Strategy

Too early to place the AI boom in bubble territory

Key message

1. With corporate earnings continuing to grow, monetary policy not yet shifting toward a highly restrictive stance, and cloud service providers (CSPs) consistently raising their capex plans, we believe the current AI-driven rally is more likely in the middle stage of a tech revolution rather than on the verge of a bubble burst.
2. We maintain our target for the Taiex to challenge 50,000 by year-end and reach 55,000 over the next 12 months.
3. We remain focused on beneficiaries of the Rubin Ultra platform upgrade and the AI ASIC supply chain.

Event

Despite growing concerns over an AI bubble, historical evidence suggests that asset bubbles tend to develop gradually and typically burst only after aggressive US Fed tightening or a major black swan event. Based on current valuations, monetary conditions, and fundamental trends, we believe the AI boom remains well short of a bubble.

Analysis

Current AI rally remains firmly anchored by earnings growth & has yet to display hallmarks of a speculative bubble. Historically, major asset bubbles, such as the 2000 dot-com bubble and the 2007 housing boom, were characterized by share prices significantly outpacing earnings growth. In other words, investors were willing to pay increasingly higher valuation premiums, causing share prices to diverge gradually from underlying fundamentals. On a PEG basis, tech stocks reached 3.1x at the peak of the dot-com bubble, reflecting excessively optimistic growth expectations, while housing-related stocks traded at 1.6x during the 2007 housing boom, indicating that market valuations had moved well ahead of earnings growth.

However, the current AI investment boom differs meaningfully from past asset bubbles. Taking AI leaders such as Nvidia (US), Microsoft (US), and Broadcom (US) as examples, both revenue and earnings continue to reach record highs, with earnings upgrades largely keeping pace with share price appreciation. Importantly, the PEG of leading AI firms currently stands around 1.0x, far below the 3.1x peak recorded during the dot-com bubble and also below the 1.6x seen during the housing boom.

Monetary conditions have yet to create prerequisites for a bubble burst. Looking back at the Reagan-era bull market of the 1980s, the dot-com bubble in 2000, and the housing boom preceding the 2008 global financial crisis, these cycles generally did not end because of a sudden deterioration in fundamentals. Rather, they were brought to an end by external shocks, including aggressive Fed tightening, a sharp contraction in liquidity, or major black swan events. In other words, bubbles are often fueled by overly optimistic expectations, but their eventual collapse is typically triggered by an abrupt shift in the macroeconomic environment.

Historical evidence suggests that major asset bubbles tend to burst only after the Fed has raised policy rates well into restrictive territory, significantly above the neutral rate. During both the 2000 dot-com bubble and the 2007 housing bubble, the Fed lifted benchmark interest rates to levels more than 150bps above the estimated neutral rate, ultimately triggering valuation compression and broader market correction. By contrast, the current federal funds rate stands at approximately 3.75%, still below the market-implied nominal neutral rate of 4-5%, suggesting that monetary conditions have yet to enter a highly restrictive phase.

In addition, an inverted yield curve has historically served as a key warning signal ahead of major asset bubble collapse. Prior to both the 2000 dot-com bust and the 2007 housing downturn, the US Treasury yield curve inverted, reflecting rising funding costs and a meaningful tightening in financial conditions, which subsequently accelerated asset price correction. Overall, the market has yet to exhibit the monetary tightening signals that typically preceded the burst of previous bubbles. While these risks warrant continued monitoring, current conditions remain well below warning thresholds seen in historical cycles.

CSP capital spending remains key determinant of AI cycle sustainability. Beyond valuation and monetary policy, the key indicator of the AI boom's sustainability is the capex outlook of major cloud service providers (CSPs). Looking back at major tech booms, including the internet, smartphones, and cloud computing, long-term growth trajectories were underpinned by sustained increases in corporate investment.

Microsoft, Amazon (US), Google (US), and Meta (US) continue to invest aggressively in AI infrastructure, driving demand for GPUs, AI servers, networking equipment, and data centers, which we see as a major earnings drivers across the AI supply chain. As such, instead of focusing solely on share price performance, investors should pay closer attention to whether capex continues to be revised up.

