Citi Research
Equities

8 April 2014 | 15 pages

Homebuilding
North America

Homebuilding

Not All Books (i.e. TBVs) Are Created Equal: Exploring Land Cost Basis Relative to Adjusted P/TBVs, & MSA/State Exposure

- **What's New?** — We anticipate that home price appreciation is moderating based on increasing (i.e. normalizing) inventories in a number of markets and the slowing pace of sales (YoY) in US New/Existing Home Sales starting in 2H12, both detailed in this report. Therefore, we believe long-term investors should look to gain exposure to builder shares that exhibit attractive land cost basis & relative P/TBVs.

- **Land Cost Basis versus P/TBVs: Most-to-Least Favorable** — Our proprietary analysis shows that BRP, WCIC, UCP, & WLH have the most favorable land cost basis among covered builders with a ratio of 5-9% for "(Owned) Inventory ($) per Lot (excluding Homes Under Construction) as a % of 4Q13 Backlog ASPs" versus the coverage mean of 12.4%. Please note that: (1) this analysis sounds simple, but given the opacity of land cost basis data, it becomes a data gathering challenge; and (2) WCIC's costs associated with highly amenitized communities may cause this analysis to not be apples-to-apples vs. peers. Among larger (public float) builders, PHM, LEN, & DHI appear to have a relatively attractive ratio of 10-11% at the low-end of the range, while KBH, BZH, & MDC come in at the less favorable high-end at 16-20%. Among builders with the most favorable land cost basis, Buy-rated BRP & UCP screen best on 2014E P/TBV analysis (implied consensus) with multiples of 1.5x & 1.2x, respectively, compared to the peer median of 1.6x. Based on this proprietary analysis, both names should theoretically trade at a premium.

- **Drilling Down on Regional Exposures** — We estimate covered builders' active community exposure by state as a % of total (Figure 10) based on our proprietary analysis, which drills down to the MSA level. We pursued this analysis for the past 3 quarters to understand which builders might be impacted by stronger/weaker regional performance relative to the US average. For example, while it may be too early to tell if the Northern states have recovered from a harsh winter, our recent checks point to: (1) New Home Sales in the Southwest down materially in 1Q14 (YoY), particularly in less affluent markets there; & (2) the Texas and the Southeast markets continuing to grow (YoY), albeit at moderating (YoY) paces. Among larger (public float) builders, DHI & RYL possess the lowest Southwest exposure and are overweight well-performing TX & the Southeast exposure. MDC & KBH have the highest exposure to softening Southwest markets.

- **Near-Term Stock Views** — Near term, we remain cautious on builder shares given our expectations of a more benign than anticipated Spring Selling Season. We see US homebuilder stocks continuing to grind a bit lower here, perhaps ~10%, and anticipate that the new bar for 2014 nationwide net order (units) expectations may need to drift down to up 10% YoY or less, versus Street expectations across mid-cap covered builders to grow orders by ~14% YoY in 2014 (excluding PHM).

Will Randow, CFA
+1-212-816-1939
will.randow@citi.com

Scott Schrier, CFA
scott.schrier@citi.com

Trey Morrish
trey.morrish@citi.com

Not All Books (i.e. TBVs) Are Created Equal

We anticipate that home price appreciation is moderating based on increasing (i.e. normalizing) inventories in a number of markets and the slowing pace of sales (YoY) in US New/Existing Home Sales starting in 2H12, both detailed in this report. Therefore, we believe long-term investors should look to gain exposure to builder shares that exhibit attractive land cost basis & relative P/TBV multiples.

Lands Cost Basis: Digging for Intrinsic Value

Figure 1. Homebuilding – Land Supply & Percentage of Lots Acquired in Last 12 Months by Covered Builder

	BRP	BZH	DHI	KBH	LEN	MDC	MHO	MTH	PHM	RYL	TOL	TMHC	UCP	WCIC	WLH	TOTALS
LTM Change in Owned Lots	1,351	2,293	10,500	5,732	18,505	3,135	3,006	1,886	(7,848)	5,759	(1,392)	1,721	(25)	1,329	308	46,260
+ LTM Home Closings**	4,656	5,154	26,049	7,157	19,325	4,739	3,699	5,635	19,266	7,116	4,366	6,036	449	495	1,360	115,502
= LTM Owned Lots Acquired	6,007	7,447	36,549	12,889	37,830	7,874	6,705	7,521	11,418	12,875	2,974	7,757	424	1,824	1,668	161,762
÷ 4Q13 Owned Lots	93,024	22,886	142,600	38,355	125,643	13,038	11,479	21,497	95,212	23,540	34,108	33,728	4,163	7,831	10,901	678,005
= % of Owned Lots Acquired LTM	*6%*	*33%*	*26%*	*34%*	*30%*	*60%*	*58%*	*35%*	*12%*	*55%*	*9%*	*23%*	*10%*	*23%*	*15%*	*26%*
Note: Lot Supply Based on LTM Closings	*20.0x*	*4.4x*	*5.5x*	*5.4x*	*6.5x*	*2.8x*	*3.1x*	*3.8x*	*4.9x*	*3.3x*	*7.8x*	*5.6x*	*9.3x*	*15.8x*	*8.0x*	*5.5x*
	BRP	BZH	DHI	KBH	LEN	MDC	MHO	MTH	PHM	RYL	TOL	TMHC	UCP	WCIC	WLH	TOTALS
LTM Change in Controlled Lots	1,351	3,874	100	16,343	26,159	4,343	5,953	5,351	3,603	9,837	3,535	4,835	634	1,645	1,905	89,468
+ LTM Home Closings**	4,656	5,154	26,049	7,157	19,325	4,739	3,699	5,635	19,266	7,116	4,366	6,036	449	495	1,360	115,502
= LTM Controlled Lots Acquired	6,007	9,028	26,149	23,500	45,484	9,082	9,652	10,986	22,869	16,953	7,901	10,871	1,083	2,140	3,265	204,970
÷ 4Q13 Controlled Lots	99,040	28,978	191,600	61,095	146,609	15,786	21,211	28,283	123,478	38,142	51,235	45,371	5,513	8,507	13,747	878,595
= % of Controlled Lots Acquired LTM	*6%*	*31%*	*14%*	*38%*	*31%*	*58%*	*46%*	*39%*	*19%*	*44%*	*15%*	*24%*	*20%*	*25%*	*24%*	*25%*
Note: Lot Supply Based on LTM Closings	*21.3x*	*5.6x*	*7.4x*	*8.5x*	*7.6x*	*3.3x*	*5.7x*	*5.0x*	*6.4x*	*5.4x*	*11.7x*	*7.5x*	*12.3x*	*17.2x*	*10.1x*	*7.5x*

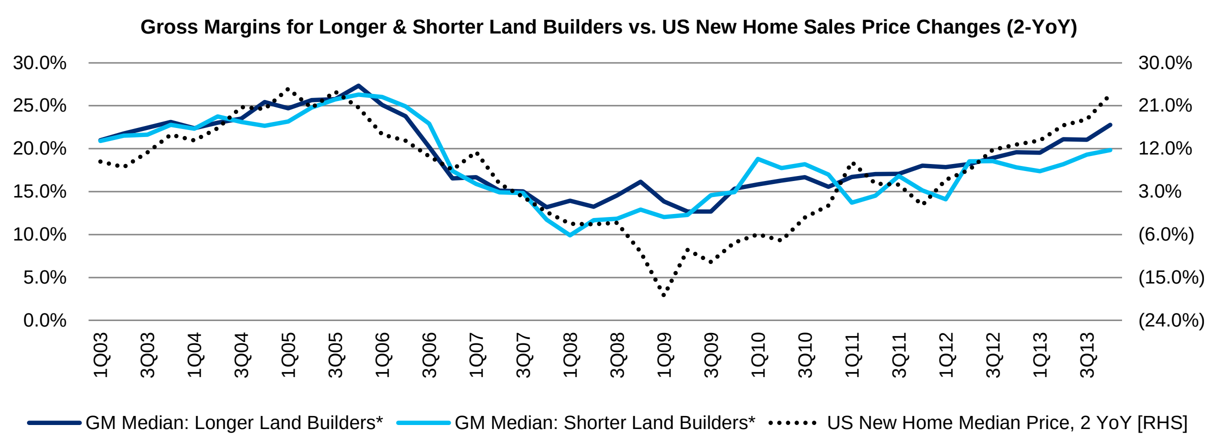
*Note: Excludes Unconsolidated Entities
**Includes Estimates for Lot Sales

Source: Citi Research, Company Reports

We find that BRP, WCIC, UCP, WLH, PHM, LEN, and DHI have the most favorable land cost basis among covered builders – in that order. MDC, BZH, and KBH appear to have the least favorable.

