Recent employment trends in residential and nonresidential construction

During and following the 2001 recession, as consumer investment and business investment diverged from their usual patterns, residential construction employment increased and nonresidential construction employment declined.

The construction industry encompasses a collection of diverse, specialized smaller industries, each serving different groups and providing different services. Although differing in timing, business and employment cycles across these subindustries have tended to follow similar patterns, rising sharply in response to economic expansions and declining in response to contractions. However, during and following the recession of 2001, two divergent and historically atypical employment trends emerged among construction industries, with those serving residential customers thriving, and those serving nonresidential customers stagnating or declining. This article analyzes trends in construction employment from 2001 to 2005, with special attention being given to the measurement of residential and nonresidential components.

Construction employment

Construction is an extremely cyclical industry that typically has suffered recessionary employment declines exceeding, in both depth and duration, those in other industries. During and following the four recessions that took place from 1973 to 1991, employment declines in the construction industry averaged 16.2 percent, as opposed to 2.0 percent in total nonfarm industries, excluding construction. In addition, employment declines in construction over this period lasted about two and one-half times as long as those in other industries. (See chart 1.) However, in 2001, construction experienced an employment decline that was mild by historical standards (3.0 percent), while other nonfarm industries combined experienced a more typical decline (2.1 percent). Furthermore, construction’s 2001 employment contraction was substantially shorter in duration than that in total nonfarm, excluding construction—another departure from historical patterns. This pattern carries through to job recovery, with construction recovering jobs lost in the downturn much more quickly than usual, and other industries recovering much more slowly than usual. (See table 1.)

Differences from trend in the 2001 recession reflect job loss and job recovery inconsistencies across construction component industries, with overall construction employment being pulled in two different directions. Largely mirroring trends in the larger economy, component industries catering to the needs of consumers—the residential market—experienced steady employment increases. Construction industries that focused on the needs of business and government—the nonresidential market—experienced steady employment declines. (See table 2.) It is not unusual for trends in residential and nonresidential construction to vary somewhat; however, the magnitude of their divergence in the 2001 recession is historically unique and reflects the unusual nature of the recession itself.
Construction Employment in Recessions

A business recession

The recession of 2001 has been called a “business recession,” an economic downturn primarily characterized by sharply curtailed business investment. Cutbacks in business spending and—to a lesser extent—government spending were offset by robust spending among consumers. This was especially true in the construction industry, where divergent trends emerged in residential and nonresidential fixed investment during the recession of 2001. (See charts 2 and 3.)

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### Table 2. Employment trends in selected industries following March 2001 business cycle peak through 2005

<table>
<thead>
<tr>
<th>Industry</th>
<th>Industry-specific employment peak</th>
<th>Industry-specific employment trough</th>
<th>Duration of contraction in months</th>
<th>Job loss Number (in thousands)</th>
<th>Percent</th>
<th>Month of recovery</th>
<th>Employment change since peak Number (in thousands)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total nonfarm</td>
<td>February 2001</td>
<td>August 2003</td>
<td>30</td>
<td>2,754</td>
<td>2.1</td>
<td>February 2005</td>
<td>1,825</td>
<td>1.4</td>
</tr>
<tr>
<td>Total nonfarm, excluding construction</td>
<td>February 2001</td>
<td>August 2003</td>
<td>30</td>
<td>2,667</td>
<td>2.1</td>
<td>April 2005</td>
<td>1,250</td>
<td>1.0</td>
</tr>
<tr>
<td>Construction</td>
<td>March 2001</td>
<td>March 2003</td>
<td>24</td>
<td>207</td>
<td>3.0</td>
<td>March 2004</td>
<td>554</td>
<td>8.1</td>
</tr>
<tr>
<td>Construction of buildings</td>
<td>March 2000</td>
<td>March 2003</td>
<td>36</td>
<td>84</td>
<td>5.1</td>
<td>October 2004</td>
<td>75</td>
<td>4.5</td>
</tr>
<tr>
<td>Nonresidential building</td>
<td>October 2000</td>
<td>February 2004</td>
<td>40</td>
<td>95</td>
<td>11.6</td>
<td>No job recovery</td>
<td>–56</td>
<td>–6.9</td>
</tr>
<tr>
<td>Heavy and civil engineering construction</td>
<td>February 2002</td>
<td>June 2004</td>
<td>28</td>
<td>59</td>
<td>6.1</td>
<td>June 2005</td>
<td>17</td>
<td>1.8</td>
</tr>
<tr>
<td>Specialty trade contractors</td>
<td>March 2001</td>
<td>May 2002</td>
<td>14</td>
<td>128</td>
<td>3.0</td>
<td>December 2003</td>
<td>400</td>
<td>9.3</td>
</tr>
</tbody>
</table>

### Chart 2. Private residential fixed investment, indexed to level at business cycle peak, recession and recovery, 1973–91 and 2001

Historically, residential fixed investment began falling well before the peak in the business cycle. On average, it returned to the peak level 10 quarters after the business cycle peak. However, in 2001, residential investment was still growing at the business cycle peak and continued growing throughout the recession. Especially notable is the fact that for each of the 6 quarters following the 2001 business cycle peak, residential investment exceeded its maximum for the prior four business cycles.

