in larger funeral homes. Funeral directors may earn promotions to higher paying positions such as branch manager or general manager. Some directors eventually acquire enough money and experience to establish their own funeral home businesses.

### Employment

Funeral directors held about 29,000 jobs in 2006. About 20 percent were self-employed. Nearly all worked in the death care services industry.

### Job Outlook

Job opportunities are expected to be good, particularly for those who also embalm. Some mortuary science graduates relocate to get a job.

**Employment change.** Employment of funeral directors is expected to increase by 12 percent during the 2006-16 decade, about as fast as the average for all occupations. Projected job growth reflects growth in the death care services industry, where funeral directors are employed.

**Job prospects.** In addition to employment growth, the need to replace funeral directors who retire or leave the occupation for other reasons will provide a number of job opportunities. Funeral directors are older, on average, than workers in most other occupations and are expected to retire in greater numbers over the coming decade. In addition, some funeral directors leave the profession because of the long and irregular hours. Some mortuary science graduates relocate to get a job.

### Earnings

Median annual earnings for wage and salary funeral directors were \$49,620 in May 2006. The middle 50 percent earned



between \$37,200 and \$65,260. The lowest 10 percent earned less than \$28,410 and the top 10 percent earned more than \$91,800.

Salaries of funeral directors depend on the number of years of experience in funeral service, the number of services performed, the number of facilities operated, the area of the country, and the director's level of formal education. Funeral directors in large cities usually earn more than their counterparts in small towns and rural areas.

### Related Occupations

The job of a funeral director requires tact, discretion, and compassion when dealing with grieving people. Others who need these qualities include social workers, psychologists, physicians and surgeons, and other health practitioners involved in diagnosis and treatment.

### Sources of Additional Information

For a list of accredited mortuary science programs and information on the funeral service profession, write to:

► The National Funeral Directors Association, 13625 Bishop's Dr., Brookfield, WI 53005. Internet: <http://www.nfda.org>

For information about college programs in mortuary science, scholarships, and funeral service as a career, contact:

► The American Board of Funeral Service Education, 3432 Ashland Ave., Suite U, St. Joseph, MO 64506.

Internet: <http://www.abfse.org>

For information on specific State licensing requirements, contact the State's licensing board.

For more information about funeral directors and their work, see the *Occupational Outlook Quarterly* article, "Jobs in weddings and funerals: Working with the betrothed and the be-reaved," available in many libraries and career centers and online at:

<http://www.bls.gov/opub/ooq/2006/winter/art03.pdf>

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## Human Resources, Training, and Labor Relations Managers and Specialists

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(O\*NET 11-3041.00, 11-3042.00, 11-3049.99, 13-1071.00, 13-1071.01, 13-1071.02, 13-1072.00, 13-1073.00, 13-1079.99)

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### Significant Points

- The educational backgrounds of these workers vary considerably, reflecting the diversity of duties and levels of responsibility.
- Certification and previous experience are assets for most specialties, and are essential for more advanced positions, including managers, arbitrators, and mediators.
- College graduates who have earned certification should have the best job opportunities.

### Nature of the Work

Every organization wants to attract the most qualified employees and match them to jobs for which they are best suited. However, many enterprises are too large to permit close contact between top management and employees. Human resources, training, and labor relations managers and specialists provide this connection. In the past, these workers performed the administrative function of an organization, such as handling employee benefits questions or recruiting, interviewing, and hiring new staff in accordance with policies established by top management. Today's human resources workers manage these tasks, but, increasingly, they also consult with top executives regarding strategic planning. They have moved from behind-the-scenes staff work to leading the company in suggesting and changing policies.

In an effort to enhance morale and productivity, limit job turnover, and help organizations increase performance and improve business results, these workers also help their firms effectively use employee skills, provide training and development opportunities to improve those skills, and increase employees' satisfaction with their jobs and working conditions. Although some jobs in the human resources field require only limited contact with people outside the human resources office, dealing with people is an important part of the job.

There are many types of human resources, training, and labor relations managers and specialists. In a small organization, a *human resources generalist* may handle all aspects of human resources work, and thus require an extensive range of knowledge. The responsibilities of human resources generalists can vary widely, depending on their employer's needs.

In a large corporation, the *director of human resources* may supervise several departments, each headed by an experienced manager who most likely specializes in one human resources activity, such as employment and placement; compensation, and benefits; training and development; or labor relations. The director may report to a top human resources executive. (Executives are included in the *Handbook* statement on top executives.)

**Employment and placement.** Employment and placement managers supervise the hiring and separation of employees. They also supervise employment, recruitment, and placement specialists, including recruitment specialists and employment interviewers. Employment, recruitment, and placement specialists recruit and place workers.

**Recruiters** maintain contacts within the community and may travel considerably, often to college campuses, to search for promising job applicants. Recruiters screen, interview, and occasionally test applicants. They also may check references and extend job offers. These workers must be thoroughly familiar with the organization and its human resources policies in order to discuss wages, working conditions, and promotional opportunities with prospective employees. They also must stay informed about equal employment opportunity (EEO) and affirmative action guidelines and laws, such as the Americans with Disabilities Act.

**Employment interviewers**—whose many job titles include *human resources consultants*, *human resources development specialists*, and *human resources coordinators*—help to match

employers with qualified jobseekers. Similarly, employer relations representatives, who usually work in government agencies, maintain working relationships with local employers and promote the use of public employment programs and services.

**Compensation, benefits, and job analysis.** Compensation, benefits, and job analysis specialists conduct compensation programs for employers and may specialize in specific areas such as pensions or position classifications. For example, *job analysts*, occasionally called *position classifiers*, collect and examine detailed information about job duties in order to prepare job descriptions. These descriptions explain the duties, training, and skills that each job requires. Whenever a large organization introduces a new job or reviews existing jobs, it calls upon the expert knowledge of the job analyst.

*Occupational analysts* conduct research, usually in large firms. They are concerned with occupational classification systems and study the effects of industry and occupational trends on worker relationships. They may serve as technical liaison between the firm and other firms, government, and labor unions.

Establishing and maintaining a firm's pay system is the principal job of the *compensation manager*. Assisted by staff specialists, compensation managers devise ways to ensure fair and equitable pay rates. They may conduct surveys to see how their firm's rates compare with others, and they ensure that the firm's pay scale complies with changing laws and regulations. In addition, compensation managers often manage their firm's performance evaluation system, and they may design reward systems such as pay-for-performance plans.

*Employee benefits managers and specialists* manage the company's employee benefits program, notably its health insurance and pension plans. Expertise in designing and administering benefits programs continues to take on importance as employer-provided benefits account for a growing proportion of overall compensation costs, and as benefit plans increase in number and complexity. For example, pension benefits might include a 401K or thrift savings, profit-sharing, and stock ownership plans; health benefits might include long-term catastrophic illness insurance and dental insurance. Familiarity with health benefits is a top priority for employee benefits managers and specialists, as more firms struggle to cope with the rising cost of health care for employees and retirees. In addition to health insurance and pension coverage, some firms offer employees life and accidental death and dismemberment insurance, disability insurance, and relatively new benefits designed to meet the needs of a changing workforce, such as parental leave, child and elder care, long-term nursing home care insurance, employee assistance and wellness programs, and flexible benefits plans. Benefits managers must keep abreast of changing Federal and State regulations and legislation that may affect employee benefits.

*Employee assistance plan managers*, also called *employee welfare managers*, are responsible for a wide array of programs. These include occupational safety and health standards and practices; health promotion and physical fitness, medical examinations, and minor health treatment, such as first aid; plant security; publications; food service and recreation activities; carpooling and transportation programs, such as transit subsi-

dies; employee suggestion systems; child care and elder care; and counseling services. Child care and elder care are increasingly significant because of growth in the number of dual-income households and the elderly population. Counseling may help employees deal with emotional disorders, alcoholism, or marital, family, consumer, legal, and financial problems. Some employers offer career counseling as well. In large firms, certain programs, such as those dealing with security and safety, may be in separate departments headed by other managers.

**Training and development.** *Training and development managers and specialists* conduct and supervise training and development programs for employees. Increasingly, management recognizes that training offers a way of developing skills, enhancing productivity and quality of work, and building worker loyalty to the firm, and most importantly, increasing individual and organizational performance to achieve business results. Training is widely accepted as an employee benefit and a method of improving employee morale, and enhancing employee skills has become a business imperative. Increasingly, managers and leaders realize that the key to business growth and success is through developing the skills and knowledge of its workforce.

Other factors involved in determining whether training is needed include the complexity of the work environment, the rapid pace of organizational and technological change, and the growing number of jobs in fields that constantly generate new knowledge, and thus, require new skills. In addition, advances in learning theory have provided insights into how adults learn, and how training can be organized most effectively for them.

*Training managers* provide worker training either in the classroom or onsite. This includes setting up teaching materials prior to the class, involving the class, and issuing completion certificates at the end of the class. They have the responsibility for the entire learning process, and its environment, to ensure that the course meets its objectives and is measured and evaluated to understand how learning impacts business results.

*Training specialists* plan, organize, and direct a wide range of training activities. Trainers respond to corporate and worker service requests. They consult with onsite supervisors regarding available performance improvement services and conduct orientation sessions and arrange on-the-job training for new employees. They help all employees maintain and improve their job skills, and possibly prepare for jobs requiring greater skill. They help supervisors improve their interpersonal skills in order to deal effectively with employees. They may set up individualized training plans to strengthen an employee's existing skills or teach new ones. Training specialists in some companies set up leadership or executive development programs among employees in lower level positions. These programs are designed to develop leaders, or "groom" them, to replace those leaving the organization and as part of a succession plan. Trainers also lead programs to assist employees with job transitions as a result of mergers and acquisitions, as well as technological changes. In government-supported training programs, training specialists function as case managers. They first assess the training needs of clients and then guide them through the most appropriate training method. After training, clients may either

be referred to employer relations representatives or receive job placement assistance.

Planning and program development is an essential part of the training specialist's job. In order to identify and assess training needs within the firm, trainers may confer with managers and supervisors or conduct surveys. They also evaluate training effectiveness to ensure that the training employees receive helps the organization meet its strategic business goals and achieve results.

Depending on the size, goals, and nature of the organization, trainers may differ considerably in their responsibilities and in the methods they use. Training methods include on-the-job training; operating schools that duplicate shop conditions for trainees prior to putting them on the shop floor; apprenticeship training; classroom training; and electronic learning, which may involve interactive Internet-based training, multimedia programs, distance learning, satellite training, other computer-aided instructional technologies, videos, simulators, conferences, and workshops.

**Employee relations.** An organization's *director of industrial relations* forms labor policy, oversees industrial labor relations, negotiates collective bargaining agreements, and coordinates grievance procedures to handle complaints resulting from management disputes with unionized employees. The director of industrial relations also advises and collaborates with the director of human resources, other managers, and members of their staff, because all aspects of human resources policy—such as wages, benefits, pensions, and work practices—may be involved in drawing up a new or revised union contract.

*Labor relations managers* and their staffs implement industrial labor relations programs. Labor relations specialists prepare information for management to use during collective bargaining agreement negotiations, a process that requires the specialist to be familiar with economic and wage data and to have extensive knowledge of labor law and collective bargaining trends. The labor relations staff interprets and administers the contract with respect to grievances, wages and salaries, employee welfare, health care, pensions, union and management practices, and other contractual stipulations. As union membership continues to decline in most industries, industrial relations



*College graduates with certification should have the best opportunities for jobs as human resources, training, and labor relations managers and specialists.*

personnel are working more often with employees who are not members of a labor union.

Dispute resolution—attaining tacit or contractual agreements—has become increasingly significant as parties to a dispute attempt to avoid costly litigation, strikes, or other disruptions. Dispute resolution also has become more complex, involving employees, management, unions, other firms, and government agencies. Specialists involved in dispute resolution must be highly knowledgeable and experienced, and often report to the director of industrial relations. *Conciliators*, or *mediators*, advise and counsel labor and management to prevent and, when necessary, resolve disputes over labor agreements or other labor relations issues. *Arbitrators*, occasionally called umpires or referees, decide disputes that bind both labor and management to specific terms and conditions of labor contracts. Labor relations specialists who work for unions perform many of the same functions on behalf of the union and its members.

*EEO officers, representatives, or affirmative action coordinators* handle EEO matters in large organizations. They investigate and resolve EEO grievances, examine corporate practices for possible violations, and compile and submit EEO statistical reports.

Other emerging specialties in human resources include *international human resources managers*, who handle human resources issues related to a company's foreign operations; and *human resources information system specialists*, who develop and apply computer programs to process human resources information, match job seekers with job openings, and handle other human resources matters.

**Work environment.** Human resources work usually takes place in clean, pleasant, and comfortable office settings. Arbitrators and mediators may work out of their homes.

Although most human resources, training, and labor relations managers and specialists work in the office, some travel extensively. For example, recruiters regularly attend professional meetings and visit college campuses to interview prospective employees; arbitrators and mediators often must travel to the site chosen for negotiations.

Many human resources, training, and labor relations managers and specialists work a standard 35- to 40-hour week. However, longer hours might be necessary for some workers—for example, labor relations managers and specialists, arbitrators, and mediators—when contract agreements are being prepared and negotiated.

### **Training, Other Qualifications, and Advancement**

The educational backgrounds of human resources, training, and labor relations managers and specialists vary considerably, reflecting the diversity of duties and levels of responsibility. In filling entry-level jobs, many employers seek college graduates who have majored in human resources, human resources administration, or industrial and labor relations. Other employers look for college graduates with a technical or business background or a well-rounded liberal arts education.

**Education and training.** Many colleges and universities have programs leading to a degree in personnel, human resources, or labor relations. Some offer degree programs in human resources administration or human resources management,



training and development, or compensation and benefits. Depending on the school, courses leading to a career in human resources management may be found in departments of business administration, education, instructional technology, organizational development, human services, communication, or public administration, or within a separate human resources institution or department.

Because an interdisciplinary background is appropriate in this field, a combination of courses in the social sciences, business, and behavioral sciences is useful. Some jobs may require a more technical or specialized background in engineering, science, finance, or law, for example. Most prospective human resources specialists should take courses in compensation, recruitment, training and development, and performance appraisal, as well as courses in principles of management, organizational structure, and industrial psychology. Other relevant courses include business administration, public administration, psychology, sociology, political science, economics, and statistics. Courses in labor law, collective bargaining, labor economics, labor history, and industrial psychology also provide a valuable background for the prospective labor relations specialist. As in many other fields, knowledge of computers and information systems also is useful.

An advanced degree is increasingly important for some jobs. Many labor relations jobs require graduate study in industrial or labor relations. A strong background in industrial relations and law is highly desirable for contract negotiators, mediators, and arbitrators; in fact, many people in these specialties are lawyers. A background in law also is desirable for employee benefits managers and others who must interpret the growing number of laws and regulations. A master's degree in human resources, labor relations, or in business administration with a concentration in human resources management is highly recommended for those seeking general and top management positions.

The duties given to entry-level workers will vary, depending on whether the new workers have a degree in human resource management, have completed an internship, or have some other type of human resources-related experience. Entry-level employees commonly learn the profession by performing administrative duties—helping to enter data into computer systems, compiling employee handbooks, researching information for a supervisor, or answering the phone and handling routine questions. Entry-level workers often enter formal or on-the-job training programs in which they learn how to classify jobs, interview applicants, or administer employee benefits. They then are assigned to specific areas in the human resources department to gain experience. Later, they may advance to a managerial position, supervising a major element of the human resources program—compensation or training, for example.

**Other qualifications.** Previous experience is an asset for many specialties in the human resources field, and is essential for more advanced positions, including managers, arbitrators, and mediators. Many employers prefer entry-level workers who have gained some experience through an internship or work-study program while in school. Human resources administration and human resources development require the ability to work with individuals as well as a commitment to organizational goals. This field also demands other skills that people

may develop elsewhere—using computers, selling, teaching, supervising, and volunteering, among others. The field offers clerical workers opportunities for advancement to professional positions. Responsible positions occasionally are filled by experienced individuals from other fields, including business, government, education, social services administration, and the military.

The human resources field demands a range of personal qualities and skills. Human resources, training, and labor relations managers and specialists must speak and write effectively. The growing diversity of the workforce requires that they work with or supervise people with various cultural backgrounds, levels of education, and experience. They must be able to cope with conflicting points of view, function under pressure, and demonstrate discretion, integrity, fair-mindedness, and a persuasive, congenial personality.

**Certification and advancement.** Most organizations specializing in human resources offer classes intended to enhance the skills of their members. Some organizations offer certification programs, which are signs of competence and credibility and can enhance one's advancement opportunities. For example, the International Foundation of Employee Benefit Plans confers a designation in three distinct areas of specialization—group benefit, retirement, and compensation—to persons who complete a series of college-level courses and pass exams. Candidates can earn a designation in each of the specialty tracks and, simultaneously, receive credit toward becoming a Certified Employee Benefits Specialist (CEBP). The American Society for Training and Development (ASTD) Certification Institute offers professional certification in the learning and performance field. Addressing nine areas of expertise, it requires passing a knowledge-based exam and successful work experience. In addition, ASTD offers 16 short-term certificate and workshop programs covering a broad range of professional training and development topics. The Society for Human Resource Management offers two levels of certification, including the Professional in Human Resources (PHR) and the Senior Professional in Human Resources (SPHR). Additionally, the organization offers the Global Professional in Human Resources for those with international and cross-border responsibilities and the California Certification in Human Resources for those who plan to work in the State and are unfamiliar with California's labor and human resource laws. All designations require experience and a passing score on a comprehensive exam. World at Work Society of Certified Professionals offers four levels of designations in the areas of compensation, benefits, work life, and total rewards management practices. Through the Society, candidates can obtain the designation of Certified Compensation Professional (CCP), Certified Benefits Professional (CBP), Global Remuneration Professional (GRP), and Work-Life Certified Professional (WLCP).

Exceptional human resources workers may be promoted to director of human resources or industrial relations, which can eventually lead to a top managerial or executive position. Others may join a consulting or outsourcing firm or open their own business. A Ph.D. is an asset for teaching, writing, or consulting work.

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Human resources, training, and labor relations managers and specialists .....	—	868,000	1,015,000	147,000	17
Compensation and benefits managers.....	11-3041	49,000	55,000	5,900	12
Training and development managers .....	11-3042	29,000	33,000	4,500	16
Human resources managers, all other .....	11-3049	58,000	65,000	6,600	11
Employment, recruitment, and placement specialists.....	13-1071	197,000	233,000	36,000	18
Compensation, benefits, and job analysis specialists.....	13-1072	110,000	130,000	20,000	18
Training and development specialists .....	13-1073	210,000	249,000	38,000	18
Human resources, training, and labor relations specialists, all other .....	13-1079	214,000	250,000	35,000	16

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

**Employment**

Human resources, training, and labor relations managers and specialists held about 868,000 jobs in 2006. The following tabulation shows the distribution of jobs by occupational specialty:

Training and development specialists .....	210,000
Employment, recruitment, and placement specialists.....	197,000
Human resources managers .....	136,000
Compensation, benefits, and job analysis specialists.....	110,000
Human resources, training, and labor relations specialists, all other .....	214,000

Human resources, training, and labor relations managers and specialists were employed in virtually every industry. About 17,000 managers and specialists were self-employed, working as consultants to public and private employers.

The private sector accounted for nearly 9 out of 10 salaried jobs, including 13 percent in administrative and support services; 10 percent in professional, scientific, and technical services; 9 percent in health care and social assistance; 9 percent in finance and insurance firms; and 7 percent in manufacturing.

Government employed 13 percent of human resources managers and specialists. They handled the recruitment, interviewing, job classification, training, salary administration, benefits, employee relations, and other matters related to the Nation's public employees.

**Job Outlook**

Employment of human resources, training, and labor relations managers and specialists is expected to grow faster than the average for all occupations. College graduates who have earned certification should have the best job opportunities.

**Employment change.** Overall employment is projected to grow by 17 percent between 2006 and 2016, faster than the average for all occupations. Legislation and court rulings setting standards in various areas—occupational safety and health, equal employment opportunity, wages, health care, pensions, and family leave, among others—will increase demand for human resources, training, and labor relations experts. Rising health care costs should continue to spur demand for specialists to develop creative compensation and benefits packages that firms can offer prospective employees.

Employment of labor relations staff, including arbitrators and mediators, should grow as firms become more involved in labor relations and attempt to resolve potentially costly labor-management disputes out of court. Additional job growth may stem from increasing demand for specialists in international human resources management and human resources information systems.