At present, major CSPs remain committed to expanding AI investment, indicating that demand has yet to reach saturation. However, every tech revolution is ultimately subject to ROI scrutiny. If AI investment fails to translate effectively to sales growth, or if the pace of adoption slows, capex growth will eventually peak. Therefore, the key to the sustainability of the AI rally is not where stock prices trade, but whether CSP investment momentum remains intact. As long as capex continues to grow, industry earnings should be able to support current valuations. Conversely, if investment plans turn conservative, the market may begin to reassess the long-term outlook for the AI industry.

Conclusion & top picks

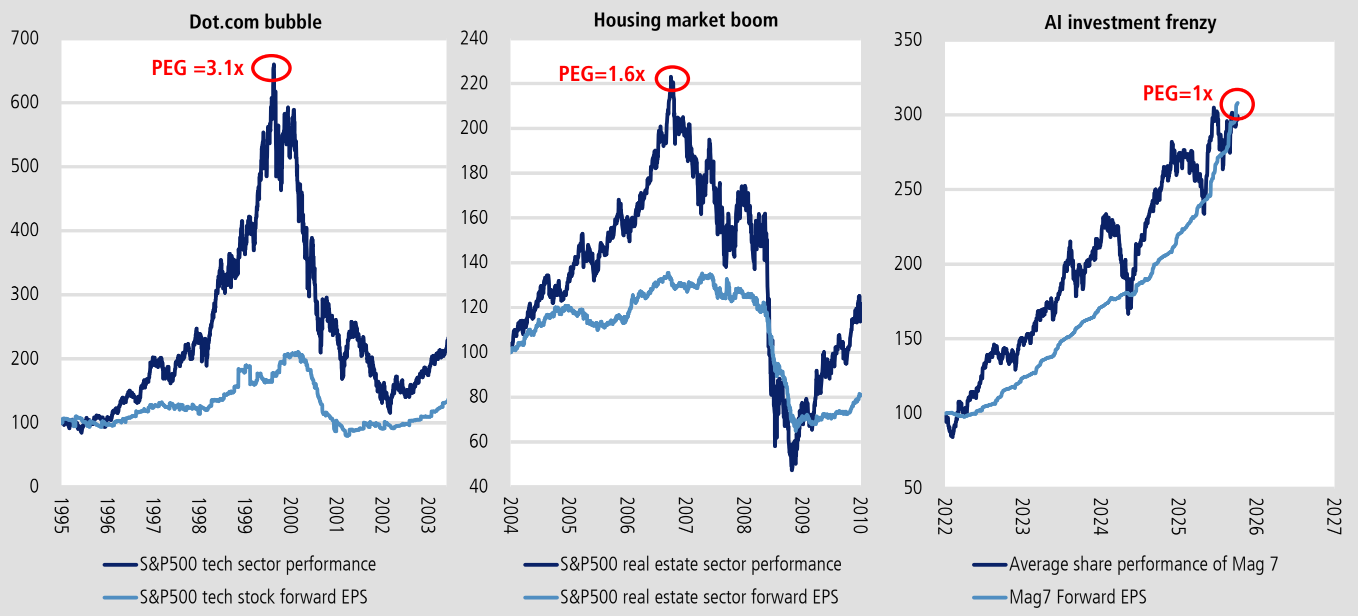
Discussions about an AI bubble are inevitable. However, historical evidence suggests that major asset bubbles typically develop over an extended period and tend to burst only after a significant shift in monetary policy or emergence of a major risk event. We have examined the AI sector from the perspectives of valuation, liquidity, and investment momentum, and acknowledge that certain areas do exhibit signs of overheating. However, the AI sector remains far from valuation detachment from fundamentals, which is commonly observed in the final stage of asset bubbles before they burst. In light of continued corporate earnings growth, ongoing upward capex revisions by major CSPs, and Fed policy having yet to become highly restrictive, we believe the current AI upcycle is more likely in the middle of tech-driven expansion rather than on the edge of a bubble burst.

As such, we maintain a positive medium- to long-term outlook for the Taiex. We expect the AI investment cycle to continue supporting both corporate earnings growth and valuation expansion, and therefore maintain our target of 50,000 for the Taiex by year-end and 55,000 over the next 12 months.

That said, the market will still need to navigate several uncertainties over the next two months, including the trajectory of Fed policy and US midterm elections, which could lead to increased volatility. As a result, we recommend engagement upon pullbacks while focusing on the next wave of hardware upgrade opportunities driven by Nvidia’s Rubin Ultra platform, including thermal, power supply, CCL, ABF substrate, rail kit, and optical communications. In addition, as major CSPs continue to step up investment in AI ASIC, they will naturally pay more attention to building an ecosystem for their self-developed chips, and this will serve as a major investment theme for IC design houses, advanced packaging, high-speed interconnect, and testing interface suppliers.

Figure 1: During previous asset bubbles, share prices advanced far above earnings, with PEG surging to 1.6-3.1x; current average PEG of leading AI-related firms stands at 1x, suggesting valuations are still reasonable

Mainstream sector share price performance vis-à-vis earnings growth during previous asset bubbles (start of asset bubble = 100, points)

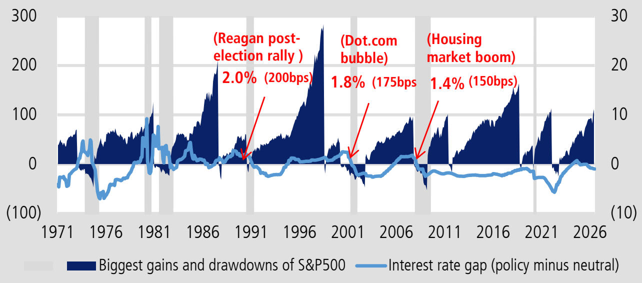


Source: Bloomberg; KGI Research

Note: We use S&P 500 IT services index in 1995-2003 as benchmark for dot.com bubble, S&P 500 real estate index in 2004-09 for global financial crisis, and share performance of Magnificent Seven since 2022 for current AI upcycle.

Figure 2: Before collapse of last 3 asset bubbles, Fed policy rate was highly restrictive, or above neutral rate by at least 150bps

Biggest gains & drawdowns of S&P 500, percent (LHS); gap between policy & neutral interest rates, percent (RHS)

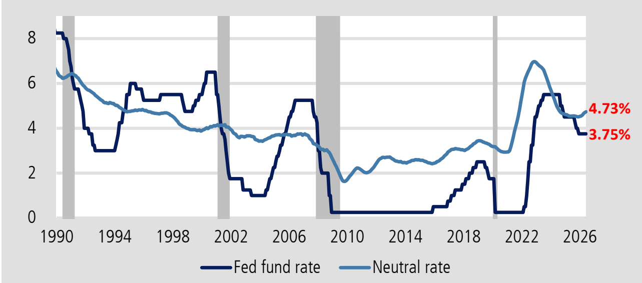


Source: Bloomberg; KGI Research

Note: Shaded areas indicate US economic recession periods.

Figure 3: Current Fed funds rate stands at 3.75%, below nominal neutral rate of 4-5% as projected by market, suggesting monetary environment is not yet highly restrictive

US benchmark & neutral interest rates, percent

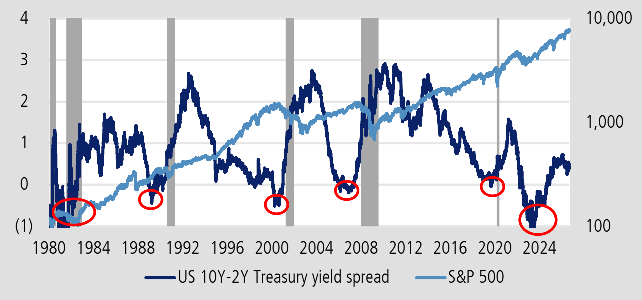


Source: Bloomberg; KGI Research

Note: Shaded areas indicate US economic recession periods.