In 2001, nonresidential investment was somewhat stronger than average immediately before the business cycle peak and remained about average 2 quarters into the recession. However, nonresidential investment plummeted thereafter, quickly falling well below both its 1973-to-1991 average and its minimum for all quarters. In other words, nonresidential building investment following the 2001 business cycle peak has been weaker than during any of the previous four business cycles.

**SOURCE:** Bureau of Economic Analysis.
Residential demand and employment

Over the past few years, demographic trends and favorable economic developments have converged, creating strong demand for residential construction. Baby boomers—those born from 1946 to 1964—form an enormous demographic cohort. This group has entered their middle and later years having accumulated home equity that far exceeds that of prior generations. This equity has been a ready source of funds for the purchase of new homes and the renovation of existing homes, both of which have fueled construction activity over the past few years. In addition, many boomers purchase second homes as investments, as vacation homes, or in anticipation of retirement. In fact, surging sales of second homes have largely been driven by purchasers over the age of 55. While relatively few of these homes are newly constructed, their purchase indicates increased demand for housing overall—a condition that spurs construction. Even first-time home buyers among boomers exert a strong influence on the housing market due to the sheer size of the demographic group.

Boomers are now joined in the housing market by their children. Although a much smaller group, people in the 25-to-44 age cohort form a disproportionate share of homeowners,
especially owners of newly constructed homes.9 (See table 3.) Affluent, educated young people are also highly mobile, showing a propensity to migrate within the United States, with the West and South being favored destinations. This migration, along with that of retirees, has helped drive population growth and building activity in these regions. Thus, it is not surprising that in recent years these regions have experienced the greatest amount of growth in new home starts.10

Immigration is also a vital factor influencing the demand for housing. Immigration to the United States surged in the early 1990s, spurring growth in household formation. More importantly, the number of persons naturalized has climbed since the late 1990s.11 Naturalization suggests longer residence, which indicates a greater likelihood of homeownership. Compared with new immigrants, naturalized immigrants are likely to have developed greater familiarity with the financial processes involved in home purchase. While these homebuyers are likely to purchase existing homes, rather than new ones, their influence on the market carries through to new home construction.12

These demographic conditions provide an underlying foundation for strong housing and residential construction markets. However, these conditions do not fully explain recent growth, which has been exceptionally strong relative to demographic fundamentals. Financial and economic conditions complete the explanation.

More than any other factor, a sustained period of low mortgage rates has fueled activity in the housing market, and by extension, the residential construction market. Over most of the past quarter-century, there has been a secular decline in mortgage rates. In the 1970s, the 30-year fixed conventional mortgage rate averaged 8.86 percent; the 1980s average was 12.70 percent; the 1990s average was 8.12 percent; the average after 2000 has been 6.52 percent. The rate fell to a historic low point of 5.23 in June 2003 and has fluctuated within a percentage point of that level since then.13 (See chart 4.)

A mortgage rate, like all interest, is the price of borrowing money. As interest rates fall, monthly mortgage payments fall as well, which allows borrowers to obtain a larger loan. With each percentage point drop in the rate, the amount a homebuyer can borrow increases by about 10 percent. For example, with a 30-year fixed rate mortgage, at 8.50 percent, a simple monthly payment of $1,000 will purchase a $130,100 loan; at 7.50 percent, the same payment will purchase a loan of $143,100; a further decrease to 6.50 percent increases the loan amount to $158,300; and at 5.50 percent, the loan amount increases to $176,200. Therefore, lower mortgage rates increase the purchasing power of potential homebuyers at all income levels. Another adverse effect of this phenomenon is that it...
drives up home prices. But these price increases did not slow construction activity. Price increases have been most acute in metropolitan areas on the two coasts of the country, where available land is at a premium. Most new residential construction, however, occurs in the South and (interior) West, where land is more readily available and price increases have been more moderate. Furthermore, even in expensive coastal cities, home builders have continued to build on the peripheries of metropolitan areas, as buyers show an increased willingness to live farther from city centers.

