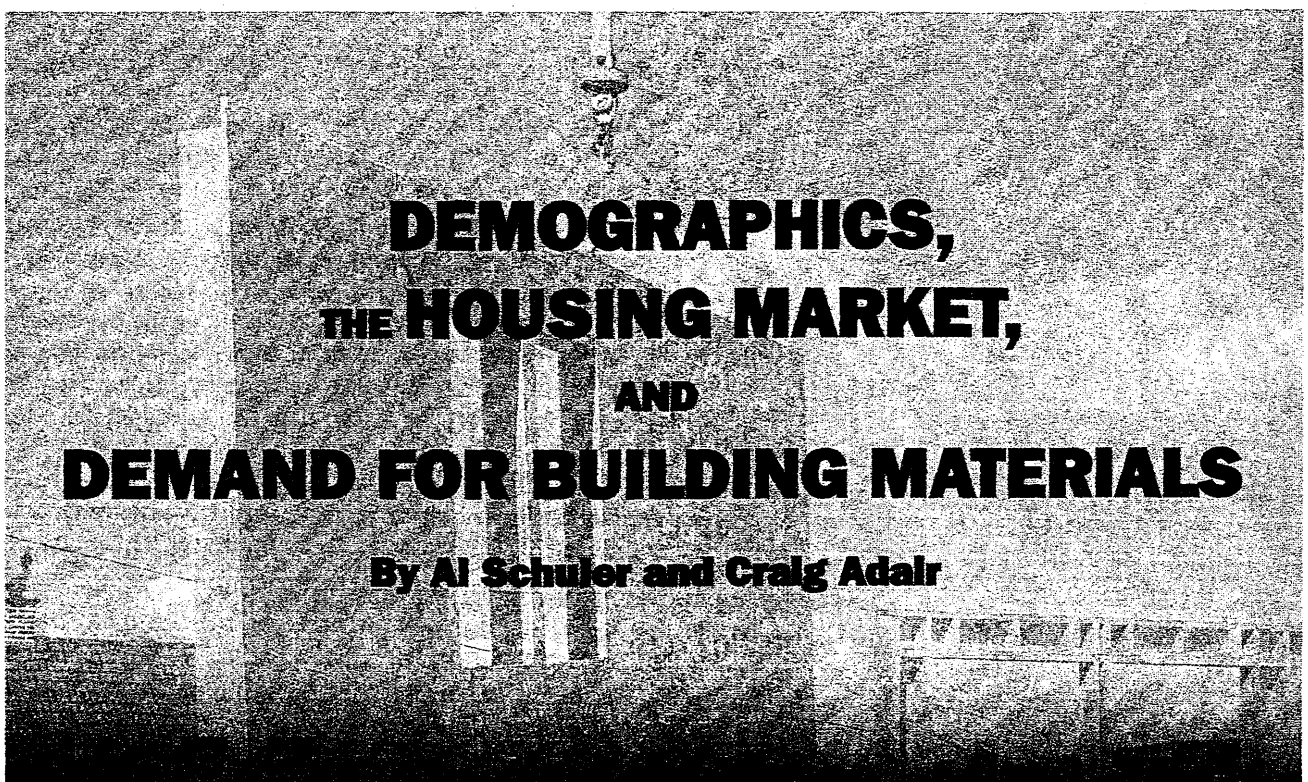


DEMOGRAPHICS, THE HOUSING MARKET, AND DEMAND FOR BUILDING MATERIALS

By Al Schuler and Craig Adair

Historically, housing has been critical to the health of the forest products industry since two-thirds or more of our structural lumber and panel products are consumed in new housing and remodeling. Likewise, it is important to the overall economy, accounting for one-fifth of GDP in 2001, and 40 percent of GDP growth in 2001 (Joint Center for Housing Studies 2002). The demographic foundations for housing are expected to be very strong during this decade, due in large part to the influx of immigrants over the past 20 years. Today, one in five U.S. households is headed by either a foreign-born individual or a first-generation American (Joint Center for Housing Studies 2002).

Demographic trends also suggest that our population is aging (Jones 1999, USBC 2002), and an aging population has important implications for labor supply, particularly skilled labor. Shortages are already forcing the homebuilding industry to speed up the industrialization process (building or "assembling" homes like we build/assemble automobiles and airplanes) in order to reduce labor costs and improve productivity to remain profitable (NAHB 1998). Industrialization will mean that more components of a home, such as floor trusses, roof trusses, wall panels, and prehung doors and windows, will be made in a factory and then delivered to a jobsite for installation. It could also mean that more steel and concrete systems will be adopted if the wood products industry fails to shed its commodity orientation and fails to assist the building industry in making the transition to industrialization as painless as possible.

