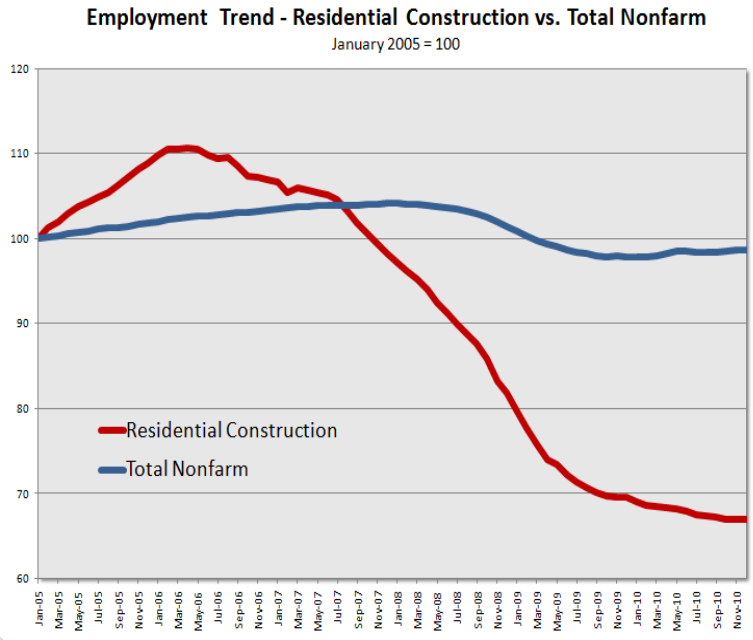
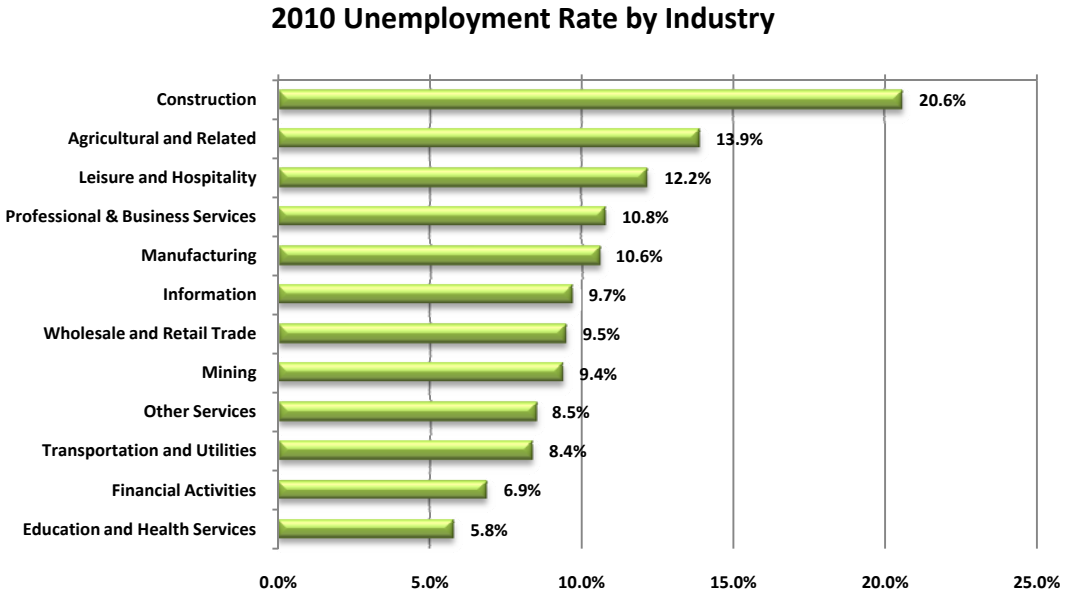
Construction Industry Employment Trends

While the economy on a whole is beginning to recover the construction and building materials industries remain in a deep recession. Jobs in the construction industry and related sectors have fallen relative to other industries, resulting in high unemployment and idle capacity:

- Since a peak in 2006, total construction payroll employment has dropped by 2.1 million, with residential construction payrolls down by nearly 1.4 million (40%).
  - The unemployment rate for construction workers was 20.7 percent in Dec. 2010
  - There are over 1.7 million unemployed workers whose last job was in construction
  - In the 12 months up to Dec. 2010, total nonfarm employment increased 0.9 percent, but residential construction employment fell by 3.7 percent





Unemployment in Industry Related to Construction:

- There have been 144,000 jobs lost (11%) in construction-related retail (Lowes, Home Depot, etc.) since December 2007, with 196,000 lost (15%) since July 2006.

- In manufacturing, employment has dropped 15 percent since the recession began, but in construction-related manufacturing the numbers are much worse:
  - 31 percent in wood products (152,000 jobs lost),
  - 22 percent in nonmetallic minerals, such as window glass, gypsum products, and fiberglass insulation, (110,000 jobs lost), and
  - 23 percent in HVAC equipment (23,000 jobs lost).

- Overall capacity utilization in manufacturing was 73 percent in November 2010, still well below the pre-recession peak of 80 percent, but up from a low point of 65 percent in June 2009. For construction-related manufacturing, it is still depressed:
  - 63 percent for wood products
  - 59 percent for nonmetallic mineral products

- The vast majority of the manufactured products and raw materials used in residential alterations and repairs are produced domestically. So, dollars spent on remodeling circulate primarily through the U.S. economy[1].

[1]Home Performance Resource Center Report: Domestic Manufacturing Share of Common Energy Remodeling Projects)

Analysis:

Over the course of economic cycles, residential construction, including remodeling, typically declines before the overall economy enters recession, and experiences greater relative declines than other sectors.[2] In the current episode, that has been especially true. Historically, residential investment has also recovered before the overall economy, leading the way out of recessions. The role of residential investment as an engine of recovery has been missing in this instance.

Since reaching a peak in the spring of 2006, payroll employment in residential construction has declined from 3.45 million (seasonally adjusted) to 2.09 million, or more than 39 percent (table 1). Overall nonfarm employment didn't reach a peak until December 2007. The 130.7 million total for payroll employment in December 2010 was 5.2 percent below the pre-recession peak of 138.0 million, but represented an increase of 0.9 percent from December 2009. Employment is residential construction continued to decline in 2010.

Employment in the production and distribution of building materials has also fallen by more than overall employment in manufacturing and trade. For example, since December 2007 the total number of jobs in retail trade has fallen by 7.0 percent, but the decline during that period was 11.2 percent for building materials and garden supply stores. In the wholesale trade sector, employment has declined by 23.9 percent for construction supplies, compared to 6.9 percent overall. In manufacturing, there have been widespread job losses, with an employment decline of 15 percent since December 2007, but sectors related to residential investment have fallen even more, with declines of 31 percent in wood products, 22 percent in nonmetallic mineral products (which includes window glass, gypsum products, and fiberglass insulation), 15 percent in fabricated metals (ductwork, metal windows and doors), and 23 percent in HVAC equipment.

Housing starts have remained at the lowest rate of production since World War II, with starts falling further after the expiration of a temporary home buyer tax credit, and employment in residential construction and related industries has continued to decline. Moreover, weakness in nonresidential building construction has caused further declines in employment.

The declines in residential and nonresidential construction activity have created large reservoirs of unused capacity in labor markets and production facilities. The unemployment rate for experienced

[2] For a discussion of the relationship of housing to economic cycles, see Edward E. Leamer, "Housing *is* the Business Cycle" (Federal Reserve Bank of Kansas City, 2007) available at http://www.kansascityfed.org/publicat/sympos/2007/PDF/Leamer_0415.pdf

workers in construction was 20.7 percent in December 2010. The overall capacity utilization rate in manufacturing was 73 percent in November (table 2), but it was lower for wood products (63 percent) and nonmetallic mineral products (59 percent). The monthly data on capacity utilization from the Federal Reserve do not provide more detailed industry categories, but other housing-related manufacturing is undoubtedly also operating at low rates of capacity utilization. The construction industry is highly fragmented, with low reliance on capital equipment assets, partly due to the feast and famine cyclical fluctuations in activity. This industry organization facilitates downsizing when demand falls, but also allows rapid expansion during recovery. The industry includes general contractors who organize complex projects and span a variety of functions, and special trade contractors who perform specific types of work, such as roofing or plumbing. The vast majority of actual job-site production, whether for new construction or for alterations and repairs to existing structures, is performed by special trade contractors. General remodeling contractors (who direct work spanning several specialties) are more likely than new home builders to have construction workers as payroll employees, but even in remodeling most production is subcontracted. Similarly, although some home centers and other retailers offer construction, installation, and home repair services, that work is also typically subcontracted. Table 3 shows data from the 2007 Economic Census for establishments in the construction industry with payroll employees, including the share of employees who are in construction occupations and the share of work that is subcontracted (either for materials and labor or for labor only).

Special trade contractors may be moderately-large enterprises—with more employees than the general contractors they serve—but most are small businesses or self-employed independent contractors. As table 4 shows, the self-employed share of workers is higher in the construction industry than in other sectors, at 17.5 percent in 2009. For alterations and repairs to existing homes, the self-employed share is higher still, since other construction segments such as bridge-building have few self-employed workers. Not all self-employed workers in the industry are individuals working on their own. Many are proprietors of unincorporated businesses with payroll employees. Because of the large self-employed workforce, the decline in jobs shown by the payroll statistics understates the total loss of jobs in construction.

Much of the cost of improvements and repairs for existing homes consists of the labor and other value-added contributions performed on the job, but more than half goes toward the cost of materials, distribution, and other purchased services. Of each dollar spent on alterations and repairs, about 9 percent goes directly to retail trade and about 3 percent to wholesale trade (for those products purchased by contractors directly from wholesalers). Table 5 shows the amount paid directly for materials and

distribution. Table 6 shows total effects, including purchases of intermediate goods (e.g., purchase of glass by window manufacturers). The total requirements figures add up to more than 100 percent, because the purchases of inputs by manufacturers and other non-trade suppliers are counted as well as the sales of the final product. For wholesale and retail trade however, the cost of goods sold is excluded (only the gross markup is included), in both the direct requirements table and the total requirements. These tables are from the 2002 benchmark input-output estimates from the Department of Commerce, the most recent for which there is comparable industry detail, but the proportions probably haven't changed much since then. In the tables, "other residential structures" consists primarily of capital improvements to existing structures, including replacement of major components such as HVAC, windows, and doors.

Although the categories shown in tables 5 and 6 are much broader than just home performance investments or weatherization, it is clear that a wide range of materials and services go into alterations and repairs.

The share of residential remodeling, as well as other residential construction, that flows to and through retail trade is much larger than for other businesses, who may only obtain office supplies and other minor items through retail outlets. In part that reflects the uneven demands and fragmented structure of the industry. In addition, however, building materials retailers provide services that go far beyond restocking shelves and ringing up purchases. Building materials retailers, including home centers, lumber yards, appliance dealers, hardware stores and other specialty outlets, cut and fabricate products to specifications, deliver to job sites, handle special orders, track down obscure products and parts, and often extend credit.

For state-of-the-art high performance components like the most efficient heating, air-conditioning, and water heating equipment, as well as for insulated ducts and premium windows, the components represent a larger share of the installed cost. On-site labor, while not reduced, accounts for a smaller proportion. Moreover, in the manufacture of such products, the amount of material used is greater than for standard-quality goods. The coefficients for intermediate goods in an input-output analysis similar to tables 5 and 6 would thus be greater. The ultimate number of jobs per dollar of expenditure would not necessarily be greater or less, but relative to weatherization activities such as air sealing, more employment would be created in manufacturing and in the supply chain rather than at the job site.

It is also worth noting that the vast majority of the manufactured products and raw materials used in residential alterations and repairs are produced domestically. The major exceptions, where imports make up a substantial (though minority) share, are wood used to make windows (for which most domestic timber species are less suitable), tile, and cement. Some imported steel is also probably used in HVAC equipment and other products.

Summary:

This document pulls data from Census, the Federal Reserve and the Bureau of Labor Statistics to analyze the latent capacity for the home retrofitting industry to quickly scale based on existing manufacturing infrastructure and the 1.4 million jobs lost in residential construction!

The analysis also clearly demonstrates that in addition to having an employment pool that is ready to move quickly, the product manufactures serving the industry have significant excess capacity. Furthermore, the labor supply numbers are understated because of the large number of self-employed construction workers that do not show up in payroll statistics. Thus, accelerating activities for the purpose of economic stimulus would contribute to future productivity and increased energy efficiency.

Labor constitutes a significant share of any remodeling job, but over half of every dollar spent also flows through to retail and manufacturing through product purchases. Thus a program that incentivizes energy improvements not only creates jobs within the construction industry directly but also through retail, manufacturing and local economic activity.

Sources:

Employment data for payroll workers by industry come from the monthly survey of employers conducted by the Bureau of Labor Statistics (BLS), referred to as the "Current Employment Statistics" Program. Data are accessible online at http://www.bls.gov/data/ , either through a series of menus, or, if the series ID codes are known, through the "series report" facility at http://data.bls.gov/cgi-bin/srgate

Unemployment rates and number of unemployed workers are collected in the monthly Current Population Survey, conducted for BLS by the Census Bureau. Data are available on the BLS web site through the series report database and in tables at http://www.bls.gov/cps/tables.htm

Capacity utilization data are available monthly in the Federal Reserve G17 report, at http://www.federalreserve.gov/releases/g17/ . Quarterly data with more detailed categories, based on the same survey, are available from the Census Bureau at http://www.census.gov/manufacturing/capacity/index.html

Residential construction data (starts, completions, etc.) are assembled by the Census Bureau and are available at http://www.census.gov/const/www/newresconstindex.html