Various mortgage products have also mitigated the impact of price increases. Financing options such as adjustable-rate mortgages and interest-only mortgages have increased in popularity along with home prices. These loans require smaller down payments and lower monthly payments, effectively making it easier for prospective home buyers to purchase larger, newer, and more expensive homes.

Increasing home prices have also increased the equity, or ownership share, of existing homeowners. An owner who has paid 50 percent of the purchase price of his or her home has at least 50 percent equity in it. If the value of that home rises from $200,000 to $300,000, the value of the homeowner’s ownership share rises from $100,000 to $150,000. The owner can tap that equity by refinancing his loan or otherwise borrowing against his increased equity. Surging home prices and sustained low mortgage rates over the past several years have encouraged many homeowners to do just that. This in turn has spurred construction activity, since the single biggest use of such “cash-out” equity is the renovation or remodeling of homes.¹⁴

These demographic and financial factors have led to a dramatic increase in home construction, with all indicators—permit issuance, housing starts, and new home sales—showing steady increases over the past several years.¹⁵ (See table 4.) This increased housing activity has carried through to residential building employment, which grew through virtually all of the 2001 recession, adding 194,000 jobs since its last employment trough in April 2001—an increase of 25 percent. (See chart 5.) This growth occurred primarily in the single-family home component of residential builders.

At the same time, however, the previously mentioned increase in “cash-out” refinancing also spurred employment growth among residential remodelers. But recent moderate increases in mortgage rates have dampened both refinance and remodeling activity. Employment in multifamily building construction also increased in 2005, as increases in the price of single-family homes have led potential buyers to turn to condominiums as lower priced substitutes. Directly comparable employment data at this level of detail is not available for prior recessions. However, BLS employment data produced under the discontinued Standard Industrial Classification (SIC) system show that residential employment throughout and following the 2001 recession was uniquely strong.

Employment among specialty trade contractors also increased in response to robust residential construction activity. This industry group consists of establishments involved in specific building activities, such as framing, painting, or roofing. Unlike the building construction industry, specialty trade contractors are not responsible for entire projects.

BLS now publishes data for specialty trade contractors under two parallel classification schemes; these data are available from 2001 to the present.¹⁶ The first scheme follows the North American Industry Classification System (NAICS),¹⁷ which is used by all CES employment series. (See box on page 9.) Because this system involves classifying specialty trade establishments by specific trade activities, information on residential and nonresidential employment are not available for the data classified only under NAICS. Thus, BLS publishes employment data for specialty trades using type of construction—residential or nonresidential—as an additional classification criterion. This allows for analysis of these two markets to determine which one drives employment changes in specialty trades. Although this employment series is not available prior to 2001, data from that year’s recession show a

<table>
<thead>
<tr>
<th>Year</th>
<th>Building permits</th>
<th>Housing starts</th>
<th>Housing completions</th>
<th>Ratio of starts to completions</th>
<th>New home sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>-4.3</td>
<td>-4.4</td>
<td>-1.9</td>
<td>-2.5</td>
<td>-0.3</td>
</tr>
<tr>
<td>2001</td>
<td>2.8</td>
<td>2.2</td>
<td>-0.2</td>
<td>2.4</td>
<td>3.5</td>
</tr>
<tr>
<td>2002</td>
<td>6.8</td>
<td>6.4</td>
<td>4.9</td>
<td>1.4</td>
<td>7.2</td>
</tr>
<tr>
<td>2003</td>
<td>8.1</td>
<td>8.4</td>
<td>1.8</td>
<td>6.4</td>
<td>11.6</td>
</tr>
<tr>
<td>2004</td>
<td>8.6</td>
<td>5.9</td>
<td>9.7</td>
<td>-3.5</td>
<td>10.8</td>
</tr>
<tr>
<td>2005</td>
<td>3.7</td>
<td>5.6</td>
<td>4.8</td>
<td>0.7</td>
<td>6.6</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau
trend in residential specialty trade contractors that is similar to that in other residential construction. (See chart 6.)

Nonresidential demand and employment

The picture for nonresidential construction has not been nearly as rosy as that for residential construction. A key difference between the two types of construction is that businesses only derive utility from new construction if it produces income itself or otherwise enhances their ability to produce income. Homeowners, or potential homeowners, are fairly responsive to enhanced opportunities to own a home or to move to a more expensive home. But for businesses, the advantages of more space or better amenities are not sufficient justification by themselves for businesses to build, purchase, or lease new space.