Job growth could be limited by the widespread use of computerized human resources information systems that make workers more productive. Like other workers, employment of human resources, training, and labor relations managers and specialists, particularly in larger firms, may be adversely affected by corporate downsizing, restructuring, and mergers and acquisitions.

Demand may be particularly strong for certain specialists. For example, employers are expected to devote greater resources to job-specific training programs in response to the increasing complexity of many jobs and technological advances that can leave employees with obsolete skills. Additionally, as highly trained and skilled baby boomers retire, there should be strong demand for training and development specialists to impart needed skills to their replacements. In addition, increasing efforts throughout industry to recruit and retain quality employees should create many jobs for employment, recruitment, and placement specialists.

Among industries, firms involved in management, consulting, and employment services should offer many job opportunities, as businesses increasingly contract out human resources functions or hire human resources specialists on a temporary basis in order to deal with the increasing cost and complexity of training and development programs. Demand for specialists also should increase in outsourcing firms that develop and administer complex employee benefits and compensation packages for other organizations.

**Job prospects.** College graduates who have earned certification should have the best job opportunities. Graduates with a bachelor's degree in human resources, human resources administration, or industrial and labor relations should be in demand; those with a technical or business background or a well-rounded liberal arts education also should find opportunities. Demand for human resources, training, and labor relations managers and specialists is governed by the staffing needs of the firms for

which they work. A rapidly expanding business is likely to hire additional human resources workers—either as permanent employees or consultants—while a business that has experienced a merger or a reduction in its workforce will require fewer of these workers. Also, as human resources management becomes increasingly important to the success of an organization, some small and medium-size businesses that do not have a human resources department may assign employees various human resources duties together with other unrelated responsibilities.

In addition to human resources management and specialist jobs created over the 2006-2016 projection period, many job openings will arise from the need to replace workers who transfer to other occupations, retire, or leave the labor force for other reasons.

**Earnings**

Annual salary rates for human resources workers vary according to occupation, level of experience, training, location, and firm size.

Median annual earnings of compensation and benefits managers were \$74,750 in May 2006. The middle 50 percent earned between \$55,370 and \$99,690. The lowest 10 percent earned less than \$42,750, and the highest 10 percent earned more than \$132,820. In 2006, median annual earnings were \$85,330 in the management of companies and enterprises industry.

Median annual earnings of training and development managers were \$80,250 in May 2006. The middle 50 percent earned between \$58,770 and \$107,450. The lowest 10 percent earned less than \$43,530, and the highest 10 percent earned more than \$141,140.

Median annual earnings of human resources managers, all other were \$88,510 in May 2006. The middle 50 percent earned between \$67,710 and \$114,860. The lowest 10 percent earned less than \$51,810, and the highest 10 percent earned more than \$145,600. In May 2006, median annual earnings were \$98,400 in the management of companies and enterprises industry.

Median annual earnings of employment, recruitment, and placement specialists were \$42,420 in May 2006. The middle 50 percent earned between \$32,770 and \$58,320. The lowest 10 percent earned less than \$26,590, and the highest 10 percent earned more than \$81,680. Median annual earnings in the industries employing the largest numbers of employment, recruitment, and placement specialists were:

Management, scientific, and technical consulting services .....	\$53,060
Management of companies and enterprises .....	48,360
Local government .....	40,660
Employment services .....	39,720
State government.....	36,320

Median annual earnings of compensation, benefits, and job analysis specialists were \$50,230 in May 2006. The middle 50 percent earned between \$39,400 and \$63,800. The lowest 10 percent earned less than \$32,180, and the highest 10 percent earned more than \$80,150. Median annual earnings in the industries employing the largest numbers of compensation, benefits, and job analysis specialists were:

Local government .....	\$53,440
Management of companies and enterprises .....	52,960
Insurance carriers .....	50,510
Agencies, brokerages, and other insurance related activities .....	49,100
State government.....	46,100

Median annual earnings of training and development specialists were \$47,830 in May 2006. The middle 50 percent earned between \$35,980 and \$63,200. The lowest 10 percent earned less than \$27,450, and the highest 10 percent earned more than \$80,630. Median annual earnings in the industries employing the largest numbers of training and development specialists were:

Computer systems design and related services .....	\$60,430
Management of companies and enterprises .....	50,850
Insurance carriers .....	50,060
State government.....	49,040
Local government .....	47,990

The average salary for human resources managers employed by the Federal Government was \$76,503 in 2007; for labor-management relations examiners, \$94,927; and for manpower development specialists, \$86,071. Salaries were slightly higher in areas where the prevailing local pay level was higher. There are no formal entry-level requirements for managerial positions. Applicants must possess a suitable combination of educational attainment, experience, and record of accomplishment.

According to a July 2007 salary survey conducted by the National Association of Colleges and Employers, bachelor’s degree candidates majoring in human resources, including labor and industrial relations, received starting offers averaging \$41,680 a year.

**Related Occupations**

All human resources occupations are closely related. Other workers with skills and expertise in interpersonal relations include counselors, education administrators, public relations specialists, lawyers, psychologists, social and human service assistants, and social workers.

**Sources of Additional Information**

For information about human resource management careers and certification, contact:

- Society for Human Resource Management, 1800 Duke St., Alexandria, VA 22314. Internet: <http://www.shrm.org>

For information about careers in employee training and development and certification, contact:

- American Society for Training and Development, 1640 King St., Box 1443, Alexandria, VA 22313-2043.

Internet: <http://www.astd.org>

For information about careers and certification in employee compensation and benefits, contact:

- International Foundation of Employee Benefit Plans, 18700 W. Bluemound Rd., P.O. Box 69, Brookfield, WI 53008-0069.

Internet: <http://www.ifebp.org>

- World at Work, 14040 N. Northsight Blvd., Scottsdale, AZ 85260. Internet: <http://www.worldatwork.org>



## Industrial Production Managers

(O\*NET 11-3051.00)

### Significant Points

- Industrial production managers coordinate all the people and equipment involved in the manufacturing process.
- Most employers prefer to hire workers with a college degree; experience in some part of production operations is also usually required.
- Employment is expected to decline as overall employment in manufacturing declines.

### Nature of the Work

Industrial production managers plan, direct, and coordinate the production activities required to produce the vast array of goods manufactured every year in the United States. They make sure that production meets output and quality goals while remaining within budget. Depending on the size of the manufacturing plant, industrial production managers may oversee the entire plant or just one area.

Industrial production managers devise methods to use the plant's personnel and capital resources to best meet production goals. They may determine which machines will be used, whether new machines need to be purchased, whether overtime or extra shifts are necessary, and what the sequence of production will be. They monitor the production run to make sure that it stays on schedule and correct any problems that may arise.

Part of an industrial production manager's job is to come up with ways to make the production process more efficient. Traditional factory methods, such as mass assembly lines, have given way to "lean" production techniques, which give managers more flexibility. While in a traditional assembly line, each worker was responsible for only a small portion of the assembly, repeating that task on every product, lean production employs teams to build and assemble products in stations or cells, so rather than specializing in a specific task, workers are capable of performing all jobs within a team. Without the constraints of the traditional assembly line, industrial production managers can more easily change production levels and staffing on different product lines to minimize inventory levels and more quickly react to changing customer demands.

Industrial production managers also monitor product standards and implement quality control programs. They make sure the finished product meets a certain level of quality, and if not, they try to find out what the problem is and find a solution. While traditional quality control programs reacted only to problems that reached a certain significant level, newer management techniques and programs, such as ISO 9000, Total Quality Management (TQM), or Six Sigma, emphasize continuous quality improvement. If the problem relates to the quality of work performed in the plant, the manager may

implement better training programs or reorganize the manufacturing process, often based upon the suggestions of employee teams. If the cause is substandard materials or parts from outside suppliers, the industrial production manager may work with the supplier to improve their quality.

Industrial production managers work closely with the other managers of the firm to implement the company's policies and goals. They also must work with the financial departments in order to come up with a budget and spending plan. They work the closest with the heads of sales, procurement, and logistics. Sales managers relay the client's needs and the price the client is willing to pay to the production department, which must then fulfill the order. The logistics or distribution department handles the delivery of the goods, which often needs to be coordinated with the production department. The procurement department orders the supplies that the production department needs to make its products. It is also responsible for making sure that the inventories of supplies are maintained at proper levels so production proceeds without interruption. A breakdown in communications between the production manager and the procurement department can cause slowdowns and a failure to meet production schedules. Just-in-time production techniques have reduced inventory levels, making constant communication among managers, suppliers, and procurement departments even more important.

**Work environment.** Most industrial production managers divide their time between production areas and their offices. While in the production area, they must follow established health and safety practices and wear the required protective clothing and equipment. The time in the office, which often is located near production areas, usually is spent meeting with subordinates or other department managers, analyzing production data, and writing and reviewing reports.

Many industrial production managers work extended hours, especially when production deadlines must be met. In 2006, about a third of all workers worked more than 50 hours a week, on average. In facilities that operate around-the-clock, managers often work late shifts and may be called at any hour to deal with emergencies. This could mean going to the plant to resolve the problem, regardless of the hour,



*Industrial production managers monitor the quantity and quality of goods produced.*

### Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Industrial production managers.....	11-3051	157,000	148,000	-9,200	-6

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

and staying until the situation is under control. Dealing with production workers as well as superiors when working under the pressure of production deadlines or emergency situations can be stressful. Corporate restructuring has eliminated levels of management and support staff, thus shifting more responsibilities to production managers and compounding this stress.

#### Training, Other Qualifications, and Advancement

Because of the diversity of manufacturing operations and job requirements, there is no standard preparation for this occupation. Most employers prefer to hire workers with a college degree. Experience in some part of production operations is also usually required, although some college graduates are hired directly into management positions.

**Education and training.** Many industrial production managers have a college degree in business administration, management, industrial technology, or industrial engineering. However, although employers may prefer candidates with a business or engineering background, some companies will hire well-rounded liberal arts graduates who are willing to spend time in a production-related job.

Some industrial production managers enter the occupation after working their way up through the ranks, starting as production workers and then advancing to supervisory positions before being selected for management. These workers already have an intimate knowledge of the production process and the firm's organization. To be selected for promotion, workers can expand their skills by obtaining a college degree, demonstrating leadership qualities, or by taking company-sponsored courses to learn the additional skills needed for management.

As production operations become more sophisticated, an increasing number of employers look for candidates with graduate degrees in industrial management or business administration, particularly for positions at larger plants where managers have more oversight responsibilities. Combined with an undergraduate degree in engineering, either of these graduate degrees is considered particularly good preparation. Managers who do not have graduate degrees often take courses in decision sciences, which provide them with techniques and statistical formulas that can be used to maximize efficiency and improve quality. Those who enter the field directly from college or graduate school often are unfamiliar with the firm's production process. As a result, they may spend their first few months in the company's training program. These programs familiarize trainees with the production process, company policies, and the requirements of the job. In larger companies, they also may include assignments to other departments, such as purchasing and accounting. A

number of companies hire college graduates as first-line supervisors and later promote them to management positions.

**Other qualifications.** Companies are placing greater importance on a candidate's interpersonal skills. Because the job requires the ability to compromise, persuade, and negotiate, successful production managers must be well-rounded and have excellent communication skills. Strong computer skills are also essential.

Industrial production managers must continually keep informed of new production technologies and management practices. Many belong to professional organizations and attend trade shows or industry conferences where new equipment is displayed and new production methods and technologies discussed.

**Certification and advancement.** Some industrial production managers earn certifications that show their competency in various quality and management systems. Although certification is not required for industrial production manager jobs, it may improve job prospects.

One credential, Certified in Production and Inventory Management (CPIM), is offered by the Association for Operations Management and requires passing a series of exams that cover supply chain management, resource planning, scheduling, production operations, and strategic planning. Certification holders must complete a set number of professional development activities every 3 years to maintain their certification.

The American Society for Quality offers the Certified Manager of Quality/Organizational Excellence (CMQ/OE) credential. This certification is open to managers who pass an exam and who have at least 10 years of experience or education, 5 of which must be in a decision-making position. It is intended for managers who lead process improvement initiatives. To maintain certification, workers must complete a set number of professional development units every 3 years.

Industrial production managers with a proven record of superior performance may advance to plant manager or vice president for manufacturing. Others transfer to jobs with more responsibilities at larger firms. Opportunities also exist for managers to become consultants. (For more information, see the statement on management analysts elsewhere in the *Handbook*.)

#### Employment

Industrial production managers held about 157,000 jobs in 2006. About 4 out of 5 are employed in manufacturing industries, including the fabricated metal product, transportation equipment, and computer and electronic product manufacturing sectors. Production managers work in all parts of the country, but jobs are most plentiful in areas where manufacturing is concentrated.

**Job Outlook**

Employment of industrial production managers is expected to decline. Applicants with experience in production occupations along with a college degree in industrial engineering, management, or a related field will enjoy the best job prospects.

**Employment change.** Employment of industrial production managers is expected to decline moderately by 6 percent over the 2006-2016 decade, mirroring the overall decline in manufacturing employment. Some declines will result from manufacturing plants moving abroad, but domestic production in manufacturing is expected to continue to increase. However, as plants produce more goods with fewer people, there will be less need for industrial production managers.

Efforts to increase efficiency at the management level have led companies to ask production managers to assume more responsibilities, particularly as computers allow managers to more easily coordinate scheduling, planning, and communication among departments. In addition, more emphasis on quality in the production process has redistributed some of the production manager’s oversight responsibilities to supervisors and workers on the production line. However, most of the decision making work of production managers cannot be automated, which will limit the declines in employment.

**Job prospects.** Despite employment declines, a number of jobs are expected to open due to the need to replace workers who retire or transfer to other occupations. Applicants with experience in production occupations along with a college degree in industrial engineering, management, or business administration, and particularly those with an undergraduate engineering degree and a master’s degree in business administration or industrial management, will enjoy the best job prospects. Employers also are likely to seek candidates who have excellent communication skills, related work experience, and who are personable, flexible, and eager to enhance their knowledge and skills through ongoing training.

**Earnings**

Median annual earnings for industrial production managers were \$77,670 in May 2006. The middle 50 percent earned between \$59,650 and \$100,810. The lowest 10 percent earned less than \$47,230, and the highest 10 percent earned more than \$130,680. Median annual earnings in the manufacturing industries employing the largest numbers of industrial production managers were:

Management of companies and enterprises .....	\$88,820
Aerospace product and parts manufacturing.....	87,750
Motor vehicle parts manufacturing .....	79,360
Printing and related support activities.....	73,350
Plastics product manufacturing .....	70,180

**Related Occupations**

Industrial production managers oversee production staff and equipment, ensure that production goals and quality

standards are being met, and implement company policies. Other managerial occupations with similar responsibilities are general and operations managers, construction managers, and sales managers. Occupations requiring comparable training and problem-solving skills are engineers, management analysts, and operations research analysts.

**Sources of Additional Information**

General information on careers in industrial production management is available from local manufacturers and schools with programs in industrial management.

For more information on careers in production management and information on the CPIM certification, contact:

► APICS, the Association for Operations Management, 5301 Shawnee Road, Alexandria, VA 22312. Internet: <http://www.apics.org>

For more information on quality management and the CMQ/OE certification, contact:

► American Society for Quality, 600 North Plankinton Ave., Milwaukee, WI 53203. Internet: <http://www.asq.org>

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**Insurance Underwriters**

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(O\*NET 13-2053.00)

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**Significant Points**

- Most large insurance companies prefer to hire people who have a college degree in business administration or finance with courses in accounting.
- Continuing education is necessary for advancement.
- Employment is expected to grow more slowly than average as the spread of underwriting software increases worker productivity.
- Job opportunities should be best for those with a background in finance and strong computer and communication skills.

**Nature of the Work**

Insurance companies protect individuals and organizations from financial loss by assuming billions of dollars in risk each year—risks of car accident, property damage, illness, and other occurrences. Underwriters decide if insurance is provided and under what terms. They are needed to identify and calculate the risk of loss from policyholders, establish who receives a policy, determine the appropriate premium, and write policies that cover this risk. An insurance company may lose business to competitors if the underwriter appraises risks too conservatively, or it may have to pay excessive claims if the underwriting actions are too liberal.

With the aid of computers, underwriters analyze information in insurance applications to determine whether a risk is acceptable and will not result in a loss. Insurance applications often are supplemented with reports from loss-control representatives, medical reports, reports from data vendors, and actuarial studies. Underwriters then must decide whether





*Underwriters consider many factors when determining eligibility for an insurance policy.*

to issue the policy and, if so, determine the appropriate premium to charge. In making this determination, underwriters consider a wide variety of factors about the applicant. For example, an underwriter working in health insurance may consider age, family history, and current health whereas an underwriter working for a property-casualty insurance company is concerned with the causes of loss to which property is exposed and the safeguards taken by the applicant. Therefore, underwriters serve as the main link between the insurance carrier and the insurance agent. On occasion, they accompany sales agents to make presentations to prospective clients.

Technology plays an important role in an underwriter's job. Underwriters use computer applications called "smart systems" to manage risks more efficiently and accurately. These systems analyze and rate insurance applications, recommend acceptance or denial of the risk, and adjust the premium rate in accordance with the risk. With these systems, underwriters are better equipped to make sound decisions and avoid excessive losses.

The Internet also has affected the work of underwriters. Many insurance carriers' computer systems are now linked to various databases on the Internet that allow immediate access to information—such as driving records—necessary in determining a potential client's risk. This kind of access reduces the amount of time and paperwork necessary for an underwriter to complete a risk assessment.

Although there are many possible lines of insurance to work in, most underwriters specialize in one of four broad categories: life, health, mortgage, and property and casualty. Life and health insurance underwriters may further specialize in group or individual policies.

An increasing proportion of insurance sales, particularly in life and health insurance, are being made through group contracts. A standard group policy insures everyone in a specified group through a single contract at a standard premium rate. The group underwriter analyzes the overall composition of the group to ensure that the total risk is not excessive. Another type of group policy provides members of a group—senior citizens, for example—with individual policies reflecting their needs. These usually are casualty policies, such as those covering automobiles. The casualty underwriter analyzes the ap-

plication of each group member and makes individual appraisals. Some group underwriters meet with union or employer representatives to discuss the types of policies available to their group.

Property and casualty underwriters usually specialize in either commercial or personal insurance and then by type of risk insured, as in fire, homeowners', automobile, marine, or liability insurance, as well as workers' compensation. In cases where property-casualty companies provide insurance through a single "package" policy covering various types of risks, the underwriter must be familiar with different lines of insurance. For business insurance, the underwriter often must be able to evaluate the firm's entire operation in appraising its application for insurance.

**Work environment.** Underwriters have desk jobs that require no unusual physical activity. Their offices usually are comfortable and pleasant. Most underwriters are based in a company headquarters or regional branch office, but they occasionally attend meetings away from home for several days. Construction and marine underwriters frequently travel to inspect worksites and assess risks.

Although underwriters typically work a standard 40-hour week, more are working longer hours due to the downsizing of many insurance companies. For some underwriters, evening and weekend hours are not uncommon.

### **Training, Other Qualifications, and Advancement**

Although there are no formal education requirements for becoming an underwriter, many employers prefer candidates with a bachelor's degree or professional designation, some insurance-related experience, and strong computer skills. Much of what an underwriter does may be learned through on-the-job training, so the majority of underwriters start their careers as trainees.

**Education and training.** For entry-level underwriting jobs, most large insurance companies prefer college graduates who have a degree in business administration or finance with courses or experience in accounting. However, a bachelor's degree in almost any field—plus courses in business law and accounting—provides a good general background and may be sufficient to qualify an individual. Because computers are an integral part of most underwriters' jobs, some coursework with computers is also beneficial. Many employers prefer to hire candidates with several years of related experience in underwriting or insurance.

New employees usually start as underwriter trainees or assistant underwriters. They may help collect information on applicants and evaluate routine applications under the supervision of an experienced risk analyst. Property and casualty trainees study claims files to become familiar with factors associated with certain types of losses. Many larger insurers offer work-study training programs, lasting from a few months to a year. As trainees gain experience, they are assigned policy applications that are more complex and cover greater risks.

The computer programs many underwriters use to assess risk are always being improved upon and updated, so on-the-job computer training may continue throughout an underwriter's career.

## Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Insurance underwriters.....	13-2053	104,000	111,000	6,600	6

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

**Other qualifications.** Underwriting can be a satisfying career for people who enjoy analyzing information and paying attention to detail. In addition, underwriters must possess good judgment in order to make sound decisions. Excellent communication and interpersonal skills also are essential, as much of the underwriter's work involves dealing with agents and other insurance professionals.

**Certification and advancement.** Continuing education is necessary for advancement. Independent-study programs for experienced underwriters are available. The Insurance Institute of America offers a training program for beginning underwriters. It also offers the designation of Associate in Commercial Underwriting (ACU) for those starting a career in underwriting business insurance policies. People interested in underwriting personal insurance policies may earn the Associate in Personal Insurance (API) designation. To earn either the ACU or API designation, underwriters complete a series of courses and examinations that generally lasts 1 to 2 years.

The American Institute for Chartered Property Casualty Underwriters awards the Chartered Property and Casualty Underwriter (CPCU) designation to experienced underwriters. Earning the CPCU designation requires passing 8 exams, having at least 3 years of insurance experience, and abiding by the Institute's and CPCU Society's code of professional ethics.

The American College offers the equivalent Chartered Life Underwriter (CLU) designation and the Registered Health Underwriter (RHU) designation for life and health insurance professionals.

Experienced underwriters who complete courses of study may advance to senior underwriter or underwriting manager positions. Some underwriting managers are promoted to senior managerial jobs. Some employers require a master's degree to achieve this level. Other underwriters are attracted to the earnings potential of sales and, therefore, obtain State licenses to sell insurance and related financial products as agents or brokers.

### Employment

Insurance underwriters held about 104,000 jobs in 2006. Insurance carriers employed 65 percent of all underwriters. Most of the remaining underwriters work in insurance agencies or for organizations that offer insurance services to insurance companies and policyholders. A small number of underwriters work in agencies owned and operated by banks, mortgage companies, and real estate firms.

Most underwriters are based in the insurance company's home office, but some, mainly in the property and casualty area, work out of regional branch offices of the insurance company. These underwriters usually have the authority to underwrite most risks and determine an appropriate rating without consulting the home office.

### Job Outlook

Although growth is expected to be more slowly than the average for all occupations, job prospects will remain good because of the continuous turnover experienced in this occupation.

**Employment change.** Employment of underwriters is expected to grow by 6 percent during the 2006-16 decade, which is slower than the average for all occupations. Underwriting software will continue to make workers more productive, but it does not do away with the need for human skills. As a result, employment of underwriters will increase as a growing economy and population expands the insurance needs of businesses and individuals.

Demand for underwriters also is expected to improve as insurance carriers try to restore profitability to make up for an unusually large number of underwriting losses in recent years. As the carriers' returns on their investments have declined, insurers are placing more emphasis on underwriting to generate revenues. This renewed interest in underwriting should result in some long-term growth for underwriters.

**Job prospects.** Job opportunities should be best for those with experience in related insurance jobs, a background in finance, and strong computer and communication skills. In addition to openings arising from job growth, openings also will be created by the need to replace underwriters who retire or transfer to another occupation.

New and emerging fields of insurance will be the source of the most job opportunities for underwriters. Insurance carriers are always assessing new risks and offering new types of policies to meet changing circumstances. Underwriters are needed particularly in the area of product development, where they assess risks and set the premiums for new lines of insurance. One new line of insurance being offered by life insurance carriers is long-term care insurance and it may provide job opportunities for underwriters.

### Earnings

Median annual earnings of wage and salary insurance underwriters were \$52,350 in May 2006. The middle 50 percent earned between \$40,000 and \$71,070 a year. The lowest 10 percent earned less than \$32,270, while the highest 10 percent earned more than \$92,240. Median annual earnings of underwriters working with insurance carriers were \$52,900, while underwriters' median annual earnings in agencies, brokerages, and other insurance related activities were \$51,820.

Insurance companies usually provide better-than-average benefits, including retirement plans and employer-financed group life and health insurance. Insurance companies usually pay tuition for underwriting courses that their trainees complete, and some also offer salary incentives.

## Related Occupations

Underwriters make decisions on the basis of financial and statistical data. Other workers with the same type of responsibility include accountants and auditors, actuaries, budget analysts, cost estimators, financial managers, loan officers, and credit analysts. Other related jobs in the insurance industry include insurance sales agents and claims adjusters, appraisers, examiners, and investigators.

## Sources of Additional Information

Information about a career as an insurance underwriter is available from the home offices of many insurance companies.

Information about the property-casualty insurance field can be obtained by contacting:

➤ Insurance Information Institute, 110 William St., New York, NY 10038. Internet: <http://www.iii.org>

Information about the health insurance field can be obtained by contacting:

➤ National Association of Health Underwriters, 2000 North 14th Street, Suite 450, Arlington, VA 22201.

Internet: <http://www.nahu.org>

Information on the underwriting function and the CPCU and AU designations can be obtained from:

➤ American Institute for Chartered Property and Casualty Underwriters and Insurance Institute of America, 720 Providence Rd., P.O. Box 3016, Malvern, PA 19355.

Internet: <http://www.aicpcu.org>

➤ CPCU Society, 720 Providence Road, Malvern, PA 19355.

Internet: <http://www.cpcusociety.org>

Information on the CLU and RHU designations can be obtained from:

➤ American College, 270 South Bryn Mawr Ave., Bryn Mawr, PA 19010. Internet: <http://www.theamericancollege.edu>

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## Loan Officers

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(O\*NET 13-2072.00)

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### Significant Points

- About 9 out of 10 loan officers work for commercial banks, savings institutions, credit unions, and related financial institutions.
- Loan officers usually need a bachelor's degree in finance, economics, or a related field; training or experience in banking, lending, or sales is advantageous.
- Earnings often fluctuate with the number of loans generated, rising substantially when the economy is good and interest rates are low.

### Nature of the Work

For many individuals, taking out a loan is the only way to buy a house, car, or college education. For businesses, loans likewise are essential to start many companies, purchase inventory, or invest in capital equipment. *Loan officers* facilitate this lending by finding potential clients and helping them to apply for loans.



*Loan officers determine the creditworthiness of prospective clients.*

Loan officers also gather personal information about clients and businesses to ensure an informed decision regarding their creditworthiness and the probability of repayment. Loan officers may also provide guidance to prospective borrowers who have problems qualifying for traditional loans. For example, loan officers might determine the most appropriate type of loan for a particular customer and explain specific requirements and restrictions associated with the loan.

Loan officers guide clients through the process of applying for a loan. The process begins with a meeting or telephone call with a prospective client, during which the loan officer obtains basic information about the purpose of the loan and explains the different types of loans and credit terms available to the applicant. Loan officers answer questions about the process and sometimes assist clients in filling out the application.

After a client completes the application, the loan officer begins the process of analyzing and verifying the information on the application to determine the client's creditworthiness. Often, loan officers can quickly access the client's credit history by computer and obtain a credit "score," representing a software program's assessment of the client's creditworthiness. When a credit history is not available or when unusual financial circumstances are present, the loan officer may request additional financial information from the client or, in the case of commercial loans, copies of the company's financial statements. Loan officers include such information and their written comments in a loan file, which is used to analyze whether the prospective loan meets the lending institution's requirements. Loan officers then decide, in consultation with their managers, whether to grant the loan. If the loan is approved, a repayment schedule is arranged with the client.

Loan officers usually specialize in commercial, consumer, or mortgage loans. Commercial or business loans help companies pay for new equipment or expand operations; consumer loans include home equity, automobile, and personal loans; mortgage loans are made to purchase real estate or to refinance an existing mortgage. As banks and other financial institutions begin to offer new types of loans and a growing variety of financial services, loan officers will have to learn about these new product lines.



In many instances, loan officers act as salespeople. Commercial loan officers, for example, contact firms to determine their needs for loans. If a firm is seeking new funds, the loan officer will try to persuade the company to obtain the loan from his or her institution. Similarly, mortgage loan officers develop relationships with commercial and residential real estate agencies so that, when an individual or firm buys a property, the real estate agent might recommend contacting a specific loan officer for financing.

Some loan officers, called loan underwriters, specialize in evaluating a client’s creditworthiness and may conduct a financial analysis or other risk assessment.

Other loan officers, referred to as *loan collection officers*, contact borrowers with delinquent loan accounts to help them find a method of repayment to avoid their defaulting on the loan. If a repayment plan cannot be developed, the loan collection officer initiates collateral liquidation, in which the lender seizes the collateral used to secure the loan—a home or car, for example—and sells it to repay the loan.

**Work environment.** Working as a loan officer usually involves considerable travel. For example, commercial and mortgage loan officers frequently work away from their offices and rely on laptop computers, cellular telephones, and pagers to keep in contact with their employers and clients. Mortgage loan officers often work out of their home or car, visiting offices or homes of clients to complete loan applications. Commercial loan officers sometimes travel to other cities to prepare complex loan agreements. Consumer loan officers, however, are likely to spend most of their time in an office.

Most loan officers work a standard 40-hour week, but many work longer, depending on the number of clients and the demand for loans. Mortgage loan officers can work especially long hours because they are free to take on as many customers as they choose. Loan officers are especially busy when interest rates are low, causing a surge in loan applications.

**Training, Other Qualifications, and Advancement**

Loan officers usually need a bachelor’s degree in finance, economics, or a related field. Previous banking, lending, or sales experience is also highly valued by employers.

**Education and training.** Loan officer positions generally require a bachelor’s degree in finance, economics, or a related field. Loan officers without a college degree often advance to their positions after gaining several years of work experience in various other related occupations, such as teller or customer service representative.

**Licensure.** There are currently no specific licensing requirements for loan officers working in banks or credit unions. Training and licensing requirements for loan officers who work in mortgage banks or brokerages vary by State and may include continuing education requirements. As the types of mortgages

offered to prospective homebuyers increases, licensing requirements may become more stringent as regulators and lawmakers become more leery of possible predatory lending.

**Other qualifications.** People planning a career as a loan officer should be good at working with others, confident in their abilities, and highly motivated. Loan officers must be willing to attend community events as representatives of their employer. Sales ability, good interpersonal and communication skills, and a strong desire to succeed also are important qualities for loan officers. Most employers also prefer applicants who are familiar with computers and their applications in banking.

**Certification and advancement.** Capable loan officers may advance to larger branches of their firms or to managerial positions. Some loan officers advance to supervise other loan officers and clerical staff.

Various banking associations and private schools offer courses and programs for students interested in lending and for experienced loan officers who want to keep their skills current. For example, the Bank Administration Institute, an affiliate of the American Banker’s Association, offers the Loan Review Certificate Program for people who review and approve loans. This program enhances the quality of reviews and improves the early detection of deteriorating loans, thereby contributing to the safety and soundness of the loan portfolio.

The Mortgage Bankers Association offers the Certified Mortgage Banker (CMB) designation to loan officers in real estate finance. The association offers three CMB designations: residential, commerce, and masters to candidates who have 3 years of experience, earn educational credits, and pass an exam. Completion of these courses and programs generally enhances employment and advancement opportunities.

**Employment**

Loan officers held about 373,000 jobs in 2006. About 9 out of 10 loan officers were employed by commercial banks, savings institutions, credit unions, and related financial institutions. Loan officers are employed throughout the Nation, but most work in urban and suburban areas. At some banks, particularly in rural areas, the branch or assistant manager often handles the loan application process.

**Job Outlook**

Loan officers can expect average employment growth. Job opportunities will be best for people with a college education and related experience.

**Employment change.** Employment of loan officers is projected to increase 11 percent between 2006 and 2016, which is about as fast as the the average for all occupations. Employment growth stemming from economic expansion and population increases—factors that generate demand for loans—will be partially offset by increased automation that speeds the lending

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Loan officers .....	13-2072	373,000	415,000	43,000	11

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

process and by the growing use of the Internet to apply for and obtain loans.

The use of credit scoring has made the loan evaluation process much simpler than in the past and even unnecessary in some cases. Credit scoring allows loan officers—particularly loan underwriters—to evaluate many more loans in less time than previously. In addition, the mortgage application process has become highly automated and standardized, a simplification that has enabled mortgage loan vendors to offer their services over the Internet. Online vendors accept loan applications from customers over the Internet and determine which lenders have the best interest rates for particular loans. With this knowledge, customers can go directly to the lending institution, thereby bypassing mortgage loan brokers. Shopping for loans on the Internet, especially for mortgages, is expected to become more common in the future and to slow job growth for loan officers.

**Job prospects.** Besides openings arising from growth, additional job openings will result from the need to replace workers who retire or otherwise leave the occupation permanently.

College graduates and those with banking, lending, or sales experience should have the best job prospects.

Job opportunities for loan officers are influenced by the volume of applications, which is determined largely by interest rates and by the overall level of economic activity. Although loans remain a major source of revenue for banks, demand for new loans fluctuates and affects the income and employment opportunities of loan officers. An upswing in the economy or a decline in interest rates often results in a surge in real estate buying and mortgage refinancing, requiring loan officers to work long hours processing applications and inducing lenders to hire additional loan officers. Loan officers often are paid by commission on the value of the loans they place, and when the real estate market slows, they often suffer a decline in earnings and may even be subject to layoffs. The same applies to commercial loan officers, whose workloads increase during good economic times as companies seek to invest more in their businesses. In difficult economic conditions, an increase in the number of delinquent loans results in more demand for loan collection officers.

### Earnings

Median annual earnings of wage and salary loan officers were \$51,760 in May 2006. The middle 50 percent earned between \$37,590 and \$73,630. The lowest 10 percent earned less than \$29,590 while the top 10 percent earned more than \$107,040. Median annual earnings in the industries employing the largest numbers of loan officers were as follows:

The form of compensation for loan officers varies. Most are paid a commission based on the number of loans they originate. Some institutions pay only salaries, while others pay their loan officers a salary plus a commission or bonus based on the number of loans originated. Loan officers who are paid on commission usually earn more than those who earn only a salary, and those who work for smaller banks generally earn less than those employed by larger institutions.

According to a salary survey conducted by Robert Half International, a staffing services firm specializing in account-

ing and finance, consumer loan officers, referred to as personal bankers, with 1 to 3 years of experience earned between \$30,750 and \$36,250 in 2007, and commercial loan officers with 1 to 3 years of experience made between \$45,750 and \$70,250. Commercial loan officers with more than 3 years of experience made between \$61,750 and \$100,750, and consumer loan officers earned between \$36,250 and \$51,250. Earnings of loan officers with graduate degrees or professional certifications are higher.

Banks and other lenders sometimes may offer their loan officers free checking privileges and somewhat lower interest rates on personal loans.

### Related Occupations

Loan officers help people manage financial assets and secure loans. Occupations that involve similar functions include those of securities, commodities, and financial services sales agents; financial analysts and personal financial advisors; real estate brokers and sales agents; insurance underwriters; insurance sales agents; and loan counselors.

### Sources of Additional Information

Information about a career as a mortgage loan officer can be obtained from:

► Mortgage Bankers Association, 1919 Pennsylvania Ave. NW., Washington, DC 20006.

Internet: <http://www.mortgagebankers.org>

State bankers' associations can furnish specific information about job opportunities in their State. Also, individual banks can supply information about job openings and the activities, responsibilities, and preferred qualifications of their loan officers.

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## Lodging Managers

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(O\*NET 11-9081.00)

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### Significant Points

- Long hours, including night and weekend work, are common.
- Employment is projected to grow about as fast as the average for all occupations.
- College graduates with degrees in hotel or hospitality management should have better opportunities for jobs at full-service hotels and for advancement than those without a degree.

### Nature of the Work

A comfortable room, good food, and a helpful staff can make being away from home an enjoyable experience for both vacationing families and business travelers. Lodging managers make sure that these conveniences are provided, while also ensuring that the establishments are run efficiently and profitably. Most lodging managers work in traditional hotels and motels, but some work in other lodging establishments, such

as recreational camps and RV parks, inns, boardinghouses, and youth hostels.

Lodging establishments can vary significantly in size and in the number of services they provide, which can range from supplying a simple in-room television and continental breakfast to operating a casino and accommodating a convention. These factors affect the number and type of lodging managers employed at each property. However, the one person who oversees all lodging operations at a property is usually called a *general manager*. At larger hotels with several departments and multiple layers of management, one general manager and multiple assistant managers coordinate the activities of separate departments. (See related sections elsewhere in the *Handbook* on supervisors and managers of housekeeping and janitorial workers, human resources, training, and labor relations managers and specialists, financial managers, advertising, marketing, promotions, public relations and sales managers, and food service managers.) In smaller limited-service hotels—mainly those without food and beverage service—one lodging manager may direct all the activities of the property.

Lodging managers have overall responsibility for the operation and profitability of the hotel. Depending on the hotel and the size of its staff, lodging managers may either perform or direct housekeeping, personnel, office administration, marketing and sales, purchasing, security, maintenance, oversight of recreation facilities, and other activities. They may hire and train staff, set schedules, and lend a hand when needed.

Within guidelines established by the owners of the hotel or executives of the hotel chain, lodging managers set room rates, allocate funds to departments, approve expenditures, and ensure that standards for guest service, decor, housekeeping, food quality, and banquet operations are met. Increasingly, lodging managers are also responsible for ensuring that the information technology that is common in today's hotels is operational. Some lodging managers work in financial management, monitoring room sales and reservations, overseeing accounting and cash-flow matters at the hotel, projecting occupancy levels, and deciding which rooms to discount and when to offer rate specials.



*Lodging managers ensure that standards for guest service are met.*

*Front office managers*, a category of lodging manager, coordinate reservations and room assignments and train and direct the hotel's front desk staff. They ensure that guests are treated courteously, complaints and problems are resolved, and requests for special services are carried out. Any adjustments to bills often are referred to front office managers for resolution.

Some lodging managers, called *convention services managers*, coordinate the activities of various departments to accommodate meetings, conventions, and special events. They meet with representatives of groups or organizations to plan the number of conference rooms to reserve, the configuration of the meeting space, and determine what other services the group will need, such as catering or banquets and audio, visual, or other electronic requirements. During the meeting or event, they resolve unexpected problems and monitor activities to ensure that hotel operations conform to the group's expectations.

Lodging managers may work with hotel sales and marketing directors and public relations directors to manage and coordinate the advertising and promotion of the hotel. They help develop lodging and dining specials and coordinate special events, such as holiday or seasonal specials. They may direct their staff to purchase advertising and to market their property to organizations or groups seeking a venue for conferences, conventions, business meetings, trade shows, and special events.

Lodging managers who oversee the personnel functions of a hotel or serve as human resource directors ensure that all accounting, payroll, and employee relations matters are handled in compliance with hotel policy and applicable laws. They also oversee hiring practices and standards and ensure that training and promotion programs reflect appropriate employee development guidelines.

Computers are used extensively by lodging managers and their assistants to keep track of guests' bills, reservations, room assignments, meetings, and special events. In addition, computers are used to order food, beverages, and supplies, as well as to prepare reports for hotel owners and top-level managers. Many hotels also provide extensive information technology services for their guests. Managers work with computer specialists and other information technology specialists to ensure that the hotel's computer systems, Internet, and communications networks function properly.

**Work environment.** Because hotels are open around the clock, night and weekend work is common. Many lodging managers work more than 40 hours per week and are often on-call, which means they may be called back to work at any time. In some hotels and resort properties where work is seasonal, managers may have other duties less related to guest services during the off season or they may find work in other hotels or occupations.

The pressures of coordinating a wide range of activities, turning a profit for investors, and dealing with guests who are sometimes angry can be stressful. Managing conferences and working at the front desk during check-in and check-out times can be particularly hectic.



**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Lodging managers.....	11-9081	71,000	80,000	8,700	12

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

**Training, Other Qualifications, and Advancement**

Management trainees for larger upscale hotel chains almost always need a bachelor's or master's degree, preferably in hospitality or hotel management. If not coming directly from college, experience working at a hotel is generally required to get a position as a lodging manager.

**Education and training.** Most large, full-service hotel chains usually hire people who have a bachelor's degree in business, hotel, or hospitality management for management trainee positions; however, a liberal arts degree coupled with experience in the hospitality field may be sufficient. At other hotels, especially those with fewer services, employers look for applicants with an associate degree or certificate in hotel, restaurant, or hospitality management along with experience. Formal internships or part-time or summer work in a hotel are an asset. Most degree programs include work-study opportunities.

