Joint Center for Housing Studies
Harvard University

The Performance of Remodeling Contractors in an Era of Industry Growth and Specialization

Abbe Will and Kermit Baker

December 2007
W07-8

Abstract

Professional remodeling contractors have not experienced the same flurry of consolidation as in the national homebuilding industry in recent years. The home improvement industry remains fragmented with many small contractors that focus on local markets and are highly susceptible to failure with each new cycle of remodeling activity. This paper analyzes the structure, performance and survivorship trends of professional contractors serving the remodeling industry using data from the U.S. Census Bureau's Economic Census of the construction sector and Business Information Tracking Series, as well as *Qualified Remodeler* magazine's Top 500 Remodelers. While remodelers are finding efficiencies in becoming more specialized businesses, there is little evidence that specialization leads to higher or less volatile growth. In fact, more diversified firms, such as full-service remodelers may be better equipped to handle the cyclical nature of the industry.

I. Introduction

The U.S. home improvement industry is a significant part of the national economy as each year hundreds of billions of dollars are spent on remodeling activities. Yet comprehensive studies of the characteristics and performance of remodeling contractors are few, largely due to the limited availability of quality data sources. This study aims to not only describe the changing size and structure of professional contractors serving the remodeling industry but also to assess the performance of remodeling contractors over time and across different business models, and to determine trends in contractor survivorship.

Professional remodeling contractors have experienced very little consolidation over the years, in stark contrast to the national homebuilding industry. The majority of remodeling contractors today still run relatively small operations that serve a limited geographical area. Rather than consolidate, it appears that remodeling contractors are seeking competitive advantage in becoming more specialized businesses. By understanding the impact of specialization of operations on the performance of remodelers, it will be possible to assess whether specialization might lead to stronger growth and more stability in the remodeling industry in the years to come.

Section II of this report looks at the size and structure of the remodeling contracting industry, recent growth trends, and the implications of continued fragmentation within the industry. Section III discusses the extent of specialization among contractors and the extent to which that phenomenon has offset the lack of industry concentration in terms of their business performance. Section IV looks at recent trends in survivorship, and discusses the role of age, size, and recent growth as contributors to business failures of remodeling firms.

The report concludes that industry fragmentation has been a significant contributor to high failure rates in the industry. Contractor specialization, while possibly leading to higher growth rates at many firms, appears not to have been a strategy that offsets these high failure rates because in recent years specialized firms have seen greater volatility in business levels than in full-service firms.

II. Remodeling Industry Overview

Size and Structure

Exceptional growth in homeowner improvements pushed the residential remodeling market to an all-time high of $280 billion in 2005, the majority of which went toward professionally installed projects.[1] Although government surveys, such as the biennial American Housing Survey and the quarterly Residential Improvements and Repairs (C50) Report frequently collect data on consumer expenditures for home improvements and maintenance, detailed statistics on professional remodeling contractors are captured only once every five years as part of the U.S. Census Bureau's Economic Census of the construction sector (Construction Census).[2]

A key source for data on the professional remodeling industry, the Construction Census is a comprehensive survey of business activity covering residential and nonresidential construction establishments with payroll employees, where an establishment is defined as a single physical place of business.[3] The Census Bureau also collects less detailed data on self-employed contractors through the Nonemployer Statistics series, which annually tabulates the number and receipts of business establishments that have no paid employees but are subject to federal income tax. According to the Census Bureau, the majority of self-employed individuals operate very small proprietorships that are likely not the main source of income for the business owner.

The term 'general remodeling contractor' used throughout this paper refers to the industry of residential remodelers as defined by the North American Industry Classification System (NAICS), which along with new residential construction, industrial building construction, and commercial and institutional building construction makes up the Construction of Buildings subsector of the economy. The industry of residential remodelers consists of businesses that are primarily responsible for the remodeling of single-family and multifamily residences (including additions, alterations, reconstruction, maintenance and repair work). Included in this industry are general remodeling contractors, remodeling design-build firms,

[1] See Joint Center report *Foundations for Future Growth in the Remodeling Industry* for market size methodology.
[2] The Economic Census collects data at the industry level using the 2002 North American Industry Classification System (NAICS). NAICS codes categorize establishments by the primary activity in which they are engaged, and related industries are aggregated into subsectors, which then define major economic sectors. The construction sector is comprised of three subsectors: construction of buildings, specialty trade contractors, and heavy and civil engineering construction.
[3] For convenience, the terms establishment, business and firm are used interchangeably throughout the paper.

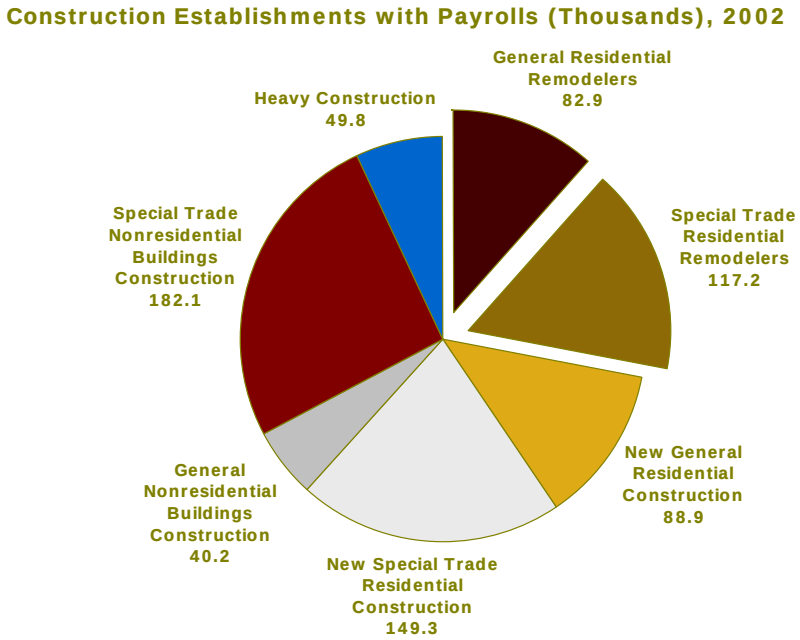
remodeling project construction management firms and operative remodelers, which remodel existing housing either for others or on their own account for sale.

Specialty Trade Contractors form a separate subsector of the construction industry that includes businesses whose primary activity is performing specific activities involved in residential and nonresidential building construction, such as site preparation, framing, plumbing, painting, electrical work, etc. The work performed by special trade contractors may be for new construction or additions, alterations, maintenance, and repairs (i.e. remodeling). Specialty trade work is often subcontracted from general contractors but work also may be done directly for the owner of the property, which is especially likely in the case of improvements to existing housing. (U.S. Census Bureau, 2002 NAICS Codes and Titles).

The most recent data available on residential general and special trade remodelers is from the 2002 Construction Census which was released in late 2005 and early 2006. The census estimates that there were a total of 710,000 businesses with payrolls operating in the construction sector in 2002, and general and special trade residential remodelers comprised fully 28 percent of the entire sector, as seen in Figure 1. According to Joint Center estimates based on unpublished Census tabulations, residential construction alone encompassed more than 438,000 establishments, 45 percent of which were considered professional remodelers. The Joint Center defined these professional remodelers as general and special trade construction businesses earning more than 50 percent of receipts that year from remodeling activities (including maintenance and repair). By this definition in 2002 professional remodelers with payrolls included 82,900 general remodeling contractors and 117,200 specialty trade contractors.[4]

[4] The Joint Center estimates that the number of general and special trade remodeling contractor businesses with payrolls grew 16.8 percent from 1997 to 2002. See Appendix Table A-3.

Figure 1: Professional Remodelers Comprise Over a Quarter of the Construction Sector



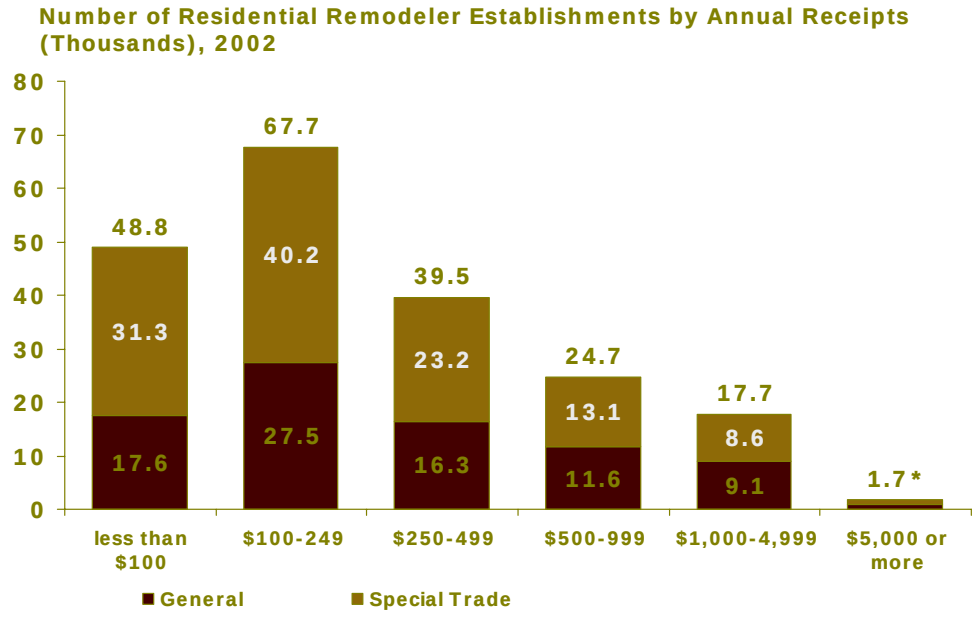
Notes: Heavy construction encompasses all heavy and civil engineering industries including land subdivision, construction of utility systems, water and sewer lines, oil and gas pipelines, power lines, highways, streets, and bridges. General nonresidential buildings construction includes industrial and commercial construction.
Source: Unpublished tabulations of the 2002 Economic Census of Construction, U.S. Census Bureau.