Commercial, industrial, and other forms of nonresidential buildings are essentially part of the productive capacity of corresponding industries. When those industries suffer, the result is often excess capacity or unused building space. An example can be found in commercial building. Driven by generally bleak business conditions, especially following the collapse of the “dot com” economy of the 1990s, employment in office-using industries experienced a decline that was historically unique in magnitude. Since these office workers occupy commercial real estate, it is not surprising that their job losses were accompanied by a rapid increase in commercial vacancy rates. (See chart 7.) Office vacancy rates represent excess capacity for office-using industries—that

In early 2005, BLS introduced a time series that facilitates analysis of employment in the construction industry. CES data is categorized according to the 2002 North American Industry Classification System (NAICS), which does not distinguish between residential and nonresidential specialty trade contractors. Therefore, analyzing employment changes within specialty trades is rather difficult. For example, data from the Census Bureau’s quinquennial Economic Census details the types of construction performed by the specialty trades component industries. If employment growth was concentrated in industries whose business was heavily residential, one could assume that residential strength was driving overall growth in specialty trades. However, because the Economic Census is only updated every 5 years, timeliness is lost using this method. The new CES time series relies on supplemental survey information to determine whether each specialty trades establishment specializes in residential or nonresidential construction. By producing monthly estimates divided into these two categories, it is possible to see trends and turning points with greater precision.
Construction Employment in Recessions


NOTE: Office employment is defined as the sum of employment in the information, financial activities, and professional and business services industries. Shaded areas denote recessions.

SOURCE: For vacancy rate data: CB Richard Ellis. Vacancy rate data prior to 1985 are not available.
is, their productive assets are not being fully utilized. Therefore, investors and builders often are reluctant to add capacity in the form of new construction until existing buildings are utilized more fully and vacancy rates decline.

Vacancy rates stabilized in 2003 and have declined somewhat recently, but they remain quite high. This same trend occurs in industrial construction, which has been negatively affected by long-term weakness in manufacturing, a trend that was exacerbated by the 2001 recession. Manufacturing weakness has led to greatly diminished nonresidential construction investment, which is mirrored in the dollar value of nonresidential construction awards. (See chart 8.) Still, there have been a few bright spots in private nonresidential construction. These are in building types that either benefit from consumer spending or are less susceptible to decreasing business investment. Real spending on retail construction has seen steady growth over much of the past 3 years, driven by expansion among discount department stores, which in turn is driven by sustained strength in consumer spending. Nonresidential construction strength has also come in health care construction, the demand for which is much less sensitive to economic fluctuations.

Government also plays an important role in nonresidential construction activity. Government spending accounts for 20 to 25 percent of all construction spending, with the vast majority being nonresidential construction. The majority of government construction projects are classified as heavy or civil engineering projects, such as highways, sewers, utilities, and other kinds of public infrastructure. But educational and office construction also constitute large areas of government expenditure. Recessions generally reduce government income, because tax receipts tend to fall in periods of diminished economic activity. However, government spending on construction projects tends to hold up fairly well during recessions, a situation that continued in 2001.

Employment in nonresidential building construction entered a period of nearly 3 years of decline in October 2000. By the time it reached its trough in February 2004, the industry had lost almost 95,000 jobs, a decline of about 12 percent. Since then, the industry has recovered about a third of the lost jobs. Within nonresidential construction, industrial building experienced especially severe job losses. Since last reaching an employment peak in July 2000, the industry has lost 57,000 jobs, a quarter of its workforce.

The picture has been somewhat brighter for commercial building construction, which did not begin to lose jobs until a year after industrial building employment began to decline.
Construction Employment in Recessions

Although the industry lost 55,000 jobs on its way to an employment trough in December 2003, the commercial building industry has now recovered nearly all of the jobs it lost during that time. This recovery is attributable to the strength in retail and health care construction, moderate growth in educational and institutional construction, and declining office vacancy rates.

Nonresidential specialty trade employment shows a similar pattern of decline and partial recovery. This series reached an employment trough in March 2003, losing over 200,000 jobs since the beginning of the recession—a decline of about 8 percent. Since the trough, employment in nonresidential trades has recovered about half of its recessionary job loss. 

EMPLOYMENT IN THE CONSTRUCTION INDUSTRY reflects the aggregate effect of market forces acting upon its diverse component industries. Trends in these industries were driven by forces in the larger economy. During the recession of 2001, these forces displayed unique characteristics that led to unusual trends in construction employment. Consumer and business investment diverged to a much greater extent than usual, which was mirrored in a greater-than-usual divergence in residential and nonresidential construction investment and employment.