Homebuilders currently (and historically) control approximately 2 years supply of developed lots (based on TTM closings), with their remaining lots in some stage of development and/or entitlement. Partly for this reason, builders' gross margins correlate well to changes in US New Home Sales prices over the prior 2 years, as shown in Figure 2. Further, historically and somewhat surprisingly, land-long versus land-short homebuilder models have generated somewhat similar gross margins, and importantly, comparable ROEs and stock returns over the past cycle. Therefore, we can't necessarily say owning a land-long homebuilder is better than land-short in this period of likely slowing home price appreciation, following a rapid rebound in price appreciation.

Figure 2. Expected slowing in home price appreciation may inhibit further gross margin expansion for the builders, unless a given builder has attractive land basis



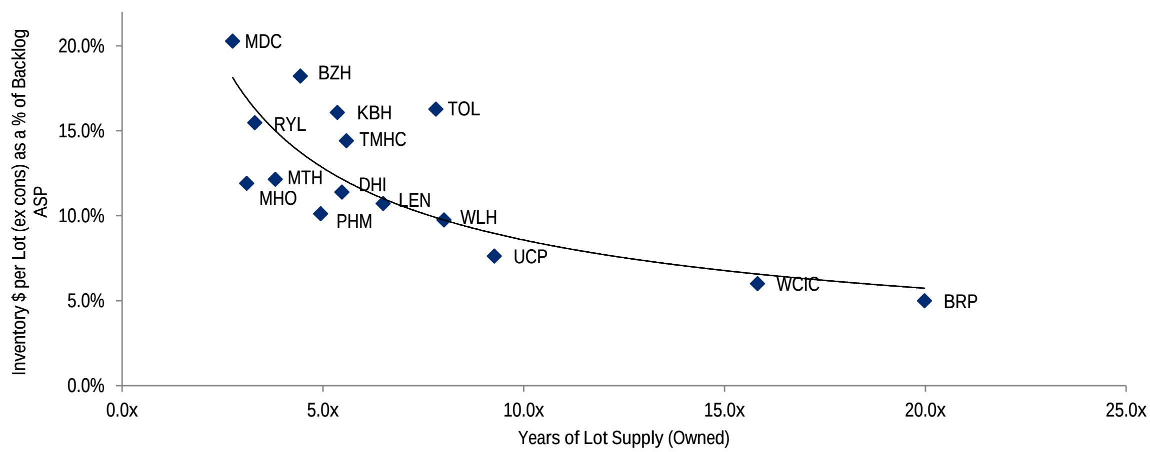
*Longer land builders include DHI, LEN, PHM, & TOL, and shorter land (i.e. merchant builders) include BZH, KBH, MDC, MTH, & RYL
Source: Citi Research Estimates, Company Reports, Census Bureau, Haver

We believe an important differentiating factor among builders is "actual" favorable land cost basis, not just generic land-long vs. land-short investor preferences of builder business models.

However, we do believe an important differentiating factor among homebuilders is "actual" attractive land cost basis, which we attempt to measure as "(Owned) Inventory ($) per Lot (excluding Homes Under Construction) as a % of 4Q13 Backlog ASPs". We then graph these ratios against years of owned lot supply to adjust for differing stages of development among covered builders.

For this exercise, we assessed builder inventories carefully, making as few assumptions as necessary when disclosures weren't provided upon request for a few select builders (e.g. number of homes under construction and lot sales), to estimate what we believe to be a very useful ratio in evaluating the homebuilders land cost basis: "(Owned) Inventory ($) per Lot (excluding Homes Under Construction) as % of 4Q13 Backlog ASPs". We then plot this ratio against years of owned lots supply to account for the fact that builders typically carry roughly 2 years supply of developed lots that often have a cost basis of sometimes double that of undeveloped lots. As shown in Figure 3, homebuilders that fall on or below the curve exhibit what we perceive as a favorable land cost basis, and those well above the curve, a less favorable land basis. Our proprietary analysis shows that BRP, WCIC, UCP, and WLH have some of the most favorable land cost basis among covered builders with a ratio of 5-9% for "(Owned) Inventory ($) per Lot (excluding Homes Under Construction) as a % of 4Q13 Backlog ASPs" versus the coverage median of 12.4%. Please note that: (1) this analysis sounds simple but getting land cost basis information is difficult in some cases ; and (2) WCIC's costs associated with the company's highly amenitized communities may cause this analysis to not be as meaningful for the company versus peers. Among larger (public float) builders, PHM, LEN, and DHI appear to have a relatively attractive ratio of 10-11% at the low-end of the range, while KBH, BZH, and MDC come in at the less favorable high-end of the range at 16-20%.

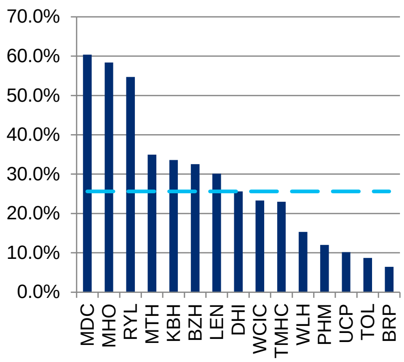
Figure 3. Homebuilding – Inventory ($) per Lot (excl. Homes Under Construction) as a % of 4Q13 Backlog ASPs versus Years Supply of Owned Lots



Source: Citi Research Estimates, Company Reports

Not surprisingly, builders with more favorable estimated land cost basis positions also acquired a lower percentage of owned lots in the past year after the run in land prices, as depicted in Figure 4.

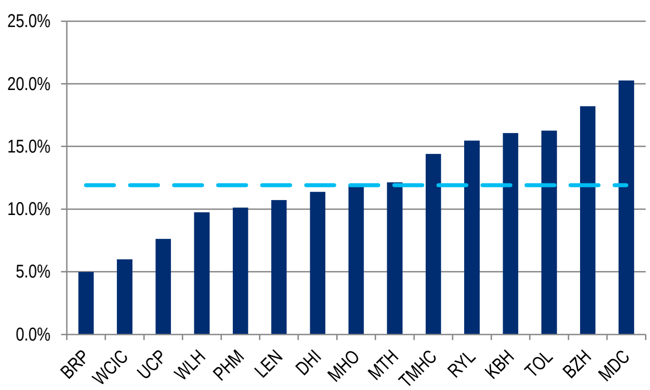
Figure 4. % of Owned Lots Acquired LTM



Source: Citi Research Estimates, Company Reports

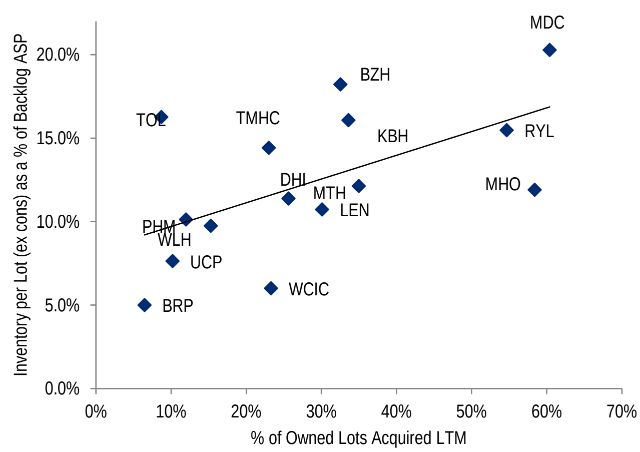
In addition, we present the caveats from homebuilders that participated in feedback (for only their own companies) for this analysis. We acknowledge the analysis has some shortcomings. For one, lots will be in various stages of development, and therefore, will have variations in associated costs within a builder's accounting book basis as well as variance across the builders as a whole. We attempted to address these potential issues through plotting our analysis against years of owned lots supply.

