Residential Homebuilding Industry

Initiation of Coverage Report

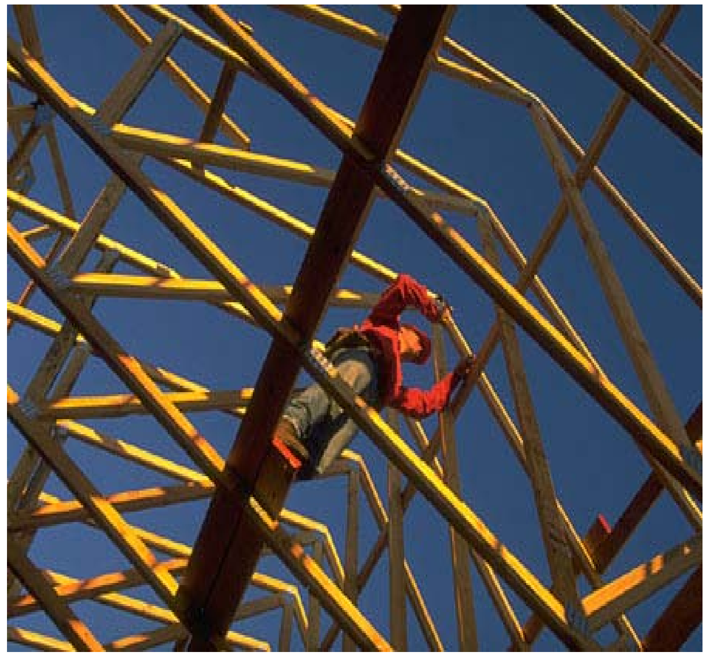
"A Solid Temporary Foundation…"

Residential Homebuilding

Date:
November 11, 2002

Recommendation:
Buy

Time Frame:
12 Months



Team Members:

Brad Anen
brad.anen@yale.edu
(203) 865-6166

Mike Bizzario
mike.bizzario@yale.edu
(203) 675-9244

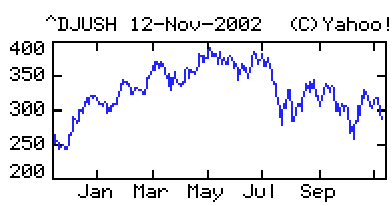
Begonya Klumb
begonya.klumb@yale.edu
(203) 772-0718

Carla Sayegh
carla.sayegh@yale.edu
(203) 773-1177

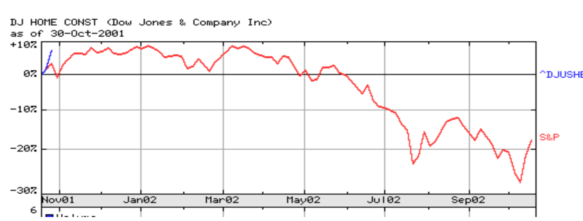
Portfolio Manager:
Sean O'Dowd

Dow Jones Residential Construction Index
(^DJUSHB)

Last Trade (November 8, 2002):	$290.49
52 Week Range:	$245.48 - $393.88



^DJUSHB 12-Month Return:	**19%**
12-Month S&P 500 Return:	(18%)



Refer to important disclosures at the end of this report.

Summary

Recommendation: Buy
Time Frame: 12 Months

- Housing starts surged in Q3 2002 and are expected to remain healthy.
- Interest rates at all-time low – Fed cut rates by 50bps on November 6, 2002. Interest rates not expected to increase substantially in next 12 months. Homebuilders estimate a 6-month to 1-year time lag between an increase in interest rates and reduced profits.
- Unemployment gradually trending downward since Q1 2002 lay-offs and restructuring period. Consumer sentiment likely to improve as well.

Overview

The homebuilding industry is comprised of companies that provide new residential homes. The homes they build can be divided into two main categories: conventional site-built homes and manufactured homes.

- *Site-built homes* are erected permanently on a piece of land that is sold along with the house. Types of conventional dwellings include single-family and multifamily units, which can be attached or detached. In 2001, the site-built segment of the industry accounted for about 82% of new home sales, as measured by units. This was up from 78% in the prior year, as manufactured home shipments dropped sharply.[1] Given the considerable amount of money consumers must borrow to purchase the typical site-built home, the homebuilding industry is very cyclical based on the level and the direction of interest rates.
- *Manufactured homes* are, as their name implies, produced in an assembly-line manner at a factory. Once built, they are shipped in sections to a lot where they are installed. Sales of manufactured homes are less influenced by interest rate trends because of the lower cost of the units. The critical factors driving cycles within that sector are the pricing, the supply/demand ratio, and the availability of rental units.

How Homebuilding Firms Operate

The homebuilding industry has long been highly decentralized. A "typical" firm could be a small business that constructs a handful of homes or a large corporation that builds entire communities. Traditionally, many builders have tended to focus on one particular area or region. However, companies that are significantly capitalized are beginning to operate in more than one region in order to spread their risks and increase revenues.

- *Homebuilder Operations.* The vast majority of major builders don't perform the actual construction of their housing units. Instead, independent subcontractors, who are generally selected on the basis of competitive bids and paid a fixed sum for their services, put most homes together for the builders. In general, subcontractors either own or lease the equipment they use and take care of their hiring and payroll expenses. This arrangement helps builders avoid the large capital outlays necessary for the purchase of construction equipment and mitigates direct employee labor costs. The builder's primary responsibility during the construction process is to have its own on-site superintendents who supervise and coordinate the building process. These employees make certain that subcontractors meet the quality and cost-control standards established by the two parties.
- *Homebuilder Strategies*. With respect to timing the start of construction, builders have different approaches. The more aggressive ones like to have speculative inventory on hand to satisfy customers who want a home immediately in order to make sales that they would otherwise lose. However, builders holding high levels of inventory may find themselves in a precarious situation should the housing market slow. Those extra homes would be difficult to unload and the builders would incur high carrying costs. Therefore, risk-averse builders take steps to minimize the possibility of having excess inventory levels. In the most conservative case, a builder won't begin construction of a home until it receives an executed purchase contract, a deposit from the customer, and notification of preliminary mortgage approval for that customer.

---

[1] S&P Industry Surveys, August 2002

Important trend: New home sales (996 thousand) in August 2002 were up 14% year over year, while existing home sales (5.26 million) were down 4% for the same period. This trend shows that the growth in the new residential housing market is still thriving, despite the current recession economic. Further, there are a significant number of residential homebuyers who prefer to construct a new home than purchase an old one[2].

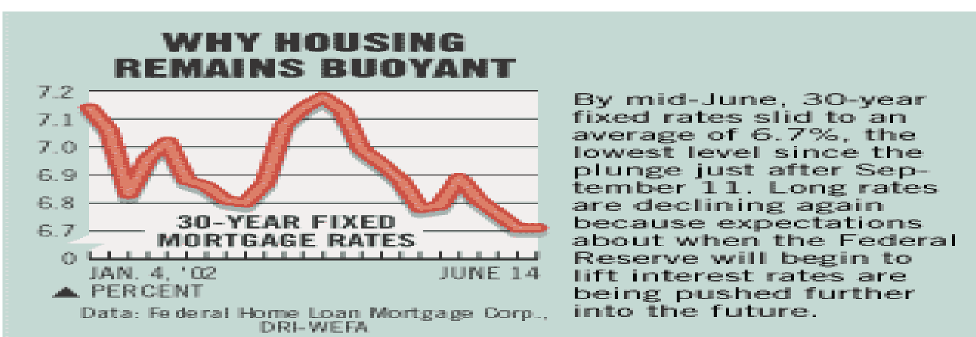
Key Drivers of Revenue (Demand) for Homebuilding Services

Interest Rates.

- *Explanation.* In assessing the overall industry outlook for homebuilders, the level and direction of interest rates are typically the most important factors in determining future housing market trends. New home sales have long been known to move in the opposite direction of long-term interest rates; as rates rise, so does the cost of a monthly mortgage payment. Similarly, a drop in interest rates makes home payments cheaper and home purchases more attractive to prospective buyers.

  Often it takes some time before a change in interest rates is reflected in a homebuilder's operating performance. Once interest rates begin to move upward, demand may remain the same or it may increase initially, as buyers who previously were undecided rush to make a purchase before rates go even higher. Conversely, demand may not increase immediately during periods of declining rates, because buyers may wait for further interest rate cuts before striking a deal. Therefore, since there is a period of several months for a home sale to close after an order is placed, it can typically take six months to a year before a change in interest rate trends is reflected in a homebuilder's bottom line. Despite this lag, it's important to remember that rising interest rates almost always signal an impending slowdown in home sales. Conversely, falling rates signal an incipient sales upturn.