Factoring in an estimated 127,200 self-employed (nonpayroll) general remodelers and 202,900 self-employed special trade remodelers brings the total number of payroll and self-employed remodeling businesses in 2002 to just over 530,000.[5] While remodelers with employees constitute less than two-fifths of the total number of establishments serving the remodeling industry, they generate a disproportionately large share of total remodeling receipts. Over 75 percent of general and special trade remodelers with payrolls earned more than $100,000 in 2002 (Appendix Table A-1). Alternatively, while self-employed remodeling contractors far outnumber businesses with employees, the majority of self-employed contractors are very small operations with almost three-quarters earning less than $100,000 in 2002. Since remodelers with employees are more significant players in the remodeling market and the nonemployer data is so limited, the focus of this paper is on general and special trade remodeling contractors with employees.

[5] See Appendix Table A-2 for the estimation methodology of self-employed remodelers. An additional 383,000 self-employed remodelers earned under $25,000 in 2002 and were discounted from the analysis under the assumption that these individuals are part-time or "hobby" contractors.

Despite the fact that remodelers with payrolls garner the bulk of remodeling industry receipts, the majority of general and special trade remodeling contractors with payrolls are still not particularly large businesses (Figure 2). In fact 58 percent of payroll remodelers generated gross revenues of under $250,000 in 2002, and another 20 percent had revenues between $250,000 and $500,000 dollars. Whether considering self-employed or payroll remodeling contractors, it is clear that this industry is dominated by smaller businesses.

Figure 2: Remodelers with Payrolls Dominated by Smaller Businesses



*The number of general and special trade remodelers with receipts of $5 million or more is 900 and 800 respectively.

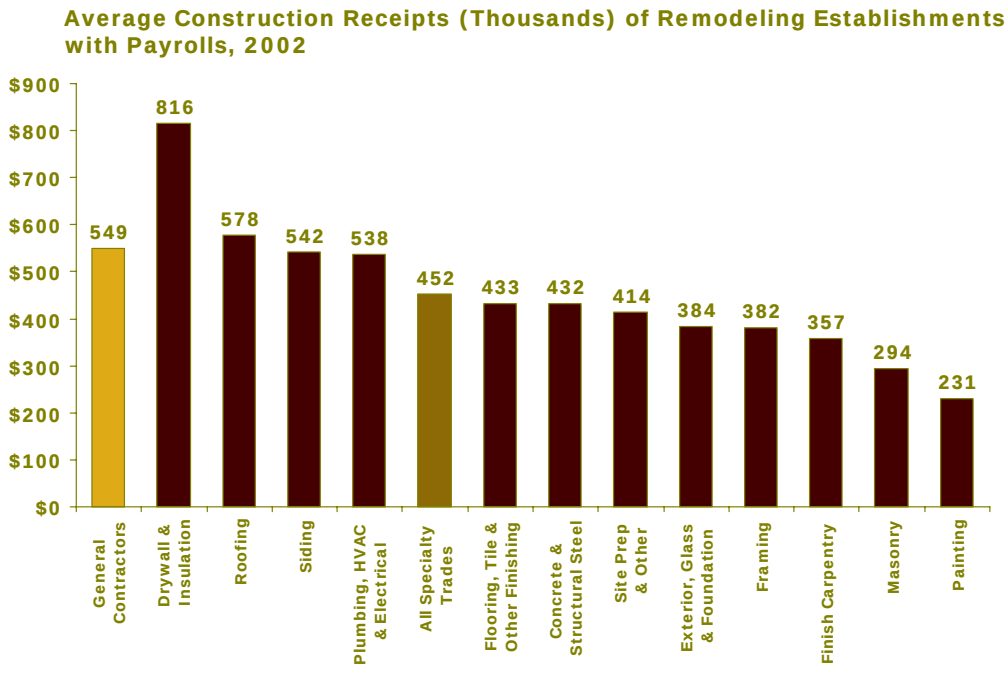
Source: Unpublished tabulations of the 2002 Economic Census of Construction, U.S. Census Bureau.

Special trade remodeling contractors make up about three-fifths of the 200,000 professional remodeling businesses with payrolls but only a few areas of specialty work dominate the field. Seventy-five percent of special trade remodelers primarily work in one of the following areas: building systems, painting, finish carpentry, or roofing. By far the largest area of special trade remodeling is building systems, which includes plumbing, HVAC and electrical trades. Thirty-eight percent of all special trade remodeling businesses are in the building system trades and these businesses comprise 43 percent of total special trade employment and 44 percent of total remodeling receipts for all special trades. Painting remodelers have the second largest

share of special trade remodeler establishments at 14 percent, and roofing remodelers have the second largest shares of employment and receipts at 12 percent each.

The average size of general remodeling contractors is larger, but still comparable to the average special trade remodeler. As seen in Figure 3, general remodeling contractors averaged about $550,000 in construction receipts in 2002 (including both new construction and remodeling), while the typical special trade remodeling contractor averaged just over $450,000. Only roofing and drywall and insulation remodeling contractors averaged larger construction receipts than general remodeling contractors. Yet, drywall and insulation remodeling contractors also had the lowest share of receipts from remodeling, so even for these businesses that specialize in remodeling projects, revenue from new construction greatly inflates their average size. While the average drywall and insulation remodeling contractor earned $816,000 in total construction receipts in 2002, average remodeling receipts for drywall and insulation remodelers was only $537,000.

Figure 3: General Remodeling Contractors Average Higher Receipts than Most Special Trades



Source: JCHS tabulations using unpublished tabulations of the 2002 Economic Census of Construction, U.S. Census Bureau.

Regional Differences

Residential remodeling contractors with payrolls show several differences by region. While professional remodelers were fairly evenly dispersed across the four major regions of the country, the South had the greatest share of general and special trade remodelers (close to 30 percent of the nation's total) in 2002.[6] On a per household basis, however, the South had the fewest number of remodeling businesses. There were only 15 remodeling establishments per 10,000 households in the South compared to 19 in the Midwest and 21 in both the Northeast and West (Figure 4). Also, on a per household basis, Southern homeowners spent the least on improvements at $13.4 million per 10,000 households in 2002, but both general and special trade remodelers operating in the South were typically larger than in other parts of the country, with average remodeling receipts of $539,000 and $366,000 respectively (Appendix Table A-4). Lastly, while general remodeling contractors are much larger on average than special trade remodelers, the magnitude of this relationship varies by region. General remodeling businesses reported on average 39 percent more revenue than special trade remodelers in the Midwest and up to 51 percent more in the Northeast.

[6] The U.S. Census Bureau groups states into four regions: Northeast, Midwest, South, and West. See http://www.census.gov/geo/www/us_regdiv.pdf for regional definitions.

Figure 4: Fewer Remodeling Contractor Establishments Serve Southern Households, Yet Earn Larger Receipts

	General			Special Trade			Professional Remodeling Expenditures per 10,000 Households (000s)
	Number of Contractors	Number of Contractors per 10,000 Households	Average Remodeling Receipts (000s)	Number of Contractors	Number of Contractors per 10,000 Households	Average Remodeling Receipts (000s)	
Northeast	17,600	8.3	$532	26,700	12.7	$351	$17,500
Midwest	20,600	8.0	$463	28,000	10.9	$334	$15,300
South	23,200	5.9	$539	35,300	9.0	$366	$13,400
West	21,500	9.2	$519	27,200	11.7	$354	$19,100
Total	**82,900**	**7.6**	**$513**	**117,200**	**10.7**	**$352**	**$15,900**

Note: Remodeling expenditures are defined as total expenditures for improvements and maintenance and repair by all residential properties.

Source: JCHS tabulations using the U.S. Census Bureau's 2002 Economic Census of Construction, Current Population Survey, and Residential Improvements and Repairs (C50) Report.

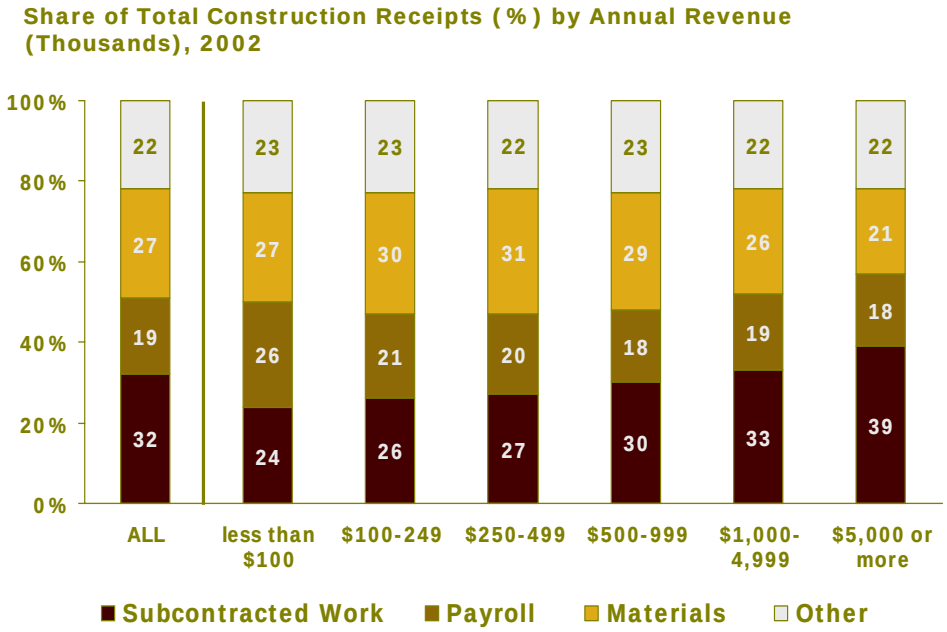
Composition of Spending

Not surprisingly, the typical general remodeling contractor subcontracts a substantial amount of work, much more so than the typical special trade remodeler. On average, the cost of work subcontracted out (not including the cost of materials purchased for subcontractors) was 32 percent of total construction receipts for general remodelers, which is about four times as much as the average special trade establishment. Within the special trades, however, the amount of work subcontracted out varies greatly. Framing remodelers, for example, subcontracted over 20 percent of all work, while masonry remodelers subcontracted only five percent.

The cost of subcontracted work also increases with receipt size for both general and special trade remodeling contractors. General remodelers with revenues under $100,000 subcontracted 24 percent of work, while those with revenues of $5 million or more spent a much larger share of receipts on subcontracting at 39 percent. The difference is much less among special trade remodelers, with those under $100,000 in receipts subcontracting only six percent of work compared to 10 percent for remodelers with revenues of $5 million or more.