Figure 5. "(Owned) Inventory ($) per Lot (excluding Homes Under Construction) as a % of 4Q13 Backlog ASPs



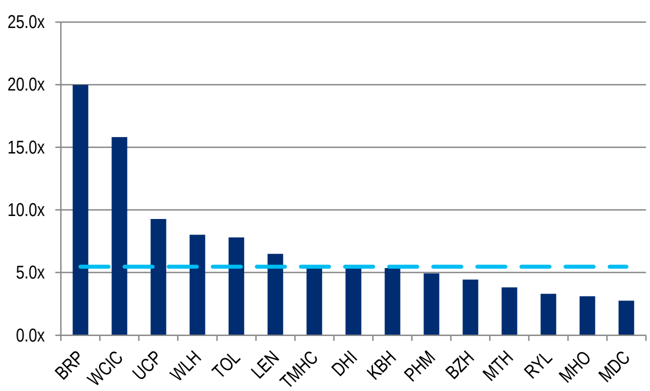
Source: Citi Research Estimates, Company Reports

Figure 6. Owned) Inventory ($) per Lot (excl. Homes Under Construction) as a % of 4Q13 Backlog ASPs vs % of Lots Acquired LTM



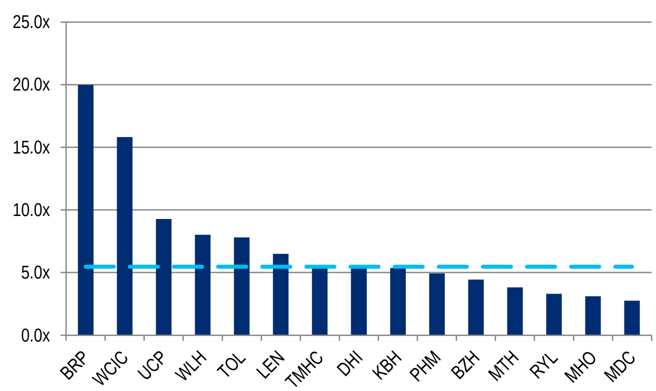
Source: Citi Research Estimates, Company Reports

Figure 7. Years of Owned Lot Supply Based on LTM Closings



Source: Citi Research Estimates, Company Reports

Figure 8. Years of Controlled Lot Supply Based on LTM Closings



Source: Citi Research Estimates, Company Reports

Among builders with the most favorable land cost basis, Buy-rated BRP and UCP screen well on 2014E P/TBV analysis (implied consensus) with multiples of 1.5x and 1.2x, respectively, compared to the peer median of 1.6x. Based on our analysis, both names should eventually trade at a meaningful premium to peers.

Figure 9. Covered Builders – Price-to-Tangible Book Value (Implied Consensus)

(Values in Million, Except Per Share)	BRP	BZH	DHI	KBH	LEN	MDC	MTH	MHO	NWHM	PHM	RYL	TMHC	TOL	UCP	WCIC	WLH	Min	Median	Max
Current Stock Price	$20.79	$19.62	$21.77	$16.81	$39.19	$28.08	$43.28	$22.92	$14.50	$19.03	$40.10	$23.56	$36.00	$14.52	$19.79	$27.24			
Equity	1,476	241	4,061	536	4,627	1,213	841	493	138	4,649	924	1,545	3,339	218	408	451			
- Non-Controlling Interest	(72)	-	(3)	-	(459)	-	-	-	(1)	-	(16)	-	(6)	-	(2)	(23)			
= Shareholder's Equity	1,405	241	4,059	536	4,169	1,213	841	493	**137**	4,649	908	1,545	3,333	218	405	428			
+/- Equity Treated as Debt & Pro Forma Adj	-	31	(22)	-	(34)	-	-	(48)	-	-	-	-	-	-	-	-			
- Intangibles	-	-	(39)	-	(34)	-	(39)	-	-	(136)	-	(37)	-	-	(8)	(17)			
- Deferred Tax Assets, Net (i.e. Reversal)	-	(5)	(587)	-	(377)	(176)	(70)	(111)	-	(2,087)	(186)	(245)	(286)	-	(0)	(96)			
= 2013 Tangible Book Value ex DTA	$1,405	$267	$3,411	$536	$3,725	$1,037	$732	$334	**$137**	$2,426	$722	$1,263	$3,047	$218	$398	$316			
+ 2014 Net Income (Consensus)	190	16	594	119	570	81	155	41	6	453	182	241	303	8	24	68			
+ 2015 Net Income (Consensus)	236	42	733	147	733	113	189	50	40	561	242	272	418	25	39	100			
+ 2016 Net Income (Consensus)	248	72	870	188	863	145	209	65	54	762	285	342	546	32	74	120			
= Tangible Book Value ex DTA at 2016-End	$2,080	$397	$5,608	$990	$5,891	$1,376	$1,286	$490	**$237**	$4,201	$1,431	$2,118	$4,314	$283	$534	$603			
Basic Share	117	25	323	84	192	48	36	24	16	380	46	122	169	18	26	31			
+ Share Based Comp (Assumption 2% of Basic)	2	1	6	2	4	1	1	0	0	8	1	2	3	0	1	1			
+ Other Equity Linked Securities (Dilution), Net	-	9	16	-	16	-	-	-	-	-	1	-	-	-	-	0			
= Diluted Shares	119	34	345	85	211	49	37	25	**17**	387	49	125	173	19	27	32			
TBV Per Share ex DTA:																			
2014-End	$13.36	$8.25	$11.60	$7.67	$20.35	$22.60	$24.00	$15.10	$8.53	$7.43	$18.63	$12.06	$19.38	$12.05	$15.89	$11.95			
2015-End	$15.34	$9.48	$13.73	$9.39	$23.82	$24.89	$29.12	$17.10	$10.93	$8.88	$23.62	$14.24	$21.80	$13.39	$17.35	$15.06			
2016-End	$17.42	$11.57	$16.25	$11.59	$27.91	$27.82	$34.78	$19.71	$14.18	$10.84	$29.48	$16.98	$24.96	$15.12	$20.13	$18.81			
NPV DTA Per Share (Implied by Cons NI):	$0.87	$5.79	$1.81	$7.48	$1.92	$3.82	$2.28	$4.48	$ -	$4.84	$4.22	$2.09	$2.20	$ -	$2.88	$3.43			
P/TBV ex DTA (Implied by Cons NI):																	Min	Median	Max
2014-End	1.6x	2.4x	1.9x	2.2x	1.9x	1.2x	1.8x	1.5x	1.7x	2.6x	2.2x	2.0x	1.9x	1.2x	1.2x	2.3x	1.2x	1.9x	2.6x
2015-End	1.4x	2.1x	1.6x	1.8x	1.6x	1.1x	1.5x	1.3x	1.3x	2.1x	1.7x	1.7x	1.7x	1.1x	1.1x	1.8x	1.1x	1.6x	2.1x
2016-End	1.2x	1.7x	1.3x	1.5x	1.4x	1.0x	1.2x	1.2x	1.0x	1.8x	1.4x	1.4x	1.4x	1.0x	1.0x	1.4x	1.0x	1.4x	1.8x
P/TBV incl DTA (Implied by Cons NI):																			
2014-End	1.5x	1.4x	1.6x	1.1x	1.8x	1.1x	1.6x	1.2x	1.7x	1.6x	1.8x	1.7x	1.7x	1.2x	1.1x	1.8x	1.1x	1.6x	1.8x
2015-End	1.3x	1.3x	1.4x	1.0x	1.5x	1.0x	1.4x	1.1x	1.3x	1.4x	1.4x	1.4x	1.5x	1.1x	1.0x	1.5x	1.0x	1.4x	1.5x
2016-End	1.1x	1.1x	1.2x	0.9x	1.3x	0.9x	1.2x	0.9x	1.0x	1.2x	1.2x	1.2x	1.3x	1.0x	0.9x	1.2x	0.9x	1.2x	1.3x
2015 ROE (Based on Consensus Earnings)	15%	9%	17%	12%	17%	9%	21%	11%	28%	13%	25%	17%	12%	11%	8%	22%	8%	14%	28%
2016 ROE (Based on Consensus Earnings)	12%	14%	18%	14%	17%	11%	19%	13%	30%	16%	25%	19%	14%	13%	15%	25%	11%	15%	30%
2015 Return on Market Cap (New Equity)	10%	6%	10%	10%	9%	8%	12%	9%	17%	8%	12%	9%	7%	9%	7%	11%	6%	9%	17%
2016 Return on Market Cap (New Equity)	10%	11%	12%	13%	10%	10%	13%	11%	22%	10%	15%	12%	9%	12%	14%	14%	9%	12%	22%