Community colleges, junior colleges, and many universities offer certificate or degree programs in hotel, restaurant, or hospitality management leading to an associate, bachelor's, or graduate degree. Technical institutes, vocational and trade schools, and other academic institutions also offer courses leading to formal recognition in hospitality management. More than 800 educational facilities across the United States provide academic training for would-be lodging managers. Hotel management programs include instruction in hotel administration, accounting, economics, marketing, housekeeping, food service management and catering, and hotel maintenance and engineering. Computer training also is an integral part of hotel management training due to the widespread use of computers in reservations, billing, and housekeeping management. Lodging managers also need to know how to generate and read profit-and-loss reports and other business and economic data.

More than 450 high schools in 45 States offer the Lodging Management Program created by the Educational Institute of the American Hotel and Lodging Association. This 2-year program offered to high school juniors and seniors teaches management principles and leads to a professional certification called the "Certified Rooms Division Specialist." Many colleges and universities grant participants in this program credit towards a postsecondary degree in hotel management.

Hotel employees who do not have hospitality training or a college degree but who do demonstrate leadership potential and possess sufficient experience may be invited to participate in a management training program sponsored by the hotel or a hotel chain's corporate parent. Those who already possess the people skills and service orientation needed to succeed in hotel management can usually train for technical expertise in areas such as computer use and accounting principles while on the job. Trainees usually begin as assistant managers and

may rotate assignments among the hotel's departments to gain a wide range of experiences. Relocation to another property may be required to help round out the experience and to help a trainee grow into a more responsible management position in a larger or busier hotel.

**Other qualifications.** Lodging managers must be able to get along with many different types of people, even in stressful situations. They must be able to solve problems quickly and concentrate on details. Initiative, self-discipline, effective communication skills, and the ability to organize and direct the work of others are essential for lodging managers. Managers must have a good knowledge of hotel operations, including safety and security measures, repair and maintenance, and personnel practices. Knowledge of hotel financing is essential to operate a hotel profitably.

**Certification and advancement.** Large hotel chains may offer better opportunities for advancement than small, independently owned establishments, but relocation every several years often is necessary for advancement. Large chains have more extensive career ladder programs and offer managers the opportunity to transfer to another hotel in the chain or to a regional or central office. Career advancement can be accelerated by the completion of certification programs offered by various hotel and lodging associations. Certification usually requires a combination of course work, examinations, and experience.

**Employment**

Most lodging managers work in the traveler accommodation industry, including hotels and motels, although they can work for any business that provides room or shelter for people. Companies that manage hotels under contract also employ managers. Lodging managers held about 71,000 jobs in 2006. The majority of lodging managers—54 percent—were self-employed, primarily as owners of small hotels and bed-and-breakfast inns.

**Job Outlook**

Steady growth in travel will provide average job growth and very good job opportunities for lodging managers. However, those seeking jobs at hotels with the highest level of guest services will face strong competition.

**Employment change.** Employment of lodging managers is expected to grow 12 percent from 2006 to 2016, which is about as fast as the average for all occupations. Steady business travel and increased domestic and foreign tourism will drive job growth. The many new hotels being planned or built will need lodging managers to run them. In 2007 alone, over 600 new hotels will open. Many of these will be located in suburbs where population and business activity are growing fastest. Most of these new hotels, however, will offer limited

services and will not have large staffs or need many managers, somewhat moderating job growth. Some lodging places also do not require a manager to be available 24 hours a day; instead front desk clerks assume some managerial duties at night. Still, there are expected to be a significant number of full-service hotels built, including resort, casino, and luxury hotels, which should generate many additional job openings for experienced managers and management trainees.

**Job prospects.** In addition to job openings from employment growth, additional job openings are expected to occur as experienced managers leave the labor force or transfer to other occupations, in part because of the long hours and stressful working conditions. Job opportunities are expected to be good for people with good customer service skills and experience in the food service or hospitality industries. People with a college degree in hotel or hospitality management are expected to have the best opportunities at upscale and luxury hotels.

### Earnings

Median annual earnings of lodging managers were \$42,320 in May 2006. The middle 50 percent earned between \$31,870 and \$58,380. The lowest 10 percent earned less than \$25,120 and the highest 10 percent earned more than \$82,510. Median annual earnings for lodging managers in traveler accommodations were \$41,880.

Salaries of lodging managers vary greatly according to their responsibilities, location, and the segment of the hotel industry in which they work. Managers may earn bonuses of up to 25 percent of their basic salary in some hotels and also may be furnished with meals, parking, laundry, and other services. In addition to providing typical benefits, some hotels offer profit-sharing plans and educational assistance to their employees.

### Related Occupations

Other workers who organize and direct a business focused on customer service include food service managers, gaming managers, sales worker supervisors, and property, real estate, and community association managers.

### Sources of Additional Information

For information on careers and scholarships in hotel management, contact:

➤ American Hotel and Lodging Association, 1201 New York Ave. NW., Suite 600, Washington, DC 20005.

Internet: <http://www.ahla.com>

Information on careers in the lodging industry and professional development and training programs may be obtained from:

➤ Educational Institute of the American Hotel and Lodging Association, 800 N. Magnolia Ave., Suite 1800, Orlando, FL 32853. Internet: <http://www.ei-ahla.org>

For information on educational programs in hotel and restaurant management, including correspondence courses, write to:

➤ International Council on Hotel, Restaurant, and Institutional Education, 2810 North Parham Rd., Suite 230, Richmond, VA 23294. Internet: <http://www.chrie.org>

## Management Analysts

(O\*NET 13-1111.00)

### Significant Points

- Despite much faster than average employment growth, keen competition is expected for jobs; opportunities should be best for those with a graduate degree, specialized expertise, and a talent for salesmanship and public relations.
- About 27 percent, over three times the average for all occupations, are self-employed.
- A bachelor's degree is sufficient for many entry-level government jobs; many positions in private industry require a master's degree, specialized expertise, or both.

### Nature of the Work

As business becomes more complex, firms are continually faced with new challenges. They increasingly rely on management analysts to help them remain competitive amidst these changes. Management analysts, often referred to as *management consultants* in private industry, analyze and propose ways to improve an organization's structure, efficiency, or profits.

For example, a small but rapidly growing company might employ a consultant who is an expert in just-in-time inventory management to help improve its inventory-control system. In another case, a large company that has recently acquired a new division may hire management analysts to help reorganize the corporate structure and eliminate duplicate or nonessential jobs. In recent years, information technology and electronic commerce have provided new opportunities for management analysts. Companies hire consultants to develop strategies for entering and remaining competitive in the new electronic marketplace. (For information on computer specialists working in consulting, see the following statements elsewhere in the *Handbook*: computer software engineers; systems analysts, computer scientists, and database administrators; and computer programmers.)

Management analysts might be single practitioners or part of large international organizations employing thousands of other consultants. Some analysts and consultants specialize in a specific industry, such as health care or telecommunications, while others specialize by type of business function, such as human resources, marketing, logistics, or information systems. In government, management analysts tend to specialize by type of agency. The work of management analysts and consultants varies with each client or employer, and from project to project. Some projects require a team of consultants, each specializing in one area. In other projects, consultants work independently with the organization's managers. In all cases, analysts and consultants collect, review, and analyze information in order to make recommendations to managers.

Both public and private organizations use consultants for a variety of reasons. Some lack the internal resources needed to

handle a project, while others need a consultant's expertise to determine what resources will be required and what problems may be encountered if they pursue a particular opportunity. To retain a consultant, a company first solicits proposals from a number of consulting firms specializing in the area in which it needs assistance. These proposals include the estimated cost and scope of the project, staffing requirements, references from a number of previous clients, and a completion deadline. The company then selects the proposal that best suits its needs. Some firms, however, employ internal management consulting groups rather than hiring outside consultants.

After obtaining an assignment or contract, management analysts first define the nature and extent of the problem that they have been asked to solve. During this phase, they analyze relevant data—which may include annual revenues, employment, or expenditures—and interview managers and employees while observing their operations. The analysts or consultants then develop solutions to the problem. While preparing their recommendations, they take into account the nature of the organization, the relationship it has with others in the industry, and its internal organization and culture. Insight into the problem often is gained by building and solving mathematical models, such as one that shows how inventory levels affect costs and product delivery times.

Once they have decided on a course of action, consultants report their findings and recommendations to the client. Their suggestions usually are submitted in writing, but oral presentations regarding findings also are common. For some projects, management analysts are retained to help implement the suggestions they have made.

Like their private-sector colleagues, management analysts in government agencies try to increase efficiency and worker productivity and to control costs. For example, if an agency is planning to purchase personal computers, it must first determine which type to buy, given its budget and data-processing needs. In this case, management analysts would assess the prices and characteristics of various machines and determine which ones best meet the agency's goals. Analysts may manage contracts for a wide range of goods and services to ensure quality performance and to prevent cost overruns.

**Work environment.** Management analysts usually divide their time between their offices and the client's site. In either



Many management analysts are self-employed.

situation, much of an analyst's time is spent indoors in clean, well-lit offices. Because they must spend a significant portion of their time with clients, analysts travel frequently.

Analysts and consultants generally work at least 40 hours a week. Uncompensated overtime is common, especially when project deadlines are approaching. Analysts may experience a great deal of stress when trying to meet a client's demands, often on a tight schedule.

Self-employed consultants can set their workload and hours and work at home. On the other hand, their livelihood depends on their ability to maintain and expand their client base. Salaried consultants also must impress potential clients to get and keep clients for their company.

### **Training, Other Qualifications, and Advancement**

Entry requirements for management analysts vary. For some entry-level positions, a bachelor's degree is sufficient. For others, a master's degree, specialized expertise, or both is required.

**Education and training.** Educational requirements for entry-level jobs in this field vary between private industry and government. Many employers in private industry generally seek individuals with a master's degree in business administration or a related discipline. Some employers also require additional years of experience in the field or industry in which the worker plans to consult. Other firms hire workers with a bachelor's degree as research analysts or associates and promote them to consultants after several years. Some government agencies require experience, graduate education, or both, but many also hire people with a bachelor's degree and little work experience for entry-level management analyst positions.

Few universities or colleges offer formal programs in management consulting; however, many fields of study provide a suitable educational background for this occupation because of the wide range of areas addressed by management analysts. Common fields of study include business, management, accounting, marketing, economics, statistics, computer and information science, or engineering. Most analysts also have years of experience in management, human resources, information technology, or other specialties. Analysts also routinely attend conferences to keep abreast of current developments in their field.

**Other qualifications.** Management analysts often work with minimal supervision, so they need to be self-motivated and disciplined. Analytical skills, the ability to get along with a wide range of people, strong oral and written communication skills, good judgment, time-management skills, and creativity are other desirable qualities. The ability to work in teams also is an important attribute as consulting teams become more common.

**Certification and advancement.** As consultants gain experience, they often become solely responsible for specific projects, taking on more responsibility and managing their own hours. At the senior level, consultants may supervise teams working on more complex projects and become more involved in seeking out new business. Those with exceptional skills may eventually become partners in the firm, focusing on attracting new clients and bringing in revenue. Senior consultants who leave their consulting firms often move to senior management



positions at non-consulting firms. Others with entrepreneurial ambition may open their own firms.

A high percentage of management consultants are self-employed, partly because business startup and overhead costs are low. Since many small consulting firms fail each year because of lack of managerial expertise and clients, persons interested in opening their own firm must have good organizational and marketing skills. Several years of consulting experience are also helpful.

The Institute of Management Consultants USA, Inc. offers the Certified Management Consultant (CMC) designation to those who meet minimum levels of education and experience, submit client reviews, and pass an interview and exam covering the IMC USA's Code of Ethics. Management consultants with a CMC designation must be recertified every 3 years. Certification is not mandatory for management consultants, but it may give a jobseeker a competitive advantage.

**Employment**

Management analysts held about 678,000 jobs in 2006. About 27 percent of these workers, over three times the average for all occupations, were self-employed. Management analysts are found throughout the country, but employment is concentrated in large metropolitan areas. Management analysts work in a range of industries, including management, scientific, and technical consulting firms; computer systems design and related services firms; and Federal, State, and local governments.

**Job Outlook**

Employment of management analysts is expected to grow much faster than average. Despite projected rapid employment growth, keen competition is expected for jobs as management analysts because of the independent and challenging nature of the work and the high earnings potential that make this occupation attractive to many.

**Employment change.** Employment of management analysts is expected to grow 22 percent over the 2006-16 decade, much faster than the average for all occupations, as industry and government increasingly rely on outside expertise to improve the performance of their organizations. Job growth is projected in very large consulting firms with international expertise and in smaller consulting firms that specialize in specific areas, such as biotechnology, health care, information technology, human resources, engineering, and marketing. Growth in the number of individual practitioners may be hindered by increasing use of consulting teams that are often more versatile.

Job growth for management analysts has been driven by a number of changes in the business environment that have forced firms to take a closer look at their operations. These changes include regulatory changes, developments in information technology, and the growth of electronic commerce. Firms hire consul-

tants to help them adapt to new business regulations, such as the Sarbanes-Oxley Act, which tightened financial reporting rules. Traditional companies hire analysts to help design intranets or company Web sites or to establish online businesses. New Internet startup companies hire analysts not only to design Web sites but also to advise them in traditional business practices, such as pricing strategies, marketing, and inventory and human resource management.

To offer clients better quality and a wider variety of services, consulting firms are partnering with traditional computer software and technology firms. Also, many computer firms are developing consulting practices of their own to take advantage of this expanding market. Although information technology consulting should remain one of the fastest growing consulting areas, employment in the computer services industry can be volatile so the most successful management analysts may also consult in other business areas.

The growth of international business also has contributed to an increase in demand for management analysts. As U.S. firms expand their business abroad, many will hire management analysts to help them form the right strategy for entering the market; to advise them on legal matters pertaining to specific countries; or to help them with organizational, administrative, and other issues, especially if the U.S. company is involved in a partnership or merger with a local firm. These trends provide management analysts with more opportunities to travel or work abroad but also require them to have a more comprehensive knowledge of international business and foreign cultures and languages. Just as globalization creates new opportunities for management analysts, it also allows U.S. firms to hire management analysts in other countries; however, because international work is expected to increase the total amount of work, this development is not expected to adversely affect employment in this occupation.

Furthermore, as international and domestic markets have become more competitive, firms have needed to use resources more efficiently. Management analysts increasingly are sought to help reduce costs, streamline operations, and develop marketing strategies. As this process continues and businesses downsize, even more opportunities will be created for analysts to perform duties that previously were handled internally. Finally, more management analysts also will be needed in the public sector, as Federal, State, and local government agencies seek ways to become more efficient.

**Job prospects.** Despite rapid employment growth, keen competition is expected. The pool of applicants from which employers can draw is quite large since analysts can have very diverse educational backgrounds and work experience. Furthermore, the independent and challenging nature of the work, combined with high earnings potential, makes this occupation attractive to many. Job opportunities are expected to be best for

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Management analysts.....	13-1111	678,000	827,000	149,000	22

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

those with a graduate degree, specialized expertise, and a talent for salesmanship and public relations.

Economic downturns also can have adverse effects on employment for some management consultants. In these times, businesses look to cut costs, and consultants may be considered an excess expense. On the other hand, some consultants might experience an increase in work during recessions because they advise businesses on how to cut costs and remain profitable.

**Earnings**

Salaries for management analysts vary widely by years of experience and education, geographic location, specific expertise, and size of employer. Generally, management analysts employed in large firms or in metropolitan areas have the highest salaries. Median annual earnings of wage and salary management analysts in May 2006 were \$68,050. The middle 50 percent earned between \$50,860 and \$92,390. The lowest 10 percent earned less than \$39,840, and the highest 10 percent earned more than \$128,330. Median annual earnings in the industries employing the largest numbers of management analysts were:

Management, scientific, and technical consulting services.....	\$76,600
Computer systems design and related services.....	76,130
Federal executive branch.....	73,800
Management of companies and enterprises .....	68,660
State government.....	50,270

Salaried management analysts usually receive common benefits, such as health and life insurance, a retirement plan, vacation, and sick leave, as well as less common benefits, such as profit sharing and bonuses for outstanding work. In addition, all travel expenses usually are reimbursed by the employer. Self-employed consultants have to maintain their own office and provide their own benefits.

**Related Occupations**

Management analysts collect, review, and analyze data; make recommendations; and implement their ideas. Occupations with similar duties include accountants and auditors; budget analysts; cost estimators; financial analysts and personal financial advisors; operations research analysts; economists; and market and survey researchers. Some management analysts specialize in information technology and work with computers, as do computer systems analysts and computer scientists and database administrators. Most management analysts also have managerial experience similar to that of administrative services managers; advertising, marketing, promotions, public relations, and sales managers; financial managers; human resources, training, and labor relations managers and specialists; industrial production managers; or top executives.

**Sources of Additional Information**

Information about career opportunities in management consulting is available from:

- Association of Management Consulting Firms, 380 Lexington Ave., Suite 1700, New York, NY 10168. Internet: <http://www.amcf.org>

Information about the Certified Management Consultant designation can be obtained from:

- Institute of Management Consultants USA, Inc., 2025 M St.NW., Suite 800, Washington, DC 20036. Internet: <http://www.imcusa.org>

Information on obtaining a management analyst position with the Federal Government is available from the Office of Personnel Management (OPM) through USAJOBS, the Federal Government’s official employment information system. This resource for locating and applying for job opportunities can be accessed through the Internet at <http://www.usajobs.opm.gov> or through an interactive voice response telephone system at (703) 724-1850 or TDD (978) 461-8404. These numbers are not toll free, and charges may result. For advice on how to find and apply for Federal jobs, see the *Occupational Outlook Quarterly* article “How to get a job in the Federal Government,” online at:

<http://www.bls.gov/opub/ooq/2004/summer/art01.pdf>

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**Medical and Health Services Managers**

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(O\*NET 11-9111.00)

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**Significant Points**

- Job opportunities will be good, especially for applicants with work experience in health care and strong business and management skills.
- A master’s degree is the standard credential, although a bachelor’s degree is adequate for some entry-level positions.
- Medical and health services managers typically work long hours and may be called at all hours to deal with problems.

**Nature of the Work**

Health care is a business and, like every business, it needs good management to keep it running smoothly. Medical and health services managers, also referred to as *health care executives* or *health care administrators*, plan, direct, coordinate, and supervise the delivery of health care. These workers are either specialists in charge of a specific clinical department or generalists who manage an entire facility or system.

The structure and financing of health care are changing rapidly. Future medical and health services managers must be prepared to deal with the integration of health care delivery systems, technological innovations, an increasingly complex regulatory environment, restructuring of work, and an increased focus on preventive care. They will be called on to improve efficiency in health care facilities and the quality of the care provided.

Large facilities usually have several assistant administrators who aid the top administrator and handle daily decisions. Assistant administrators direct activities in clinical areas such as nursing, surgery, therapy, medical records, or health information.

In smaller facilities, top administrators handle more of the details of daily operations. For example, many nursing home administrators manage personnel, finances, facility operations, and admissions while also providing resident care.

Clinical managers have training or experience in a specific clinical area and, accordingly, have more specific responsibilities than do generalists. For example, directors of physical therapy are experienced physical therapists, and most health information and medical record administrators have a bachelor's degree in health information or medical record administration. Clinical managers establish and implement policies, objectives, and procedures for their departments; evaluate personnel and work quality; develop reports and budgets; and coordinate activities with other managers.

Health information managers are responsible for the maintenance and security of all patient records. Recent regulations enacted by the Federal Government require that all health care providers maintain electronic patient records and that these records be secure. As a result, health information managers must keep up with current computer and software technology and with legislative requirements. In addition, as patient data become more frequently used for quality management and in medical research, health information managers ensure that databases are complete, accurate, and available only to authorized personnel.

In group medical practices, managers work closely with physicians. Whereas an office manager might handle business affairs in small medical groups, leaving policy decisions to the physicians themselves, larger groups usually employ a full-time administrator to help formulate business strategies and coordinate day-to-day business.

A small group of 10 to 15 physicians might employ 1 administrator to oversee personnel matters, billing and collection, budgeting, planning, equipment outlays, and patient flow. A large practice of 40 to 50 physicians might have a chief administrator and several assistants, each responsible for different areas.

Medical and health services managers in managed care settings perform functions similar to those of their counterparts in large group practices, except that they could have larger staffs to manage. In addition, they might do more community outreach and preventive care than do managers of a group practice.

Some medical and health services managers oversee the activities of a number of facilities in health systems. Such systems might contain both inpatient and outpatient facilities and offer a wide range of patient services.