Notes

1 The National Bureau of Economic Research (NBER) Business Cycle Dating Committee is the generally recognized arbiter of business cycle turning points. NBER defines recessions as economy-wide declines in economic activity lasting more than a few months that can be observed in major economic indicators, such as employment and output (GDP). Recession starting points are business cycle peaks and ending points are business cycle troughs. For the time frame covered in this article, the dates of the NBER-designated recessions are as follows: November 1973 to March 1975; January 1980 to July 1980; July 1981 to November 1982; July 1990 to March 1991; March 2001 to November 2001. Note that the length and timing of the NBER-designated peaks and troughs in the business cycle often differ from those of individual employment series.

2 Data on employment used in this article are from the Current Employment Statistics (CES) program, which surveys 160,000 nonfarm businesses representing about 400,000 establishments monthly. For more information on the program’s concepts and methodology, see BLS Handbook of Methods, Chapter 2, available on the BLS Web site at http://bls.gov/opub/hom/homch2_a.htm. CES data are available at http://www.bls.gov/ces/. Data used in this article are seasonally adjusted unless otherwise noted.

3 For more information on residential and nonresidential construction employment, see Christopher Manning and John P. Mullins, “Two new construction employment series for specialty trade contractors,” this issue, pp. 14–22.

4 In this article, comparisons are made between employment in the construction industry and employment in all total nonfarm industries, excluding construction. BLS does not tabulate or publish employment estimates for total nonfarm, excluding construction; these data were tabulated by the author using published BLS estimates.

5 For both construction employment and total nonfarm employment, excluding construction, a single peak-to-trough cycle spanned the two recessions that took place from January 1980 to July 1980 and from July 1981 to November 1982. Therefore, these two recessions have been analyzed as a single employment cycle. Contractions in construction employment lasted between 17 and 38 months, compared with durations of 5 to 13 months in total nonfarm employment, excluding construction.

6 Data on residential and nonresidential investment are from Bureau of Economic Analysis, Table 1.1.3, “Real Gross Domestic Product, Quantity Indexes,” available on the Internet at http://www.bea.gov/bea/dn/nipaaweb/TableView.asp?SelectedTable=3&FirstYear=1972&LastYear=2005&Freq=Qtr.

7 According to the U.S. Census Bureau, 75 million babies were born in the United States during the baby boom; the “sheer magnitude of this human tidal wave comes into sharper focus when we realize that those born from 1946 to 1964 totaled 70 percent more people than were born during the preceding two decades.” 65+ In the United States, Current Population Reports: Special Studies, P23–190 (U.S. Census Bureau, April 1996).


9 Data on home ownership were tabulated by the author using public use microdata from the American Housing Survey, a joint program of the Census Bureau and the Department of Housing and Urban Development. These data are available on the Internet at http://www.huduser.org/DataSets/ahs/ahsdata03.html.


12 For data on homeownership and immigration, see Moving to America—Moving to Homeownership: 1994–2002, Current Housing Reports (U.S. Census Bureau, September 2003).


15 Data on new residential construction (building permits, housing starts, and housing completions) are published by the U.S. Census Bureau and are available on the Internet at http://www.census.gov/const/www/newresconstindex.html.

16 BLS organized the data into these two schemes in 2003. The series itself is available from 2001 to the present.

17 The North American Industry Classification System (NAICS) is a production-oriented framework for organizing establishments according to activities in which they are primarily engaged. Establishments using similar raw material inputs, similar capital equipment, and
similar labor are classified in the same industry. In other words, establishments that do similar things in similar ways are classified together. NAICS is structured hierarchically. Industries are first classified into broad groupings, or supersectors, which are given a two-digit designation. These two-digit supersectors are further divided into more detailed three-digit component industry groups. This process is repeated, with three-digit industries being divided into four-digit component groups, and so on, to the six-digit level. For more information on the two schemes, see Christopher Manning and John P. Mullins, “Two new construction employment series for specialty trade contractors,” this issue, pp. 14–22.

18 According to the Federal Reserve Board of Governors, as well as the National Association of Home Builders and others, the term “office-using industries” refers to Financial Activities, Information, and Professional and Business Services.

19 Real retail construction expenditures are the annual value of retail construction put in place, deflated by the Producer Price Index (PPI) of New Nonresidential Construction. Data on annual value of retail construction put in place are from the U.S. Census Bureau and PPI data are from the Bureau of Labor Statistics.

LABSTAT available via World Wide Web

LABSTAT, the Bureau of Labor Statistics public database, provides current and historical data for many BLS surveys as well as numerous news releases. Data can be accessed using the data retrieval tools available at:

http://www.bls.gov/data

If you have questions or comments regarding the LABSTAT system on the Internet, address e-mail to:

labstat.helpdesk@bls.gov