Source: Company Reports, FactSet (Consensus), and Citi Research

Regional Exposures: Relative Positioning

Figure 10. Homebuilding – Active Community Exposure by State as % of Total for Each Builder

State	BRP	BZH	DHI	KBH	LEN	MDC	MHO	MTH	PHM	RYL	TMHC	TOL	UCP	WCIC	WLH
AZ	1%	5%	4%	9%	4%	17%	-	20%	5%	5%	21%	3%	-	-	16%
CA	39%	3%	4%	22%	13%	7%	-	12%	6%	2%	14%	9%	71%	-	54%
CO	7%	-	2%	5%	2%	24%	-	7%	-	3%	4%	3%	-	-	-
FL	-	12%	20%	17%	21%	11%	15%	9%	10%	9%	25%	8%	-	100%	-
GA	-	3%	5%	-	2%	-	-	-	5%	6%	-	-	-	-	-
IL	-	-	1%	-	-	-	9%	-	5%	6%	-	1%	-	-	-
IN	-	10%	0%	-	-	-	17%	-	5%	10%	-	-	-	-	-
MD	-	11%	1%	-	4%	9%	2%	-	2%	1%	-	4%	-	-	-
MA	-	-	-	-	0%	-	-	-	2%	-	-	4%	-	-	-
MI	-	-	-	-	-	-	-	-	4%	-	-	3%	-	-	-
MN	-	-	1%	-	6%	-	-	-	4%	5%	-	2%	-	-	-
NV	-	4%	2%	6%	4%	11%	-	-	3%	4%	-	5%	-	-	30%
NJ	-	5%	1%	-	2%	1%	-	-	2%	-	-	5%	-	-	-
NY	-	1%	-	-	-	-	-	-	0%	-	-	7%	-	-	-
NC	-	10%	6%	4%	6%	-	16%	9%	6%	12%	-	5%	-	-	-
OH	-	-	-	-	-	-	25%	-	3%	-	-	-	-	-	-
PA	-	1%	0%	-	-	1%	-	-	1%	5%	-	12%	-	-	-
SC	-	8%	7%	-	5%	-	-	1%	5%	13%	-	0%	-	-	-
TN	-	4%	0%	-	0%	-	-	-	2%	-	-	-	-	-	-
TX	3%	17%	22%	37%	25%	-	13%	42%	20%	21%	24%	13%	-	-	-
UT	-	-	1%	-	-	6%	-	-	-	-	-	-	-	-	-
VA	15%	6%	0%	-	-	6%	3%	-	3%	2%	-	4%	-	-	-
WA	-	-	2%	-	3%	7%	-	-	2%	-	-	8%	29%	-	-
Other US	-	3%	20%	0%	2%	-	-	-	6%	-	-	5%	-	-	-
Canada	34%	-	-	-	-	-	-	-	-	-	11%	-	-	-	-

Source: Citi Research Estimates, Company Reports

We estimate covered builders' active community exposure by state as a % of total (Figure 10) based on our independent proprietary analysis, which drills down to the metropolitan statistical area (MSA) level. We pursued this analysis for the past 3 quarters to understand which builders might be impacted by stronger/weaker regional performance relative to the US average. For example, while it may be too early to tell if the Northern states have recovered from a harsh winter, our recent checks point to: (1) New Home Sales in the Southwest down materially in 1Q14 (YoY), particularly in less affluent markets there; and (2) the Texas and the

Southeast markets continue to grow (YoY), albeit at moderating (YoY) paces. Among larger (public float) builders, DHI and RYL possess the lowest Southwest exposure and are overweight well-performing TX and the Southeast exposure. MDC and KBH have the highest exposure to softening Southwest markets.

Figure 11. Homebuilding – Existing Home Sales Statistics, February 2014

	Existing Home Sales		Inventory		Median Home Prices	
State	YoY Change	2 Year Change	YoY Change	2 Year Change	YoY Change	2 Year Change
AZ	-18.3%	-25.5%	70.5%	70.1%	15.7%	53.1%
CA	-14.1%	-19.2%	30.6%	-13.0%	21.3%	50.4%
FL	-1.3%	7.7%	3.6%	-30.5%	10.0%	23.6%
GA	-5.6%	-10.0%	-5.5%	-27.8%	20.8%	68.1%
IL	-6.2%	39.7%	-13.5%	N/A	6.9%	13.2%
IN	-13.1%	2.9%	-15.5%	-31.8%	9.5%	14.4%
MD	-0.2%	3.0%	9.5%	-16.9%	7.7%	13.6%
MA	-3.9%	-4.0%	-26.0%	-50.7%	7.3%	15.6%
MI	-12.9%	-16.4%	N/A	N/A	10.9%	33.6%
MN	-10.7%	-26.9%	-2.3%	-30.6%	8.6%	26.8%
NV*	-20.8%	-32.1%	23.8%	7.4%	26.6%	58.4%
NJ	-7.8%	0.2%	-23.3%	-45.2%	6.1%	5.3%
NY	-5.9%	-5.9%	-20.8%	-35.0%	6.9%	10.5%
NC	-3.3%	11.2%	N/A	N/A	5.9%	27.8%
OH	-5.5%	6.6%	0.9%	-22.0%	3.6%	12.0%
SC*	2.7%	25.9%	-15.6%	-31.1%	10.5%	15.8%
TN*	4.1%	24.6%	-5.0%	-4.2%	14.4%	30.6%
TX	5.4%	20.5%	-20.9%	-43.3%	10.7%	18.5%
UT	-0.3%	1.3%	16.6%	-18.7%	7.1%	23.5%
VA	-7.5%	-5.2%	N/A	N/A	1.7%	14.1%
WA	-0.2%	N/A	6.5%	N/A	6.3%	N/A
Median	-5.6%	0.7%	-3.6%	-29.1%	8.6%	21.0%
US	-7.1%	1.8%	26.8%	8.3%	9.1%	21.5%

Source: Citi Research, NAR, NAHB, Haver

We conclude from our affordability analysis that the US has returned to its 2000-06 median level based on the NAHB's HOI analysis.

We also assessed which top builder MSAs experienced the most adverse changes in affordability (Figure 12), following a rapid recovery in home prices since 2011 and a volatile mortgage rate environment. To do so, we utilized data from the National Association of Homebuilders' Housing Opportunity Index (HOI), which is defined as the share of homes sold in a given area that would have been affordable to a family earning the local median income. Stated differently, in 4Q13 the HOI level was 64.7, indicating that 64.7% of new and existing homes sold in the quarter were affordable to nationwide families earning the related median income.

