



Chapter 1

Nature of the Construction Industry

Learning objectives

- Recall the predominant types of construction contractors and the work they typically perform.
 - Identify the common significant steps within the overall construction process.
 - Recognize select characteristics that are unique to the construction industry and that have accounting, audit, tax, or consulting consequences.
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Introduction



Learning objective: Recall the predominant types of construction contractors and the work they typically perform.

The construction industry offers many opportunities for the small practitioner. There are several reasons for this:

- The construction industry employs more people and contributes more to the GNP than any other industry in this country. It is one of the largest segments of the national economy, and, therefore, a large market for CPAs.

- Historically, because of the ease of entry into the industry, many construction contractors have been small, family-owned businesses. These kinds of businesses are well suited to the services provided by smaller CPA firms.
- Most contractors are required to post a bid or performance bond in order to obtain the contract. These bonds are issued by sureties who require audited (or at a minimum) reviewed financial statements. In some situations, the surety will also require interim statements.
- The taxation of construction contractors can be complex and typically requires the expertise of a CPA.

If you have ever been involved with a home renovation project or followed the progress of a public construction project in the newspaper (for example, a highway or an airport), then you know something about the construction business.

Have you ever remodeled your bathroom or built an addition to your house? Heard your neighbor tell the story of their remodeling project? If so, then you know how difficult it can be to coordinate the work of all the trades. You know something about budget overruns and change orders. You know how unforeseen events are a significant risk for any construction project, even those that are well planned.

This chapter will not make you an expert on the construction industry. The main objective of this chapter is to point out those characteristics of a construction business that make it different from other businesses. The focus is on those areas that have the greatest impact on the services you provide to your contractor clients.

Construction industry overview

The construction industry has a large impact on our nation's economy, employing more people and contributing more to the gross national product than any other industry. However, as the industry tends to be cyclical in nature, some economists state that our nation's economy follows the construction industry by about 18–24 months. A negative impact to the construction industry has such a large impact on suppliers and the labor force that our nation as a whole suffers. Currently, just over a decade after the economic crisis, the construction industry is once again booming trying to keep pace with demand. This challenge is just one of the many that make construction accounting a unique and complex practice area.

The construction industry is different from other industries in many ways.

- Contributes a significant portion of the U.S. economy
- Many types of contractors
- Variety of players unique to the industry both inside and outside of the entity
- Construction process is different from a typical sale
- Risks not found in many industries

Size of the construction industry

The construction industry is one of the largest sectors of the U.S. economy. The Associated General Contractors of America estimates there are 680,000 construction employers in the United States.¹ According to the Bureau of Labor Statistics, as of October 2019, the construction industry employed 7,527,000 workers in the United States; the highest level of employment since March 2008.² The most common occupations in construction are laborers, carpenters, and first-line supervisors of trades.

Finally, the Bureau of Economic Analysis in their last release of data indicates that the construction industry adds \$654.8bn to the economy of the United States.³

Types of contractors

The definition of a contractor can be very broad, so it is important that any adviser understands the general makeup of the industry. Different types of contractors have different risks and service needs. Construction contractors can be classified based on their size, the type of construction activity they undertake, and the nature and scope of their responsibility for the construction project. As a first step toward servicing your construction clients, you should understand how they fit into the summary in exhibit 1-1.




Exhibit 1-1 Types of contractors

Contractor type	Nature and scope of work
Design-build	Also known as a “turnkey” contractor, they specialize in heavy construction such as power plants, refineries, and hydroelectric facilities. A design-build project requires extensive management skill, including the ability to manage projects over a wide geographical area. A design-build contractor manages all phases of the project, from the feasibility study through the final construction.
Heavy construction	Can build roads, bridges, dams, airports, or large buildings. Typically, the work is performed for public agencies or large corporations that do their own designing and engineering.

¹ Associated General Contractors of America, *Construction Data*, <https://www.agc.org/learn/construction-data>

² Bureau of Labor Statistics, *Construction: NAICS 23*, <https://www.bls.gov/iag/tgs/iag23.htm>

³ Trading Economics, *United States GDP from Construction*, <https://tradingeconomics.com/united-states/gdp-from-construction>



Exhibit 1-1 Types of contractors (continued)

Contractor type	Nature and scope of work
General contractors	General (or prime) contractor who enters into a contract with the owner and who takes full responsibility for its completion. Can engage subcontractors to perform specific parts or phases of projects. Specialties might include housing, schools, hospitals, office buildings, manufacturing plants, or warehouses.
Subcontractors	A second-level contractor who enters into a contract with the general contractor to perform a specific part or phase of a project. Specialties can include electrical, plumbing, concrete, mechanical (including heating and air conditioning) carpentry, drywall, and flooring.
Construction manager	Enters into an agency contract with the owner to supervise and coordinate the construction activity on the project, including negotiating contracts with others for the work. The distinction between a construction contractor and a construction manager is important for tax purposes.

Players in the industry

Just as it is important for us to understand the type of contractor we are dealing with, it is also important that we understand whom the contractor is dealing with. This understanding should play a major role in determining client acceptance criteria and who may be affected by the advice we have given to our client.