- *Future Outlook.* After peaking at around 8.8% in May 2000, interest rates on 30-year fixed-rate mortgages reversed. They then followed a downward path before reaching 6.2% in late October 2001, the lowest level seen since the Federal Home Loan Mortgage Corp. (Freddie Mac) started to track rates in 1971. The rate stood around 6.3% as of late May 2002[3]. Since May 2002, the yield on the10 year bond has declined from 5.04 % to 4.03% as of October 18, 2002. On November 6, 2002, the Fed cut rates by 50 basis points, or by twice the regular increment of 25 basis points. Therefore, we do not foresee any considerable interest rate increases during the next twelve months and remain optimistic on this front.



Housing Starts.

- *Explanation*. An important driver of the housing market's unprecedented strength in recent years has been the emergence of land constraints midway through the past decade. Therefore, "constrained supply" as opposed to overly robust demand is the driving force behind the resilience of today's housing market. The Housing Starts statistic, however, is the preferred measure to gauge the state of the industry. Single-family housing starts have been running well below the "boom" years of the 1970s and not much above the levels of the 1980s. The population has been growing at a much faster rate than in previous decades. The

---

[2] Salomon Smith Barney. September Building Monthly Update. October 8, 2002.
[3] Yahoo Finance and Wall Street Journal, October 18, 2002

combination of a growing population and a steady housing inventory level relieves fears associated with overbuilding.

Released monthly by the U.S. Department of Commerce and reported as a seasonally adjusted annualized rate, housing starts indicate the number of residences on which construction has begun in a given period. This statistic is an excellent measure of how strong housing activity has been in recent periods because many units are built to satisfy previous orders. In addition, the housing starts statistic can serve as a gauge of builders' expectations about upcoming prospects. If their outlook has dimmed, they'll be unlikely to undertake substantial levels of new construction activity.

- *Future Outlook.* Housing starts in 2001 totaled 1.60 million, or 2.2% above the 2000 level. The gains in 2001 reflected a 3.4% upturn in single-family starts, which outweighed a 2.5% drop in multifamily. Trends remained similar in the first four months of 2002, when a 3.2% increase in activity was recorded, with a 5.3% rise in single-family starts prevailing over a 4.6% downturn in multifamily. As of mid-May 2002, Standard & Poor's Economics Department predicted a fractional gain, to 1.615 million starts for full-year 2002, followed by a 1.0% gain to 1.632 million in 2003[4]. Housing starts increased 13.3% year to year in September of 2002 to an annualized 1.8 million units, the highest since 1986.[5] While this lofty level isn't likely to sustain, the outlook for family homes will remain healthy in the next year due to the Federal Reserve low-interest rate stimulus. The housing sector's continued strength has been and will continue to be critical because construction and sales will continue to add to employment and economic output.

<u>Employment.</u>

- *Explanation.* The national employment picture, if healthy, can boost home sales by giving more people the means to pay a mortgage. Even in a rising interest rate environment, full employment can soften the declines in home sales as financing costs rise.
- *Future Outlook.* Employment remained in decent shape over the first seven months of 2001. Subsequently, however, the bottom dropped out of employment markets, as the economy took a punishing blow from the September 11th terrorist attacks. Job losses were then recorded in eight straight months, from August 2001 through March 2002, with the loss of 415,000 positions in October 2001 marking the worst monthly job loss total seen since May 1980. On the positive side, however, the job market has shown some signs of firming since the early part of 2002. A total of 91,000 work force positions were eliminated in the first four months of the year but in April, 43,000 new jobs were added. Unemployment rates have since decreased from 6% in April, 2002 to 5.6% in September 2002[6] and are expected to continue improving given added jobs mentioned in the "Housing Starts" section and slight improvements in macro economic indicators (interest rates and industrial indices). If the economy is gradually emerging from a recession, chances are good that the economy will undergo an extended period of growth. Thus, emergence from a recession usually indicates an extended upturn for homebuilders, as demand tends to build up during slow periods.

<u>Consumer Confidence.</u>

- *Explanation.* One widely followed measure of consumer sentiment is the consumer confidence index, which reflects consumers' views of current and future business and economic trends and how those trends are likely to affect them.
- *Future Outlook.* After reaching an all-time record of 144.7 in January 2000, the consumer confidence index fell precipitously, before bottoming at 82.2 in November 2001, which marked the index's lowest reading since February 1994. The index had been weakening for most of the time since early 2000 due to a declining economy and plunging equity markets. The fall was sharply exacerbated by the impact of the September 11 terrorist attacks. Weak labor markets, soft business conditions, and company scandals caused consumer confidence to erode in recent months. In June 2002, the index stood at 106.4 (1985=100), down from 110.3 in May[7]. While consumer sentiment is still dismal, increases in housing starts may

[4] S&P Industry Surveys, August 2002
[5] Ip, Greg, "Housing Starts Surge, but Industrial Output Slips" Wall Street Journal, October 18, 2002, A2.
[6] US Department of Labor
[7] The Conference Board - Published Data.

indicate signs of future improvement due to a rush to lock in low mortgage rates prior to any significant future increases.

Pricing.

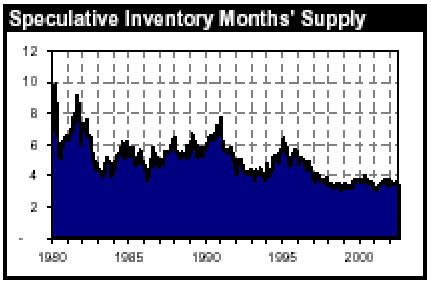
- *Explanation*. An examination of price trends can help determine whether home sales could reach higher levels. On the one hand, if home prices start to rise beyond the level of domestic inflation, the idea of housing as an investment may become more attractive (assuming prices remain affordable). Some individuals may be compelled to purchase several homes, intending to use some of them as rentals. On the other hand, when home prices stagnate or fall, buying a house for investment purposes can lose its appeal, in which case it might instead be viewed as strictly a purchase of shelter.
- *Future Outlook.* . Average prices moved higher for full-year 2001, with the trend continuing in the first four months of 2002.[8] For 2001, the average new home price totaled $213,200, up 3.0% from the average price seen for 2000. The median home price of $175,200 in 2001 represented a 3.7% rise from the 2000 level. The first four months of 2002 saw rises of 7.8% in average prices and 8.9% in the median price. The average price of existing homes for Q3 2002 was $190,900, up 3 percent from the previous quarter and was 8 percent greater than in the first quarter of 2001.[9] Since the price of homes has increased above inflation levels since January 2001, consumers may continue to purchase new homes as long-term investments.

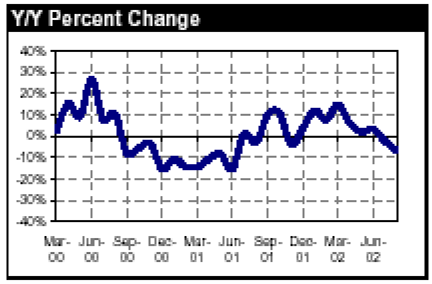
Supply of Inventories.

- *Explanation.* Inventories exert a major influence on industry pricing and margins — in good times and bad. The number of homes available for sale is the supply portion of homebuilders' supply/demand equation. Thus, the proportion of homes for sale, in relation to the level of consumer demand, typically exerts a major influence on industry pricing trends. Given the bustling sales activity of the past few years and the relatively cautious operating strategies of most builders, inventories have been at lean levels since the latter part of 1996. In fact, the 316,000 new units in inventory as of April 2002 represented a 4.2-month supply (on a seasonally adjusted basis) at current sales levels. This marked the 64th consecutive month that the inventory-to-sales ratio stood below a five-month supply. Low housing inventory levels are crucial to the ongoing strength of the housing market. Therefore, not only do low inventories play an essential role in preserving builder margins, they also help insulate the industry from a sharp downturn in housing demand. The ability to keep low levels of inventory is a key reason that any drop-off in demand will have only a modest impact on housing production relative to historical periods.[10]
- *Future Outlook.* To record strong operating margins, the industry typically prefers to keep home supply at or below a six-month level. When they don't have to worry about carrying hefty levels of expensive finished inventories, participants feel much more comfortable about their pricing power, and are much less apt to feel the need to offer reduced prices or free add-ons in their homes. For this reason, we remain optimistic about the intention and ability of the industry to constrain supply particularly in a depressed economy.