Figure 12. Homebuilding – Housing Affordability of Top Builder MSAs (2000-Present)

	2000-2006			2007-2011			2012-2013			YoY	**2-Year**
	Min	Median	Max	Min	Median	Max	Min	Median	Max	Change	**Change**
Austin	49.9	61.2	71.9	53.1	73.6	81.5	62.6	67.1	76.0	-16.1%	-20.7%
Charlotte	63.6	71.2	77.3	59.5	71.2	79.7	70.2	74.2	80.3	-6.1%	-10.0%
Dallas	57.1	65.0	75.4	53.7	69.1	79.9	60.3	71.5	75.3	-19.0%	-18.6%
DC Metro	20.5	53.1	79.8	35.0	71.6	81.2	66.4	73.9	79.8	-14.1%	-12.9%
Denver	49.7	59.7	71.8	53.4	72.9	79.1	67.7	76.7	80.1	-14.3%	-14.4%
Houston	54.2	64.4	73.7	47.4	69.7	80.5	60.2	70.0	76.4	-17.0%	-17.8%
Las Vegas	13.0	49.4	70.2	18.0	82.1	88.3	73.6	79.1	88.7	-5.2%	-16.6%
Orlando	28.9	68.7	75.5	26.1	78.6	86.6	72.4	79.4	85.4	-10.3%	-9.2%
Phoenix	26.6	66.0	75.4	30.0	81.4	86.0	67.5	76.9	83.7	-12.9%	-19.5%
San Antonio	46.5	65.5	80.3	48.0	68.6	79.8	64.8	69.7	75.4	-7.6%	-8.7%
San Francisco	5.7	7.9	16.5	5.7	22.9	37.1	14.1	28.7	39.9	-50.4%	-62.0%
Tampa/Sarasota	40.6	69.7	77.4	41.4	77.2	82.6	74.7	80.1	83.5	-6.3%	-4.4%
US Total	40.4	56.3	64.8	42.0	71.5	75.9	64.5	73.8	77.5	-13.6%	-14.8%

Source: Citi Research, NAHB

Figure 13. Jobs-to-Permit Ratios in Top Builder MSAs, 2006-13 (Cumulatively)

City-Area	Jobs-to-Permits
San Francisco	3.03x
San Antonio	1.72x
DC Metro	1.72x
Dallas	1.53x
Austin	1.50x
Orlando	1.47x
Houston	1.40x
Denver	1.26x
Charlotte	1.26x
Las Vegas	1.19x
Tampa/Sarasota	1.12x
Phoenix	0.70x
US Total	0.80x

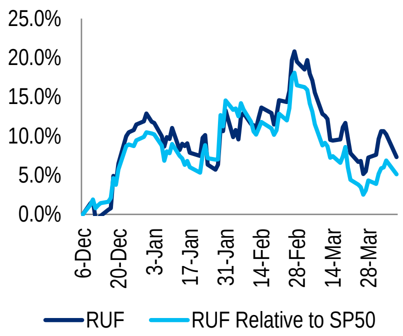
Source: Citi Research, BLS. Census Bureau, Haver

We conclude from our affordability analysis that the US has returned to its 2000-06 median level based on the NAHB's HOI analysis. Further, among homebuilders' top MSAs, all have returned to the 2000-06 median affordability level. Only San Francisco and Las Vegas hover above the prior affordability levels. However, we would note that the San Francisco-area posted some of the strongest job-to-permit growth among top builder MSAs, as shown in Figure 13.

Near-Term View: Cautious on Builder Shares

We expect US homebuilding stocks to continue to grind a bit lower here, and anticipate that the new bar for 2014 nationwide net order (units) expectations may need to drift closer to growth of 10% YoY or less, versus average Street expectations across mid-cap covered builders to grow orders by ~14% YoY in 2014 (excl. PHM).Before becoming more constructive on the group, we would await a further ~10% correction in builder shares, lower Street expectations, or acceleration in demand.

Figure 14. ISE Homebuilder Builder Index (RUF) Returns, Last ~4 Months



Source: FactSet

The favorable US New Home Sales pick-up that started in November 2013 and triggered our bullish stance then appears to be "slowing", and it's not just due to inclement weather.

Early last month, we believed it was a good time to press the "pause" button on our previous bullish stance (Staying Long the Builders amid Bottoming Sentiment, Evidence of Pent-Up Demand, & Seasonal Tailwind) through downgrading our view on the group and a number of stocks (related March 2014 report link: Pressing "Pause" on the Spring Selling Season Trade Post Run). Our change in view early was supported by: (1) ~15% multiple expansion on covered builders on 2014-15 consensus earnings over the prior 90 days and P/TBV multiples slightly ahead of prior mid-cycle levels; (2) our channel checks indicating (YoY) softening in core Southwest markets (i.e. AZ, CA, & NV) where weather did not negatively impact demand and builders have large sales exposures (i.e. over 10% of active communities on average); and (3) to a much lesser extent, inclement weather compressing the Spring Selling Season in the North (US).

Figure 15. Consensus Net Order Growth Expectations (YoY) & Net Order Revisions (Last 30 Days)

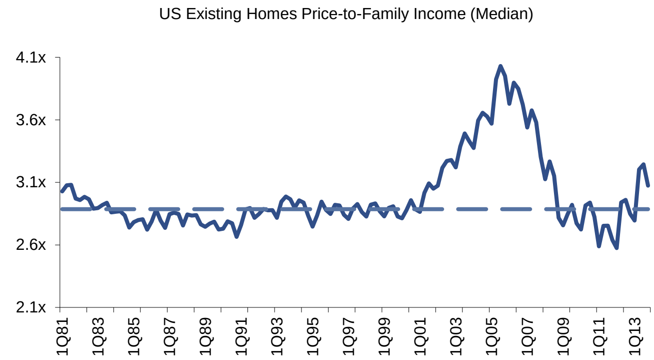
	Cons. Net Order Growth (YoY)			Cons. Order Revisions (Last 30-Days)		
	2014	2015	2016	2014	2015	2016
DHI	10.7%	15.6%	20.9%	-0.3%	-0.3%	-1.6%
KBH	11.4%	17.4%	11.9%	-0.1%	-2.0%	-8.1%
LEN	13.9%	15.9%	9.8%	-3.2%	-3.2%	-7.5%
MDC	14.7%	19.7%	15.3%	0.0%	0.0%	0.0%
MHO	16.8%	15.5%	NA	0.0%	0.0%	NA
MTH	11.2%	17.9%	14.7%	-1.9%	-2.3%	-14.1%
PHM	-2.6%	17.9%	17.4%	-1.6%	-1.3%	-1.6%
RYL	20.6%	19.3%	10.2%	-0.8%	-0.9%	-10.0%
TMHC	17.3%	18.7%	55.1%	0.0%	0.0%	0.0%
TOL	7.4%	21.9%	15.8%	0.0%	0.0%	0.0%
Mean	12.1%	18.0%	19.0%	-0.8%	-1.0%	-4.8%
Mean (ex PHM)	13.8%	18.0%	19.2%	-0.7%	-1.0%	-5.2%

Source: Citi Research, FactSet

While we were early on calling the 4Q13 acceleration and March 2014 slowing trends, present expectations may need to be reset further, perhaps down to net order growth of 10% YoY in 2014 or less.

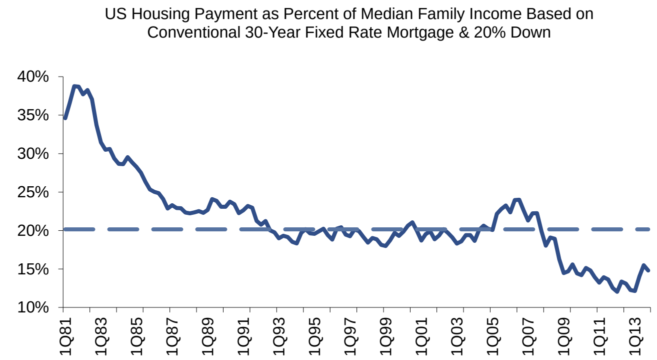
Today, the investment community seems to believe that New Home Sales demand will snap back following a slowdown in January-February 2014 (YoY) based on recent investor discussions, earnings conference calls, and multiple expansion in the stocks (e.g. 3ppt last week). While we are also hopeful, we are pretty cautious on the builder shares based on our latest findings, including our Private Homebuilder Perspectives Survey (PHPS) conducted last week and industry channel checks completed over the prior 2 weeks. Our findings showed that no snap-back in New Home Sales for March occurred, aside from a normal (unadjusted) seasonal (MoM) pick-up. For example, our private homebuilder survey showed that the net percentage of respondents indicating that unadjusted orders improved MoM in March 2014 was only 40-50%, which compared less favorably to our surveys for the month of March in the prior 2 years when the net percentage of respondents indicating sales improved was 65%. Further, our survey showed that traffic continued its strong MoM trend, similar to the month of March in the past 2 years, but traffic (i.e. potential future revenue) continues to not convert to orders (i.e. actual future revenue) for the builders.