Exhibit 1-2 Players in the industry

Player	Considerations
Project owner	Who are the parties that our client serves?
Architect and engineer	Where are the plans coming from? What is the reputation? How aware are they of the contractor implications to the building plans?



Exhibit 1-2 Players in the industry (continued)

Player	Considerations
Other contractors	What type of subcontractors do we use? What is the capacity of the subcontractors we use? Are the subcontractors bonded? Can the subcontractor handle the job?
Surety	What does the surety look at? What is the reputation of the surety? What is our reputation with the surety? Have we provided the surety the correct information needed to make a strong decision for our contractor?
Bond agent	What is our relationship with our bonding agent? What avenues of bonding do they provide? Do they understand our line of work? Is the agent well versed in the construction industry?
Lawyer	What experience does the lawyer have with construction law or labor law?
Banker	Who is loaning the funds for the project? What agreements does our client have in place to fund his cash flows? Is the banker knowledgeable on the bonded A/R?
CPA	What is their reputation in the construction industry? Does the CPA understand construction financial statements? Do they understand the role between the contractor, the surety, the bond agent, and the CPA?

Players within the contractor-client relationship

Within the construction contractor landscape there are a variety of players that can make or break the success of the business.



Exhibit 1-3 Players within the contractor-client relationship

Player	Considerations
Owner(s) of the company	What is his or her character? Reputation? What is his or her attitude? Experience? Capacity? How does he or she set the tone "at the top"?
Controller or bookkeeper	What is his or her experience? What is his or her skill? How reliable is he or she in providing us the information? What is the difference between the bookkeeper and the controller or are they one in the same?
Estimator(s)	What is the experience level? What is his or her ability? How effective is he or she? What projects has he or she estimated? Are we evaluating his or her bidding successes and failures?
Project manager(s)	What is his or her experience? What is his or her capacity? Are we evaluating his or her project management successes and failures?
Labor force	Is the labor force unionized? What is the skill? Labor supply? What is the legality of the labor force? What are the current immigration laws? Are there independent contractors?

Knowledge check

1. Which type of contractor is a second-level contractor who enters into contract with the general contractor to perform a specific part or phase of a project?
 - a. Subcontractor.
 - b. Construction manager.
 - c. Architect.
 - d. General contractor.

The construction process



Learning objective: Identify the common significant steps within the overall construction process.

Suppose you get a phone call from a local businesswoman. Her company needs financing, and her banker told her that she needed an audit of her financial statements. The banker recommended you.

The businesswoman has never hired a CPA to audit her financial statements before, and she is curious about the audit process.

Without getting into too many technical details about audit risk and assertions, how would you describe an audit, from the initial bid to the completion of the work? You might describe the audit process as follows:

- Estimate the cost of the job and preparing a bid
- Sign an engagement letter
- Send the staff to do the work
- Manage and perform the work

A construction project follows a similar process. You might describe the construction process as the process that follows:

- Prepare cost estimates and bids
- Enter into the contract
- Start the job
- Project management

Preparing cost estimates and bids

The first thing a CPA will do is review the potential client's financial statements, operations, books and records, and then estimate what it will cost to perform the audit. Next, a bid is submitted to the client, typically with an engagement letter attached.

The contractor's client is referred to as the owner. When an owner wants to construct a new facility, it is customary to hire an architect or engineer to prepare plans for the project. The contractor reviews these plans and estimates what it will take to complete the project. Preparing a cost estimate for a construction project is similar to estimating the cost of an audit and involves estimates of

- the quantities and price of materials;
- the hours of various labor classifications;
- the types and hours of any required equipment; and
- whether subcontractors will be used to perform any phases of the job.

Quantity surveys, or takeoffs of the quantities of materials required for the job prepared by the design firm or an independent agency, are often available for contractors to use as a check on their own estimating department.

Like an audit, some construction projects are put out to bid. Other projects are not; the price is negotiated between the owner and the contractor. Whether a contractor performs bid or negotiated work has an impact on that contractor's operations.

Once a CPA firm has determined how many hours it will take to perform an audit, then the firm prepares a bid. In preparing the bid, the CPA firm will consider the standard billing rates for the staff and partners as well as other factors that may come into play, for example, whether the work is to be done during the busy season or during the off season, will travel be required for the engagement team, or will specialists be required.

Once the contractors have estimated the cost of the project, they are faced with a similar decision – how much to mark it up. Factors the contractors may evaluate when considering markup are presented in exhibit 1-4.

Do not overlook the fact that in most situations the contractor should estimate the timing of the cash disbursements for the job and the cash available to meet them. The resulting cash flow requirements are vital to help the contractor allocate the contract price among the progress billing points called for in the contract.

Value-added services

Some types of construction projects require specialized, expensive equipment. Contractors are often faced with lease or buy decisions that may affect cash flow, profitability, and income tax expense. The contractor's CPA should be alert for these situations and help the contractor choose the best option.

Why it matters

The main elements of a contractor's financial statements are based on estimates – estimates of cost and gross profit (that is, cost-plus markup). The estimating process begins with preparing the bid, and the CPA needs to understand this process to fully understand the client's operations and service needs.



Exhibit 1-4 Factors a contractor evaluates when determining markup

In determining how much the bid will be marked up over cost, the contractor ordinarily evaluates several factors, including, but not limited to

- the complexities of the job;
- the volatility of the labor and materials markets;
- the contractor's experience or lack of it in doing the kind of work involved;
- the reputation of the design agency for reliability and completeness of plans;
- the season and weather;
- the predicted working relationship with the owner;
- the probability of opportunities to negotiate profitable changes to the contract;
- the alternate construction methods or specifications included in the bid request;
- the competition and the market;
- the incentive or penalty provisions of the contract;
- the anticipated cash flow characteristics of the job; and
- other peculiar risk conditions, including warranty requirements.

Entering into the contract

A CPA and an audit client sign an engagement letter; a contractor and an owner sign a contract. Any given situation can be covered by different types of contracts, and the risks and concerns may be different for each contract type. Contract types and their associated risks are discussed later in the chapter.

Starting the job

To start an audit, the CPA has to mobilize the staff and get them to the client's office along with their supplies and any necessary equipment, such as computers. A contractor faces similar tasks.

Before construction begins, the contractor usually moves equipment to the jobsite, erects a temporary field office, and installs temporary utilities. Like an audit, a contractor's work is usually done at a remote location, away from the contractor's headquarters. This form of decentralized operation can affect the contractor's internal control structure. These costs are also important to capture for new revenue recognition rules under FASB *Accounting Standards Codification*[®] 606, *Revenue from Contracts with Customers*, which will be covered in a later chapter.

Project management

With both an audit and a construction project, the quality of onsite, day-to-day management is a key in determining the success or failure of a given job. A CPA has an audit senior or manager to perform this function; a contractor has a project manager. The objectives of both are the same:

- Get the job done, according to the requirements of the contract.
- Complete the job within budget.

Think of what you require of an audit senior or manager; the requirements of a construction project manager are similar.

- Plan and schedule the staff assignments and the performance of the work.
- Ensure the work meets technical standards.
- Administer day-to-day projects and interact with the client.
- Track job costs and estimate when the job will be completed.
- Communicate job progress and other information from the jobsite.
- Identify requested procedures that are outside the parameters of the contract. Such requests should be documented as a change order.

Knowledge check

2. Which would be the construction process equivalent of a CPA signing an engagement letter?
 - a. Preparing cost estimates and bids.
 - b. Signing a contract.
 - c. Starting the job.
 - d. Project management.

Characteristics unique to contractors



Learning objective: Recognize select characteristics that are unique to the construction industry and that have accounting, audit, tax, or consulting consequences.

This section presents information on the characteristics of a construction contractor's business that make it different from other clients. Those characteristics and their implications for the CPA are summarized in exhibit 1-5.



Exhibit 1-5 Characteristics unique to contractors

What makes a contractor unique?	What it means to the CPA?
Contract projects are one-of-a-kind – the contractor does not do the same job twice.	The contractor's business is more project-oriented and less process-oriented. Unique projects increase audit risk.
Contractor usually sets a price for the work before the work is done.	A contractor must have good estimating skills. Extensive use of estimates creates accounting, auditing, and tax issues.
Construction work is performed under contract.	The risk assumed by the contractor varies according to the type of contract entered into. The requirements of the internal control structure may vary according to the type of contract. The accounting and auditing of a contractor is essentially the accounting and auditing of individual contracts.
Construction projects may take a long time to complete.	When the start and completion of a contract stretches over more than one accounting period, revenue, and taxable income are based on estimates. Generally, the longer the project, the greater the risk.
Change orders occur frequently.	Change orders, claims, extras, and back charges will affect the profitability of the job. They must be properly controlled and accounted for. Documentation is a must.



Exhibit 1-5 Characteristics unique to contractors (continued)

What makes a contractor unique?	What it means to the CPA?
Most contractors need a surety company and bonding in order to operate.	A surety company is an integral part of the contractor's business and is one of the primary users of the contractor's financial statements.
General contractors may use subcontractors on a project.	The subcontractor relationship must be managed and controlled.
As a means of generating working capital, contractors will typically "front-end" load contracts in order to accelerate cash receipts and finance the construction project.	Cash flow is a key element to managing a construction project. Over-billings and under-billings are usually an important component of a contractor's balance sheet.

Unique projects

Every construction project is unique. This makes a contractor different from a manufacturer who produces the same widget every time. A contractor is more project-oriented and less process-oriented.

This project orientation affects the accounting and auditing of a contractor. Contractor accounting (for example, percentage-of-completion, completed-contract) is essentially the accounting for individual projects. The audit of a contractor is an audit of individual projects. These two points will be the focus of subsequent chapters.

Also, the unique nature of construction projects means that every project may contain significant unknowns. This increases the risk assumed by contractors.

Unique joint ventures

Public-private partnerships, or P3s, are becoming increasingly common forms of collaboration for construction projects. Public-private partnerships take the form of contractual agreements between a public agency (federal, state, local) and a private sector entity. Due to governmental agencies struggling to obtain financing for large public works projects, these partnerships allow the private sector entity to share the risks and rewards of these public sector projects.

Pricing

A contractor prices the work before it is completed and before all the costs are known. This represents a significant risk to the contractor. It also places a premium on estimating skills.

Construction contracts

All contractors typically enter into a contract with the customer that specifies the work to be performed and the basis for determining the amount and terms of payment, and that generally requires total performance before the contractor's obligation is discharged. Contracts may include target penalties and incentives that are a function of such things as completion dates, plant capacity on the completion of the project, and underruns or overruns of estimated costs.

There are four basic types of contracts:



Exhibit 1-6 Four basic types of contract


Contract type	Considerations
Fixed-price or lump sum	Provide for a single price for the total amount of work to be performed on a project. The price is usually not subject to any adjustment by reason of the cost experience of the contractor or the performance under the contract. In a similar form they are commonly known as guaranteed maximum price or GMP contracts.
Unit-price	Provide that a contractor will perform a specific project at a fixed price per unit of output (for example, to excavate a site at \$X per cubic yard). A unit-price contract is essentially a fixed-price contract with the only variable being units of work performed.
Cost-type or cost-plus	Provide for reimbursement of allowable or otherwise defined costs incurred plus a fee that represents profit. Terms of the contract should include terms specifying reimbursable costs (general conditions), overhead recovery percentages and fees, which may be fixed or based on a percentage of total costs.
Time and materials	Similar to a cost-plus contract, these contracts generally provide for payments to the contractor on the basis of direct labor hours at fixed hourly rates and cost of materials or other specified costs.

The core differences in each type of contract (for example, fixed price versus unit-price) almost certainly will affect the risk assumed by the contractor.

Further, as a CPA, you also understand that different types of contracts carry different levels and types of risk. If you agree to prepare a tax return for a fixed fee, you must absorb any cost overruns on the project; that is a risk you assume. On the other hand, if you provide CFO-type services to your clients on a rate per-hour basis, you are not at risk if the job takes longer than anticipated. However, there may be other concerns you may not have under a fixed fee arrangement.

Different types of construction contracts will also place different demands on the accounting system and internal control structure. For example, a cost-plus contract seeks reimbursement from the owner for specified costs. In that situation, the internal control structure should emphasize the documentation of costs and expenditures for the purpose of minimizing nonreimbursable expenses. In addition, if the contractor doesn't provide the owner with a clean list of costs for the period under a cost-plus contract, the reimbursement process could be slowed, causing a cash flow issue. Contracts performed under a fixed-price arrangement will also accumulate costs, but the emphasis there is on generating information that helps management quickly identify over budget or other problem areas that need better supervision.

Exhibit 1-7 summarizes the risks and internal control structure considerations for each type of contract.

 **Exhibit 1-7 Types of contracts, risk, and internal control consideration**

Contract type	Risks	Control considerations
Fixed-price or lump sum	<ul style="list-style-type: none"> Cost overruns Poor or incomplete cost estimates Job management failures Unforeseen conditions 	<ul style="list-style-type: none"> Emphasis on cost accumulation for each job Reports should help management identify problem areas and estimate cost to complete. Management should receive and review job reports on a regular, timely basis.
Unit-price	<ul style="list-style-type: none"> Unforeseen conditions Poor or incomplete cost estimates Job management failures 	<ul style="list-style-type: none"> Emphasis on unit costs Reports should help management identify problem areas and estimate cost to complete. Management should receive and review job reports on a regular, timely basis.



Exhibit 1-7 Types of contracts, risk, and internal control consideration (continued)

Contract type	Risks	Control considerations
Cost-type or cost-plus	Time and cost overruns Warranties Disputes with the owner over definition or interpretation of reimbursable costs	Emphasis on documentation of costs and expenditures Minimize nonreimbursable costs. Maintain accountability for materials, supplies, labor, and equipment.
Time and materials	Job management failures Unforeseen conditions	Emphasis on accumulation of time and material costs Emphasis on timely billing to the owner

Construction projects take a long time

For a commercial business, the sale is made at a given point in time. For a contractor, the sale – in this case, performance under the terms of the contract – takes place over a period of time. In some cases, that period of time can be months or even years.

A major accounting issue for all contractors is determining the point or points at which revenue should be recognized as earned and costs should be recognized as expenses. Accounting for contracts is essentially a process of measuring the results of relatively long-term events and allocating those results to relatively short-term accounting periods. This is true for both generally accepted accounting principles and tax purposes. This measurement process involves considerable use of estimates in determining revenue, cost and profits and in assigning those amounts to the proper accounting period. Making the key estimates is complicated by the uncertainties inherent in the construction process.

The extensive use of estimates is also a key audit consideration, which will be discussed in chapter 6.

Change orders and other contract modifications

Contract changes are a way of life in the construction business. Read example 1-1 as a sample of the ramifications of contract changes.



Example 1-1 Mr. Watts changes his mind

Return to the analogy introduced at the beginning of this chapter that a construction project is similar to a home remodeling project. Mr. Watts decided to lay sod in the backyard, a relatively small, easily managed process. He considered adding a sprinkler system but ultimately decided against it as a way to keep the cost down. If he wanted one, he could always add it later.

Watts rototilled the yard and discovered the dirt was much harder and clay-like than he imagined. He took a sample to the local nursery and they told him that the sod would stand a much better chance of taking if he added several inches of topsoil to the yard.

The backyard was surrounded by a fence, and outside the fence were some trees. To get the truck in to deliver the topsoil, Watts had to knock down a portion of the fence and take out some trees (he didn't like them anyway).

While spreading and mixing in the topsoil, he thought again about the sprinkler system. It would be foolish to dig up the yard sometime in the future when it was already dug up now. What the heck, he figured. He took an advance on a line of credit and called a sprinkler company for an estimate.

Take the example of Mr. Watts, magnify it 10 or 20 times, and that is what it is like on most construction projects. Circumstances require a modification to the original contract, or the owner may change his or her mind and want something else. Modifications to an original contract are referred to as change orders.

Generally, a change order situation is unfavorable to both the contractor and the owner. Change orders are often unforeseen, but they are frequent in the construction industry. Contractors may not have the accounting structure that can readily identify the costs incurred due to the change order. Consider that change orders are not planned and are typically implemented with very little, if any, advance notice; change order can become problems. The contractor should have internal controls in place to identify the excess costs that a change order can bring about so that the change order does not bring about a claim later on in the job.

Claims and back charges represent amounts in excess of the original contract price that a contractor is trying to collect from the owner. They may result from unapproved or disputed change orders, delays caused by the customer, errors in plan specifications and designs, and contract termination. Other claims may result from other unanticipated costs incurred by the contractor that are not part of the existing contract.

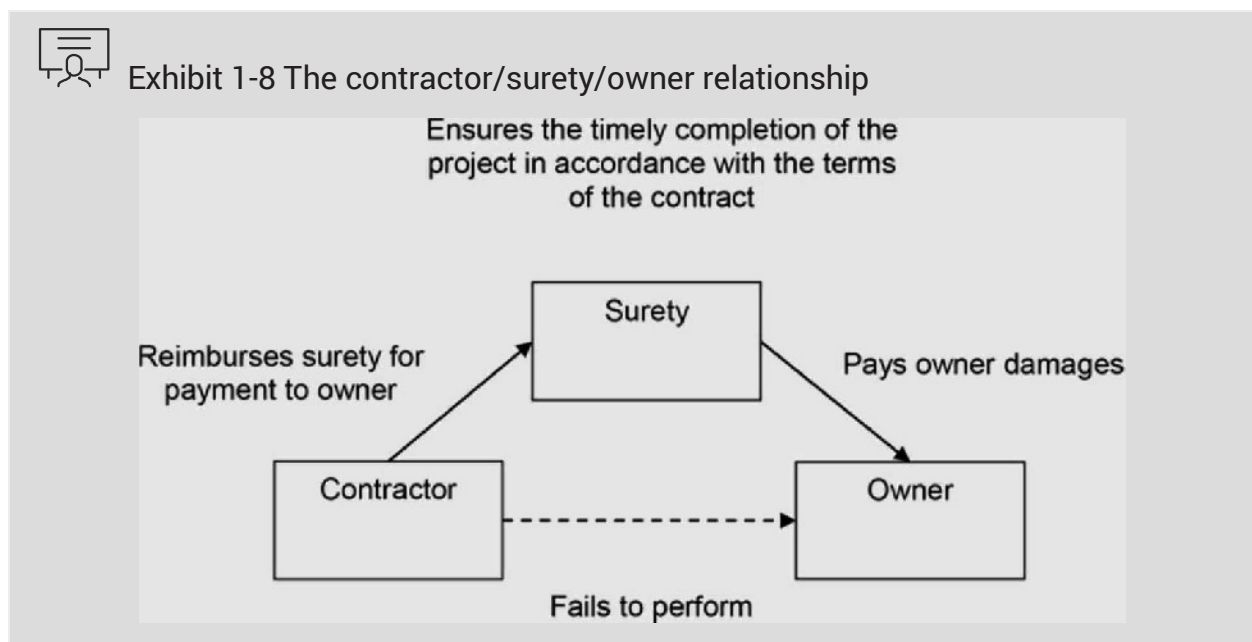
To maximize profitability on the job, management must properly control, document, and collect on any change orders, claims, extras, or back charges. The accounting for these items is somewhat specialized and may involve considerable judgment. This is discussed further in chapter 6.

Surety and bonding

A surety company is equally important to the contractor and the owner because it ensures the timely completion of the project in accordance with the terms of the contract. This guarantee is provided through the issuance of surety bonds.

A surety bond is a contract between three parties: the contractor, the surety company, and the project owner. Under a surety agreement, the surety guarantees to the owner that the contractor will perform according to the terms of the contract. Additionally, a contractor is obligated under a surety bond to reimburse the surety for any loss the surety incurs as a result of guaranteeing the contractor.

So the surety company issues a surety bond expecting that the contractor will reimburse any losses. In that sense, a surety bond functions more like a credit guarantee issued by a bank than as an insurance policy. Exhibit 1-8 shows how the contractor, surety, and owner interact.



A CPA who provides service to a construction contractor must have a working understanding of the surety process. If you prepare or audit the financial statements of a contractor, you should have a basic understanding of how those financial statements will be used by the surety. These issues are discussed in detail in chapter 4.

Subcontractors

On a large contract a general contractor will often hire a subcontractor to perform a specified task or phase of the project. This is an effective way to spread the risk, the financing, and the operational

problems of the job. However, the general contractor is still responsible to the owner for the work of the subcontractor and to pay the subcontractor's labor and material bills.

For this reason, it is important for the general contractor to exercise some control over the subcontractors, which includes not only supervision of the work, but also monitoring the subcontractors' financial condition. A subcontractor's work may be covered by a surety bond, and the general contractor needs to take necessary precautions to ensure that the subcontractor's surety is not released until the work is completely performed. The general contractor will normally withhold retainage of 10% to ensure completion and payment of costs incurred by the subcontractor.

Managing cash flow

A contractor's greatest financing need is working capital.

The contractor puts money up front to pay for material, supplies, and overhead. Usually, there is a time lag between when costs are incurred, and progress payments are received from the customer. That is why working capital is so important to a contractor.

Traditional lines of credit are seldom extended to contractors, though a working capital line of credit on specific contracts may be available. Loans from financial institutions against nontangible property are rare. Receivables of a contractor on a bonded job allow the surety to take precedence over those of the lending institutions even though there may be a secured financing agreement.

A more common form of financing a construction project is accomplished through the contractor's billing practices. Billing practices in the construction industry vary widely and are often not correlated with the performance of the work. The billing arrangements are specified in the contract and may be based on the following:

- Completion of certain stages of the work
- Costs incurred on cost-plus contracts
- Architects' or engineers' estimates of completion
- Specified time schedules
- Quantity measures of unit-price contracts, such as cubic yards excavated

Front-end loading is the practice of assigning a higher relative bid price to job components that are completed early in the job. This is an effective way of financing the costs of construction.

Most contracts call for retention by the owner of a specified amount of the progress billing (typically 5% to 10%) as a way to ensure the proper performance of the work. A well-managed contractor will be able to offset the retainage and recover the initial investments early in the job and continue it entirely on funds received through progress payments. Many contractors, particularly general contractors, are able to withhold retainage from their subcontractors.

Unlike a commercial business, a contractor's billings do not match the revenue and cost recognition practices. Differences between the amount billed and the cost and profit recognized on a job are carried on the balance sheet. The accounting for over- and under-billings is discussed in chapter 2.

Companies that substantially front-end load their jobs may find themselves in a position where the cash inflows at the end of the contract may be less than the cash requirements. This is known as *job borrow* and is illustrated in example 1-2. Appropriate controls and cash budgeting are an essential part of a contractor's financial management.



Example 1-2 Job borrow

XYZ Contractors have a project where estimated costs are \$100. The total contract for this project is \$120. The estimated cash flows for this job are as follows:

	Period					
	1	2	3	4	5	Total
Cash outflow: Job costs	\$(15)	\$(20)	\$(20)	\$(20)	\$(25)	\$(100)
Cash inflow: Progress payments	25	30	30	20	15	120
Net cash flow	\$10	\$10	\$10	\$0	\$(10)	\$20

In this situation, XYZ has front-end loaded this job, collecting more in the early stages of the contract than is spent. This helps provide working capital. At Period 3 the contractor has a job borrow of \$10. The contractor's net cash flow for the job is \$30, and the overall total when the job is complete is estimated to be \$20; therefore, the job borrow is \$10 (\$30 – \$10 = \$20)

However, at the end of the job, in Period 5, XYZ spends more in job costs than it received in progress payments. Therefore, the project must be carefully managed to be sure enough cash is on hand at the end of the job to finish it.

A more thorough explanation and analysis of a contractor's cash flow is covered in the AICPA advanced CPE course *Construction Contractors: Advanced Issues (CCAI)*.

Knowledge check

3. Which type of contract provides that a contractor will perform a specific project at a fixed price per unit of output?
 - a. Fixed-price contract.
 - b. Cost-plus contract.
 - c. Unit-price contract.
 - d. Time and materials contracts.
4. Which party is critical in the construction contract relationship because it ensures the timely completion of the project in accordance with the terms of the contract?
 - a. Surety.
 - b. Estimator.
 - c. Project manager.
 - d. General contractor.
5. Which is **not** a party to a surety bond?
 - a. Project owner.
 - b. Materials supplier.
 - c. Contractor.
 - d. Surety.

How the economic environment affects contractors

In addition to gaining an understanding of the contractor's business, it is important for the CPA to understand the economic environment in which the contractor operates.

The Construction Financial Management Association publishes an annual financial survey that provides benchmarking and financial information about the construction industry. The *Architectural Record* publishes an outlook for the construction industry each year in its November issue. Check the internet or look in your local library for a copy.

You should also try to obtain information about the economy and construction industry in the geographic area in which your clients operate. For information about the local economy, consult the local business publications, government agencies, local chapter of the Building Industry Association which is affiliated with the National Association of Home Builders (NAHB), and Chambers of Commerce.

In gaining an understanding about economic and business conditions and how these affect your contractor clients, keep in mind the following:

- "Front-end" contractors such as excavators will be the first to be affected by changes in the economy.
- "Finish" contractors, such as electrical, drywall, or carpentry, typically perform their work later in the contract cycle; therefore, will be affected later by changes in the economy.
- All construction markets – retail, commercial, and industrial – are affected by supply and demand. Construction activity will be slow in areas where supply exceeds demand. The reverse is also true.

Look for indicators such as the vacancy or occupancy rates for commercial buildings or apartments to gauge the general supply and demand for construction.

- Look for statistics on housing starts and applications for building permits to gauge the residential housing market. Keep track of trends in interest rates, too, since this market is particularly sensitive to changes in interest rates.
- Nonresidential construction is generally less interest rate sensitive than housing construction and is more reliant on the overall level of corporate profits. It may also be influenced by the availability of capital.
- Publicly financed projects are typically less sensitive to economic indicators than they are to local politics and the decisions of the voters. For example, a community may vote to construct more prisons and fewer schools, or vice versa.

The state of the industry

The state of the construction industry may depend on whom you ask. There is an overall perspective of the industry nationally, but regions, individual states, and even local economies may vary greatly. And there will be variations in the state of the industry by type of construction – residential, commercial, governmental, educational, or medical.

Because construction contracts tend to be long-term, it is important for the contractor and the CPA to stay up-to-date on the state of the industry and forecasts for the future. Anticipating trends can help position the contractor to take advantage of opportunities or avoid risk and losses from a negative downturn.

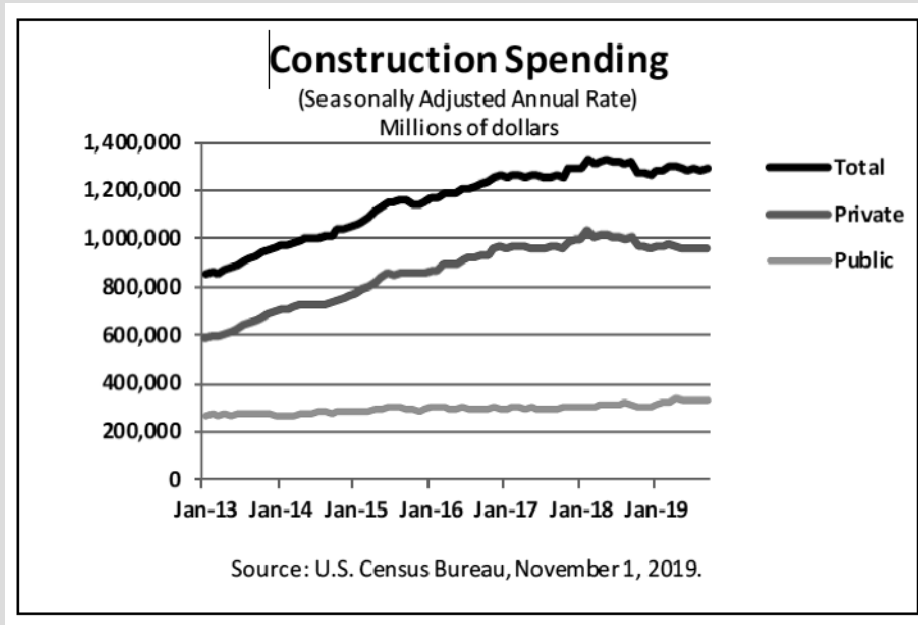
The following statistics will be the most recent as of the publication date of this course. However, it is highly recommended that you search the internet for the most recent statistics at the time you take this course.

Construction spending

In February 2019, the U.S. Census Bureau (www.census.gov) released its Monthly Construction Spending Report. The report includes the value of construction spending put in place and includes detail by construction type. The February report put the Value of Construction Put in Place, seasonally adjusted for September 2019 was \$1,294 trillion. Since 2011, construction spending has been steadily increasing.



Exhibit 1-9 Construction spending⁴



Employment

The Bureau of Labor Statistics expects employment in the construction industry to grow at a rate of 10%, faster than the average for all occupations. As of May 2018 (last available data), the median annual wage for all construction occupations was \$46,010, 19.1% higher than the median national average for all occupations of \$38,640.⁵

Again, from the Bureau of Labor Statistics, here is a summary of hourly and annual wages for select construction occupations:

⁴ U.S. Census Bureau, *Monthly Construction Spending, November 2018*, <https://www.census.gov/construction/c30/pdf/release.pdf>

⁵ Bureau of Labor Statistics, *Occupational Outlook Handbook – Construction and Extraction Occupations*, <https://www.bls.gov/ooh/construction-and-extraction/home.htm>



Exhibit 1-10 Construction employment⁶

Data series	Wages, 2018			
	Hourly		Annual	
	Median	Mean	Median	Mean
Carpenters	\$22.51	\$24.73	\$46,810	\$51,440
Construction laborers	\$17.41	\$19.67	\$36,210	\$40,910
Construction managers	\$44.26	\$49.03	\$92,060	\$101,980
Electricians	\$25.75	\$28.10	\$53,550	\$58,460
Operating engineers and other construction equipment operators	\$24.21	\$27.08	\$50,360	\$56,340

Industry outlook

The AGCA in conjunction with Sage publishes an annual Construction Hiring and Business Outlook Survey. The following are key statistics from the 2020 report:⁷

- The majority of respondents expect an increase in 2020 in the available dollar value of project for which they compete.
- 75% of respondents expect to increase their headcount in 2020.
- 81% are having a hard time filling open positions.
- 59% of respondents always operate as an open shop or only occasionally employ union labor, and 31% operate as a union shop most or all of the time.
- Top five issues in the industry include the following:
 - Worker quality
 - Worker shortage
 - Rising labor costs
 - Subcontractor availability
 - Safety

However, Dodge Data and Analytics,⁸ predicts that total U.S. construction starts will slip to \$776 billion in 2020, a decline of 4% from the 2019 estimated level of activity. Further,

- The dollar value of single-family housing starts will be down 3% in 2020 and the number of units will also lose 5% to 765,000 (Dodge basis). Affordability issues and the tight supply of entry level homes have kept demand for homes muted and buyers on the sidelines.
- Multifamily construction was an early leader in the recovery, stringing together eight years of growth since 2009. However, multifamily vacancy rates have moved sideways over the past year, suggesting that slower economic growth will weigh on the market in 2020. Multifamily starts are slated to drop 13% in dollars and 15% in units to 410,000 (Dodge basis).

⁶ Bureau of Labor Statistics, *Industries at a Glance – Construction: NAICS 23*, <https://www.bls.gov/iag/tgs/iag23.htm>

⁷ AGCA, *2019 Sage Construction Hiring and Business Outlook Survey*, December 18, 2019, <https://www.agc.org/news/2019/12/18/2020-sage-construction-hiring-and-business-outlook-survey>

⁸ Dodge Data and Analytics, *Construction Starts to Slip Back in 2020 According to Dodge Data & Analytics*, <https://www.construction.com/news/Construction-Starts-Slip-back-2020-Dodge-Data-Analytics>

- The dollar value of commercial building starts will retreat 6% in 2020. The steepest declines will occur in commercial warehouses and hotels, while the decline in office construction will be cushioned by high value data center construction. Retail activity will also fall in 2020, a continuation of a trend brought about by systemic changes in the industry.

Overall, there is a mixed outlook.



Exercise 1-1 Group discussion

Working with a partner, or in a small group, review the resources available and discuss the following questions.

1. Visit the AGCA website for State Fact Sheets: <https://www.agc.org/learn/construction-data/state-fact-sheet>. Click on your state. Read the report for your state. How does the data compare to your perspective on the industry?
2. Visit the Construction Financial Management Association website for its key industry financial indicators: <http://www.cfma.org/news/kifi.cfm>. Review the statistics. What do the measurements indicate about the current and future states of the construction industry?

Resources for the construction industry

Industry associations

- ABC – Associated Builders and Contractors – www.abc.org
 - 21,000 members in 69 chapters
- AGCA – Associated General Contractors of America – www.agc.org
 - 26,000 member firms in 89 chapters
 - Key role of construction in each state’s economy
 - <https://www.agc.org/learn/construction-data/state-fact-sheet>
- ASA – American Subcontractor Association – www.asaonline.com
 - Chapters in every state
- CFMA – Construction Financial Managers Association – www.cfma.org
 - 8,200 members in 90 chapters
 - Key industry financial indicators
 - www.cfma.org/news/kifi.cfm
- CMAA – Construction Management Association of America – www.cmaanet.org
 - 16,000 members in 29 regional chapters
- NAHB – www.nahb.org
 - 140,000 members in 700 state and local associations
- NAWIC – National Association of Women in Construction – www.nawic.org
 - 119 Chapters

Industry analytics

- Construction Dive – www.constructiondive.com
- Dodge Data and Analytics – www.construction.com

Publications

- Audit and Accounting Guide *Construction Contractors*
 - Annual publication from AICPA
- Journal of Construction Accounting & Taxation
 - Published six times per year
- Construction Guide: Accounting & Auditing
 - Annual publication from CCH
- Surety Information Office
 - Brochures and presentations about the surety process

Government resources

- U.S. Census Bureau – www.census.gov
- Bureau of Labor Statistics – www.bls.gov
- Federal Reserve Bank Economic Research – www.fred.stlouisfed.org
- Federal Reserve Bank Economic Research – www.fred.stlouisfed.org

Conferences

- AICPA Construction & Real Estate Conference – December
- AGCA Construction Super Conference – December
- CFMA Annual Conference – June
- NAHB International Builder Show – February
- CMAA Annual Conference – October
- NAWIC Annual Conference – August
- ConExpo-ConAgg – March 2020 (every three years)

Summary

To provide quality service to a construction contractor, a CPA must understand how the business operates. This chapter begins to introduce you to the construction industry, and it focused on the construction process and characteristics unique to construction contractors. The emphasis was on those items that are relevant to the accounting, auditing, tax, and consulting issues to be covered later.

Practice questions (optional)

1. Why is it important for CPAs to distinguish their contractor clients by type (for example, heavy construction versus drywall subcontractor)?
2. Describe the steps in the construction process.
3. Why is it important for a CPA to understand the contracts the construction client has entered into?
4. Describe the relationship between the surety, the contractor, and the owner. Why is the surety so important to the contractor?
5. What is a contractor's greatest financing need? What is the objective of front-end loading?