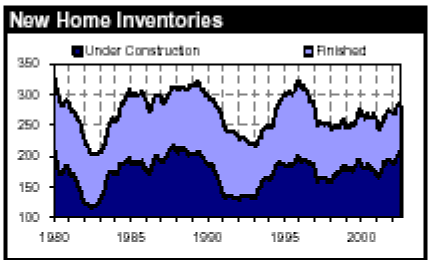
---

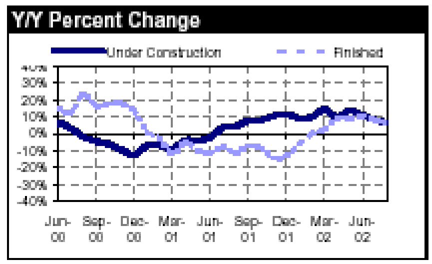
[8] US Department of Commerce.
[9] US Department of Commerce.
[10] Salomon Smith Barney. September Building Monthly Update. October 8, 2002.





Source: U.S. Census Bureau





Source: U.S. Census Bureau

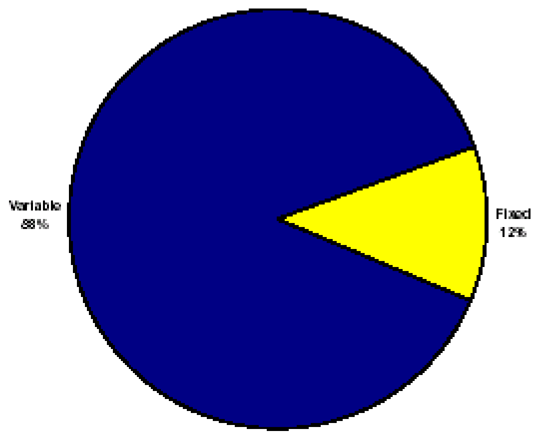
Key Drivers of Cost

Variable Costs

Variable costs represent the vast proportion of home building costs. According to Lehman Brothers, about 10-15% of total pre-tax costs represent fixed costs, leaving 85-90% variable. Materials and labor fall under variable, as the builders subcontract out all construction labor. Seventy percent of a homebuilder's SG&A is fixed, with the remainder (incentives/commissions/advertising) serving as variable costs. We also assume that all interest/other pre-tax costs are fully fixed. This analysis leaves a company with a highly variable cost structure. A highly variable cost structure is favorable to businesses that experience a high level of cyclicality. The variable structure keeps costs down during business downturns. See the figure below.[11]

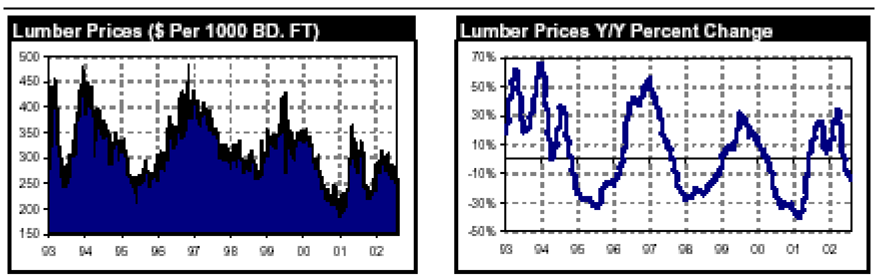
[11] Lehman Brothers Equity Research. October 16, 2002.

Homebuilding Cost Structure



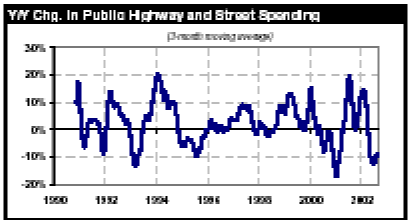
Scale in Raw Materials Purchasing
Raw material costs account for about 30% of the total cost of a house. Raw materials include lumber, cement, siding and windows, plumbing, wiring, cabinets, appliances, wallboard, insulation, shingles, paint etc. Large builders are able to secure volume discounts on these major inputs. According to Lehman Brothers a small discount of only 1-2%, can equate to a of margin boost of 30-60 basis points.

Lumber Prices
Lumber prices have fallen slightly in the first half of 2002. Lumber prices should increase slightly over the next year and a half due to the implementation of regulation regarding treated lumber. The regulation prohibits the use of arsenic based preservatives. The replacement technologies seem to be slightly more expensive at this time but will eventually fall in line with traditional treated lumber prices as scale economies and learning curves are achieved. The 12-month forward prices on lumber seem to indicate only slight increases over the next year.

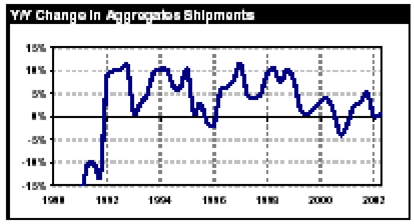


Source: StockVal

Aggregates
One of the more significant upfront costs of developing private home divisions is installing the required road, sewer, and electric infrastructure. The most significant input to this process is aggregates used for concrete roads drain tiles and foundations. Highway and Street spending was down while aggregate shipments were up approximately 1%. This seems to indicate an increase or forecasted increase in private development. We expect prices for aggregates to remain relatively steady.



Source: U.S. Census Bureau



Source: USGS

Land

The ability to acquire significant land parcels seems to be a significant driver for market share gains. Bigger builders have sizable advantages in this area due to their size and funding abilities. Larger builders have access to capital markets while smaller builders are constrained to bank lending. A common practice among large track developers is to "Option" land. This practice involves putting a small down payment of between 2-10% on a large piece of land and then gradually exercising option pieces as expansion needs arise. Land sellers are less likely to accept such deals from smaller builders due to greater future cash flows uncertainty.

Industry Structure

Among large industries in the United States, homebuilding is one of the most highly fragmented, although concentration is rising. In 2001, the country's 100 largest builders sold an aggregate of 320,810 single-family homes (excluding international sales), according to the annual study compiled by *Builder* magazine. That number would equal 35% of the year's total sales of 908,000 new U.S. homes.[12] In the past this fragmentation came from two main sources. First, homebuilding has very few barriers to entry. A home construction company can be created by anyone who has some building experience and solid organization skills. Small customized markets are not conducive to large builders looking for learning curves and low costs associated with large, track home neighborhoods. This leaves room for many small homebuilders to operate successful companies. Second, it is difficult to control large scale operations across a wide geographic area. Each district manager must negotiate a terms with the local subcontractors. This leaves significant room for a divergence of personal and corporate incentives.

The fragmentation trend seems to be changing. One of the key trends in the business has been consolidation. The top ten domestic builders have doubled their market share, from 9% a decade ago to 18% today, with the majority of the gains coming after the mid-1990s. It's not completely clear why a business which has such localized characteristics, and which remained quite fragmented for so long, has suddenly begun to consolidate at a rapid pace.

One factor appears to be a cost advantage for builders reaching critical mass. Building 2,000 homes a year instead of 200, in a market of a million annual housing starts, probably doesn't give a builder much stronger negotiating power with materials suppliers. But with some companies now constructing 20,000 homes a year, vendors can't afford to ignore them.

Also spurring consolidation is financing. This has become more difficult to obtain for most builders in recent years, after the liquidity crises of the late 1980s and mid-1990s provoked lenders to tighten standards. This favors the larger, well-capitalized builders.[13]

According to *Builder* magazine, the No. 1 builder in 2001, based on the number of homes sold in the United States, was Centex Corp. Centex reported 27,781 home closings, including 3,768 manufactured homes sold.[14] If foreign sales were added to the mix, Pulte Homes Inc. would capture the top spot for the seventh consecutive year, with

[12] S&P Industry Surveys, August 2002
[13] David L. Babson, News and Research, 2002
[14] S&P Industry Surveys, August 2002

30,394 units sold (including 22,915 in the United States). As shown by this study, even the largest companies represent a small proportion of industry sales for the year.

M&A Activity

2000 and 2001 saw an intense M&A activity. 2002 has also produced some significant M&A activity. Most notably Benzer Homes acquired Crossman Communities and merged the operation into a wholly owned subsidiary of Benzer Homes. The Benzer Crossman transaction was valued at $605 Million.[15] Consolidation serves homebuilders by giving them access to cost reductions and will continue among the larger building companies.

TOP HOMEBUILDERS — 2001

(Ranked by number of units sold)

BUILDER	UNITS*	REVENUES** (MIL. $)
Centex Corp.	26,060	7,757
Lennar Corp.	23,899	6,029
Pulte Homes	22,915	5,560
D.R. Horton	22,772	4,728
KB Home	21,486	4,574
The Ryland Group	12,686	2,742
NVR	10,372	2,624
Beazer Homes USA	9,582	1,930
M.D.C. Holdings	8,174	2,126
K. Hovnanian Enterprises	6,700	1,742

*Excluding closings at non-U.S. units, but including manufactured home sales. **May include revenues from nonhomebuilding operations.
Source: *Builder* magazine.

[15] Salomon Smith Barney, Equity Research, Homebuilding, October 8, 2002

TOP MANUFACTURED HOMEBUILDERS — 2001
(Ranked by number of units sold)

BUILDER	UNITS	REVENUES* (MIL. $)
Champion Enterprises	36,851	1,548
Fleetwood Enterprises	30,482	2,220
Clayton Homes	19,200	1,151
Oakwood Homes	18,604	1,096
Cavalier Homes	12,669	364
Horton Homes	10,900	228
Palm Harbor Homes	10,829	651
Skyline Corp.	10,000	450
Patriot Homes	5,192	182
Southern Energy Homes	4,411	162

*May include revenues from non-homebuilding operations.
Source: *Builder* magazine; company reports.

Market concentration has risen rapidly in recent years with the growth of large builders. Some companies have consolidated, while others have significantly expanded their market territories. As a result, the top 100 builders' share of new site-built homes sold in 2001 was two percentage points higher than their 33% share in 1999, seven percentage points above the 28% claimed in 1998, and 11 percentage points higher than the 1997 level. The true gain is actually somewhat larger, as all big builder totals before 2001 included foreign sales. Also, the nation's 10 largest builders accounted for 51% of closings made by the Top 100 in 2001 and 18% of all site-built home sales made that year.[16]

Manufactured homebuilders shipped 193,229 homes in 2001. On a unit basis, manufactured houses accounted for about 18% of the 1.10 million single-family homes (both site-built and manufactured) sold in the United States that year.

[16] S&P Industry Surveys, August 2002

Macro-Economic Trends

Demographic Changes

To position themselves for long-term growth, top homebuilders have been paying close attention to changes within the U.S. population. Receiving the closest scrutiny are age distribution and population trends in different geographic regions.

Summary Indicators	2001	2002	2003	2004	2005
Median Age..........	36.0	36.2	36.4	36.5	36.7
Mean Age............	36.7	36.8	36.9	37.1	37.2

Five-Year Age Group	2001	2002	2003	2004	2005
Under 5 years	18,899	18,944	19,012	19,098	19,212
5 to 9 years	19,546	19,347	19,220	19,144	19,122
10 to 14 years	20,270	20,592	20,774	20,803	20,634
15 to 19 years	20,065	20,163	20,312	20,631	20,990
20 to 24 years	19,012	19,438	19,825	20,019	20,159
25 to 29 years	17,424	17,386	17,564	17,915	18,351
30 to 34 years	19,639	19,536	19,316	18,967	18,582
35 to 39 years	21,799	21,236	20,684	20,255	20,082
40 to 44 years	22,894	22,988	22,982	22,914	22,634
45 to 49 years	20,457	21,021	21,520	21,899	22,230
50 to 54 years	18,184	18,240	18,628	19,122	19,661
55 to 59 years	13,596	14,771	15,355	16,092	16,842
60 to 64 years	10,953	11,342	11,972	12,421	12,848
65 to 69 years	9,411	9,487	9,685	9,928	10,086
70 to 74 years	8,744	8,642	8,491	8,375	8,375
Population, All Ages	277,803	280,306	282,798	285,266	287,716

2000 Census Info

a) Baby Boomers Prefer Bigger Nests

Among builders tracking population trends, those that will probably benefit the most are those catering to baby boomers — the approximately 75 million Americans born during the population explosion from 1946 to 1964. This large cohort has long influenced the homebuilding industry's performance. In the 1970s and 1980s, when boomers entered the 25-34-age bracket (defined as the first-time homebuyer portion of the housing consumption cycle), they snapped up a tremendous number of entry-level homes.

The real strength in homebuilding, therefore, should continue to track the baby boom population. The vast majority of boomers now fall into the group of "upgrade" buyers (those who sell smaller homes to buy new, larger ones), aged 35 to 54. In the four years from 2002 through 2005, the greatest population growth is expected in the 45-64-age bracket (which also includes retirement buyers). According to projections by the U.S. Department of Commerce, that age group is poised for 9.5% growth between 2002 and 2005, and an astonishing 25% growth rate between 2002 and 2015.

Thus, the "upgrade" market for single-family homes will likely be strong well into the century. More builders are likely to consider switching their focus to this area. Multi family homes are usually starter or temporary homes and thus are subject to greater volatility.

PRIVATE DWELLING UNIT STARTS
(In thousands of dwelling units)

YEAR	TOTAL	1-FAMILY HOUSES	2-4 FAMILY HOUSES	5 OR MORE FAMILY
2001	1,602.7	1,273.3	36.6	292.8
2000	1,568.7	1,230.9	38.7	299.1
1999	1,641.2	1,302.5	31.9	306.7
1998	1,617.0	1,271.4	42.4	302.8
1997	1,474.0	1,133.6	44.6	295.8
1996	1,476.9	1,160.9	45.2	270.9
1995	1,354.2	1,076.3	33.5	244.1
1994	1,457.0	1,198.4	35.2	223.6
1993	1,287.6	1,125.6	29.3	132.5
1992	1,199.6	1,030.1	30.5	139.0
1990	1,192.6	894.9	37.5	260.2
1980	1,292.2	852.1	109.6	330.5
1970	1,433.6	812.9	84.9	535.9

Source: U.S. Department of Commerce.

b) Growing Retirement Market

As the U.S. population ages, many builders are also beginning to see opportunities in building active adult housing communities. The Department of Commerce expects the senior population to grow strongly. The consensus projections have the 65-and-up age group increasing by 3.0% between 2002 and 2005 and by 30% between 2002 and 2015.

This market, particularly appealing by retirees' tremendous purchasing power, could become the hot homebuilding concept of the early twenty-first century. According to the Census Bureau's 1991 study (still the latest available), *Housing of the Elderly,* more than four out of five homeowners aged 65 and older had no borrowings outstanding on their homes, compared with only 26% for homeowners in other age groups[17]. This tremendous equity build-up among seniors should continue to make it possible for many of them to move into the retirement homes or senior communities of their choice.

c) Regional Focus

Studies have shown that U.S. residents will continue to move to the South and the West in substantial numbers. During the 50-year period through April 1, 2000, the South's share of the population increased to 36% from 31%, while the West's rose to 22% from 13%. The migration came from the Midwest, which saw its share of the U.S. population drop to 23% from 29%, and the Northeast, which fell to 19% from 26%.[18]

d) Minorities

It's important to note the influence of minority households on the U.S. homebuilding industry. In 2001, an average of 48% of African Americans owned their homes, as did 47% of Hispanic Americans and 55% of other minorities, according to the U.S. Department of Housing and Urban Development (HUD). Although these rates are far exceeded by the 74% of non-Hispanic whites who owned their homes, they demonstrate that home ownership is still high among other ethnic groups.[19]

Also, according to *The State of the Nation's Housing: 2001,* minorities comprised some 40% of the approximately eight million net new homeowners between 1994 and 2000. This trend should continue, as people of African, Hispanic, and Asian heritage are expected to comprise a growing proportion of the U.S. population in coming years. In fact, *The State of the Nation's Housing: 2001* forecasts that minorities will represent nearly two-thirds of the expected 11.7 million net new households in the United States over the decade that began in 2000. Thus, builders would be wise to target these groups in their marketing and building plans.

---

[17] S&P Industry Surveys, August 2002
[18] S&P Industry Surveys, August 2002
[19] Census 2000.