In addition to subcontracted work, remodeling contractors also spend large shares of revenue on payroll and materials (Appendix Table A-5). The typical general remodeling business spent 27 percent of revenue on materials (including those purchased for subcontractors) and 19 percent on payroll in 2002. Again, differences emerge with the size of the remodeling business. Figure 5 shows that as size increases general remodelers spent relatively less on staffing as they made more use of subcontractors, while the share of revenue spent on materials first increases with size and then declines again. Apparently, as general remodeling contractors grow larger, they are finding efficiencies by focusing spending more on subcontractors and less on payroll employees and materials.

Figure 5: Larger General Remodelers Spend Relatively More on Subcontracting



Note: Other includes overhead, profit, and miscellaneous expenses.
Source: JCHS tabulations using the 2002 Economic Census of Construction, U.S. Census Bureau.

Concentration and Consolidation

Throughout our economy in recent decades, there has been a growing trend toward concentration and consolidation of business activities. Concentration refers to a smaller share of businesses within an industry accounting for a growing share of activity, while consolidation refers to businesses acquiring or merging with other businesses to create larger entities.

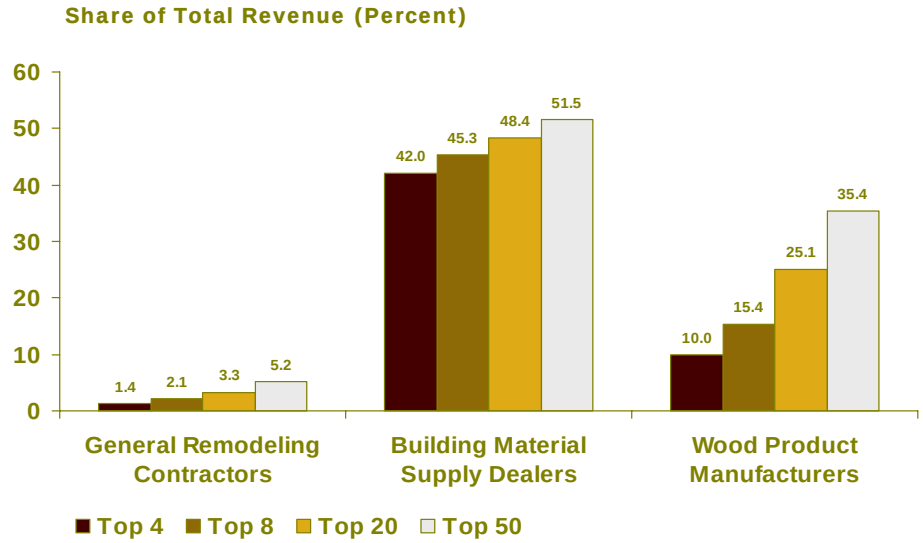
The scale of activity created by concentration and consolidation often produces greater efficiencies by reducing the share of resources that need to be devoted to centralized overhead functions (e.g. human resources, information technology, space management). Additionally it may give a business sufficient market power to be able to negotiate more effectively with its suppliers, and sufficient revenue to fend off challenges from its competition.

In the homebuilding sector, a wave of consolidation began in the early 1990s that continues to this day. Over this time, the share of new homes sold by the top ten builders in the country grew from under 10 percent in 1991 to almost 30 percent by 2006.[7] The need to raise capital on Wall Street to finance larger and larger land positions is often cited as a key reason for this consolidation among home builders.[8]

While we have seen concentration and consolidation in home building, general and special trade remodelers have not experienced the same trends. For instance, the 50 largest general remodelers in 2002 generated only 5.2 percent of total professional remodeling receipts, a much lower level of concentration than manufacturers or retailers in this industry. For example; even for wood product manufacturers (lumber mills) – one of the most fragmented manufacturers serving the residential construction industry – the top 50 companies account for over a third of total revenue (Figure 6). At the other extreme, the top 50 companies manufacturing major home appliances for the residential market accounted for 99 percent of revenue in 2002 according to the Economic Census for that year. Among other concerns, this continued fragmentation of remodeling contractors puts them at a competitive disadvantage when it comes to dealing with their suppliers.

[7] See for example, Apgar and Baker, 2006. Builder magazine provides updated information on share of homes sold by the top 10 builders.
[8] Apgar and Baker, 2006.

Figure 6: The Remodeling Contractor Industry Remains More Fragmented Than Other Parts of the Residential Construction Sector



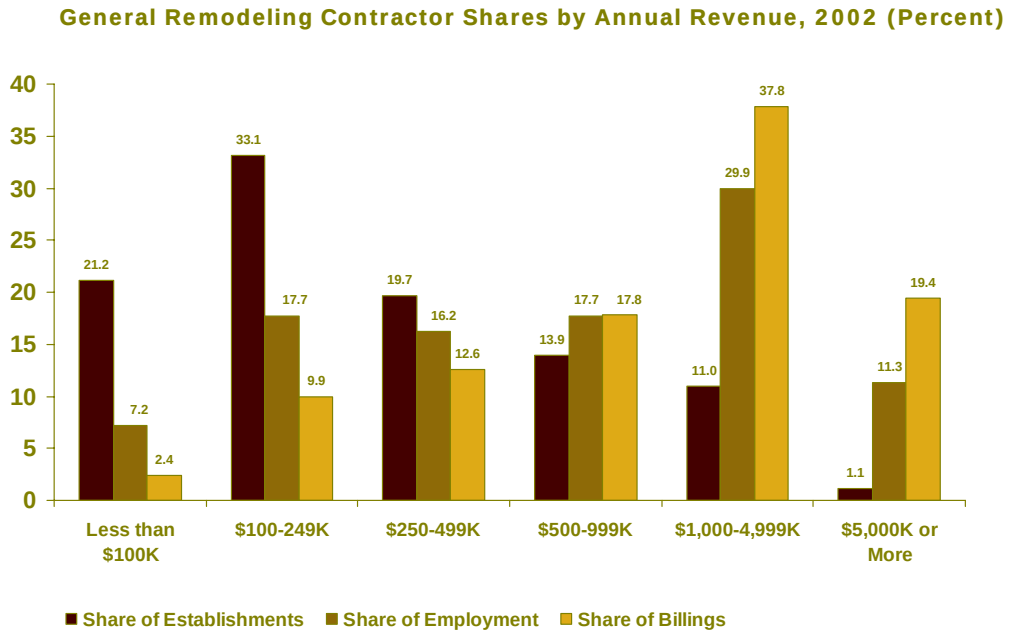
Sources: Unpublished tabulations of the 2002 Economic Census of Construction, and 2002 Censuses of Retailers and Manufacturers.

Remodeling contractors remain a fragmented industry with no signs of emerging concentration. The combined number of payroll and nonpayroll remodeling businesses grew an astonishing 32 percent over the five year time period from 1997 to 2002.[9] Most of this growth in remodeling businesses is attributed to the dramatic rise in self-employed remodelers, which tend to be relatively small establishments as noted earlier. The addition of many small remodelers adds to the traditional fragmentation that has characterized this industry.

While there is little evidence indicating that the remodeling industry is taking steps toward consolidation, some contractors do work at a significantly larger scale than others. Close to 10,000 general remodeling contracting firms, or about 12 percent of all general remodeling establishments, generated revenue of one million dollars or more in 2002. These remodelers accounted for a disproportionately large share of both employment and revenue in the industry, with over 40 percent of total employment and close to 60 percent of total construction receipts generated by general remodeling contractor businesses with payrolls (Figure 7).

[9] See Chapter 2 in the Joint Center report *Foundations for Future Growth in the Remodeling Industry* for detail on growth in payroll and self-employed remodelers.

Figure 7: Larger Payroll Businesses Generate More Than Half of All Remodeling Contractor Revenues



Source: Unpublished tabulations of 2002 Economic Census of Construction.

In the absence of concentration, as we shall see in the next section, the remodeling industry has seen growing levels of specialization that facilitate some of the same benefits to a company as does consolidation. However, even though specialization may produce some of the efficiencies and competitive advantages generally associated with larger-scale business operations, as we shall see in the final section of this paper on survivorship trends among remodeling contractors, specialization does not offset the risk of business failure.

III. Specialization and Performance among Remodeling Contractors

While the U.S. home improvement industry has seen little in the way of traditional consolidation in recent years, there has been a move toward specialization among contractors serving this industry that apparently has helped them achieve some of the same benefits of consolidation. For many residential contractors, remodeling projects now account for a larger share of their total revenue than they did a decade or two ago. Additionally, many remodeling contractors are focusing their project activity in more specialized niches within the remodeling industry. For some general remodeling contractors, this specialization is on selected types of

remodeling projects, such as kitchen and bath remodeling, decks or basements. Others may focus on projects of a certain size or complexity, such as smaller handyman services or larger upper-end design/build projects. Still others may specialize on a specific type of client, for example large rental property owners, or insurance companies for disaster-related restoration projects. This section looks generally at how specialization affects the performance of residential remodeling firms, as well as how the underlying volatility in the remodeling industry affects specialty firms.

Increased Industry Specialization

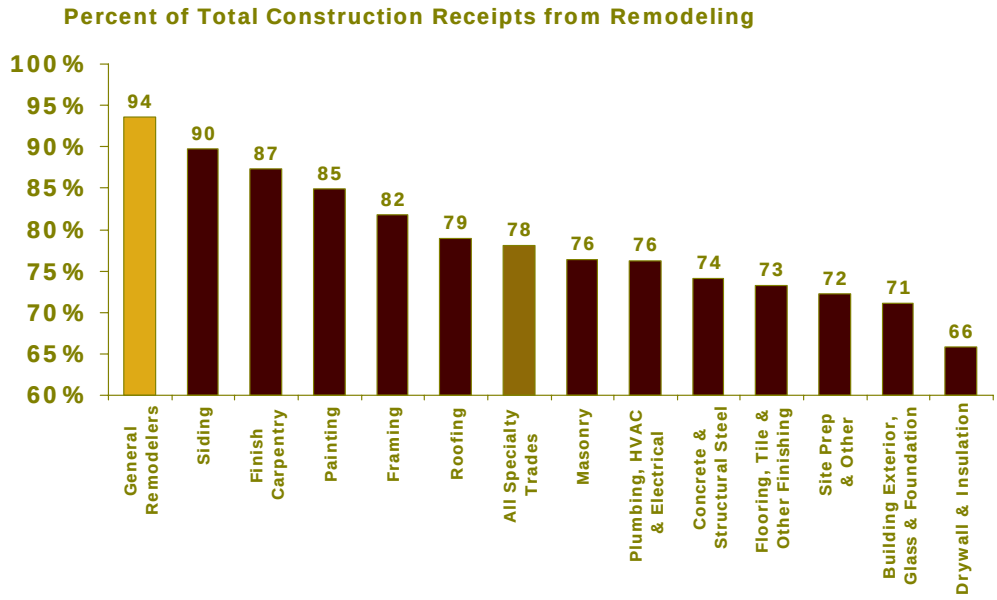
Over the past few decades, residential remodeling has become a more specialized industry. Traditionally, general construction contractors and special trade contractors often served multiple construction sectors including homebuilding, residential remodeling, nonresidential construction, and nonresidential reconstruction. However, more recent government construction Censuses indicate that most contractors now concentrate their work in a single construction sector. For example, the 2002 Construction Census indicates that 85 percent of the total value of remodeling receipts for general residential contractors was generated by general remodeling contracting firms, up from 82 percent in 1997.[10] So, from an industry-wide perspective, the overwhelming majority of remodeling work is done by firms that concentrate on remodeling projects. When looking at specialization through a slightly different lens – the individual general remodeling contractor – it is even more apparent: in 2002 the average remodeling contractor generated 94 percent of its business from remodeling projects.

Special trade remodelers are somewhat less focused on remodeling than general contractors. Still, from an industry perspective fully 75 percent of special trade remodeling industry revenue in 2002 was generated by those specialty trade firms that could be classified as remodeling firms. A similar picture emerges from an individual firm perspective. The typical special trade remodeling contractor generated 78 percent of its revenue from remodeling projects. However, there was a high degree of variation in terms of specialization for these

[10] In this analysis, remodeling contractors are defined as those contractors that received more than half of their revenue from remodeling projects that year based on unpublished tabulations of the Economic Census of Construction. However, this Census covers only businesses with payrolls. As was discussed earlier in this report, nonpayroll firms make up the majority of businesses serving the remodeling industry, and account for a significant portion of industry revenue. The inclusion of nonemployer businesses would no doubt change the specialization figures but probably not the broad conclusions from this analysis.

special trade remodeling firms by their individual trade. While averaging 78 percent, siding remodelers averaged 90 percent of their revenue from remodeling, and drywall and insulation remodeling contractors averaged just 66 percent, apparently finding it easier to move back and forth between remodeling and new construction projects (Figure 8).

Figure 8: General Contractors Focus More on Remodeling Than Specialty Trades



Source: JCHS tabulations using unpublished tabulations of the 2002 Economic Census of Construction, U.S. Census Bureau.

Franchising seems to be a promising business model for remodeling contractors that may lead to both increased industry specialization *and* consolidation. Franchising a national operation provides remodelers with established systems for key business operations such as marketing, sales, scheduling, and financial management. Established systems and procedures as well as training and support are very attractive benefits to franchising for smaller scale remodelers wanting to increase their revenues, expand their offerings, gain brand awareness or simply remain profitable.

While the total number of remodeling franchise businesses is not available, *Qualified Remodeler* magazine began tracking large national franchises in 2003 as part of its annual Top 500 Remodelers survey. Fourteen major remodeling franchises have been identified through this

effort.[11] Insurance restoration franchises, full-service and handyman firms are included on the National Firms list, but most of the largest remodeling franchises are specialty firms focusing on siding, windows, basements, decks, kitchens or baths. The top franchises in 2006 had over 1,000 locations across the U.S. and reported revenue of $1.2 billion. Remodeling franchises that appeared on the National Firms list every year from 2003-2006 had annual revenue growth of 19.6 percent on average.[12] This high growth rate is likely due to both increased sales and gains in the number of franchise locations in operation. In either case, franchising appears to be gaining popularity among remodeling contractors as a sound and successful business strategy.

Optimal Size for Remodeling Contractors

In spite of the considerable fragmentation of remodeling contractors, little research has been conducted to identify the optimal size of a firm serving this industry. The ease of entry into the industry – capital needs generally are modest and licensing and registration requirements for contractors are minimal in most communities – coupled with the variation in building codes from community to community, point to competitive advantages for smaller firms serving a local market. On the other hand, economies of scale for marketing, as well as the required level of investments to develop systems for scheduling, ordering, and billing point to advantages of scale in remodeling operations.

Many remodeling practitioners feel that the optimal size of a remodeling firm depends on its specialization. Mark Richardson, President of Case Design/Remodeling, a large full-service remodeling firm with many specialty divisions, has developed a typology of firm specialties and identified what he feels to be the ideal range for the scale of operations for each of these specialties. Firms installing specialty products (e.g. skylights, garage doors, gutters) lend themselves to smaller-scale operations because demand for any of these products in a local area is usually limited. Contractors undertaking more common specialty projects (e.g. roofing, siding, or window replacements) where the typical individual project size is larger can benefit from larger scale opportunities that the market presents.

---

[11] By area of business, these fourteen franchises are: Insurance Restoration – Paul Davis Restoration and Disaster Kleenup International; Full-Service – True Home Value; Handyman – Handyman Connection; Single-line Specialty – Window World, Accent Windows, Nationwide Floor & Window, DreamMaker Kitchen & Bath, Kitchen Tune-Up, ABC Seamless, United States Seamless, Liquid Siding of America, Archadeck and Owens Corning Remodeling.

[12] The following four national franchise companies appeared on *Qualified Remodeler's* National Firms list since the list began in 2003: Paul Davis Restoration, Window World, ABC Seamless and DreamMaker Kitchen & Bath.

For full-service remodelers, who normally undertake a broader range of projects and coordinate special trade subcontractors, optimal scale again depends on the popularity and size of typical projects undertaken. Firms focusing on small- and medium-scale projects typically have a smaller ideal size than firms undertaking larger design/build projects. Firms focusing on insurance restoration projects, where there are usually only a few such projects at any one time within a given locality often are best suited as mid-size firms (Figure 9).

Figure 9: Ideal Scale for Residential Remodeling Business Depends on Specialization

	Specialty			Full-Service			Other
Business Size (Thousands)	•Windows •Siding •Roofing	•Kitchen •Bath •Basements •Deck	•Gutters •Glass •Garage Doors •Skylights •Small Products	Small Jobs/ Handyman	Medium Jobs/ Traditional	Larger Jobs/ Design/ Build	Insurance Restoration
$250-750			X	X	X		
$750-2,500	X	**X**		**X**	x	**X**	**X**
$2,500-15,000	X	X		X		X	
$15,000 and Above	X						

Note: Small x's indicate approximate size range for area of business; large x's indicate ideal size.

Source: Typologies and ideal scale estimates provided by Mark Richardson, Case Design/Remodeling.

While the optimal size for a remodeling firm may vary by specialization, evidence in recent years is that larger firms have outperformed the industry in terms of revenue growth. Over the 2000-2006 period, results from *Qualified Remodeler* magazine's annual Top 500 Remodelers list[13] indicate that revenue growth for the top 500 firms averaged 11.0 percent over this period. This compares to average growth of 8.9 percent for all professionally installed home

[13] *Qualified Remodeler* magazine has been surveying the top 500 remodeling contractors nationally for the past 25 years. Since the magazine relies heavily on self-identification and self-reporting for its information, this list no doubt omits some of the larger firms, and misstates the annual revenue of others. Still, it serves as a representation of the largest general remodeling contracting firms nationally.

improvement projects according to the U.S. Census Bureau's survey of residential improvements and repairs (C50).[14]

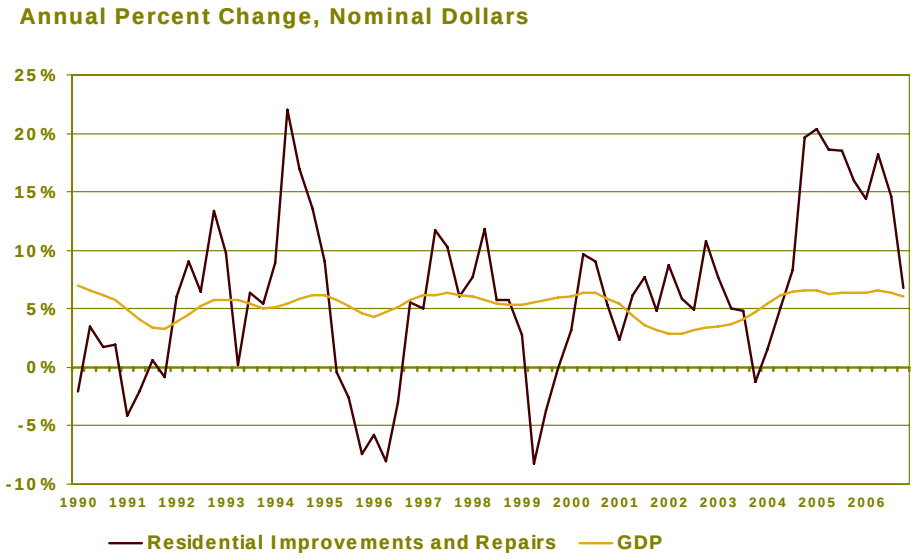
Volatility in Remodeling Activity

Like most sectors in the construction industry, remodeling activity exhibits a lot of variability in year-to-year levels of activity. This is because large portions of the remodeling industry are composed of discretionary expenditures, which households will undertake when the economy is healthy, financing costs are favorable, and incomes are growing. When the economy is weak and conditions are unfavorable, households will typically defer these expenditures.

Looking back to 1990, the overall U.S. economy has not recorded an annual decline in nominal terms over this period, and neither has it recorded an annual gain above seven percent. Remodeling activity, as measured in nominal dollars by the Census Bureau's quarterly survey of residential improvements and repairs (C50), by contrast, has recorded four annual declines over this period, as well as five years in which growth exceeded 10 percent (Figure 10). Certainly, firms working in this industry need to be prepared for the "boom and bust" nature of business levels.

