The Housing Market and Demand for Building Materials : Challenges and Opportunities

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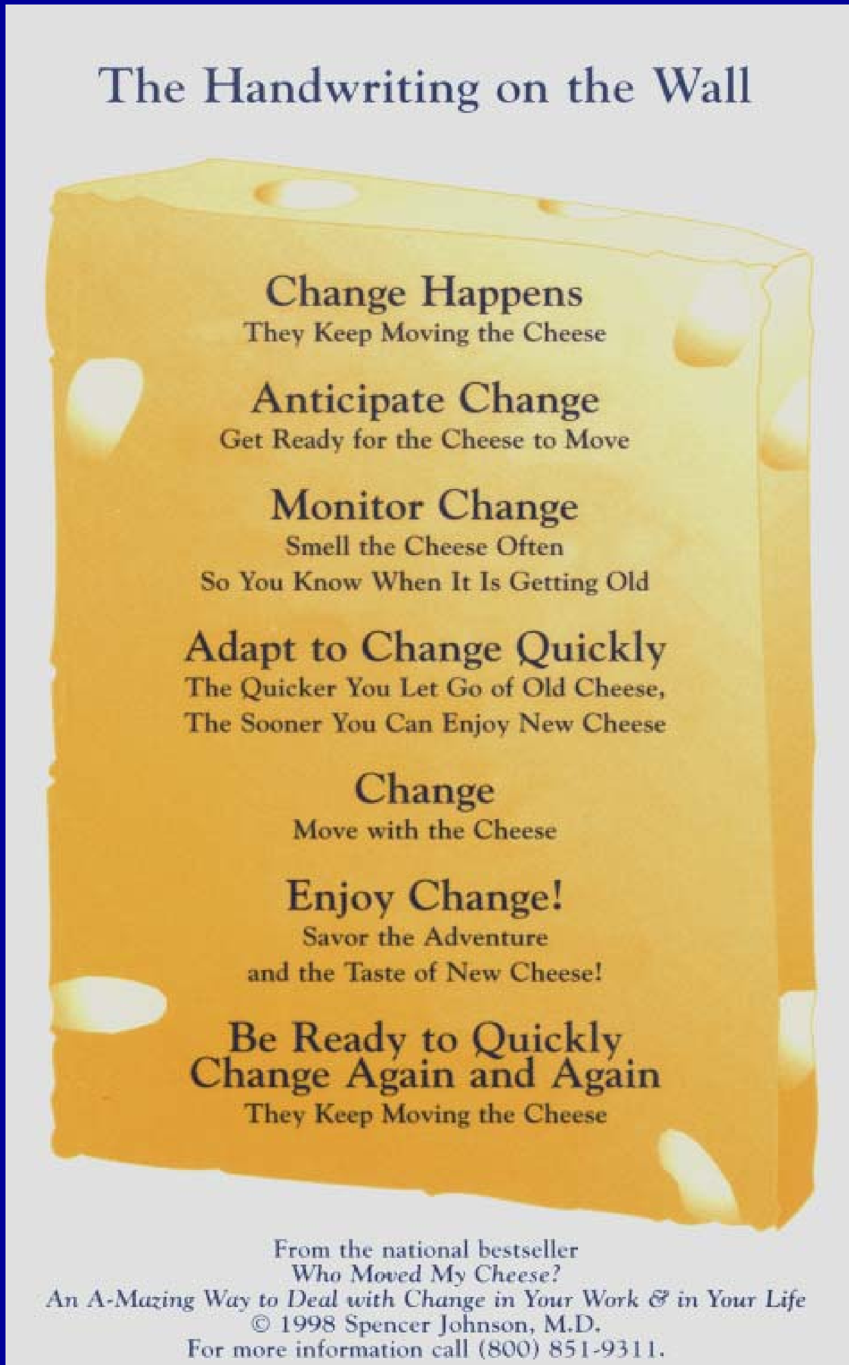


Changes that will impact demand for residential building materials

- Demographics - demand for shelter
- Housing Construction
  - industrialization
  - substitution
- Globalization
  - new competitors
  - are we competitive in commodities?
- Structural panels & EWPs
  - D/S & product life cycles
- Satisfy key customers by adopting correct business model – innovation is key!!!!

Part I - Housing Demand

75% of structural panels and lumber
Are consumed in residential construction
Activity (new housing plus R&A)

Long Term (Trend), U.S. Housing Demand Depends on 3 major factors

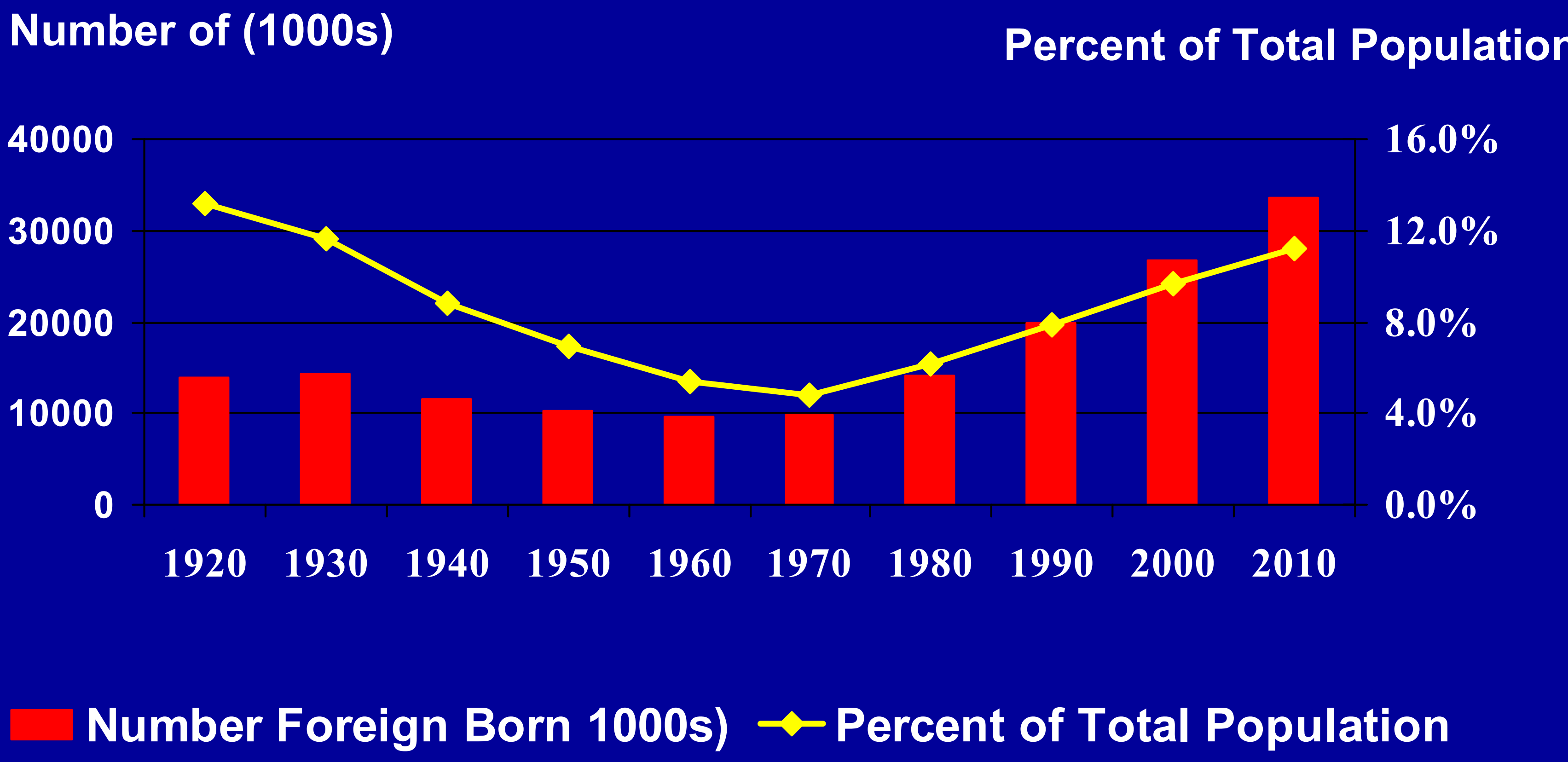
	NAHB Estimate [1]
Net household formations [2] Population size and age, divorce, marriage, immigration	1.4 – 1.5 million
Net removals [3] Demolition and conversion to non-housing use	.3 - .4 million
Net vacancies – includes second homes[4]	.1 - .2 million
Shelter Demand (include HUD code)	1.8 – 2.1 million

[1] Middle and high immigration forecasts put the range at 1.82 – 2.10 million.
[2] Immigration has been the hardest to predict. More than 1990's.
[3] Removals should increase by 100,000 per year from the 1990's.
[4] Second homes should grow as the population ages.

Source: Seiders, David. Chief Economist NAHB.

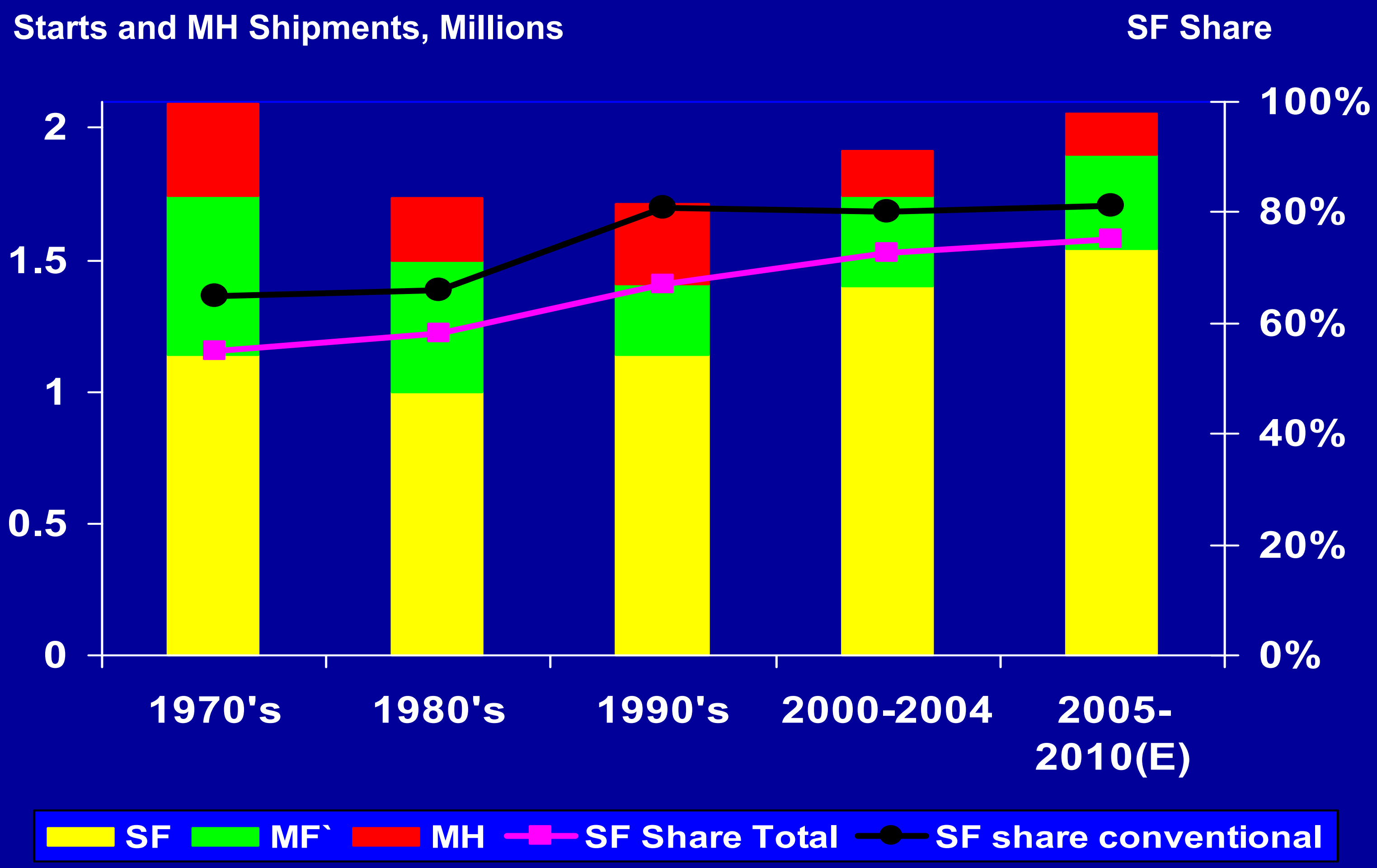
Stronger Than Expected Immigration Will Lift Housing Demand

Immigrants bought 20% of new homes last 5 years



Source: U.S. Bureau of the Census

Single Family Drives Housing Demand
Share up from 55% in 70's to 74% this decade
Why – Affordability, Demographics & Immigration!!!



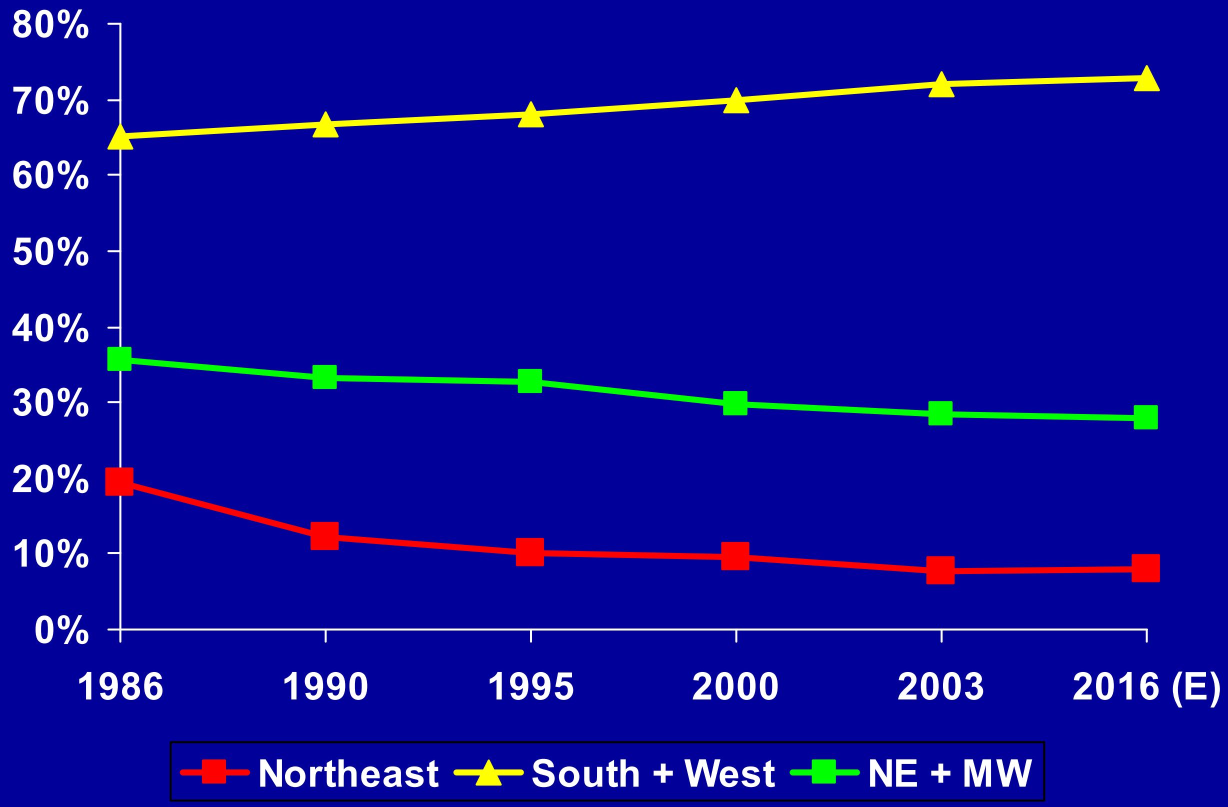
Source: Consensus forecast – NAHB, major banks)

Regional shifts in housing demand

Graying population will keep moving south & west - 50% of population growth between 2000 and 2030 will be in FL, TX, and CA

Today, 72% of SF starts are in the West (26%) and South (46%)
NE down from 20% in 1986 to 7.8% today

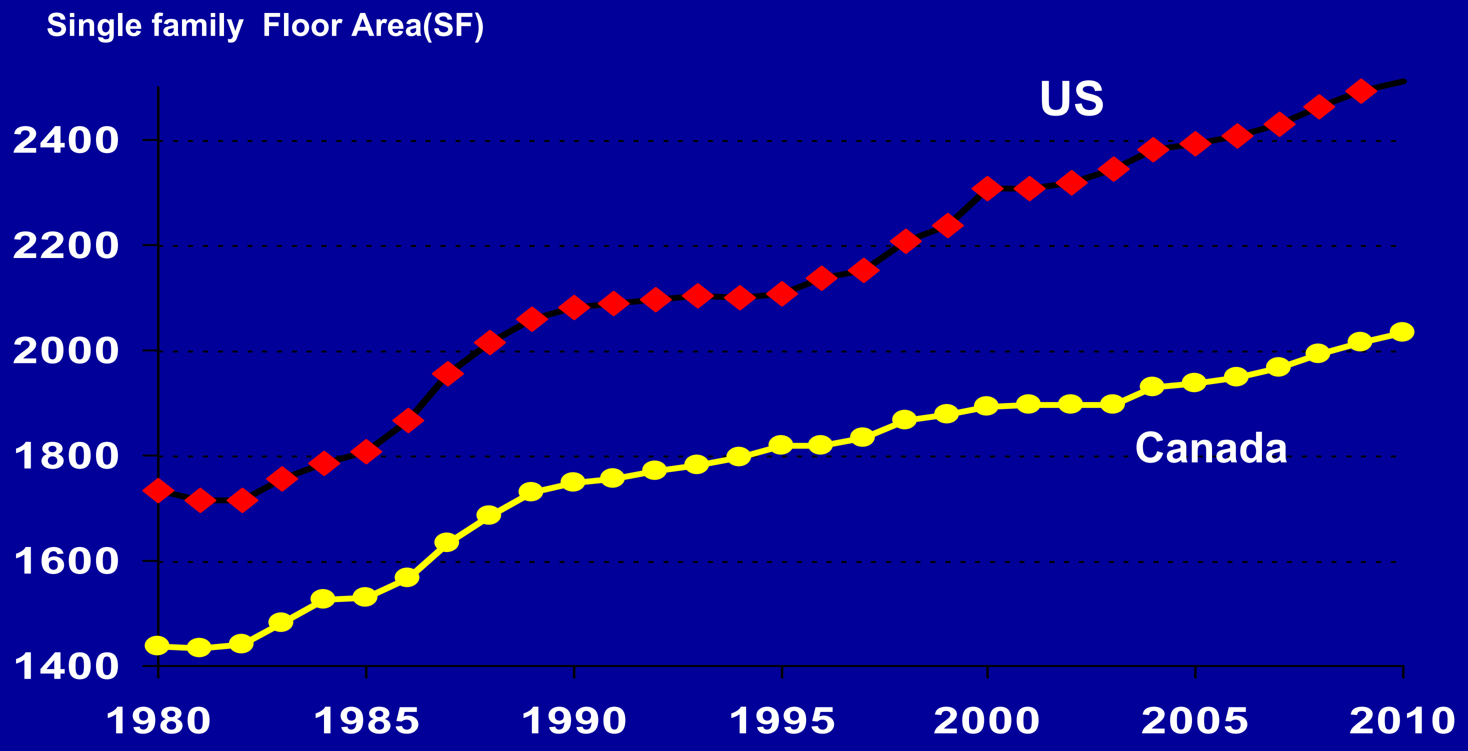
Share of Single Family Housing starts



Source: RISI

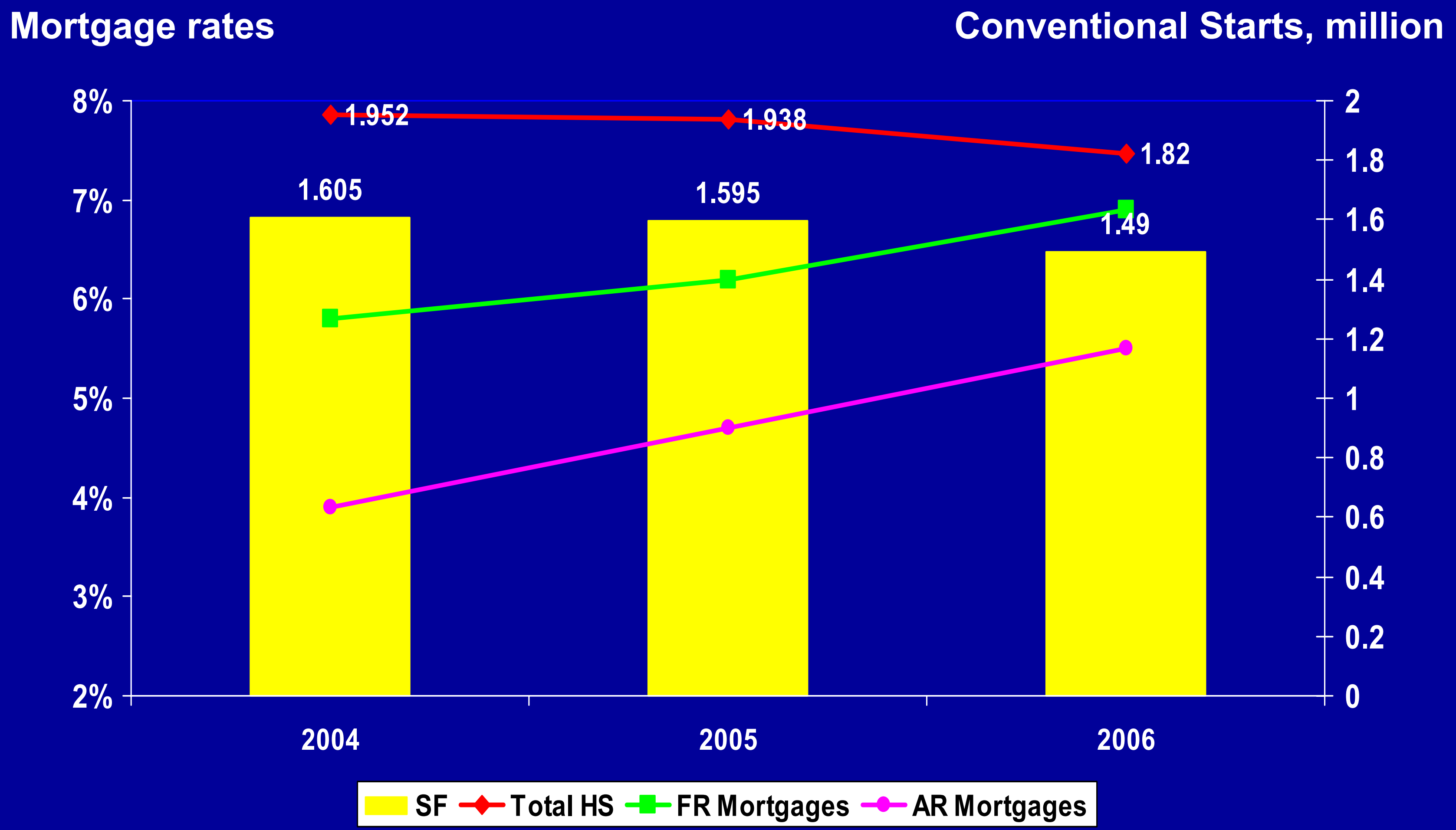
Increasing House Size Leads to Higher Lumber and Panel Demand

Average single family home size increased 33%
In the past 20 years;   To increase another 5% by 2010



Source: RISI

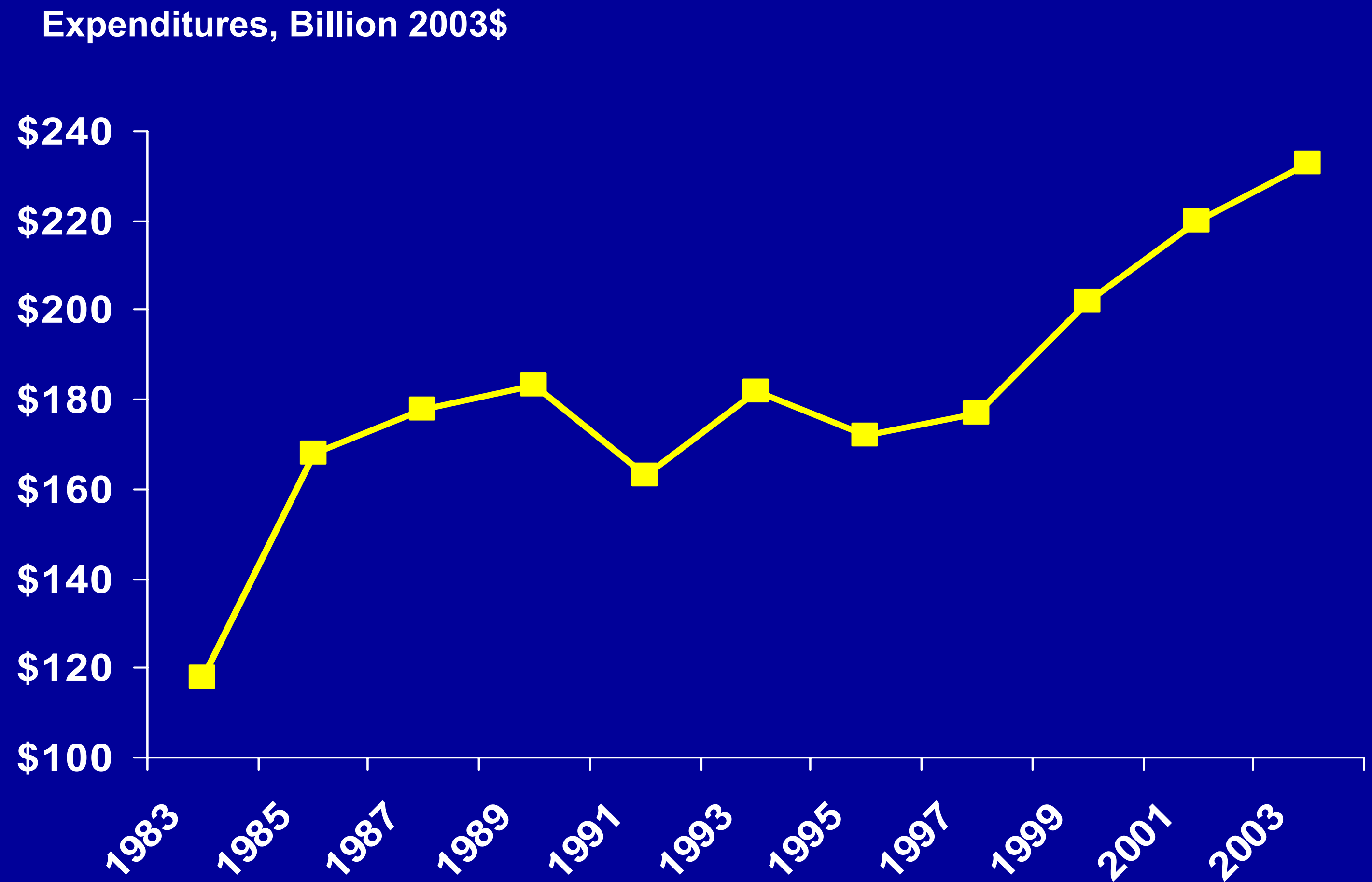
Market Outlook for 2005 - 06 – Moderate slowdown, focused on Single Family sector as higher rates weaken affordability for 1st time buyers



Source; NAHB, April 14

U.S. Remodeling Market

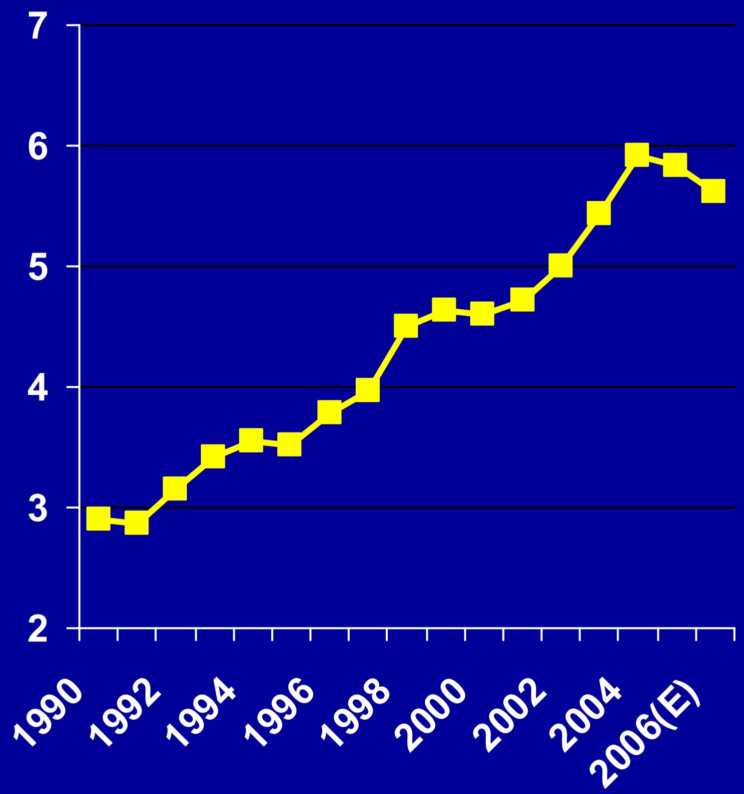
remodeling expenditures are significant – they equal 40% of all housing expenditures in U.S. and Canada



Sources: Census – Value of construction put in Place; Harvard Joint Center for Housing Studies

Remodeling Market Drivers
Aging housing stock + strong resale market

Sales of existing homes (SF, millions)



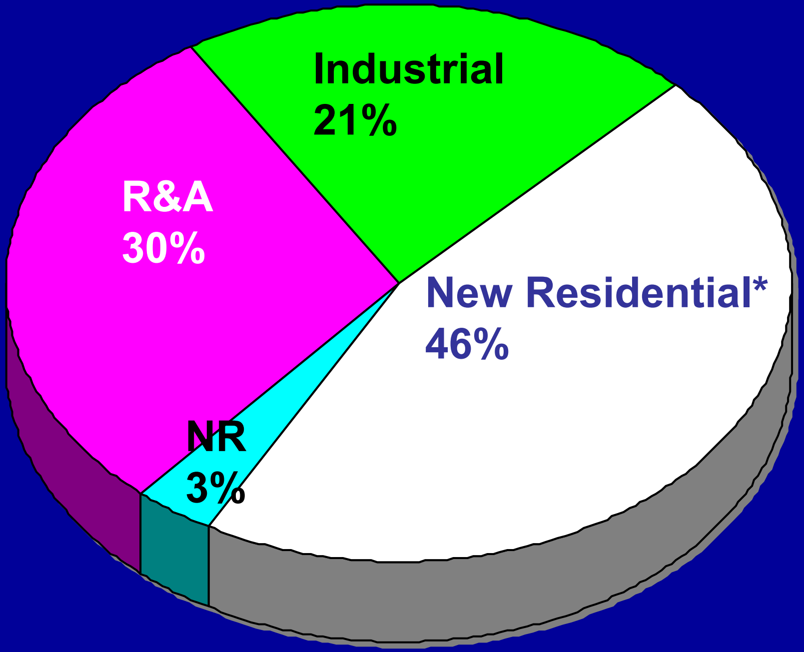
- There are 120 million housing units in the U.S. with average age of 32 years
- Age group that spends the most spending on R&A is done by 35 - 54 year olds
  - has grown by 16.6 million since 1990
  - by 2005, it will reach 83 million
- Most consumers prefer to renovate than relocate
- House values (real) are appreciating again after 15 years of stagnant prices (1980 – 1995).