TOP MULTIFAMILY RENTAL BUILDERS — 2001

(Ranked by number of units built)

BUILDER	UNITS	REVENUES (MIL. $)
Trammell Crow Residential	7,950	1,100
Regency Development Associates	7,468	71
A.G. Spanos Cos.	5,582	680
Lincoln Property	5,529	1,766
Simpson Housing Ltd. Partnership	5,378	518
Clark Realty Builders	4,582	280
Colson & Colson Construction Co.	4,541	888
Picerne Real Estate Group	4,257	302
JPI3,500	1,135	
Bostic Brothers Construction	3,378	150

Source: *Builder* magazine.

e) Immigration Boosts Demand

Builders must recognize the influence that immigrants are likely to have on housing markets. Because people who immigrate to the United States tend to do so when they're young, they're likely candidates for the entry-level home buying market. Immigrants now account for just over 10% of the U.S. population, according to a study issued by the U.S. Census Bureau in January 2001.

U.S. Bureau of the Census population tables predict that the number of individuals aged 25 to 34 in the United States will increase only nominally between 2002 and 2005. However, these tables don't count foreign-born individuals living in the United States. The strong growth expected in the number of young immigrants moving to the United States could keep the first-time homebuyer market remain relatively solid in coming years.

During the 1990s, the entry-level home market was poised for a crash as the number of U.S.-born residents aged 25 to 34 declined. However, some 29% of U.S. immigrants in this age group owned homes as of 2001, according to data published by the U.S. Department of Commerce. Although that level is modest compared with native-born groups, it represents a sharp increase from 18% ten years earlier. *The State of the Nation's Housing: 2001* notes that foreign-born individuals accounted for about one-third of the nation's household growth from 1995 through the end of 2000, and were responsible for more than half of household growth in the Northeast. As such, the influx of immigrants to the United States has kept entry-level housing a viable business option.

MANUFACTURED HOME SHIPMENTS VS. NEW HOMES SOLD
(In thousands)

	1995	1996	1997	1998	1999	2000	2001
Site-built homes sold*	665	758	805	885	881	877	908
% of total	66	68	69	70	72	78	82
Manufactured homes shipped	340	363	354	373	348	251	193
% of total	34	32	31	30	28	22	18
Total new homes	1,005	1,121	1,159	1,258	1,229	1,128	1,101

*Single-family.
Source: U.S. Department of Commerce.

Design Centers and Marketing Efforts

In an effort to increase the attractiveness of their homes, maximize sales productivity, and sell substantial amounts of high-margin options, many homebuilders have recently introduced freestanding design centers. These centers typically allow homebuyers to see the thousands of different options available to upgrade the home they are purchasing.

For builders, the centers have two purposes. The first is to relieve the builder's sales staff of the responsibility for selling the options, which reduces the time they have to market homes. The second is to sell more of those high-margin options. Because design teams staff such centers, they tend to be more efficient and productive in selling options than is the sales staff.

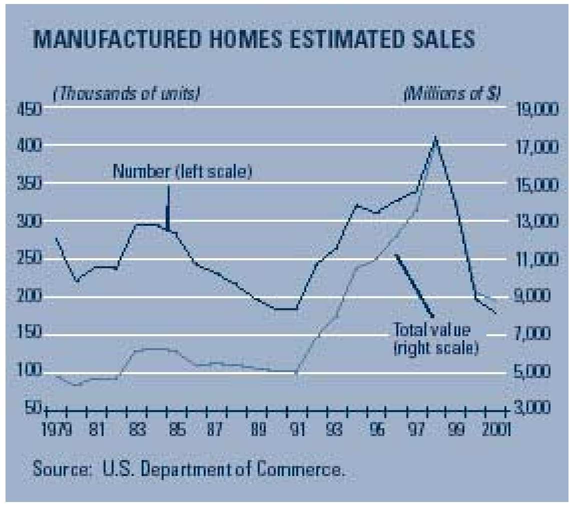
The downside of the design centers is that setting them up is costly and time-consuming. Thus, only builders that have attained a certain size can afford to construct one profitably. Because the design center is a relatively new concept, opinions vary on how large the builder must be to support one. Some consultants believe any firm building 75 or more homes in a year could run a profitable design center. Others think that at least 200 homes per year are needed to reach that goal.

Computer Technology Benefits

The use of computers is already helping builders and customers in both the design and business processes. Builders are increasingly adapting their businesses to use computer technology to help them meet the desires of prospective customers.

According to *Builder* magazine, contractors first began using computer-aided design (CAD) in the mid-1980s, when programs were available to produce two-dimensional drawings. Shortly afterward, programs were developed to generate three-dimensional views, along with materials lists. Today, highly advanced programs make it possible for a contractor to give clients a "virtual tour" before their prospective home is built. Builders also rely on computer applications to show buyers available options, to draw up sales contracts, and to promote communication with clients and subcontractors.

Many homebuilders today maintain Web sites to make themselves and their offerings known to the public on the Internet. A well-composed and easy-to-navigate Web site — where text, graphics, and other communications tools are transmitted together — can reach many potential buyers and can be very advantageous to a builder.
Carrying that strategy even further, in March 2000 the nation's five leading builders at that time (Pulte Homes Inc., KB Home, D.R. Horton Inc., Centex Corp., and Lennar Corp.) announced that they were teaming up to form a company featuring a combined Web site, named Builder Homesite. The venture, which has since been joined by a number of other builders, offers new home listings of all participants and provides one-stop shopping for services



and products to owners of their homes. The participants have put together a management team led by individuals from outside their staffs, and the venture launched its first service in the fall of 2001. Known as newhomesource.com, Builder Homesite's first service is a consumer Internet address that features new-home brands from participating builders (over 60 builders are currently taking part). Newhomesource.com allows visitors to search for a new home, based on home type, price, general location or specific neighborhood, commuting distance and schools. Data such as photos and floor plans are also offered on the site.

In addition, in early 2002, Builder Homesite teamed up with eBay Real Estate to create a new homes destination within the eBay Real Estate marketplace. Besides generating leads for Builder Homesite's builders, the site will offer on-line home sales events.

Given the preponderance of online mortgage sites that have sprung up over the past few years, a variety of builders with mortgage banking arms have also felt the need to participate in that area. According to Forrester Research Inc., an independent research firm, online mortgage originations accounted for only 1.5% of the home loans closed in 1999 (latest available), but it predicted that the level would likely rise to about 10% by 2003. With consumers growing more comfortable about undertaking business transactions on the Internet, most builders with mortgage banking operations feel a need to participate in the online segment.

In addition to offering their own online mortgage banking services, some builders have become participants in services that collect mortgage applications and then funnel them to the lenders best suited to take on a particular loan. For instance, the CTX Mortgage unit of Centex Corp. signed on with the Lending Tree service in late June 1999, and within five days it had started to receive 20 mortgage loan leads per day.

Tax Reform Likely To Encourage Housing Activity

In August 1997, the federal government signed a budget accord calling for significant tax cuts. The revised tax laws, which contain big breaks on capital gains from home sales, will likely have a major impact on residential home buying decisions. The package is effective for sales or exchanges of principal residences after May 6, 1997.
Under the reworked tax laws, married couples filing joint returns are exempt from taxes on up to $500,000 of profits on the sale of their principal home (defined as a principal residence for at least two of the previous five years). Single filers have a $250,000 exemption. Taxpayers can use this provision every two years. The previous law required sellers under 55 years of age to reinvest their profits within two years to avoid paying a capital gains tax. Individuals 55 or older could take a one-time exclusion on up to $125,000 of gains on a home sale.
The amended law in most cases entails much less of a burden than its predecessor. Now, only taxpayers whose gains exceed the exemption maximum consider themselves losers (on a tax basis) since they are no longer allowed to defer taxes by reinvestment.

This tax relief seems likely to cause a shift in living arrangements. Although homeowners may generally prefer to stay put, large numbers of individuals had been locked into their homes by the tax situation. Those most likely to take advantage of the change are people over the age of 55 with more than $125,000 in capital gains, and owners younger than 55 who are looking to downsize.

While we are unaware of any studies to date that assess the impact of the revised tax laws, the individuals most affected by the budget accord would be most likely to buy into active adult/retirement developments or to become renters again. Thus, the areas of homebuilding most apt to benefit from the revamped tax laws are active adult/retirement communities and multifamily construction.

Improvement in Manufactured Homes

In the manufactured housing area, the primary trends driving the industry are the improving image and the economic and demographic factors favoring the purchase of factory-built homes. On the negative side, those positive factors prompted an overly aggressive opening of retail sites throughout the industry for a good portion of the 1990s.

a) Enhanced Image

One factor in manufactured homes' brisk sales pace for most of the 1990s was the public's more favorable opinion of them. After suffering for many years from a poor public image, manufactured homebuilders upgraded the quality of their offerings. Today's manufactured homes are often top-quality structures located in relatively spacious planned communities and often feature such amenities as porches and garages. Indeed, today's factory-built homes are often difficult to distinguish from site-built models.