[14] These figures are not directly comparable since the 500 companies compiled each year by *Qualified Remodeler* magazine are the top 500 businesses in terms of revenue for that year. Firms that did not perform as well may have dropped out of the top 500, which may serve to overstate the average growth for the top 500 firms. On the other hand, growth in overall spending on professionally installed home improvements reflects a growing number of firms each year, so the average per firm would be somewhat less than the average overall growth rate for all firms in this sector.

Figure 10: Remodeling More Cyclical than Broader Economy



Source: U.S. Commerce Department.

Though there is little empirical evidence to confirm it, there are reasons to think that larger remodeling contracting firms may be better able to cope with industry cyclicality. Not only are they more likely to be better financed, but larger firms have a greater ability to manage costs. For example, as discussed in the previous section, payroll labor at larger firms is typically a smaller share of overall firm expenses than at smaller firms, because larger firms rely more heavily on subcontracted labor. Greater reliance on subcontracted labor helps larger firms to balance out workloads, which allows them to increase and reduce project labor more easily as economic conditions fluctuate. Larger remodelers also use their labor more productively. Annual revenue per employee net of subcontracts for all general remodeling contractors averaged just under $100,000 in 2002 according to the Construction Census, but climbed to almost $150,000 for firms with revenue of $5 million or more.

Specialization and Firm Performance

In addition to size a firm's specialization can significantly affect its performance. By concentrating on the services it offers, specialization allows firms to develop the efficiency in

operations of larger full-service firms. Additionally, these firms may gain the market power with its suppliers of larger full-service firms for the narrower set of product lines that it purchases. In this sense, specialized remodeling contractors can gain some of the efficiencies and market power that normally would derive from industry concentration without actually having to consolidate.

In fact, the majority of larger remodeling firms have specialized their service offerings. Of the 500 top firms from *Qualified Remodeler* magazine's 2006 list, close to two out of five firms are classified as specialty remodelers (e.g. roofing, siding, window replacement contractors). Another 28 percent of the top firms are classified as design/build firms, meaning that they offer design as well as construction services to their clients, often because of the complexity of the projects. Full-service firms, meaning they provide home improvement services across a broad spectrum of remodeling projects, comprise just 27 percent of the top 500 firms on this list.[15] The remaining seven percent of firms on the list are in the "other" category, mostly encompassing insurance restoration, handyman services, and franchises.

While specialization may allow a remodeling firm to operate more efficiently, a risk of this strategy is that it exposes the firm to greater levels of volatility. For example, if business conditions change in a local market, firms with less diversified project offerings may well see greater volatility in revenue.

Indeed, analysis of *Qualified Remodeler* magazine's database of top 500 remodeling contractors over the 2000 to 2006 period[16] indicates that more specialized remodeling firms – design/build, specialty, and "other" – generally reported more revenue volatility than full-service firms and for some categories this higher volatility was not even compensated with higher revenue growth.

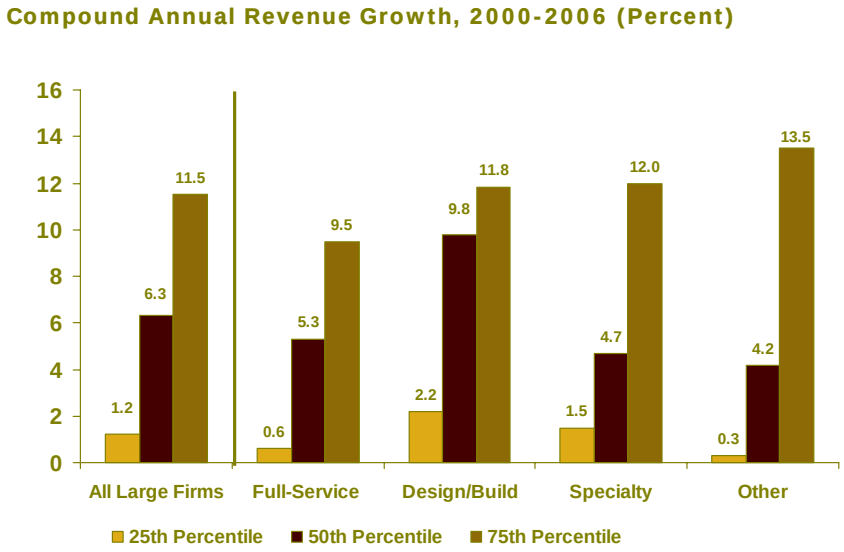
For this analysis, volatility was measured as the differential in compound annual growth rates over the 2000 to 2006 period between the worst-performing 25 percent of firms in a category (25th percentile) and the best-performing 25 percent of firms (75th percentile). The result was that design/build, specialty, and "other" firms showed somewhat more volatility in revenue growth as compared to full-service firms. However, design/build was the only category that

[15] Even these full-service firms, however, may be categorized as full-service because they have a broad range of specialty divisions. Therefore, they may be organized like specialty firms but still be classified as full-service firms because of the range of services offered.

[16] Since firms that routinely reported information to *Qualified Remodeling* magazine were assumed to provide more accurate information than those that only responded occasionally, this analysis was restricted to firms that reported information in both 2000 and 2006, and that reported information for at least four years over this period.

reported higher revenue growth over this period. For this period in the remodeling industry, at least, higher risk in terms of volatility was not always rewarded by faster growth (Figure 11).

Figure 11: While All Types of Firms Have Seen Strong Growth, Full-Service Firms Have Seen Less Volatility



Sources: JCHS tabulations of *Qualified Remodeler* magazine's Top 500 Remodelers.

For remodeling firms, specialization as a way to deal with industry fragmentation and volatility in business levels may be a risky strategy as firms move across the construction cycle. Between 2000 and 2006, at least, larger full-service general remodeling contractors reported more balanced performance than other categories. Even with achieving this balance, the typical full-service firm reported higher growth than those in the specialty or other category. Only design/build firms reported higher revenue growth on average, no doubt a reflection of the strong growth in upper-end projects over this period.[17] To determine how well different specialties perform during different market conditions, it will be important to monitor results during this current market transition.

[17] See Joint Center report *Foundations for Future Growth in the Remodeling Industry* for a discussion of the strong upper-end market for home improvement projects earlier this decade.

IV. Remodeling Contractor Survivorship

Certainly the remodeling industry is dominated by many small contractor establishments, which have greater exposure to the recurrent upturns and downturns in the housing and remodeling markets. The nature of the remodeling industry is such that the costs of entry are relatively low. However, a large number of small businesses with modest investments entering the industry when the market is strong and then exiting when it takes a turn for the worse makes for an unstable industry.

The study of business dynamics for firms outside of the manufacturing sector was for many years hampered by difficulties in tracking businesses over time. Jovanovic (1982) provides a theoretical framework for the growth and survival of firms, such that firms enter an industry not knowing their full ability to produce output. Efficient firms grow and survive, while inefficient firms decline and fail, implying that smaller firms are less efficient and thus more likely to fail than larger firms. Both Nucci (1999) and Caves (1998) present comprehensive summaries of the empirical literature on business dissolutions and firm turnover, with much of the literature concluding that business dissolution declines with the age of the business and also with the number of employees, yet business dissolution rates are not uniform across all types of industries or locations. For example, in his research of U.S. businesses with payroll, Nucci found that both the manufacturing and wholesale industries had the lowest rates of dissolution with 10 percent of active businesses closing from 1987-1988, and the mining and construction industries had the highest rates of closure at 15 percent. Though investigating a time period with a very different economic situation, Knaup (2005) still found some variation among industries, with start-ups in the information industry in 1998 having a four year dissolution rate of 62 percent, but new establishments in education and health services dissolved at a rate of only 45 percent over four years.

In recent years, several studies have focused on business dissolution and survivorship within the construction industry. Arditi et al. (2000) analyzed the reasons for contractor failure and found that over two-thirds of failures from 1989-1993 were due mainly to budgetary reasons, or administrative systems and procedures under the control of management, while another quarter of failures were due mainly to macroeconomic issues out of the control of management, such as industry weakness or high interest rates, to which management could not react quickly enough or strategize around. In looking at single-family homebuilders in Ontario from 1978-

1998, Buzzelli and Harris (2003) concluded that though the business cycle is indeed responsible for some of the contractor instability in the market, it is the size of the contractor that ultimately determines industry exits. On average, 40 percent of small builders (building less than 26 homes per year) exited the homebuilding industry per year compared to less than five percent of large builders (building more than 100 homes per year). Carliner (2001) also noted that younger construction establishments exited the industry at a rate more than twice that of older businesses. More specifically, a 2001 Joint Center for Housing Studies working paper by Belsky et al. identified significant factors in the dissolution of general and special trade remodeling contractors and found that, again, the probability of dissolution decreases with age, size, and growth in residential construction demand.

There exist few data series which can be used to track the same contractors over time, but one such database is the Business Information Tracking Series (BITS) from the U.S. Census Bureau.[18] Data from BITS provide rough estimates of the magnitude of change in the number of contractor businesses serving the remodeling industry over time. Compared to other construction industries, a fairly high share of general remodeling contractors ceased operating between 2003 and 2004, the most recent year for which data on remodelers are available.[19] Almost 13 percent of general remodelers identified in 2003 were no longer operating in 2004, while the entire construction sector had a failure rate of 11.0 percent and all U.S. businesses with payrolls had a failure rate of only 9.1 percent over the same time period.[20] Moreover, 2003 was a fairly normal year for the industry, with owner improvements up an estimated 2.5 percent from the year prior according to the U.S. Census Bureau's Residential Improvements and Repairs (C50) Report. Thus, even in a somewhat typical year for the remodeling industry, a relatively high percentage of businesses still exited the industry.

[18] Part of the Statistics of U.S. Businesses program, BITS is a longitudinal database of all known business establishments with payroll in the U.S. Another promising dataset for studying business formations and dissolutions is the Integrated Longitudinal Business Database compiled by the U.S. Census Bureau, which combines the payroll and nonpayroll universes of all business establishments in the U.S. (see Davis et al. 2007).

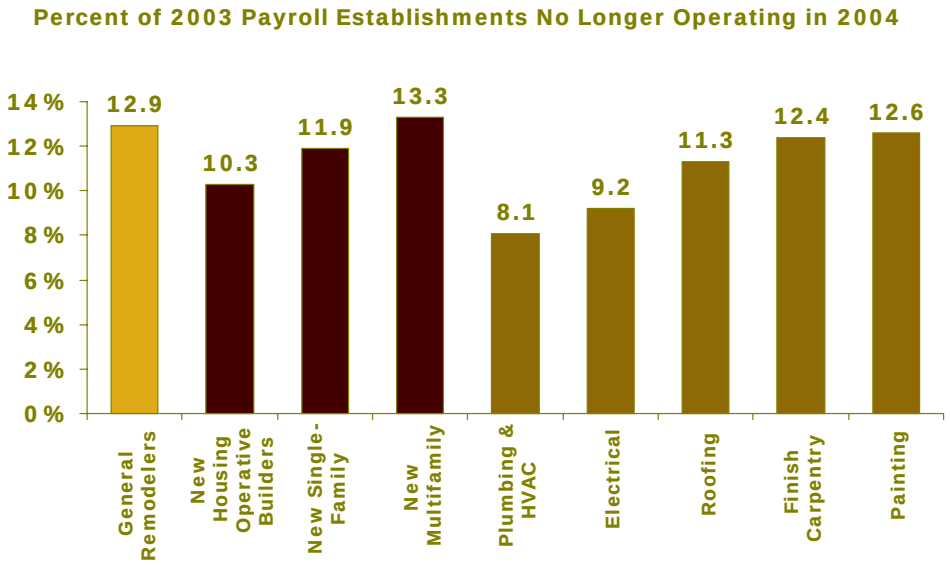
[19] Due to limits of the database, this analysis of contractor survivorship involves identifying contractor establishments in 2003, tabulating how many ceased operations in the following year, and then assessing these one-year failure rates by both the size of the establishment (as gauged by the size of its payroll expenditures since BITS only captures revenue statistics once every five years in which there was an economic census) and by changes to payroll in the year prior to exiting the industry.

[20] Incidentally, the term "failure rate" is used here only to mean the establishment ceases to exist, but not necessarily because the business actually failed to generate enough revenue to cover expenses. In fact, Head's (2000) analysis of the business dynamics of start-ups using BITS data found that close to a third of owners of firms which opened between 1989 and 1992 and closed between 1992 and 1996 considered their business successful at the time of closure.

As seen in Figure 12, compared to new residential construction industries, general remodelers had a higher one-year failure rate in 2004 than both new single-family contractors and new housing operative builders, [21] while new multifamily construction contractors had a slightly higher failure rate than general remodelers at 13.3 percent. One of the reasons for the higher dissolution rate of multifamily builders may be because 2002-2004 was a difficult time for multifamily builders with stable and then declining starts, which made multifamily construction by far the weakest segment of new residential construction during that time.[22] Also, when compared to the failure rates of a selection of the largest special trades (in terms of number of contractor establishments), none had failure rates quite as high as general remodelers. It should be noted that the special trades in this analysis are defined much more broadly and include contractors engaged in both new construction and remodeling, as well as both residential and nonresidential construction. Consistent with previous findings, plumbing, electrical and roofing contractors average considerably larger receipts than carpentry and painting contractors, and also have lower dissolution rates, suggesting that the size of the business influences the likelihood of staying in business.

[21] Operative builders are also known as speculative or merchant builders that build either single- or multifamily homes for sale on their own account rather than as contractors.
[22] U.S. Census Bureau, *Table Q1. New Privately Owned Housing Units Started in the United States by Purpose and Design.* See http://www.census.gov/const/www/quarterly_starts_completions.pdf.

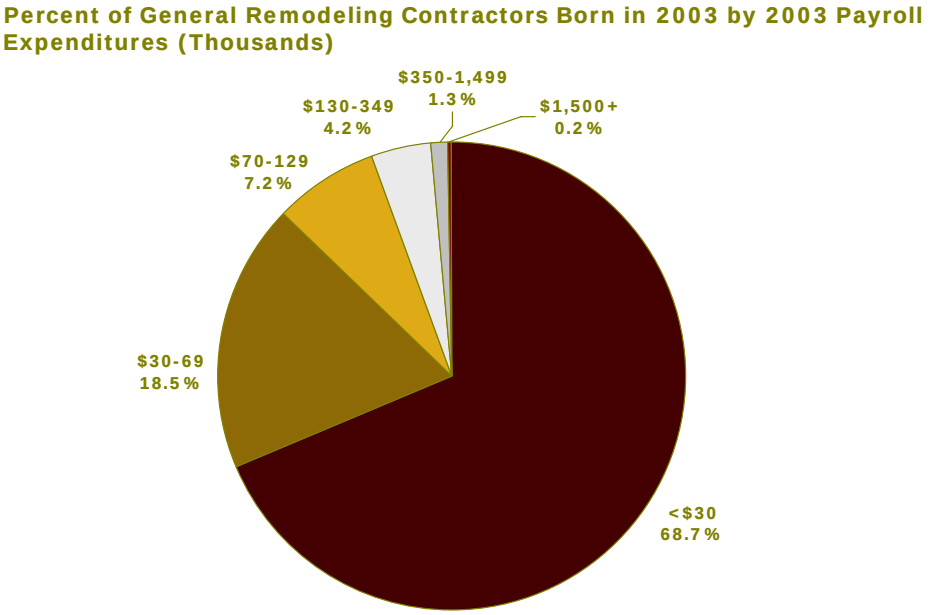
Figure 12: General Remodelers Had a Relatively High Failure Rate



Source: U.S. Census Bureau, Business Information Tracking Series.

In looking at general remodelers identified in 2003, one striking finding is that about one in five were newly formed that year, and many of these start-up businesses were small. Almost 30 percent of remodeling contractors with a payroll of less than $30,000 in 2003 were newly established, while only three percent of contractors with payrolls of $1.5 million or more were start-ups. In fact, close to 95 percent of all start-up remodelers had payrolls of under $130,000 in 2003 (Figure 13). Another interesting finding is that almost an equal share of general remodelers experienced increasing payrolls (of five percent or more) from 2002 to 2003 as those establishments that experienced a decline in payroll at 37 percent and 35 percent respectively.

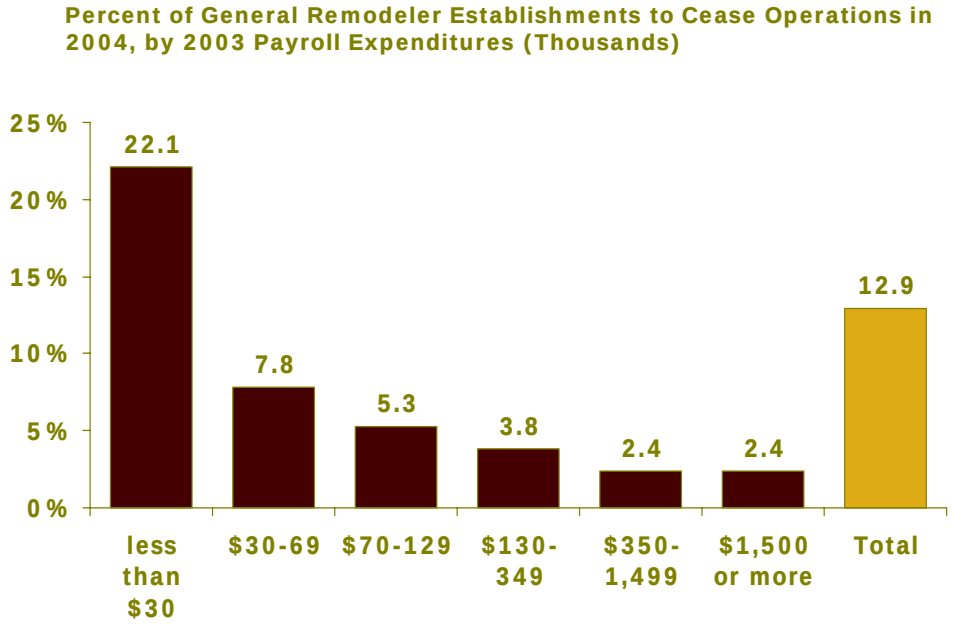
Figure 13: Majority of Start-Up Remodelers Have Very Small Payrolls



Source: U.S. Census Bureau, Business Information Tracking Series.

As mentioned previously, general remodeling contractors had an overall business dissolution rate of 12.9 percent, but examining failure rates by the size of the business (in terms of payroll expenditures) clearly shows that smaller contractors are much more likely to exit the remodeling industry (Figure 14). Twenty-two percent of contractors that had payrolls of less than $30,000 in 2003 were no longer operating in 2004, a failure rate almost ten times higher than contractors with payrolls of $350,000 or more.

Figure 14: Smaller Remodeling Contractors Experienced Much Higher Rates of Business Failure



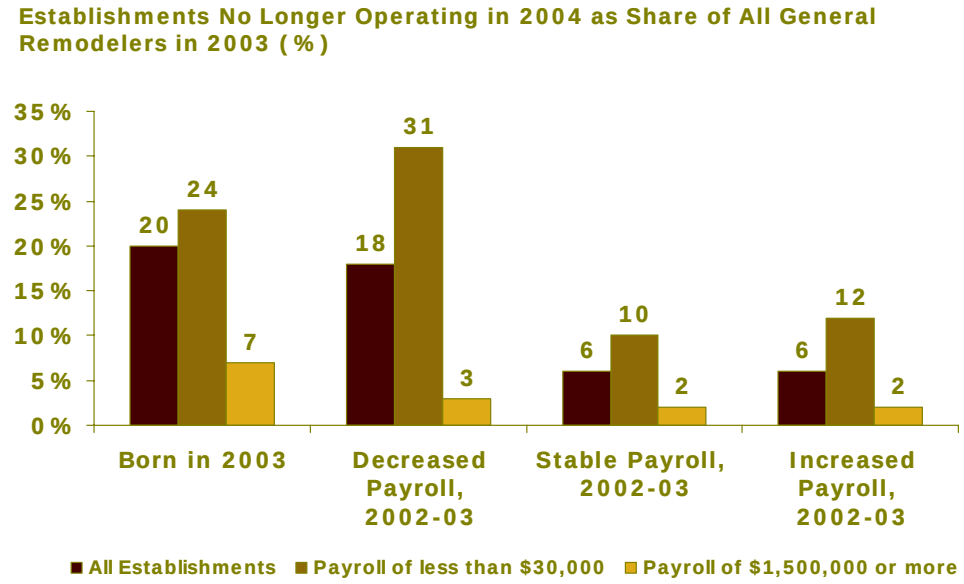
Source: U.S. Census Bureau, Business Information Tracking Series.

Calculating the 2003-2004 business dissolution rates by both the size of the establishment's payroll expenditures in 2003 and by the change in the establishment's payroll in the previous year (either declining, stable, or increasing) adds another dimension to the analysis. The data show that for general remodeling contractors both start-ups and businesses that experienced a decline in payroll had much higher failure rates than contractors that experienced stable or increasing payrolls from 2002-2003 (Figure 15). As noted above, a fairly large share of general remodelers in 2003 were start-ups, and fully 20 percent of these new businesses did not survive to 2004. And, again, the size of the business makes quite a difference. Almost a quarter of general remodeling contractors that were born in 2003 and had less than $30,000 in payroll expenditures did not survive, and yet only seven percent of start-ups in the highest payroll category failed.

A similar story can be told about contractors that experienced a decline in payroll in the year prior. Eighteen percent of all general remodelers with a decline in payroll did not survive, and again having smaller payroll expenditures greatly magnifies the failure rate. Here, 31 percent of small contractors with declining payrolls ceased operations, but only three percent of

those remodelers with payrolls of $1.5 million or more and experiencing a decline in payroll in the previous year failed. Also we see that those contractors with stable or increasing payrolls in the previous year had overall failure rates one third that of start-ups and contractors with declining payrolls. Still we see that even here size makes a difference and the smaller the contractor, the greater the likelihood of exiting the remodeling industry. All in all smaller establishments, start-ups, and remodelers with shrinking payrolls all have significantly larger dissolution rates. And certainly, high remodeler birth and death rates create considerable churn in this industry.

Figure 15: Failure Rates Significantly Higher for New Remodelers, Those with Declining Payrolls



Note: Stable payroll in 2002-2003 is defined as growth of 0-4.9% and increased payroll is defined as growth of 5.0% or more.
Source: U.S. Census Bureau, Business Information Tracking Series.

The rather high failure rates of general remodelers compared to other types of construction establishments are significant and it says a great deal about the stability of the industry. Still, the driving factors of these high dissolution rates seem to be the size of the business, the age of the business, and recent growth. Size of the business, whether measured by revenue, payroll or number of employees is an important determinant because larger businesses

with more capital and access to resources are better able to weather a weak market and declines in revenue. The age of the business is also important because prior experience is helpful for anticipating changes to the market and navigating the business through industry cycles with greater skill and acumen. Of course, recent performance of the establishment is also a good indicator of where the business is headed in the near term. Recognizing what factors most affect contractor survivorship and failure is crucial if the industry is to evolve and grow over the long run.

The interaction of these three variables—size, age and recent growth—has considerable consequence then for determining the likelihood of survival. Looking at opposite ends of the spectrum, small remodeling businesses of less than $30,000 in payroll expenses that experienced declining payrolls in 2003 had a one year failure rate 19 times higher than large contractors ($1.5 million in payroll expenses) with increasing payrolls in 2003 (of five percent or more) at 30.8 percent. Similarly, small remodeler start-ups in 2003 had a failure rate of 24.5 percent, which is almost 11 times greater than the failure rate for large remodelers that had been in operation for at least one year. Even with the many limitations of the current BITS database, the results of this analysis corroborate previous studies in indicating that, in particular, size and age are important factors for predicting the exit of remodeling contractors. Going forward, the BITS database will become much richer for analyzing the survival rates of remodelers as more years of data are collected.

V. Summary and Conclusions

The most recent statistics available on professional contractors serving the remodeling industry show that this industry continues to be dominated by many small businesses that are consequently more susceptible to the whims of the business cycle. Self-employed remodelers outnumber businesses with payrolls by 65 percent, and the vast majority of the self-employed earn very small receipts. Even remodelers with payrolls are heavily distributed toward the lower end of the revenue range.

Remodeling contractors are not experiencing much consolidation, but rather increasing specialization both within the remodeling industry as well as with the range of services that they offer to their clients. Specialization seems to be a strategy to allow smaller firms to achieve similar efficiencies in their business practices as larger full-service firms. However, more specialized firms risk greater levels of volatility in terms of annual revenue growth in such a

cyclical industry. More diversified remodeling firms, such as full-service firms or those that specialize in several types of remodeling will likely achieve more stable growth over time.

The size of a remodeling business matters immensely for influencing the likelihood of remaining in business. The overall one-year failure rate of general remodelers was found to be somewhat higher than most of the new construction industries and a sampling of the largest special trades (by number of establishments). Yet, when size of the establishment was taken into account, failure rates for remodelers dropped off significantly with increases in payroll size, which was used as a proxy for revenue. Not only size, but also age and recent growth were found to be important factors influencing business failure. Start-up remodelers and those that had experienced shrinking payrolls in the year prior were much more likely to exit the industry than older establishments and those that had stable or increasing payrolls. Certainly, new and small businesses are much more challenged by the strong cyclicality of remodeling activity.

Ultimately, specialization of remodeling contractors appears not to improve their business performance. However, to the extent that specialization allows smaller firms to grow faster than they would have without specializing, it may be a successful strategy to cope with the inevitable industry volatility. In and of itself, though, specialization appears to open up firms to greater exposure to industry volatility and therefore higher failure rates than more diversified businesses.

References

Apgar, William C. and Kermit Baker. (2006). *The Evolving Homebuilding Industry and Implications for Consumers.* Joint Center for Housing Studies, Harvard University.

Arditi, David, Almula Koksal and Serdar Kale. (2000). "Business Failures in the Construction Industry," *Engineering, Construction and Architectural Management*, Vol. 7, No. 2, 120-132.

Belsky, Eric S., Mark A. Calabria and Alfred R. Nucci. (March 2001). "Survivorship and Growth in the Residential Remodeling Industry: Evidence from the Census of Construction," *Joint Center for Housing Studies of Harvard University*, W01-5.

Buzzelli, Michael and Richard Harris. (May 2003). "Small is Transient: Housebuilding Firms in Ontario, Canada 1978–98," *Housing Studies*, Vol. 18, No. 3, 369-386.

Carliner, Michael. (August 2001). "Life and Death in the Construction Industry," *Housing Economics*, 5-8.

Caves, Richard E. (December 1998). "Industrial Organization and New Findings on the Turnover and Mobility of Firms," *Journal of Economic Literature*, Vol. 36, No. 4, 1947-1982.

Davis, Steven J., John Haltiwanger, Ron S. Jarmin, C. J. Krizan, Javier Miranda, Alfred Nucci, and Kristin Sandusky. (July 2007). "Measuring the Dynamics of Young and Small Businesses: Integrating the Employer and Nonemployer Universes," NBER Working Paper No. 13226.

Headd, Brian. (2001). "Business Success: Factors Leading to Surviving and Closing Successfully," *Center for Economic Studies*, WP-01-01.

Joint Center for Housing Studies. (2007). *Foundations for Future Growth in the Remodeling Industry.* Harvard University.

Jovanovic, Boyan. (May 1982). "Selection and the Evolution of Industry," *Econometrica*, Vol. 50, No. 3, 649-670.

Knaup, Amy E. (May 2005). "Survival and Longevity in the Business Employment Dynamics Data," *Monthly Labor Review*, 50-56.

Nucci, Alfred R. (February 1999). "The Demography of Business Closings," *Small Business Economics*, Vol. 12, No. 1, 25-39.

Qualified Remodeler. *Top 500 Remodelers*, 2000-2006. http://www.qualifiedremodeler.com/

U.S. Census Bureau. *2002 NAICS Codes and Titles.* http://www.census.gov/epcd/naics02/naicod02.htm

U.S. Census Bureau. Residential Improvements and Repairs Statistics (C50), *Expenditures for Owner-Occupied One-Unit Properties by Payments to Contractors or Materials Purchased by Owner*.

U.S. Census Bureau. Unpublished tabulations of the *1997 & 2002 Economic Census of Construction.*

U.S. Census Bureau. Unpublished tabulations of the *2002 Nonemployer Statistics.*

U.S. Census Bureau, Statistics of U.S. Businesses. *1989-2004 Business Information Tracking Series.*

Appendix Tables

Table A-1: Residential Remodeling Establishments with Payrolls by Annual Receipts: 2002							
	Less than $100,000	**$100-249,999**	**$250-499,999**	**$500-999,999**	**$1,000,000-4,999,999**	**$5,000,000 or more**	**Total**
General Contractors	**17,555**	**27,470**	**16,289**	**11,559**	**9,093**	**884**	**82,851**
Special Trade Contractors							
Concrete and Structural Steel	1,069	1,038	774	464	229	17	**3,592**
Framing	440	812	607	224	112	8	**2,203**
Masonry	1,295	1,531	723	286	136	14	**3,987**
Building Exterior, Glazing and Foundation	371	701	488	212	105	6	**1,882**
Roofing	2,336	3,521	2,595	1,524	1,149	111	**11,237**
Siding	647	927	731	408	405	29	**3,147**
Plumbing, Heating, AC and Electrical	8,478	15,569	10,162	5,782	4,003	412	**44,406**
Drywall and Insulation	685	754	451	194	161	46	**2,292**
Painting	7,220	5,919	2,141	911	391	29	**16,611**
Flooring, Tile and Other Finishing	2,942	3,532	1,421	1,014	767	63	**9,739**
Finish Carpentry	5,141	4,872	2,410	1,711	930	52	**15,116**
Site Prep and Other	659	1,053	676	366	208	22	**2,984**
Total Special Trade	**31,282**	**40,230**	**23,179**	**13,097**	**8,598**	**809**	**117,195**
Total	**48,837**	**67,700**	**39,469**	**24,656**	**17,692**	**1,694**	**200,047**

Source: Unpublished tabulations of 2002 Economic Census of Construction, U.S. Census Bureau.

Table A-2: Self-Employed Residential Remodeling Contractors by Annual Receipts: 2002						
	$25-49,999	**$50-99,999**	**$100-199,999**	**$200-299,999**	**Over $300,000**	**Total**
General Contractors	**48,235**	**35,106**	**22,705**	**8,753**	**12,417**	**127,216**
Special Trade Contractors						
Concrete and Structural Steel	1,389	856	444	81	104	2,874
Framing	876	1,973	672	147	226	3,895
Masonry	2,072	1,683	975	183	159	5,072
Building Exterior, Glazing and Foundation	536	1,018	645	132	68	2,400
Roofing	4,490	3,654	2,502	862	808	12,315
Siding	4,652	2,057	1,292	362	354	8,716
Plumbing, Heating, AC and Electrical	15,011	13,288	7,715	1,492	997	38,503
Drywall and Insulation	1,776	1,978	692	255	175	4,875
Painting	25,441	12,960	4,381	734	571	44,087
Flooring, Tile and Other Finishing	16,811	10,086	5,089	1,120	843	33,950
Finish Carpentry	18,459	11,179	5,186	1,056	940	36,820
Site Prep and Other	3,643	2,907	1,959	388	469	9,366
Total Special Trade	**95,156**	**63,638**	**31,553**	**6,812**	**5,715**	**202,873**
Total	**143,391**	**98,744**	**54,258**	**15,564**	**18,132**	**330,089**

Notes: The Economic Census of Construction does not report on nonpayroll residential remodeling businesses. JCHS estimates assume that the distribution of remodeling receipts for nonpayroll businesses is comparable to that for payroll establishments in the same revenue category. The remodeling share of total receipts for payroll establishments was calculated and these shares were applied to nonpayroll businesses within each of the revenue categories to estimate the number of nonpayroll remodeling businesses. The estimate of 330,000 nonpayroll remodelers was calculated by eliminating the 383,000 nonpayroll remodelers who reported less than $25,000 in gross receipts in 2002. This procedure provides a conservative estimate of the number of businesses concentrating their activities in residential remodeling.

Sources: JCHS tabulations using unpublished tabulations of the U.S. Census Bureau's 2002 Economic Census of Construction and 2002 Nonpayroll Statistics.

Table A-3: Remodeling Contractor Establishments with Payrolls: 1997 and 2002

	2002		1997		Percent Change (1997-2002)
General Contractors	**82,851**		**62,405**		**32.8**
Special Trade Contractors					
Plumbing, Heating, and AC	32,671		32,030	A	2.0
Painting	16,611		16,766		-0.9
Electrical Work	11,412	B	11,485		-0.6
Masonry, Stone Work, Tile Setting, and Plastering	9,059		6,612		37.0
Carpentry and Floor Work	23,288		18,298		27.3
Roofing and Siding	14,384		15,142	C	-5.0
Concrete Work	3,495		1,992	D	75.5
Miscellaneous	6,277		6,556	E	-4.3
Total Special Trade	**117,197**		**108,881**		**7.6**
Total	**200,048**		**171,286**		**16.8**

Notes: Industry classifications (NAICS codes) for the construction sector were significantly revised in 2002, resulting in the following changes:

A. Includes environmental controls installation contractors and septic tank, cesspool, and dry well contractors.

B. Includes environmental controls installation contractors.

C. Includes metal ceiling, panel, and shelving Installation.

D. Includes asphalt, brick and concrete paving.

E. Includes indoor swimming pool contractors and anchored earth retention contractors.

Sources: 1997 and 2002 Economic Census of Construction, U.S. Census Bureau.

Table A-4: Regional Distribution of Residential Remodeling Establishments and Revenue: 2002

	Northeast			Midwest		
	Number	Remodeling Receipts ($Mil)	Average Revenue ($000s)	Number	Remodeling Receipts ($Mil)	Average Revenue ($000s)
General Contractors	**17,596**	**9,361**	**532.0**	**20,641**	**9,560**	**463.1**
Special Trade Contractors						
Concrete and Structural Steel	538	101	188.6	1,113	343	307.8
Framing	502	155	308.6	651	186	284.9
Masonry	975	219	224.4	891	225	252.7
Building Exterior, Glazing and Foundation	298	89	299.5	384	132	343.6
Roofing	1,774	643	362.5	2,934	1,401	477.4
Siding	689	327	474.9	1,402	629	448.5
Plumbing, Heating, AC and Electrical	10,626	4,575	430.5	10,118	3,763	371.9
Drywall and Insulation	556	518	932.5	475	112	235.9
Painting	3,719	665	178.9	3,694	615	166.5
Flooring, Tile and Other Finishing	1,784	493	276.0	1,926	680	353.1
Finish Carpentry	4,561	1,447	317.2	3,615	1,077	298.1
Site Prep and Other	724	160	221.2	750	179	238.9
Total Special Trade	**26,746**	**9,392**	**351.2**	**27,953**	**9,341**	**334.2**
Total	**44,342**	**18,753**	**422.9**	**48,594**	**18,901**	**388.9**

Source: Unpublished tabulations of the 2002 Economic Census of Construction, U.S. Census Bureau.

Table A-4 Cont.: Regional Distribution of Residential Remodeling Establishments and Revenue: 2002									
	South			West			Total		
	Number	Remodeling Receipts ($Mil)	Average Revenue ($000s)	Number	Remodeling Receipts ($Mil)	Average Revenue ($000s)	Number	Remodeling Receipts ($Mil)	Average Revenue ($000s)
General Contractors	**23,153**	**12,471**	**538.6**	**21,462**	**11,135**	**518.8**	**82,851**	**42,525**	**513.3**
Special Trade Contractors									
Concrete and Structural Steel	1,014	360	355.1	927	344	371.6	3,592	1,149	319.8
Framing	485	157	324.2	565	191	338.4	2,203	689	312.6
Masonry	1,231	245	199.0	890	207	232.7	3,987	896	224.7
Building Exterior, Glazing and Foundation	697	155	223.2	504	137	272.9	1,883	514	273.0
Roofing	3,309	1,668	504.0	3,220	1,415	439.3	11,237	5,126	456.2
Siding	602	376	624.1	454	200	440.2	3,147	1,531	486.6
Plumbing, Heating, AC and Electrical	15,483	6,271	405.1	8,180	3,599	440.0	44,406	18,208	410.0
Drywall and Insulation	651	368	565.3	609	232	381.1	2,292	1,231	537.0
Painting	4,458	1,119	250.9	4,741	863	182.0	16,611	3,262	196.4
Flooring, Tile and Other Finishing	2,897	817	281.9	3,132	1,098	350.5	9,739	3,087	316.9
Finish Carpentry	3,700	1,043	281.8	3,240	1,143	352.7	15,116	4,710	311.6
Site Prep and Other	782	354	453.0	729	199	272.6	2,984	892	298.9
Total Special Trade	**35,307**	**12,933**	**366.3**	**27,189**	**9,628**	**354.1**	**117,197**	**41,294**	**352.3**
Total	**58,460**	**25,403**	**434.5**	**48,651**	**20,762**	**426.8**	**200,048**	**83,819**	**419.0**

Source: Unpublished tabulations of the 2002 Economic Census of Construction, U.S. Census Bureau.

Table A-5: Composition of Spending, Residential Remodeler Establishments: 2002					
	Number of Establishments	**Total Construction Receipts ($Millions)**	**Average Construction Receipts ($Thousands)**	**Cost of Work Subcontracted ($Millions)**	**Average Cost of Work Subcontracted ($Thousands)**
General Contractors	**82,851**	**45,454**	**549**	**14,592**	**176.1**
Special Trade Contractors					
Concrete and Structural Steel	3,592	1,551	432	116	32.2
Framing	2,203	842	382	187	84.7
Masonry	3,987	1,173	294	60	14.9
Building Exterior, Glazing and Foundation	1,882	723	384	38	20.2
Roofing	11,237	6,490	578	642	57.2
Siding	3,147	1,706	542	190	60.5
Plumbing, Heating, AC and Electrical	44,406	23,885	538	1,302	29.3
Drywall and Insulation	2,292	1,871	816	270	117.9
Painting	16,611	3,841	231	412	24.8
Flooring, Tile and Other Finishing	9,739	4,213	433	387	39.7
Finish Carpentry	15,116	5,397	357	679	44.9
Site Prep and Other	2,984	1,234	414	108	36.1
Total Special Trade	**117,195**	**52,925**	**452**	**4,390**	**37.5**
Total	**200,047**	**98,379**	**492**	**18,983**	**94.9**

Source: Unpublished tabulations of the 2002 Economic Census of Construction, U.S. Census Bureau.

Table A-5 Cont.: Composition of Spending, Residential Remodeler Establishments: 2002

	Number of Employees	Average Number of Employees	Payroll ($Millions)	Average Payroll ($Thousands)	Cost of Materials ($Millions)	Average Cost of Materials ($Thousands)
General Contractors	**321,560**	**3.9**	**8,759**	**105.7**	**12,016**	**145.0**
Special Trade Contractors						
Concrete and Structural Steel	17,619	4.9	403	112.3	538	149.6
Framing	7,909	3.6	187	84.8	236	107.2
Masonry	17,577	4.4	399	100.1	298	74.7
Building Exterior, Glazing and Foundation	7,667	4.1	198	105.3	257	136.5
Roofing	67,915	6.0	1,424	126.8	2,156	191.8
Siding	17,365	5.5	443	140.7	598	190.1
Plumbing, Heating, AC and Electrical	240,245	5.4	7,091	159.7	7,281	164.0
Drywall and Insulation	13,757	6.0	323	141.0	500	218.1
Painting	55,704	3.4	1,147	69.1	842	50.7
Flooring, Tile and Other Finishing	44,702	4.6	1,184	121.6	1,211	124.3
Finish Carpentry	52,746	3.5	1,271	84.1	1,892	125.1
Site Prep and Other	12,688	4.3	311	104.4	297	99.5
Total Special Trade	**555,893**	**4.7**	**14,382**	**122.7**	**16,105**	**137.4**
Total	**877,453**	**4.4**	**23,141**	**115.7**	**28,120**	**140.6**

Source: Unpublished tabulations of the 2002 Economic Census of Construction, U.S. Census Bureau.