Figure 16. Asking prices for homes rose 23% since the 2011 trough contributing to less favorable affordability.



Source: Citi Research

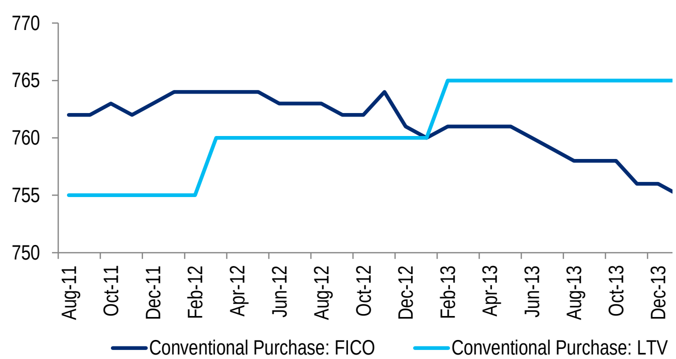
Figure 17. Further, while low rates make housing affordability still favorable, rapid price appreciation since 2011, a bump up in rates, and tight lending conditions may have put potential buyers on the sidelines.



Source: Citi Research

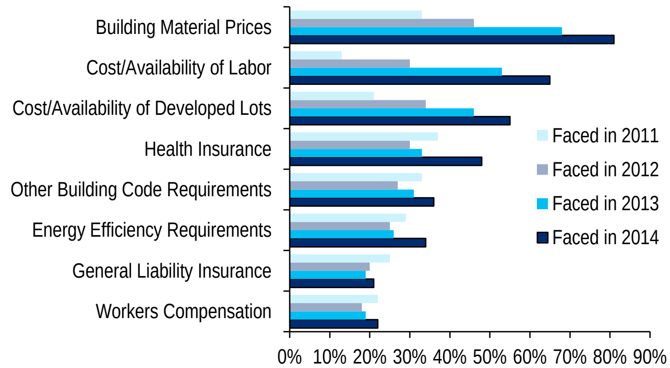
We believe the weak traffic-to-order conversion is the result of buyers being more selective since 1H13 for a number of potential reasons.

Figure 18. Conforming purchase mortgage credit score (avgs) are tracking around ~760, vs 710-730 pre-crisis. We estimate this tightening resulted in a ~15% reduction in availability of conforming mortgages…



Source: Citi Research, Ellie Mae Originations Insight Report

Figure 19. …And it's not getting any easier for builders elsewhere. Below are NAHB's (surveyed) estimates for important issues facing builders in 1Q14 versus prior years in 1Qs.



Source: Citi Research, NAHB

These reasons likely include: (1) rapid price appreciation since the lows in 2011 through early 2012, higher effective interest rates on 15/30-year mortgages since 1H13, and related less favorable affordability; (2) a pick-up in nationwide competing Existing Homes Sales inventories, with nationwide inventories up 6% YoY in March 2014 and up materially more (i.e. normalizing) in markets that price snapped back quickly (i.e. AZ, CA, & NV); (3) tight purchase mortgage lending conditions, which we don't see easing materially over the next year (see this report for more details: Outlook on US Housing Finance); and (4) a number of constraints we have previously discussed including available lots, labor, and related rising input costs (see this transcript for more details: Citi's Quarterly Homebuilding Lot Supply Conference Call).

Figure 20. Companies Mentioned

Company	RIC	Rating		Currency	Price	TP
Brookfield Res	BRP.N	1		USD	20.79	28.00
Beazer Homes	BZH.N	3	H	USD	19.62	14.00
D R Horton	DHI.N	2		USD	21.77	26.00
KB HOME	KBH.N	2	H	USD	16.81	17.00
Lennar	LEN.N	2		USD	39.19	41.00
M.D.C. Hld	MDC.N	2		USD	28.08	29.00
M I Homes	MHO.N	2		USD	22.92	24.00
Meritage Homes	MTH.N	2		USD	43.28	44.00
New Home	NWHM.N	2		USD	14.50	16.50
Pultegroup	PHM.N	2		USD	19.03	21.00
Ryland Grp	RYL.N	2		USD	40.10	43.00
Taylor Morrison	TMHC.N	2		USD	23.56	26.00
Toll Brothers	TOL.N	2		USD	36.00	34.00
UCP	UCP.N	1		USD	14.52	20.00
WCI Communities	WCIC.N	2		USD	19.79	20.00
William Lyn Hm	WLH.N	1		USD	27.24	36.00

Source: dataCentral

Appendix A-1

Analyst Certification

The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this report.

IMPORTANT DISCLOSURES

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Toll Brothers Inc

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of MDC Holdings Inc

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of D.R. Horton, Inc.

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Ryland Group Inc

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Lennar Corp

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Brookfield Residential Properties Inc

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of UCP Inc

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Meritage Homes Corp

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of PulteGroup Inc

Citigroup Global Markets Inc is acting as a Bookrunner in relation to the announced secondary offering of common shares for WCI Communities Inc

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Beazer Homes USA Inc

Citigroup Global Markets Inc. or its affiliates beneficially owns 1% or more of any class of common equity securities of Ryland Group, Beazer Homes. This position reflects information available as of the prior business day.

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of Toll Brothers, M.D.C. Holdings, D.R. Horton, KB Home, The New Home Company Inc., Taylor Morrison Home Corp., Ryland Group, Lennar, William Lyon Homes, Brookfield Residential Properties Inc., UCP, Inc., Meritage Homes, WCI Communities, Beazer Homes.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from Toll Brothers, M.D.C. Holdings, M/I Homes Inc, D.R. Horton, KB Home, The New Home Company Inc., Taylor Morrison Home Corp., Ryland Group, Lennar, William Lyon Homes, Brookfield Residential Properties Inc., UCP, Inc., Meritage Homes, Pultegroup Inc, WCI Communities, Beazer Homes.

Citigroup Global Markets Inc. or its affiliates expects to receive or intends to seek, within the next three months, compensation for investment banking services from Taylor Morrison Home Corp., Brookfield Residential Properties Inc., WCI Communities, Beazer Homes.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from Toll Brothers, M.D.C. Holdings, M/I Homes Inc, D.R. Horton, KB Home, Taylor Morrison Home Corp., Ryland Group, Lennar, William Lyon Homes, Brookfield Residential Properties Inc., Meritage Homes, Pultegroup Inc, WCI Communities, Beazer Homes in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as investment banking client(s): Brookfield Residential Properties Inc., Taylor Morrison Home Corp., William Lyon Homes, WCI Communities, UCP, Inc., Toll Brothers, M/I Homes Inc, The New Home Company Inc., M.D.C. Holdings, D.R. Horton, KB Home, Ryland Group, Lennar, Meritage Homes, Pultegroup Inc, Beazer Homes.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, securities-related: Toll Brothers, M.D.C. Holdings, M/I Homes Inc, D.R. Horton, KB Home, Ryland Group, Lennar, Brookfield Residential Properties Inc., UCP, Inc., Meritage Homes, Pultegroup Inc, WCI Communities, Beazer Homes.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, non-securities-related: Toll Brothers, M.D.C. Holdings, M/I Homes Inc, D.R. Horton, KB Home, Taylor Morrison Home Corp., Ryland Group, Lennar, William Lyon Homes, Brookfield Residential Properties Inc., Meritage Homes, Pultegroup Inc, WCI Communities, Beazer Homes.