Part II – Housing Construction

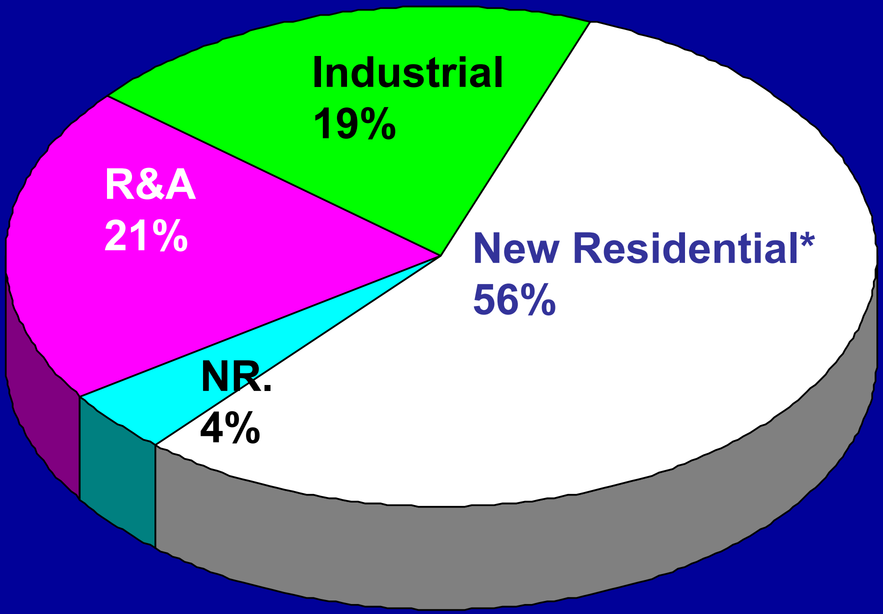
- Importance of housing to wood products industry
- Structural changes – industrialization trends – componentization – building more of house in the factory – driven by demographics and other issues
- Substitution – more EWPs and non wood building materials
- Builders want to simplify the construction process – they want “supply partners” to “build the house”, freeing up the builder’s time to find and develop land, provide financing to buyers, ….

Where does the wood go?... Three quarters go to residential (new housing & remodeling) - USA

2004 Softwood Lumber
60.7 BBF (142 million Cubic Meters)



2004 Structural Panels
40.8 BSF(3/8) (36 million Cubic Meters)

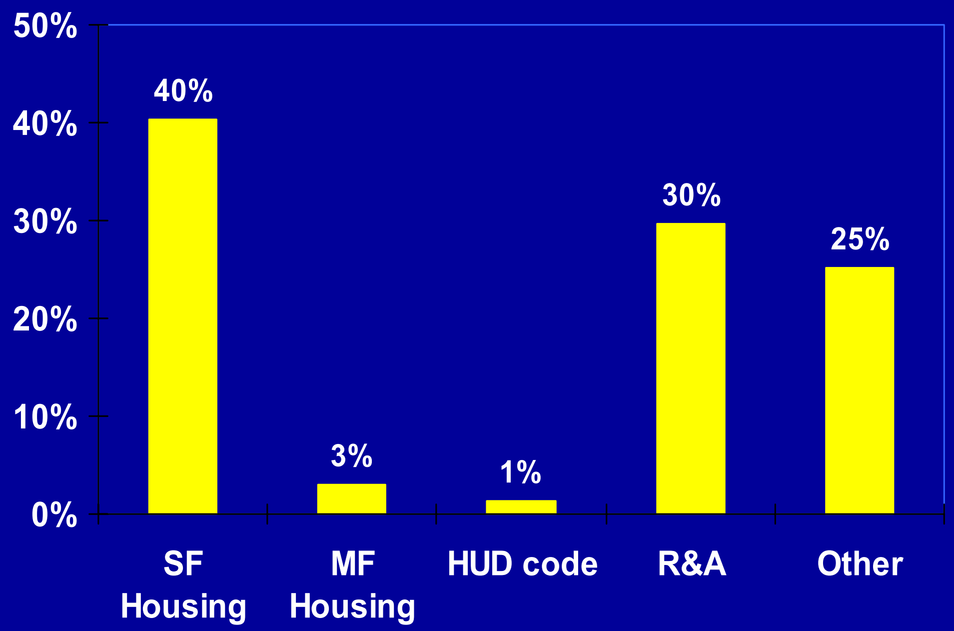


*New Residential incl. SF, MF, and Mobile Homes

Source: RISI, 2004

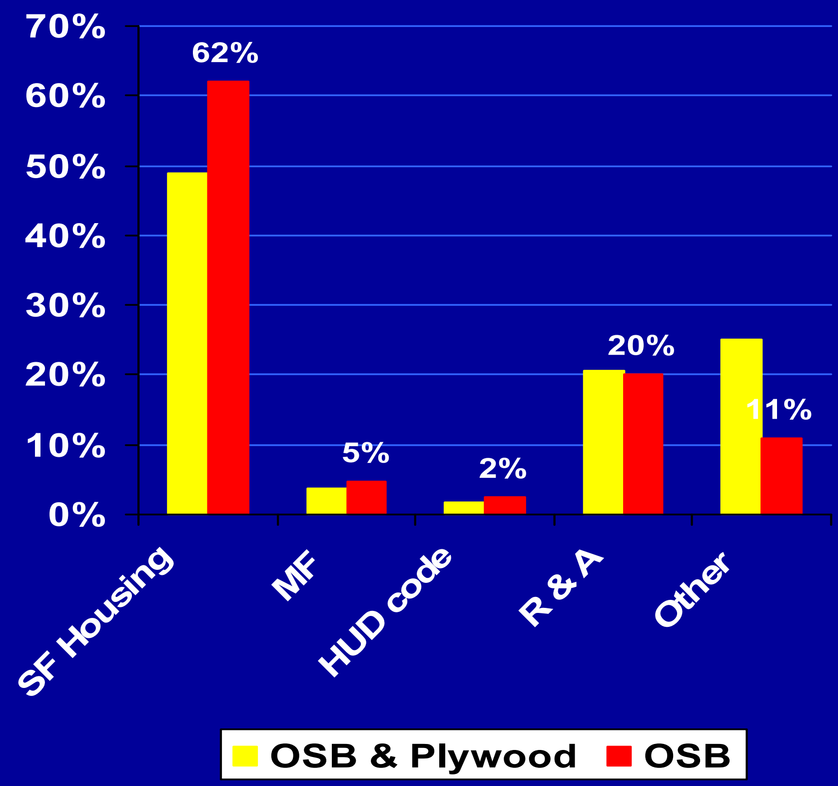
And… single family housing is most important

U.S. Lumber Market share

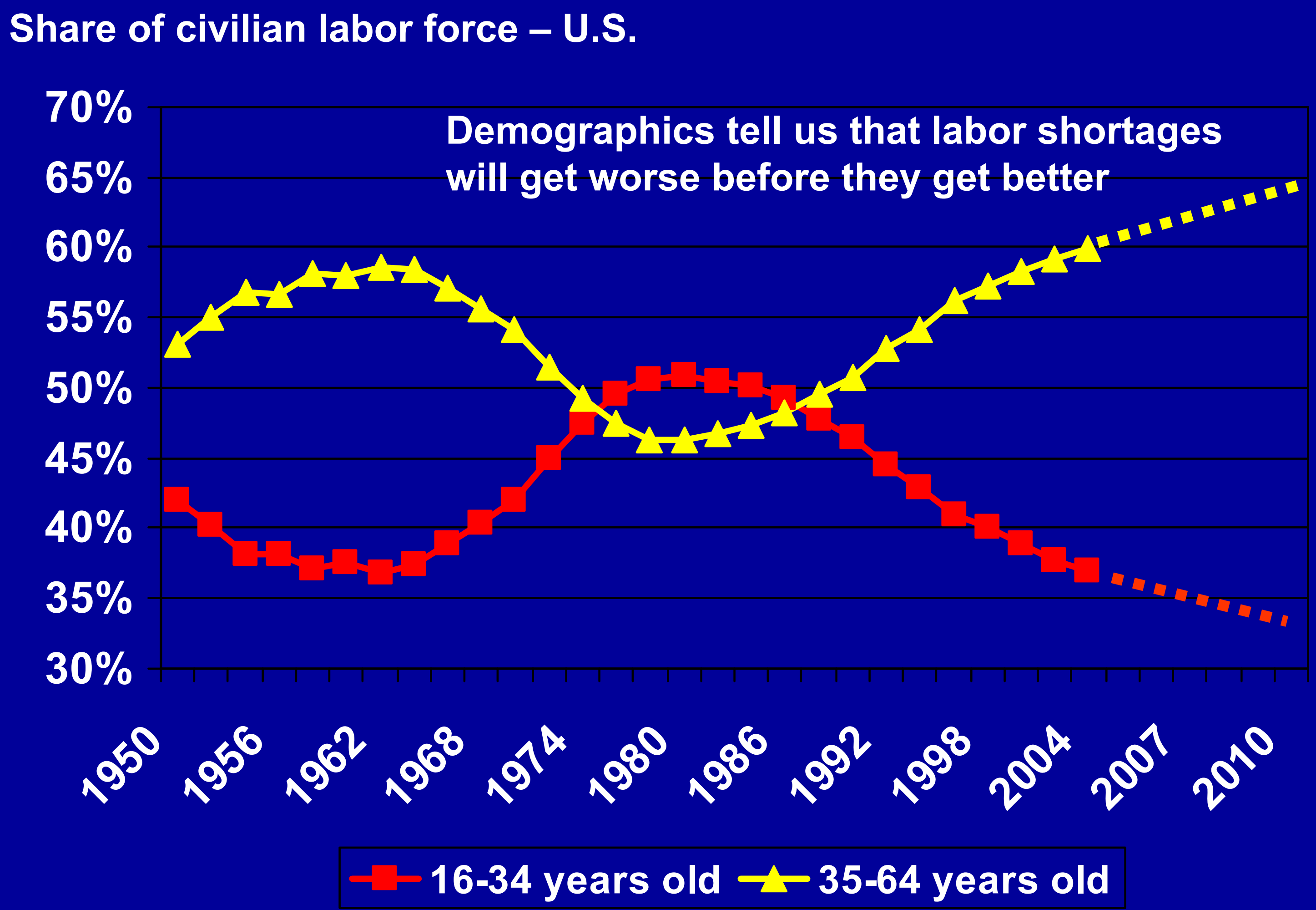


Source: RISI

U.S. Panels Market Share



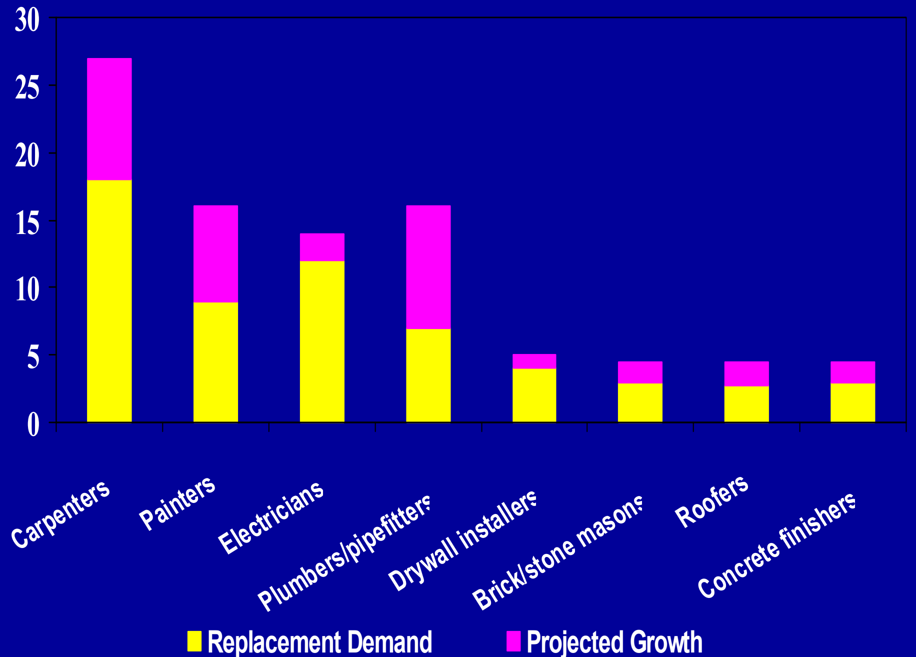
Demographics also impact labor availability… skilled labor shortages will be with us for a a long time



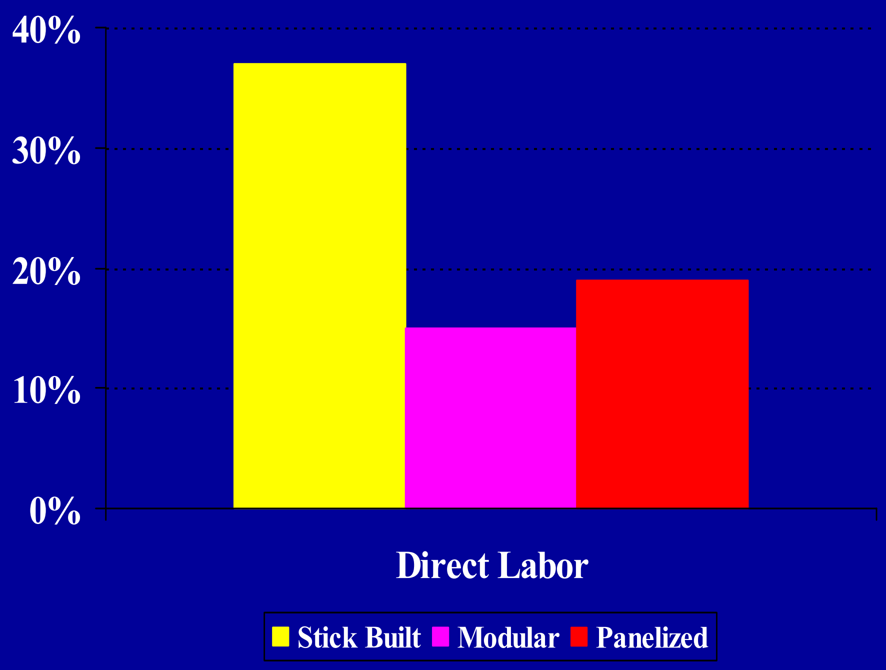
Source: economagic.com/em-cgi/find.exe/civilian-labor_force

Replacing workers leaving the trades is a constant challenge for builders … so, they are automating

We need to find 27,000 new carpenters every year. This will drive demand for easy-to-install components and systems. Fewer people on the jobsite.



Direct Labor share of costs
(excl. finished lot and gross margins)



Source: U.S. Bureau of Labor Statistics, Occupational Projects and Training Data

And,…they are responding with new construction methods …

(1,000 units)

	1997		2004	
	# Units	%	# Units	%
Stick Built[1]	1,175	79.7%	1,326	68%
Panelized[2]	**105**	**7.1%**	**260**	**13%**
Concrete[3]	**125**	**8.6%**	**275**	**14%**
Modular[4]	45	3.1%	58	3%
Steel Frame[5]	8	0.5%	8	.4%
SIPs[6]	8	0.5%	16	.8%
Other[7]	8	0.5%	10	.5%
TOTAL	1,474	100%	1,953	100%
Manufactured*	354	19%	131	6%
Grand Total	1,828	100%	1,979	100%

Trading places: Stick building decline offset by panelization

The trend to panelization means that builders are taking steps to streamline building and lower jobsite cost.

Concrete & steel are growing. Share growth of these two is a "wood loss" of about 15,000 starts per year.

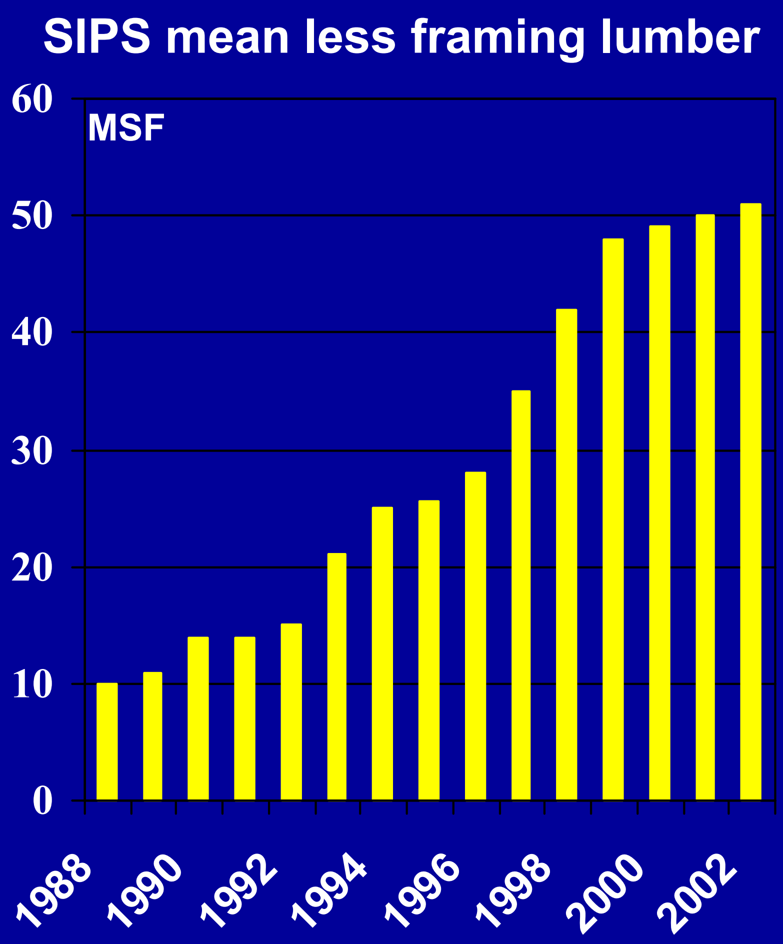
[1] stick built walls and floor with prefab roof trusses, [2] panelized wood walls built in factory, [3] block or poured concrete walls, [4] factory built modules (not HUD), [5] steel framing used for at least exterior walls, [6] foam core with structural panels, [7] log homes, post & beam, etc. *HUD code

Source: APA, Craig Adair, march 2005

Using more factory built to reduce waste, labor cost, & cycle time… less lumber needed for each house

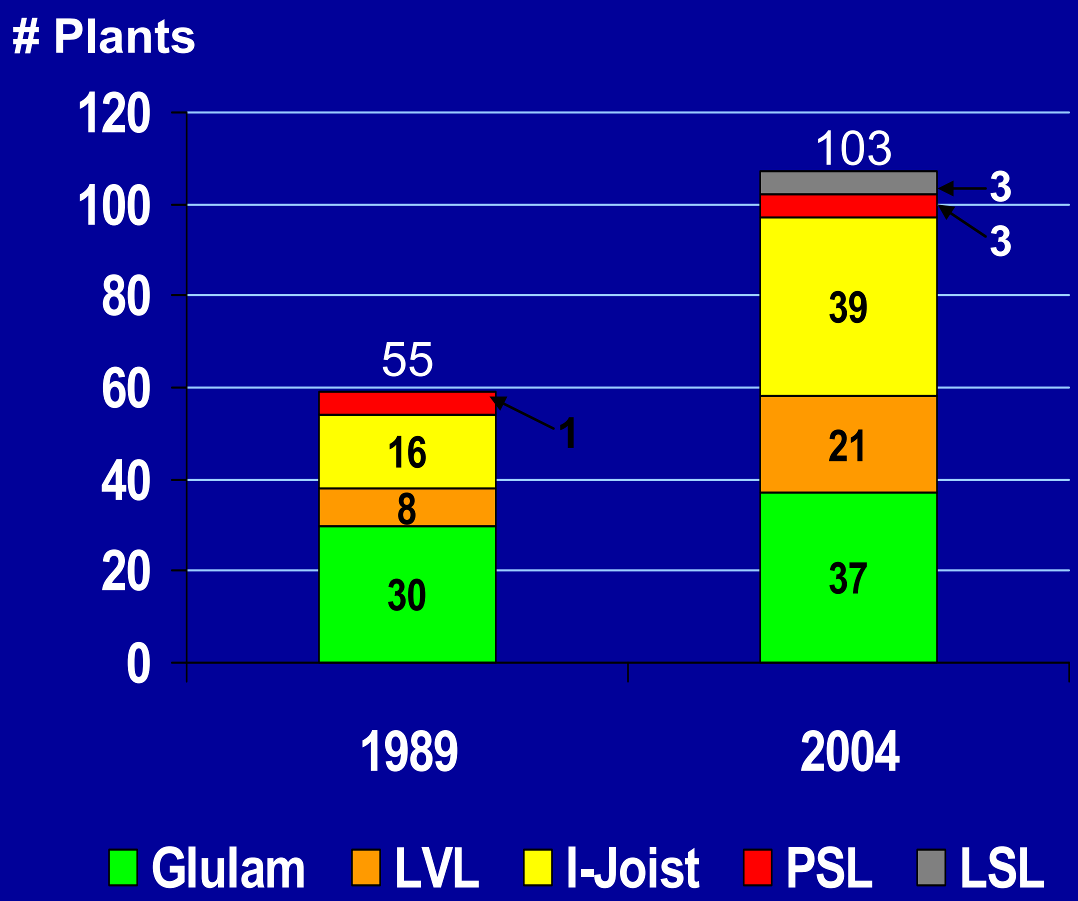
Factory Built Walls and Glulam Beams

LVL(Laminated Veneer Lumber) and OSB factory built wall panels



Source: APA

… Engineered wood plants doubled in past 15 years .. They use smaller trees and more hardwoods



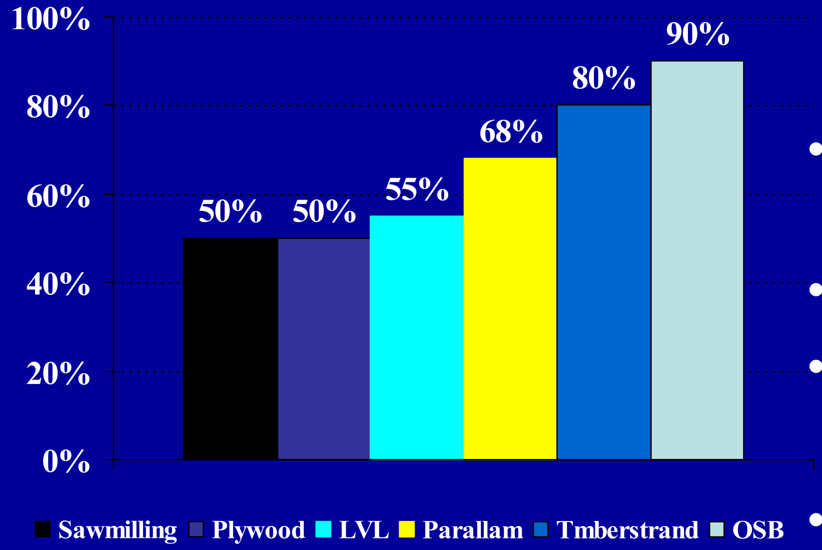
Growth:

- Environmental pressure.
- Consistent quality.
- Fewer callbacks.
- More consistent price.
- Less jobsite waste.

Source: APA, Sept ’04.

And, they give higher yields from the log … that means less waste and lower manufacturing cost … and they are more efficient

Final product yield (%)



40% fewer parts – less labor
Plus 50% less wood fiber

- <u>Floor system Piece Count</u>
- *<u>Traditional 2x4</u>* 85 2x10's
- 133 pieces total
- <u>LP's "Solid Start"</u> 26 I Joists

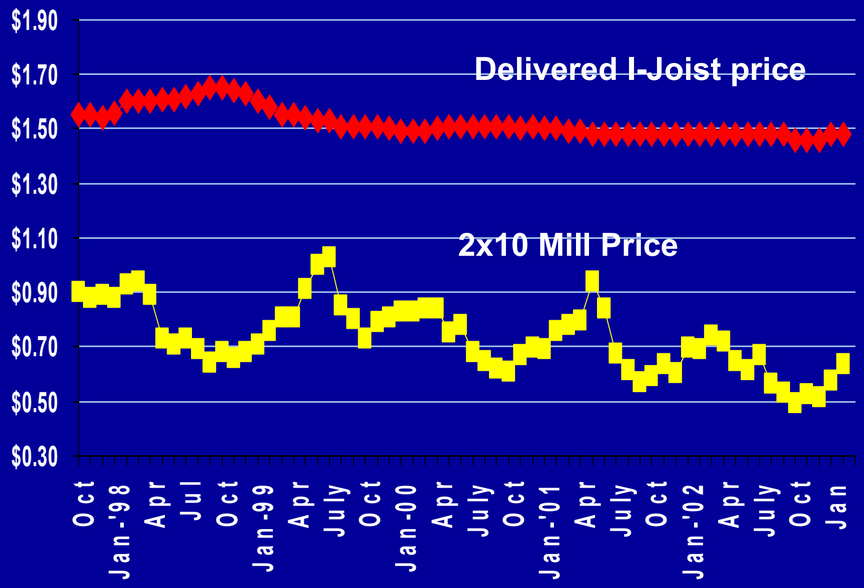
80 pieces total

Source:TJ Weyco, USDA FS, Norbord Industries

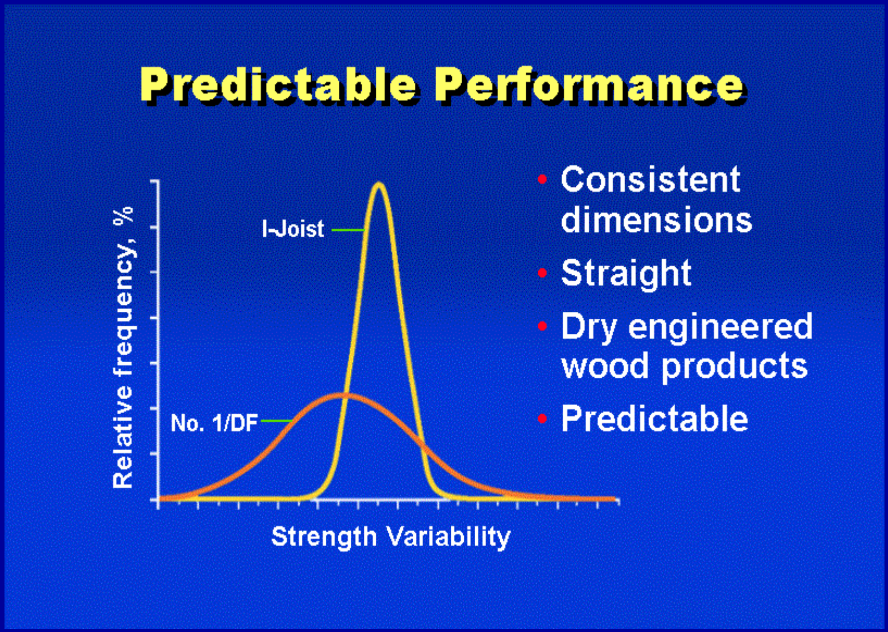
More Advantages of EWPs

Lower Price Volatility
Important to Builders in Costing Projects

I-Joist & 2x10 Lumber
Price Per Linear Foot



Predictable performance Important to architects & Builders for Design efficiency – Deal with Liability concerns



- 9-1/2"&11-7/8" I-Joist, 6-city average builder price delivered.
- 2 x 10 No. 2 & Btr. Southern Pine, KD, 14', Westside, mid-month mill price.

Source: *Random Lengths Publications* and *Engineered Lumber Trends Newsletter.*

And, major impacts in building material usage…

structural floor materials in new U.S. home construction*

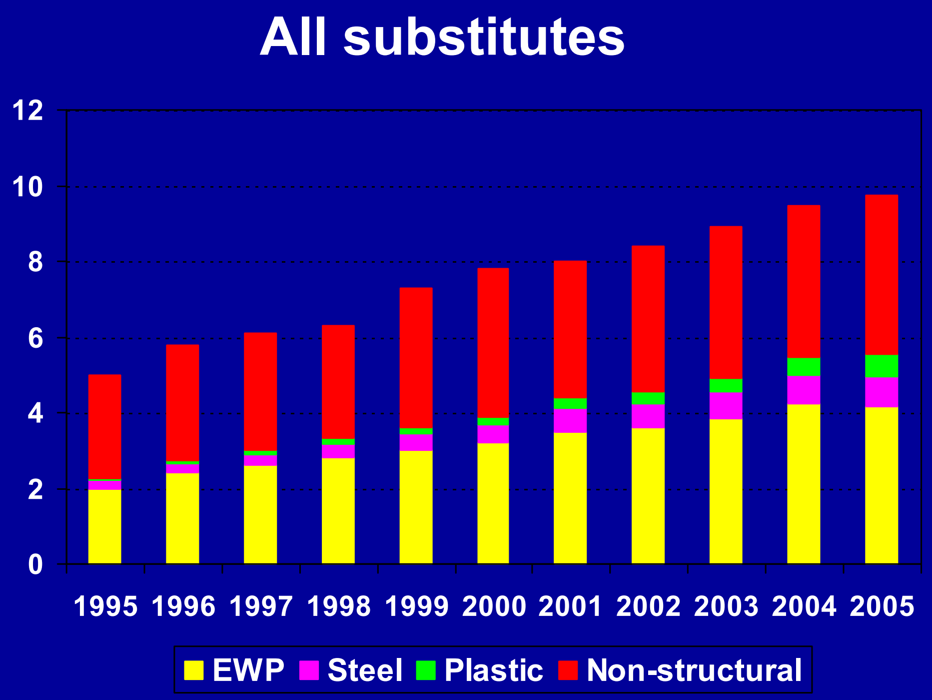
	1997	1998	1999	2000	2001	2002	2003
Concrete	29%	29%	31%	35%	34%	35%	37%
Steel	1	0	1	1	1	1	1
Lumber joists	40	39	35	31	29	26	26
I-Joists	20	22	23	23	26	27	27
Open Web wood truss	10	9	10	9	10	10	10
Others	1	1	1	1	1	1	1

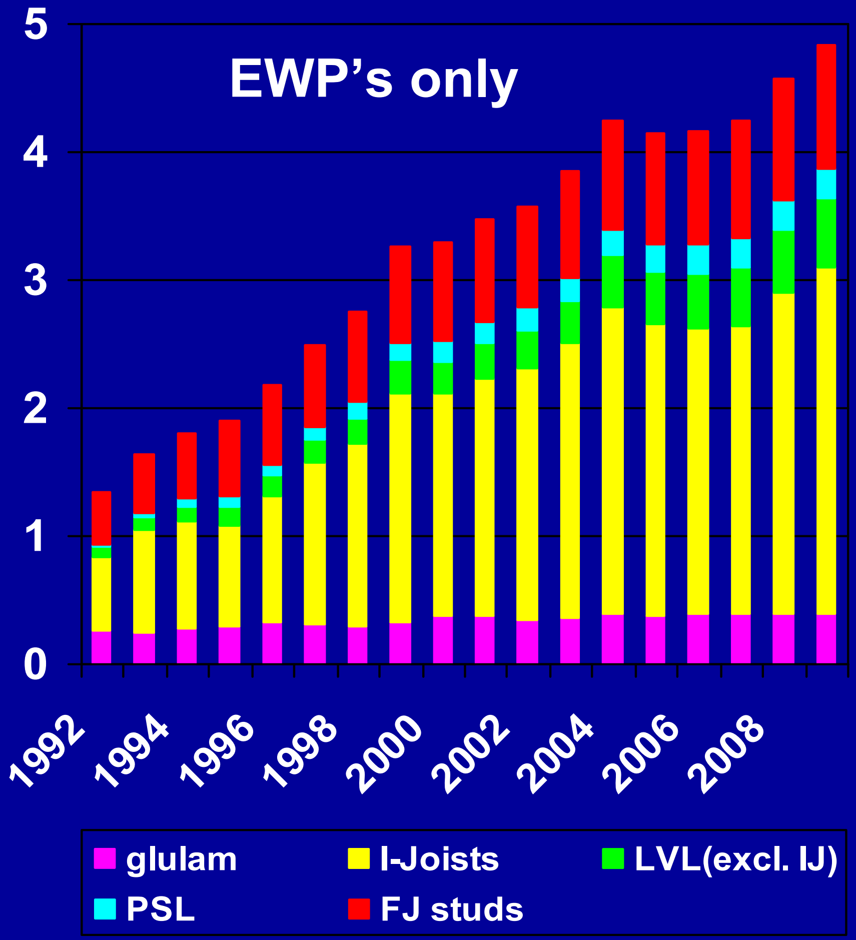
Source: NAHB Research Center annual survey of home builders, published in Structural building components, December 2003 (www.sbcmag.info)

* Includes SF, MF, and HUD code

Resulting in major lumber substitution

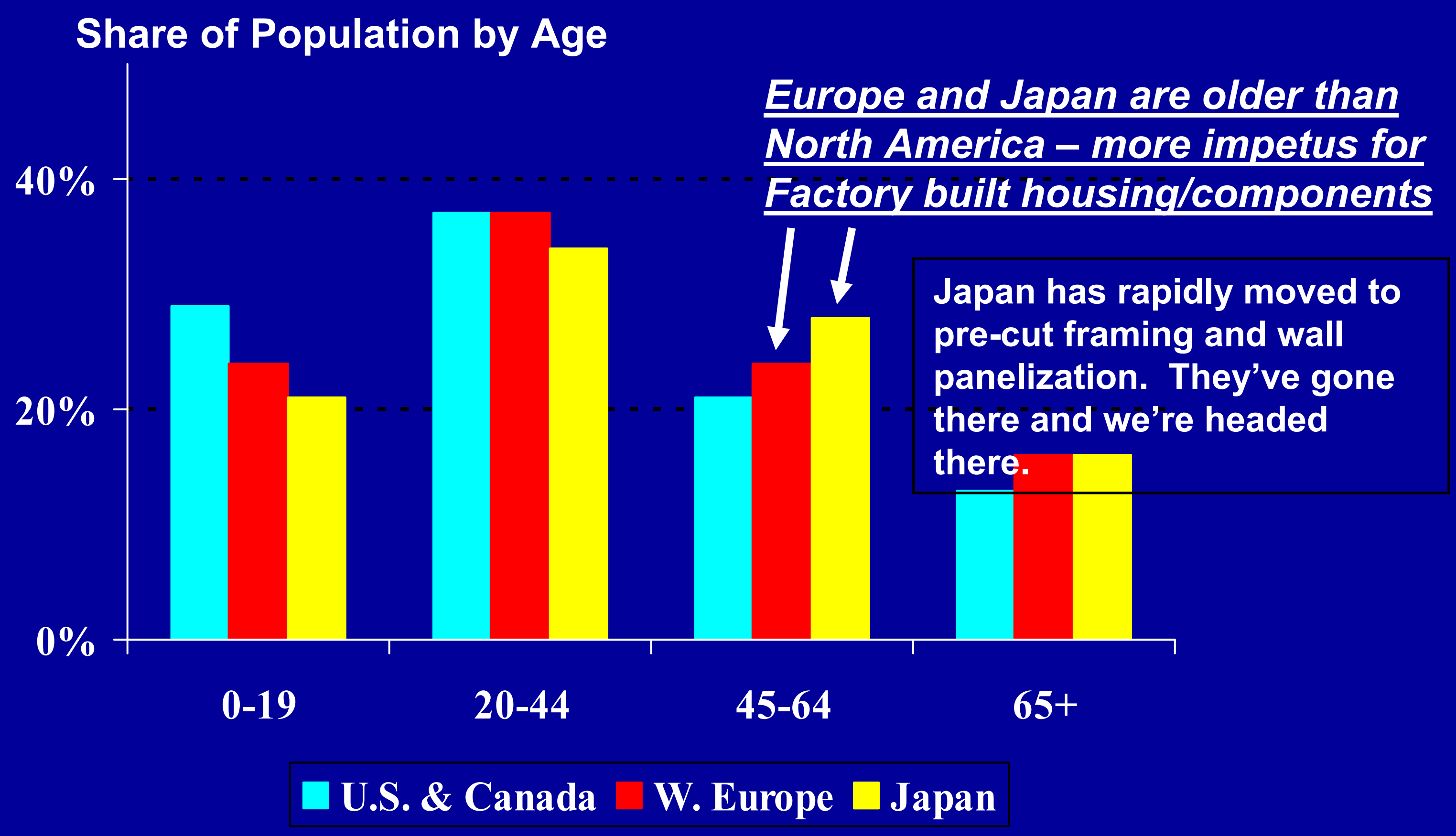
North America, BBF equivalent





Source: Russ Taylor's Wood Market Monthly, August 2001, November 2004

World Demographic Profile - 1998

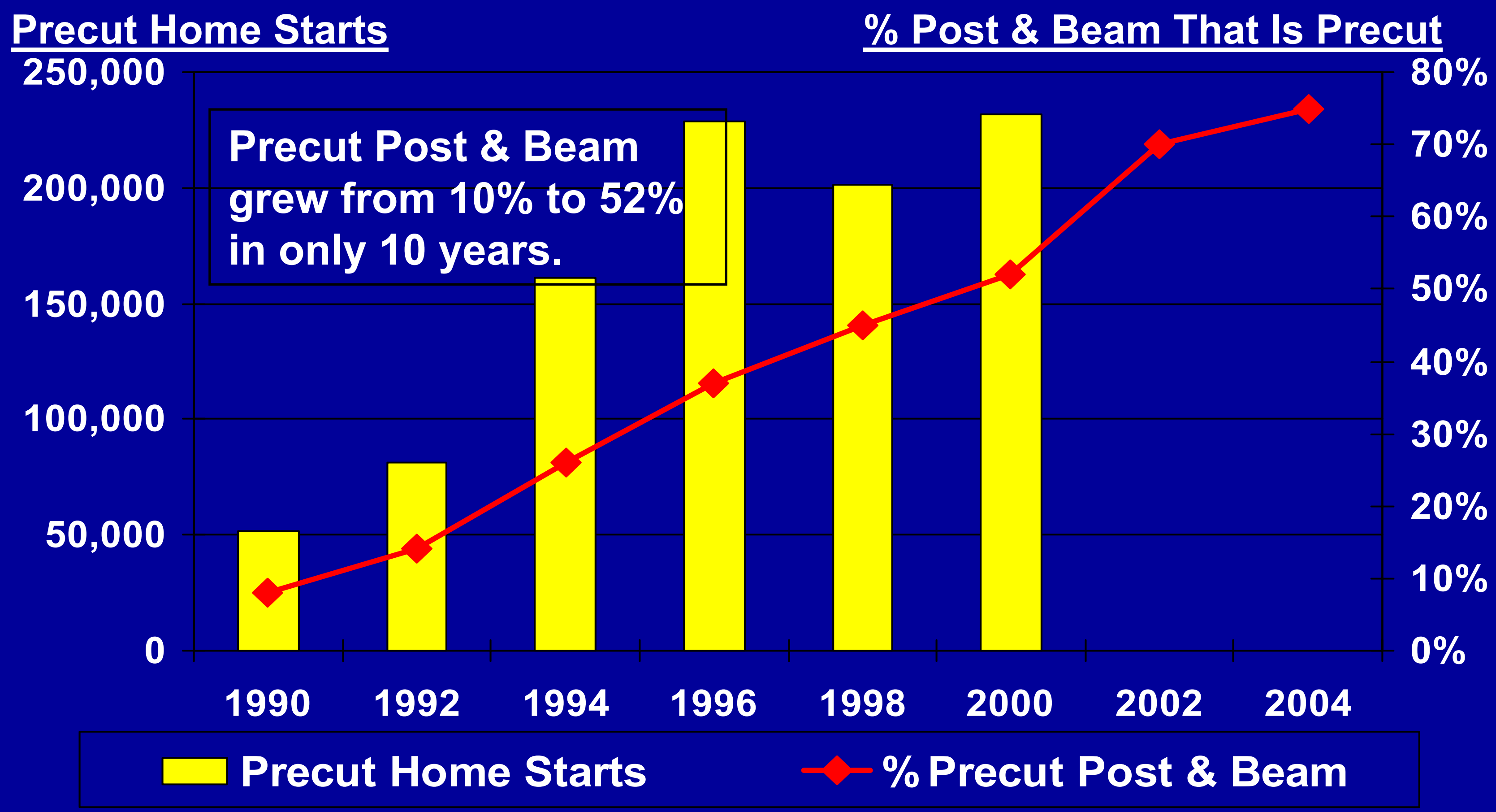


Source: U.S. Census, World Population Profile, WP/98

Japan Precut Homes Increasing

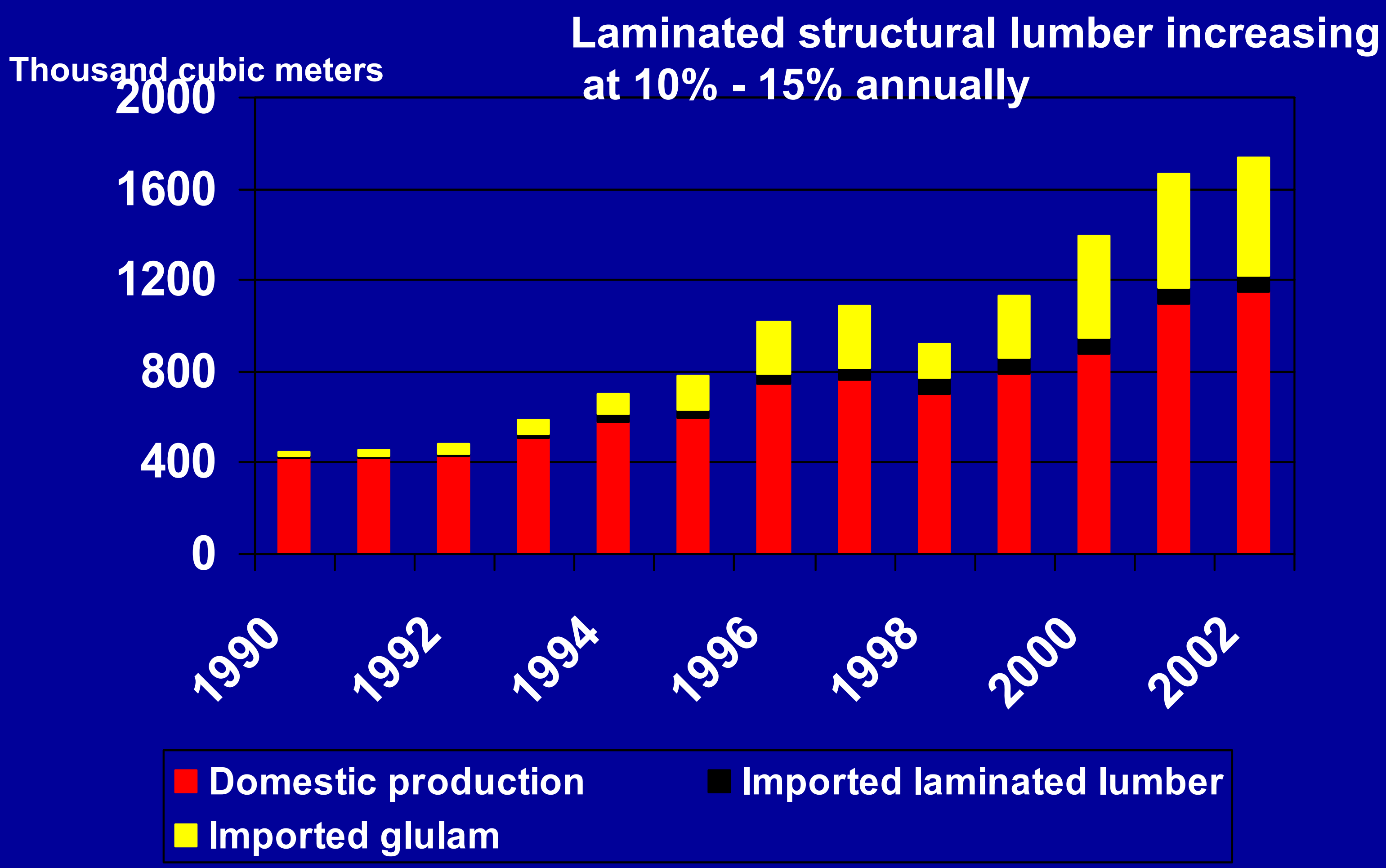
Drivers - demographics, new govt. building regs – Quality assurance law, 10 year home warranty program, Kobe earthquake

Post & Beam construction is moving to factory components with CAD, cut to length, machine cut mortise and tenon, numbered parts, using more glulam and engineered wood products.



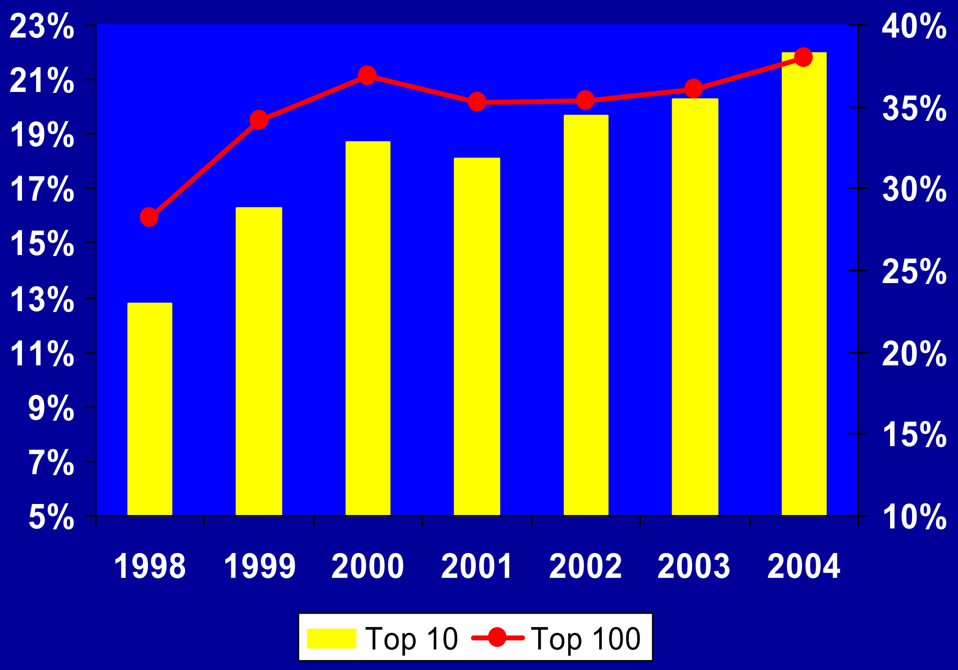
Source: Japan Lumber Journal, Precutters' Assoc.

Impact of More Prefabrication in Japan Drives Use of Glulam & Laminated Lumber



Consolidation in U.S. Homebuilding will accelerate industrialization trends – *Will (is) Drive Consolidation in Primary Wood Industry and Supply Channels*

Top 10 Market Share* Top 100 Market Share*



Consolidation rationale

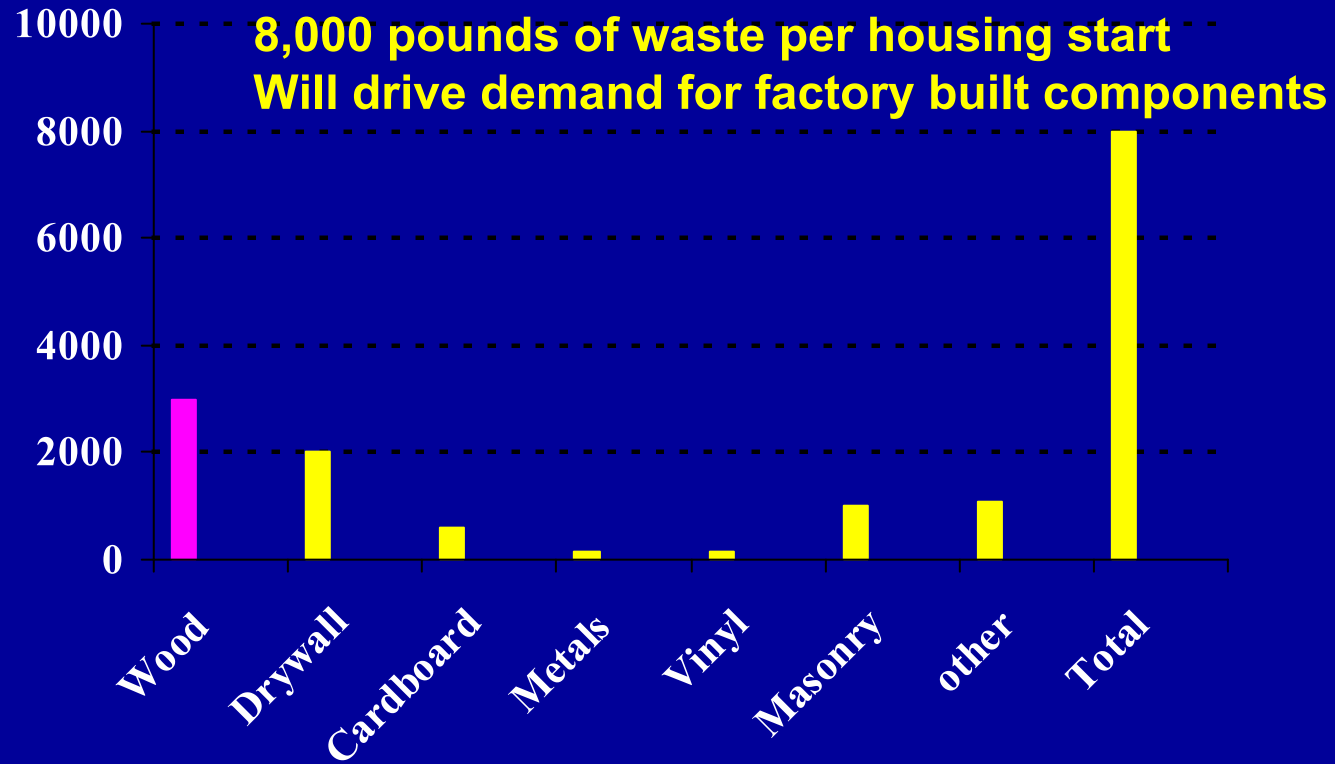
- Lower capital costs – important because 65% is inventory
- Operating efficiencies
- Land control – land development costs exceed 25% of new home
- Brand recognition
- Deeper pockets
- **Simplify construction process**
- National vs regional focus

* SF Homes closed by largest for-sale builders

Source: NAHB, M. Carliner

Construction Site Waste – The Builder Doesn't Want to Pay Twice - Builders operate on low margins (< 10%) so any Cost Savings are Important

Pounds of waste for a 2000 Sq. Ft. Home in U.S.



Source: NAHB

Supply Channel Changes

Supply channel changes – the rise of the large national homebuilder, retail product proliferation, and improved technology is driving consolidation in the residential supply chain!

(1) “with greater purchasing power, large builders can negotiate lower margins and additional services from dealers, and influence product lines that dealers “carry”. E.g. preassembly of components and product installation

(2) To provide these new products/services on a national level, the retail supply chain is consolidating. From traditional office and stocking distributors to more focus on retail sector – 1st DIY, now Pro Yards

(3) The supply chain is getting shorter – to reduce costs, many manufacturers are shipping directly to dealers who ship direct to builders (one step vs two step); some manufacturers ship direct to large builders.

Source: Residential Supply Chain in Transition; JCHS, Harvard University WO4-3; February 2004

Pro Dealer Customer Base
More Sales To Large Builders

Customer	1997	2002
• 500+ Homebuilder	12%	20%
• 25-499 Homes	24%	32%
• Smaller Builders	64%	48%
Multifamily, Remodeling Contractors, Homeowners	100%	100%

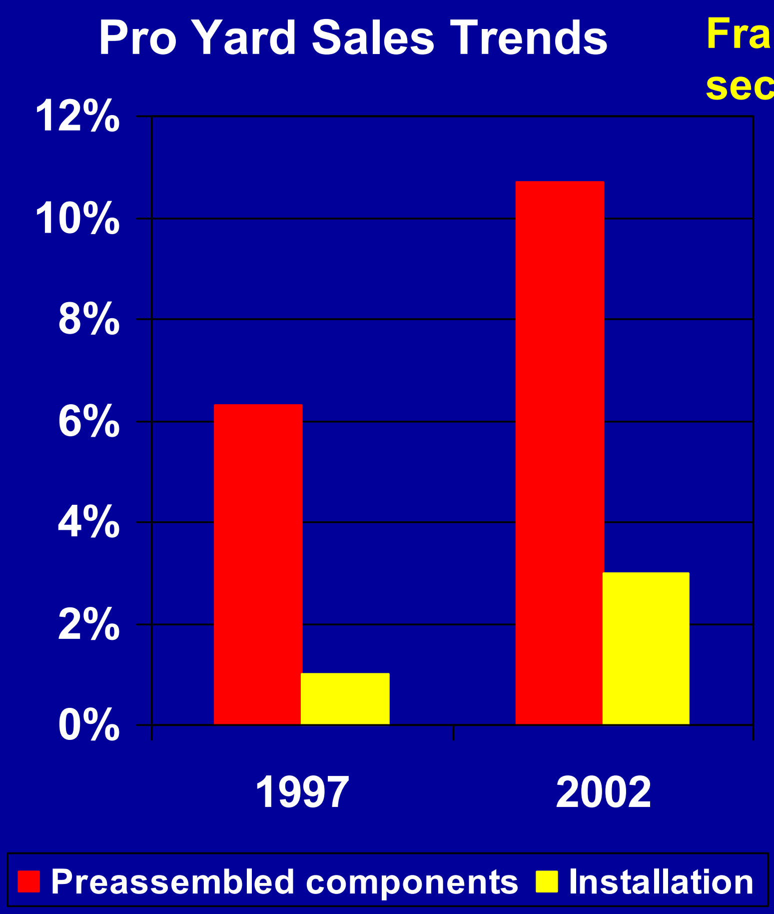
The large pro dealer is leading the way to service large builders.

Implications for the wood product manufacturer:

- **Get to know the current and emerging players.**
- **Larger pro dealers getting more buying clout, may dictate more terms – desire more strategic partnerships with primary industry?**
- **They may demand more quality features, cut-to-size, better delivery schedules, "price smoothing", inventory management, etc.**

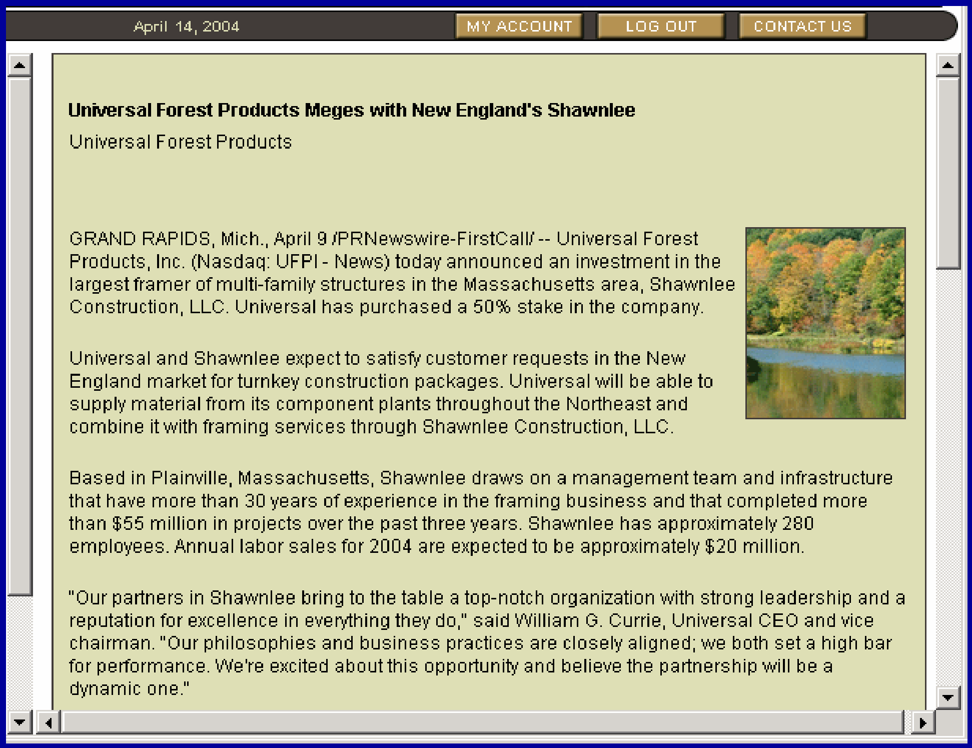
Source: Residential Supply Chain In Transition, Feb.'04. www.jchs.harvard.edu/

Turnkey – Components – Installation – Partnerships Trends



Strategic Partnership between Universal FP and Shawnlee, the largest framer of multi-family structures in MA:

Framing and Installation services For site built & retail sectors is fastest growing business for Universal



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Universal Forest Products Meges with New England's Shawnlee

Universal Forest Products

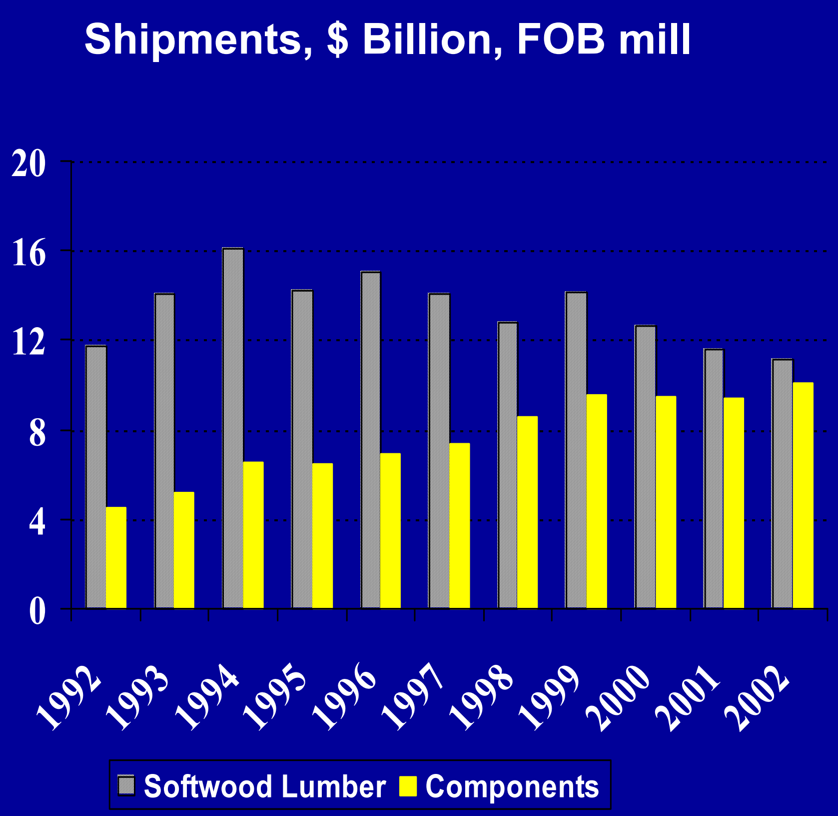
GRAND RAPIDS, Mich., April 9 /PRNewswire-FirstCall/ -- Universal Forest Products, Inc. (Nasdaq: UFPI - News) today announced an investment in the largest framer of multi-family structures in the Massachusetts area, Shawnlee Construction, LLC. Universal has purchased a 50% stake in the company.

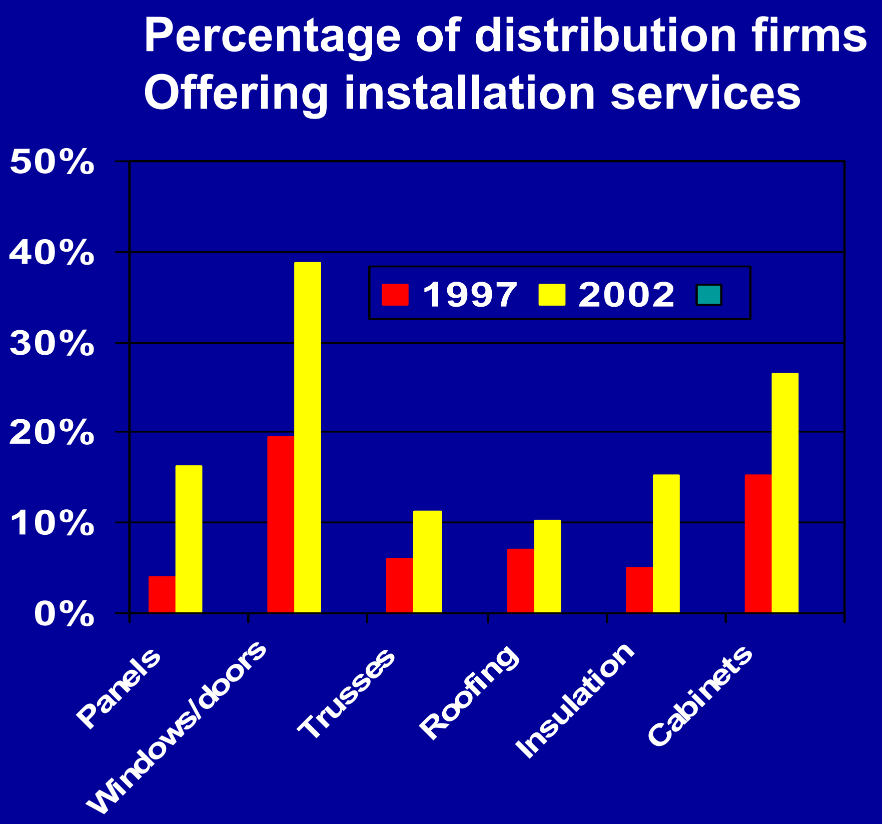
Universal and Shawnlee expect to satisfy customer requests in the New England market for turnkey construction packages. Universal will be able to supply material from its component plants throughout the Northeast and combine it with framing services through Shawnlee Construction, LLC.

Based in Plainville, Massachusetts, Shawnlee draws on a management team and infrastructure that have more than 30 years of experience in the framing business and that completed more than $55 million in projects over the past three years. Shawnlee has approximately 280 employees. Annual labor sales for 2004 are expected to be approximately $20 million.

"Our partners in Shawnlee bring to the table a top-notch organization with strong leadership and a reputation for excellence in everything they do," said William G. Currie, Universal CEO and vice chairman. "Our philosophies and business practices are closely aligned; we both set a high bar for performance. We're excited about this opportunity and believe the partnership will be a dynamic one."

Residential Components* Growing Faster than Lumber because Builders want Installed Sales/Turnkey Services to Reduce Labor, Waste, Cycle Time, & Litigation

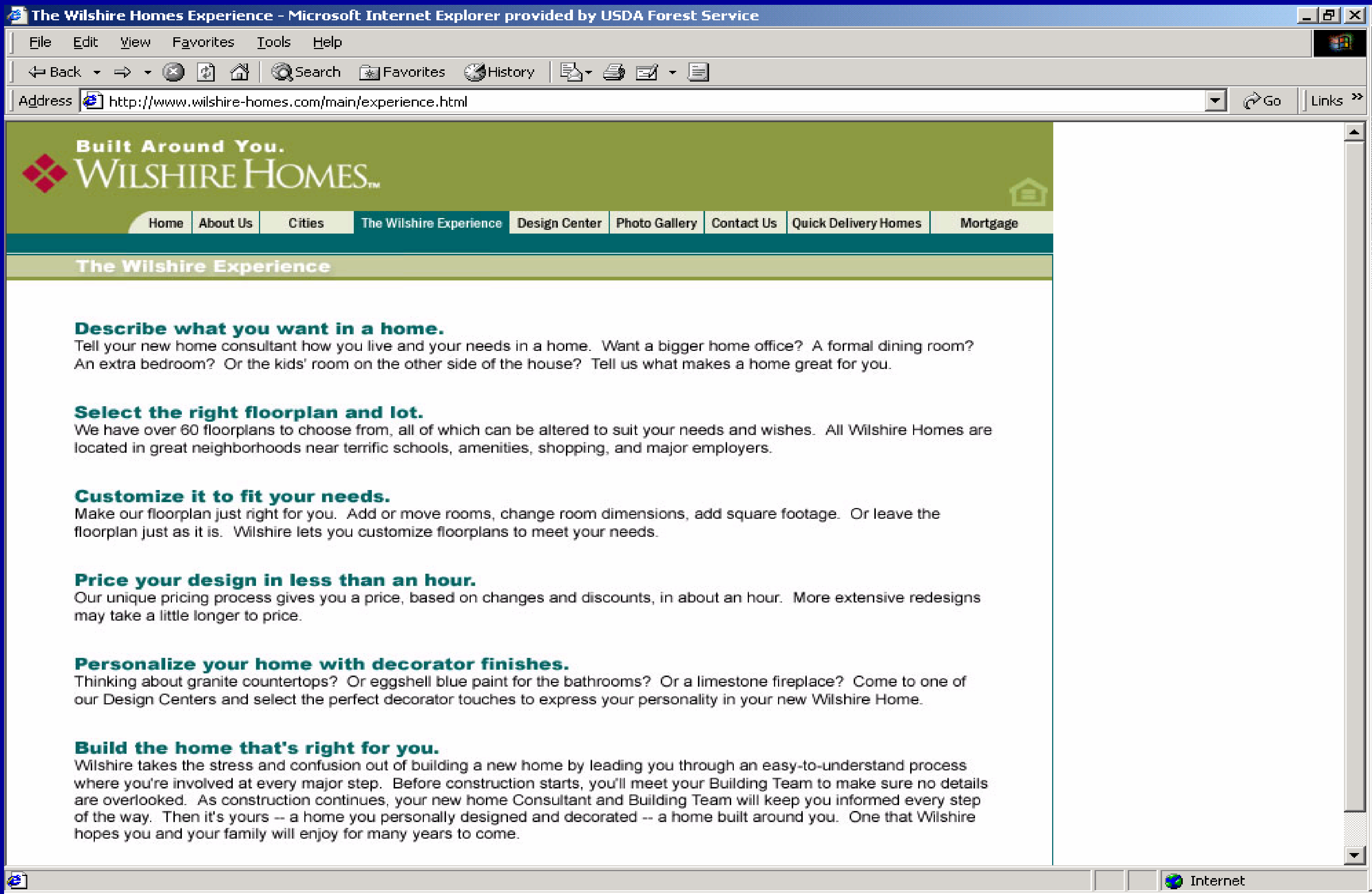




•Includes: Wood trusses (NAICS 321214), EWP (321213), Prefab wood buildings (321992), (precut, panelized form, modular), Excludes components used by HUD code manufactured homes

Source: U.S.Census

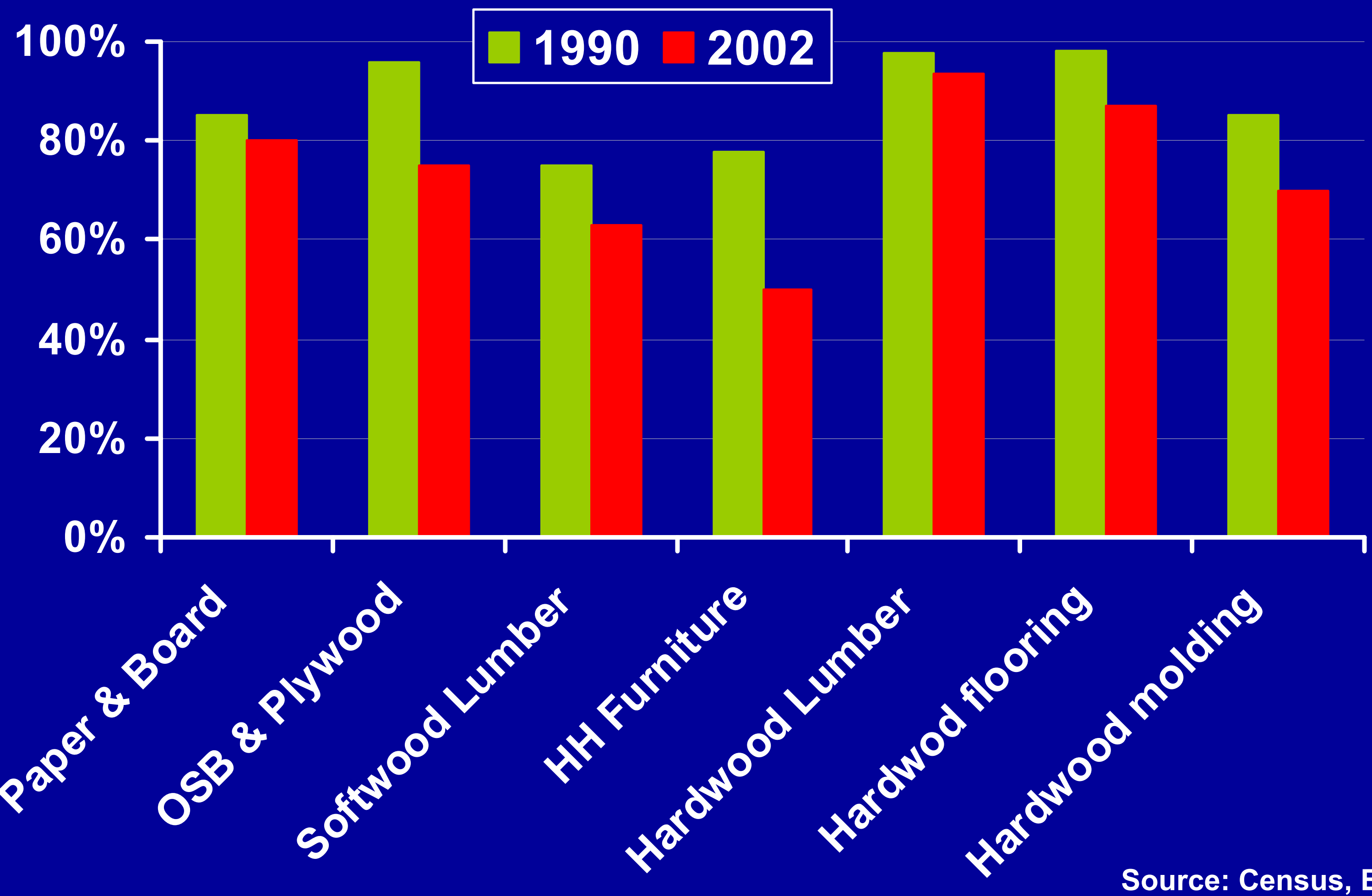
More U.S. Home Builders now offer Customization/Design options because their customers demand them -This means more interchangeable components like wall panels, engineered floor systems, and other "installed sales options" like complete framing packages (Remember the auto industry example) – no guarantee it will be wood



Globalization Issues

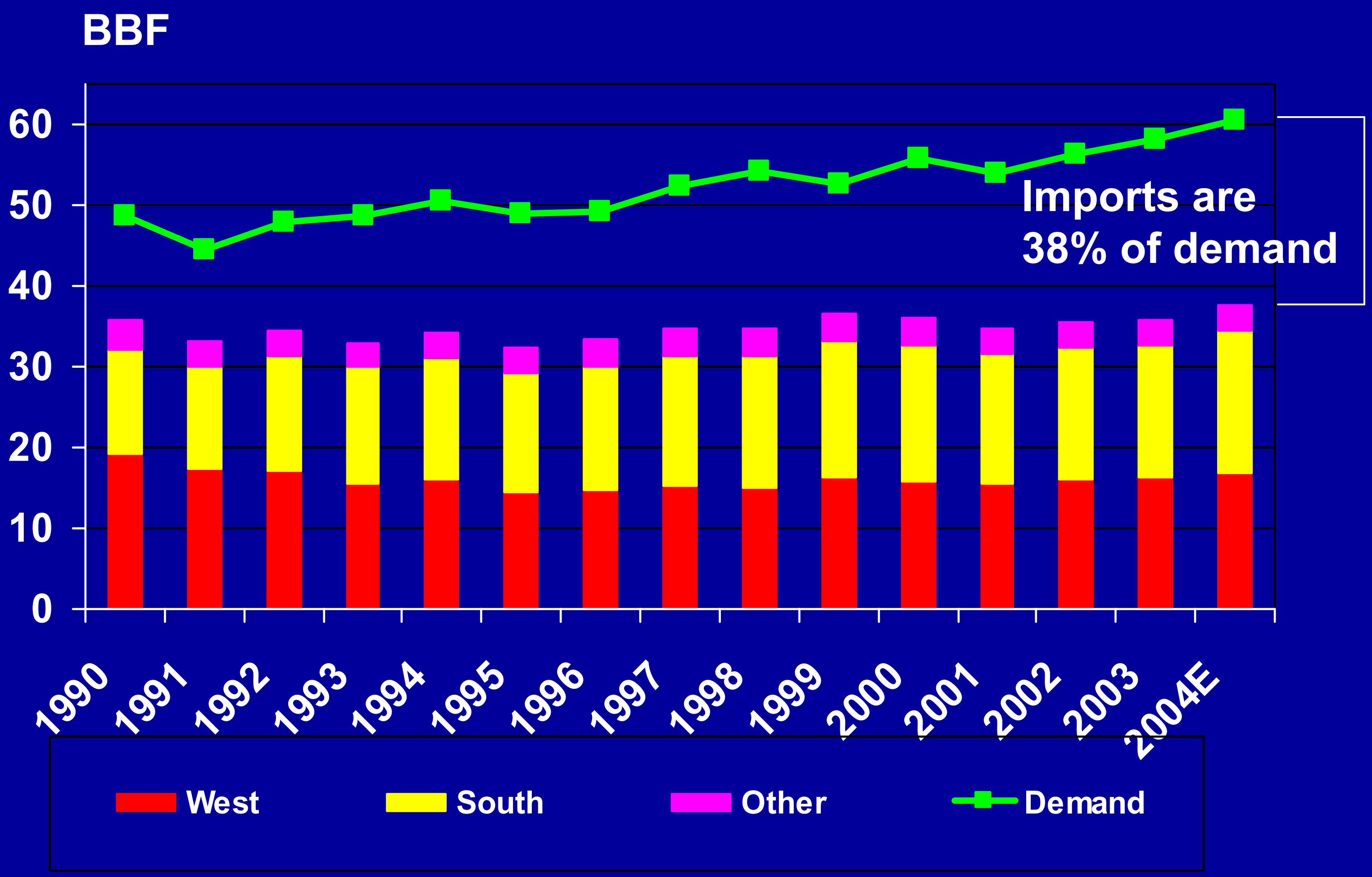
- New competitors
- Is U.S. competitive in commodities????
- Some of us need to “move up the food chain” or add value!!!
- Innovation in products, services, systems, management, marketing, sales,…..

Supply to U.S. Markets - Domestically-produced shares of U.S. consumption declined for most wood products from 1990 to 2002, especially for more labor-intensive products . . .



Source: Census, BLS

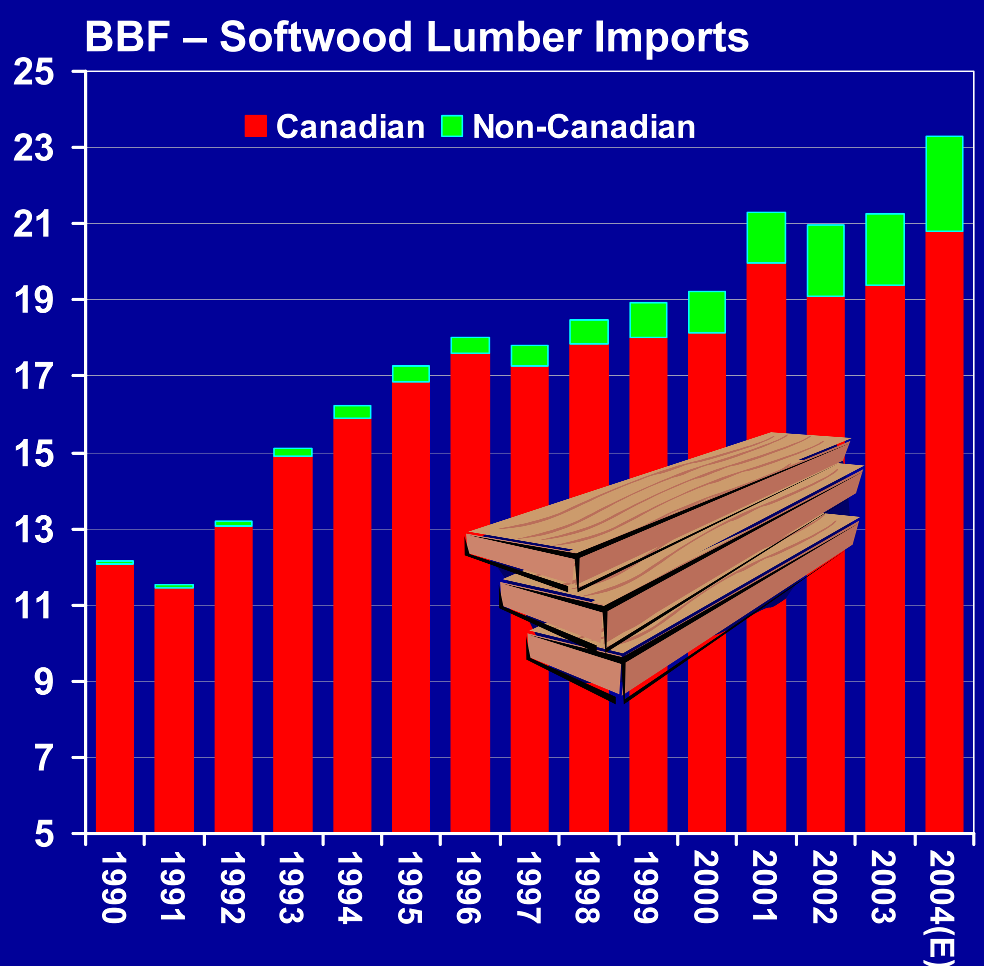
U.S. Softwood Lumber supply – Imports absorbed almost all the growth in demand



Demand* = domestic consumption plus offshore exports

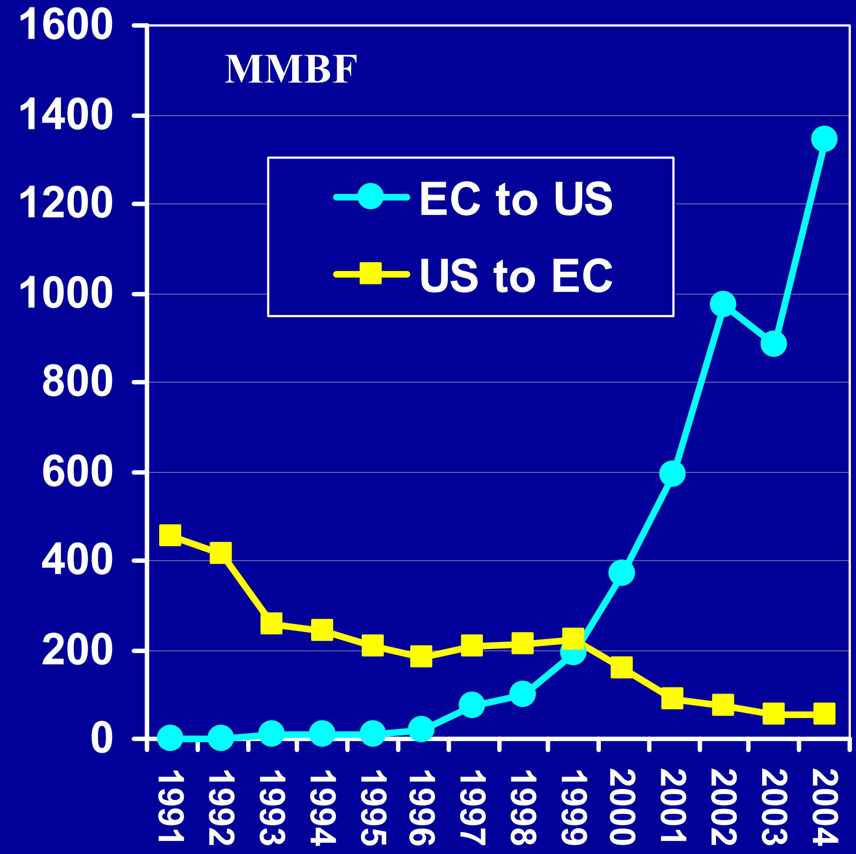
Source: RISI, SFPA

Softwood lumber imports from Canada are huge, and non-Canadian imports are also growing . . .



Source: RISI, USDA FAS

Big shifts in framing lumber trade with Europe (in wides and narrows) began in the late 1990s . . . (a quality issue)

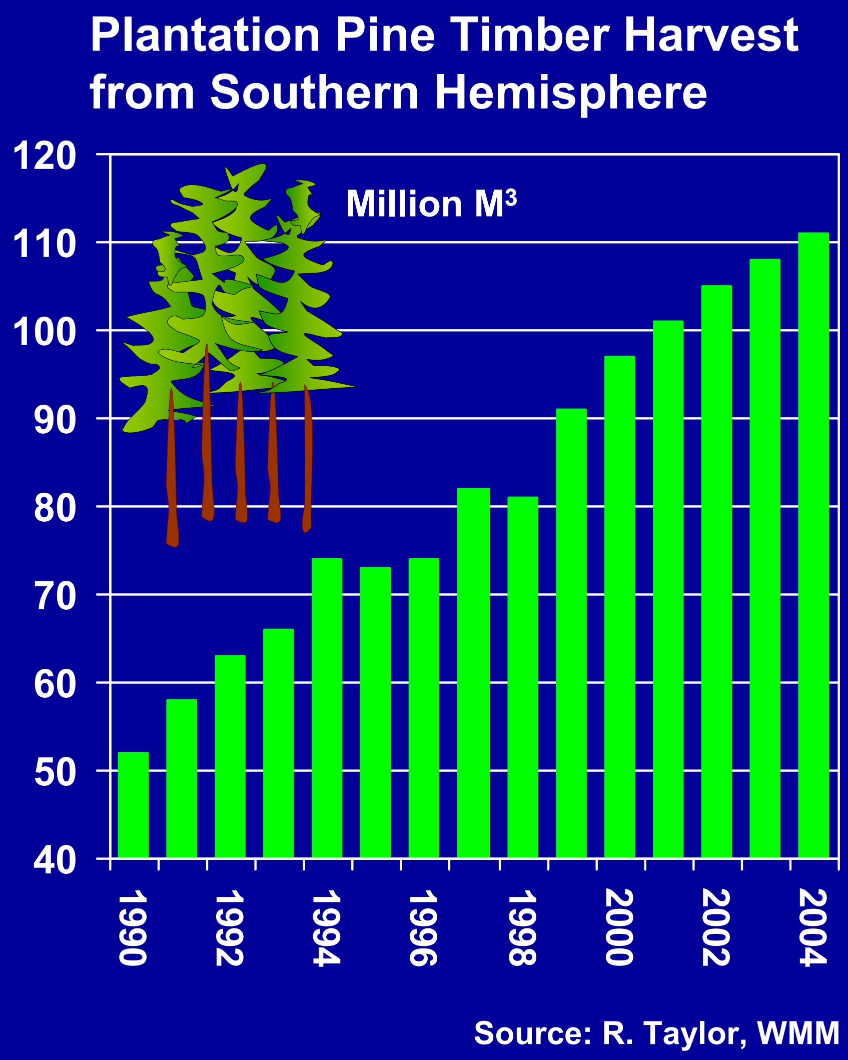


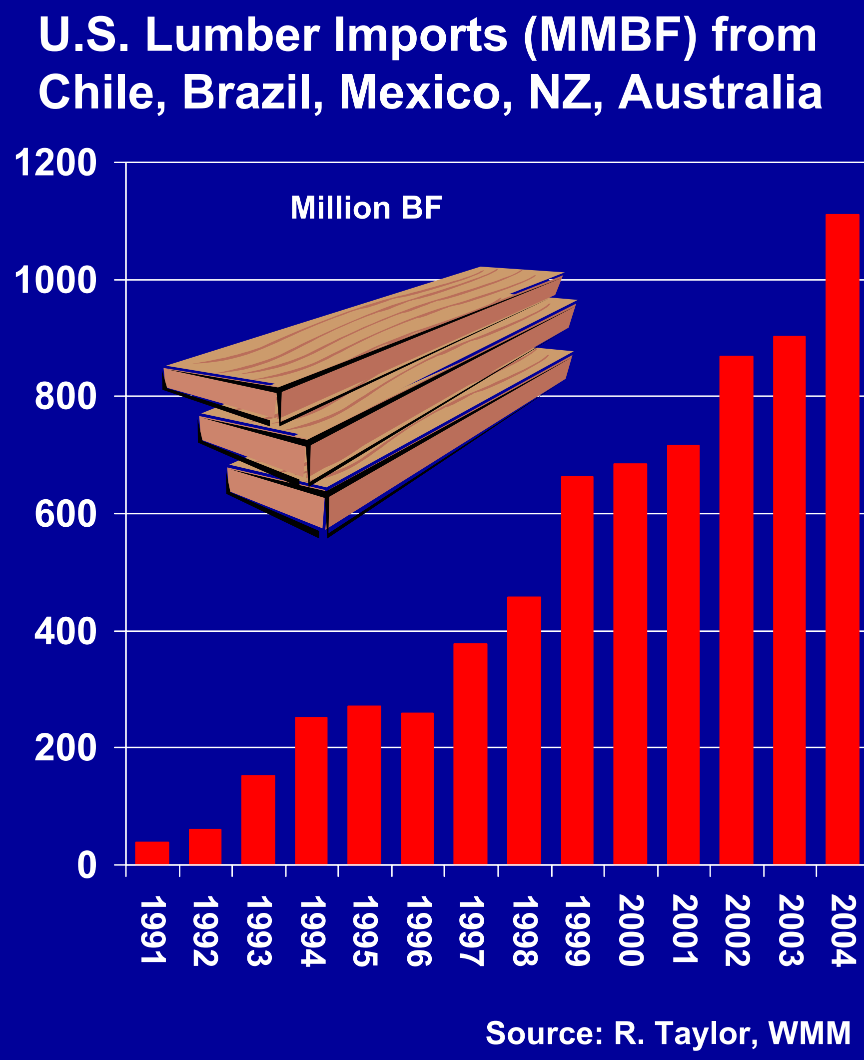
Softwood Lumber Imports

MLB – Canada/Maritimes

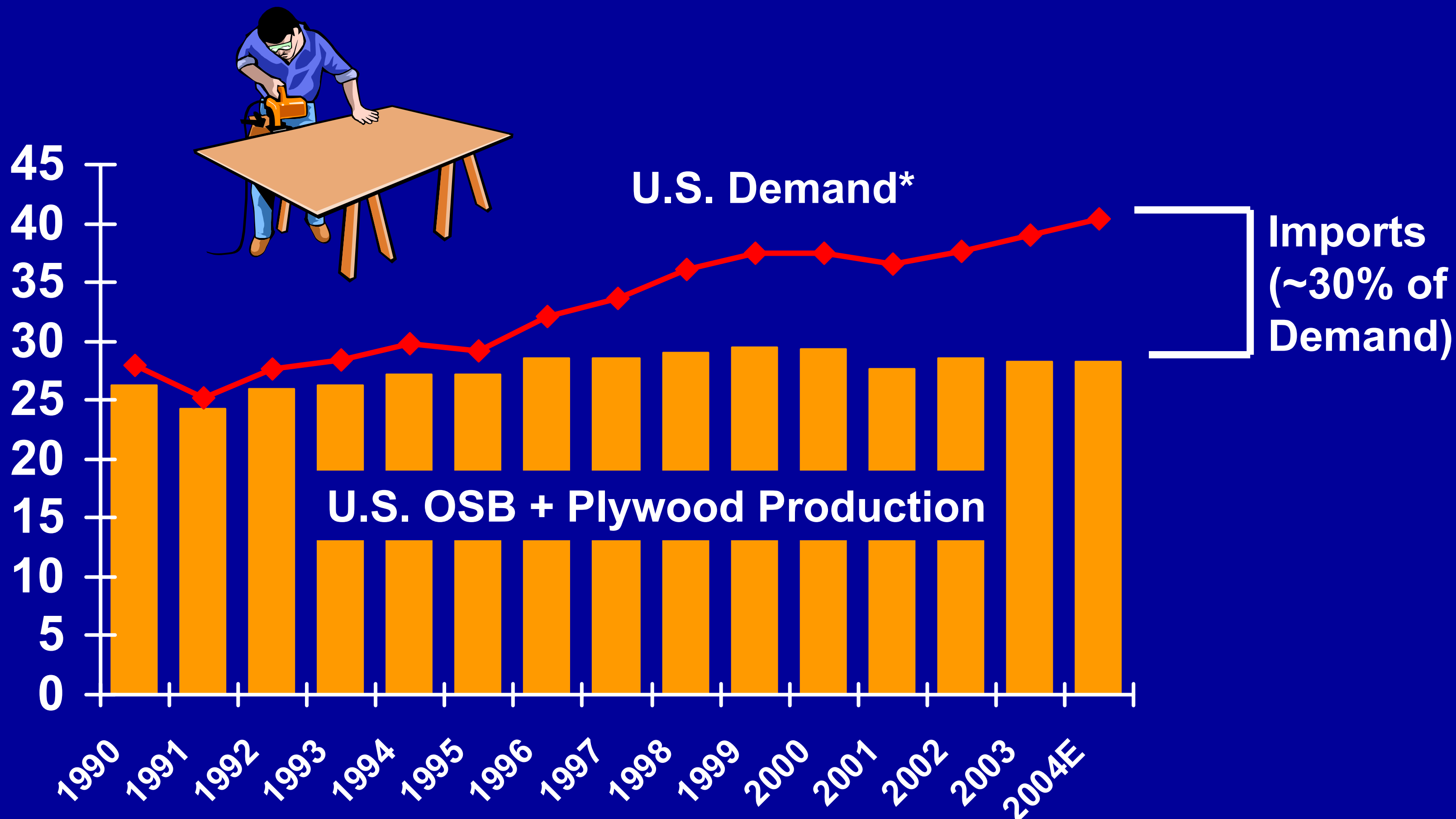
Estonia - Europe

Also, with expanded pine plantation output, the Southern hemisphere & Latin America emerged as a growing softwood lumber supply source . . .





Similarly, in structural panel markets, imports absorbed almost all the growth in demand . . .



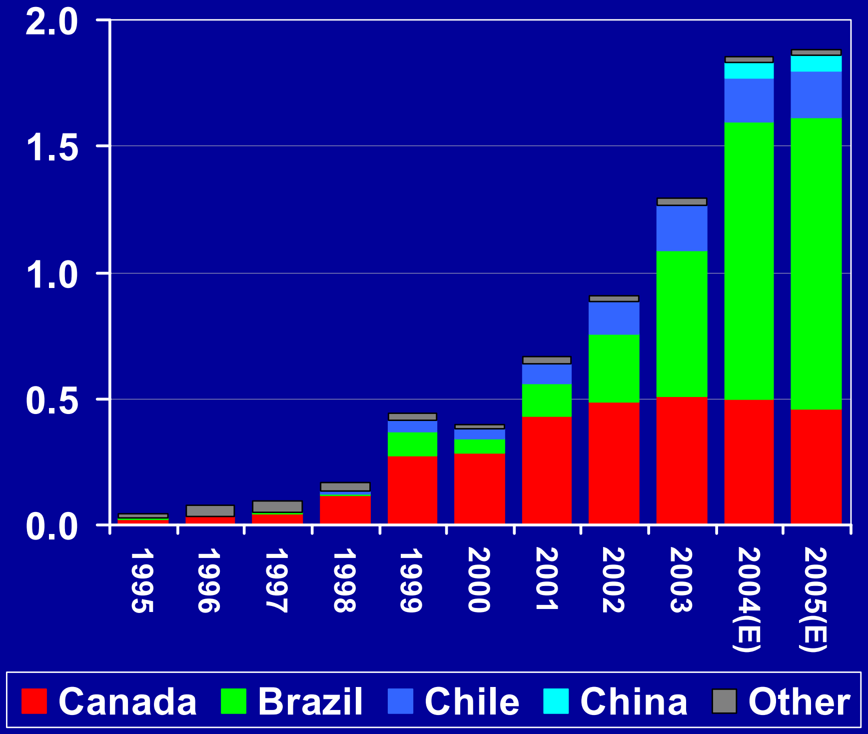
*Demand = domestic consumption plus exports

Source: RISI

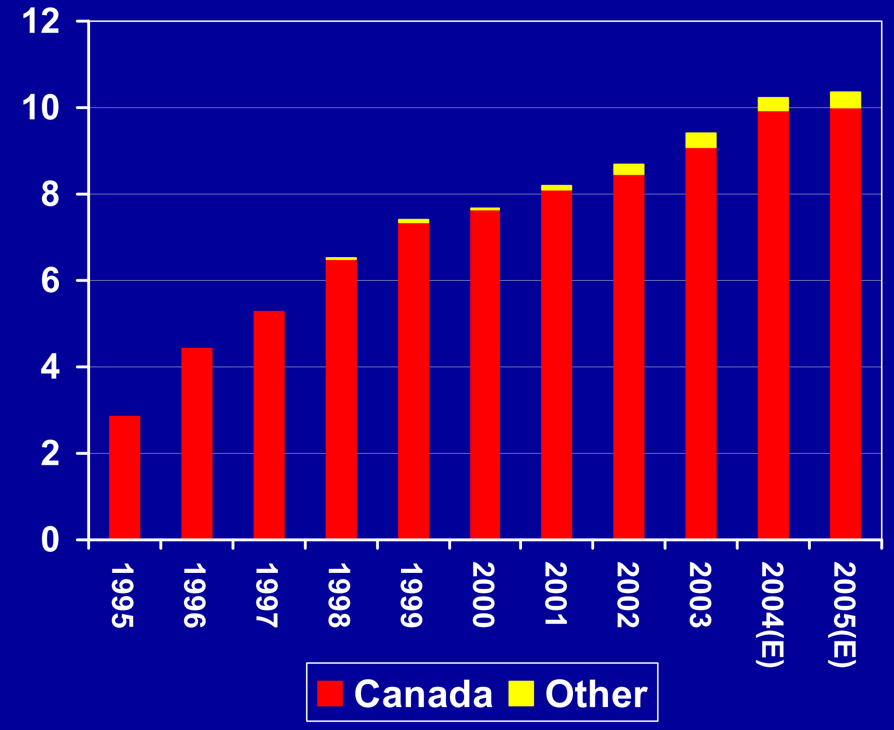
Plywood is coming from Brazil, and OSB from Canada . . .

Billion Square Feet (3/8”)

Softwood Plywood



OSB

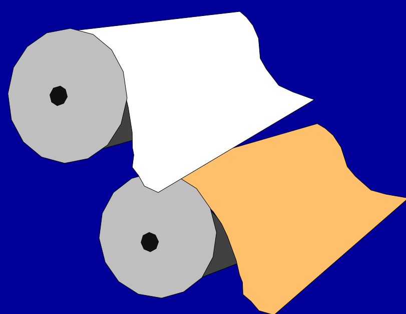


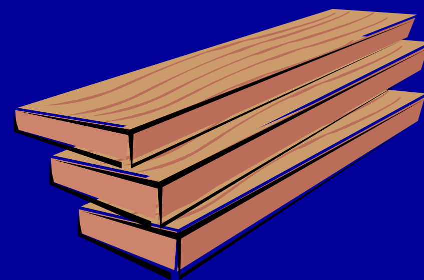
Source: USDA, FAS

Foreign panel mills currently certified by North American accreditation agencies.

Source: APA

Can the U.S. compete in these product sectors?





Some reasons why you want to avoid Commodities unless you have cheap wood, cheap power, fewer regulations, cheap labor, ….

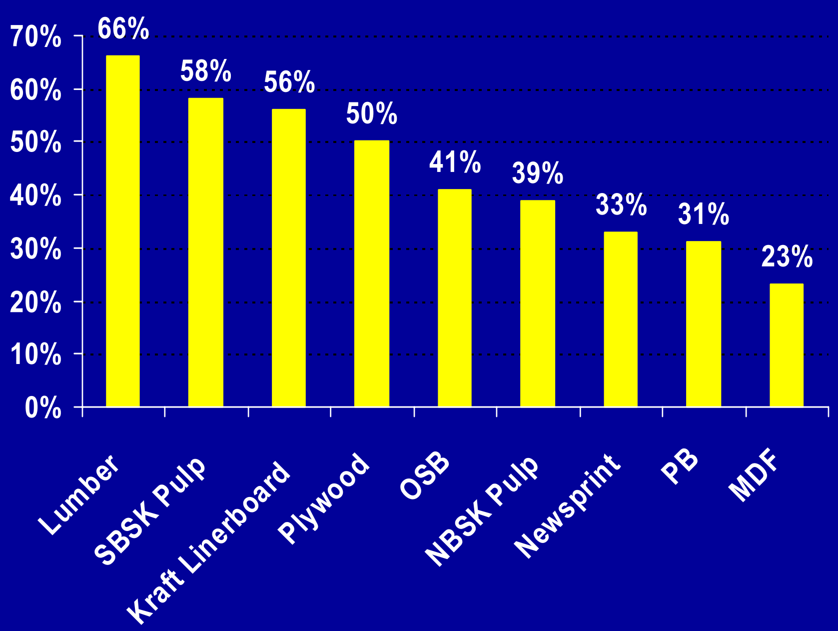
Some reasons why commodity prices (real, inflation adjusted dollars) will decline

- Lower production costs resulting from technological improvements
- Lower industry marginal costs due to closure of higher costs mills via recent M&A activity
- Increasing supply from lower cost regions (production shift from North hemisphere to Southern hemisphere)
- Falling “use factors” (consumption per unit – e.g., lumber per SF floor area of a house) due to substitute products

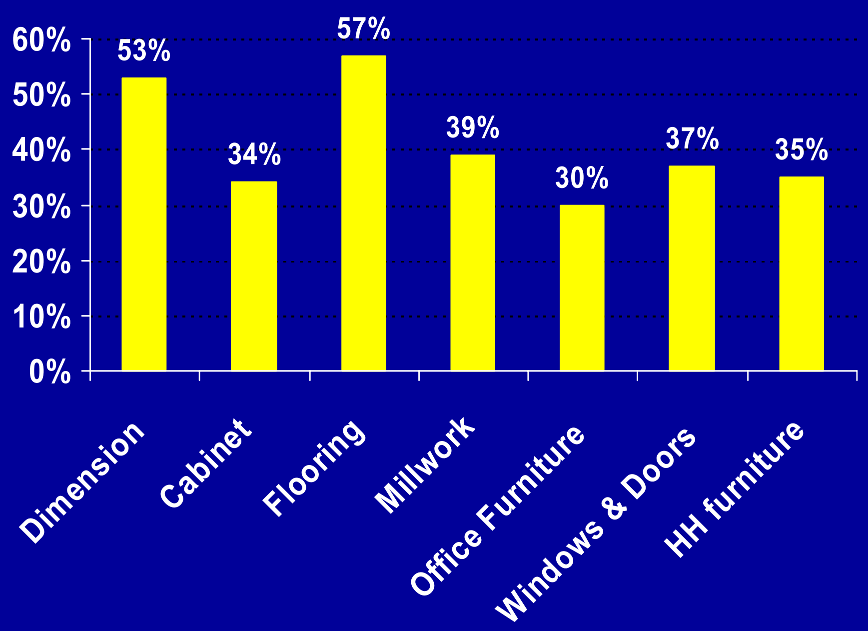
Why is U.S. losing commodity wood markets?? Here are some clues

Fiber as % of Mill Gate Operating cost

Primary Industry



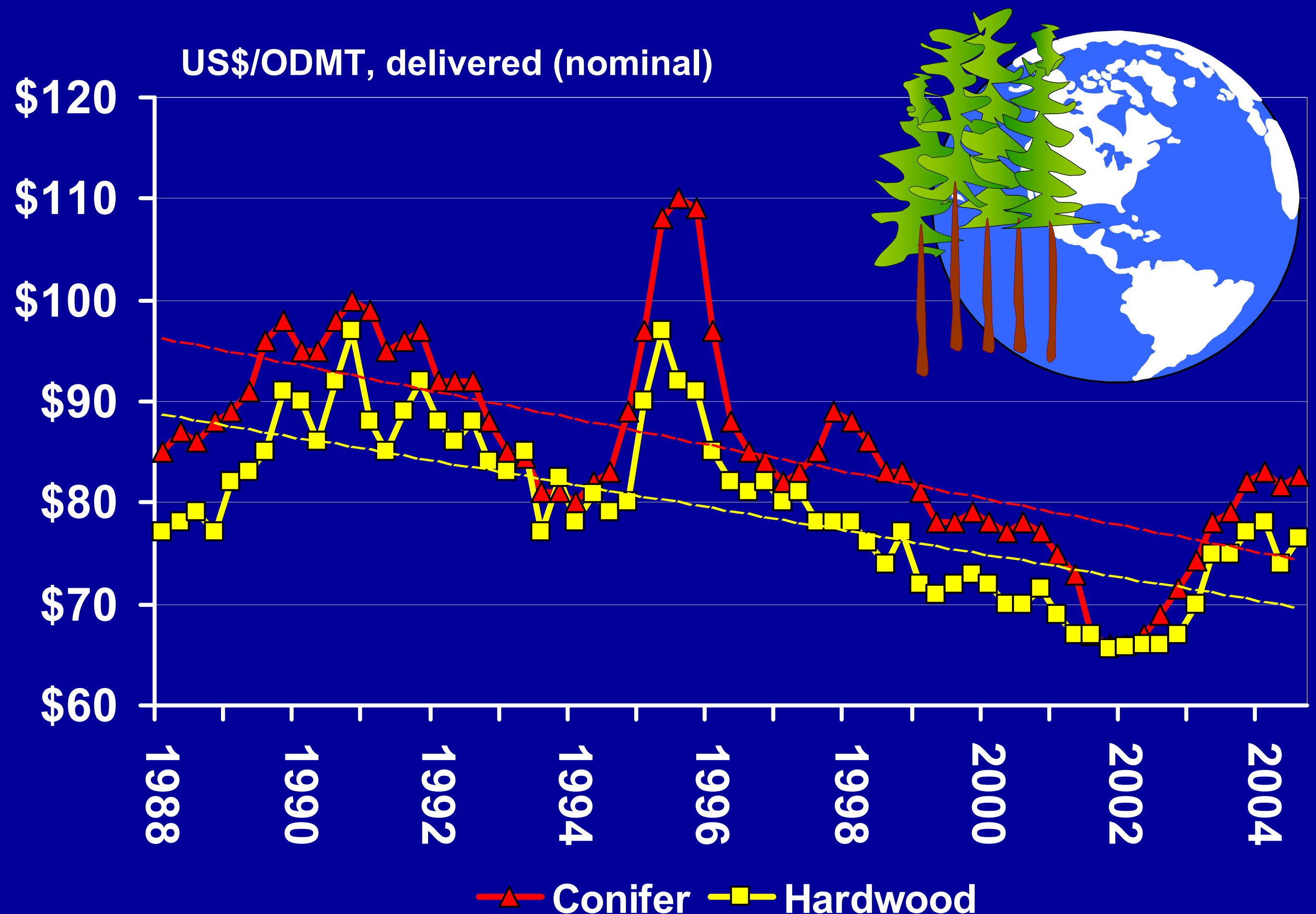
Secondary Industry



Source: CIBC World Markets

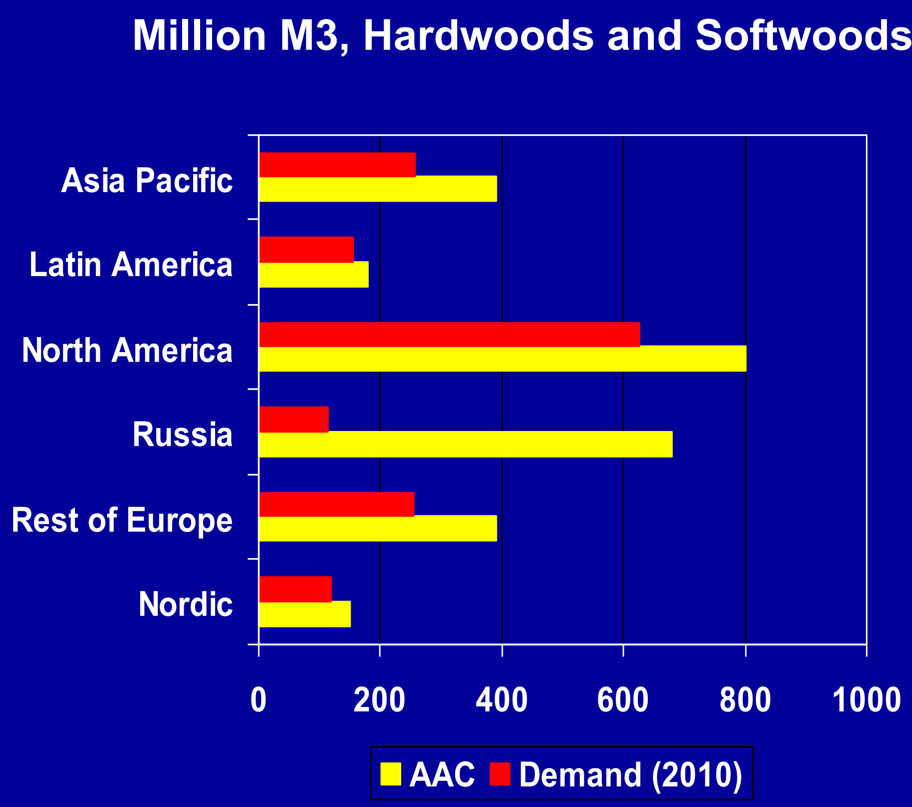
Some realities to consider . . .

Global average wood fiber (chip) prices have fallen by 15 to 20% in the past 15 years … that implies lower real (inflation adjusted) commodity prices in future??

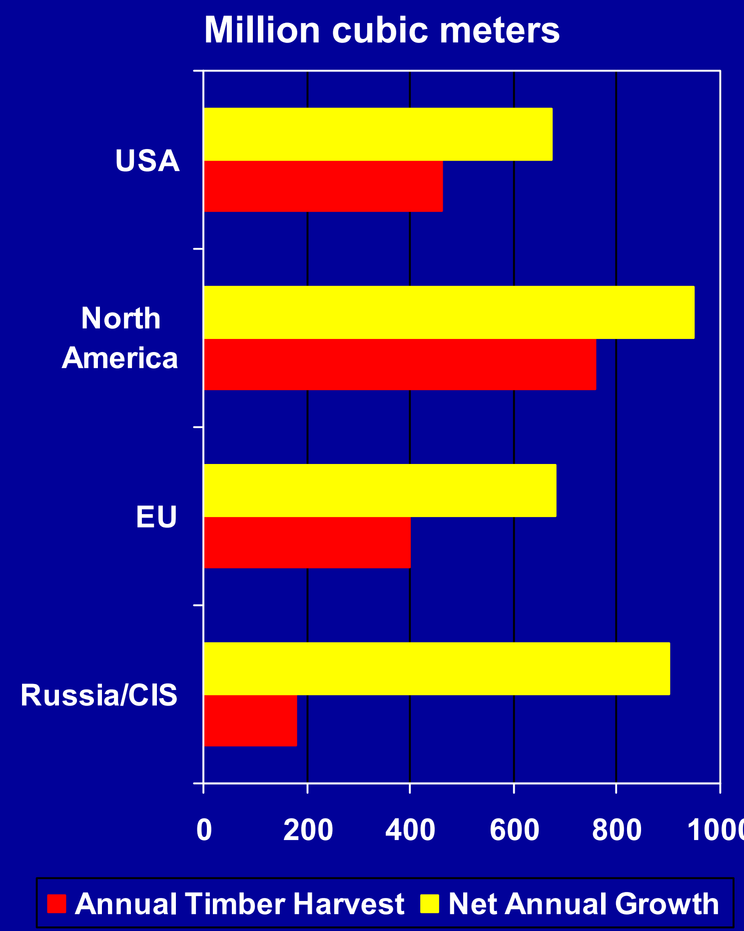


Source: Wood Resource Quarterly, WRI, Bob Flynn

Fiber prices are falling because …
Supply exceeds demand … Future timber glut?



Source: Jaakko Poyry



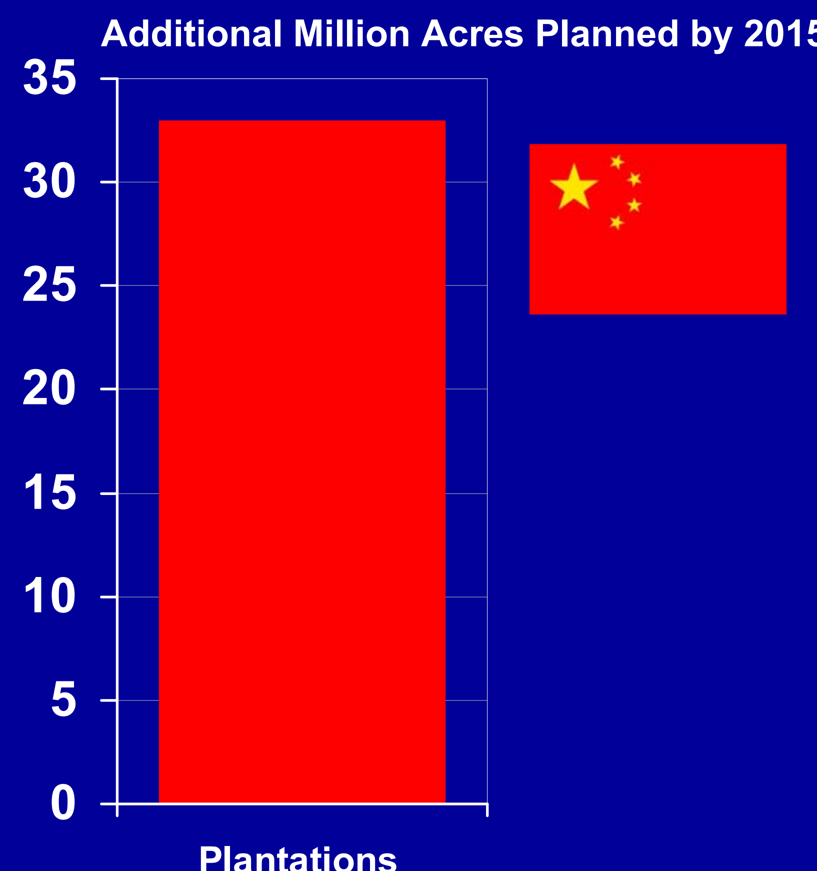
Source: Source: U.S.A. - AF&PA; others - R. Taylor, WMM, 2/2003; UN/ECE

Global expansion of wood fiber plantations is one reason for declining global fiber costs . . .

900% growth in past 20 years (20 million HA to180)

Klabin de Papel e Celulose plantations in Brazil

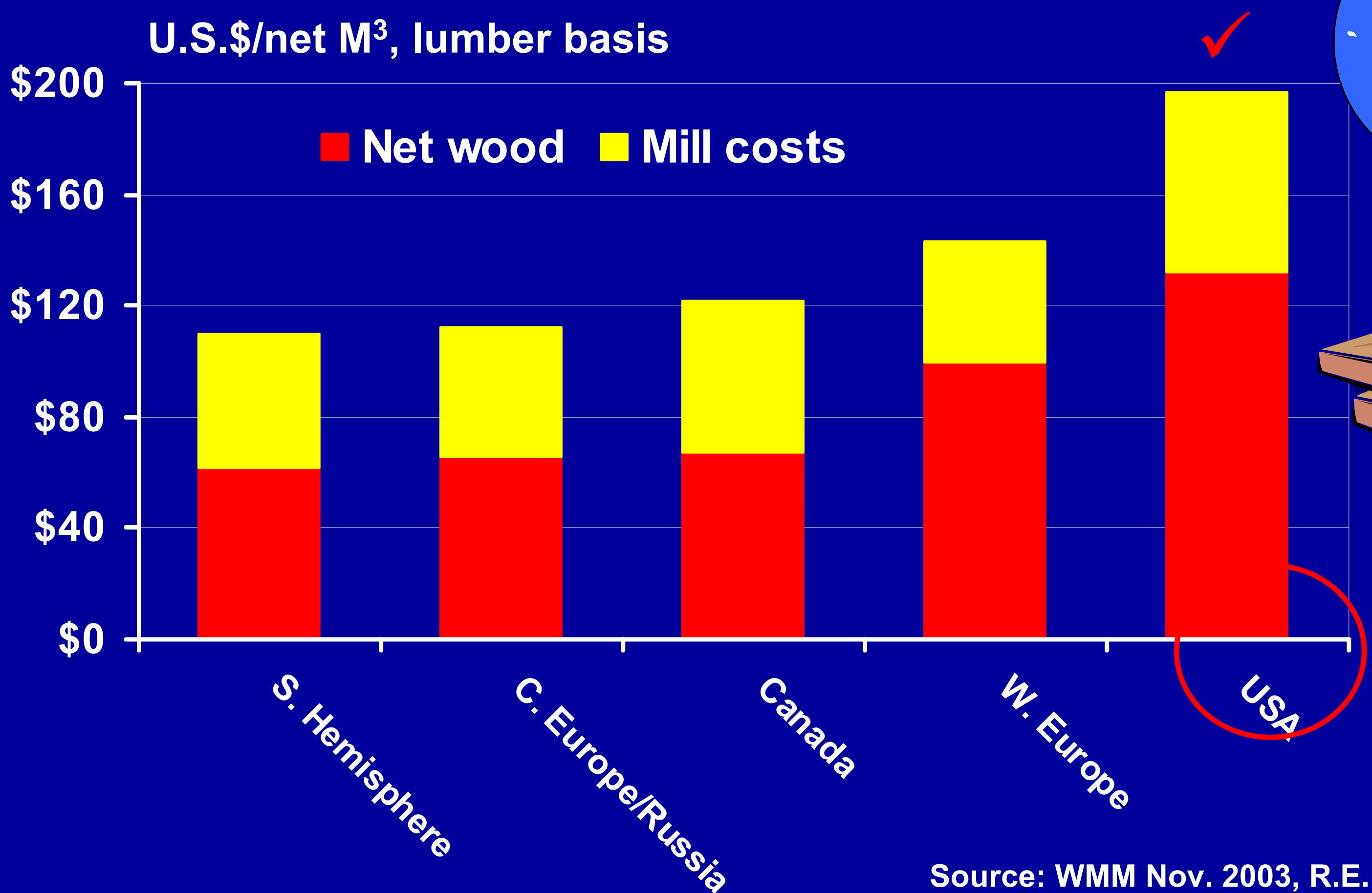
Fiber Plantation Expansion in China (supported in part by state subsidies)

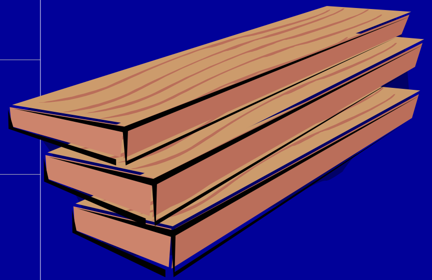


Source: AF&PA

Also, the United States is not the lowest cost producer of forest products, such as lumber . . ., but the recent weakening of the USD is helping

Global Sawmilling Costs – 2002

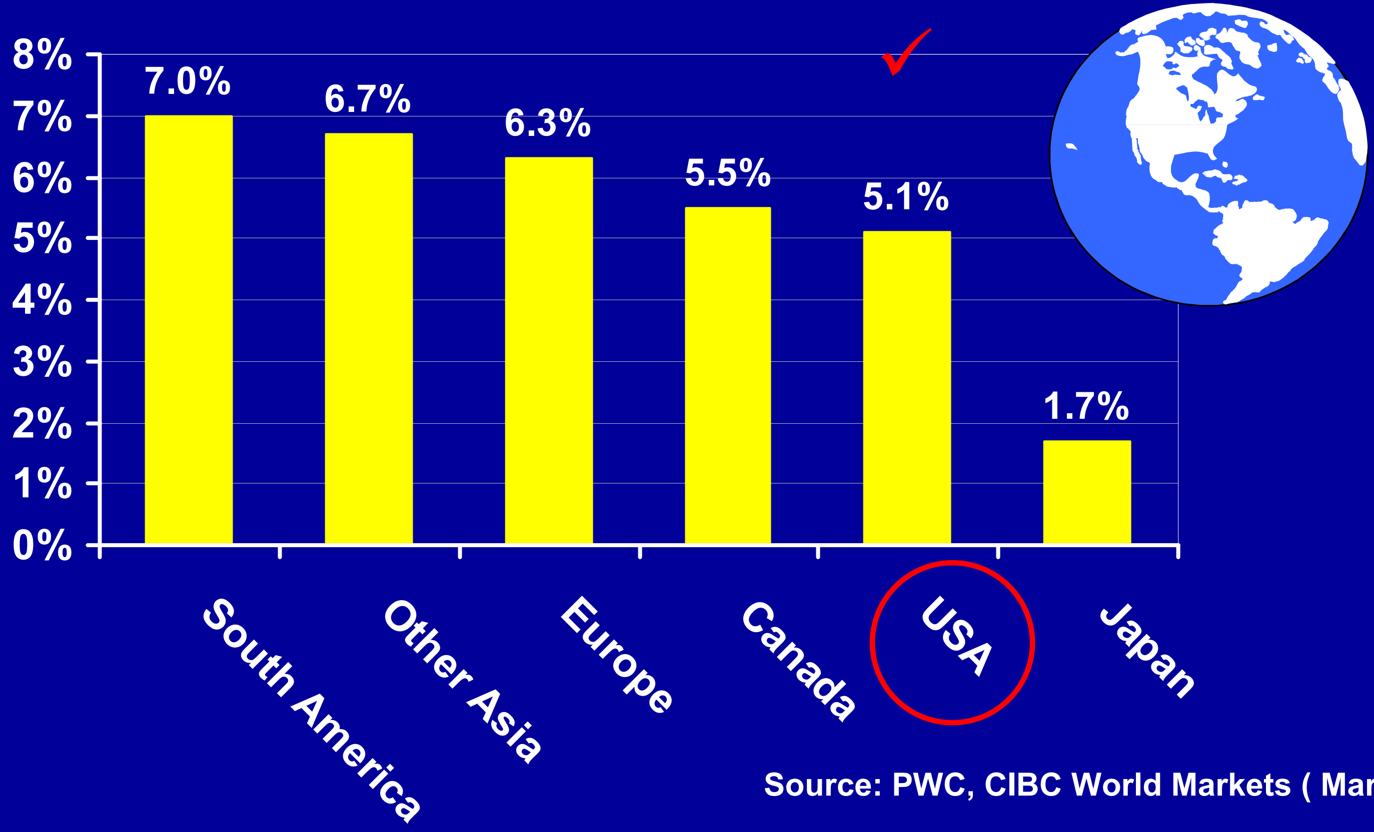




Source: WMM Nov. 2003, R.E. Taylor, USDA FS

. . . as other regions have provided more profitable returns on capital investments … guess where the new money is going???

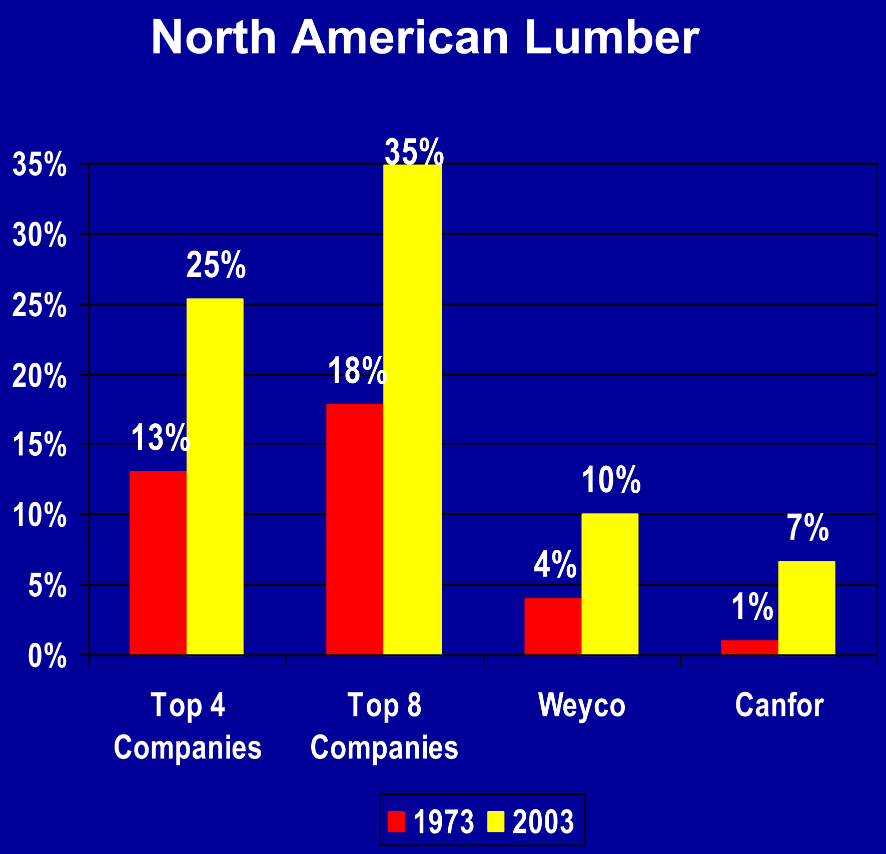
ROCE by Region : 1998-2003

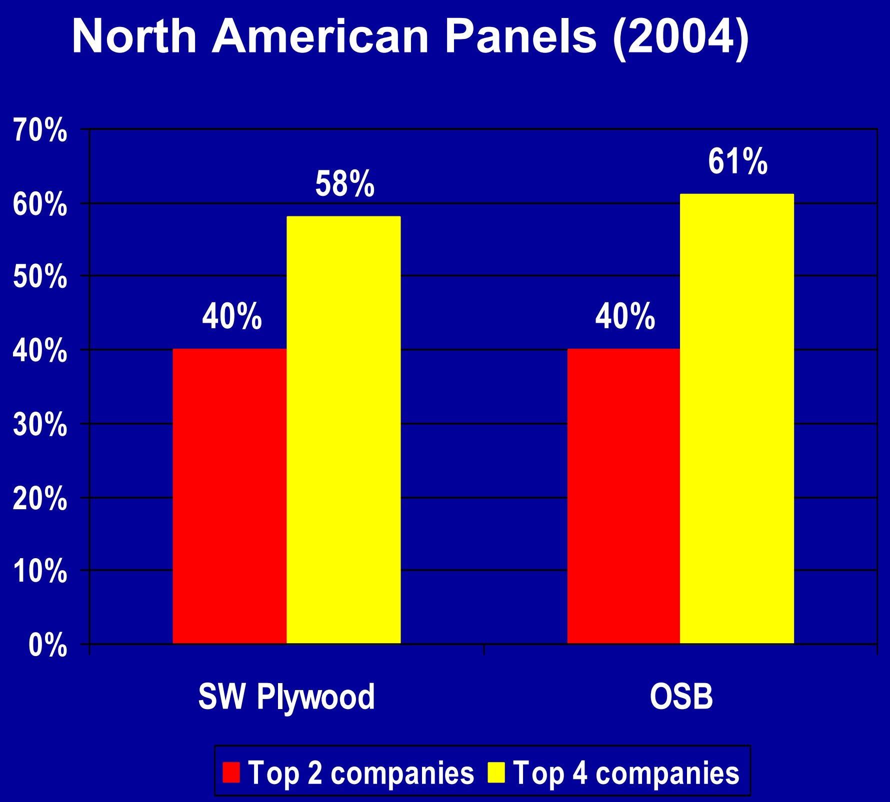


Source: PWC, CIBC World Markets (March 2005)

Consolidation in Lumber and Structural Panels…

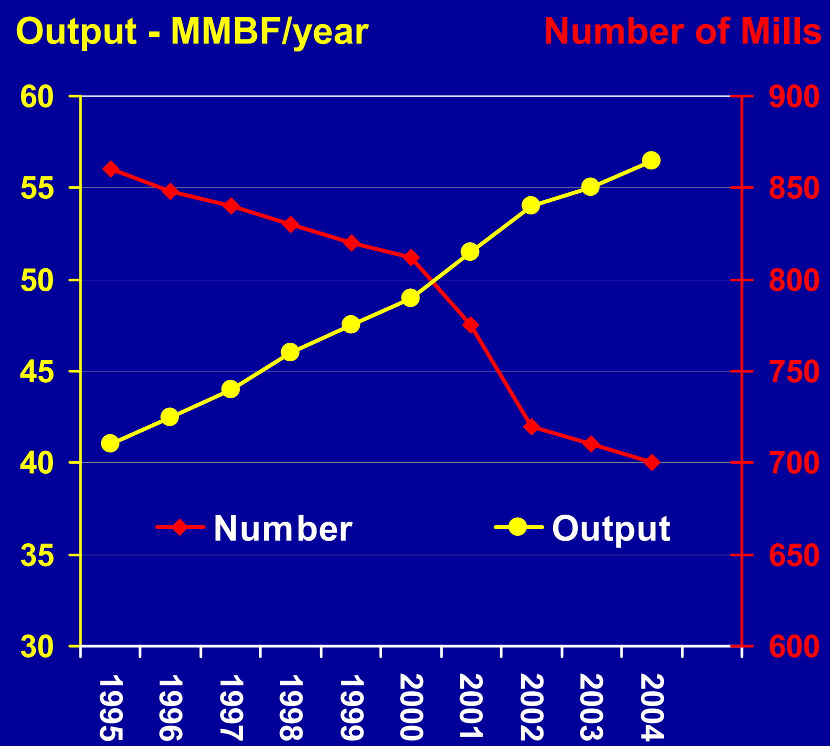
Implications .. It's about scale economies – consolidation to drive costs down and lock up customers … and, larger companies are more global in sourcing fiber and products





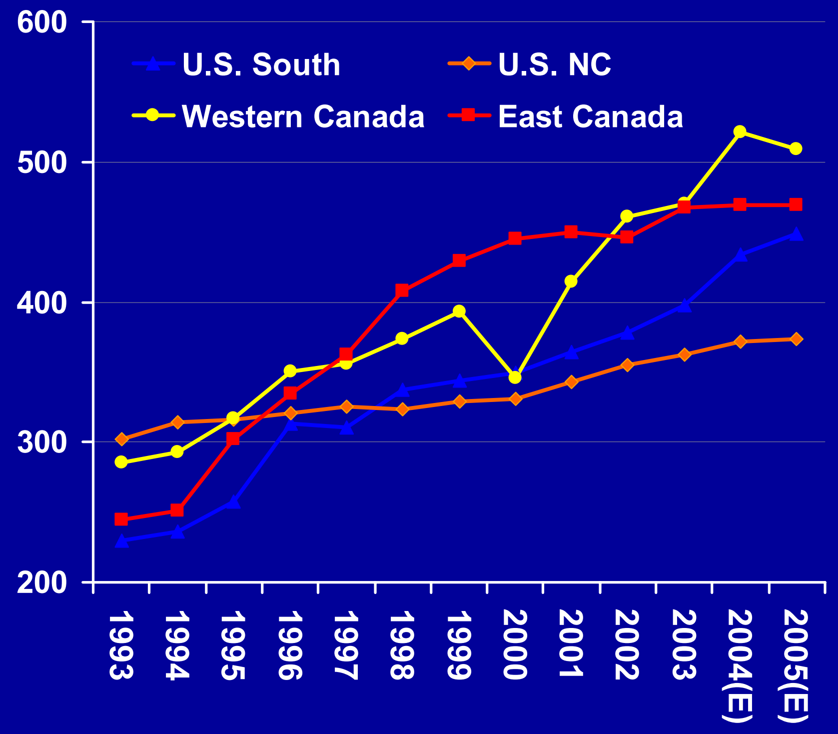
With import competition and consolidation, U.S. mills are getting bigger - more efficient and automated ... If you stay in commodities, this is the way to go, but make sure you have the resources to "pull it off"

U.S. sawmill statistics



170% capacity increase in past decade
Avg. mill: 245 MMSF to 411 MMSF

Regional OSB Capacity, MMSF(3/8")



Source: RISI

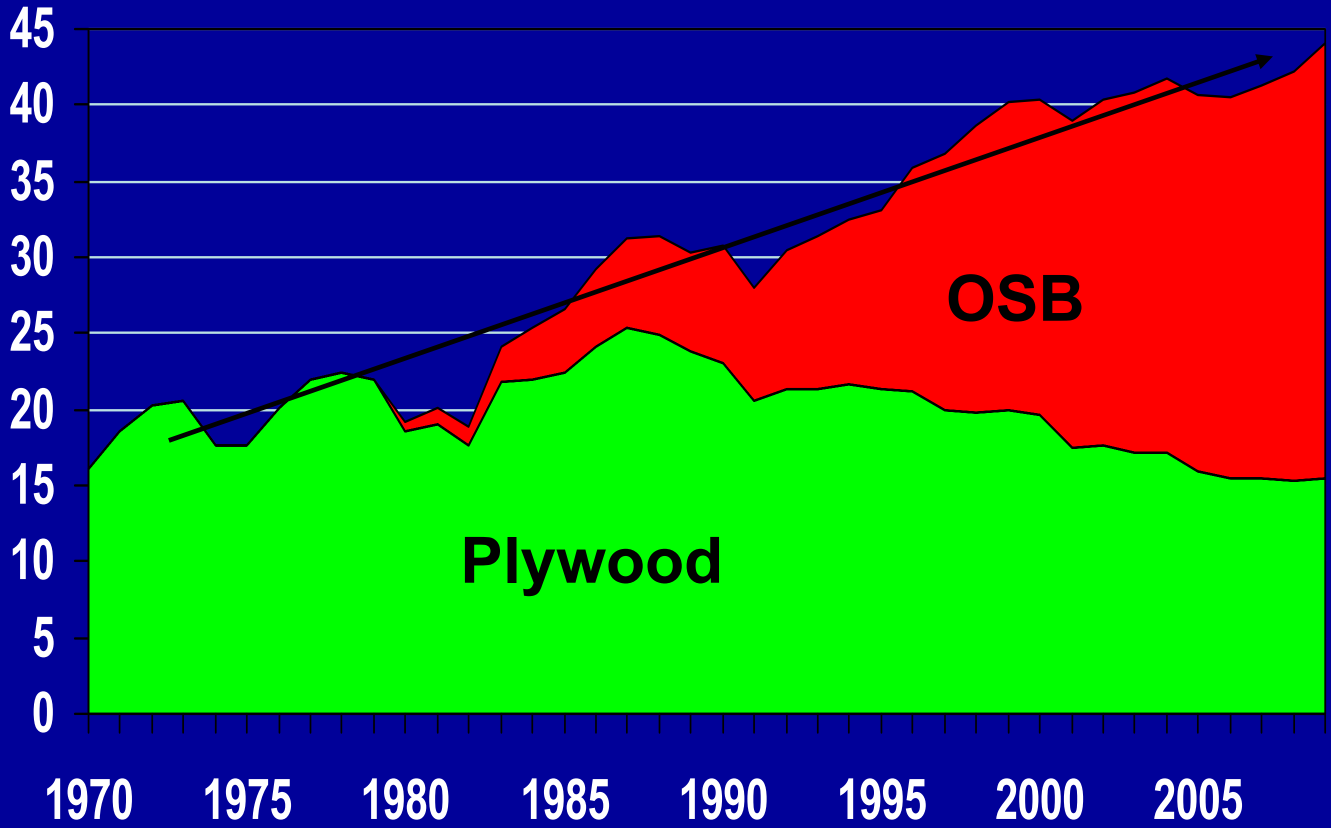
Structural Panels and EWPs

- Demand/supply analysis
- Market share – high concentration in few end uses/markets – becoming commodities
- Product life cycles – even some EWPs are becoming mature
- Increasing margin pressure on commodities ….
- More reasons to move up the food chain!!!

  with innovation in products, building systems, …. Innovative business model(s), innovative business solutions

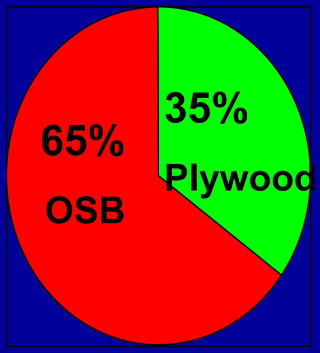
North American Structural Panel Markets

North American production
BSF 3/8"



2009

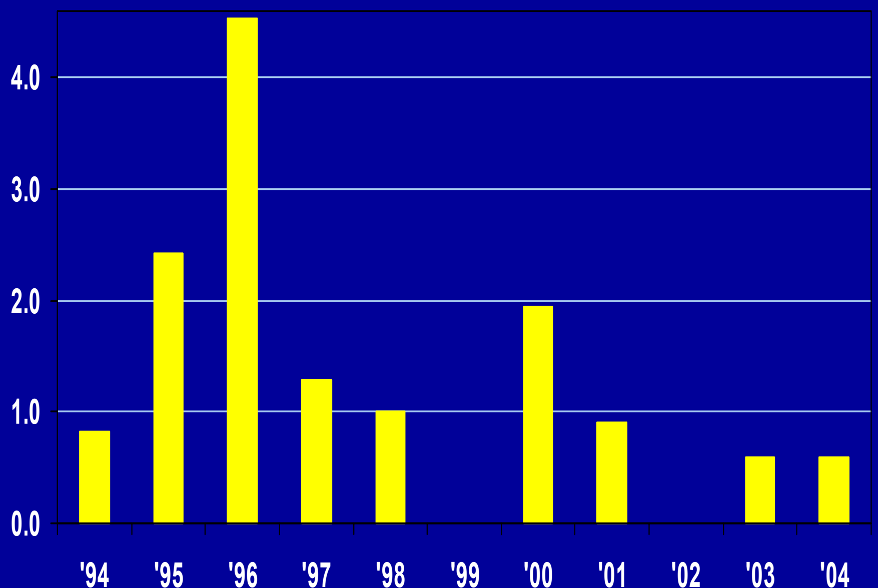
Plywood:	15.5
OSB:	28.5
Total	44.0



Source: APA, RISI

North American OSB Prices : supply is just as important as demand

Capacity additions, BSF (3/8")