Adding to a manufactured home's popularity as a residence has been a trend toward the production of multisection units, which provide a much larger living space than do single-section units. Multisection homes constituted more than 40% of all manufactured homes produced in each year since 1987; the percentage climbed to 75% in 2001, from 70% in 2000. These totals are up sharply from the 25% range of the early 1980s.

Along with better public regard for factory-built homes has come increased community acceptance. Far more municipalities are now allowing manufactured home communities to locate in areas traditionally used for site-built homes.

b) Greater affordability

Sold at much lower prices than site-built homes, manufactured homes are considerably more affordable. The average price for a manufactured home (excluding land costs) was $49,400 in 2001 and $46,500 in 2000, according to the Department of Commerce. These figures compared with $213,200 for the average new site-built home in 2001 and $207,000 in 2000. In 2001, single-section manufactured homes averaged $30,400 and multisection homes averaged $55,600.

Among U.S. residents, just fewer than 30% had gross family incomes of less than $25,000 in 2000, according to *Money Income in the U.S.,* published by the U.S. Department of Commerce in September 2001. Given those relatively low wage levels, manufactured units are the most realistic option for many individuals (particularly the younger population) interested in becoming homeowners.

The manufactured homebuilding industry is also experiencing a growing proportion of home purchases by retirees and "empty nesters" — people whose children have grown up and moved away. The low cost and low maintenance requirements of manufactured units (given their typically smaller size) make them attractive to these age groups. In addition, the recreational facilities and activities offered as part of manufactured home communities appeal to many people.

Valuation and Financials

Attractive Fundamental Industry Characteristics

We find a number of characteristics that make this industry attractive, which have also served to drive Return on Invested Capital (ROIC)[20] higher over time. We expect these characteristics to continue. These factors include:[21]

1) **Growing competitive advantage of large vs. small builders in access to capital and land**. Public builders have the advantage of the ability to tap public debt and equity markets, revolving lines of credit and growth in internal pre-inventory cash flows. The spread in the cost of financing between public and private builders is currently at least 200-300 basis points. Furthermore, public builders, given their size and funding abilities, can increasingly "option" land – put a minimal down-payment, under an agreement to "take down" portions of a large partial of land over time. Such agreements generally represent walk-away deals, where the bigger builder's risk represents its down payment (10% or less, possibly as little as 2%). Land-sellers would not likely do such deals for smaller builders on the fear of not being paid; with bigger builders this should not be a concern.
2) **Raw materials purchasing**. As mentioned in the cost drivers section of the report, bigger builders have a significant purchasing power versus smaller builders.
3) **Geographical diversification**. Because in the homebuilding industry different regions perform at somewhat different rates at different times, geographic diversity appears crucial to minimize risk. In early 1990s, our universe of homebuilders on average built and sold homes in fewer than 10 states and less than 20 markets. Today, on average these companies sell in near 20+ states and 40+ markets.
4) **Relatively little spec building keeps inventories relatively low**. Today, big builders largely sell first and then build. On average, speculative inventories stand at about 10-15% of total (i.e., 85% of homes currently built have been already sold) vs. 50% 10 years ago.
5) **Largely variable cost business**. As mentioned in the cost section of the report, given the cyclicality of this business, a cost structure of mostly variable costs, will help homebuilders make money and generate positive cash flows even in a bad economic downturn.
6) **Big builders should accelerate their growth through acquisitions**. Given the current fragmentation in the market, bigger builders have been and will continue to consolidate the industry, not just using acquisitions to gain local market presence or good managers but also to further bolster their land positions. Such acquisitions (which historically generate little goodwill) should help boost market shares. Among the top 300 builders, we estimate over 175 builders could be targets.

Financials

Homebuilders' accounting and financials lack issues around some recent accounting/financials hot buttons:[22]

- Very little restructuring. Unlike a large number of US companies over the past decade, the homebuilders in our universe have taken very little in the way of "non-recurring" charges. Compared to building products companies, since 1995 homebuilders charges have represented on 3% of continuing net income vs. 40% for building products companies.
- No pensions. None of the companies covered in our universe have pension assets/liabilities or expenses, removing any issues around pension earnings or future liabilities that overwhelm other companies' finances.
- Very little goodwill. While our coverage homebuilders have made over 50+ acquisitions since the early-mid 1990s they have fortunately acquired very little goodwill (about 5% of total capital).

---

[20] ROIC is calculated as net income minus dividends divided by all long-term debt plus common and preferred shares. Invested capital can be in buildings, projects, machinery, other companies, etc.
[21] Lehman Brothers Equity Research. October 16, 2002.
[22] Lehman Brothers Equity Research. October 16, 2002.

Insider Ownership and Insider Selling

Insider ownership is relatively high in our group of companies. On average insider ownership is about 20-25%. We believe that managers with large ownership over time would be less inclined to take actions that would hurt themselves. With such ownership percentages, we suspect management stands relatively well aligned with shareholders.

In terms of insider selling, total net sales picked up in 2000 and 2001. However, when looked as a percentage of top insider holdings over the last five years, total sales are less than 10% of insider holdings during each of those years. This year so far our universe of companies are running at a sales rate of about 5% of holdings. Given the run up in the stocks over the last few years, the relatively high ownership levels, and the likely frustration over stocks dropping while results continue to be strong, it is not surprising to see an increase in selling. That said, if sales ever approach 10% of holdings we would be more worried.[23]

Debt and Liquidity

The following table summarizes some indicators of debt and liquidity for our group of companies. The credit ratings for these companies range from Ba3 to Baa2 for Moody's, BB- to BBB for S&P, and BB+ to BBB+ for Fitch ratings. Hence, these companies are on average in the threshold of investment grade ratings. The Debt-to-Total Capitalization ratio is at 48% on average, below 49% for the construction services industry. The interest coverage ratio has an average of 16.61x, while the construction services industry is at 15.59x. However, this measure shows a relatively broad range within our group, which means that when looking at individual companies, this is a metric that should be analyzed more in detail. In conclusion, the numbers do not indicate any sign of financial distress in the covered companies, and we do not believe debt and liquidity is going to be a concern for these companies, at least during our recommendation time frame.

Credit Ratings, Debt, and Liquidity

	Moody's (1)	S&P (2)	Fitch (1)	Total Debt / Total Capitalization (3)	Interest Coverage (4)
Beazer Homes	Ba3	BB	N/A	48%	5.25
Centex Corp	Baa2	BBB	BBB+	46%	6.58
D.R. Horton Inc.	Ba1	BB	BB+	56%	46.05
Hovnanian	Ba3	BB-	N/A	N/A	4.01
KB Home	Ba2	BB+	BB+	58%	10.34
Lennar Corporation	Ba1	BB+	BBB+	45%	6.99
MDC Holdings	Ba1	BB+	BBB-	35%	NM
Pulte	Baa3	BBB-	BBB+	47%	NM
Ryland	Ba2	BB+	BB+	N/A	23.7
Standard Pacific	Ba2	BB	N/A	N/A	40.06
Toll Brothers	Baa3	BBB-	BBB	51%	6.49
Average				**48%**	**16.61**
Median				**48%**	**6.99**
Construction Services Industry Average				**49%**	**15.59**

(1) Rating for Senior Unsecured Debt
(2) Rating for Long Term Local Credit
(3) Merrill Lynch Building and Building Products, October 4, 2002. Figures refer to Market values of equity and debt.
(4) Multex Investor

Source: Bloomberg, Multex Investor, Merril Lynch Equity Research.

---

[23] Lehman Brothers Equity Research. October, 2002.