Citigroup Global Markets Inc. or an affiliate received compensation in the past 12 months from Brookfield Residential Properties Inc., Taylor Morrison Home Corp., William Lyon Homes, Toll Brothers, M/I Homes Inc, The New Home Company Inc..

Analysts' compensation is determined based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates ("the Firm"). Like all Firm employees, analysts receive compensation that is impacted by overall firm profitability which includes investment banking revenues.

The Firm is a market maker in the publicly traded equity securities of M.D.C. Holdings, M/I Homes Inc, D.R. Horton, Taylor Morrison Home Corp., Brookfield Residential Properties Inc., Meritage Homes, Pultegroup Inc.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Research product ("the Product"), please contact Citi Research, 388 Greenwich Street, 28th Floor, New York, NY, 10013, Attention: Legal/Compliance [E6WYB6412478]. In

addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures, are contained on the Firm's disclosure website at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures. Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Historical disclosures (for up to the past three years) will be provided upon request.

Citi Research Equity Ratings Distribution

	12 Month Rating			Relative Rating		
Data current as of 31 Mar 2014	Buy	Hold	Sell	Buy	Hold	Sell
Citi Research Global Fundamental Coverage	49%	40%	12%	1%	98%	1%
% of companies in each rating category that are investment banking clients	55%	53%	45%	58%	53%	42%

Guide to Citi Research Fundamental Research Investment Ratings:
Citi Research stock recommendations include an investment rating and an optional risk rating to highlight high risk stocks.
Risk rating takes into account both price volatility and fundamental criteria. Stocks will either have no risk rating or a High risk rating assigned.
Investment Ratings: Citi Research investment ratings are Buy, Neutral and Sell. Our ratings are a function of analyst expectations of expected total return ("ETR") and risk. ETR is the sum of the forecast price appreciation (or depreciation) plus the dividend yield for a stock within the next 12 months. The Investment rating definitions are: Buy (1) ETR of 15% or more or 25% or more for High risk stocks; and Sell (3) for negative ETR. Any covered stock not assigned a Buy or a Sell is a Neutral (2). For stocks rated Neutral (2), if an analyst believes that there are insufficient valuation drivers and/or investment catalysts to derive a positive or negative investment view, they may elect with the approval of Citi Research management not to assign a target price and, thus, not derive an ETR. Analysts may place covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and / or trading in the company's securities (e.g. trading suspension). As soon as practically possible, the analyst will publish a note re-establishing a rating and investment thesis. To satisfy regulatory requirements, we correspond Under Review and Neutral to Hold in our ratings distribution table for our 12-month fundamental rating system. However, we reiterate that we do not consider Under Review to be a recommendation.
Relative three-month ratings: Citi Research may also assign a three-month relative call (or rating) to a stock to highlight expected out-performance (most preferred) or under-performance (least preferred) versus the geographic and industry sector over a 3 month period. The relative call may highlight a specific near-term catalyst or event impacting the company or the market that is anticipated to have a short-term price impact on the equity securities of the company. Absent any specific catalyst the analyst(s) will indicate the most and least preferred stocks in the universe of stocks under consideration, explaining the basis for this short-term view. This three-month view may be different from and does not affect a stock's fundamental equity rating, which reflects a longer-term total absolute return expectation. For purposes of NASD/NYSE ratings-distribution-disclosure rules, most preferred calls correspond to a buy recommendation and least preferred calls correspond to a sell recommendation. Any stock not assigned to a most preferred or least preferred call is considered non-relative-rated (NRR). For purposes of NASD/NYSE ratings-distribution-disclosure rules we correspond NRR to Hold in our ratings distribution table for our 3-month relative rating system. However, we reiterate that we do not consider NRR to be a recommendation.

Prior to October 8, 2011, the firm's stock recommendation system included a risk rating and an investment rating. Risk ratings, which took into account both price volatility and fundamental criteria, were: Low (L), Medium (M), High (H), and Speculative (S). Investment Ratings of Buy, Hold and Sell were a function of the Citi Research expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating. Additionally, analysts could have placed covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and/or trading in the company's securities (e.g. trading suspension). Stocks placed "Under Review" were monitored daily by management and as practically possible, the analyst published a note re-establishing a rating and investment thesis. For securities in developed markets (US, UK, Europe, Japan, and Australia/New Zealand), investment ratings were:Buy (1) (expected total return of 10% or more for Low-Risk stocks, 15% or more for Medium-Risk stocks, 20% or more for High-Risk stocks, and 35% or more for Speculative stocks); Hold (2) (0%-10% for Low-Risk stocks, 0%-15% for Medium-Risk stocks, 0%-20% for High-Risk stocks, and 0%-35% for Speculative stocks); and Sell (3) (negative total return). For securities in emerging markets (Asia Pacific, Emerging Europe/Middle East/Africa, and Latin America), investment ratings were:Buy (1) (expected total return of 15% or more for Low-Risk stocks, 20% or more for Medium-Risk stocks, 30% or more for High-Risk stocks, and 40% or more for Speculative stocks); Hold (2) (5%-15% for Low-Risk stocks, 10%-20% for Medium-Risk stocks, 15%-30% for High-Risk stocks, and 20%-40% for Speculative stocks); and Sell (3) (5% or less for Low-Risk stocks, 10% or less for Medium-Risk stocks, 15% or less for High-Risk stocks, and 20% or less for Speculative stocks).

Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.

NON-US RESEARCH ANALYST DISCLOSURES
Non-US research analysts who have prepared this report (i.e., all research analysts listed below other than those identified as employed by Citigroup Global Markets Inc.) are not registered/qualified as research analysts with FINRA. Such research analysts may not be associated persons of the member organization and therefore may not be subject to the NYSE Rule 472 and NASD Rule 2711 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. The legal entities employing the authors of this report are listed below:

Citigroup Global Markets Inc	Will Randow, CFA; Scott Schrier, CFA; Trey Morrish

OTHER DISCLOSURES

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to M.D.C. Holdings, M/I Homes Inc, D.R. Horton, KB Home, Lennar, Meritage Homes, WCI Communities. (For an explanation of the determination of significant financial interest, please refer to the policy for managing conflicts of interest which can be found at www.citiVelocity.com.)

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities

transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Research does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of Citi Research to provide research coverage of the/those issuer(s) mentioned therein, including in response to news affecting this issuer, subject to applicable quiet periods and capacity constraints. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

Important Disclosures for Bell Potter Customers: Bell Potter is making this Product available to its clients pursuant to an agreement with Citigroup Global Markets Australia Pty Limited. Neither Citigroup Global Markets Australia Pty Limited nor any of its affiliates has made any determination as to the suitability of the information provided herein and clients should consult with their Bell Potter financial advisor before making any investment decision.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in Australia through Citigroup Global Markets Australia Pty Limited. (ABN 64 003 114 832 and AFSL No. 240992), participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in Brazil by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários, BACEN - Brazilian Central Bank, APIMEC - Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBID - Associação Nacional dos Bancos de Investimento. Av. Paulista, 1111 - 11º andar - CEP. 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of Canada by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. This product is available in Chile through Banchile Corredores de Bolsa S.A., an indirect subsidiary of Citigroup Inc., which is regulated by the Superintendencia de Valores y Seguros. Agustinas 975, piso 2, Santiago, Chile. The Product is distributed in Germany by Citigroup Global Markets Deutschland AG ("CGMD"), which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). CGMD, Reuterweg 16, 60323 Frankfurt am Main. Research which relates to "securities" (as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong)) is issued in Hong Kong by, or on behalf of, Citigroup Global Markets Asia Limited which takes full responsibility for its content. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Research is made available through Citibank, N.A., Hong Kong Branch, for its clients in Citi Private Bank, it is made available by Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citibank N.A. is regulated by the Hong Kong Monetary Authority. Please contact your Private Banker in Citibank N.A., Hong Kong, Branch if you have any queries on or any matters arising from or in connection with this document. The Product is made available in India by Citigroup Global Markets India Private Limited, which is regulated by Securities and Exchange Board of India. Bakhtawar, Nariman Point, Mumbai 400-021. The Product is made available in Indonesia through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in Israel through Citibank NA, regulated by the Bank of Israel and the Israeli Securities Authority. Citibank, N.A, Platinum Building, 21 Ha'arba'ah St, Tel Aviv, Israel. The Product is made available in Italy by Citigroup Global Markets Limited, which is authorised by the PRA and regulated by the FCA and the PRA. Via dei Mercanti, 12, Milan, 20121, Italy. The Product is made available in Japan by Citigroup Global Markets Japan Inc. ("CGMJ"), which is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Shin-Marunouchi Building, 1-5-1 Marunouchi, Chiyoda-ku, Tokyo 100-6520 Japan. If the Product was distributed by SMBC Nikko Securities Inc. it is being so