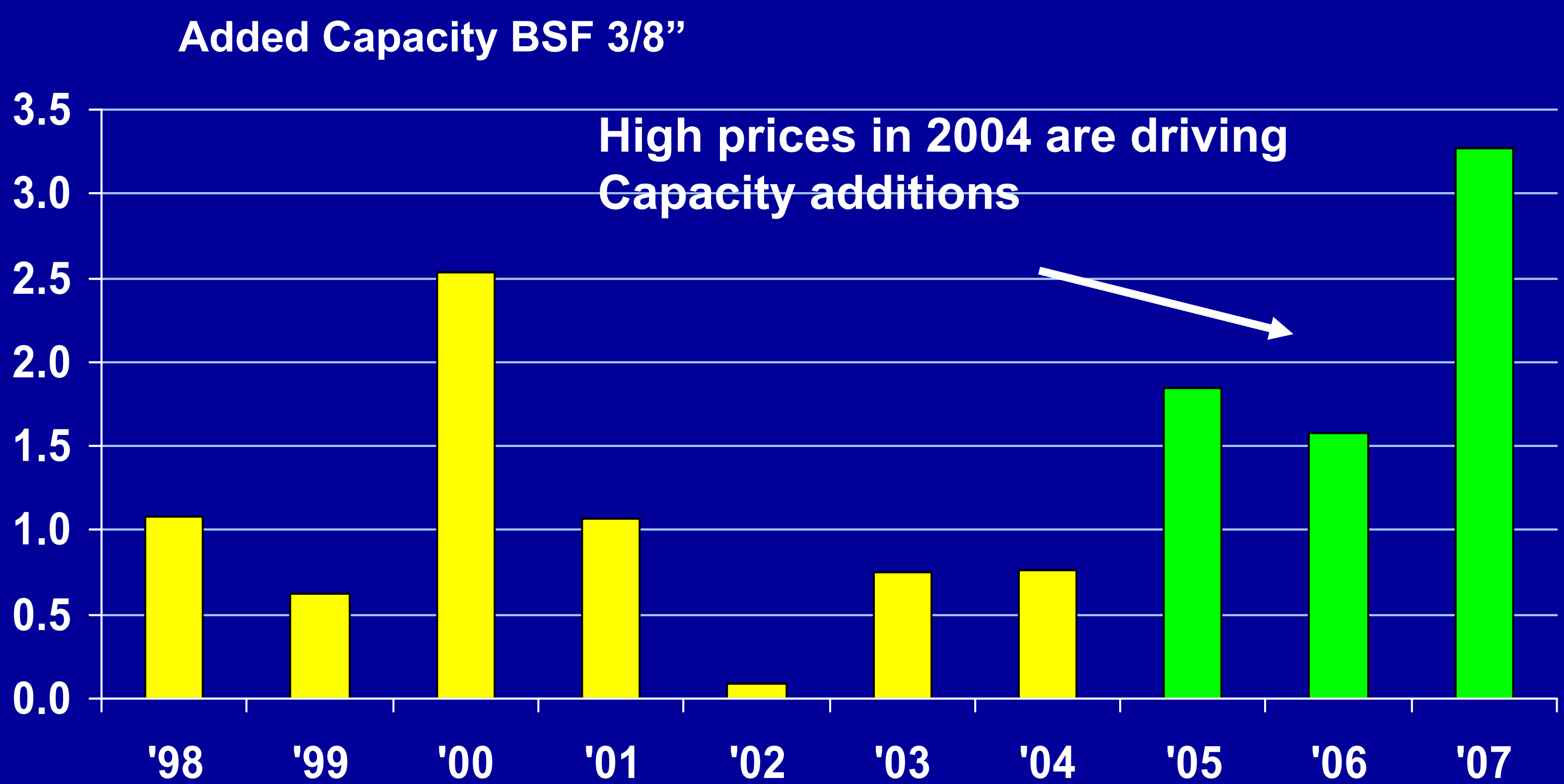
NC,7/16" FOB mill

Starts, million

Source: APA

Source: Census, Random Lengths

Supply - New Wave Of North American OSB

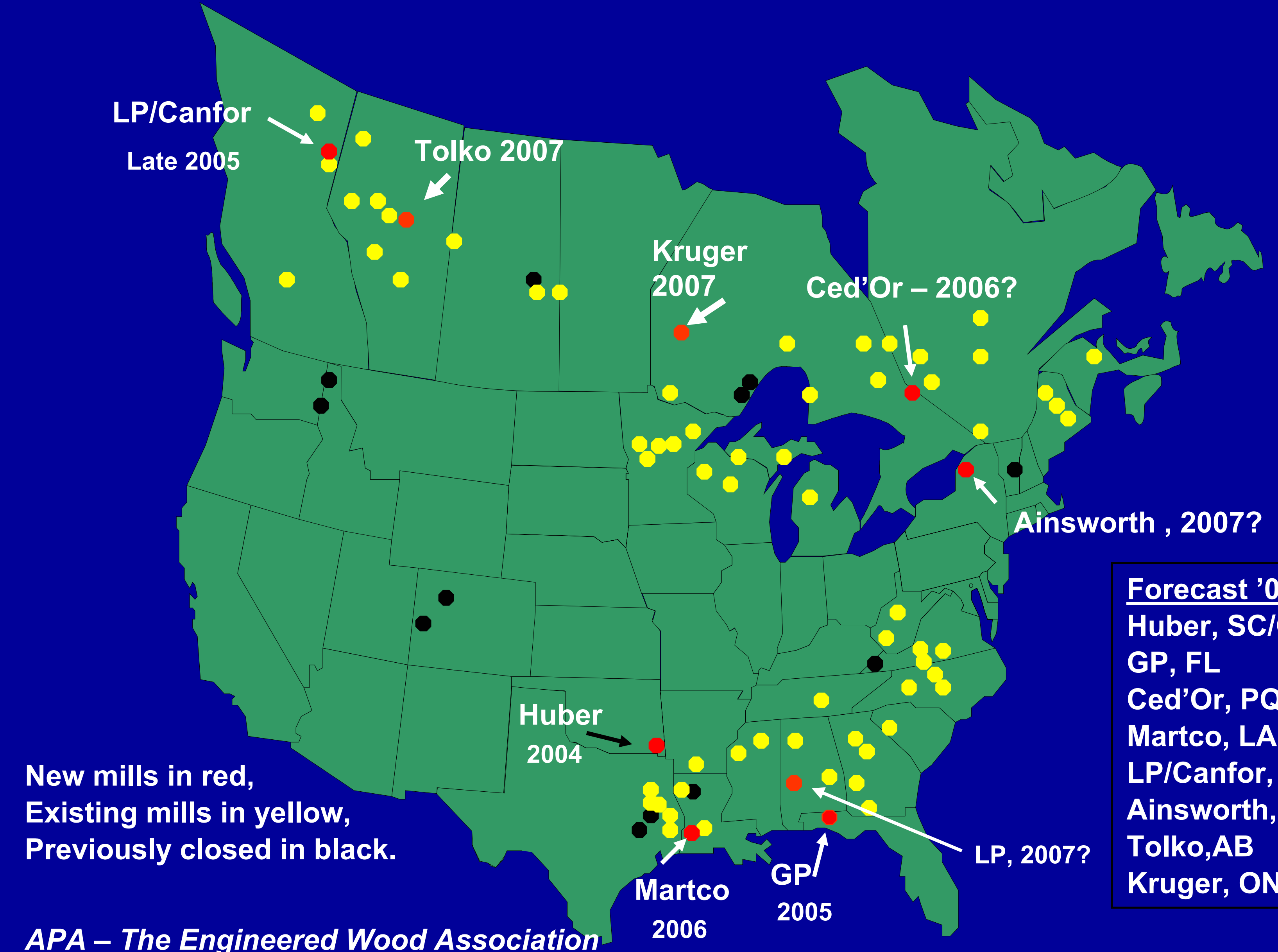


----6.7 BSF ’05-’07----

----6.8 BSF ’98-’03 ------

Source: APA, March 2005 . Includes new mills and capacity creep.

OSB Mills 2004+



Forecast '05-'10:
Huber, SC/GA
GP, FL
Ced'Or, PQ
Martco, LA
LP/Canfor, BC
Ainsworth, NY
Tolko,AB
Kruger, ON

APA – The Engineered Wood Association

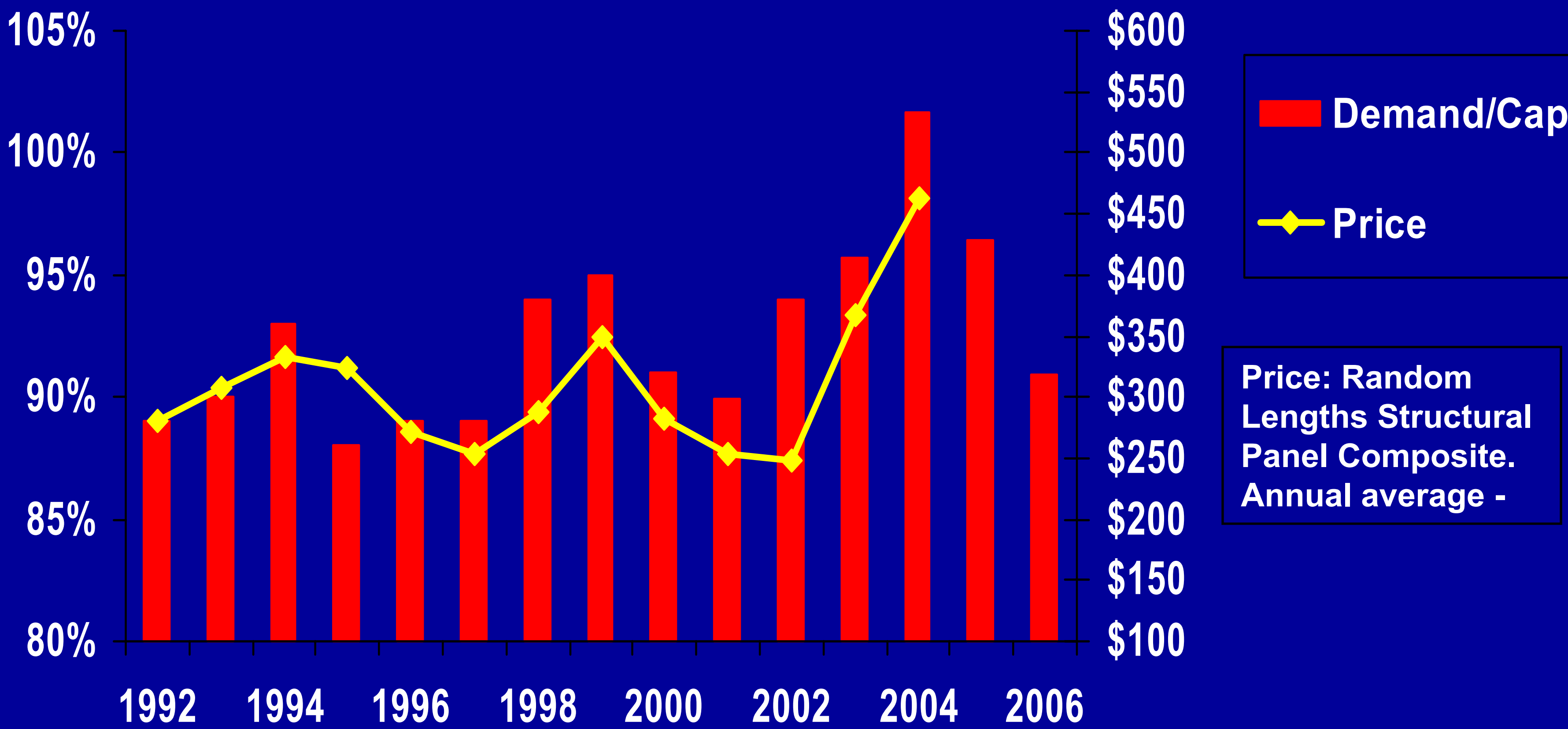
New Mills Planned for 2005 and Beyond

Company	Country	MMSF (3/8")	Start Date
Chatham Forest Prod.	USA	500	2006??
Ogdensburg, NY (recently bought by Ainsworth)			
LP/Canfor	Canada	820	Sept 2005
Fort St. John,BC			
Martco, Louisiana	USA	850	2006?
LP – Alabama	USA	800	late 2007
GP, Florida	USA	500	early 2005
Ced-Or Forest Prod.	Canada	210	????
Bearn, QC			
Kruger, Longlac Ont.	Canada	750	2007?
Huber – SC or GA	USA	700+	2007?

Source: Wood Based panels Intl. – March 2005

Outlook – North American Structural Panels

New capacity plus fewer starts will mean lower prices during 2005 - 2006



Price: Random Lengths Structural Panel Composite. Annual average -

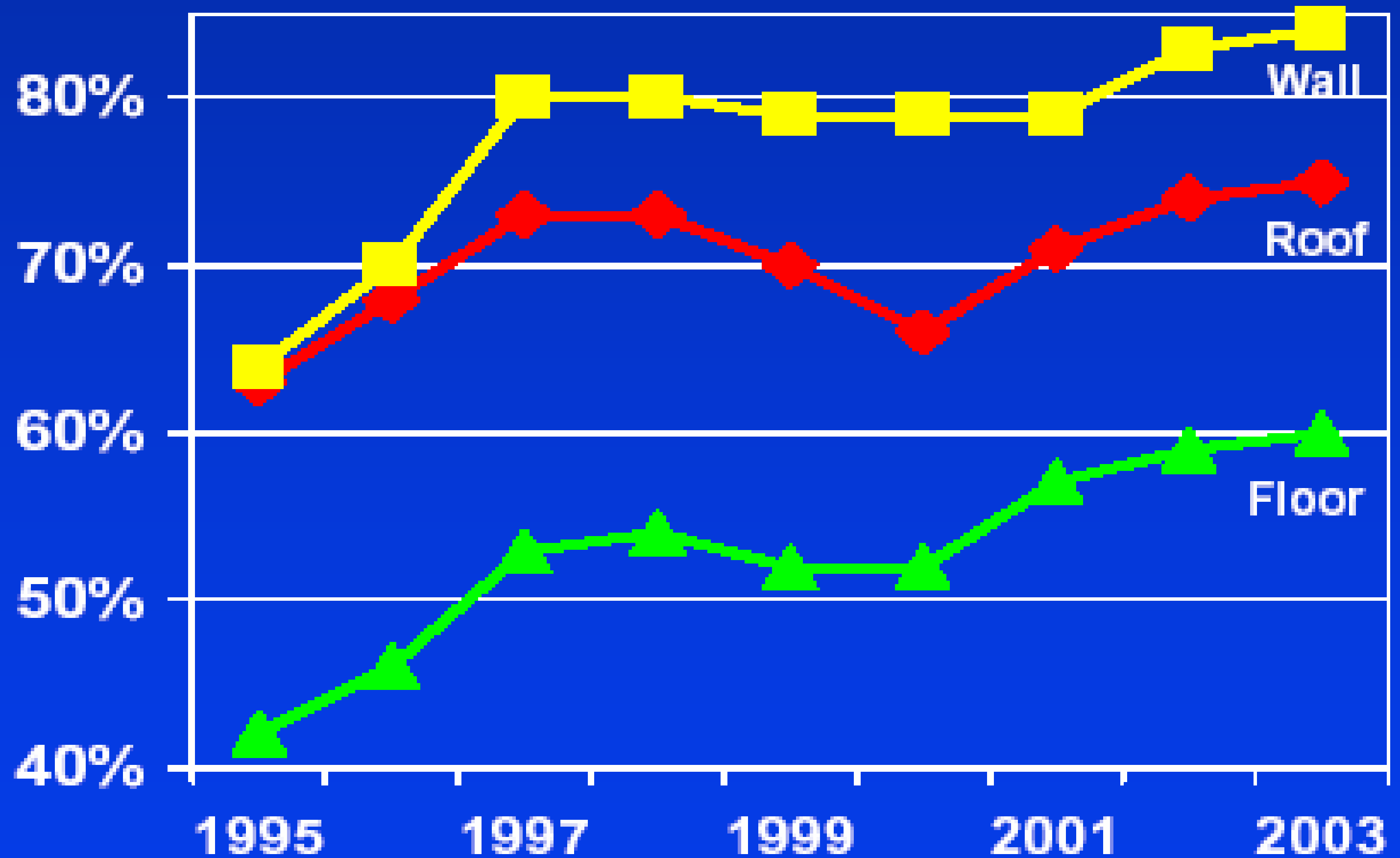
Source: Demand/Cap RISI

Demand: North American domestic market demand + offshore exports

Capacity: North American total

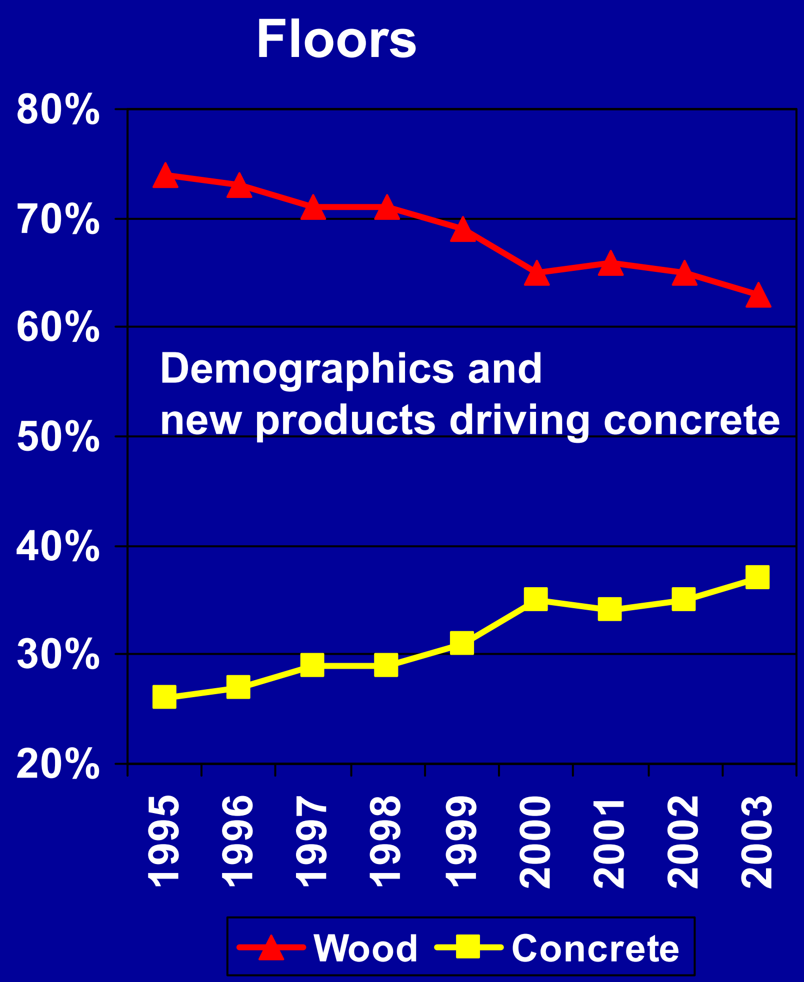
OSB Sheathing Shares vs. Plywood
U.S & Canada-Single Family & Multifamily

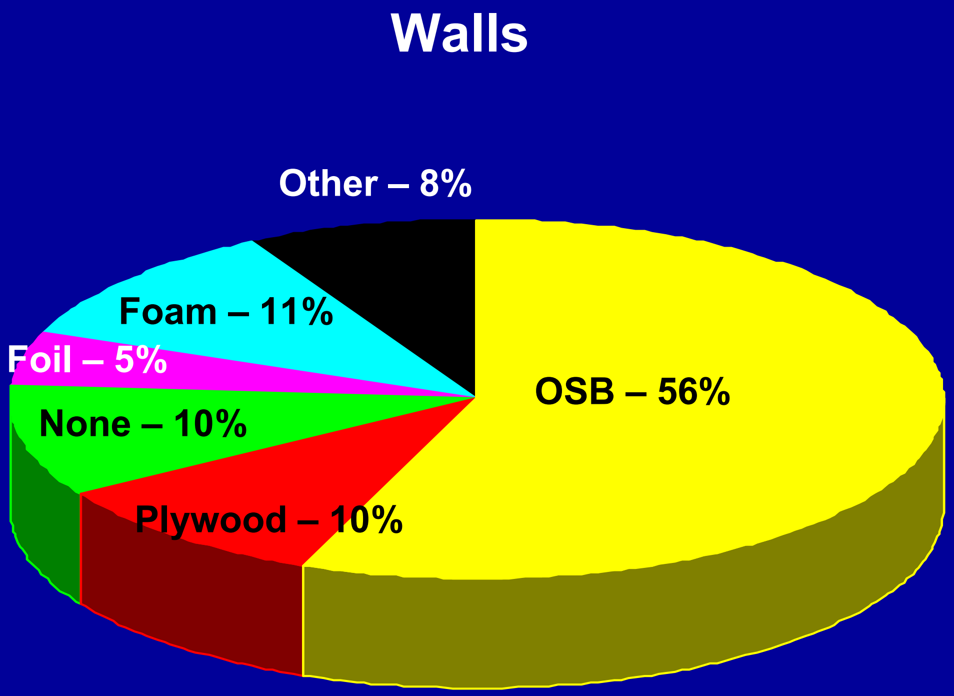
OSB already has a high share of home construction. The sheathing market is getting filled up with OSB and OSB may come after industrial next.



Source: APA-The Engineered Wood Association. '03 preliminary.

Competition in sheathing markets - 2003



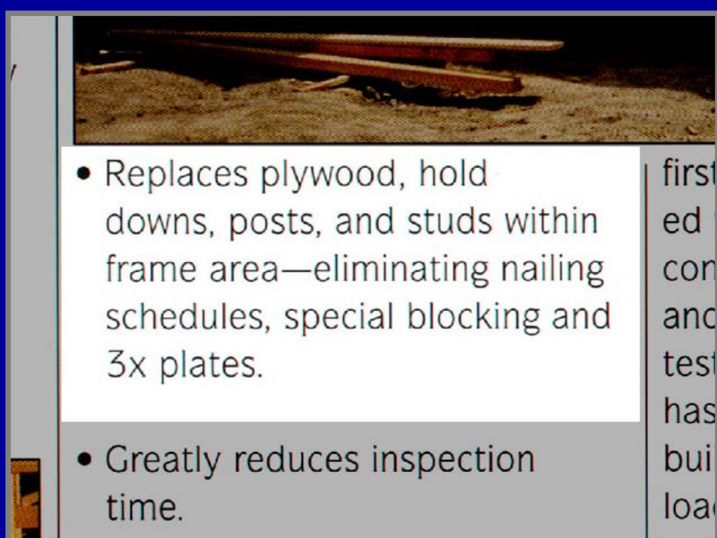


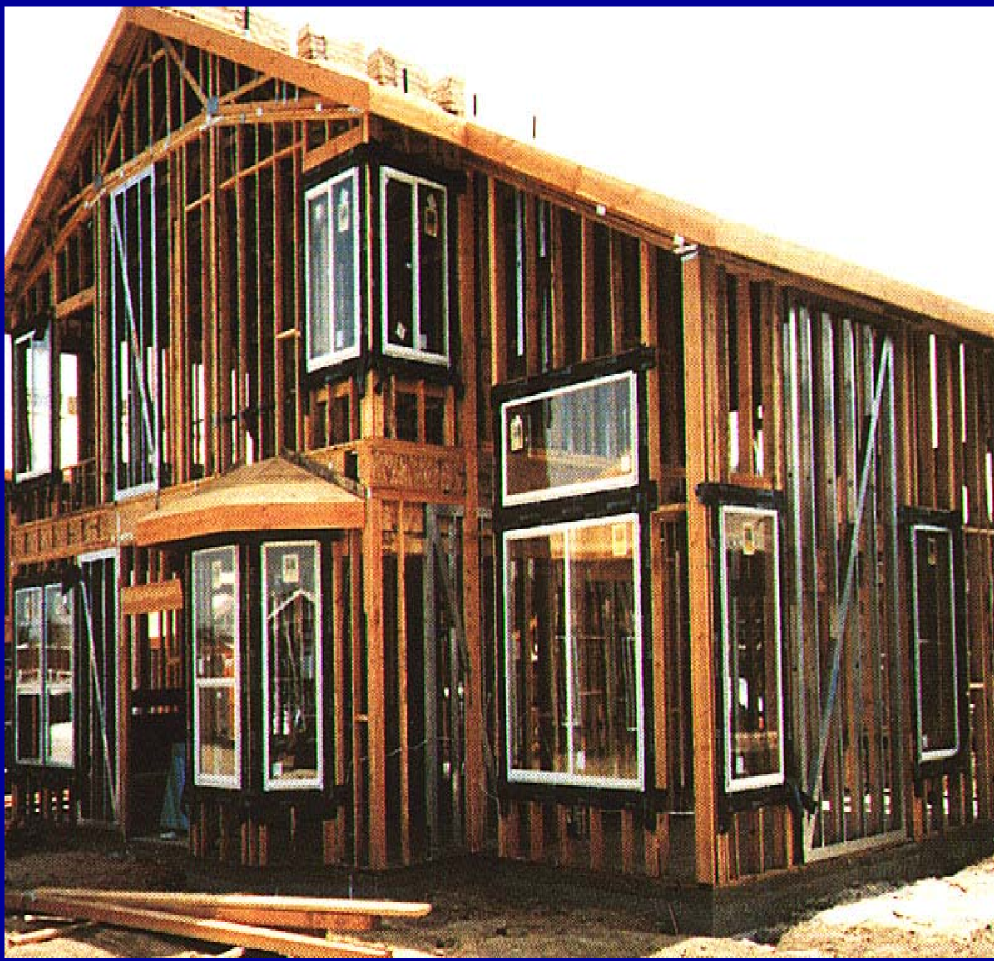
Source: NAHB Research Center

Wood Wall Sheathing Losing Share a Question of Economics (less labor, inspection time, framing lumber,..) to the Builder

Advertisement:

"The principle benefits of the Strong-Wall Shearwall® are its consistency and strength… …this allows for more windows and doors in the house design because you use 30-70% less shearwall than typically required."
Translation – less OSB!!!





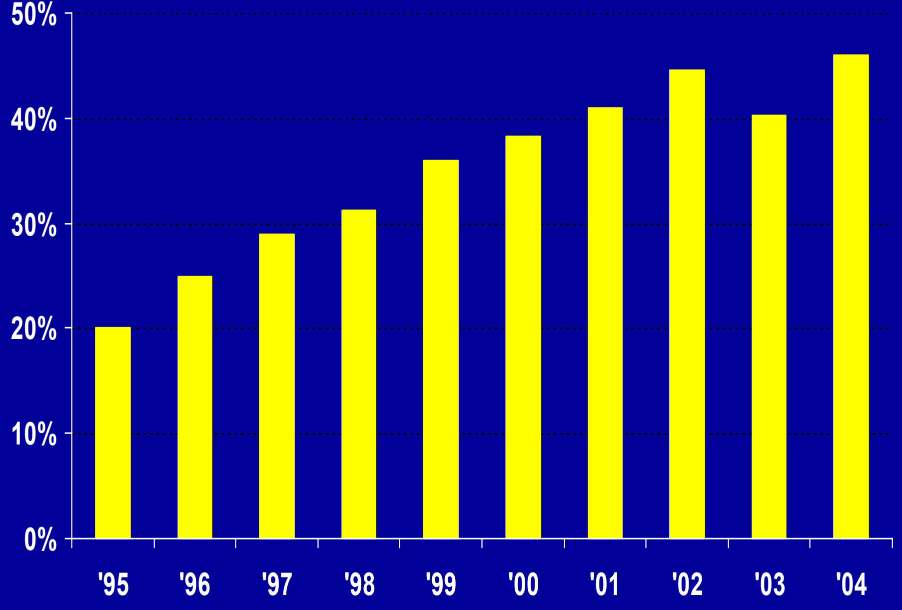
Wood Wall Sheathing Losses

- Foil faced kraft board and foam sheathing.

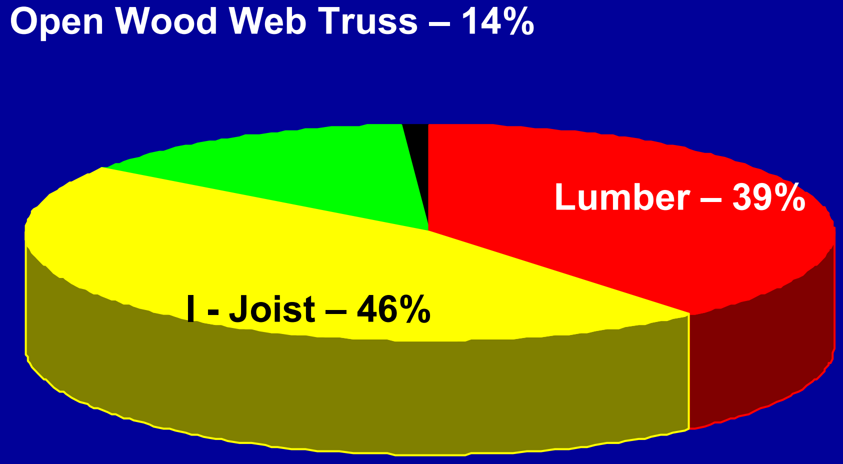
I-joist Market Share
Raised Floors – approaching saturation???

Single Family

Share of raised floor area



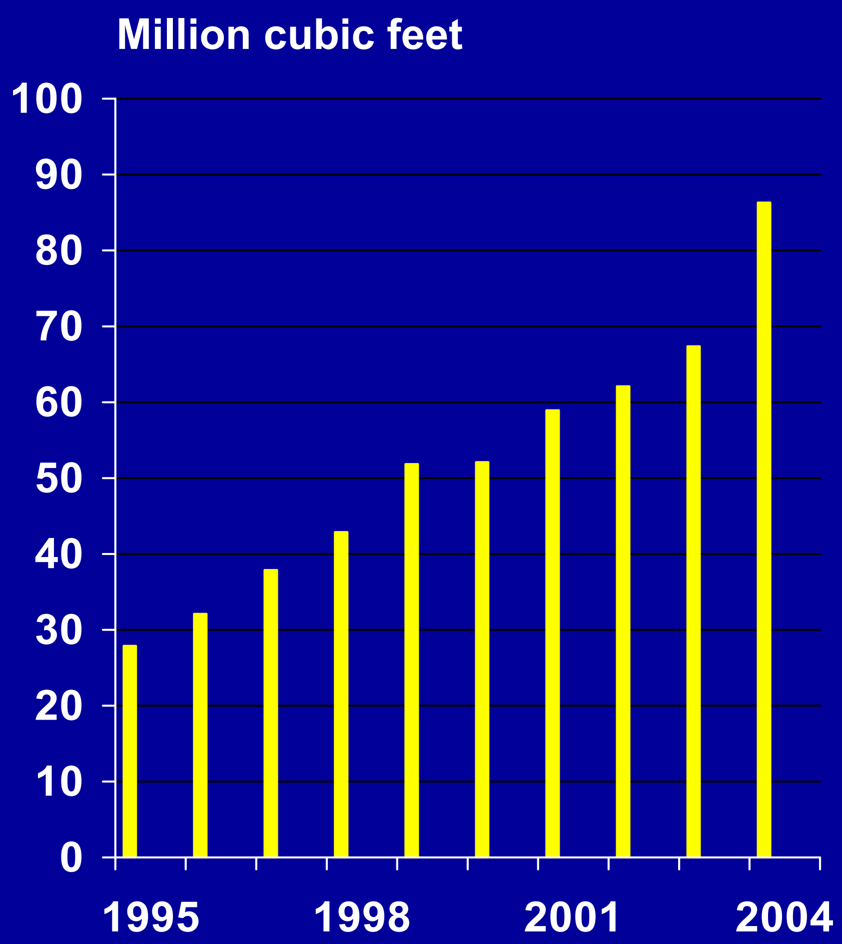
New Residential* (2004)

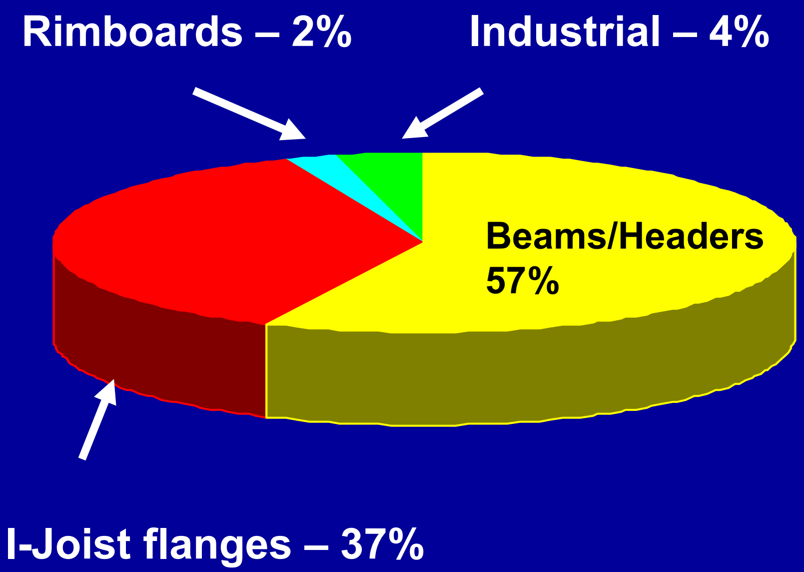


* SF + MF + HUD

Source: NAHB Research Builder surveys; APA

LVL Stats

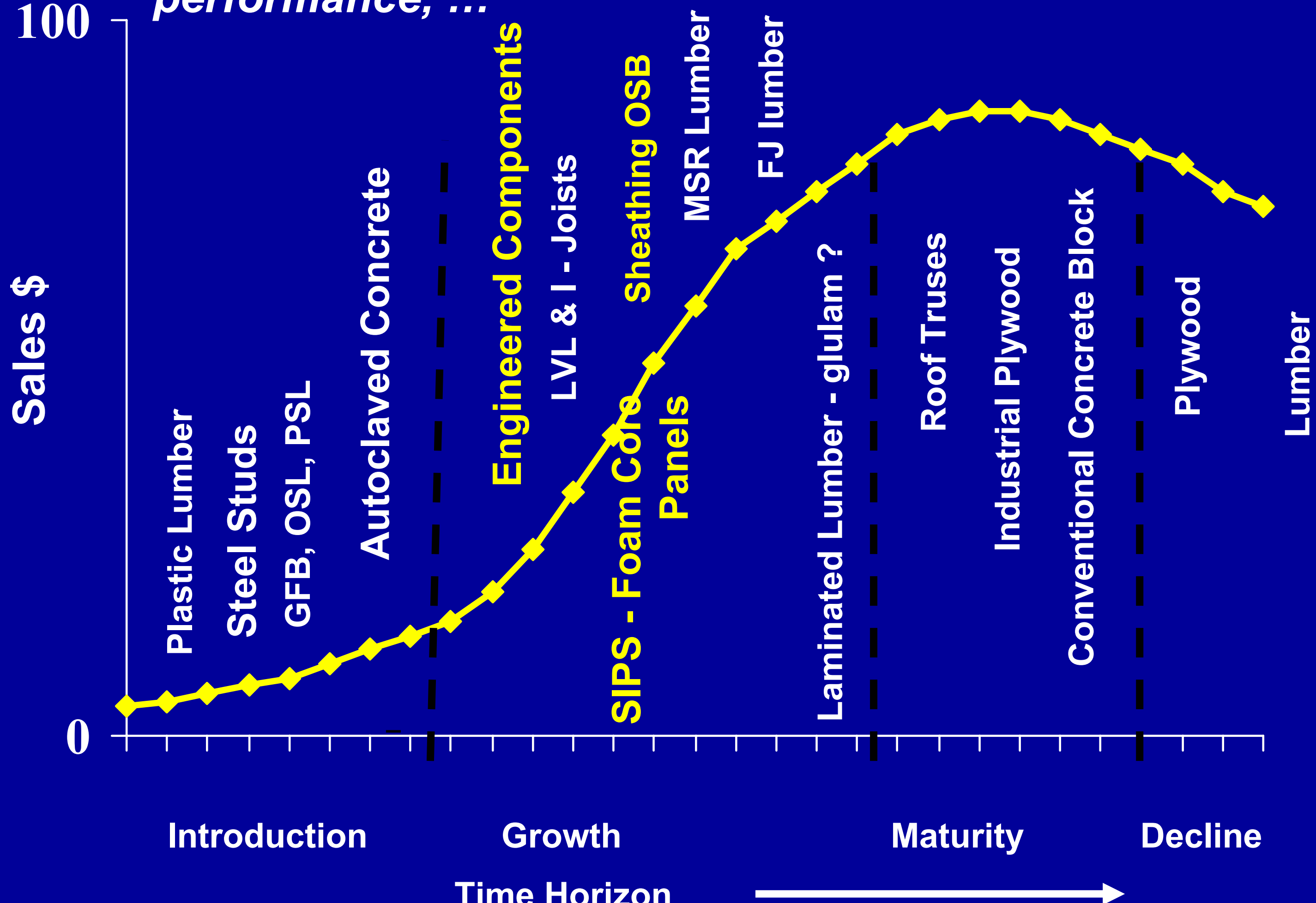




Source: APA

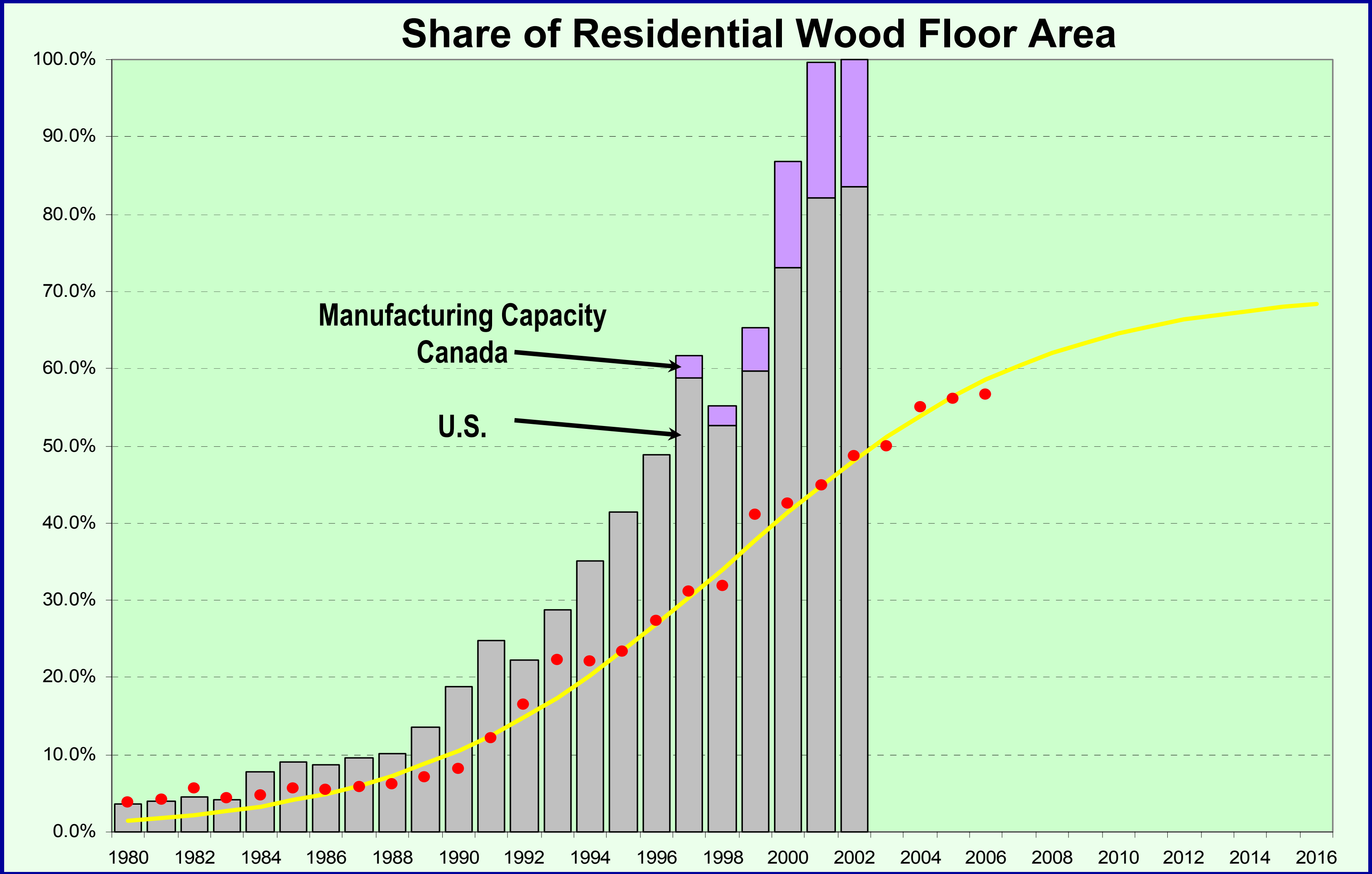
Construction “Product Life Cycle”

Alternatives to Lumber and Plywood
conventional wood expected to continue losing market share to materials with less maintenance, stronger, predictable performance, …



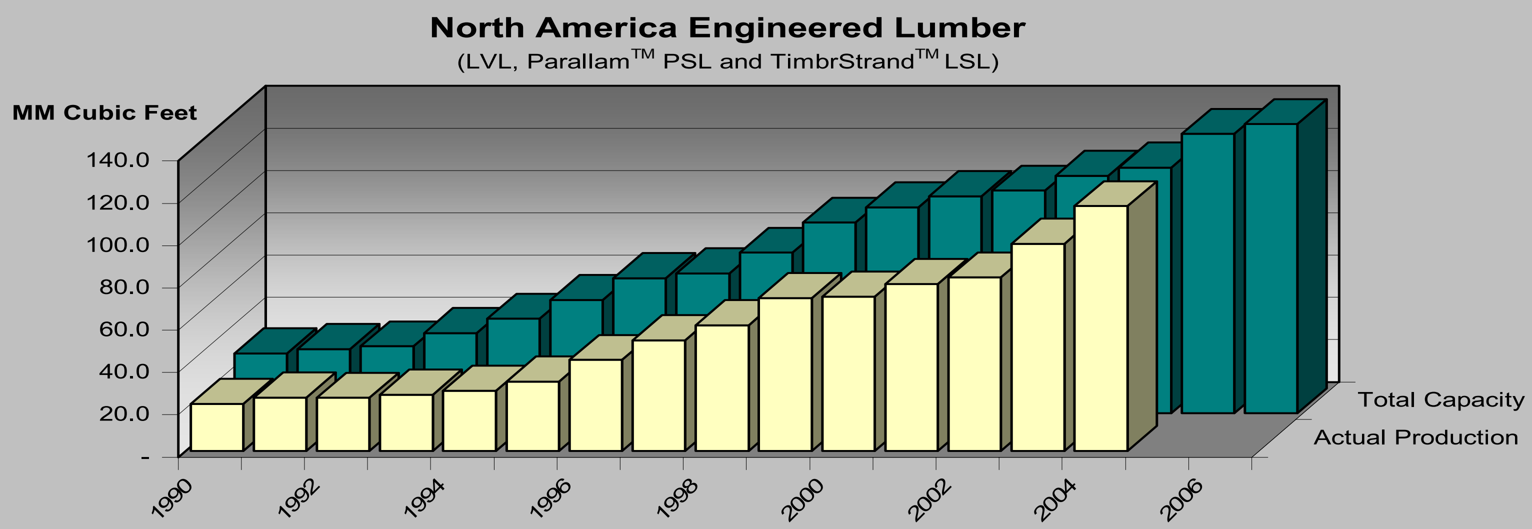
Source: USFS

I-Joist Life Cycle



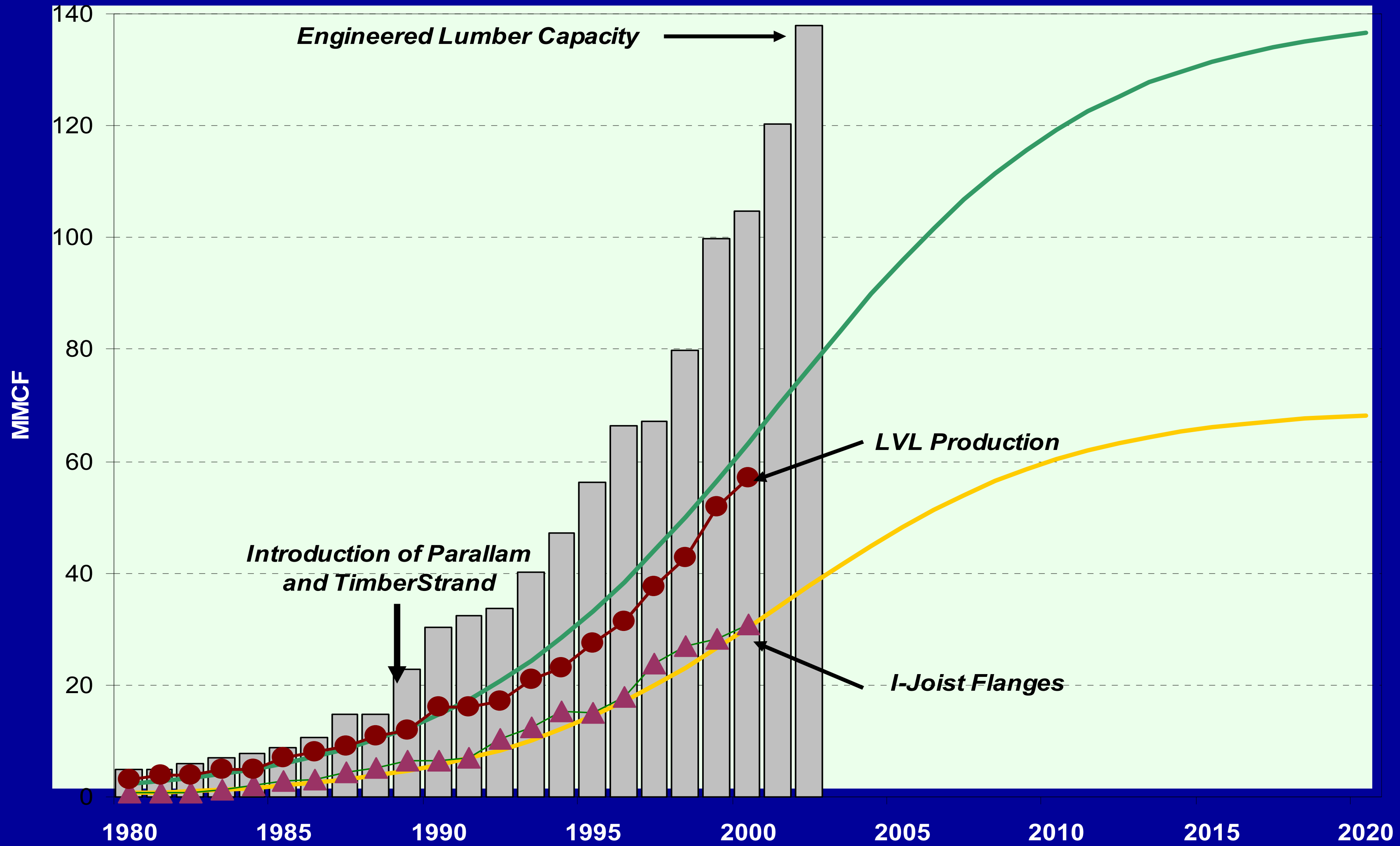
Source: Bill Walters, Weyco Truss Joist

North America Engineered Lumber
(LVL, Parallam™ PSL and TimbrStrand™ LSL)



Source: Bill Walters, Weyco/Trus joist

Engineered Lumber Life Cycle



Source: Bill Walter, Trus Joist

Where We Are Today with many wood products including EWPs

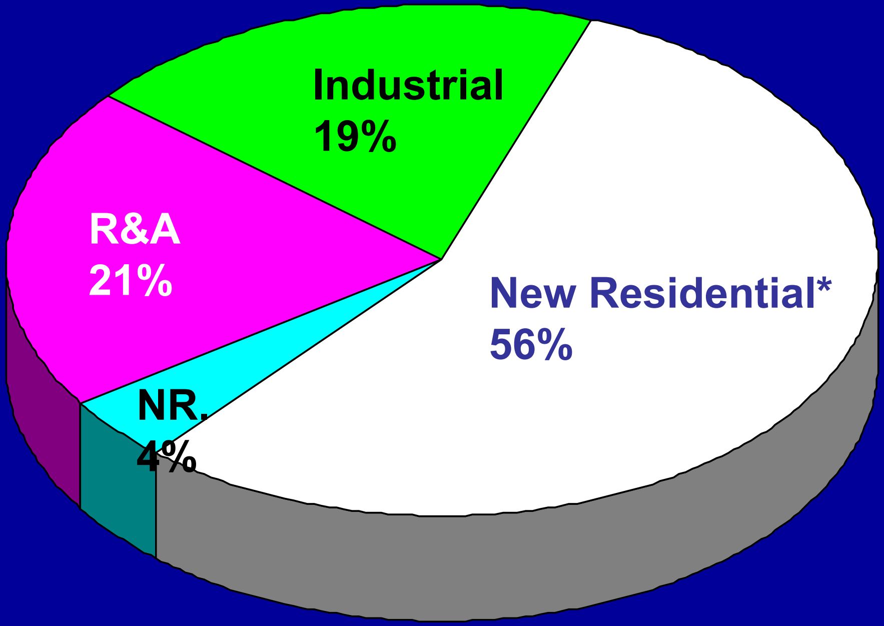
- Approaching the plateau of the life cycle for many products
- Major producers are large, vertically integrated companies
- Customers are becoming increasingly price conscious
- Capacity approaching expected demand (unless industry develops new products, systems, innovations …..)
- Off shore production is increasing – more of this production is coming to North America (both conventional products and EWPs)

Keys To Future Success

- Know your strengths and weaknesses
- Know who your key customers are and what they want from their suppliers – builders want to simplify construction process – goof proof products – shared liability….
- Maintain high standards of performance, reliability and convenience in your business
- Cost Improvement – higher performance products & more efficient use of wood
- Marketing – educate your customers re: your products/services
- **Innovation – new products for new markets; new & enhanced applications; new systems; new business model (s)??**

Where does the wood go? – Too many eggs in one basket? Think about opportunities in Industrial and Non residential ???

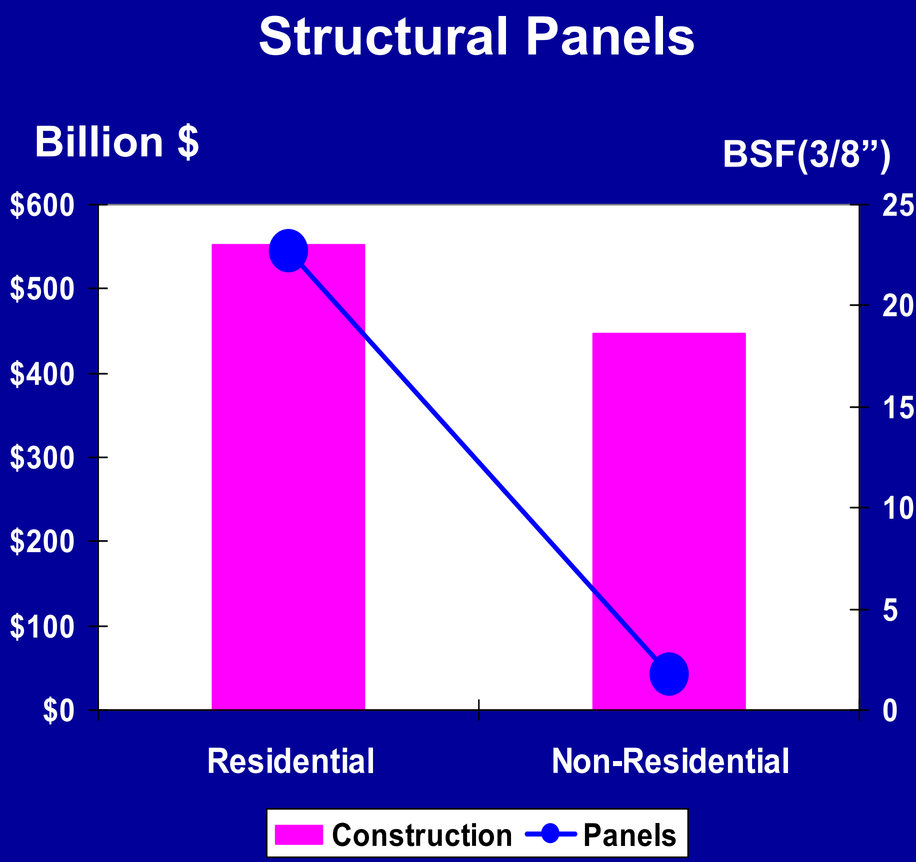
2004 Structural Panels
40.8 BSF(3/8) (36 million Cubic Meters)

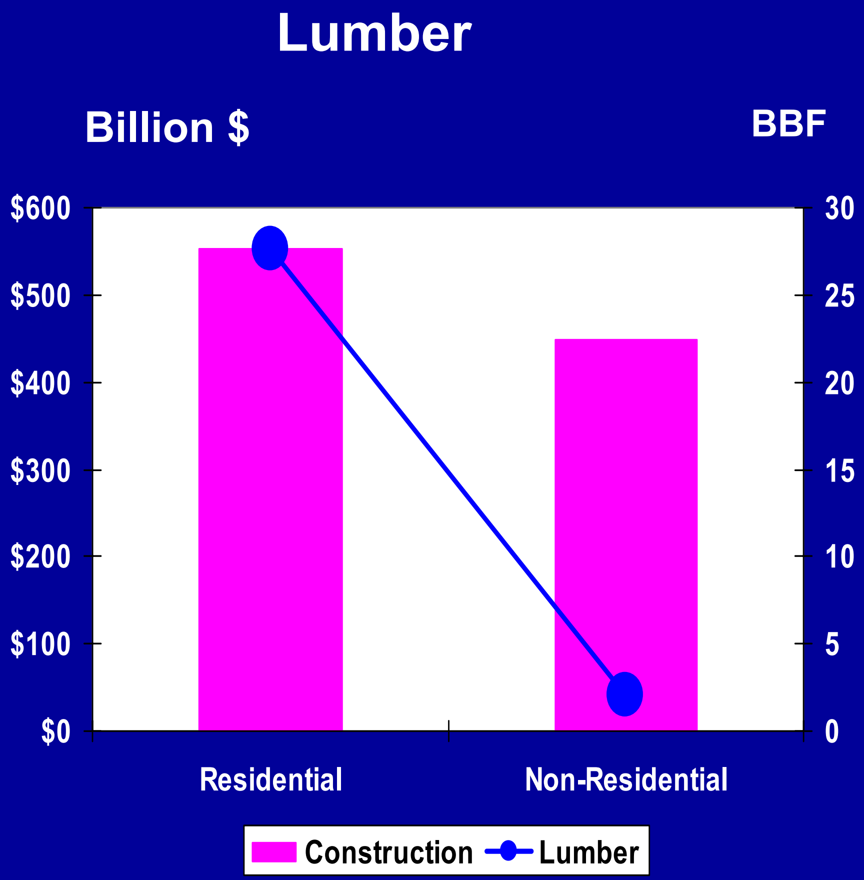


*New Residential incl. SF, MF, and Mobile Homes

Source: RISI, 2004

2004 U.S. Construction Expenditures vs Lumber & Panel Consumption





Source: construction expenditures -U.S. Commerce, Report C-30; Panel consumption - RISI

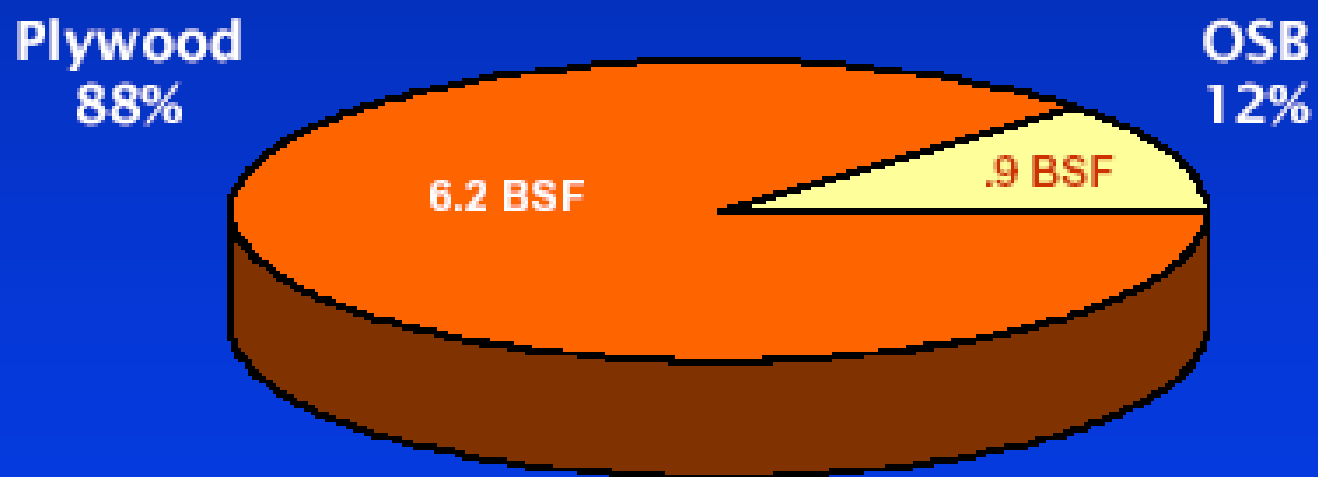
Commercial Application – construction expenditures for non residential markets equal residential expenditures, but only 25% of the value of wood products go to non residential markets – lots of room for innovation!!!!!!

Source: APA

Industrial Market 2004

7.1 Billion Square Feet

Mostly plywood because plywood is able to deliver more customer specifications.



Furniture & fixtures – 30% Transportation – 21%
Materials handling – 26% Other – 23%
Needed innovation in properties & performance – appearance, surface qualities, milling, thickness / size tolerances ….. "flexible manufacturing"