Stock Performance

The Dow Jones Home Builders Stock Index has performed extremely well during the past years and the major reason for this has been the rise in EPS. For the last five years, our group's EPS growth has been 39.2% on an annual average, while the S&P EPS growth during the same period has been 8.7% annually.[24] However, home builder stocks have not benefited nearly as much as one might have expected from the rise in earnings, as P/E for builders have stayed low while those for firms in other industries increased.[25] Hence, at a time when P/E ratios on most stocks, including those of companies in other cyclical businesses, remain at or near record-high levels (for the S&P 500 in the mid-20s, which is double the historical average), homebuilders' single-digit P/E contain much less optimism than most other stocks.[26]

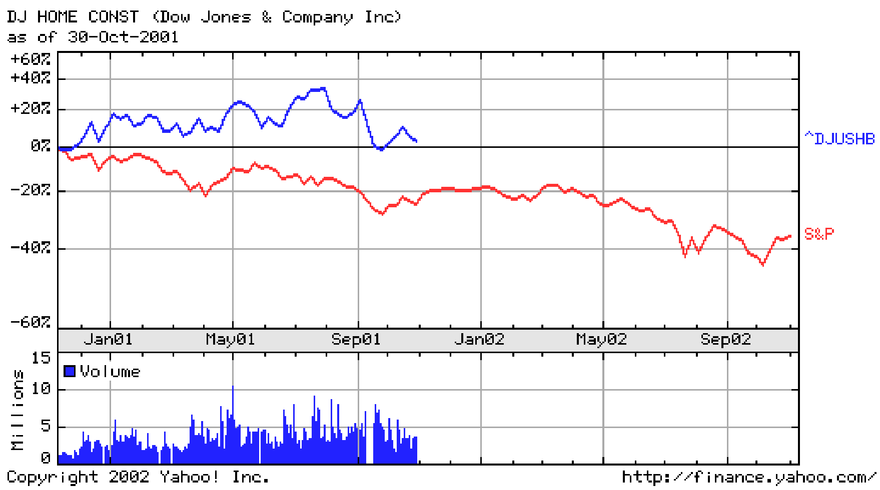


Figure 3. HBSI and S&P 500, PE Ratios

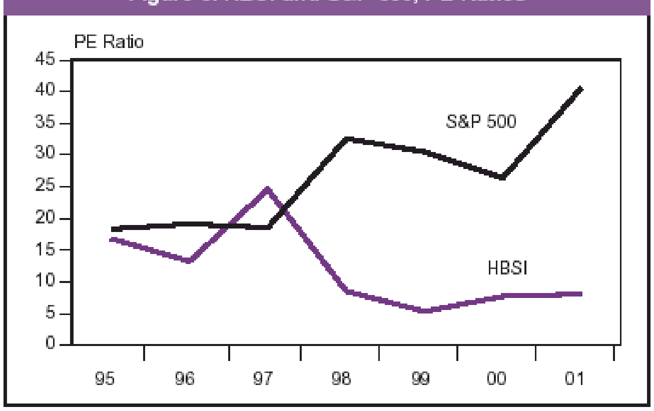
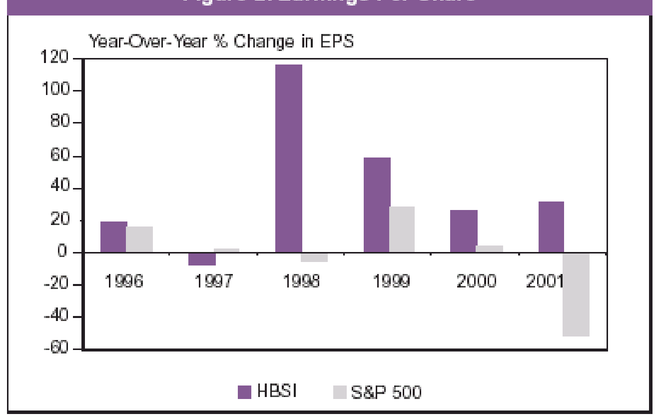


Figure 2. Earnings Per Share



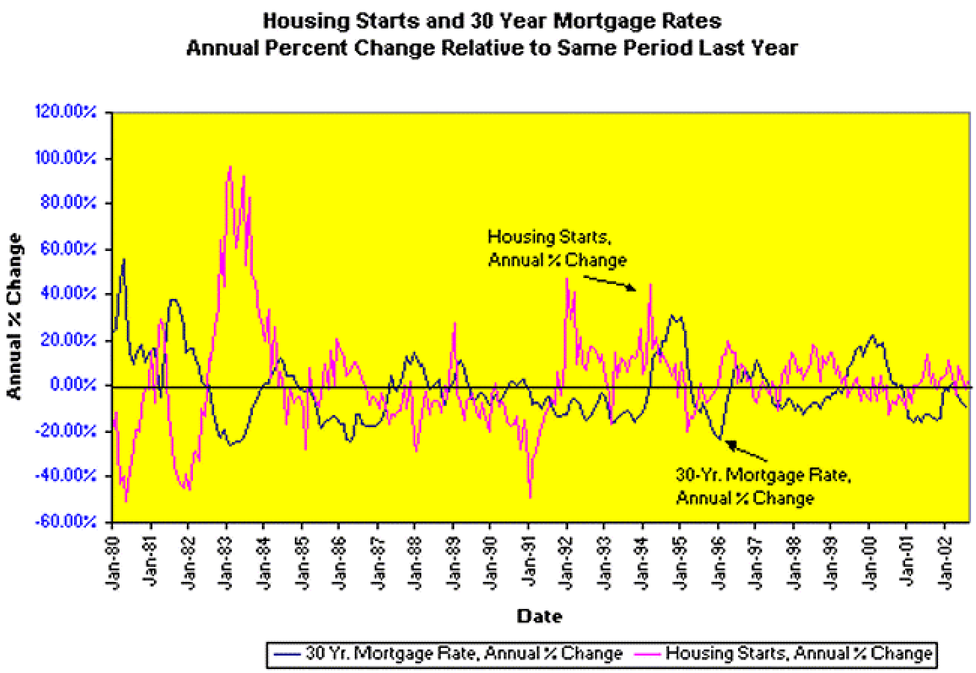
Source: Housing Economics. April, 2002.

We believe that the stocks in this industry have always sold at low price/earnings ratios because of the traditional cyclicality of the business. However, as we have seen throughout the report, for the large, efficient builders, we believe that the cycle has been tamed somewhat. From the cost perspective, these companies show enough competitive advantages and efficiencies as to be able to cope with an economic downturn or with an increase in interest rates much better than they were a decade ago. From the point of view of demand, the following graphs

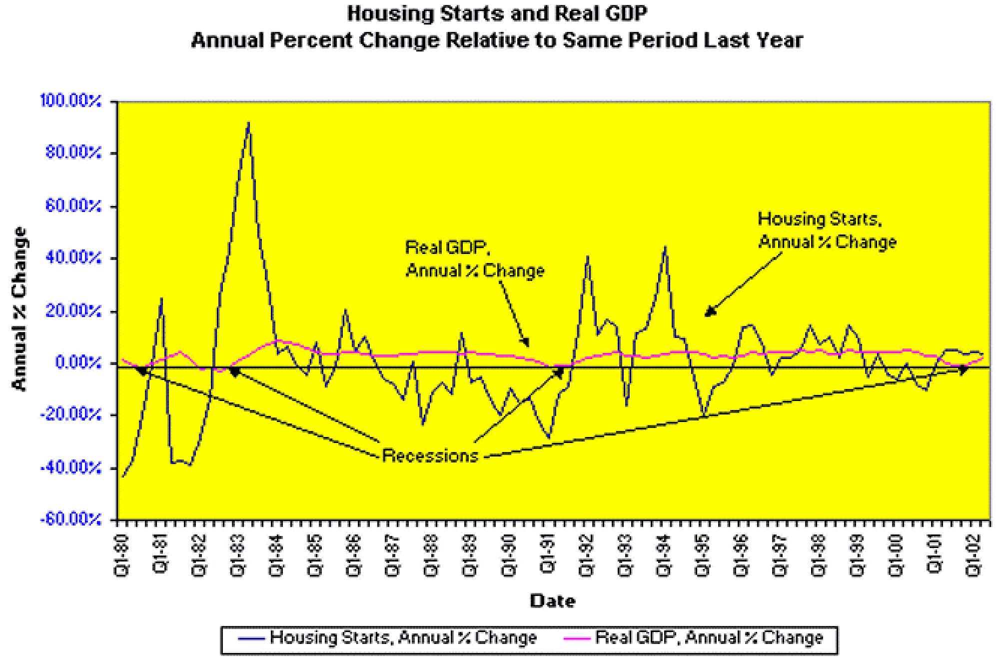
[24] Multex Investor
[25] Housing Economics. April, 2002.
[26] David L. Babson & Company Inc. November, 2002.

show how the impact of changes in interest rates and GDP growth on the housing starts has been decreasing over time.[27] This means that the cyclicality of the industry is flattening.

In conclusion, the already depressed current valuation of home builders compared to other industries should provide a pretty good cushion if housing starts do turn down for a while, and potential for multiple upgrading if earnings prove to be less cyclical than in the past.



[27] Southwestern Economics Resource Center, webpage



Valuation

With continued robust new order growth in 3Q02, and the record low interest rates, we believe that several homebuilders are likely to raise their 2003 earnings guidance. The group, on average, is trading at 6.6 times 2002 earnings estimates, 5.7 times 2003 forward earnings estimates, and 1.5 times book value.[28] Despite general macro-economic concerns (i.e., continued layoffs, declining consumer confidence), we believe the current depressed valuation of the home builders more than reflects the potential risks, and therefore we remain favorable on the group.

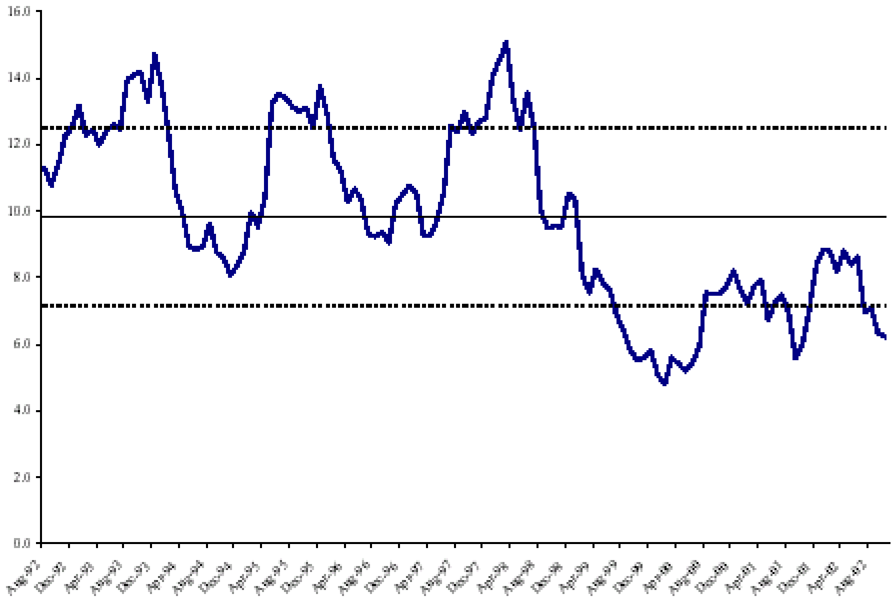
Home Building Valuation Multiples

		Current		Calendar EPS			2002	2003	
	Rating (2)	Price (1)	M-Cap	2001A	2002E	2003E	P/E	P/E	P/Book (4)
Beazer Homes	Outperform	$62.54	$802	$9.10	$10.68	$11.85	5.9	5.3	1.2
Centex Corp	Outperform	$44.92	$2,766	$5.98	$7.03	$9.60	6.4	4.7	1.3
D.R. Horton Inc.	Outperform	$18.16	$2,660	$2.41	$2.82	$3.25	6.4	5.6	1.4
Hovnanian	Neutral	$33.90	$1,022	$2.46	$4.20	$4.80	8.1	7.1	2.3
KB Home	Neutral	$44.46	$1,861	$5.50	$6.75	$7.75	6.6	5.7	1.7
Lennar Corporation	Outperform	$53.31	$3,448	$5.89	$7.35	$8.25	7.3	6.5	1.8
MDC Holdings	Outperform	$35.21	$939	$5.86	$5.70	$6.50	6.2	5.4	1.3
Pulte	Outperform	$44.36	$2,714	$6.01	$6.95	$7.80	6.4	5.7	1.1
Ryland	Outperform	$38.40	$1,011	$4.79	$5.85	$6.45	6.6	6.0	1.7
Standard Pacific	Outperform	$23.13	$747	$3.73	$3.70	$4.40	6.3	5.3	1.1
Toll Brothers	Neutral	$20.20	$1,418	$2.76	$3.00	$3.30	6.7	6.1	1.4
Average							**6.6**	**5.7**	**1.5**
Median							**6.4**	**5.7**	**1.4**

(1) Prices as of 11/7/02
(2) CSFB ratings
(3) CSFB Estimates
(4) Most recent quarter, Multex Investor

[28] CSFB. Homebuilder Update. October 9, 2002.

- **Historical P/E Comparisons**. The group of homebuilders in our universe is trading at below 5.7x forward 2003 earning estimates. This is well more than one standard deviation below the average of about 10x since 1992. Hence, we see room for significant stock price upside on average for the industry.



- **Price-to-Book**. Price-to-Book has represented a historic favorite valuation measure for the group, with buying at 1x book and selling at 2x book. While the group now stands slightly below historical average price-to-book (1.5 vs. 1.6x average), we see reasonable logic for the average to move above the historical 1.6x over time, given the companies' competitive advantages that bolster return on investment for our universe of companies.

- **Historical Transaction Analysis**. The transaction multiples since 1997 have been in the range of 6.2x to 15.1x earnings, and 0.8x to 2.4x book value. The average transaction multiples have been 8.9x times earnings and 1.6x book value. These values suggest that there is some upside potential for the industry's stocks.

Major Homebuilder Transaction Multiples

Deals $75 million and larger (Dollars in millions)

			Valuation		Equity Value Multiples		Multiples	
Ann. Date	Target Name (Parent)	Acquiror Name (Parent)	Equity Value	Transaction Value	LTM Net Income	Tangible Book	LTM Net Sales	LTM EBITDA
6/11/97	Pacific Greystone Corp.	Lennar Corp.	$258	$425	11.8x	1.8x	0.9x	6.5x
12/19/97	Continental Homes Holding Corp.	D.R. Horton Inc.	$475	$861	15.1x	1.9x	0.9x	9.3x
10/20/98	Lewis Homes	KB Home	$457	$592	NA	2.1x	0.9x	6.3x
10/4/99	Newmark Homes	Technical Olympic SA	$108	$246	6.7x	1.0x	0.6x	8.9x
2/17/00	U.S. Home	Lennar Corp.	$490	$1,134	6.8x	0.8x	0.6x	6.4x
8/28/00	Washington Homes	Hovnanian Enterprises	$85	$137	6.2x	1.1x	0.3x	4.5x
9/12/00	Western Pacific Housing	Schuler Homes	$181	$422	7.4x	1.7x	0.8x	5.4x
10/12/00	Engle Homes	Technical Olympic SA	$215	$411	7.0x	1.0x	0.5x	5.0x
5/1/01	Del Webb	Pulte Corp.	$798	$1,840	8.8x	1.5x	0.9x	8.3x
10/23/01	Schuler Homes	D.R. Horton Inc.	$907	$1,469	9.8x	2.4x	1.0x	6.2x
12/19/01	Forecast Group	Hovnanian Enterprises	$225	$244	–	1.6x	0.5x	3.1x
1/30/02	Crossmann Communities	Beazer Homes	$525	$605	9.8x	2.0x	0.8x	6.6x
		Median			8.1x	1.6x	0.8x	6.4x
		Mean			8.9x	1.6x	0.7x	6.4x

Source: Company reports and Salomon Smith Barney estimates

Conclusion

Despite general macro-economic concerns (i.e., continued layoffs, declining consumer confidence), we believe the current depressed valuation of the home building universe more than reflects the potential risks. Given the growing competitive advantage of the publicly traded homebuilders, the growth prospects (interest rates at an all-time low, robust housing starts, and lean inventory levels), and current valuation, we believe this industry should be a long-term buy.

Important Disclaimer

Please read this document before reading this report.

This report has been written by MBA students at Yale School of Management in partial fulfillment of their course requirements. The report is a **student and not a professional** report. It is intended solely to serve as an example of student work at Yale School of Management. It is not intended as investment advice. It is based on publicly available information and may not be complete analyses of all relevant data.

If you use this report for any purpose, you do so at your own risk. **YALE UNIVERSITY, YALE SCHOOL OF MANAGEMENT, AND YALE UNIVERSITY'S OFFICERS, FELLOWS, FACULTY, STAFF AND STUDENTS MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESSED OR IMPLIED, ABOUT THE ACCURACY OR SUITABILITY FOR ANY USE OF THESE REPORTS, AND EXPRESSLY DISCLAIM RESPONSIBILITY FOR ANY LOSS OR DAMAGE, DIRECT OR INDIRECT, CAUSED BY USE OF OR RELIANCE ON THESE REPORT.**