

## Yale SCHOOL OF MANAGEMENT

### Industry Analysis Report - 2022

**NVR** 





#### Industry: US Residential Homebuilders

Performance Rating: Buy

Price Target: \$570

Current Price: \$446

Investment Horizon: 12 - 18 Mos

- 1) Homebuilder balance sheets are better positioned to handle significant volume declines
- 2) Industry business models facilitate higher returns and consistent FCF generation
- 3) APV Analysis and Industry Fundamentals suggest equities might be undervalued

#### Market Index: Russell 3000 (R.3000)

#### Industry Index: FactSet US Homebuilding Industry (FI1415US)



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Report Date: October 20th, 2022

#### **Industry Overview**

<u>US Homebuilding Constituents</u>: The US Public Homebuilder and Residential Construction Sector consists of ~ 20 firms/relevant players, all members of the National Association of Home Builders. D.R. Horton and Lennar Corporation are the two most dominant players in the industry, holding 22% and 21% of Total Sales, respectively. The other firms comprise the remaining 34%. Homebuilder revenue and operations is typically driven through the sale of single-family and multi-family housing units. Many of these firms also segment business operations to include Rental Services and Mortgage/Financial Services. As of 2021 CYE, home sales encompass the vast majority of total revenue ~ 97%.



- ► D.R. Horton (NYSE: DHI)
- **Lennar Corporation** (NYSE: LEN)
- > **NVR, Inc.** (NYSE: NVR)
- PulteGroup, Inc. (NYSE: PHM)
- > Toll Brothers, Inc (NYSE: TOL)
- > Meritage Homes Corporation (NYSE: MTH)
- > Taylor Morrison Home Corporation (NYSE: TMHC)
- ► KB Home (NYSE: KBH)
- ► M.D.C. Holdings, Inc (NYSE: MDC)
- ► LGI Homes, Inc. (NYSE: LGIH)
- > Tri Pointe Homes, Inc. (NYSE: TPH)
- > Century Communities, Inc. (NYSE: CCS)
- ➢ M/I Homes, Inc. (NYSE: MHO)
- ➢ Green Brick Partners, Inc. (NYSE: GRBK)
- Beazer Homes USA, Inc. (NYSE: BZH) Hovnanian Enterprises, Inc. (NYSE: HOV)
- Landsea Homes Corporation (NYSE: LSEA)

#### **US Housing Market Fundamentals**

US public homebuilders operate in a highly fragmented and near perfectly housing market. As most major industry players have exposure to almost all housing end-markets, developing true competitive advantages remain difficult for the builders.<sup>1</sup>

## **Recent Proprietary Field Research**

/ASHI	INGTON D.C. – J NV	<u>une 2021 –</u> 对 R, Lennar, Tri I						Heavy Bui	lder Competition,	Volume	and Pricing Ver	y Strong						
	a				er Exposure I													
4	% '20 Closings 27%	2871	Naples Sar	1048	Sacramento 336	Albuquerque	Indianapolis	Columbia, S	C Jacksonville	Tampa	Las Vegas 1487	Chicag						
нс	24%	2980	2	1010	427				2240	313	1467							
	21%	11372	÷.	2189	1516		1209	-	539	3587	1526	806						
M	18%	5890	-	1071	-	-	755	-	1487	855	1261	461						
•	16%	525	-	-	+			-			525							
E	14%	8856	-	2687	388		688	391	440	2120	1403	739						
C	12%	944	-	12	20	12		-	-		944	-						
4	10%	331		1.7		100	1.1			12	331							
н	9%	1022	-	711	1	-			-	311	1							
н	7%	1185		603	• 1			59	523	1.0	2,#							
					sure to B													
	100	% '20 Clos		Wash	lington DC	Seattle	Sa	alose	Baltimore		Riverside							
	TPH	28%	1441 3852		383	286			59 1102		713							
	KBH	10%	1043	2	2750			<u></u>	1102		1043							
	MDC	926	762			260		-			502							
	LEN	976	4718		987	654		0	703		2374							
	TOL	976	736		638			÷	98									
	PHM	676	1585		470	370		<u></u>	113		632							
	TMHC	5%	688			248		-			440							
	DHI	496	3067		-	1358		-	379		1330							
	LGIH	496	336		-	336		-			258							
	МТН			2052	1.000	100000	12		N STAN		230							
			Builder	CA	FL	AZ	G	iA	NC									
			DHI	5%	21%	5%	6	%	6%									
			KBH	30%	16%	9%	C	1%	2%									
			LEN	14%	28%	5%	3	%	6%									
		1	LGIH	3%	12%	6%	5	%	11%									
			MDC	15%	11%	17%	0	1%	0%									
			MTH	8%	12%	19%	6	%	8%									
			NVR	0%	9%	0%	C	1%	7%									
			PHM	5%	22%	8%	4	%	5%									
			TMHC	17%	20%	14%	4	%	5%									
			TPH	42%	0%	9%	0	1%	0%									
			TOL	15%	6%	3%	-	%	4%									

Given these housing market dynamics, US homebuilders are '*Price-Takers*' within respective end markets. As such, *Housing Unit Average Selling Price* (ASP) remains the most important driver of both *Demand* and *Total Sales Revenues*. Therefore, current macroeconomic conditions and housing market cycles largely determine builder profitability.

Macroeconomic and market factors are the most significant drivers of price, and therefore revenue. We do believe that current monetary tightening, coupled with a Fed 'hard-landing' should lead to some form of market turn sometime in 2023. could lead the housing and capital markets into a downturn 2023. <u>However</u>, we do find ourselves firmly in the camp which believes that should such a recession occur, ensuing declines in sales volume and pricing power should prove mild in nature. We argue that consensus market expectations through FY24 appear too draconian in both magnitude and duration. The market is pricing in expectations of a severe downturn – a recession similar to the '08 Great Financial Crisis (GFC). Should a GFC-esque scenario occur, builders would experience a ~ -45% YoY % decline in Sales Revenue Growth. Moreover, Industry Gross Margins should contract from 25% - 11% over the ensuing handful of years. It would likely take another five years before margins could reach the 20% Net Income Break-Even Threshold.<sup>2</sup>

<sup>&</sup>lt;sup>1</sup> Patterson, Truman et al. "Housing – Homebuilding & Building Products Compendium." Wolfe Research. January 2022. 50 – 51.

<sup>&</sup>lt;sup>2</sup> "United States/Homebuilding – Key Items". FactSet. December 2022.

**Interest Rates and US Mortgages**: Influenced by the Fed, and through monetary policy, interest rates play a large role in determining demand for housing and housing unit affordability. In periods of economic tightening, the Fed will raise the *Federal Funds* Rate by altering the short end of the *Treasury Yield Curve*. As rates and short-end yields continue to rise, market participants are encouraged to save rather than invest given the higher EAR on a riskless return. Subsequently, financing a home effectively becomes more expensive for the consumer due to the higher interest rate in which they must lock in at. US homebuilders are an extremely cyclical industry. Where we are in a cycle will determine how one might project future earnings and total return. As such, the builders' current position within an economic cycle can be proxied through the direction of how interest rates appear to be moving. used as a proxy in projecting near future earnings and return total return. The current 10-YR is at 3.91% as of October – the highest it's been since the early months of 2019. Furthermore, as rates increase housing prices become less affordable to the market since over 90% of residential home purchases are financed through mortgages. The *10-Year Treasury Yield* and the mortgage rates tend to move in lockstep with one another.<sup>3</sup>



The average *30 Year Fixed Mortgage Rate* is currently at 6.94% - the highest it's been in decades. As the Fed continues this current tightening cycle, housing affordability issues will also become more prevalent. As housing units rise in price, housing market demand will generally decline. The *MBA Mortgage Purchase Application Index* serves as a proxy for **Housing Demand** and measures the monthly number of mortgage applications filed for *Single-Family Housing* Units in the US. As of August 2022, US housing demand had already been down 27% YoY.<sup>4</sup>



<sup>&</sup>lt;sup>3</sup> Patterson, Truman et al. "Housing – Homebuilding & Building Products Compendium." <u>Wolfe Research</u>. January 2022. 55.

<sup>&</sup>lt;sup>4</sup> Patterson, Truman et al. "Housing – Homebuilding & Building Products Compendium." <u>Wolfe Research</u>. October 2022. 53.

#### Homebuilder Business Model and Market Strategy

**Regional Scale Efficiencies**: As price takers within these fragmented markets, **Regional Consolidation** remains the primary vehicle through which homebuilders may attain competitive advantages. Local dominance is crucial for homebuilder market strategy, elevating the regionally dominant homebuilder to a **Quasi-Monopoly** status. As these companies continue to consolidate in local markets, builders will likewise optimize the rate at which they take market share – granting them additional **Economics of Scale** cost structure benefit. The builder is granted leverage in negotiation wages with sub-contractors, and lower raw material prices with suppliers. Most importantly, regionally dominant builders may also purchase Lot **Inventories** and **Land Bank Options** (granting the right, but not the obligation to purchase land lots at a set price in the future) at hefty discounts.

More importantly, after the events of GFC, many of the homebuilders lean on these land bank options to enhance Balance Sheet Mechanics, generating high **ROE** and consistent **FCF** through-cycle. An **Asset-Light** Model not only 1) reduces homebuilder exposure to both **Land and Liquidity Risk**, but also 2) optimizes **Asset Turnover** rates, as inventory may be sold and moved more quickly with a portion held off of the balance sheet. The visual below illustrates how homebuilder balance sheet dynamics have improved since GFC. The builders have since positioned to better absorb and navigate any housing market downturn.<sup>5</sup>



**Profitability and Liquidity**: The asset-light model facilitates higher **ROIC** and steady **WC** – thereby optimizing management profitability and structurally higher margins over time. NVR – The Industry "*Unicorn*" – remains the paramount example of this business model. Consolidating almost entirely in the Northeast during the 1990s, NVR became the 1<sup>st</sup> (and only) homebuilder to attain 100% optionality. Holding a firm foothold in the Washington D.C., Philadelphia, and New York housing markets – NVR's scale efficiency has facilitated higher FCF generation, optimized GMs, and increased **Cash Liquidity** from FY17 to FY21.

Source: FactSet Fundamentals					
	DEC '17	DEC '18	DEC '19	DEC '20	DEC '21
Profitability (%)					
Gross Margin	19.58	19.16	19.43	19.40	22.6
SG&A to Sales	7.43	7.29	7.26	6.92	6.4
Operating Margin	12.15	11.87	12.16	12.48	16.2
Pretax Margin	13.65	13.65	14.13	14.63	18.1
Net Margin	8.66	11.34	12.10	12.23	14.1
Free Cash Flow Margin	8.96	10.15	11.74	12.50	14.0
NVR, Inc. NVR 62944T105 2637785 NYSE Common stock Source: FactSet Fundamentals		DEC 147 D	EC 149 DEC	140 DEC 120	DEC
NVR 62944T105 2637785 NYSE Common stock		DEC '17 D	EC '18 DEC	'19 DEC '20	DEC '2
NVR 62944T105 2637785 NYSE Common stock Source: FactSet Fundamentals		DEC '17 D	EC '18 DEC	'19 DEC '20	DEC 12

Cash Only

Short-Term Receivables

688.5

20.0

18.6

731.9 1.160.5 2.809.5 2.636.7

18.3

18.6

18.3

<sup>&</sup>lt;sup>5</sup> Credit Suisse. "US Homebuilder Industry Comparison – GFC". 2021.

#### **Financial Drivers and Forecasts**

**<u>Revenue Drivers</u>**: Homebuilder revenue is driven primarily by 1) **Units Delivered** 2) **Units Ordered** and 3) **Unit Sales Price**. Houses which have been completed and closed refer to *Units Delivered*. New sales contracts and unit builds fall under the umbrella of *Units Ordered*. These in many cases represent the number of new sales contracts executed by homebuyers, net of cancellations, during the fiscal year.<sup>6</sup> Units ordered can be considered a forecast into demand.

A review of the industry shows units delivered are about 114% of the units ordered the previous year. Excluding 2020, where units delivered far outpaced units ordered in 2019, attributed to the surge into suburbia during the pandemic, units delivered average ~110% of the units ordered the previous year. An insight into units ordered can be determined via applications for US Mortgages. Trading Economics tracks US Mortgage applications on a week-to-week basis.

A rise in mortgage applications this week (a 3.8% rise), was the first in five weeks, the mean over the last year has been around 2.0% decline. We assess the decline in mortgage applications is tied to the hike in interest rates, which make mortgage loans more expensive. Anticipating higher interest rates, and thus, higher mortgage rates, the -2% trend line on mortgage applications will continue through 2025. The -2.0% growth rate in mortgage applications serve as a proxy to estimate the FYE22 Units ordered and FYE23 Units Delivered. We use the 110% estimate through 2025 for units delivered and 2026 for units ordered.



To ascertain *Average Sales Price*, we took the aggregate average sales price by dividing the home sales by the units delivered. This data largely matched with the *FRED* databases "*Average Sales Price of Houses Sold for the United States (ASPUS)*" Dataset. Over a ten-year span dating from 2012 to 2021, the average difference between the calculated industry average and *FRED* annual ASPUS was 50 basis points (on average, Industry average was .5% higher than *FRED* prices). Using FRED as a proxy for average sales price, the average sales price of a house sold in the US increased from \$440,000 to \$520,000, an 18% YoY increase.<sup>7</sup> Applying the 18% growth in sales price to the 2021 industry average sales price provides an estimate for 2022.

<sup>&</sup>lt;sup>6</sup> Lennar 10K

<sup>&</sup>lt;sup>7</sup> https://fred.stlouisfed.org/series/ASPUS

**Sales**: We think high interest rates will squeeze the housing market. The *NAHB* and *Wells Fargo* publish a *Housing Market Index* (*HMI*) which surveys *NAHB* members about the single-family housing market. The index ranges from 0 to 100 and reflects *NAHB* members view on the market conditions for the sale of new homes at the present time and in the next six months. This month, September 2022, the index is 46, the lowest it's been since 2014, after recovering from indexes in the single digits in 2008-2009.<sup>8</sup> Notably though, it's a 30-point drop from September 2021 – the last time there has been that significant YoY drops was during 2006-2008 (with the exception of March and April 2020).

If this pessimistic outlook on the housing market follows a similar trend to the housing market burst in 2008 – though this time for high inflation, we can use the *FRED ASPUS* data from this time to determine a forecast. According to *FRED* data, in Q1 2008, the average price of a home was \$290,400. When the recession ended in Q3 2009, the average price of a home was \$274,100. It took to Q4 2011 before prices started rising – the average price of a home was \$259,700 during this time. Using Q1 2008 data to Q4 2011 data, the quarterly compound growth rate is a -0.7%, which is applied to housing prices for 2023E-2026E. Home sales average 97% of total revenues and are used to estimate the aggregate industry's future sales.



<u>SG&A</u>: While Selling, General, and Administrative (SG&A) increased over the ten-year span (CAGR 14.5%), SG&A as a percentage of total sales trended downwards. We reason that other factors may have contributed toward this SG&A margin downtrend. Firstly, most builders began to vertically build so that each new unit would have significantly less variation in specs and options. Through this, builders were not only granted cost savings, but also enabled most to have more foresight into future costs, and ability to control those costs. Secondly, most builders began to bundle SGA + COGS, as administrative oversight granted the builders more latitude to control these costs to maintain a certain level of margin (i.e., the ability to shutdown/stall certain projects in various regions if demand was not consistent with margin threshold). Ultimately, we believe that SG&A will return to prepandemic levels - ~ 11% of sales.



8 https://www.nahb.org/news-and-economics/housing-economics/indices/housing-market-index

<u>COGS</u>: Homebuilders practice to push the cost of building a home to the home buyer. In a planned community, if costs change from the estimates, the costs are allocated to the remaining, unfinished homes. Further, costs are recognized at the time of purchase, as described by Toll Brothers in their FY21 Annual Report.<sup>9</sup> COGS as a % of home sales falls between 76% and 83% of home sale revenue over the last ten years. Increases in margin likely reflect competition in the home buying market, leading to increased prices as people sought homes in response to Covid-19 lockdowns and low interest rates.

Post-GFC, homebuilders sought out ways in which to deleverage both debt and land risk. As a result, builders implemented strategies like *Vertical Construction* – building more identical units with less variability to provide greater visibility in COGS and SGA. Builders also acquired land and sought building strategies which were much more meticulous than previous years, such as through land options. Between 2014 and 2019, COGS as a % of sales was between 76% and 83%. The drop to 76% in 2021 is likely due to increased demand, which inflated revenue – and not a measure of the homebuilder's industry active reduction in decreasing COGS. Given declining housing prices, and less demand, we estimate that COGS as a % of revenues will not remain at a low 76%, and will instead increase to 81% in 2023E, COGS will be 78.5% of Sales in 2022E. 81% for COGS was chosen given its slightly less than 2012, and we believe firms were still reorganizing their building strategies after the 2008 financial crises. Further, when looking at the 5 largest firms, with the exception of Lennar, all firms have hovered around the same percentage between 2014 and 2019 (note, given the five firms are the largest, their COGS margin is lower than industry average due to economies of scale). The average between 2014 and 2019 is 81%, which is used in future projections.





<sup>9</sup> Toll Brothers FY21 10K

**Depreciation**: Had almost tripled between 2012 and 2021 but increased at a slower rate than total units delivered, indicating that the fixed assets acquired to accommodate the growth in units delivered used economies of scale. Depreciation is calculated using a straight-line method or based on units of production methods, based on information included in Toll Brothers FY21 10K. Industry wide (or even companywide) we do not have a good indication of the split between straight line method or units of production method. Depreciation as a percentage of revenues is consistently less than 1% and averages at 0.5% over the last ten years. We use 0.5% to project depreciation.

<u>**Taxes</u>**: Aggregating industry data from both Bloomberg and FactSet terminals places the range of current firm tax rates ~ 24.15% - 25.75%. If we assume a normal distribution among the group, we can take ~24.50% as the industry average tax rate.</u>

<u>Capital Expenditure</u>: Land Lot/Options and Units are considered Inventory items on the balance sheet. PP&E is therefore nonexistent since sub-contracting labor and other SG&A costs are the main operating expenditures. Due to this Capex as a % of Sales is typically ~.20% - and has held constant historically. As a % of EBIT, we calculate this figure to be ~ 3.60%. We believe moving forward this ratio will remain rather resilient and should stay connected to sales and earnings.

<u>Working Capital  $\Delta$ </u>: Is calculated by subtracting current liabilities from current assets, between 2012 and 2021 varied from year to year. To estimate future working capital, we forecasted the average from 2012 to 2021 for years 2022E through 2026E.

	2022	2023	2024	2025	2026
EBIT	24,967	17,592	16,734	15,918	15,142
Depreciation	538	541	543	546	549
Taxes	6,117	4,310	4,100	3,900	3,710
Capital expenditure	899	633	602	573	545
<u>Change in Working Capital</u>	6,289	6,289	6,289	6,289	6,289
Cash Flows	12,	0,209	0,209	0,207	0,207

	Table	of Projected	Free	Cash	Flows
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**Housing Fundamentals**: The current *Housing Cycle* and *Economic Cycle* dynamics will also play a role in homebuilder equity returns. The homebuilder industry is highly cyclical. As leading-economic indicators, homebuilder stocks will tend to look most attractive at cycle peaks, and least attractive at cycle troughs. Given this technical dynamic, we believe that a buying opportunity exists when the builders are trading at low through-cycle P/E and P/B ratios. Low multiples may indicate an equity trough and valuable entry point. We firmly believe that the homebuilders are near or at cycle-trough. Our \$570 fair value estimate helps to affirm our thesis since such a valuation would represent a ~ 16% discount to the current index price. Furthermore, data reveals that US homebuilders are currently trading at ~ 4.90x P/E and ~ 1.17x P/B – well below their 11.70x and 1.80 5-YR averages.

Secondly, we believe technical analysis likewise conveys the US homebuilders as a solid buying opportunity. As market leading indicators, the homebuilders will tend to trough before the general market, subsequently outperforming the market index for a number of periods. For instance – homebuilders underperformed the market in 2006, well before GFC's trough. Subsequently, the builders outperformed the market from 2012 - 2019. After lagging from 2019 - 2022, we believe fundamentals indicate that the builders are near cycle-trough and are positioned for a period of market outperformance. Most recently, the homebuilders have outperformed the market since September  $19^{\text{th}}$  – indicating that the group could have reached trough if rates did peak in July.