**Work environment.** Some managers work in comfortable, private offices; others share space with other staff. Most medical and health services managers work long hours. Nursing care facilities and hospitals operate around the clock; administrators and managers be called at all hours to deal with problems. They also travel to attend meetings or inspect satellite facilities.

### Training, Other Qualifications, and Advancement

A master's degree in one of a number of fields is the standard credential for most generalist positions as a medical or health care manager. A bachelor's degree is sometimes adequate for entry-level positions in smaller facilities and departments. In



*Medical and health services managers may deal with personnel, billing and collection, budget, and procurement issues.*

physicians' offices and some other facilities, on-the-job experience may substitute for formal education.

**Education and training.** Medical and health services managers must be familiar with management principles and practices. A master's degree in health services administration, long-term care administration, health sciences, public health, public administration, or business administration is the standard credential for most generalist positions in this field. However, a bachelor's degree is adequate for some entry-level positions in smaller facilities, at the departmental level within health care organizations, and in health information management. Physicians' offices and some other facilities hire those with on-the-job experience instead of formal education.

Bachelor's, master's, and doctoral degree programs in health administration are offered by colleges; universities; and schools of public health, medicine, allied health, public administration, and business administration. In 2007, 72 schools had accredited programs leading to the master's degree in health services administration, according to the Commission on Accreditation of Healthcare Management Education.

For people seeking to become heads of clinical departments, a degree in the appropriate field and work experience may be sufficient early in their career. However, a master's degree in health services administration or a related field might be required to advance. For example, nursing service administrators usually are chosen from among supervisory registered nurses with administrative abilities and graduate degrees in nursing or health services administration.

Health information managers require a bachelor's degree from an accredited program. In 2007, there were 42 accredited bachelor's degree programs and 3 master's degree programs in health information management according to the Commission on Accreditation for Health Informatics and Information Management Education.

Some graduate programs seek students with undergraduate degrees in business or health administration; however, many graduate programs prefer students with a liberal arts or health profession background. Candidates with previous work experience in health care also may have an advantage. Competition for entry into these programs is keen, and applicants need above-average grades to gain admission. Graduate programs



usually last between 2 and 3 years. They may include up to 1 year of supervised administrative experience and coursework in areas such as hospital organization and management, marketing, accounting and budgeting, human resources administration, strategic planning, law and ethics, biostatistics or epidemiology, health economics, and health information systems. Some programs allow students to specialize in one type of facility—hospitals, nursing care facilities, mental health facilities, or medical groups. Other programs encourage a generalist approach to health administration education.

**Licensure.** All States and the District of Columbia require nursing care facility administrators to have a bachelor’s degree, pass a licensing examination, complete a State-approved training program, and pursue continuing education. Some States also require licenses for administrators in assisted living facilities. A license is not required in other areas of medical and health services management.

**Certification and other qualifications.** Medical and health services managers often are responsible for facilities and equipment worth millions of dollars, and for hundreds of employees. To make effective decisions, they need to be open to different opinions and good at analyzing contradictory information. They must understand finance and information systems and be able to interpret data. Motivating others to implement their decisions requires strong leadership abilities. Tact, diplomacy, flexibility, and communication skills are essential because medical and health services managers spend most of their time interacting with others.

Health information managers who have a bachelor’s degree or postbaccalaureate from an approved program and who pass an exam can earn certification as a Registered Health Information Administrator from the American Health Information Management Association.

**Advancement.** Medical and health services managers advance by moving into more responsible and higher paying positions, such as assistant or associate administrator, department head, or chief executive officer, or by moving to larger facilities. Some experienced managers also may become consultants or professors of health care management.

New graduates with master’s degrees in health services administration may start as department managers or as supervisory staff. The level of the starting position varies with the experience of the applicant and the size of the organization. Hospitals and other health facilities offer postgraduate residencies and fellowships, which usually are staff positions. Graduates from master’s degree programs also take jobs in large medical group practices, clinics, mental health facilities, nursing care corporations, and consulting firms.

Graduates with bachelor’s degrees in health administration usually begin as administrative assistants or assistant department heads in larger hospitals. They also may begin as de-

partment heads or assistant administrators in small hospitals or nursing care facilities.

**Employment**

Medical and health services managers held about 262,000 jobs in 2006. About 37 percent worked in hospitals, and another 22 percent worked in offices of physicians or in nursing and residential care facilities. Most of the remainder worked in home health care services, Federal Government health care facilities, outpatient care centers, insurance carriers, and community care facilities for the elderly.

**Job Outlook**

Employment of medical and health services managers is expected to grow faster than average. Job opportunities should be good, especially for applicants with work experience in the health care field and strong business management skills.

**Employment change.** Employment of medical and health services managers is expected to grow 16 percent from 2006 to 2016, faster than the average for all occupations. The health care industry will continue to expand and diversify, requiring managers to help ensure smooth business operations.

Managers in all settings will be needed to improve quality and efficiency of health care while controlling costs, as insurance companies and Medicare demand higher levels of accountability. Managers also will be needed to oversee the computerization of patient records and to ensure their security as required by law. Additional demand for managers will stem from the need to recruit workers and increase employee retention, to comply with changing regulations, to implement new technology, and to help improve the health of their communities by emphasizing preventive care.

Hospitals will continue to employ the most medical and health services managers over the 2006-16 decade. However, the number of new jobs created is expected to increase at a slower rate in hospitals than in many other industries because of the growing use of clinics and other outpatient care sites. Despite relatively slow employment growth, a large number of new jobs will be created because of the industry’s large size.

Employment will grow fastest in practitioners’ offices and in home health care agencies. Many services previously provided in hospitals will continue to shift to these settings, especially as medical technologies improve. Demand in medical group practice management will grow as medical group practices become larger and more complex.

Medical and health services managers also will be employed by health care management companies that provide management services to hospitals and other organizations and to specific departments such as emergency, information management systems, managed care contract negotiations, and physician recruiting.

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016		Change, 2006-16	
			Number	Percent	Number	Percent
Medical and health services managers.....	11-9111	262,000	305,000	43,000	16	

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

**Job prospects.** Job opportunities will be good, especially for applicants with work experience in the health care field and strong business management skills should have the best opportunities. Medical and health services managers with experience in large hospital facilities will enjoy an advantage in the job market, as hospitals become larger and more complex. Competition for jobs at the highest management levels will be keen because of the high pay and prestige.

**Earnings**

Median annual earnings of wage and salary medical and health services managers were \$73,340 in May 2006. The middle 50 percent earned between \$57,240 and \$94,780. The lowest 10 percent earned less than \$45,050, and the highest 10 percent earned more than \$127,830. Median annual earnings in the industries employing the largest numbers of medical and health services managers in May 2006 were:

General medical and surgical hospitals.....	\$78,660
Outpatient care centers.....	67,920
Offices of physicians.....	67,540
Nursing care facilities.....	66,730
Home health care services.....	66,720

Earnings of medical and health services managers vary by type and size of the facility and by level of responsibility. For example, the Medical Group Management Association reported that, in 2006, median salaries for administrators were \$72,875 in practices with 6 or fewer physicians, \$95,766 in practices with 7 to 25 physicians, and \$132,955 in practices with 26 or more physicians.

According to a survey by the Professional Association of Health Care Office Management, 2006 average total compensation for office managers in specialty physicians’ practices was \$70,474 in gastroenterology, \$70,599 in dermatology, \$76,392 in cardiology, \$67,317 in ophthalmology, \$67,222 in obstetrics and gynecology, \$77,621 in orthopedics, \$62,125 in pediatrics, \$66,853 in internal medicine, and \$60,040 in family practice.

**Related Occupations**

Medical and health services managers have training or experience in both health and management. Other occupations requiring knowledge of both fields are insurance underwriters and social and community service managers.

**Sources of Additional Information**

Information about undergraduate and graduate academic programs in this field is available from:

➤ Association of University Programs in Health Administration, 2000 North 14th St., Suite 780, Arlington, VA 22201.

Internet: <http://www.aupha.org>

For a list of accredited graduate programs in medical and health services administration, contact:

➤ Commission on Accreditation of Healthcare Management Education, 2000 North 14th St., Suite 780, Arlington, VA 2220.

Internet: <http://www.cahme.org>

For information about career opportunities in health care management, contact:

➤ American College of Healthcare Executives, One N. Franklin St., Suite 1700, Chicago, IL 60606.

Internet: <http://www.healthmanagementcareers.org>

For information about career opportunities in long-term care administration, contact:

➤ American College of Health Care Administrators, 300 N. Lee St., Suite 301, Alexandria, VA 22314.

Internet: <http://www.achca.org>

For information about career opportunities in medical group practices and ambulatory care management, contact:

➤ Medical Group Management Association, 104 Inverness Terrace East, Englewood, CO 80112.

Internet: <http://www.mgma.org>

For information about medical and health care office managers, contact:

➤ Professional Association of Health Care Office Management, 461 East Ten Mile Rd., Pensacola, FL 32534.

For information about career opportunities in health information management, contact:

➤ American Health Information Management Association, 233 N. Michigan Ave., Suite 2150, Chicago, IL 60601.

Internet: <http://www.ahima.org>

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**Meeting and Convention Planners**

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(O\*NET 13-1121.00)

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**Significant Points**

- Planners often work long hours in the period prior to and during a meeting or convention, and extensive travel may be required.
- Employment is expected to grow faster than average.
- Opportunities will be best for individuals with a bachelor’s degree and some experience as a meeting planner.

**Nature of the Work**

Meetings and conventions bring people together for a common purpose, and meeting and convention planners work to ensure that this purpose is achieved seamlessly. Meeting planners coordinate every detail of meetings and conventions, from the speakers and meeting location to arranging for printed materials and audio-visual equipment.

The first step in planning a meeting or convention is determining the purpose, message, or impression that the sponsoring organization wants to communicate. Planners increasingly focus on how meetings affect the goals of their organizations; for example, they may survey prospective attendees to find out what motivates them and how they learn best. Planners then choose speakers, entertainment, and content, and arrange the program to present the organization’s information in the most effective way.

Meeting and convention planners search for prospective meeting sites, which may be hotels, convention centers, or conference centers. They issue requests for proposals to all

the sites in which they are interested. These requests state the meeting dates and outline the planners' needs for the meeting or convention, including meeting and exhibit space, lodging, food and beverages, telecommunications, audio-visual requirements, transportation, and any other necessities. The establishments respond with proposals describing what space and services they can supply, and at what prices. Meeting and convention planners review these proposals and either make recommendations to top management or choose the site themselves.

Once the location is selected, meeting and convention planners arrange support services, coordinate with the facility, prepare the site staff for the meeting, and set up all forms of electronic communication needed for the meeting or convention, such as e-mail, voice mail, video, and online communication.

Meeting logistics, the management of the details of meetings and conventions, such as labor and materials, is another major component of the job. Planners register attendees and issue name badges, coordinate lodging reservations, and arrange transportation. They make sure that all necessary supplies are ordered and transported to the meeting site on time, that meeting rooms are equipped with sufficient seating and audio-visual equipment, that all exhibits and booths are set up properly, and that all materials are printed. They also make sure that the meeting adheres to fire and labor regulations and oversee food and beverage distribution.

There also is a financial management component of the work. Planners negotiate contracts with facilities and suppliers. These contracts, which have become increasingly complex, are often drawn up more than a year in advance of the meeting or convention. Contracts may include clauses requiring the planner to book a certain number of rooms for meeting attendees and imposing penalties if the rooms are not filled. Therefore, it is important that the planner closely estimate how many people will attend the meeting based on previous meeting attendance and current circumstances. Planners must also oversee the finances of meetings and conventions. They are given overall budgets by their organizations and must create a detailed budget, forecasting what each aspect of the event will cost. Additionally, some planners oversee meetings that contribute significantly to their organization's operating budget and must ensure that the event meets income goals.



*Meeting and convention planners often work long hours before and during a meeting or convention.*

An increasingly important part of the work is measuring how well the meeting's purpose was achieved, and planners begin this measurement as they outline the meeting's goals. Planners set their own specific goals after learning an organization's goals for a meeting or convention. They choose objectives for which success is measurable and define what will constitute achievement of each goal. The most obvious way to gauge their success is to have attendees fill out surveys about their experiences at the event. Planners can ask specific questions about what the attendees learned, how well organized the meeting or convention appeared, and how they felt about the overall experience. If the purpose of a meeting or convention is publicity, a good measure of success would be how much press coverage the event received. A more precise measurement of meeting success, and one that is gaining importance, is return on investment. Planners compare the costs and benefits of an event and show whether it was worthwhile to the organization. For example, if a company holds a meeting to motivate its employees and improve company morale, the planner might track employee turnover before and after the meeting.

An important part of all these different functions of meeting professionals is establishing and maintaining relationships. Meeting and convention planners interact with a variety of people and must communicate effectively. They must understand their organization's goals for the meeting or convention, be able to communicate their needs clearly to meeting site staff and other suppliers, maintain contact with many different people, and inform people about changes as they occur.

Some aspects of the work vary by the type of organization for which planners work. Those who work for associations must market their meetings to association members, convincing members that attending the meeting is worth their time and expense. Marketing is usually less important for corporate meeting planners because employees are generally required to attend company meetings. Corporate planners usually have shorter time frames in which to prepare their meetings. Planners who work in Federal, State, and local governments must learn how to operate within established government procedures, such as procedures and rules for procuring materials and booking lodging for government employees.

Convention service managers, meeting professionals who work in hotels, convention centers, and similar establishments, act as liaisons between the meeting facility and planners who work for associations, businesses, or governments. They present food service options to outside planners, coordinate special requests, suggest hotel services based on the planners' budgets, and otherwise help outside planners present effective meetings and conventions in their facilities.

Meeting planners in small organizations perform a wider range of duties, with perhaps one person coordinating an entire meeting. These planners usually need to multi-task even more than planners in larger organizations.

In large organizations or those that sponsor large meetings or conventions, meeting professionals are more likely to specialize in a particular aspect of meeting planning. Some specialties are conference coordinators, who handle most of the meeting logistics; registrars, who handle advance registration and payment, name badges, and the set-up of on-site registration; and educa-



tion planners, who coordinate the meeting content, including speakers and topics. In organizations that hold very large or complex meetings, there may be several senior positions, such as manager of registration, education seminar coordinator, or conference services director, with the entire meeting planning department headed by a department director.

**Work environment.** The work of meeting and convention planners may be considered either stressful or energizing, but there is no question that it is fast-paced and demanding. Planners oversee multiple operations at one time, face numerous deadlines, and orchestrate the activities of several different groups of people. Meeting and convention planners spend the majority of their time in offices; but during meetings, they work on-site at the hotel, convention center, or other meeting location. They travel regularly to attend meetings and to visit prospective meeting sites. The extent of travel depends upon the type of organization for which the planner works. Local and regional organizations require mostly regional travel, while national and international organizations require travel to more distant locales, including travel abroad.

Work hours can be long and irregular, with planners working more than 40 hours per week in the time leading up to a meeting and fewer hours after finishing a meeting. During meetings or conventions, planners may work very long days, possibly starting as early as 5:00 a.m. and working until midnight. They are sometimes required to work on weekends.

Some physical activity is required, including long hours of standing and walking and some lifting and carrying of boxes of materials, exhibits, or supplies. Planners work with the public and with workers from diverse backgrounds. They may get to travel to beautiful hotels and interesting places and meet speakers and meeting attendees from around the world, and they usually enjoy a high level of autonomy.

### **Training, Other Qualifications, and Advancement**

People with a variety of educational or work backgrounds may seek meeting and convention planning positions. Many migrate into the occupation after gaining planning experience. For example, an administrative assistant may begin planning small meetings and gradually move into a full-time position as a meeting and convention planner. Although there are some certification programs and college courses in meeting and convention planning available, most needed skills are learned through experience.

**Education and training.** Many employers prefer applicants who have a bachelor's degree, but this is not always required. The proportion of planners with a bachelor's degree is increasing because the work and responsibilities are becoming more complex.

Planners have backgrounds in a variety of disciplines, but some useful undergraduate majors are marketing, public relations, communications, business, and hotel or hospitality management. Individuals who have studied hospitality management may start out with greater responsibilities than those with other academic backgrounds.

Several universities offer bachelors or masters degrees with majors in meetings management. Additionally, meeting and convention planning continuing education programs are offered

by a few universities and colleges. These programs are designed for career development of meeting professionals as well as for people wishing to enter the occupation. Some programs may require 40 to more than 100 classroom hours and may last anywhere from 1 semester to 2 years.

Most of the training is done informally on the job. Entry-level planners, depending upon their education, generally begin by performing small tasks under the supervision of senior meeting professionals. For example, they may issue requests for proposals and discuss the resulting proposals with higher level planners. They also may assist in registration, review of contracts, or the creation of meeting timelines, schedules, or objectives. They may start by planning small meetings, such as committee meetings. Those who start at small organizations have the opportunity to learn more quickly since they will be required to take on a larger number of tasks.

**Other qualifications.** Meeting and convention planners must have excellent written and verbal communications skills and interpersonal skills. They must be detail-oriented with excellent organizational skills, and they must be able to multi-task, meet tight deadlines, and maintain composure under pressure in a fast-paced environment. Quantitative and analytic skills are needed to formulate and follow budgets and to understand and negotiate contracts. The ability to speak multiple languages is a plus, since some planners must communicate with meeting attendees and speakers from around the world. Planners also need computer skills, such as the ability to use financial and registration software and the Internet. In the course of their careers, planners may work in a number of different, unrelated industries, and they must be able to learn independently about each new industry so they can coordinate programs that address the industry's important issues.

Some meeting and convention planners enter the occupation after working in hotel sales or as marketing or catering coordinators. These are effective ways to learn about meeting and convention planning because these hotel personnel work with numerous meeting planners, participate in negotiations for hotel services, and witness many different meetings. Workers who enter the occupation in these ways often start at a higher level than those with bachelor's degrees and no experience.

**Certification and advancement.** To advance in this occupation, planners must volunteer to take on more responsibility and find new and better ways of doing things in their organizations. The most important factors are demonstrated skill on the job, determination, and gaining the respect of others within the organization. Because formal education is increasingly important, those who enter the occupation may enhance their professional standing by enrolling in meeting planning courses offered by professional meeting and convention planning organizations, colleges, or universities. Education may improve work performance, and therefore may be an important factor in career development. However, advancement based solely on education is uncommon.

As meeting and convention planners prove themselves, they are given greater responsibilities. This may mean taking on a wider range of duties or moving to another planning specialty to gain experience in that area before moving to a higher level. For example, a planner may be promoted from conference coor-

dinator, with responsibility for meeting logistics, to program coordinator, with responsibility for booking speakers and formatting the meeting's program. The next step up may be meeting manager, who supervises all parts of the meeting, and then director of meetings, and then possibly department director of meetings and education. Another path for promotion is to move from a small organization to a larger one, taking on responsibility for larger meetings and conventions.

The Convention Industry Council offers the Certified Meeting Professional (CMP) credential, a voluntary certification for meeting and convention planners. Although the CMP is not required, it is widely recognized in the industry and may help in career advancement. To qualify, candidates must have a minimum of 3 years of meeting management experience, full-time employment in a meeting management capacity, and proof of accountability for successfully completed meetings. Those who qualify must then pass an examination that covers topics such as adult learning, financial management, facilities and services, logistics, and meeting programs.

The Society of Government Meeting Professionals (SGMP) offers the Certified Government Meeting Professional credential. This certification is not required to work as a government meeting planner. It may, however, be helpful to those who want to demonstrate knowledge of issues specific to planning government meetings, such as regulations and policies governing procurement and travel. To qualify for certification, candidates must have at least 1 year of membership in SGMP. Membership requires employment as a meeting planner within Federal, State, or local government or for firm that works on government contracts. To become certified, members must take a 3-day course and pass an exam.

With significant experience, meeting planners may become independent meeting consultants, advance to vice president or executive director of an association, or start their own meeting planning firms.

**Employment**

Meeting and convention planners held about 51,000 jobs in 2006. About 27 percent worked for religious, grantmaking, civic, professional, and similar organizations; 17 percent worked in accommodation, including hotels and motels; 8 percent worked for educational services, public and private; 3 percent worked for governments; and 6 percent were self-employed. The rest were employed by convention and trade show organizing firms and in other industries as corporate meeting and convention planners.