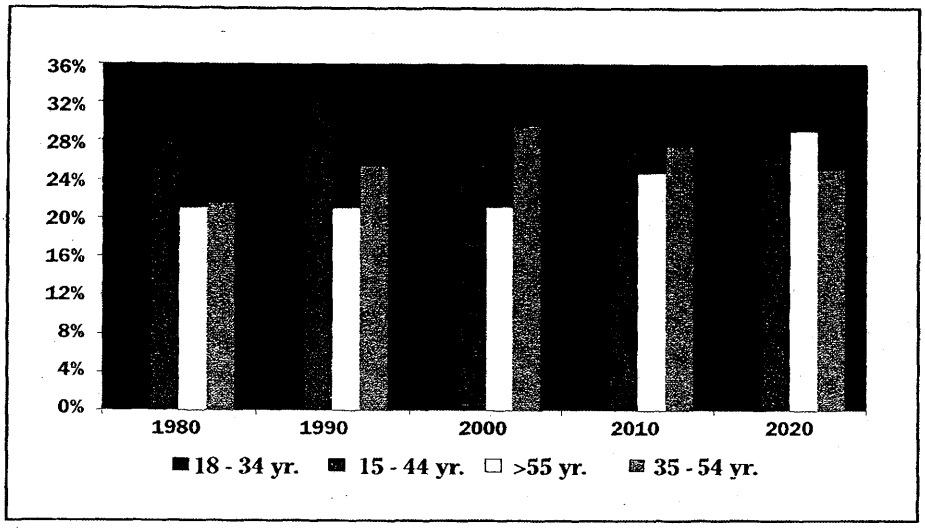


Figure 1. – Historical U.S. population and projections by specific age groups (USBC 2002).

Remodeling expenditures and related building material demand should also get a boost from favorable demographic forces; the aging housing stock; and the fact that renovations, additions, and maintenance to America's housing stock consumes almost as many lumber and panel products as new housing (APA 2002a). According to recent American Housing Surveys (USDC 2000), people aged 35 to 54 are the prime consumers engaged in remodeling, and through the end of this decade, that group will make up about 30 percent of the population. The same survey tells us that there are about 120 million housing units with an average age of about 30 years, suggesting that remodeling markets will be robust for many years to come.

According to Professor David Foot, author of *Boom, Bust, Echo* (1996), "Demography – the study of human populations – is the most powerful and most underutilized tool we have for understanding the past and foretelling the future." Foot goes on to say that demographics can explain two-thirds or more of everything. The rationale is as follows. Demographic forecasting is based on two key pieces of information: 1) the number of people in each age group; and 2) the probability that a person within a specific age group will participate in a given behavior, such as buying a home or car, remodeling a home, or buying furniture (called participation rate). Participation rates are usually determined from an analysis of historical demand data, if available, or from consumer surveys if more appropriate. For example, we can analyze historical data to tell us which part of the population is most likely to purchase, rent, or even remodel a home. For example, peak spending on starter homes is age 33; remodeling and furniture expenditures peak at age 40; spending on custom homes/trade-up homes peaks at 44; vacation homes at 52; and peak spending on retirement homes is age 65 (Dent 1999). Peak overall spending is at age 46.5 years. We can determine with some certainty the answer to the number of people who will end up in each age group based on knowledge of birth rates, death rates, and some basic assumptions regarding net immigration rates. Because behavior patterns can change over time due to changing economic conditions or evolving social values, we can't determine participation rates with the same degree of certainty. For example, two trends that impact housing demand are more women getting married later in life as they juggle careers with parenthood, and more single-parent households due to the increase in divorce rates.

Figure 1 shows the distribution of the population between 1980 through 2000, and a forecast to 2020. By combining what we know about housing demand with demographic projections, we are provided with a solid basis for determining the potential for future home sales, remodeling demand, demand for furniture, and so on. For example, we know from the American Housing Surveys (USDC 2000) that the prime house-buying age group is that between the ages of 25 and 44. Figure 1 also tells us that America is aging and this has important implications for the economy, the housing market, construction techniques, and demand for building materials.

Particularly in the past decade, the rate of immigration has been phenomenal (Fig. 2). And because most immigrants don't buy homes until they are established (that usually takes about 10 years), the large influx of immigrants during the 1990s will help drive demand in this decade. Immigration began to escalate in the 1980s for many reasons, two of which are the growing attractiveness of the United States as a place to live, and relaxation of immigra-

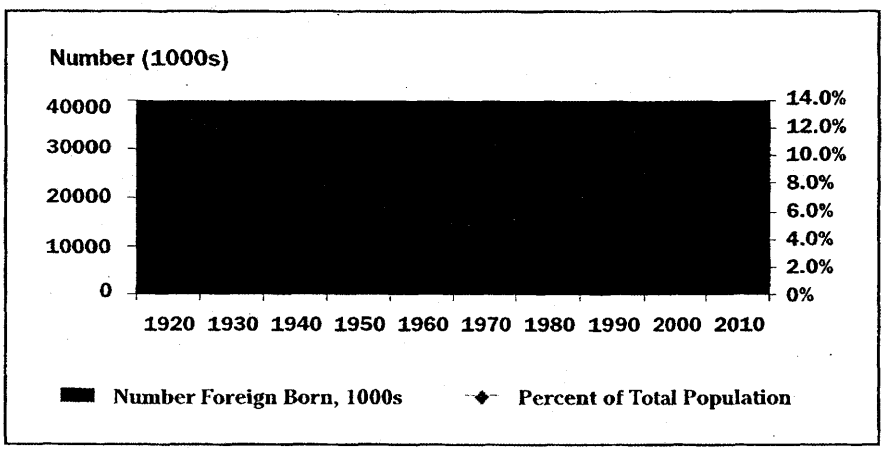


Figure 2. – Strong immigration beginning in the 1980s is positive for housing in this decade (USBC 2000).