#### **APV Valuation Analysis**





<u>Cost of Debt</u>: The four largest firms in the industry have *Investment Grade Credit Ratings (BBB)*. The current cost of debt is 6.21% (as of 11 October 2022), which is a ten year high. We used the ten-year average  $\sim$ 3.50% <sup>10</sup>

Terminal Cash Flow Growth Rate: 4%, less than the GDP compounded annual growth rate between 1991 and 2021 (4.5%).<sup>11</sup>

**Terminal Debt Growth Rate**: This variable is calculated using the weighted average of the projected 1% growth rate for *Long Term Debt* and the projected 12% growth rate for *Short Term Debt*.

Beta Equity	1.00
D/E <sup>7</sup>	66%
10-Year Treasury Rate	3.91%
Cost of Debt	3.50%
Tax Rate	24.5%
Market Risk Premium	6.00%
Rate of Equity	9.91%
Discount Rate	7.78%
Terminal Cash Flow Growth Rate	4.00%
Terminal Total Debt Growth Rate	2.34%

**Equity Value**: The equity value was calculated using 2022 projected cash and debt + 2020-2021 growth rate, to return an equity value of USD \$132,444 million.

**Share Price**: We compared our equity value of \$132,444 million to the Homebuilders Index market value of \$103,671. From this, we derived a \$570.69 *Fair Value Price*.

<sup>&</sup>lt;sup>10</sup> FRED. "ICE BofA BBB US Corporate Index Effective Yield." 22 October 2022. https://fred.stlouisfed.org/series/BAMLC0A4CBBBEY#0 <sup>7</sup> FactSet Industry Average

<sup>&</sup>lt;sup>11</sup> FactSet – US Homebuilding Return Analysis

# APPENDIX

coea	% mgnaM	50%A	% migneM	D&A	% nignM	EBILDY	Margin %	EBIL	% migneM	Net Income	% mgnaM	Total Debt	% mignel/A	% Change	Other Sales	% of Backlog Conversion	% Change	Average Selling Price (Backlog)	% Change	<b>Ending Backlog Units</b>	% Change	Sales Order Backlog Value	% Change	Average Selling Price (Orders)	% Change	Units Ordered (Actual)	% Change	New Orders Value	% Change	Average Selling Price (Sales)	% Change	Units Delivered (Actual)	% Change	Home Sales	YoY Growth %	Sales	AGGREGATED FINANCIALS	National Association of Home Builders USD - Million: Calendar Year - 12/31
523,161	\$39%	623,529	13%	2187	1%	608,I2	0°ð	81,259	2%	25,292	%8	521,167	76%	5%	\$536	305%	12%	324	17%	40,526	29%	S13,146	13%	264	2%	110,372	15%	\$29,182	11%	280	9%	97,701	20%	\$27,343	20%	S27,878	Annual	2012
229,840	0,00T	24,201	%II	57 I S	0%	23'040	3%0I	090,52	o,08	54,792	13%	823,628	62%	-17%	S443	312%	15%	372	3%	41,830	18%	\$15,577	-5%	151	9%	120,129	4%	\$30,303	13%	317	21%	118,070	37%	\$37,396	36%	\$37,840	Annual	2013
237,062	0°18	955,339	12%	5223	0%0	25,267	11%	247177	0%6	389,52	%8	156,T22	Q1%	27%	<b>\$564</b>	316%	4%	386	12%	46,848	16%	\$18,062	25%	314	11%	133,283	38%	\$41,862	10%	348	11%	130,605	21%	\$45,431	22%	\$45,995	Annual	2014
543,829	\$130	S6,161	12%	1328	0%0	36,216	%11	<b>35,315</b>	10%	957,52	2%	106,022	24%	26%	S709	300%	6%	407	19%	55,759	26%	S22,700	3%	324	17%	156,179	21%	\$50,539	4%	361	13%	148,064	18%	\$53,388	18%	<b>\$</b> 54,097	Annual	2015
852,115	\$23%	58,92	11%	8728	0%0	472,72	11%	22'834	0%0	24'044	6%	527,445	43%	-6%	S665	306%	4%	423	9%	60,522	13%	\$25,581	3%	335	10%	171,236	13%	\$57,323	4%	376	13%	167,513	18%	\$62,998	18%	\$63,663	Annual	2016
359,106	829%	529,72	%11	5028	09%	850,82	12%	26,923	10%	107,42	2%	887,262	42%	-4%	S636	305%	5%	444	19%	71,784	25%	\$31,907	2%	342	13%	192,931	15%	\$65,907	3%	387	10%	184,980	14%	\$71,511	13%	S72,147	Annual	2017
821,272	82%	550,02	10%	2410	0%0	810,929	12%	135,02	10%	26,994	%8	234'030	39%	28%	S813	312%	-2%	435	7%	76,858	5%	\$33,443	1%	345	12%	216,172	13%	S74,639	3%	400	19%	219,264	23%	S87,624	23%	S88,437	Annual	2018
179,972	ò918	47a,02	10%e	2496	1%	911,526	12%	173,02	10%°	<b>Tae,Te</b>	%8	701,452	36%	97%	\$1,599	319%	-2%	427	9%	84,042	7%	\$35,908	-8%	318	-10%	194,732	-17%	S61,982	-2%	390	9%	239,738	7%	\$93,486	8%	<b>S</b> 95,085	Annual	2019
620,582	0%PT	\$10 <sup>,400</sup>	10%°	2546	1%	000,412	I496	823,518	13%	810,012	10%	534,501	33%	-25%	\$1,200	224%	1%	432	60%	134,063	61%	S57,914	3%	326	32%	256,505	35%	\$83,735	-1%	385	12%	268,177	11%	\$103,367	10%	\$104,567	Annual	2020
001,002	3€9%	380,118	%6	9536	%0	223,213	18%	255'225	1796	\$17,264	13%	232'245	52%	49%	S1,783	229%	19%	515	14%	152,930	36%	\$78,717	23%	402	25%	321,750	54%	\$129,194	11%	428	12%	300,867	24%	S128,664	25%	S130,447	Annual	2021
000,7112	829%	000,ðI2	%11	9558	0%0	005,852	15%6	000,322	I496	000,712	15%	000,012	%II	11%	1,987	219%	-8%	474	-10%	137,000	-17%	S65,000	16%	465	-4%	310,000	11%	S144,000	-3%	414	16%	350,000	13%	S144,789	38%	\$180,000	Annual	2022E
000,0512	\$196	006, EI2	0011	eree	060	000,022	13%	000,052	13%	000,812	11%	000, 512, 000	0,00	-75%	500	264%	-23%	367	-20%	109,000	-38%	\$40,000	2%	473	-11%	277,000	-9%	\$131,000	8%	448	-14%	300,000	-7%	\$134,530	-11%	\$160,000	Annual	2023E
000,0012	2796	214'000	11%	3838	0%	000,812	14%	000,812	I4%	000,812	14%	000,TI2	13%	98%	886	333%	-9%	333	-17%	90,000	-25%	\$30,000	-12%	418	-8%	256,000	-18%	\$107,000	-6%	424	-4%	288,000	-9%	\$122,000	-19%	\$130,000	Annual	2024E
000'00IS	30€T	000,EI2	10%°	3635	0%0	516,000	13%	000,TI2	13%	516,000	13%	003,712	14%	21%	1,193	320%	8%	361	8%	97,000	17%	\$35,000	-17%	347	17%	300,000	-3%	S104,000	-2%	417	4%	300,000	2%	\$125,000	-3%	\$126,193	Annual	2025E
000,00I2	0°87	000,512	10%e	9092	06/0	000,35IS	121%	000, 012	13%	000, EI2	15%	000, 312	13%	-27%	876	0%0	1%	363	5%	102,000	6%	\$37,000	6%	369	-3%	290,000	3%	S107,000	-2%	410	3%	310,000	2%	S127,000	1%	S127,876	Annual	2026E

Share Price Ω Adjusted MV

DHI \$71.25 24% \$17.10

Len \$76.51 22% \$16.83

NVR \$4,009.25 13% \$521.20

**PHM** \$39.00 9% \$3.51

TOL \$42.87 \$% \$2.14

MTH \$70.90 3% \$2.13

TMHC \$25.45 3% \$0.76

KBH \$27.54 2% \$0.55

MDC \$28.83 2% \$0.58

LGIH \$85.58 2% \$1.71

TPH \$15.55 2% \$0.31

CCS \$43.39 2% \$0.87

MHO \$39.97 3% \$1.20

**GRBK** \$22.05 2% \$0.44

BZH \$10.39 4% \$0.42

HOV \$39.30 1% \$0.39

LSEA \$4.70 1% \$0.05

TOTALS \$4,652.53 100% \$570.19