**Job Outlook**

Employment of meeting and convention planners is expected to grow faster than the average for all occupations over the 2006-16 decade. Some additional job openings will arise

from the need to replace workers who leave the workforce or transfer to other occupations. Opportunities will be best for individuals with a bachelors degree and some meeting planning experience.

**Employment change.** Employment of meeting and convention planners is expected to grow 20 percent over the 2006-16 decade, faster than the average for all occupations.

As businesses and organizations become increasingly international, meetings and conventions become even more important. In organizations that span the country or the globe, the periodic meeting is increasingly the only time the organization can bring all of its members together. Despite the proliferation of alternative forms of communication, such as e-mail, videoconferencing, and the Web, face-to-face interaction is still a necessity. In fact, new forms of communication foster interaction and connect individuals and groups that previously would not have collaborated. By increasing the number of human connections, electronic forms of communication actually increase the demand for meetings, which may offer the only opportunity for these people to interact in person.

Industries that are experiencing high growth tend to experience corresponding growth in meetings and conferences. For example, the medical and pharmaceutical sectors will experience large increases in meeting activity because of their high growth and their knowledge-intensive natures. These increases will spur employment growth of meeting professionals in medical and pharmaceutical associations. Professional associations hold conferences and conventions that offer the continuing education, training, and opportunities to exchange ideas that are vital to medical and pharmaceutical professionals.

**Job prospects.** In addition to openings from employment growth, there will also be some job openings that arise due to the need to replace workers who leave the workforce or transfer to other occupations. Opportunities will be best for individuals with a bachelor's degree and some meeting planning experience.

Unlike workers in some occupations, meeting and convention planners often can change industries relatively easily, so they often are able to move to different industries in response to the growth or declines in particular sectors of the economy.

Demand for corporate meeting planners is highly susceptible to business cycle fluctuations because meetings are usually among the first expenses cut when budgets are tight. For associations, fluctuations are less pronounced because meetings are generally a source of revenue rather than an expense. However, since fewer people are able to attend association meetings during recessions, associations often reduce their meeting staff as well. Associations for industries such as health care, in which meeting attendance is required for pro-

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Meeting and convention planners .....	13-1121	51,000	61,000	10,000	20

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

professionals to maintain their licensure, are the least likely to experience cutbacks during downturns in the economy.

### Earnings

Median annual earnings of wage and salary meeting and convention planners in May 2006 were \$42,180. The middle 50 percent earned between \$32,840 and \$55,040. The lowest 10 percent earned less than \$25,880, and the highest 10 percent earned more than \$70,950. In 2006, median annual earnings in the industries employing the largest numbers of meeting and convention planners were as follows:

Business, professional, labor, political, and similar organizations .....	\$45,850
Other support services.....	44,770
Local government .....	41,110
Colleges, universities, and professional schools .....	39,400
Traveler accommodation.....	38,270

### Related Occupations

Meeting and convention planners work to communicate a particular message or impression about an organization, as do public relations specialists. They coordinate the activities of several operations to create a service for large numbers of people, using organizational, logistical, communication, budgeting, and interpersonal skills. Food service managers use the same skills for similar purposes. Like meeting and convention planners, producers and directors coordinate a range of activities to produce a television show or movie, negotiate contracts, and communicate with a wide variety of people. Travel agents also use similar skills, such as interacting with many people and coordinating travel arrangements, including hotel accommodations, transportation, and advice on destinations.

### Sources of Additional Information

For information about meeting planner certification, contact:

► Convention Industry Council, 8201 Greensboro Dr., Suite 300, McLean, VA 22102.

Internet: <http://www.conventionindustry.org>

For information about the Certified Government Meeting Professional designation, contact:

► Society of Government Meeting Professionals, 908 King St., Lower Level, Alexandria, VA 22314.

Internet: <http://www.sgmp.org>

For information about internships and on-campus student meeting planning organizations, contact:

► Professional Convention Management Association, 2301 S. Lake Shore Dr., Suite 1001, Chicago, IL 60616-1419.

Internet: <http://www.pcma.org>

For information about meeting planning education, entering the profession, and career paths, contact:

► Meeting Professionals International, 3030 LBJ Fwy., Suite 1700, Dallas, TX 75244-5903.

Internet: <http://www.mpiweb.org>

For general career information about meeting and convention planners, see the *Occupational Outlook Quarterly* article "Meeting and convention planners," online at:

<http://www.bls.gov/opus/ooq/2005/fall/art03.pdf>

## Property, Real Estate, and Community Association Managers

(O\*NET 11-9141.00)

### Significant Points

- Opportunities should be best for those with college degrees in business administration, real estate, or related fields, and with professional designations.
- Particularly good opportunities are expected for those with experience managing housing for older people or with experience running a health unit.
- More than half of property, real estate, and community association managers are self-employed.

### Nature of the Work

To businesses and investors, properly managed real estate is a source of income and profits; to homeowners, well-managed property is a way to preserve and enhance resale values and increase comfort. Property, real estate, and community association managers maintain and increase the value of real estate investments by handling the logistics of running a property. *Property and real estate managers* oversee the performance of income-producing commercial or residential properties and ensure that real estate investments achieve their expected revenues. *Community association managers* manage the common property and services of condominiums, cooperatives, and planned communities through their homeowner or community associations.

When owners of apartments, office buildings, or retail or industrial properties lack the time or expertise needed for the day-to-day management of their real estate investments or homeowner associations, they often hire a property or real estate manager or a community association manager. The manager is employed either directly by the owner or indirectly through a contract with a property management firm.

Generally, property and real estate managers handle the financial operations of the property, ensuring that rent is collected and that mortgages, taxes, insurance premiums, payroll, and maintenance bills are paid on time. In community associations, homeowners pay no rent and pay their own real estate taxes and mortgages, but community association managers collect association dues. Some property managers, usually senior-level property managers, supervise the preparation of financial statements and periodically report to the owners on the status of the property, occupancy rates, expiration dates of leases, and other matters.

Often, property managers negotiate contracts for janitorial, security, groundskeeping, trash removal, and other services. When contracts are awarded competitively, managers solicit bids from several contractors and advise the owners on which bid to accept. They monitor the performance of contractors, and investigate and resolve complaints from residents and tenants when services are not properly provided. Managers also purchase supplies and equipment for the property, and make



arrangements with specialists for repairs that cannot be handled by regular property maintenance staff.

In addition to fulfilling these duties, property managers must understand and comply with relevant legislation, such as the Americans with Disabilities Act, the Federal Fair Housing Amendment Act, and local fair housing laws. They must ensure that their renting and advertising practices are not discriminatory, and that the property itself complies with all of the local, State, and Federal regulations and building codes.

Onsite property managers are responsible for the day-to-day operations of a single property, such as an office building, a shopping center, a community association, or an apartment complex. To ensure that the property is safe and properly maintained, onsite managers routinely inspect the grounds, facilities, and equipment to determine whether repairs or maintenance are needed. In handling requests for repairs or trying to resolve complaints, they meet not only with current residents, but also with prospective residents or tenants to show vacant apartments or office space. Onsite managers also are responsible for enforcing the terms of rental or lease agreements, such as rent collection, parking and pet restrictions, and termination-of-lease procedures. Other important duties of onsite managers include keeping accurate, up-to-date records of income and expenditures from property operations and submitting regular expense reports to the senior-level property manager or owners.

Property managers who do not work onsite act as a liaison between the onsite manager and the owner. They also market vacant space to prospective tenants by hiring a leasing agent, advertising, or other means, and they establish rental rates in accordance with prevailing local economic conditions.

Some property and real estate managers, often called *real estate asset managers*, act as the property owners' agent and adviser for the property. They plan and direct the purchase, development, and disposition of real estate on behalf of the business and investors. These managers focus on long-term strategic financial planning, rather than on day-to-day operations of the property.

In deciding to acquire property, real estate asset managers consider several factors, such as property values, taxes, zoning, population growth, transportation, and traffic volume and patterns. Once a site is selected, they negotiate contracts for the purchase or lease of the property, securing the most beneficial terms. Real estate asset managers review their company's real estate holdings periodically and identify properties that are no longer financially profitable. They then negotiate the sale of, or terminate the lease on, such properties.

Community association managers, on the other hand, do work that more closely parallels that of onsite property managers. They collect monthly assessments, prepare financial statements and budgets, negotiate with contractors, and help to resolve complaints. In other respects, however, the work of association managers differs from that of other residential property and real estate managers because they interact with homeowners and other residents on a daily basis. Usually hired by a volunteer board of directors of the association, they administer the daily affairs, and oversee the maintenance, of property and facilities that the homeowners own and use jointly through the associa-

tion. They also assist the board and owners in complying with association and government rules and regulations.

Some associations encompass thousands of homes and employ their own onsite staff and managers. In addition to administering the associations' financial records and budget, managers may be responsible for the operation of community pools, golf courses, and community centers, and for the maintenance of landscaping and parking areas. Community association managers also may meet with the elected boards of directors to discuss and resolve legal issues or disputes that may affect the owners, as well as to review any proposed changes or improvements by homeowners to their properties, to make sure that they comply with community guidelines.

**Work environment.** The offices of most property, real estate, and community association managers are clean, modern, and well lighted. However, many managers spend a major portion of their time away from their desks. Onsite managers, in particular, may spend a large portion of their workday away from their offices, visiting the building engineer, showing apartments, checking on the janitorial and maintenance staff, or investigating problems reported by tenants. Property and real estate managers frequently visit the properties they oversee, sometimes daily when contractors are doing major repair or renovation work. Real estate asset managers may spend time away from home while traveling to company real estate holdings or searching for properties to acquire.

Property, real estate, and community association managers often must attend evening meetings with residents, property owners, community association boards of directors, or civic groups. Not surprisingly, many managers put in long workweeks, especially before financial and tax reports are due and before board and annual meetings. Some apartment managers are required to live in the apartment complexes where they work, so that they are available to handle emergencies, even when they are off duty. They usually receive compensatory time off for working nights or weekends. Many apartment managers receive time off during the week so that they are available on weekends to show apartments to prospective residents.

### **Training, Other Qualifications, and Advancement**

Employers increasingly are hiring college graduates with a bachelor's or master's degree in business administration, accounting, finance, or real estate, even if they don't have much practical experience.

**Education and training.** Most employers prefer to hire college graduates for property management positions. In fact, employers increasingly are hiring inexperienced college graduates with a bachelor's or master's degree in business administration, accounting, finance, real estate, or public administration for these positions. Those with degrees in the liberal arts also may qualify, especially if they have relevant coursework. Many people entering jobs such as assistant property manager have onsite management experience.

**Licensure.** Managers of public housing subsidized by the Federal Government are required to be certified, but many property, real estate, and community association managers who work with all types of property choose to earn a professional designation voluntarily, because it represents formal recogni-



*Property, real estate, and community association managers handle the logistics of running a property.*

tion of their achievements and affords status in the occupation. Real estate managers who buy or sell property are required to be licensed by the State in which they practice. In a few States, property association managers must be licensed.

**Other qualifications.** Previous employment as a real estate sales agent may be an asset to onsite managers, because it provides experience that is useful in showing apartments or office space. In the past, those with backgrounds in building maintenance have advanced to onsite manager positions on the strength of their knowledge of building mechanical systems, but this path is becoming less common as employers place greater emphasis on administrative, financial, and communication abilities for managerial jobs.

People most commonly enter real estate asset manager jobs by transferring from positions as property managers or real estate brokers. Real estate asset managers must be good negotiators, adept at persuading and working with people, and good at analyzing data in order to assess the fair-market value of property or its development potential. Resourcefulness and creativity in arranging financing are essential for managers who specialize in land development.

Good speaking, writing, computer, and financial skills, as well as an ability to deal tactfully with people, are essential in all areas of property management.

**Certification and advancement.** Many people begin property management careers as assistants. Assistants work closely with a property manager and learn how to prepare budgets, analyze insurance coverage and risk options, market property to prospective tenants, and collect overdue rent payments. In time, many assistants advance to property manager positions.

Some people start as onsite managers of apartment buildings, office complexes, or community associations. As they acquire experience, often working under the direction of a more experienced property manager, they may advance to positions of greater responsibility. Those who excel as onsite managers often transfer to assistant offsite property manager positions, in which they can acquire experience handling a broad range of property management responsibilities.

The responsibilities and compensation of property, real estate, and community association managers increase as these work-

ers manage more and larger properties. Most property managers, often called portfolio managers, are responsible for several properties at a time. As their careers advance, they gradually are entrusted with larger properties that are more complex to manage. Many specialize in the management of one type of property, such as apartments, office buildings, condominiums, cooperatives, homeowners' associations, or retail properties. Managers who excel at marketing properties to tenants might specialize in managing new properties, while those who are particularly knowledgeable about buildings and their mechanical systems might specialize in the management of older properties requiring renovation or more frequent repairs. Some experienced managers open their own property management firms.

Many employers encourage attendance at short-term formal training programs conducted by various professional and trade associations that are active in the real estate field. Employers send managers to these programs to improve their management skills and expand their knowledge of specialized subjects, such as the operation and maintenance of building mechanical systems, the enhancement of property values, insurance and risk management, personnel management, business and real estate law, community association risks and liabilities, tenant relations, communications, accounting and financial concepts, and reserve funding. Managers also participate in these programs to prepare themselves for positions of greater responsibility in property management. The completion of these programs, plus related job experience and a satisfactory score on a written examination can lead to certification, or the formal award of a professional designation, by the sponsoring association. (Some organizations offering certifications are listed as sources of additional information at the end of this statement.) Some associations also require their members to adhere to a specific code of ethics.

## Employment

Property, real estate, and community association managers held about 329,000 jobs in 2006. About 36 percent worked for real estate agents and brokers, lessors of real estate, or activities related to real estate. Others worked for real estate development companies, government agencies that manage public buildings, and corporations with extensive holdings of commercial properties. More than half of property, real estate, and community association managers are self-employed.

## Job Outlook

Faster than average employment growth is expected. Opportunities should be best for jobseekers with a college degree in business administration, real estate, or a related field, and for those who attain a professional designation. Particularly good opportunities are expected for those with experience managing housing for older people or with experience running a health unit.

**Employment change.** Employment of property, real estate, and community association managers is projected to increase by 15 percent during the 2006–16 decade, faster than the average for all occupations. Job growth among onsite property managers in commercial real estate is expected to accompany the projected expansion of the real estate and rental and leasing industry. An increase in the Nation's stock of apartments,

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Property, real estate, and community association managers.....	11-9141	329,000	379,000	50,000	15

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

houses, and offices also should require more property managers. Developments of new homes are increasingly being organized with community or homeowner associations that provide community services and oversee jointly owned common areas requiring professional management. To help properties become more profitable or to enhance the resale values of homes, more commercial and residential property owners are expected to place their investments in the hands of professional managers. Moreover, the number of older people will grow during the 2006–16 projection period, increasing the need for specialized housing, such as assisted-living facilities and retirement communities that require management.

**Job prospects.** In addition to openings from job growth, a number of openings are expected as managers transfer to other occupations or leave the labor force. Opportunities should be best for jobseekers with a college degree in business administration, real estate, or a related field, and for those who attain a professional designation. Because of the expected increase in assisted-living and retirement communities, particularly good opportunities are expected for those with experience managing housing for older people or with experience running a health unit.

**Earnings**

Median annual earnings of salaried property, real estate, and community association managers were \$43,070 in May 2006. The middle 50 percent earned between \$28,700 and \$64,200 a year. The lowest 10 percent earned less than \$20,140, and the highest 10 percent earned more than \$95,170 a year. Median annual earnings of salaried property, real estate, and community association managers in the largest industries that employed them in May 2006 were:

Land subdivision .....	\$78,040
Local government .....	55,210
Activities related to real estate .....	40,590
Offices of real estate agents and brokers.....	40,500
Lessors of real estate.....	37,480

Many resident apartment managers and onsite association managers receive the use of an apartment as part of their compensation package. Managers often are reimbursed for the use of their personal vehicles, and managers employed in land development often receive a small percentage of ownership in the projects that they develop.

**Related Occupations**

Property, real estate, and community association managers plan, organize, staff, and manage the real estate operations of businesses. Workers who perform similar functions in other fields include administrative services managers, education ad-

ministrators, food service managers, lodging managers, medical and health services managers, real estate brokers and sales agents, and urban and regional planners.

**Sources of Additional Information**

For information about education and careers in property management, as well as information about professional designation and certification programs in both residential and commercial property management, contact:

► Institute of Real Estate Management, 430 N. Michigan Ave., Chicago, IL 60611. Internet: <http://www.irem.org>

For information on careers and certification programs in commercial property management, contact:

► Building Owners and Managers Institute, 1521 Ritchie Hwy., Arnold, MD 21012. Internet: <http://www.bomi.org>

For information on careers and professional designation and certification programs in residential property management and community association management, contact:

► Community Associations Institute, 225 Reinekers Ln., Suite 300, Alexandria, VA 22314.

Internet: <http://www.caionline.org>

► National Board of Certification for Community Association Managers, 225 Reinekers Ln., Suite 310, Alexandria, VA 22314.

Internet: <http://www.nbccam.org>

**Purchasing Managers, Buyers, and Purchasing Agents**

(O\*NET 11-3061.00, 13-1021.00, 13-1022.00, 13-1023.00)

**Significant Points**

- About 43 percent are employed in wholesale trade or manufacturing establishments.
- Some firms prefer to promote existing employees to these positions, while others recruit and train college graduates.
- Employment is projected to have little or no job growth.
- Opportunities should be best for those with a college degree.

**Nature of the Work**

Purchasing managers, buyers, and purchasing agents shop for a living. They buy the goods and services the company or institution needs to either resell to customers or for the establishment’s own use. *Wholesale and retail buyers* purchase goods, such as clothing or electronics, for resale. *Purchasing agents*



buy goods and services for use by their own company or organization; they might buy raw materials for manufacturing or office supplies, for example. *Purchasing agents and buyers of farm products* purchase goods such as grain, Christmas trees, and tobacco for further processing or resale.

Purchasing professionals consider price, quality, availability, reliability, and technical support when choosing suppliers and merchandise. They try to get the best deal for their company, meaning the highest quality goods and services at the lowest possible cost to their companies. In order to accomplish this successfully, purchasing managers, buyers, and purchasing agents study sales records and inventory levels of current stock, identify foreign and domestic suppliers, and keep abreast of changes affecting both the supply of, and demand for, needed products and materials. To be effective, purchasing specialists must have a working technical knowledge of the goods or services to be purchased.

In large industrial organizations, a distinction often is drawn between the work of a buyer or purchasing agent and that of a *purchasing manager*. Purchasing agents commonly focus on routine purchasing tasks, often specializing in a commodity or group of related commodities, such as steel, lumber, cotton, grains, fabricated metal products, or petroleum products. Purchasing agents usually track market conditions, price trends, and futures markets. Purchasing managers usually handle the more complex or critical purchases and may supervise a group of purchasing agents handling other goods and services. Whether a person is titled purchasing manager, buyer, or purchasing agent depends somewhat on specific industry and employer practices. But purchasing managers often have a much larger range of duties than purchasing agents. They may actively seek new technologies and suppliers. They may create and oversee systems that allow individuals within their organizations to buy their own supplies, lowering the cost of each transaction.

Purchasing specialists employed by government agencies or manufacturing firms usually are called purchasing directors, managers, or agents; or contract specialists. These workers acquire materials, parts, machines, supplies, services, and other inputs to the production of a final product. Purchasing agents and managers obtain items ranging from raw materials, fabricated parts, machinery, and office supplies to construction services and airline tickets. Some purchasing managers specialize in negotiating and supervising supply contracts and are called contract or supply managers.

Often, purchasing specialists in government place solicitations for services and accept bids and offers through the Internet. Government purchasing agents and managers must follow strict laws and regulations in their work, in order to avoid any appearance of impropriety.

Purchasing specialists who buy finished goods for resale are employed by wholesale and retail establishments, where they commonly are known as buyers or merchandise managers. Wholesale and retail buyers are an integral part of a complex system of distribution and merchandising that caters to the vast array of consumer needs and desires. Wholesale buyers purchase goods directly from manufacturers or from other wholesale firms for resale to retail firms, commercial establishments, institutions, and other organizations. In retail firms, buyers pur-

chase goods from wholesale firms or directly from manufacturers for resale to the public.

