

Zillow

3Q beat but soft 4Q outlook weighs on sentiment; Lowering PO to \$47

Reiterate Rating: BUY | PO: 47.00 USD | Price: 35.79 USD

3Q Rev/EBITDA above Street with cont'd outperformance

3Q Rev/EBITDA at \$496mn/\$107mn was above Street at \$482mn/\$87mn as residential revenue at \$362mn (down 3% y/y) exceeded Street ests. at \$356mn and grew 11pts above market (vs +19pts in 2Q). Zillow noted relative outperformance was primarily driven by growth initiatives and less by relative macro. Rental revenue of \$99mn (up 34% y/y) was also above Street at \$90mn driven by increased traffic and listing growth in multifamily (listing up 28% y/y & revenue up 42% y/y). EBITDA beat was driven by higher topline growth and continued strong focus on expense management/timing.

High rates weigh on outlook; FUB acquisition positive

4Q revenue outlook of \$430mn-\$455mn and EBITDA of \$40-\$60mn was below Street at \$460mn and \$76mn due to continued pressure on volumes given higher rates and low inventory. In 4Q, ZG expects residential revenue growth to outperform market by 6pts. Zillow is acquiring Follow Up Boss (FUB) at ~18x 2024 Cash EBITDA (~\$22mn) and noted FUB is expected to grow more than 20% in 2023. We see FUB fitting well with Zillow platform & Super App strategy and positive for growth & profitability in 2024/25.

Marginally raising revenues but lowering EBITDA

We are marginally raising our revenue estimates reflecting stronger growth in rentals, offset by lower growth in residential & mortgage segment (high rates, low inventory and affordability). We are reducing EBITDA estimates reflecting higher cost of revenue (incremental website development costs as Zillow tests new products). For 2024, we increase revenue by 1% to \$2,044mn & lower EBITDA by 7% to \$435mn (up 13% y/y).

Expect later inflection but ZG relatively best positioned

We are encouraged to see another quarter of above market performance. While RE market is likely to remain volatile over the next several quarters, we expect return to home volume growth in 2H'24 and see Zillow as relatively better positioned vs peers. In 2024, we expect accelerated rollout and increasing traction of growth initiatives (Real-time touring, ShowingTime, Seller Solutions, Mortgages, etc.) to help ZG continue share gains and drive EBITDA. We lower our PO from \$48 to \$47 on slightly lower 2024 EBITDA of \$435mn and unchanged 22x multiple. See our take on the [NAR class action ruling](#). Reiterate Buy.

Estimates (Dec) (US\$)	2021A	2022A	2023E	2024E	2025E
EPS	(0.84)	1.71	1.22	1.17	1.96
GAAP EPS	(2.05)	(0.42)	(0.77)	(0.95)	(0.26)
EPS Change (YoY)	NM	NM	-28.7%	-4.1%	67.5%
Consensus EPS (Bloomberg)			1.03	1.38	1.86
DPS	0	0	0	0	0
EPS (Z - US\$)	(0.84)	1.71	1.22	1.17	1.96
DPS (Z - US\$)	0	0	0	0	0
Valuation (Dec)					
P/E	NM	20.9x	29.3x	30.6x	18.3x
EV / EBITDA*	32.6x	14.6x	22.6x	20.1x	13.7x
Free Cash Flow Yield*	-38.2%	51.5%	3.4%	3.7%	7.3%

* For full definitions of *iQmethod*SM measures, see page 8.

01 November 2023

Equity

Key Changes

(US\$)	Previous	Current
Price Obj.	48.00	47.00
2023E Rev (m)	1,904.4	1,922.8
2024E Rev (m)	2,033.1	2,043.6
2025E Rev (m)	2,339.2	2,351.3
2023E EPS	1.11	1.22
2024E EPS	1.36	1.17
2025E EPS	2.05	1.96

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Stock Data

Price (NAS / NAS)	35.79 USD / 36.46 USD
Price Objective	47.00 USD / 47.00 USD
Date Established	1-Nov-2023 / 1-Nov-2023
Investment Opinion	C-1-9 / C-1-9
52-Week Range	28.06 USD - 55.68 USD
Market Value (mn)	8,518 USD
Average Daily Value	17.33 USD
Shares Outstanding (mn)	238.0 / 238.0
BofA Ticker / Exchange	ZG / NAS
BofA Ticker / Exchange	Z / NAS
Bloomberg / Reuters	ZG US / ZG.OQ
ROE (2023E)	6.7%
Net Dbt to Eqty (Dec-2022A)	4.3%
ESGMeter™	High

ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of BofA Global Research's equity investment rating, volatility risk rating, income rating, and price objective for that company. For full details, refer to ["BofA ESGMeter Methodology"](#).

FUB: Follow Up Boss

S&M: Sales and Marketing

G&A: General and Administrative

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Timestamp: 01 November 2023 11:28PM EDT

iQprofileSM Zillow

iQmethodSM – Bus Performance*

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Return on Capital Employed	-4.0%	-0.7%	-3.9%	-3.7%	-1.2%
Return on Equity	-4.3%	8.4%	6.7%	6.9%	11.6%
Operating Margin	-4.0%	-1.0%	-10.3%	-7.0%	1.4%
Free Cash Flow	(3,250)	4,389	288	311	621

iQmethodSM – Quality of Earnings*

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Cash Realization Ratio	NM	10.9x	1.4x	1.6x	1.7x
Asset Replacement Ratio	0.6x	0.7x	0.7x	0.7x	0.7x
Tax Rate	NM	NM	NM	NM	NM
Net Debt-to-Equity Ratio	-1.6%	4.3%	2.2%	15.7%	10.7%
Interest Cover	-1.7x	-0.8x	-7.5x	-6.6x	-2.0x

Income Statement Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Sales	8,147	6,184	1,923	2,044	2,351
% Change	143.9%	-24.1%	-68.9%	6.3%	15.1%
Gross Profit	1,788	1,834	1,604	1,720	2,011
% Change	18.4%	2.6%	-12.5%	7.2%	16.9%
EBITDA	267	596	386	435	636
% Change	-22.0%	122.9%	-35.2%	12.6%	46.3%
Net Interest & Other Income	(199)	(38)	86	17	14
Net Income (Adjusted)	(215)	415	291	275	454
% Change	NM	NM	-30.0%	-5.4%	65.1%

Free Cash Flow Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Net Income from Cont Operations (GAAP)	(528)	(101)	(183)	(223)	(60)
Depreciation & Amortization	130	157	182	195	210
Change in Working Capital	0	0	0	0	0
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	(2,779)	4,448	422	479	621
Capital Expenditure	(73)	(115)	(133)	(140)	(150)
Free Cash Flow	-3,250	4,389	288	311	621
% Change	NM	NM	-93.4%	8.2%	99.5%

Balance Sheet Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Cash & Equivalents	2,611	1,466	1,571	1,066	1,235
Trade Receivables	155	72	72	83	94
Other Current Assets	4,687	2,063	1,640	1,658	1,571
Property, Plant & Equipment	215	271	347	448	556
Other Non-Current Assets	3,028	2,691	2,723	2,724	2,724
Total Assets	10,695	6,563	6,352	5,978	6,179
Short-Term Debt	1,209	0	607	607	607
Other Current Liabilities	2,674	270	357	371	383
Long-Term Debt	1,319	1,660	1,057	1,057	1,057
Other Non-Current Liabilities	152	151	129	129	129
Total Liabilities	5,354	2,081	2,150	2,164	2,176
Total Equity	5,341	4,482	4,202	3,813	4,015
Total Equity & Liabilities	10,695	6,563	6,352	5,978	6,191

* For full definitions of iQmethodSM measures, see page 8.

Company Sector

Internet/e-Commerce

Company Description

Zillow Group (ZG) is the category leader for online real estate advertising with over 300mn average monthly unique users across multiple sites. Zillow operates the top two online and mobile real estate lead generating services Zillow.com and Trulia.com, as well as high growth segments in rentals and mortgage lead generation. We believe Zillow occupies a lucrative position in the market relative to competitors due to its dominant and growing share of user traffic and advertiser spending

Investment Rationale

Given Zillow's sizable real estate-focused audience, we are positive on its ability to capture ad dollars and lead fees in home-related markets such as real estate, rentals, and mortgage. As more dollars shift from offline to higher online ROI, Zillow is well positioned to capture the majority of real estate agent spending on online advertising. In the near- to medium-term, housing fundamentals are a risk, but we expect growth to resume as home affordability improves.

Stock Data

Average Daily Volume	484,168
Shares / Common - Dual Listed	1.00

Quarterly Earnings Estimates

	2022	2023
Q1	0.56A	0.37A
Q2	0.50A	0.42A
Q3	0.41A	0.35A
Q4	0.22A	0.09E

Key Changes

(US\$)	Previous	Current
Price Obj.	48.00	47.00
2023E EPS	1.11	1.22
2024E EPS	1.36	1.17
2025E EPS	2.05	1.96

3Q Positives:

- **3Q Revenue/EBITDA beat:** 3Q Rev/EBITDA at \$496mn/\$107mn was above Street at \$482mn/\$87mn. Topline beat was driven by better-than-expected growth in rental and residential business. EBITDA benefited from higher-than-expected topline growth and lower S&M and G&A expenses, offset by higher COGS (website development expenses).
- **Above market growth:** In 3Q, growth in residential revenue at \$362mn (down 3% y/y) outperformed industry (down 14% y/y) by 11pts (vs +19pts in 2Q). Zillow highlighted that relative outperformance vs broader market was primarily driven by company's growth initiatives and less by relative macro factors (such as first-time buyers coming into the market). Management noted investments in top and mid funnel experiences were driving improvements in overall lead volumes relative to industry.
- **Strong growth in rental business:** In 3Q, rental revenues of \$99mn (up 34% y/y) was above Street at \$90mn primarily driven by increased traffic and listing growth in both multifamily (revenue up 42% y/y) and single-family listing. Management noted Zillow remains the #1 most visited rentals platform according to Comscore, with average monthly rentals unique visitors up double digits in 3Q. The number of multifamily properties on Zillow platform grew 28% 3Q'23 (up from 21% in 2Q'23 and 14% in 1Q'23). The total active listings across Zillow rentals marketplace was up 45% y/y. In 4Q, Zillow expects rental business to grow over 30% y/y.
- **Continued share repurchase:** Zillow repurchased \$100mn of shares in 3Q (TTM \$510mn). At the end of 3Q, the company had \$914mn available for share repurchases. In 3Q, diluted share count declined 0.3% y/y.
- **Accelerated rollout of real-time touring:** Management highlighted wherever real time touring is enabled, Zillow continues to see significant outperformance versus the industry. As a result, the company is accelerating the rollout of real time touring, independent of enhanced markets. Real time touring is currently live in 57 markets and Zillow plans to add 33 new markets by the end of 2023.
- **Follow Up Boss acquisition positive for valuation and profitability:** Zillow highlighted it is acquiring Follow Up Boss (FUB) at ~18x 2024 FUB Cash EBITDA (~\$22mn). Management noted FUB has been profitable and growing for the last 11 years and is expected to grow more than 20% in 2023. We see FUB fitting well with Zillow platform and Super App strategy and positive for growth and profitability in 2024/25.

3Q Negatives:

- **4Q outlook miss:** 4Q revenue guide of \$430mn-\$455mn and EBITDA outlook of \$40-\$60mn was below Street estimates at \$460mn and \$76mn, respectively.
- **Industry volumes remain soft:** Management expects total home transaction volumes to be down 8-13% y/y (down 10% at midpoint) due to high mortgage rates and low overall inventory. While this is above -14% in 3Q'23, we believe the Street was modeling transactions closer to down 8% y/y.
- **Regulatory headwind:** On the Sitzer Burnett ruling, management highlighted that regardless of the outcome (which could take years and multiple appeals), Zillow remains relatively well positioned to grow. However, given ZG derives ~50% of sales from buyside lead generation segment that is supported by buyside fees, an outcome which leads to lower buyside commissions or agents, risk remains a lower fee pool (though partially offset by a strategy of shifting to



the highest productivity agents). For more details, See our note: [Sitzer Burnett ruling could drive big changes in agent commissions](#).

- **SBC above EBITDA & FCF:** In 3Q, SBC of \$109mn was above EBITDA of \$107mn and FCF of \$40mn. TTM SBC of \$452mn remains above EBITDA of \$395mn and FCF of \$223mn.
- **Miss on 3Q mortgage revenue:** 3Q mortgage revenue of \$24mn (down 8% y/y) was slightly below Street at \$25mn as higher interest rates impacted demand. In 3Q, purchase loan origination volume increased 88% y/y (up 35% q/q). For 4Q, Zillow expects positive revenue growth in the mortgages segment.

Estimate Changes

We are marginally raising our revenue estimates reflecting stronger growth in rental segment, offset by lower growth in residential and mortgage segment (high rates, low inventory and affordability). We are reducing our EBITDA estimates reflecting higher cost of revenue (incremental website development costs as Zillow develops and tests new products) and marginally higher other costs. For 2024, we increase revenue by 1% to \$2,044mn and lower EBITDA by 7% to \$435mn (up 13% y/y).

Exhibit 1: Estimate Changes

We are lowering 2024 EBITDA, key for valuation, by 7% to \$275mn.

Zillow Segments	4Q23E			2023E			2024E		
	New	Old	Difference	New	Old	Difference	New	Old	Difference
Residential	333	337	(3)	1,436	1,433	3	1,480	1,501	(21)
Rentals	90	82	8	354	338	16	421	388	32
Mortgage	20	20	0	94	95	(1)	103	104	(1)
Other	9	9	0	39	39	0	40	40	0
Total Revenue	\$452	\$447	\$5	\$1,923	\$1,904	\$18	\$2,044	\$2,033	\$11
Cost of revenue	95	89	5	389	374	15	419	386	32
As a % of revenue	21%	20%	1%	20%	20%	1%	20%	19%	1%
Gross Profit	\$357	\$358	(\$1)	\$1,534	\$1,530	\$3	\$1,625	\$1,647	(\$22)
Gross Margin	79%	80%	-1%	80%	80%	-1%	80%	81%	-1%
Sales and Marketing	150	150	(0)	590	601	(11)	607	604	3
As a % of revenue	38%	38%	0%	31%	32%	(1%)	30%	30%	(0%)
Technology and Development	101	100	1	397	395	2	411	407	5
As a % of revenue	22%	22%	0%	21%	21%	(0%)	20%	20%	0%
General and Administrative	90	89	1	343	345	(2)	365	361	4
As a % of revenue	20%	20%	0%	18%	18%	(0%)	18%	18%	0%
Operating Expenses	\$460	\$459	\$2	\$1,802	\$1,827	(\$25)	\$1,863	\$1,852	\$12
As a % of revenue	102%	103%	(0.7%)	94%	96%	(2.2%)	91%	91%	0.1%
Non-GAAP Operating Income	\$16	\$19	(\$2)	\$193	\$181	\$12	\$242	\$275	(\$34)
Non-GAAP EPS diluted	\$0.09	\$0.12	(\$0.03)	\$1.22	\$1.11	\$0.11	\$1.17	\$1.36	(\$0.19)
Adj. EBITDA	\$64	\$66	(\$2)	\$386	\$368	\$18	\$435	\$468	(\$34)
Margin	14%	15%	(1%)	20%	19%	1%	21%	23%	(2%)

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Actual vs BofA Estimates

Exhibit 2: Actual vs. BofA Estimates

3Q Rev/EBITDA at \$496mn/\$107mn was above Street at \$482mn/\$87mn.

Zillow	3Q23		
Segments	Actuals	BofA Ests.	Difference
Residential	362	355	7
Rentals	99	91	8
Mortgage	24	25	(1)
Other	11	11	0
Total Revenue	\$496	\$482	\$14
Cost of revenue	106	96	10
As a % of revenue	21%	20%	1%
Gross Profit	\$390	\$386	\$4
Gross Margin	79%	80%	-1%
Sales and Marketing	146	157	(11)
As a % of revenue	29%	36%	(7%)
Technology and Development	100	99	1
As a % of revenue	20%	21%	(0%)
General and Administrative	86	89	(3)
As a % of revenue	17%	18%	(1%)
Operating Expenses	\$443	\$469	(\$26)
As a % of revenue	89%	97%	(8%)
Non-GAAP Operating Income	\$56	\$42	\$14
Non-GAAP EPS diluted	\$0.35	\$0.21	\$0.13
Adj. EBITDA	\$107	\$87	\$20
Margin	22%	18%	4%

Source: BofA Global Research estimates, Company Filings

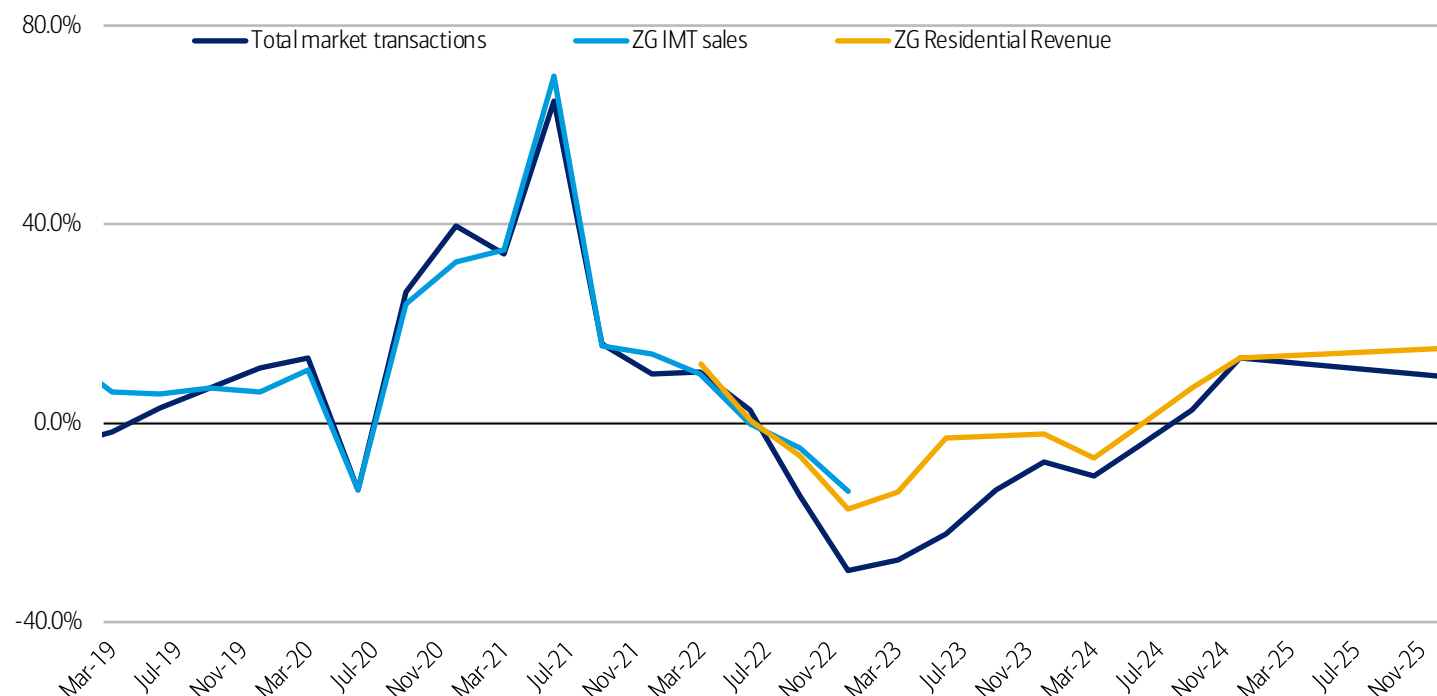
BofA GLOBAL RESEARCH

ZG Residential vs. Market

Over the past several years, ZG Residential revenues have closely tracked total real estate transactions growth. Given high mortgage rates, low inventory and affordability, we expect continued pressure on transactions till 2Q'24, though with improving trends. We expect market to return to growth in 2H'24 largely on improving home affordability as well as a degree of mean reversion as existing average homes volume YTD (till 3Q'23) was 21% below average since 1999 and 36% below peak volume in January 2021. We estimate Zillow Residential revenue to grow 3% y/y in 2024 (vs broader RE transactions growth flat) and 15% y/y in 2025 (vs market up 10% y/y).

Exhibit 3: ZG Residential segment sales vs. total real estate transactions

We estimate for Core ZG revenues to outperform total market transactions.



Source: BofA Global Research, Bloomberg

*Note: ZG IMT Sales discontinued after 4Q22

BofA GLOBAL RESEARCH

**In 4Q22, Zillow adjusted the segmentation of its revenue base and as such ZG IMT was discontinued. We now track Residential revenue relative to total market transactions.*

Price objective basis & risk

Zillow (ZG / Z)

Our \$47 price objective for both Class A and Class C shares is based on a 22x EV/EBITDA estimate. This is above ZG's average historic EBITDA multiple of nearly 21x (excluding Zillow Offers) given continued industry volatility but opportunity for meaningful market share expansion over the next several years. Our 22x multiple is above the peer lead generation average of 15x which given our forecast for double digit EBITDA growth in 2024-25.

Downside risks are: 1) a more prolonged U.S. housing market downturn, 2) potential for multiple compression and 3) execution risk around new growth initiatives and 4) increased competition from Costar's new residential advertising marketplace.

Upside risks are: 1) faster-than-expected growth and S&M leverage, 2) better than expected trends in the US existing home market, and 3) faster than expected progress in ZG hitting its new long term targets.

Analyst Certification

I, Curtis Nagle, CFA, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

US - Internet Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Alphabet	GOOGL	GOOGL US	Justin Post
	Alphabet	GOOG	GOOG US	Justin Post
	Amazon.com	AMZN	AMZN US	Justin Post
	AppLovin	APP	APP US	Omar Dessouky, CFA
	DoorDash	DASH	DASH US	Michael McGovern
	Electronic Arts	EA	EA US	Omar Dessouky, CFA
	Expedia	EXPE	EXPE US	Justin Post
	LegalZoom	LZ	LZ US	Michael McGovern
	Match Group	MTCH	MTCH US	Curtis Nagle, CFA
	Meta Platforms Inc	META	META US	Justin Post
	Pinterest	PINS	PINS US	Justin Post
	RH	RH	RH US	Curtis Nagle, CFA
	Roblox Corp. Class A	RBLX	RBLX US	Omar Dessouky, CFA
	Squarespace, Inc.	SQSP	SQSP US	Michael McGovern
	Take-Two Interactive	TTWO	TTWO US	Omar Dessouky, CFA
	Uber	UBER	UBER US	Justin Post
	Udemy Inc	UDMY	UDMY US	Curtis Nagle, CFA
	Vivid Seats	SEAT	SEAT US	Curtis Nagle, CFA
	Wayfair	W	W US	Curtis Nagle, CFA
	Zillow	ZG	ZG US	Curtis Nagle, CFA
	Zillow	Z	Z US	Curtis Nagle, CFA
NEUTRAL				
	ACV Auctions	ACVA	ACVA US	Curtis Nagle, CFA
	Airbnb	ABNB	ABNB US	Justin Post
	Booking Holdings Inc	BKNG	BKNG US	Justin Post
	Bumble	BMBL	BMBL US	Curtis Nagle, CFA
	Digital Turbine, Inc	APPS	APPS US	Omar Dessouky, CFA
	Duolingo	DUOL	DUOL US	Curtis Nagle, CFA
	eBay	EBAY	EBAY US	Justin Post
	Etsy, Inc.	ETSY	ETSY US	Curtis Nagle, CFA
	Instacart	CART	CART US	Justin Post
	Overstock.com Inc	OSTK	OSTK US	Curtis Nagle, CFA
	Playtika	PLTK	PLTK US	Omar Dessouky, CFA



US - Internet Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Snap	SNAP	SNAP US	Justin Post

UNDERPERFORM

	Chewy Inc	CHWY	CHWY US	Curtis Nagle, CFA
	Lyft, Inc.	LYFT	LYFT US	Michael McGovern
	Opendoor Technologies	OPEN	OPEN US	Curtis Nagle, CFA
	Peloton	PTON	PTON US	Curtis Nagle, CFA
	Redfin Corp	RDFN	RDFN US	Curtis Nagle, CFA
	Shutterstock	SSTK	SSTK US	Curtis Nagle, CFA

IQmethodSM Measures Definitions**Business Performance**

Return On Capital Employed

Return On Equity

Operating Margin

Earnings Growth

Free Cash Flow

Numerator

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income

Operating Profit

Expected 5 Year CAGR From Latest Actual

Cash Flow From Operations – Total Capex

Denominator

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill Amortization

Shareholders' Equity

Sales

N/A

N/A

Quality of Earnings

Cash Realization Ratio

Asset Replacement Ratio

Tax Rate

Net Debt-To-Equity Ratio

Interest Cover

Numerator

Cash Flow From Operations

Capex

Tax Charge

Net Debt = Total Debt – Cash & Equivalents

EBIT

Denominator

Net Income

Depreciation

Pre-Tax Income

Total Equity

Interest Expense

Valuation Toolkit

Price / Earnings Ratio

Price / Book Value

Dividend Yield

Free Cash Flow Yield

Enterprise Value / Sales

Numerator

Current Share Price

Current Share Price

Annualised Declared Cash Dividend

Cash Flow From Operations – Total Capex

EV = Current Share Price × Current Shares + Minority Equity + Net Debt +

Other LT Liabilities

Enterprise Value

Denominator

Diluted Earnings Per Share (Basis As Specified)

Shareholders' Equity / Current Basic Shares

Current Share Price

Market Cap = Current Share Price × Current Basic Shares

Sales

Basic EBIT + Depreciation + Amortization

IQmethodSM is the set of BofA Global Research standard measures that serve to maintain global consistency under three broad headings: Business Performance, Quality of Earnings, and valuations. The key features of *IQmethod* are: A consistently structured, detailed, and transparent methodology. Guidelines to maximize the effectiveness of the comparative valuation process, and to identify some common pitfalls.

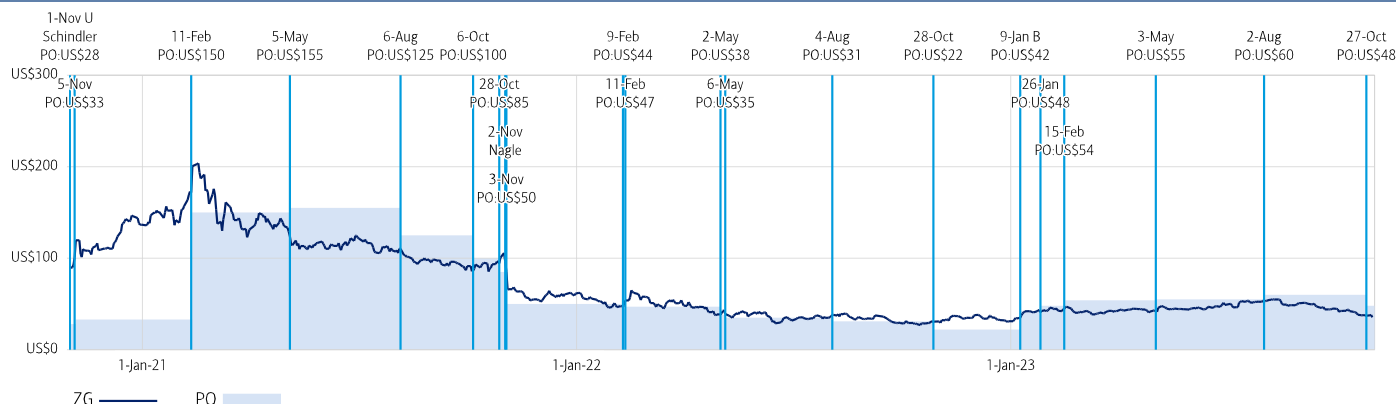
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Disclosures

Important Disclosures

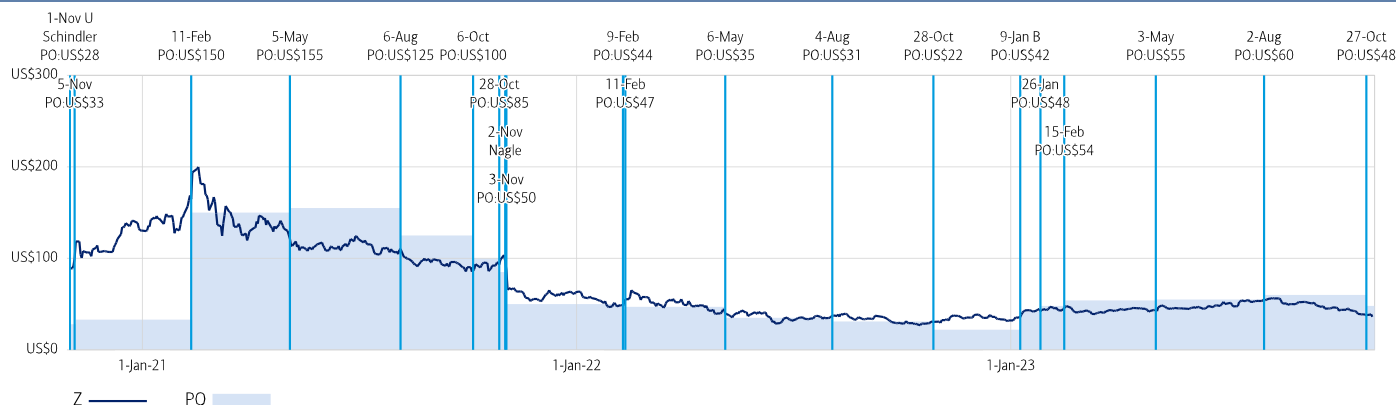
Zillow A (ZG) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Zillow C (Z) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Equity Investment Rating Distribution: Technology Group (as of 30 Sep 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	204	51.52%	Buy	104	50.98%
Hold	95	23.99%	Hold	45	47.37%
Sell	97	24.49%	Sell	27	27.84%

Equity Investment Rating Distribution: Global Group (as of 30 Sep 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1869	53.48%	Buy	1046	55.97%
Hold	828	23.69%	Hold	461	55.68%
Sell	798	22.83%	Sell	370	46.37%

^{R1} Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.



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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R2}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R2} Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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