tion laws due in part to the growing labor shortages in the United States. The "baby bust" of the late 1960s and 1970s and the aging baby boomer population would have resulted in fewer Americans of peak household formation age today (25 to 34 for starter homes and rental housing, and 35 to 44 for "move-up" homes) if not for the impact of immigration. Likewise, the falloff in the 35 to 54 age group would have been much steeper if not for immigration. As noted by Carliner (2001), "Immigration has smoothed out the differences in the age distribution implied by the historical pattern of births." Many analysts had predicted a fall in housing demand in the 1990s as the population aged, but they underestimated the sizable and very positive immigration impact.

Demographic trends influence almost every facet of the residential construction market, and because demographics are relatively easy to understand, we are able to estimate some of the more important impacts as listed below.

Housing Demand

The demand for housing is based on demographic factors (net household formations, births, deaths, and net immigration), net removals, and change in vacancies. Demographic factors historically account for approximately two-thirds of demand, while replacing homes that are demolished (net removals) plus demand for vacation homes and inventory (change in vacancies) make up the other third (NAHB 2001a). Demographic demand is shaped primarily by shifts in the age and family composition of the adult population. These shifts have been heavily influenced by immigration during the past two decades. Demographic factors determine what many economists refer to as "trend" or sustainable demand for shelter (Joint Center for Housing Studies 2002). Macroeconomic factors such as interest rates, consumer confidence, income growth, and employment status affect short-term fluctuations about the trend. A demand forecast provided by the National Association of Home Builders (NAHB) shows that housing demand should approach 2 million units annually in this decade (Fig. 3). This highlights several important trends: 1) the forecast shows total demand approaching the peak years reached during the 1970s; 2) the household formations component is projected to strengthen this decade; and 3) net removals demand will increase, driven by the fact that the existing housing stock (approximately 120 million units) is aging and more older homes will be demolished this decade (NAHB 2001b).

Housing Mix

It is important to understand the housing mix (conventional single-family and multi-family units, and HUD-code manufactured/mobile homes) and how it relates to demographics. The conventional category includes homes that are "stick-built" on the site, and also homes that are built in varying degrees in a factory and then transported to the site (such as modular, panelized, log construction, etc.). These homes must comply with the building codes of the locality in which they are built (e.g., the International Residential Code). HUD-code manufactured homes (in the past, these were called mobile homes) must comply with standards issued by the U.S. Department of Housing and Urban Development. Demographics influence this housing mix. Younger people generally either rent or buy conventional starter homes or HUD-code manufactured homes. As they get older and more established, the family gets larger and they transition to "move-up" and even larger "custom or luxury" homes. Increasing home size has been one of the most powerful influences on wood product demand in the post World War II era. Most of the household heads of the growing immigrant population are in the 25 to 35 age

group and this supports demand for rental housing (multi-family) and starter homes. The aging baby boomer population (still one of the largest groups in the population at 75 million strong) is in their peak income-earning years, thus supporting a strong custom home and vacation home demand. The "Echo Boomers" (children of the boomers) are also a large group, with over 96 million, and the front wave (ages 20 to 25) in this group will be entering the housing market over the next 10 to 15 years. This will help revive the rental market and the starter home demand later this decade.

Remodeling

Spending patterns for remodeling change with age (USBC 2001, Joint Center for Housing Studies 1999). The group that spends the most on remodeling (ages 35 to 54) has grown by 17 million since 1990, and will reach 83 million by 2005. Almost one-third of the population will fall into the 35 to 54 age group over the next decade. Therefore, demographically speaking, remodeling expenditures should remain strong. This is particularly true for the wood-intensive "improvements" category that includes room additions, re-roofing, and kitchen and bath remodeling.

Labor supply

Demographic trends impact population distribution, the age distribution of the employed labor force, and therefore, the availability of skilled labor (NAHB 1998). Labor-intensive industries like residential construction, therefore, must adjust to an aging workforce so prevalent not only in North America, but also in Europe and Japan. The labor force is clearly aging, with 60 percent of the labor supply between 35 and 64 years old (Economagic LLC 2001). Furthermore, as seen in Figure 1, the framing crew labor pool (ages 18 to 34) is shrinking. In the 1980s, they made up almost 31 percent of the population, but today, their share is below 25 percent, and is expected to continue to shrink.

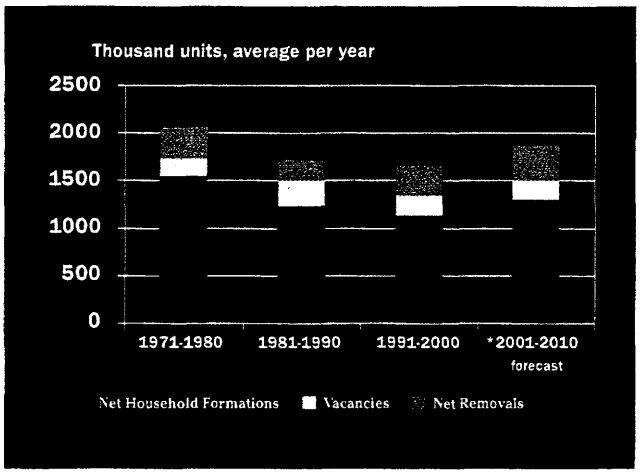


Figure 3. – Housing demand forecast approaches 2 million units annually (NAHB 2001b).

Demographics have a huge impact on the housing market and that market is critical to the economic well being of the wood products industry. Residential construction, including new housing and remodeling, uses more than two-thirds of the softwood lumber and structural panels consumed in this country (APA 2002a). When we include the industrial softwood lumber, hardwood lumber, and composite products (e.g., medium density fiberboard, particleboard, etc.) that go into furniture, moldings, and other housing-related items, housing is the overwhelming driver for wood products demand. Furthermore, housing accounts for about 20 percent of our nation's GDP as follows: residential investment for new housing and remodeling averages 4 percent of GDP; rent payments and imputed benefits generated by owner-occupied properties brings us to 12 percent of GDP; and when we add in spending for heat, utilities, home operation, appliances, and furnishings, the total contribution of the housing sector exceeds 20 percent of GDP (Joint Center for Housing Studies 2002).

Demographic support for housing in this decade is solid, particularly the wood-intensive single-family sector. In fact, total demand, including HUD-code manufactured home shipments, should approach the 2-million-units-per-year level achieved during the 1970s. More important, because homes today are larger (single-family homes are 27 percent larger than they were in 1980), total residential square footage of floor area in this decade will be significantly higher than the 1970s, even though more homes were built then. Single-family homes also make up a higher percentage of housing demand today: 67 percent of conventional housing in the 1990s (80% during 1998 to 2002) compared with 54 percent in the 1970s. Single-family housing is expected to be at least 65 percent of conventional housing demand in the decade we're in, and therefore will remain the single most important driver for building materials demand (NAHB 2001b). In 2001, single-family construction used more than 19 billion board feet (BBF) of lumber while 1.7 BBF went into multi-family and 1.1 BBF went into HUD-code hous-

ing (RISI 2001). In addition, single-family homes are the largest market segment for I-joists, laminated veneer lumber (LVL), and glulam beams (APA 2002b). Table 1 indicates the importance of single-family construction in determining overall demand for structural wood products.

Those same demographic studies that tell us we should expect strong housing demand (and therefore a healthy outlook for building materials) for the rest of this decade, are also telling us to expect long-term labor shortages (NAHB 1998, Jones 1999). Specifically, the percent of the population in the construction age group (ages 18 and 34 are where most of the framers and carpenters come from) will decrease as the population ages (Price-Robinson 2000, NAHB 2001a). Figure 1 shows very clearly the shrinking percentages of young people in the workforce. Demographics are not the only cause of labor shortages. Surveys of builders by the NAHB (1998) suggest a variety of reasons for general labor shortages in the construction industry: 1) poor job security; 2) poor employee benefits due to the relatively small size of most construction firms; 3) unattractive working conditions (including the seasonal and cyclical nature of the construction business); 4) poor image; 5) the fragmentation of the industry, which makes it difficult to implement solutions for labor shortages; and 6) the lack of opportunity for training in the building trades, which aggravates labor shortages and contributes to the poor quality of existing labor.

The significant amount of waste created when building a typical single-family home today is also causing concern. For every single-family home built in the United States, approximately 8,000 pounds of waste are generated. Wood waste represents 3,000 pounds, or 38 percent, of that waste (NAHB 2002). Getting rid of construction waste is becoming a big issue with builders as disposal fees rise steadily throughout most of the country. Waste on the jobsite costs builders twice: once when it is purchased, and again when it is hauled away for disposal. Although disposal is only about .5 percent of the cost of a single-family home, the average builder's pre-tax profit margin is less than 10 percent, and this makes small gains important (NAHB 2002). These concerns have made the trend toward industrialization attractive. When housing components are factory built, there is less waste on the jobsite because the parts or components are pre-manufactured to minimize both waste and site construction time.

The U.S. housing industry is undergoing an industrialization process like many other industries in the manufacturing sector (O'Brien, et. al. 2000) Specifically, NAHB (1998) has recommended the following changes: 1) embrace new management techniques and computer technology to reduce the cycle time of construction; 2) promote more systematic integration of housing components on-site by increasing their modularity, flexibility, adaptability, and connectivity; 3) develop innovative technologies that combine functions traditionally performed by separate subcontractors, thereby reducing the need for separate trades and steps in the construction process; 4) prefabricate housing components under controlled conditions of the factory to simplify assembly in the field. In essence, we may soon build houses like we build cars, that is, builders will assemble components supplied by their supply partners. The "assembly plant" may still be the jobsite, but more and more of the house is being assembled from factory-built components. A specific example is the recent agreement between Pulte Homes and Louisiana-Pacific (L-P) Corporation. The 3-year agreement provides Pulte Homes (one of America's largest builders) with set purchasing terms on LP I-joists, LVL, and rim boards, which are all used in framing a house (Beck 2001). The article goes on to say that "Pulte Homes believes the deal will allow it to reduce costs by $3 million to $5 million over the next 3 years, mainly because the engineered wood products require less labor, use less lumber, and cut down on waste."

In the housing industry, most of the "changes" to date have been in material substitution for conventional lumber and panel products. Conventional wood products are losing market share to new and improved wood products like engineered I-joists, roof trusses, LVL, and engineered wall panel systems (Schuler and Adair 2000). Engineered wood I-joists have now captured over 40 percent of the wood floor joist market, up from 20 percent in 1995 (APA 2002a) and the dollar value of shipments of lumber components (roof trusses, wall panels, and engi-

Product	Share
OSB	57%
I-joists	73%
Glulam	57%

Table 1. – Single-family share of structural wood products consumed in the United States in 2001 (RISI 2001, APA 2002b).

neered floor systems) has doubled in the past 10 years (Fig. 4). More ominously, non-wood-based systems like autoclaved concrete wall systems and steel framing systems are capturing some market share (Price-Robinson 2001).

The steel industry, in particular, has radically changed their approach in going after the residential framing market. Almost a decade ago, they boldly predicted steel would capture 25 percent of the framing market share by 2000, but it didn't happen, partly because they didn't give the builders the tools they needed to adopt steel framing. But, in late 1998, the American Iron and Steel Institute created the North American Steel and Framing Alliance (NASFA 2001) and committed $100 million over 5 years to remedy past mistakes (Price-Robinson 2001). For example, this time, span tables have been developed for floor framing and beam/header applications; products have been standardized to reduce confusion to the builder, thus removing the important engineering barrier; and they have gotten prescriptive measures into the model building codes, again making it easier for builders to consider switching to steel framing. In addition, they are obtaining some support and endorsement from organizations like the NAHB. The steel industry's goal is to make it as "painless as possible" for the homebuilder to initially try, and eventually adopt, the steel framing system. Residential steel framing market share is approaching 4 percent for wall framing (7.5% for non-load-bearing interior walls), 2 percent for floor joists, and 1.3 percent for roof systems; the total framing market share now exceeds 2 percent. With this more realistic approach, steel is achieving alarming success with tonnage consumed in residential framing applications up threefold (from 100,000 tons to over 300,000 tons) in the past 4 years.

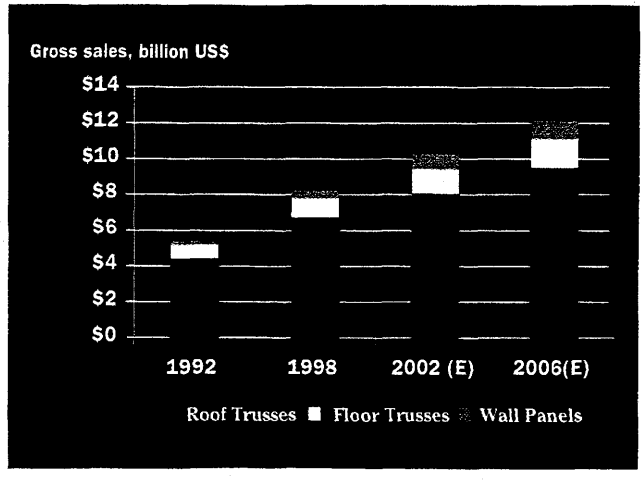
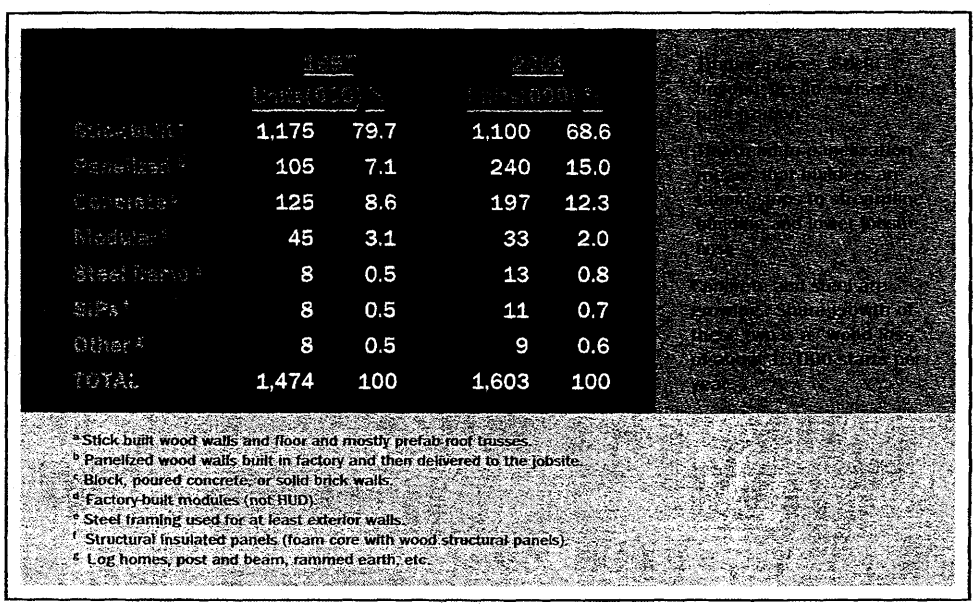


Figure 4. – Product substitution – conventional lumber loses market share to new wood products (Grundahl 2001).

O'Brien, et. al. (2000) suggest that, although home construction has changed little in the past 150 years, globalization and the response to rising labor costs is now forcing more incremental changes. For example, site-built "stick" building, which represents about 69 percent of conventional housing starts (down from 90 percent 20 years ago) has been losing market share to factory-built technology (Fig. 5). Many housing analysts (O'Brien 2000, Hallahan and Assoc. 2000, Taylor 2001) agree that site-built construction will remain the dominant system, with other systems acquiring modest additional market share over the next decade. Stick-built systems will remain predominately wood based, although steel is expected to make additional inroads by substituting steel studs and joists for their wood counterparts. Other wood-based systems, such as modular, log, and dome homes will also gain some share, as will steel-based and concrete systems, but stick-built systems should maintain a major share (Taylor 2001).

The biggest gains over the past several years, and a trend that is expected to continue, have been in the use of panelized components (Fig. 5). Panelized housing market share of conventional housing has doubled in the past 4 years, growing from 7 percent in 1997 to 15 percent in 2001. In fact, if panelized (both stud wall and structural insulated panels [SIPS]) continue to grow, stick-built systems (defined as stick-built walls with factory-built roof trusses) will fall well below today's 69 percent share. Pulte Homes and other large builders are taking panelization a step further to include factory-built interior and exterior walls, and floor panels (Perez 2002). Furthermore, some builders prewire the wall panels for electricity and attach the drywall before being trucked to the jobsite for final assembly. Concrete basement walls can be poured and cured at factories to be pieced together on a building lot at the builder's (and often the weather's) convenience. Staircases, exterior walls, and structural beams, are also being built in the factory. Why? Because it saves time and money, and helps maintain a high quality of construction. According to Perez (2002), panelization is gaining speed partly because the quality of the components has vastly improved in recent years, but mostly because of the shortage of skilled labor on construction sites.

The customized society of today (e.g., Starbucks coffee in lieu of supermarket coffee; multi-functional cell phones; unique vacation packages; IKEA custom-designed furniture; $2,000 washers/dryers in lieu of a



Stick-built[a]	1,175	79.7	1,100	68.6
Panelized[b]	105	7.1	240	15.0
Concrete[c]	125	8.6	197	12.3
Modular[d]	45	3.1	33	2.0
Steel frame[e]	8	0.5	13	0.8
SIPs[f]	8	0.5	11	0.7
Other[g]	8	0.5	9	0.6
TOTAL	1,474	100	1,603	100

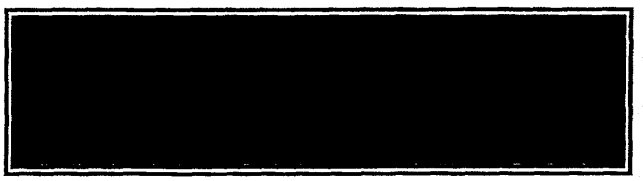
[a] Stick built wood walls and floor and mostly prefab roof trusses.
[b] Panelized wood walls built in factory and then delivered to the jobsite.
[c] Block, poured concrete, or solid brick walls.
[d] Factory-built modules (not HUD).
[e] Steel framing used for at least exterior walls.
[f] Structural insulated panels (foam core with wood structural panels).
[g] Log homes, post and beam, rammed earth, etc.

Figure 5. – Housing starts by building method (APA 2002b).

standard $700 pair; luxury cars and SUVs in lieu of the standard Chevy and Ford) is made up mostly of aging, wealthy baby boomers, and there are 75 million of them. We are starting to see more builders offering prospective buyers the opportunity to "custom design" their own home. The key to reasonably priced custom-designed homes is interchangeable component (modular) building blocks like panelized wall systems, engineered roof and floor systems, and expert estimating software, which gives customers pricing on custom design changes (often within 1 hr.). Wilshire Homes in the San Antonio/Austin area is developing a database of customization amenities that will allow customers to view their customized changes on a computer when purchasing a new home (Wilshire Homes 2002). Toll Brothers is another custom homebuilder that allows a certain flexibility in designing a home, including curved staircases, solariums, guest suites, and various floor plans and roof designs (Toll Brothers 2002).

Another factor that will impact the rate at which industrialization takes place is the recent trend to consolidation in U.S. homebuilding (Fig. 6). Consolidation rationale is being driven both by opportunities and problems facing the homebuilding industry. The most identifiable and obvious trend is the move to large national builder status and away from smaller regional builder status. Here is the rationale as spelled out by Pulte Homes, North America's largest builder of conventional homes: 1) lower capital costs (important because 65% of a builder's assets are tied up in inventory); 2) operating and overhead efficiencies; 3) land control (land development costs often exceed 25% of the cost of a new home today; 4) brand recognition (the ability to sell the same customer a starter home, move-up/custom home, and a retirement home, in different regions of the country; and 5) deeper pockets (larger builders have money for R&D,. product development, etc.).

The trend to large national builders will also have an impact on the distribution of building materials. For some clues, just look how Home Depot and Lowe's have changed the distribution of wood products to the do-it-yourself (DIY) market. Large national builders will be looking for suppliers who can grow with them, and they will dictate more and more how product will flow to the builders, just like the homecenter stores now dictate how product flows to them. Home Depot and Lowe's are already building "Pro Stores" to capture the professional builder business.



The demographic information and emerging trends just discussed are obviously important to the forest products industry. We decided to contact several industry marketing executives to gather their thoughts and ideas and to discuss whether industry has been recognizing these trends. Also, there was the possibility that the interviews would highlight other trends that the industry is concerned about. Interviews were conducted with 10 marketing executives from some of the largest North American forest products industry companies (Adair and Schuler 2003).

Demographic Trends and Labor Shortages

There was general agreement among the marketing executives that labor shortages should lead to more home fabrication or component part fabrication off the jobsite, in a way that may reduce skill requirements or provide a more attractive work atmosphere.

There was recognition that younger people entering the workforce have the perception that craft-type or manual labor is not as exciting as work with automation and technology. The economy and technological advances of the 1990s have given younger workers more choices. At the same time, geography will likely play a part in the rate of technical change. Some believed that regions such as the South still contain an abundant supply of labor willing to work on the jobsite and they have the skills necessary to support stick-building for some time to come.

Jobsite Waste

While the executives realized that jobsite waste is not good, they don't see builders or the distribution channels asking manufacturers to solve the problem. They believe that wood products are still relatively low cost and a good value. There was recognition that any wood waste means that there is lost utilization of forest fiber and this is not good for the industry. There was also recognition of the growing concern about "green building" and sustainability of construction materials and any product with significant jobsite waste could receive a poorer "green rating" than another material that doesn't have a waste stream problem. Some were quick to point out that waste can be managed more effectively in a factory environment.

Consolidation in the Homebuilding Industry

The marketing executives interviewed were quite aware of recent trends in builder consolidation. However, there was a wide variety of opinions about what this will mean for forest products manufacturers. There was a bit of skepticism about how fast consolidation will happen in the future. Some had the opinion that large production builders would have a difficult time supplying the need for custom homes since custom homes are generally not suitable for mass production. Others gave examples of custom homes being manufactured by large builders using mostly component wood systems. It was recognized that consolidation increases the buying clout of large builders. Large builders now ask for rebates when they use one product brand in all of their homes.

Most thought that geography would always be a problem when it comes to obtaining large quantities of materials for a large number of homes. Regional builder offices still tend to be operated by autonomous managers who choose the products they want from the nearest pro dealer or contractor yard that caters to the professional builder and not the DIY trade. Simple logistics still make it easier to obtain wood products from the nearest pro dealer and these companies are still providing a valuable function for large builders. For the vast majority of transactions, the historical supply chains have not been broken.

Industrialization

The marketing executives grasped the concept of industrialization and understood it to be the use of currently manufactured items such as SIPs, fabricated wall sections, fabricated roof trusses, and prehung doors. Those familiar with northern and western markets recognized that the use of factory-built wall panels was growing, while those more familiar with southern markets didn't see much use of panelized walls. Most did not see the growth of factory-made components really affecting their business today. However, most thought that as industrialization emerges, there will be more stand-alone component businesses, more large builders with their own factories, and more pro dealers making components.

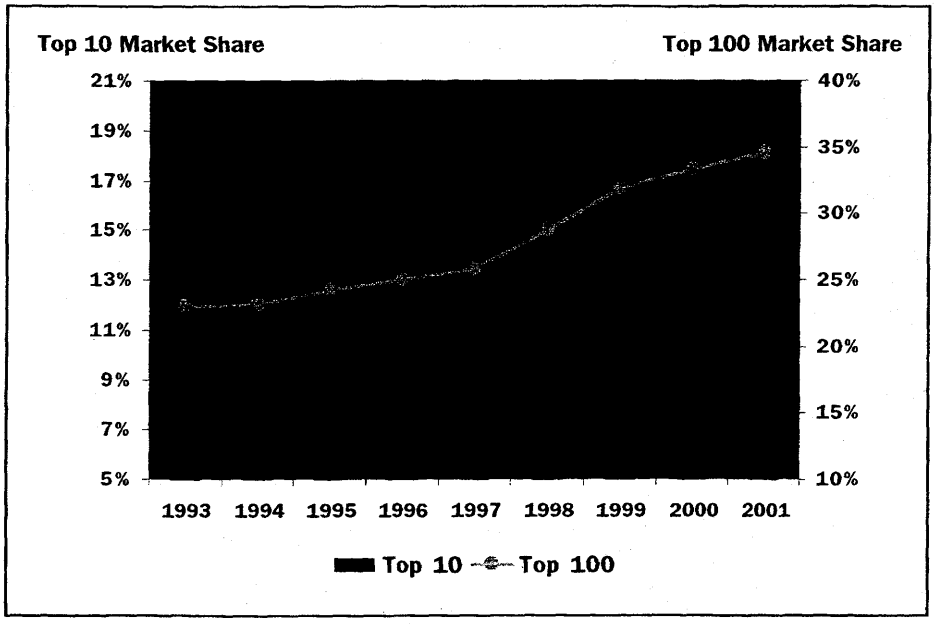


Figure 6. – Consolidation trends in U.S. homebuilding (Eisenberg and Benshoof 2002).

At some point in the future, primary lumber and panel manufacturers may re-configure products for component manufacturers. However, component manufacturers will need to grow and be viewed as an industry with significant buying power before primary wood products manufacturers will be willing to do more "cut-to-size" or provide other services for component manufacturers.

Additional Insights

The marketing executives stated that while some pro dealers, stand-alone component manufacturers, and builders are making components, it's not yet clear how the delivery channels will develop in the future. The marketing executives recognized that buying power is slowly shifting toward the builder. Component manufacturers, large dealers/distributors, and the mills hold less power to simply manufacture or deliver what they want. They foresee more "supply chain linkage" in the future that will drive the buying process. This will eventually result in mill orders responding to the builder's list of materials for a large number of homes. One executive speculated that consolidation of builders and members of the distribution chain could even contribute to more consolidation of forest products companies. If forest products manufacturers remain regional and fragmented they will be less likely to properly service homebuilding, their largest market.

Executives offered other trends that will affect them in the future. They said that some builders are pushing for more "installed components," beyond just windows and doors. Some are asking pro dealers for installed floor systems or complete framing packages. Builders want to spend more time with financing and customer relations and less time finding and training jobsite labor. This will push the labor factor away from the jobsite and into factories.

All agreed that demographic trends appear to be influencing the way everyone does business. Builders want to drive more cost out of the system and the use of components reduces the time needed to build a home. This is leading to more efficient distribution channels and more efficient delivery of components made with higher quality products.

The bottom line is that the housing industry will partner with those building material suppliers (manufacturers and distributors) who understand their need to automate, cut costs, and reduce the cycle time at the building site.

There appears to be an opportunity for the wood products industry to capitalize on the demographic trends discussed in this article. Potential strategies could include the following:

- The forest products industry should realize they have competition in all markets, and that many wood products are at the mature or declining phase of the product life cycle and new products must be developed to take their place.
- Since wood building materials constantly compete with alternatives in the marketplace, the industry must remain competitive by getting more involved with the housing industry and the "supply chain" to homebuilders, that is, work more closely with them to help solve their problems, directly, or through trade associations. The bottom line is that the housing industry will partner with those building material suppliers (manufacturers and distributors) who understand their need to automate, cut costs, and reduce the cycle time at the building site. Builders and their associations, like the NAHB, have indicated that wood framing is not sacrosanct. Demographics and current trends indicate that engineered building components and systems will be a big part of the housing industry in the future, and to gain market share, component suppliers must work with builders to understand their needs. The winning material (steel, wood, concrete, plastic?) will be the one that allows the transition for the housing industry to be as painless as possible, by developing and using more standardized high quality products, prescriptive methods (e.g., relevant span tables), design software, and cost-estimating software.
- The wood products industry must jettison their commodity orientation, at least when developing and marketing products and systems to the housing industry. If the need for this change is not recognized, other building materials may be the ones to help the housing industry build homes more efficiently and profitably. That would be a great loss, because the demographics tell us that we will need lots of new housing over this decade.

Builders are being challenged to find the building materials and labor needed to house America in this

decade. This presents an opportunity for all building material suppliers.

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