Buyers largely determine which products their establishment will sell. Therefore, it is essential that they have the ability to predict what will appeal to consumers. They must constantly stay informed of the latest trends, because failure to do so could jeopardize profits and the reputation of their company. They keep track of inventories and sales levels through computer software that is linked to the store's cash registers. Buyers also follow ads in newspapers and other media to check competitors' sales activities, and they watch general economic conditions to anticipate consumer buying patterns. Buyers working for large and medium-sized firms usually specialize in acquiring one or two lines of merchandise, whereas buyers working for small stores may purchase the establishment's complete inventory.

The use of private-label merchandise and the consolidation of buying departments have increased the responsibilities of retail buyers. Private-label merchandise, produced for a particular retailer, requires buyers to work closely with vendors to develop and obtain the desired product. The downsizing and consolidation of buying departments increases the demands placed on buyers because, although the amount of work remains unchanged, there are fewer people to accomplish it. The result is an increase in the workloads and levels of responsibility for all.

Many merchandise managers assist in the planning and implementation of sales promotion programs. Working with merchandise executives, they determine the nature of the sale and purchase items accordingly. Merchandise managers may work with advertising personnel to create an ad campaign. For example, they may determine in which media the advertisement will be placed—newspapers, direct mail, television, or some combination of all three. In addition, merchandise managers often visit the selling floor to ensure that goods are properly displayed. Buyers stay in constant contact with store and department managers to find out what products are selling well and which items the customers are demanding to be added to the product line. Often, assistant buyers are responsible for placing orders and checking shipments.

Evaluating suppliers is one of the most critical functions of a purchasing manager, buyer, or purchasing agent. Many firms now run on a lean manufacturing schedule and use just-in-time inventories so any delays in the supply chain can shut down production and cost the firm its customers and reputation. Purchasing professionals use many resources to find out all they can about potential suppliers. The Internet has become an effective tool in searching catalogs, trade journals, and industry and company publications, and directories. Purchasing professionals will attend meetings, trade shows, and conferences to learn of new industry trends and make contacts with suppliers. Purchasing managers, agents, and buyers will usually interview prospective suppliers and visit their plants and distribution centers to assess their capabilities. It is important to make certain that the supplier is capable of delivering the desired goods or services on time, in the correct quantities without sacrificing quality. Once all of the necessary information on suppliers is gathered, orders are placed and contracts are awarded to those suppliers who meet the purchaser's needs. Most of the trans-

action process is now automated using electronic purchasing systems that link the supplier and firms together through the Internet.

Purchasing professionals can gain instant access to specifications for thousands of commodities, inventory records, and their customers' purchase records to avoid overpaying for goods and to avoid shortages of popular goods or surpluses of goods that do not sell as well. These systems permit faster selection, customization, and ordering of products, and they allow buyers to concentrate on the qualitative and analytical aspects of the job. Long-term contracts are an important strategy of purchasing professionals because it allows purchasers to consolidate their supply bases around fewer suppliers. In today's global economy, purchasing managers, buyers, and purchasing agents should expect to deal with foreign suppliers which may require travel to other countries and to be familiar with other cultures and languages.

Changing business practices have altered the traditional roles of purchasing or supply management specialists in many industries. For example, manufacturing companies increasingly involve workers in this occupation at most stages of product development because of their ability to forecast a part's or material's cost, availability, and suitability for its intended purpose. Furthermore, potential problems with the supply of materials may be avoided by consulting the purchasing department in the early stages of product design.

Purchasing specialists often work closely with other employees in their own organization when deciding on purchases, an arrangement sometimes called "team buying." For example, before submitting an order, they may discuss the design of custom-made products with company design engineers, talk about problems involving the quality of purchased goods with quality assurance engineers and production supervisors, or mention shipment problems to managers in the receiving department.

**Work environment.** Most purchasing managers, buyers, and purchasing agents work in comfortable offices. They frequently work more than the standard 40-hour week, because of special sales, conferences, or production deadlines. Evening and weekend work also is common before holiday and back-to-school seasons for those working in retail trade. Consequently,



*Purchasing managers, buyers, and purchasing agents work to get the best merchandise at the lowest cost.*

many retail firms discourage the use of vacation time during peak periods.

Buyers and merchandise managers often work under great pressure. Because wholesale and retail stores are so competitive, buyers need physical stamina to keep up with the fast-paced nature of their work.

Many purchasing managers, buyers, and purchasing agents travel at least several days a month. Purchasers for worldwide manufacturing companies and large retailers, as well as buyers of high fashion, may travel outside the United States.

### **Training, Other Qualifications, and Advancement**

Qualified people may begin as trainees, purchasing clerks, expeditors, junior buyers, or assistant buyers. They often need continuing education, certification, or a bachelor's degree to advance. Retail and wholesale firms prefer to hire applicants who have a college degree and who are familiar with the merchandise they sell and with wholesaling and retailing practices. Some retail firms promote qualified employees to assistant buyer positions; others recruit and train college graduates as assistant buyers. Most employers use a combination of methods.

**Education and training.** Educational requirements tend to vary with the size of the organization. Large stores and distributors prefer applicants who have completed a bachelor's degree program with a business emphasis. Many manufacturing firms put an even greater emphasis on formal training, preferring applicants with a bachelor's or master's degree in engineering, business, economics, or one of the applied sciences. A master's degree is essential for advancement to many top-level purchasing manager jobs.

Regardless of academic preparation, new employees must learn the specifics of their employer's business. Training periods vary in length, with most lasting 1 to 5 years. In wholesale and retail establishments, most trainees begin by selling merchandise, supervising sales workers, checking invoices on material received, and keeping track of stock. As they progress, trainees are given increased buying-related responsibilities.

In manufacturing, new purchasing employees often are enrolled in company training programs and spend a considerable amount of time learning about their firm's operations and purchasing practices. They work with experienced purchasers to learn about commodities, prices, suppliers, and markets. In addition, they may be assigned to the production planning department to learn about the material requirements system and the inventory system the company uses to keep production and replenishment functions working smoothly.

**Other qualifications.** Purchasing managers, buyers, and purchasing agents must know how to use word processing and spreadsheet software and the Internet. Other important qualities include the ability to analyze technical data in suppliers' proposals; good communication, negotiation, and mathematical skills; knowledge of supply-chain management; and the ability to perform financial analyses.

People who wish to become wholesale or retail buyers should be good at planning and decisionmaking and have an interest in merchandising. Anticipating consumer preferences and ensuring that goods are in stock when they are needed requires resourcefulness, good judgment, and self-confidence. Buyers

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Purchasing managers, buyers, and purchasing agents .....	—	529,000	531,000	1,200	0
Purchasing managers .....	11-3061	70,000	72,000	2,400	3
Purchasing agents and buyers, farm products.....	13-1021	16,000	15,000	-1,400	-9
Wholesale and retail buyers, except farm products .....	13-1022	157,000	156,000	-200	0
Purchasing agents, except wholesale, retail, and farm products...	13-1023	287,000	288,000	400	0

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

must be able to make decisions quickly and to take risks. Marketing skills and the ability to identify products that will sell also are very important. Employers often look for leadership ability, too, because buyers spend a large portion of their time supervising assistant buyers and dealing with manufacturers' representatives and store executives.

Experienced buyers may advance by moving to a department that manages a larger volume or by becoming a merchandise manager. Others may go to work in sales for a manufacturer or wholesaler.

**Certification and advancement.** An experienced purchasing agent or buyer may become an assistant purchasing manager in charge of a group of purchasing professionals before advancing to purchasing manager, supply manager, or director of materials management. At the top levels, duties may overlap with other management functions, such as production, planning, logistics, and marketing.

Regardless of industry, continuing education is essential for advancement. Many purchasing managers, buyers, and purchasing agents participate in seminars offered by professional societies and take college courses in supply management. Professional certification is becoming increasingly important, especially for those just entering the occupation.

There are several recognized credentials for purchasing agents and purchasing managers. The Certified Purchasing Manager (C.P.M.) designation is conferred by the Institute for Supply Management. In 2008, this certification will be replaced by the Certified Professional in Supply Management (CPSM) credential, covering the wider scope of duties now performed by purchasing professionals. The Certified Purchasing Professional (CPP) and Certified Professional Purchasing Manager (CPPM) designations are conferred by the American Purchasing Society. The Certified Supply Chain Professional credential is conferred by APICS, the Association for Operations Management. For workers in Federal, State, and local government, the National Institute of Governmental Purchasing offers the designations of Certified Professional Public Buyer (CPPB) and Certified Public Purchasing Officer (CPPO). Most of these certifications are awarded only after work-related experience and education requirements are met and written or oral exams are successfully completed.

**Employment**

Purchasing managers, buyers, and purchasing agents held about 529,000 jobs in 2006. About 43 percent worked in the wholesale trade and manufacturing industries and another 11 percent worked in retail trade. The remainder worked mostly in service

establishments, such as management of companies and enterprises, or different levels of government. A small number were self-employed.

The following tabulation shows the distribution of employment by occupational specialty:

Purchasing agents, except wholesale, retail, and farm products .....	287,000
Wholesale and retail buyers, except farm products .....	157,000
Purchasing managers .....	70,000
Purchasing agents and buyers, farm products .....	16,000

**Job Outlook**

Employment of purchasing managers, buyers, and purchasing agents is expected to have little or no job growth through the year 2016. Generally, opportunities will be best for individuals with a bachelor's degree. In government and in large companies, opportunities will be best for those with a master's degree.

**Employment change.** No change in overall employment of purchasing managers, buyers, and purchasing agents is expected during the 2006-16 decade.

Demand for purchasing workers will be limited by improving software, which has eliminated much of the paperwork involved in ordering and procuring supplies, and also by the growing number of purchases being made electronically through the Internet and electronic data interchange (EDI). Demand will also be limited by offshoring of routine purchasing actions to other countries and by consolidation of purchasing departments, which makes purchasing agents more efficient.

Demand for purchasing workers in the manufacturing sector will be less than demand in the services sector, as the overall service sector grows more rapidly than the manufacturing sector. Also, many purchasing agents are now charged with procuring services that traditionally had been done in-house, such as computer and IT (information technology) support in addition to traditionally contracted services such as advertising.

Employment of purchasing managers is expected to grow more slowly than average. The use of the Internet to conduct electronic commerce has made information easier to obtain, thus increasing the productivity of purchasing managers. The Internet also allows both large and small companies to bid on contracts. Exclusive supply contracts and long-term contracting have allowed companies to negotiate with fewer suppliers less frequently.



Employment of wholesale and retail buyers, except farm products, is expected to have little or no change in employment. In the retail industry, mergers and acquisitions have caused buying departments to consolidate. In addition, larger retail stores are eliminating local buying departments and centralizing them at their headquarters.

Employment of purchasing agents, except wholesale, retail, and farm products, is expected to have little or no change in employment, primarily because of the increased globalization of the U.S. economy. As more materials and supplies come from abroad, firms have begun to outsource more of their purchasing duties to foreign purchasing agents who are located closer to the foreign suppliers of goods and materials they will need. This trend is expected to continue, but it will likely be limited to routine transactions with complex and critical purchases still being handled in-house.

Finally, employment of purchasing agents and buyers, farm products, is projected to decline 9 percent, as overall growth in agricultural industries and retailers in the grocery-related industries consolidate.

**Job prospects.** Persons who have a bachelor's degree in business should have the best chance of obtaining a buyer position in wholesale or retail trade or within government. A bachelor's degree, combined with industry experience and knowledge of a technical field, will be an advantage for those interested in working for a manufacturing or industrial company. Government agencies and larger companies usually require a master's degree in business or public administration for top-level purchasing positions.

**Earnings**

Median annual earnings of purchasing managers were \$81,570 in May 2006. The middle 50 percent earned between \$60,890 and \$105,780 a year. The lowest 10 percent earned less than \$46,540, and the highest 10 percent earned more than \$132,040 a year.

Median annual earnings for purchasing agents and buyers of farm products were \$46,770 in May 2006. The middle 50 percent earned between \$34,770 and \$64,100 a year. The lowest 10 percent earned less than \$26,520, and the highest 10 percent earned more than \$88,650 a year.

Median annual earnings for wholesale and retail buyers, except farm products, were \$44,640 in May 2006. The middle 50 percent earned between \$33,640 and \$60,590 a year. The lowest 10 percent earned less than \$26,270, and the highest 10 percent earned more than \$83,080 a year. Median annual earnings in the industries employing the largest numbers of wholesale and retail buyers, except farm products, were:

Management of companies and enterprises.....	\$54,390
Grocery and related product wholesalers.....	46,080
Wholesale electronic markets and agents and brokers .....	45,020
Building material and supplies dealers .....	40,380
Grocery stores.....	34,210

Median annual earnings for purchasing agents, except wholesale, retail, and farm products, were \$50,730 in May 2006. The middle 50 percent earned between \$39,000 and \$66,730 a year. The lowest 10 percent earned less than \$31,350, and the highest

10 percent earned more than \$83,900 a year. Median annual earnings in the industries employing the largest numbers of purchasing agents, except wholesale, retail, and farm products, were:

Federal executive branch.....	\$68,500
Aerospace product and parts manufacturing .....	59,390
Navigational, measuring, electromedical, and control instruments manufacturing .....	55,620
Management of companies and enterprises.....	54,820
Local government.....	48,170

Purchasing managers, buyers, and purchasing agents receive the same benefits package as other workers, including vacations, sick leave, life and health insurance, and pension plans. In addition to receiving standard benefits, retail buyers often earn cash bonuses based on their performance and may receive discounts on merchandise bought from their employer.

**Related Occupations**

Like purchasing managers, buyers, and purchasing agents, procurement clerks work to obtain materials and goods for businesses. Workers in other occupations who need a knowledge of marketing and the ability to assess consumer demand include those in advertising, marketing, promotions, public relations, and sales managers; food service managers; insurance sales agents; lodging managers; sales engineers; and sales representatives, wholesale and manufacturing.

**Sources of Additional Information**

Further information about education, training, employment, and certification for purchasing careers is available from:

- American Purchasing Society, North Island Center, Suite 203, 8 East Galena Blvd., Aurora, IL 60506.
- Association for Operations Management, APICS, 5301 Shawnee Rd., Alexandria, VA 22312-2317.  
Internet: <http://www.apics.org>
- Institute for Supply Management, P.O. Box 22160, Tempe, AZ 85285-2160. Internet: <http://www.ism.ws>
- National Institute of Governmental Purchasing, Inc., 151 Spring St., Suite 300, Herndon, VA 20170-5223.  
Internet: <http://www.nigp.org>

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**Tax Examiners, Collectors, and Revenue Agents**

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(O\*NET 13-2081.00)

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**Significant Points**

- Tax examiners, collectors, and revenue agents work for Federal, State, and local governments.
- Employment is expected to have little or no change, but the large number of retirements over the next 10 years should create many job openings.
- Competition will be greatest for positions with the Internal Revenue Service.

## Nature of the Work

Taxes are one of the certainties of life, and as long as governments collect taxes, there will be jobs for tax examiners, collectors, and revenue agents. By reviewing tax returns, conducting audits, identifying taxes payable, and collecting overdue tax dollars, these workers ensure that governments obtain revenues from businesses and citizens.

*Tax examiners* do similar work whether they are employed at the Federal, State, or local government level. They review filed tax returns for accuracy and determine whether tax credits and deductions are allowed by law. Because many States assess individual income taxes based on the taxpayer's reported Federal adjusted gross income, tax examiners working for the Federal Government report any adjustments or corrections they make to the States. State tax examiners then determine whether the adjustments affect the taxpayer's State tax liability. At the local level, tax examiners often have additional duties, but an integral part of the work still includes the need to determine the factual basis for claims for refunds.

Tax examiners usually deal with the simplest tax returns—those filed by individual taxpayers with few deductions or those filed by small businesses. At the entry level, many tax examiners perform clerical duties, such as reviewing tax returns and entering them into a computer system for processing. If there is a problem, tax examiners may contact the taxpayer to resolve it.

Tax examiners also review returns for accuracy, checking taxpayers' math and making sure that the amounts that they report match those reported from other sources, such as employers and banks. In addition, examiners verify that Social Security numbers match names and that taxpayers have correctly interpreted the instructions on tax forms.

Much of a tax examiner's job involves making sure that tax credits and deductions claimed by taxpayers are legitimate. Tax examiners contact taxpayers by mail or telephone to address discrepancies and request supporting documentation. They may notify taxpayers of any overpayment or underpayment and either issue a refund or request further payment. If a taxpayer owes additional taxes, tax examiners adjust the total amount by assessing fees, interest, and penalties and notify the taxpayer of the total liability. Although most tax examiners deal with uncomplicated returns, some may work in more complex tax areas, such as pensions or business net operating losses.

*Revenue agents* specialize in tax-related accounting work for the U.S. Internal Revenue Service (IRS) and for equivalent agencies in State and local governments. Like tax examiners, they audit returns for accuracy. However, revenue agents handle complicated income, sales, and excise tax returns of businesses and large corporations. As a result, their work differs in a number of ways from that of tax examiners.

Entry-level Federal revenue agents usually audit tax returns of small businesses whose market specializations are similar. As they develop expertise in an industry, such as construction, retail sales, or finance, insurance, and real estate, revenue agents work with tax returns of larger corporations.

Many experienced revenue agents specialize; for example, they may focus exclusively on multinational businesses. But

all revenue agents working for the Federal Government must keep abreast of the lengthy, complex, and frequently changing tax code. Computer technology has simplified the research process, allowing revenue agents Internet access to relevant legal bulletins, IRS notices, and tax-related court decisions. Revenue agents are increasingly using computers to analyze data and identify trends that help pinpoint tax offenders.

At the State level, revenue agents have duties similar to those of their counterparts in the Federal Government. State revenue agents use revenue adjustment reports forwarded by the IRS to determine whether adjustments made by Federal revenue agents affect a taxpayer's taxable income in the eyes of the States. In addition, State agents consider the sales and income taxes for their own States.

At the local level, revenue agents have varying titles and duties, but they still perform field audits or office audits of financial records for business firms. In some cases, local revenue agents also examine financial records of individuals. These local agents, like their State counterparts, rely on the information contained in Federal tax returns. However, local agents also must be knowledgeable enough to apply local tax laws regarding income, utility fees, or school taxes.

*Collectors*, also called *revenue officers* in the IRS, deal with delinquent accounts. The process of collecting a delinquent account starts with the revenue agent or tax examiner sending a report to the taxpayer. If the taxpayer makes no effort to resolve the delinquent account, the case is assigned to a collector. When a collector takes a case, he or she first sends the taxpayer a notice. The collector then works with the taxpayer on how to settle the debt.

In cases in which taxpayers fail to file a tax return, Federal collectors may request that the IRS prepare the return on a taxpayer's behalf. In other instances, collectors are responsible for verifying claims that delinquent taxpayers cannot pay their taxes. They investigate these claims by researching court information on the status of liens, mortgages, or financial statements; locating assets through third parties, such as neighbors or local departments of motor vehicles; and requesting legal summonses for other records. Ultimately, collectors must decide whether the IRS should take a lien—a claim on an asset such as a bank account, real estate, or an automobile—to settle a debt. Collectors also have the discretion to garnish wages—that is, take a portion of earned wages—to collect taxes owed.

A big part of a collector's job at the Federal level is imposing and following up on delinquent taxpayers' payment deadlines. For each case file, collectors must maintain records, including contacts, telephone numbers, and actions taken.

Like tax examiners and revenue agents, collectors use computers to maintain files. Computer technology also gives collectors access to data to help them identify high-risk debtors—those who are unlikely to pay or are likely to flee. Collectors at the IRS usually work independently. However, they call on experts when tax examiners or revenue agents find fraudulent returns, or when the seizure of a property will involve complex legal steps.

At the State level, collectors decide whether to take action on the basis of their own States' tax returns. Collection work

may be handled over the telephone or turned over to a collector who specializes in obtaining settlements. These collectors contact people directly and have the authority to issue subpoenas and request seizures of property. At the local levels, collectors have less power than their State and Federal counterparts. Although they can start the processes leading to the seizure of property and garnishment of wages, they must go through the local court system.

**Work environment.** Tax examiners, collectors, and revenue agents work in clean, pleasant, and comfortable office settings. Sometimes travel is necessary. Revenue agents at both the Federal and State levels spend a significant portion of their time in the offices of private firms, accessing tax-related records. Some agents may be permanently stationed in the offices of large corporations with complicated tax structures. Agents at the local level usually work in city halls or municipal buildings. Collectors travel to local courthouses, county and municipal seats of government, businesses, and taxpayers' homes to look up records, search for assets, and settle delinquent accounts.

Stress can result from the need to work under a deadline in checking returns and evaluating taxpayer claims. Collectors also must face the unpleasant task of confronting delinquent taxpayers.



*Little or no change in employment is projected, but expected retirements should create many job openings.*

Tax examiners, collectors, and revenue agents generally work a 40-hour week, although some overtime might be needed during the tax season. State and local tax examiners, who may review sales, gasoline, and cigarette taxes instead of handling tax returns, may have a steadier workload year-round.

**Training, Other Qualifications, and Advancement**

Many tax examiners, collectors, and revenue agents have a bachelor's degree. But relevant experience, or a combination of postsecondary education and experience, is sufficient qualification for many jobs. Specialized experience is sufficient to qualify for many jobs in State and local government.

**Education and training.** As shown in the table below, a bachelor's degree was the most common level of educational attainment among tax examiners, collectors, and revenue agents in 2006.

	Percent
High school graduate or less .....	25
Some college, no degree .....	19
Associate degree .....	10
Bachelor's degree .....	39
Graduate degree .....	6

In the Federal Government, workers must have a bachelor's degree or a combination of some college education and related experience. But in State and local governments, workers often have an associate degree, some college-level business classes and specialized experience, or a high school diploma and specialized experience.

For more advanced entry-level positions, applicants often must have a bachelor's degree. Candidates may sometimes qualify without a bachelor's degree, however, if they can demonstrate experience working with tax records, tax laws and regulations, documents, financial accounts, or similar records.

Specific education and training requirements vary by occupational specialty.

Tax examiners usually must have a bachelor's degree in accounting or a related discipline or a combination of education and full-time accounting, auditing, or tax compliance work. Tax examiner candidates at the IRS must have a bachelor's degree or 1 year of full-time specialized experience, which could include full-time work in accounting, bookkeeping, or tax analysis. After they are hired, tax examiners receive some formal training. In addition, annual employer-provided updates keep tax examiners current with changes in procedures and regulations.

Collectors usually must have some combination of college education and experience in collections, management, customer service, or tax compliance, or as a loan officer or credit manager. A bachelor's degree is required for employment as a collector with the IRS. No additional experience is required, and experience may not be substituted for the degree. Degrees in business, finance, accounting, and criminal justice are good backgrounds.

Entry-level collectors receive formal and on-the-job training under an instructor's guidance before working independently. Collectors usually complete initial training by the



end of their second year of service, but may receive advanced technical instruction as they gain seniority and take on more difficult cases. Also, collectors are encouraged to continue their professional education by attending meetings to exchange information about how changes in tax laws affect collection methods.

Revenue agents usually must have a bachelor’s degree in accounting, business administration, economics, or a related discipline or a combination of education and full-time business administration, accounting, or auditing work. Revenue agents with the IRS must have either a bachelor’s degree or 30 semester hours of accounting coursework along with specialized experience. Specialized experience includes full-time work in accounting, bookkeeping, or tax analysis.

**Other qualifications.** Tax examiners, collectors, and revenue agents work with confidential financial and personal information; therefore, trustworthiness is crucial for maintaining the confidentiality of individuals and businesses. Applicants for Federal Government jobs must submit to a background investigation.

Collectors need good interpersonal and communication skills because they deal directly with the public and because their reports are scrutinized when the tax agency must legally justify attempts to seize assets. They must be able to negotiate well and deal effectively with others in potentially confrontational situations.

Revenue agents need strong analytical, organizational, and time management skills. They also must be able to work independently, because they spend so much time away from their home office, and they must keep current with changes in the tax code and laws.

**Advancement.** Advancement potential within Federal, State, and local agencies varies for tax examiners, revenue agents, and collectors. For related jobs outside government, experienced workers can take a licensing exam administered by the Federal Government to become enrolled agents—non-government tax professionals authorized to represent taxpayers before the IRS.

Collectors who demonstrate leadership skills and a thorough knowledge of collection activities may advance to supervisory or managerial collector positions, in which they oversee the activities of other collectors. It is only these higher level supervisors and managers who may authorize the more serious actions against individuals and businesses. The more complex collection attempts which usually are directed at larger businesses are reserved for collectors at these higher levels.

Newly hired revenue agents expand their accounting knowledge and remain up to date by consulting auditing manuals and other sources for detailed information about individual industries. Employers also continually offer training in new

auditing techniques and tax-related issues and court decisions. As revenue agents gain experience, they may specialize in an industry, work with larger corporations, and cover increasingly complex tax returns. Some revenue agents also specialize in assisting in criminal investigations, auditing the books of known or suspected criminals such as drug dealers or money launderers. Some agents work with grand juries to help secure indictments. Others become international agents, assessing taxes on companies with subsidiaries abroad.

**Employment**

In 2006, tax examiners, revenue agents, and collectors held about 81,000 jobs at all levels of government.

About 44 percent worked for the Federal Government, 37 percent for State governments, and the remainder for local governments. In the IRS, tax examiners and revenue agents predominate because of the need to examine or audit tax returns. Collectors make up a smaller proportion, because most disputed tax liabilities do not require enforced collection.

**Job Outlook**

Little or no change in employment is expected, but the large number of retirements expected over the next 10 years should create many job openings at all levels of government.

**Employment change.** Employment of tax examiners, collectors, and revenue agents is projected to grow 2 percent during the 2006-16 decade, which is considered little or no change. Demand for tax examiners, revenue agents, and tax collectors will stem from changes in government policy toward tax enforcement and from growth in the number of businesses.

The Federal Government is expected to increase its tax enforcement efforts. Also, new technology and information sharing among tax agencies make it easier for agencies to pinpoint potential offenders, increasing the number of cases for audit and collection. These two factors should increase the demand for revenue agents and tax collectors.

The work of tax examiners is especially well suited to automation, adversely affecting demand for these workers in particular. In addition, more than 40 States and many local tax agencies contract out their tax collection functions to private-sector collection agencies in order to reduce costs, and this trend is likely to continue. The IRS has begun outsourcing some tax collection, but it is unclear whether the agency will continue or expand this practice. If IRS outsourcing continues, it will dampen growth in employment of revenue officers but is not expected to affect employment of revenue agents.

**Job prospects.** The large number of retirements expected over the next 10 years is expected to create many job openings at all levels of government. Both State and Federal tax agencies are turning their enforcement focus to higher in-

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016		Change, 2006-16	
			Number	Percent	Number	Percent
Tax examiners, collectors, and revenue agents .....	13-2081	81,000	82,000	1,700	2	

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

come taxpayers and businesses, which file more complicated tax returns. Because of this, workers with knowledge of tax laws and experience working with complex tax issues will have the best opportunities.

Competition will be greatest for positions with the IRS. Opportunities at the Federal level will reflect the tightening or relaxation of budget constraints imposed on the IRS, the primary employer of these workers.

Employment at the State and local levels may fluctuate with the overall state of the economy. When the economy is contracting, State and local governments are likely to freeze hiring and lay off workers in response to budgetary constraints.

### Earnings

In May 2006, median annual earnings for all tax examiners, collectors, and revenue agents were \$45,620. The middle 50 percent earned between \$34,840 and \$62,530. The bottom 10 percent earned less than \$27,290, and the top 10 percent earned more than \$81,890. However, median earnings vary considerably, depending on the level of government. At the Federal level, May 2006 median annual earnings for tax examiners were \$52,630; at the State level, they were \$44,110; and at the local level, they were \$33,120.

Earnings also vary by occupational specialty. For example, in the Federal Government in 2006, tax examiners earned an average of \$38,290, revenue agents earned \$82,204, and tax specialists earned \$55,100.

IRS employees receive family, vacation, and sick leave. Full-time permanent IRS employees are offered tax deferred retirement savings and investment plans with employer matching contributions, health insurance, and life insurance.

### Related Occupations

Tax examiners, collectors, and revenue agents analyze and interpret financial data. Occupations with similar responsibilities include accountants and auditors, budget analysts, cost estimators, financial analysts and personal financial advisors, financial managers, and loan officers.

### Sources of Additional Information

Information on obtaining positions as tax examiners, collectors, or revenue agents with the Federal Government is available from the Office of Personnel Management through USAJOBS, the Federal Government's official employment information system. This resource for locating and applying for job opportunities can be accessed through the Internet at <http://www.usajobs.opm.gov> or through an interactive voice response telephone system at (703) 724-1850 or TDD (978) 461-8404. These numbers are not tollfree, and charges may result.

State or local government personnel offices can provide information about tax examiner, collector, or revenue agent jobs at those levels of government.

For information about careers at the Internal Revenue Service, contact:

► Internal Revenue Service, 1111 Constitution Ave. NW., Washington, D.C. 20224. Internet: <http://www.jobs.irs.gov>

## Top Executives

(O\*NET 11-1011.00, 11-1021.00)

### Significant Points

- Keen competition is expected because the prestige and high pay of these jobs attract a large number of applicants.
- Top executives are among the highest paid workers; however, long hours, considerable travel, and intense pressure to succeed are common.
- The formal education and experience of top executives vary as widely as the nature of their responsibilities.

### Nature of the Work

All organizations have specific goals and objectives that they strive to meet. Top executives devise strategies and formulate policies to ensure that these objectives are met. Although they have a wide range of titles—such as chief executive officer, chief operating officer, board chair, president, vice president, school superintendent, county administrator, or tax commissioner—all formulate policies and direct the operations of businesses and corporations, public sector organizations, nonprofit institutions, and other organizations.

A corporation's goals and policies are established by the *chief executive officer* in collaboration with other top executives, who are overseen by a board of directors. In a large corporation, the chief executive officer meets frequently with subordinate executives to ensure that operations are conducted in accordance with these policies. The chief executive officer of a corporation retains overall accountability; however, a *chief operating officer* may be delegated several responsibilities, including the authority to oversee executives who direct the activities of various departments and implement the organization's policies on a day-to-day basis. In publicly held and nonprofit corporations, the board of directors ultimately is accountable for the success



While top executives are among the highest paid workers, long hours and intense pressure to succeed are common.

or failure of the enterprise, and the chief executive officer reports to the board.

In addition to being responsible for the operational success of a company, top executives also are increasingly being held accountable for the accuracy of their financial reporting, particularly among publicly traded companies. For example, recently enacted legislation contains provisions for corporate governance, internal control, and financial reporting.

The nature of the responsibilities of other high-level executives depends on the size of the organization. In small organizations, such as independent retail stores or small manufacturers, a partner, owner, or general manager often is responsible for purchasing, hiring, training, quality control, and day-to-day supervisory duties. In large organizations, the duties of executives are highly specialized. Some managers, for instance, are responsible for the overall performance of one aspect of the organization, such as manufacturing, marketing, sales, purchasing, finance, personnel, training, administrative services, computer and information systems, property management, transportation, or legal services. (Some of these and other management occupations are discussed elsewhere in this section of the *Handbook*.)

*Chief financial officers* direct the organization’s financial goals, objectives, and budgets. They oversee the investment of funds and manage associated risks, supervise cash management activities, execute capital-raising strategies to support a firm’s expansion, and deal with mergers and acquisitions.

*Chief information officers* are responsible for the overall technological direction of their organizations. They are increasingly involved in the strategic business plan of a firm as part of the executive team. To perform effectively, they also need knowledge of administrative procedures, such as budgeting, hiring, and supervision. These managers propose budgets for projects and programs and make decisions on staff training and equipment purchases. They hire and assign computer specialists, information technology workers, and support personnel to carry out specific parts of the projects. They supervise the work of these employees, review their output, and establish administrative procedures and policies. Chief information officers also provide organizations with the vision to master information technology as a competitive tool.

Chief executives have overall responsibility for the operation of their organizations. Working with executive staff, they set goals and arrange programs to attain these goals. Executives also appoint department heads, who manage the employees who carry out programs. Chief executives also oversee budgets and ensure that resources are used properly and that programs are carried out as planned.

Chief executive officers carry out a number of other important functions, such as meeting with staff and board members to determine the level of support for proposed programs. Chief executive officers in government often nominate citizens to boards and commissions, encourage business investment, and promote economic development in their communities. To do all of these varied tasks effectively, chief executives rely on a staff of highly skilled personnel. Executives who control small companies, however, often do this work by themselves.

*General and operations managers* plan, direct, or coordinate the operations of companies or public and private sector organizations. Their duties include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one area of management or administration, such as personnel, purchasing, or administrative services. In some organizations, the duties of general and operations managers may overlap the duties of chief executive officers.

**Work environment.** Top executives typically have spacious offices and numerous support staff. General managers in large firms or nonprofit organizations usually have comfortable offices close to those of the top executives to whom they report. Long hours, including evenings and weekends, are standard for most top executives and general managers, although their schedules may be flexible.

Substantial travel between international, national, regional, and local offices to monitor operations and meet with customers, staff, and other executives often is required of managers and executives. Many managers and executives also attend meetings and conferences sponsored by various associations. The conferences provide an opportunity to meet with prospective donors, customers, contractors, or government officials and allow managers and executives to keep abreast of technological and managerial innovations.

In large organizations, job transfers between local offices or subsidiaries are common for persons on the executive career track. Top executives are under intense pressure to succeed; depending on the organization, this may mean earning higher profits, providing better service, or attaining fundraising and charitable goals. Executives in charge of poorly performing organizations or departments usually find their jobs in jeopardy.

**Training, Other Qualifications, and Advancement**

The formal education and experience required by top executives vary as widely as their responsibilities do, but many of these workers have at least a bachelor’s degree and considerable experience.

**Education and training.** Many top executives have a bachelor’s or graduate degree in business administration, liberal

**Projections data from the National Employment Matrix**

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Top executives.....	—	2,123,000	2,157,000	34,000	2
Chief executives .....	11-1011	402,000	410,000	8,200	2
General and operations managers .....	11-1021	1,720,000	1,746,000	26,000	2

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.



arts, or a more specialized discipline. The specific degree required often depends on the type of organization for which they work. College presidents, for example, typically have a doctorate in the field in which they originally taught, and school superintendents often have a master's degree in education administration. (For information on lower-level managers in educational services, see the *Handbook* statement on education administrators.) A brokerage office manager needs a strong background in securities and finance, and department store executives generally have extensive experience in retail trade.

Some top executives in the public sector have a background in public administration or liberal arts. Others might have a more specific background related to their jobs. For example, a health commissioner might have a graduate degree in health services administration or business administration. (For information on lower-level managers in health services, see the *Handbook* statement on medical and health services managers.)

Many top executive positions are filled from within the organization by promoting experienced, lower-level managers when an opening occurs. In industries such as retail trade or transportation, for instance, it is possible for individuals without a college degree to work their way up within the company and become managers. However, many companies prefer that their top executives have extensive managerial experience and, therefore, hire individuals who have been managers in other organizations.

**Other qualifications.** Top executives must have highly developed personal skills. An analytical mind able to quickly assess large amounts of information and data is very important, as is the ability to consider and evaluate the relationships between numerous factors. Top executives also must be able to communicate clearly and persuasively. For managers to succeed they need other important qualities as well, including leadership, self-confidence, motivation, decisiveness, flexibility, sound business judgment, and determination.

**Certification and advancement.** Advancement may be accelerated by participation in company training programs that impart a broader knowledge of company policy and operations. Managers also can help their careers by becoming familiar with the latest developments in management techniques at national or local training programs sponsored by various industry and trade associations. To facilitate their promotion to an even higher level, managers who have experience in a particular field, such as accounting or engineering, may attend executive development programs geared towards their background.

Participation in conferences and seminars can expand knowledge of national and international issues influencing the organization and can help the participants develop a network of useful contacts. For example, the Institute of Certified Professional Managers offers the Certified Manager (CM) credential, which is earned by completing training and passing an exam. The certification is held by individuals at all experience levels, from those seeking to enter management to those who are already senior executives. Certification is not necessary

for advancement but may be helpful in developing and demonstrating valuable management skills.

General managers may advance to a top executive position, such as executive vice president, in their own firm or they may take a corresponding position in another firm. They may even advance to peak corporate positions such as chief operating officer or chief executive officer. Chief executive officers often become members of the board of directors of one or more firms, typically as a director of their own firm and often as chair of its board of directors. Some top executives establish their own firms or become independent consultants.

**Employment**

Top executives held about 2.1 million jobs in 2006. Employment by detailed occupation was distributed as follows:

General and operations managers .....	1,720,000
Chief executives .....	402,000

Top executives are found in every industry, but service-providing industries, including government, employed over 3 out of 4 top executives.

**Job Outlook**

Employment of top executives is projected to have little or no change. Keen competition for jobs is expected because of the prestige and high pay of these positions.

**Employment change.** Employment of top executives—including chief executives, general and operations managers, and legislators—is expected to grow 2 percent from 2006 to 2016. Because top managers are essential to the success of any organization, their jobs are unlikely to be automated or offshored to other countries. Some top executive jobs may be eliminated through industry consolidation, as upper management is streamlined after mergers and acquisitions. Employment of top executives is not as sensitive to growth in business as employment in many other occupations. As a business grows, the number of top executives changes little relative to the total number of employees. Therefore, top executives are not expected to experience as much employment growth as workers in the occupations they oversee.

Projected employment growth of top executives varies by industry. For example, employment growth is expected to grow faster than average in professional, scientific, and technical services and about as fast as the average in administrative and support services. However, employment is projected to decline in some manufacturing industries.

**Job prospects.** Keen competition is expected for top executive positions because the prestige and high pay attract a large number of qualified applicants. Because this is a large occupation, numerous openings will occur each year as executives transfer to other positions, start their own businesses, or retire. However, many executives who leave their jobs transfer to other executive positions, a pattern that tends to limit the number of job openings for new entrants to the occupation.

Experienced managers whose accomplishments reflect strong leadership qualities and the ability to improve the efficiency or competitive position of an organization will have

the best opportunities. In an increasingly global economy, experience in international economics, marketing, information systems, and knowledge of several languages also may be beneficial.

**Earnings**

Top executives are among the highest paid workers in the U.S. economy. However, salary levels vary substantially depending on the level of managerial responsibility; length of service; and type, size, and location of the firm. For example, a top manager in a very large corporation can earn significantly more than a counterpart in a small firm.

Median annual earnings of wage and salary general and operations managers in May 2006 were \$85,230. The middle 50 percent earned between \$58,230 and \$128,580. Because the specific responsibilities of general and operations managers vary significantly within industries, earnings also tend to vary considerably. Median annual earnings in the industries employing the largest numbers of general and operations managers were:

Architectural, engineering, and related services .....	\$113,280
Management of companies and enterprises .....	105,130
Building equipment contractors.....	85,270
Depository credit intermediation .....	85,050
Local government .....	74,950

Median annual earnings of wage and salary chief executives in May 2006 were greater than \$145,600; some chief executives of large companies earn hundreds of thousands to over a million dollars annually, although salaries vary substantially by type and level of responsibilities and by industry.

In addition to salaries, total compensation often includes stock options and other performance bonuses. The use of executive dining rooms and company aircraft and cars, expense allowances, and company-paid insurance premiums and physical examinations also are among benefits commonly enjoyed by top executives in private industry. A number of chief

executive officers also are provided with company-paid club memberships and other amenities.

**Related Occupations**

Top executives plan, organize, direct, control, and coordinate the operations of an organization and its major departments or programs. The members of the board of directors and lower-level managers also are involved in these activities. Many other management occupations have similar responsibilities; however, they are concentrated in specific industries or are responsible for a specific department within an organization. A few examples are administrative services managers; education administrators; financial managers; food service managers; and advertising, marketing, promotions, public relations, and sales managers. Legislators oversee their staffs and help set public policies in Federal, State, and local governments.

**Sources of Additional Information**

For more information on top executives, including educational programs and job listings, contact:

➤ American Management Association, 1601 Broadway, 6th Floor, New York, NY 10019.

Internet: <http://www.amanet.org>

➤ National Management Association, 2210 Arbor Blvd., Dayton, OH 45439. Internet: <http://www.nma1.org>

For more information on executive financial management careers, contact:

➤ Financial Executives International, 200 Campus Dr., P.O. Box 674, Florham Park, NJ 07932.

Internet: <http://www.financialexecutives.org>

➤ Financial Management Association International, College of Business Administration, University of South Florida, 4202 East Fowler Ave., BSN 3331, Tampa, FL 33620.

Internet: <http://www.fma.org>

For information about management skills development, including the Certified Manager (CM) credential, contact:

➤ Institute for Certified Professional Managers, 1598 S. Main St., Harrisonburg, VA 22801. Internet: <http://www.icpm.biz>