Digging into Construction Data

By Kenneth D. Simonson

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Construction is a large, diverse, and—lately—fast-growing sector of the U.S. economy, comprising several distinct categories of activity. Construction accounts for roughly five percent of non-farm payroll employment and 12 percent of self-employment. The value of construction put in place totals eight percent of GDP; construction supplies and equipment are important components of manufacturing output. The current outlook for the industry is for a pause in the fast-growing residential market, but we can expect an acceleration in private and public non-residential construction. Data on different aspects of construction are available from a variety of federal and private sources. There are limitations and pitfalls that data users should bear in mind.

The construction industry is a major contributor to the economy as data from a variety of sources attest. Here is a concise drive down “the construction data highway,” with a glance in the rearview mirror, a look at the road ahead, and a few warning signs about potholes in some of the indicators.

Statistics and Sources

Construction employment in the United States in 2004 averaged 7.0 million, or five percent of non-farm payroll employment, according to the monthly employment situation report (www.bls.gov/ces) from the U.S. Bureau of Labor Statistics (BLS). Moreover, two million of the nation’s 18 million sole proprietors and other non-employer businesses were in construction, according to the U.S. Census Bureau’s non-employer statistics (www.census.gov/epcd/nonemployer). Note that the employed and non-employed workers are not additive since many employees moonlight or turn to self-employment between payroll jobs.

The value of construction put in place (www.census.gov/construction-spending), a measure of the amount spent on design, engineering, and construction, was $1 trillion in 2004, according to the Bureau of Census. This amount is equivalent to roughly eight percent of GDP. Approximately half of that total represented value added by construction firms directly, according to the U.S. Bureau of Economic Analysis (BEA)’s estimate of GDP by industry (www.bea.gov/bea/pn/GDPbyInd_VA_NAICS.xls). The other half was for purchases of goods and services.

Bureau of Census figures (www.census.gov/indicator/www/m3) show that shipments of construction materials and supplies in 2004 totaled $471 billion or nearly 11 percent of total manufacturing shipments. Shipments of construction machinery totaled $29 billion—ten percent of total machinery shipments. Shipments do not equate to construction industry purchases, since shipments include exports and sales to non-construction customers. Conversely, construction projects use materials and equipment that are imported as well as items that are not construction-specific, such as diesel fuel and pickup trucks.

Costs for construction materials and components jumped ten percent between December 2003 and December 2004, a bit more than the 9.1 percent increase in the U.S. Bureau of Labor Statistics (BLS)’s producer price index (PPI) for all intermediate goods and far ahead of the 4.1 percent gain in the finished-goods PPI (www.bls.gov/ppi). The PPI for construction machinery and equipment climbed six percent during this period.

Most construction firms are tiny. The Census Bureau’s County Business Patterns identified 710,000 construction establishments in 2002, with a total of 6.3 million employees, or nine per establishment (www.census.gov/epcd/cbp/view/cbpview.html). Of these, 647,000 or 91 percent had fewer than 20 employees, and only 467 or 0.07 percent had 500 or more. Nearly all the construction firms have only one “establishment,” or fixed location, although they may operate at numerous job sites in the course of a year.

There is a large seasonal element to some types of construction work, such as highway construction in Northern states. For example, seasonally adjusted hiring in construction was nearly level in November and December 2004—388,000 and 385,000 respectively—while unadjusted hiring plunged from 299,000 to 236,000, as reported by the BLS in its monthly Job Openings and Labor Turnover release (www.bls.gov/jlt).

Construction workers earn higher
hourly wages ($19.21 in January 2005, seasonally adjusted) than private non-supervisory or production workers overall ($15.88, a 21 percent difference), according to BLS’s monthly employment report. But construction work is less continuous than the average job, both because of seasonality and the lack of assurance that once a project is completed another one requiring the same skills will be available. As a result, the gap in average annual pay in 2003 between construction ($39,500) and all private industries ($37,500) was only five percent, according to BLS’s quarterly census of employment and wages (www.bls.gov/cew/home.htm).

**Construction is more a collection of separate industries than a single industry.**

The industry is ubiquitous and large enough in nearly every state for BLS to present monthly state construction employment counts. (Construction data are combined with the small natural resources and mining sector for Delaware, the District of Columbia, Hawaii, and Maryland.) Unfortunately, these are the only free monthly construction data by state. BLS puts out annual employment counts and wages by industry, occupation, and state. BEA produces quarterly and annual estimates of earnings—employee compensation plus profit-type income—by industry, with a lag of several months. The Bureau of the Census presents annual state and local information, but with an even longer lag, in its County Business Patterns. (www.census.gov/epcd/cbp/view/cbpview.html).

The construction industry’s workforce differs from the overall labor force in a number of ways, as shown in BLS tables from the Current Population Survey (www.bls.gov/cps/home.htm#annual). In 2004, the industry employed disproportionately more Hispanic or Latino workers (21 percent of total construction employees vs. 13 percent for all industry) but fewer women (10 percent vs. 46 percent overall), blacks (six percent vs. 11 percent) and Asians (one percent vs. four percent). Union membership was nearly twice as high in construction (14.7 percent) as it was in the entire private sector (7.9 percent).

**Private Eyes on the Industry**

Besides the usual government suspects, a number of private sources provide information about construction. McGraw-Hill is the leading private source of both free and for-sale information about construction (www.construction.com).

McGraw-Hill Construction (formerly F.W. Dodge) produces a monthly report on the value of new construction contracts. This report typically comes out a few days before the Census report on the value of construction put in place. The McGraw-Hill report covers about 55 percent of the total reported by Census and counts the full value of a contract the month it begins, whereas Census counts only the amount spent on goods, services, labor, and overhead in a given month. The overall direction of change in the two series tends to agree most of the time, although subcomponents fluctuate more in the McGraw-Hill series, as the start of a single large stadium, power plant, or bridge project can send the total for that category up long before many dollars are “put in place.”

McGraw-Hill’s Engineering News-Record, or ENR (www.enr.com), is a weekly magazine that includes two pages of prices for 75 specific construction materials in 20 cities plus a building cost index and a separate construction cost index, both of which use fixed baskets of material and labor to track changes. In addition, the magazine usually runs several articles at the end of each quarter on construction cost trends. The city-level data and highly specific material costs provide levels of detail not found in the PPI. The greater specificity makes it easier to track costs for a particular location or type of project but provides less of a basis for overall construction cost trends.

A supplement to the December 2004 issue of ENR called “Construction Facts” listed a variety of price indexes from both public and private sources. General-purpose cost indexes such as ENR’s and the GDP indexes measure direct materials and labor input costs. Selling-price indexes attempt to capture the change in prices of completed buildings, including any change in margins for contractors. Valuation cost indexes measure the replacement cost of buildings and are typically used for insurance purposes.

An impressionistic early-warning system for construction input costs and availability comes out of the monthly reports of the Institute for Supply Management (ISM) (www.ism.ws). The separate surveys of purchasing managers for manufacturing and nonmanufacturing companies yield lists of items that have risen or fallen in price or are in short supply. An unspecified number of construction companies are included in the non-manufacturing survey; and both reports typically list items that are significant for construction even if they are not unique to the industry, such as steel products or freight surcharges.

ENR publishes an annual list of the largest construction firms, known