distributed under license. In the event that an error is found in an CGMJ research report, a revised version will be posted on the Firm's Citi Velocity website. If you have questions regarding Citi Velocity, please call (81 3) 6270-3019 for help. The Product is made available in Korea by Citigroup Global Markets Korea Securities Ltd., which is regulated by the Financial Services Commission, the Financial Supervisory Service and the Korea Financial Investment Association (KOFIA). Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. KOFIA makes available registration information of research analysts on its website. Please visit the following website if you wish to find KOFIA registration information on research analysts of Citigroup Global Markets Korea Securities Ltd. http://dis.kofia.or.kr/fs/dis2/fundMgr/DISFundMgrAnalystPop.jsp?companyCd2=A03030&pageDiv=02. The Product is made available in Korea by Citibank Korea Inc., which is regulated by the Financial Services Commission and the Financial Supervisory Service. Address is Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. The Product is made available in Malaysia by Citigroup Global Markets Malaysia Sdn Bhd (Company No. 460819-D) ("CGMM") to its clients and CGMM takes responsibility for its contents. CGMM is regulated by the Securities Commission of Malaysia. Please contact CGMM at Level 43 Menara Citibank, 165 Jalan Ampang, 50450 Kuala Lumpur, Malaysia in respect of any matters arising from, or in connection with, the Product. The Product is made available in Mexico by Acciones y Valores Banamex, S.A. De C. V., Casa de Bolsa, Integrante del Grupo Financiero Banamex ("Accival") which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In New Zealand the Product is made available to 'wholesale clients' only as defined by s5C(1) of the Financial Advisers Act 2008 ('FAA') through Citigroup Global Markets Australia Pty Ltd (ABN 64 003 114 832 and AFSL No. 240992), an overseas financial adviser as defined by the FAA, participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in Pakistan by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in the Philippines through Citicorp Financial Services and Insurance Brokerage Philippines, Inc., which is regulated by the Philippines Securities and Exchange Commission. 20th Floor Citibank Square Bldg. The Product is made available in the Philippines through Citibank NA Philippines branch, Citibank Tower, 8741 Paseo De Roxas, Makati City, Manila. Citibank NA Philippines NA is regulated by The Bangko Sentral ng Pilipinas. The Product is made available in Poland by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Dom Maklerski Banku Handlowego S.A. ul.Senatorska 16, 00-923 Warszawa. The Product is made available in the Russian Federation through ZAO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in Singapore through Citigroup Global Markets Singapore Pte. Ltd. ("CGMSPL"), a capital markets services license holder, and regulated by Monetary Authority of Singapore. Please contact CGMSPL at 8 Marina View, 21st Floor Asia Square Tower 1, Singapore 018960, in respect of any matters arising from, or in connection with, the analysis of this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore Branch, a licensed bank in Singapore that is regulated by Monetary Authority of Singapore. Please contact your Private Banker in Citibank N.A., Singapore Branch if you have any queries on or any matters arising from or in connection with this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). This report is distributed in Singapore by Citibank Singapore Ltd ("CSL") to selected Citigold/Citigold Private Clients. CSL provides no independent research or analysis of the substance or in preparation of this report. Please contact your Citigold//Citigold Private Client Relationship Manager in CSL if you have any queries on or any matters arising from or in connection with this report. This report is intended for recipients who are accredited investors as defined under the Securities and Futures Act (Cap. 289). Citigroup Global Markets (Pty) Ltd. is incorporated in the Republic of South Africa (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in the Republic of China through Citigroup Global Markets Taiwan Securities Company Ltd. ("CGMTS"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan and/or through Citibank Securities (Taiwan) Company Limited ("CSTL"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan, subject to the respective license scope of each entity and the applicable laws and regulations in the Republic of China. CGMTS and CSTL are both regulated by the Securities and Futures Bureau of the Financial Supervisory Commission of Taiwan, the Republic of China. No portion of the Product may be reproduced or quoted in the Republic of China by the press or any third parties [without the written authorization of CGMTS and CSTL]. If the Product covers securities which are not allowed to be offered or traded in the Republic of China, neither the Product nor any information contained in the Product shall be considered as advertising the securities or making recommendation of the securities in the Republic of China. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security or financial products. Any decision to purchase securities or financial products mentioned in the Product must take into account existing public information on such security or the financial products or any registered prospectus. The Product is made available in Thailand through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 18/F, 22/F and 29/F, 82 North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand. The Product is made available in Turkey through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Buyukdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. In the U.A.E, these materials (the "Materials") are communicated by Citigroup Global Markets Limited, DIFC branch ("CGML"), an entity registered in the Dubai International Financial Center ("DIFC") and licensed and regulated by the Dubai Financial Services Authority ("DFSA") to Professional Clients and Market Counterparties only and should not be relied upon or distributed to Retail Clients. A distribution of the different Citi Research ratings distribution, in percentage terms for Investments in each sector covered is made available on request. Financial products and/or services to which the Materials relate will only be made available to Professional Clients and Market Counterparties. The Product is made available in United Kingdom by Citigroup Global Markets Limited, which is authorised by the Prudential Regulation Authority ("PRA") and regulated by the Financial Conduct Authority ("FCA") and the PRA. This material may relate to investments or services of a person outside of the UK or to other matters which are not authorised by the PRA nor regulated by the FCA and the PRA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in United States by Citigroup Global Markets Inc, which is a member of FINRA and registered with the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is authorised by the PRA and regulated by the FCA and the PRA.

Pursuant to Comissão de Valores Mobiliários Rule 483, Citi is required to disclose whether a Citi related company or business has a commercial relationship with the subject company. Considering that Citi operates multiple businesses in more than 100 countries around the world, it is likely that Citi has a commercial relationship with the subject company.

Many European regulators require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to Citi Research's Products can be found at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.

Compensation of equity research analysts is determined by equity research management and Citigroup's senior management and is not linked to specific transactions or recommendations.

The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted.

Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product.

Citi Research generally disseminates its research to the Firm's global institutional and retail clients via both proprietary (e.g., Citi Velocity and Citi Personal Wealth Management) and non-proprietary electronic distribution platforms. Certain research may be disseminated only via Citi's proprietary distribution platforms; however such research will not contain changes to earnings forecasts, target price, investment or risk rating or investment thesis or be otherwise inconsistent with the author's previously published research. Certain research is made available only to institutional investors to satisfy regulatory requirements. Individual Citi Research analysts may also opt to circulate published research to one or more clients by email; such email distribution is discretionary and is done only after the research has been disseminated.

The level and types of services provided by Citi Research analysts to clients may vary depending on various factors such as the client's individual preferences as to the frequency and manner of receiving communications from analysts, the client's risk profile and investment focus and perspective (e.g. market-wide, sector specific, long term, short-term etc.), the size and scope of the overall client relationship with Citi and legal and regulatory constraints.

Citi Research product may source data from dataCentral. dataCentral is a Citi Research proprietary database, which includes Citi estimates, data from company reports and feeds from Thomson Reuters.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST