

Competitive Actions of Small Firms in a Declining Market

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Small firms, through their flexibility advantages and closeness to customers, potentially can increase their sales volume in economic downturns. The decline in U.S. housing construction (beginning in 2006) provided an opportunity to develop and test four hypotheses predicting the attributes and marketing actions associated with successful companies supplying housing markets. Smaller firms and those producing made-to-order products were most likely to have realized increased sales volume. These successful firms were not engaged in several marketing actions hypothesized to increase sales volume in a declining market. Small firm competitiveness was based more on working closely with customers to produce fully customized products.

Introduction

After years of robust growth driven largely by readily available credit, favorable demographics, wealth effects, and speculation, the U.S. housing market began a precipitous decline in 2006 (Buehlmann et al. 2008). With single family housing starts at 0.74 million

annualized and permits at 0.67 million in January 2008, the industry reached its slowest pace since 1993. An additional 4.13 million single family homes were on the market. As of January 2008, single family resale inventories were at 10.1 months, and new housing inventories were at 9.9 months.¹ The value of private construction (accounting for 75 percent

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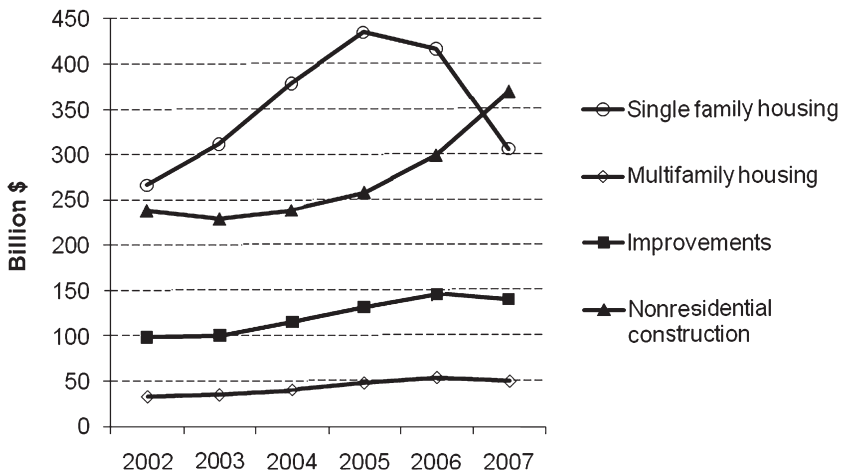
¹Source for new home inventory: U.S. Bureau of Census—<http://www.census.gov/const/www/newressalesindex.html>. Source for existing home inventory: National Association of Realtors—<http://www.realtor.org/research/index.html>.

of total construction, excluding public construction, which is composed mostly of highway, transportation, and other public works) for the major sectors since 2002 is shown in Figure 1. Single family housing, the largest market during the period, has been especially hard-hit, declining in value by 27 percent or \$113 billion from 2006 to 2007 (U.S. Census Bureau 2009). The improvements (remodeling) sector, and to a lesser extent, the smaller multifamily housing sector, have held up better with expenditures actually increasing for improvements through 2006 and remaining nearly stable in 2007 (U.S. Census Bureau 2009). Nonresidential construction has realized stronger growth during the period, nearly equaling residential construction (single family plus multifamily) in 2007.

The wood products industry has been hard-hit by the housing downturn. Almost three-quarters of dimensional softwood lumber (e.g., 2 × 4s made from spruce, pine, or fir) and structural panels

(e.g., plywood and oriented strand board) consumed in the United States go into housing, including new construction and remodeling (Buehlmann et al. 2008). Perhaps less known, however, is the hardwood lumber industry's increasing reliance on housing and construction markets. Though not used to frame houses, hardwoods (e.g., oak, maple, and cherry) are the major wood material used to fabricate fixtures such as cabinets, floors, and moldings. In 1982, hardwood lumber use by the construction and remodeling sector (defined as kitchen cabinets, flooring, millwork, and other miscellaneous building products) accounted for 1.4 billion board feet (bbf) or 28 percent of domestic consumption in appearance-based products (excluding pallets and containers). This volume had increased to 4.2 bbf by 2002, accounting for over 52 percent of domestic consumption in appearance-based products (Luppold and Bumgardner 2008). Thus, construction-related markets have grown in volume and relative importance as the

Figure 1
Value of Private Construction in the United States for Various Sectors, 2002 to 2007 (U.S. Census Bureau 2009)



domestic furniture manufacturing industry has moved offshore, reducing the traditionally largest market for hardwood lumber. Hardwood lumber use by the furniture industry was larger than for the construction and remodeling sector until about 1992—between 1992 and 2002, consumption by the furniture industry declined by 23 percent to 2.1 bbf (Luppold and Bumgardner 2008). With this increasing importance of the housing sector, it is no surprise that the secondary wood industry is hard-hit by the slowdown in housing markets coupled with lost furniture markets.

Small-Firm Performance in Declining Markets

As described more fully in the next section, it is often said that smaller firms manufacturing customized products and operating at high price points are the most competitive in the current economic environment for secondary wood products. However, this literature is somewhat limited. This study was conducted to confirm these suppositions and to determine the actions successful secondary wood products firms were taking in the current downturn in single family residential construction (SFRC). A few studies have assessed the strategies that firms employ during economic downturns. The evidence suggests that larger firms generally focus more on cost reduction during such conditions whereas smaller firms focus on marketing and revenue generation (Latham 2009; Pearce and Michael 1997; Shama 1993), although cost reduction, particularly for easily replaceable assets, can be important to smaller manufacturing firms during recession as well (Michael and Robbins 1998). However, though previous studies have investigated the roles of competitive strategy (Barth 2003) and owner–manager demographic factors (Kangasharju 2000) on firm performance in mature markets, little is known whether small firms are capable of per-

forming better than large firms under such conditions. Though understood to generally exhibit higher growth rates than larger firms (Davidsson et al. 2002), will smaller firms also exhibit a greater propensity to grow in a declining market?

Theoretical Background and Hypotheses

Large firms often are seen as having a competitive advantage over small firms in most any chosen field (Penrose 1995), with economies of scale and scope, as well as experience effects, being major benefits associated with larger size (Ghemawat 1986). Smaller firms also tend to face more difficulties and risks in obtaining financial capital (Lawless and Warren 2005; Penrose 1995). In the 1950s and 1960s, it was believed that small firms faced an uncertain future. Emphasis was placed on the scale economies associated with “Fordist” models of mass production of largely undifferentiated products using rigid management and production schedules to meet growing post-War consumption (Baker 1995). However, the economic uncertainties associated with globalization, changing consumer preferences toward customized products (Pine 1993), and other factors since the 1970s resulted in flexible specialization being a key component of industrial structuring in developed economies, which created a favorable environment for smaller, more adaptable firms (Baker 1995). As a result, small firms remain an important component of the manufacturing economy in the United States as in other developed countries (Mulhern 1995). Whereas larger firms seek to expand into areas where their advantages are the greatest, that is, where scale economies are present (Penrose 1995), opportunities are left open for smaller, more flexible firms to develop differentiated products that can overcome the potential cost penalties associated with serving smaller markets (Bhide 1994).

The U.S. manufacturing sector has experienced several challenging decades. The manufacturing workforce in 2003, which numbered approximately 16 million, was equal in size to that of 1961. Over the past three decades, nearly 5 million manufacturing jobs have been lost, with the losses concentrated in those jobs involving low-skill labor (Deitz and Orr 2006). Though some of these losses can be attributed to productivity gains, another major driver behind the decline of U.S. manufacturing prowess is the ongoing globalization of trade, which has brought the comparative cost disadvantages of the United States as a manufacturing location to the forefront in several industrial sectors (Deitz and Orr 2006). Many U.S.-based secondary wood products industries such as furniture, flooring, and millwork (particularly where commodity-type products have been the norm) have been especially hard-hit by the worldwide opening of markets for goods and services (Schuler and Buehlmann 2003). In this context, many secondary wood products firms find themselves in a similar position to the broader manufacturing sector in the United States—flexibility and specialization have become critical to competitiveness.

Interestingly, the primary producers in the hardwood supply chain (sawmills producing lumber for consumption by the secondary industry) have followed an “expand or exit” strategy over the past three decades (Luppold and Bumgardner 2009), which is consistent with the scale advantages of being larger (Penrose 1995) and thus counter to trends in the secondary industry. That is, mills that have invested in sawing technology to expand production capacity have realized increased economies of scale that have driven smaller, less cost-efficient hardwood sawmills out of the market. However, to date, mills in the primary sector generally have not faced intense global competition in domestic markets,

and commodity-type production remains common.

Sources of Competitive Advantage for Small Secondary Wood Firms

To counteract the unfavorable manufacturing trends, efforts are being undertaken to find, and promote implementation of, the competitive advantages possessed by domestic wood products companies. For example, research has shown that attributes such as flexibility in order quantities and replacement part availability are competitive advantages possessed by the U.S. furniture industry relative to imported products from sources in China (Buehlmann et al. 2006). The increasing importance of the customized economy, where customers expect products and services to be customized to their needs and expectations, and are willing to pay a premium for them, call for flexible entities able to interact with individual customers and deliver with speed the desired product or service (Schuler and Buehlmann 2003). Small firms seem well-positioned to profit from these trends. Their size makes them flexible to tailor products and services to particular market niches and needs (Gilmore et al. 1999). Customization opportunities for secondary wood products such as furniture, cabinets, and millwork include choices for species, finish, hardware, and even product design and physical dimensions (Lihra, Buehlmann, and Beauregard 2008; Terreri 2008).

Most often, small firms serve local markets and source their supplies from local or regional suppliers, minimizing problematic activities such as long transportation distances. Their closeness also facilitates communication with their suppliers (Bumgardner, Romig, and Luppold 2007). Previous research also has shown that smaller wood products companies place greater emphasis on craftsmanship as a desirable employee characteristic than do larger firms (Bumgardner et al.

2005), suggesting that smaller firms might seek to take advantage of niche markets where quality and skilled production provides a competitive advantage and price sensitivity is less of a factor (Porter 1980). These potential advantages for small firms, including the ability to provide customized, higher end products, lead to development of the following hypotheses for the present study.

Hypotheses

Generally, large firms are seen to have certain inherent advantages over small firms in most any field that they might care to enter, especially in cases where economies of large-scale production, marketing, and research are compelling and relatively easy to introduce and maintain (Ghemawat 1986; Penrose 1995). Diez-Vial (2009) showed that as firms grow, they are generally more interested in leveraging value chain capabilities through vertical integration, whereas smaller firms perceive a need to stay more flexible, especially in situations where there is high demand uncertainty. It thus seems to follow, as found by Latham (2009) and Shama (1993), that large firms would focus more on cost reductions as a means of weathering recessions, whereas smaller firms would focus more on revenue generation activities such as product refinement and promotion, customer service, niche marketing, and expanding distribution channels. Smaller firms lack the economies of scale and cash flow necessary to rely on cost-reduction strategies during downturns and thus, are more likely to seek additional revenue sources (Latham 2009).

In the case of the secondary wood products industry, larger firms, particularly in the furniture sector, have moved manufacturing off-shore to take advantage of lower labor costs (Schuler and Buehlmann 2003), essentially following a generic competitive strategy of cost leadership (Porter 1980). However, this can lead to challenges in implementing a cus-

tomization strategy that offers differentiation in the marketplace. For example, a recent report described a large furniture manufacturing company that, though recognizing (and acting upon) the opportunities associated with offering customized products to consumers, must first disassemble imported (and batch-produced) products before removing the original finish to serve this market. Specified finishes from customer orders from retail showrooms are then reapplied before reassembling for shipment (Russell 2009).

Opportunities for small firms to produce semi-customized or fully customized secondary wood products exist because larger firms seek to expand into areas where their advantages are the greatest, that is, where scale economies are present (Penrose 1995). Opportunities are thus left open for smaller, more flexible firms to develop differentiated products, tailored to specific customer demands, which can overcome the cost penalties associated with serving smaller markets (Bhide 1994) and where price sensitivity is not a major factor (Porter 1980). For example, Dean, Brown, and Bamford (1998) found that the availability of niche opportunities within an industry was associated with inducement of small business formation relative to larger firms. This advantage for small firms can be especially important during an economic downturn as DeDee and Vorhies (1998) found that manufacturing on a customer order basis was positively related to financial performance for small firms during recession. We therefore propose that successful firms in the current housing downturn will be smaller, and more likely to be producing semi-custom and fully customized products at higher price points.

H1: Firms having increased sales volume in the declining SFRC market will be smaller as measured by number of employees and total sales.

H2: Firms having increased sales volume in the declining SFRC market will be more customized as measured by proportion of semi-custom products produced and proportion of made-to-order products produced.

H3: Firms having increased sales volume in the declining SFRC market will be operating at a higher price point.

There are a number of reasons why industries face decline. These include technological advances that foster substitute products, changes in buyers' lifestyles or tastes, changes in the costs of inputs or of complementary products, and shrinking customers groups/potential buyers sliding into trouble (Harrigan and Porter 1983); the latter seems most explanatory of the current housing downturn. Of course, circumstances can change and declines can reverse, which is widely expected of the U.S. housing industry as longer term underlying demographic factors remain positive (Joint Center for Housing Studies of Harvard University 2008; National Association of Home Builders 2008). It is the companies that foresee revitalization and/or have a strong stake in an industry that are the most likely to be optimistic about future demand and take steps to persevere (Harrigan and Porter 1983).

When operating in mature markets or declining markets, there are several marketing actions that can be taken to extend volume growth, including conversion of noncustomers in target segments into customers (increasing penetration), increasing the frequency or volume of use among existing customers, and expanding into untapped market segments. Boyd, Walker, and Larreche (1995) identified several such actions within these broad categories, 11 of which were investigated in the present study. Several of these activities are similar to those used by Latham (2009) to

represent Hofer's (1980) revenue-generating strategy for turning around a stagnant or declining company. It was hypothesized that successful firms operating in the declining SFRC market were employing such actions given that sales growth is more difficult in mature markets (Barth 2003). Furthermore, if successful firms in the current SFRC downturn are found to be smaller (as predicted), it would be expected that these firms would respond to the recessionary conditions by focusing more on marketing activities to generate revenue than on cost reduction (Latham 2009; Pearce and Michael 1997; Shama 1993). However, a countervailing factor could be that smaller firms have reported facing difficulties related to marketing activities such as product promotion, distribution, and market research (Huang and Brown 1999; Mulhern 1995). Perhaps these firms, if smaller, therefore will be less engaged in marketing activities.

H4: Firms having increased sales volume in the declining SFRC market are more engaged in marketing activities to extend sales volume.

Methods

An email was sent by *Modern Woodworking* magazine in February 2008 to all subscribers with an email address available (approximately 17,000) inviting them to participate in the study. This list included several nonmanufacturing firms and other entities, but it was not practical to ascertain from the list the type of organization represented in order to remove nonrelevant entries. However, as described later, it was possible to test for response bias for the responding sample. The email included a cover letter explaining the study and a link to the questionnaire posted on the Internet. A reminder notice was sent via e-mail two weeks after the initial email. The questionnaire contained 24 questions and

was completed by respondents online. As an incentive for participation, respondents were entered in a sweepstakes to win a prize. A total of 496 responses were received after a four-week period. The usable sample of manufacturers was 430 after removing nonmanufacturing responders such as distributors, service providers, and educational organizations (the apparently low response rate, as traditionally defined, was partially a function of the heavy presence of nonmanufacturers in the list of email addresses on file). Respondents were active in markets across the United States, ranging from 44 percent of firms doing regular business in the Midwest to 21 percent of respondents doing regular business in California. Over 69 percent of the respondents held positions in corporate or operating management or were owners, whereas another 16 percent were in production management.

It was possible to check for nonresponse bias by comparing the sample with known parameters for *Modern Woodworking* subscribers. The proportion of the sample with less than 50 employees was 82 percent, whereas this proportion was 72 percent for the population. Also, the sample was composed of 71 percent cabinet and household furniture manufacturing firms, whereas firms associated with these products were 62 percent of the population. Thus, though there were some minor differences, the sample seemed to be a reasonable representation of the *Modern Woodworking* population, which was composed of about 35,000 subscribers. However, given that differences might exist between subscribers and nonsubscribers, some caution is warranted in generalizing beyond companies subscribing to the magazine. Another point to note, as described in the next section, was that those responders facing a declining market were only 15 percent greater than those realizing increased demand in the current environment. Thus, there might

have been a subset of respondents “motivated” to respond based on their success. The combined result could be overrepresentation of successful firms relative to the overall industry.

In order to test the hypotheses, the respondents were placed into one of four market/performance groups based on: the proportion of their production volume that was directly associated with the SFRC market in 2007 (i.e., used in the building or trimming of new homes, excluding furniture or furnishings) and whether their sales volume increased or decreased from 2006 to 2007. Primary interest was with those firms that had more than 60 percent of their production volume associated with the declining SFRC market and whose sales volume increased from 2006 to 2007. Sales growth has been used in other small business studies as the performance measure of choice (Barth 2003). A volume of 60 percent was chosen in order to include firms that had a clear majority of sales in the SFRC market (and thus would be potentially impacted by changes in this market) but also recognizing that many firms produce products that can be used in multiple markets (e.g., kitchen cabinets can be produced for both the single family and multifamily housing market). Categorical data were analyzed using χ^2 tests of independence; whereas the tables connected with these tests show percentages in each cell to aid with interpretation of results (next section), the tests were based on the associated frequency counts. Interval-level data were analyzed using multivariate analysis of variance (MANOVA/ANOVA).

Results and Discussion

Group Descriptions

The breakdown of the sample along the market and performance dimensions (percentage of business from SFRC markets and sales volume performance) is shown in Table 1. There was a fairly

Table 1
Summary Results for Variables Used to Categorize Firms

Change in Sales Volume, 2007 versus 2006	Percent of Respondents	Production Volume Directly Associated with the SFRC ^a Market, 2007	Percent of Respondents
Sales volume off		≤60 percent of production (Percent)	
Much worse (off by 20 percent or more)	15.6	0	18.1
Somewhat worse (off by 10 percent)	11.4	1–20	16.0
Slightly worse (off by 5 percent)	10.0	21–40	10.0
Unchanged	16.5	41–60	12.8
Sales volume up		>60 percent of production	
Slightly better (up by 5 percent)	13.0	61–80	16.5
Somewhat better (up by 10 percent)	19.1	81–100	26.5
Much better (up by 20 percent or more)	14.4		

^aSFRC refers to single family residential construction.

even distribution across the categories representing changes in sales volume from 2006 to 2007. Regarding production volume directly associated with the SFRC market in 2007, there again was a fairly even distribution but with a small spike in the category whose sales volume was 81–100 percent associated with the SFRC market. Using the definitions provided in Table 1, the firms were classified as follows:²

- SFRC ≤ 60 percent of production; sales volume off → group 1 (*n* = 118);

- SFRC ≤ 60 percent of production; sales volume up → group 2 (*n* = 127);
- SFRC > 60 percent of production; sales volume off → group 3 (*n* = 112);
- SFRC > 60 percent of production; sales volume up → group 4 (*n* = 73).

A group breakdown by main product manufactured is shown in Table 2. As might be expected, the proportion of companies whose main product was kitchen/bath cabinets was substantially

²Firms whose reported sales volume was unchanged were included in the “sales volume off” group, thus the “sales volume up” group contained only those firms that actually realized an increase in sales volume in 2007.

Table 2
Profile of Companies Constituting Each Group

Demographic Variables	SFRC ^a ≤ 60 Percent of Production; Sales Volume off (Group 1)	SFRC ≤ 60 Percent of Production; Sales Volume up (Group 2)	SFRC > 60 Percent of Production; Sales Volume off (Group 3)	SFRC > 60 Percent of Production; Sales Volume up (Group 4)
Main product (in percent)				
Cabinets	27.1	32.3	57.1	63.0
Architectural fixtures	12.7	15.0	4.5	4.1
Molding/millwork	11.9	11.8	17.0	11.0
Contract furniture	10.2	12.6	1.8	0.0
Household furniture	31.4	18.1	11.6	17.8
Other	6.7	10.2	8.0	4.1
Average number of business regions per firm ^b	2.6	2.6	2.1	1.6

^aSFRC refers to single family residential construction.

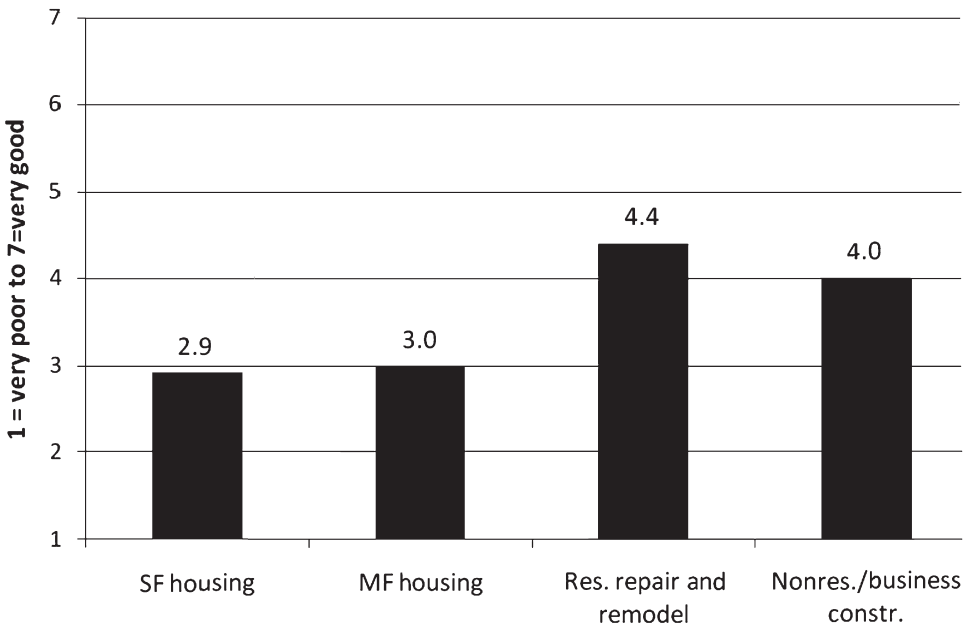
^bRespondents were asked to indicate all regions of the United States where they did regular business, including the Northeast, Mid-Atlantic, Southeast, South, Southwest, Midwest, Northwest, and California.

higher for those firms primarily in the SFRC market (groups 3 and 4), whereas architectural fixtures and contract furniture as a main product was proportionally higher for those firms operating primarily in non-SFRC markets (groups 1 and 2). Another difference of note was that firms in group 3 and especially group 4 did regular business in fewer geographic regions on average than did firms in groups 1 and 2 (ANOVA $F=4.27$; $df=3, 424$; $p=.01$), which is not surprising given the local nature of housing construction. These differences in markets served, coupled with differences in sales volume, allowed for meaningful comparative analysis of the four groups to test the hypotheses. For example, companies that realized increasing and decreasing sales volume in the SFRC market were represented

(i.e., group 4 and group 3, respectively). The categories were quite similar in terms of respondents' position, with 64 percent to 73 percent either being in corporate/operations management or the firm owner. Most of the remainder in each category was in production management.

As confirmation that SFRC housing was viewed by respondents as a declining market at the time of the study, the respondents were asked to assess the state of four major building sectors for 2008 on a scale anchored by 1 = very poor to 7 = very good. The results are shown in Figure 2, where single family housing was rated lowest, scoring only a 2.9. Single family housing was followed closely by multifamily housing (although it should be noted that expenditures on SFRC housing is over six times higher

Figure 2
Assessment of 2008 Construction Markets by Responding Secondary Wood Manufacturers



than expenditures on multifamily housing nationally, thus SFRC is a much more important segment). Residential repair and remodeling and nonresidential/business construction were perceived to be somewhat stronger markets for 2008.

Further, as confirmation that firms in group 4 were generally doing well in the SFRC market, ANOVA results ($F = 5.85$; $df = 3, 426$; $p < .01$) indicated that group 4 assessed the 2008 SFRC housing market significantly more favorable than did the other groups (means of 2.9, 2.8, 2.8, and 3.5, respectively, using the rating scale in Figure 2). This would be expected for firms whose reported sales volume was up whereas having a majority of their business directly associated with that market. Of course, the possibility also exists that such optimism is influenced by the stake these firms have in the SFRC market, which can affect objectivity toward seeing the reality of decline (Harrigan and Porter 1983).

H1

H1 states that *firms having increased sales volume in the declining SFRC market will be smaller as measured by number of employees and total sales*. As shown in Table 3, H1 was supported. The overall test for number of employees was significant ($p < .01$) and the strength of association was low to moderate (Cramer's $V = 0.19$). Group 4 (SFRC > 60 percent of production; sales volume up) had proportionally fewer firms with 20 or more employees than the other groups (cell $\chi^2 = 5.3$ out of an overall χ^2 statistic of 14.9) and more firms with 1–19 employees. Group 2 (SFRC \leq 60 percent of production; sales volume up) seemed to be geared the most toward larger firms, with 39 percent of the firms having 20 or more employees (cell $\chi^2 = 5.2$).

Similar results were obtained for total sales in 2007, with an overall significant test ($p < .01$), though the strength of

association was lower than for number of employees (Cramer's $V = 0.16$). Group 4, again, had the largest proportion of firms in the lowest sales category (less than \$1 million) and the smallest proportion of firms in the highest sales category (more than \$10 million). Also following a similar pattern as with number of employees, group 2 had proportionally fewer firms in the lowest sales category and proportionally more in the middle sales category (\$1–10 million). There are thus indications that firms with increased sales volume in 2007 tended to be smaller when operating within the declining SFRC market and larger when operating in stable or increasing (non-SFRC) markets (Figure 1).

H2

H2 states that *firms having increased sales volume in the declining SFRC market will be more customized as measured by proportion of semi-custom and made-to-order products*. As shown in Table 4, H2 was partially supported. There was no evidence of group differences for “semi-custom” products ($p = .15$), with a definition that for a given design, customers have a choice of wood species, finish, and hardware. However, there was a significant relationship for “made-to-order” products ($p = .04$), which was defined as products for which customers can specify all aspects of the product including design. Here, group 4 had proportionally fewer firms in the 0–20 percent made-to-order production category (cell $\chi^2 = 5.2$ out of an overall χ^2 statistic of 13.0) and proportionally more in the 61 to 100 percent category as predicted. Nearly four out of five firms in group 4 produced made-to-order products on the order of at least 61 percent of their overall product mix. Although the test for made-to-order products was significant, the strength of association was somewhat low (Cramer's $V = 0.12$).

Table 3
Firm Size by Group

Size Category	SFRC ^a ≤ 60 Percent of Production; Sales Volume off (Group 1)	SFRC ≤ 60 Percent of Production; Sales Volume up (Group 2)	SFRC > 60 Percent of Production; Sales Volume off (Group 3)	SFRC > 60 Percent of Production; Sales Volume up (Group 4)
Number of employees ^{b*}	(Percent)	(Percent)	(Percent)	(Percent)
1-19	74.6	61.4	72.3	86.3
20 or more	25.4	38.6	27.7	13.7
Total sales ^{c**}	Cell χ^2	Cell χ^2	Cell χ^2	Cell χ^2
Less than \$1 million	0.1	2.0	0.0	0.0
\$1-\$10 million	0.3	5.2	0.0	0.0
More than \$10 million	61.0	48.8	66.1	78.1
	24.6	34.6	16.1	13.7
	14.4	16.5	17.9	8.2
	0.0	0.2	0.7	2.2

^aSFRC refers to single family residential construction.

^bOverall χ^2 statistic = 14.9; Cramer's $V = 0.19$.

^cOverall χ^2 statistic = 22.4; Cramer's $V = 0.16$.

* $p < .01$.

** $p < .01$.

H3

H3 states that *firms having increased sales volume in the declining SFRC market will be operating at a higher price point*. As shown in Table 5, H3 was not supported by the data ($p = .14$). Most groups had a plurality of firms producing medium-/high-end products, the exception being group 1 (SFRC ≤ 60 percent of production; sales volume off), which was nearly equally split between medium/high price point companies and low/medium price point companies. A possible explanation is that most secondary wood firms operating at lower price points have already left the U.S. market as imported products have increased their market share in lower priced categories. Most of the respondents were operating at medium-high to high price points, suggesting that much of the domestic secondary wood industry operates in higher price segments given globalization pressures from low-cost competitors. Another possibility is that consumers seek value during economic downturns and are willing to trade-off certain features in customized products for a corresponding reduction in price. The latter explanation seems consistent with DeDee and Vorhies (1998), who found that emphasis on production of high-quality products was negatively associated with financial performance for small firms during downturns. A final consideration is that a low-cost position within a niche is sometimes achievable by smaller firms focusing on narrow target markets (Porter 1980).

H4

H4 states that *firms having increased sales volume in the declining SFRC market are more engaged in marketing activities to extend sales volume*. As shown in Table 6, H4 was not supported by the data. Although differences in the marketing actions undertaken in 2007 and planned for 2008 existed among the groups (Wilks' $\lambda = 0.06$ for the

MANOVA), group 4 did not score highest on any of the marketing actions. In fact, group 4 firms tended to score the lowest on each action. The following differences were statistically significant: Group 4 was less likely to have entered global markets or improved product availability than group 1, group 4 was less likely to have taken action to design campaigns that addressed the specific needs of potential new customers than group 3, and group 4 was less likely to have developed new applications for existing products than groups 1 and 3.

An explanation to the unexpected finding that group 4 firms, which increased their sales volume in a declining market, were less likely to have undertaken the marketing actions investigated could be related to firm size, given that group 4 had proportionally more small firms than the other groups. Perhaps these marketing actions were more difficult for smaller firms to implement given resource constraints. This seems especially likely for the actions where group 4 differed from group 3 (firms also operating in the declining SFRC market but generally larger than group 4 firms), namely promotion aimed at new customers and developing new product applications (Table 6). It also was interesting that on no variable was group 4 significantly different from group 2, the other group with increased sales volume in 2007 (but in non-SFRC markets) and also the group with the highest proportion of larger firms. Perhaps these firms did not perceive a need to carry out the investigated marketing actions given that they were operating in stronger markets, even though resource constraints were less of a factor given their larger size.

Summary and Implications

There was support for the hypotheses that successful secondary wood products firms operating in the declining SFRC

Table 5
Price Point Position (within Primary Product Category) by Group

Price Point Category ^{b*}	SFRC ^a ≤ 60 Percent of Production; Sales Volume Off (Group 1)	SFRC ≤ 60 Percent of Production; Sales Volume Up (Group 2)	SFRC > 60 Percent of Production; Sales Volume Off (Group 3)	SFRC > 60 Percent of Production; Sales Volume Up (Group 4)
	(Percent)	(Percent)	(Percent)	(Percent)
Low/medium ^c	39.0	23.6	32.1	21.9
Medium	22.9	29.1	25.9	30.1
Medium/high ^d	38.1	47.2	42.0	48.0

^aSFRC refers to single family residential construction.

^bOverall χ^2 statistic = 9.6.

^cCombined categories of "low" and "low-to-medium."

^dCombined categories of "medium-to-high" and "high."

* $p = .14$.

Table 6
Marketing Actions Undertaken in 2007 or Planned for 2008 by Secondary Wood Products Manufacturers to Extend Sales Volume

	<i>p</i> Value	Means				<i>F</i>	<i>df</i>	
		Group 1	Group 2	Group 3	Group 4			Wilks' λ
Multivariate analysis of variance (MANOVA)	0.06					0.896	1.40	33, 1,214.5
Group								
ANOVA for dependent variables								
Enhanced our product's value by adding features, benefits, or services	0.56	4.0 ^a	3.9	4.2	4.1			
Reminded our customers through advertising and personal selling of the basic benefits of our products and services	0.64	3.8	3.8	4.0	3.8			
Developed differentiated product lines with features targeted to the unique needs of potential new customers	0.18	3.9	3.7	4.0	3.5			
Designed advertising or personal selling campaigns that addressed the specific needs of potential new customers	0.05	3.4ab ^b	3.5ab	3.7a	2.9b			
Developed and promoted new applications for our existing products	0.02	3.5a	3.3ab	3.6a	2.9b			
Enhanced our product's value by including it in the design of integrated systems	0.40	3.3	3.2	3.5	3.1			

Table 6
Continued

	<i>p</i> Value	Means				<i>F</i>	<i>df</i>
		Group 1	Group 2	Group 3	Group 4		
Built unique distribution channels to more effectively reach potential new customers	0.80	3.1	3.2	3.1	2.9		
Encouraged larger volume purchases (quantity discounts, frequent customer discounts)	0.45	3.0	3.1	3.3	2.9		
Designed service programs to reduce the perceived risks of new customers trying our products (installation, extended warranties)	0.50	3.0	2.8	3.1	2.7		
Improved our product's availability in existing markets by developing innovative distribution systems	0.10	3.0a	2.9ab	2.8ab	2.4b		
Entered global markets where our products are in an earlier stage of their life cycle	0.02	2.3a	2.0ab	1.8b	1.7b		

^aRating scale anchors ranged from 1 = strongly disagree to 7 = strongly agree.

^bGroup means with the same letter are not different based on Tukey's Honestly Significant Difference (HSD) test.

housing market were smaller and manufactured more fully customized products than their counterparts. However, semi-customization was not enough to warrant success; a statistical difference was found only for fully customized, made-to-order products. Smaller firms with the capability to manufacture products to order seem especially well-positioned to weather the current and future downturns in the housing market and possibly also to compete with offshore competitors. Another implication is that small firms will become increasingly important to understanding consumption patterns for hardwood lumber and other raw materials even though the availability of data to measure consumption by small firms can be limited (Bumgardner, Romig, and Luppold 2007). It also could pose challenges related to distributional efficiency for lumber manufacturers and wholesalers as they may need to reach proportionally more small customers in the future. For example, a U.S. hardwood sawmill owner, commenting on changes in the industry, was recently quoted, "It used to be I only had a few large customers on my Christmas card list, now I have hundreds of small customers" (Hardwood Review 2007, p. 16). These smaller secondary manufacturers will need to establish close relationships and lines of communication with their suppliers so that their raw material needs are understood clearly.

Interestingly, group 2 firms, which like group 4 firms had increased sales volume but presumably were operating in stronger markets (e.g., nonresidential construction and contract furniture), contained the highest proportion of larger firms. Group 2, with proportionally more large firms, had possibly achieved more market diversification and thus increased sales volume; economies of scale might also have helped these larger firms (Serrasqueiro and Nunes 2008).

There was no evidence that group 4 firms were employing the marketing

actions investigated as important to increasing volume in mature and declining markets. They were consistently less likely than their counterparts to be engaged in these actions, especially those that lost sales volume in 2007 (i.e., groups 1 and 3). Possibly, the small nature of firms in group 4, which might not have the resources necessary to increase exports or to develop new distribution channels, explains the difference (Huang and Brown 1999). Ellis and Pecotich (2001) found that for small and medium-sized firms (defined as 200 employees or fewer, much larger than the definition used in the present study), information regarding export opportunities is discovered largely through decision-makers' social networks with potential foreign buyers; such networks might be limited for most small secondary wood manufacturers. Perhaps group 4 firms, being generally smaller, were more flexible (Gilmore et al. 1999) and thus able to develop specialist niches within the SFRC housing market (e.g., made-to-order cabinets). By focusing on existing product applications, distribution systems, and customers (Table 6) in limited regional areas (Table 2), these firms seemingly were able to grow in the downturn by working closely with their customers. As stated by Gilmore et al. (1999, p. 33), "[our] findings suggest that the SME [small and medium-sized enterprise], by staying close to its customers, will have a keen understanding of their needs." Future research could look more closely at the factors sought out by customers seeking made-to-order production by smaller firms, such as craftsmanship (Bumgardner et al. 2005) and service provision (Araujo and Spring 2006).

In summary, this study provides evidence that smaller firms can increase their sales volume in a declining market, a feat that might prove more difficult for larger firms. Furthermore, consistent with theory that large firms possess

inherent advantages over small firms when scale economies are present, larger firms were more likely to have grown sales volume when operating in the stable and increasing markets investigated. As globalization has brought intense pressure on domestic manufacturers to pursue competitive strategies that concentrate either on general cost reduction or seeking out more protected markets, smaller firms have become more focused on niches, whereas many larger firms have followed strategies of lowering costs through outsourcing production. Thus, perhaps small firms were better positioned to weather the decline in overall demand for secondary wood products as the housing crises intensified. A consequence of outsourcing production to distant locations seems to be a loss of flexibility, yet flexibility can be leveraged to generate revenue during economic downturns by offering differentiated products to customers whose specific needs are met through customized production. In addition, inherent closeness to customers allows small firms to understand and respond to the potential trade-offs in quality, product options, and price during economic downturns. However, small firms apparently lacked the resources necessary to engage in many of the marketing activities to grow sales volume in declining markets, perhaps suggesting that such actions generally are most appropriate for larger companies.

Limitations

Readers should keep in mind the limitations of this study. As with most survey research, the results are based on a single respondent from each company; though the respondents tended to be upper management or company owners, the perspective of the single source might not necessarily represent the perspectives of other decision-makers in the firm. The measure of performance for the study was limited in that it was based on

change in sales volume for a one-year period, from 2006 to 2007. However, as Figure 1 shows, the market change in that span was somewhat dramatic so it is likely that the overall secondary wood products industry was negatively impacted during this period. Another limitation was that firm age was not considered; though other studies have shown that “new” firms outperform firms one year or older in age during declining market conditions (Kangasharju 2000), it is unlikely that a large proportion of firms in the sample were new firms by this definition. Also, the small firms in this study might best be considered very small as the categorical definitions were less than 20 employees and less than \$1 million in annual sales, respectively. The definition of “small” varies in the literature depending in part on the particular industries studied. Lastly, the population was from a single source, subscribers to *Modern Woodworking* magazine. Though this subscriber base is large and likely representative of the larger secondary wood products industry, some caution is warranted in generalizing to firms outside *Modern Woodworking* subscribers.

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