Figure 4: Historically, inversion of yield curve is a major red flag for collapse of asset bubbles

US 10Y-2Y Treasury yield spread, percent (LHS); S&P 500, points (RHS)



Source: Bloomberg; KGI Research

Note: Shaded areas indicate US economic recession periods; red circles indicate negative interest rates in the US.

Figure 5: US stock indices tend to peak in nine months after yield curve inversion

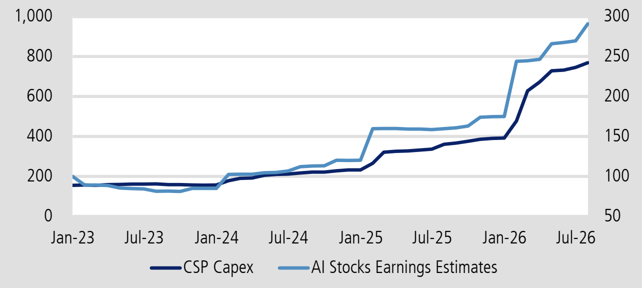
Correlation between yield curve inversion & US/Taiwan economic & stock performances

Inversion of US 2Y-10Y Treasury yield spread			Time of peaking after yield curve inversion (month)		Time of sinking into a recession after yield curve inversion (month)	
Start date	End date	Duration (month)	Taiex	S&P500	Taiwan	US
1978/8/17	1980/5/1	20.8	1.4	13.9	No recession	17.0
1980/9/11	1981/10/23	13.6	84.4	2.5	No recession	10.0
1988/12/14	1989/6/23	6.4	13.9	17.6	4.5	19.0
1998/5/26	1998/7/25	2.0	-2.8	1.8	No recession	No recession
2000/2/2	2000/12/22	10.8	0.4	1.6	7.0	13.0
2005/12/27	2007/3/16	14.8	22.0	21.3	26.1	23.0
2019/8/26	2019/9/2	0.2	4.0	5.6	5.2	5.0
2022/4/1	2024/9/6	29.6	No peaking	No peaking	No recession	No recession

Source: Bloomberg; KGI Research

Figure 6: Large CSPs are still raising capex, boding well for earnings outlook for AI supply chain, allowing Taiex earnings to be revised upward

Projected capex by large US CSPs, US$bn (LHS); Taiex AI earnings forecast, points (RHS)

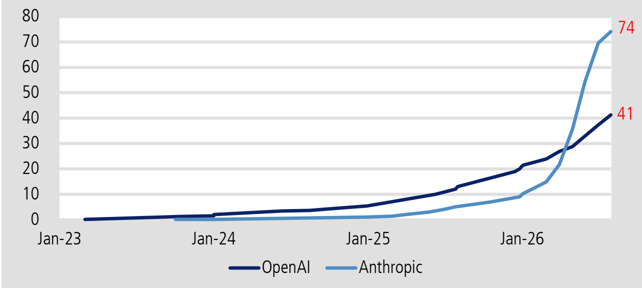


Source: TEJ; Bloomberg; KGI Research

Note: We use earnings forecasts as of end-2022 as base of 100.

Figure 7: Robust growth in annualized sales of OpenAI & Anthropic speaks volumes about monetization of AI applications

Annualized sales of OpenAI and Anthropic, US$bn



Source: Ticker Trends; KGI Research

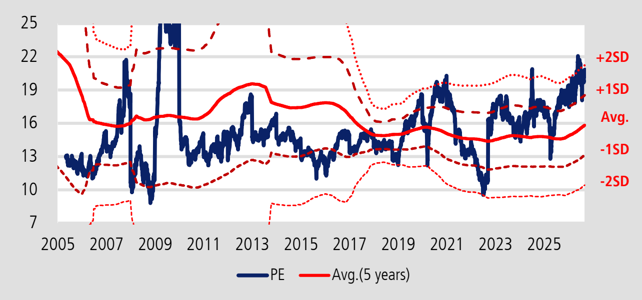
Figure 8: Earnings & valuations of Taiex constituents

Earning (NT$bn)	**2021**	**2022**	**2023**	**2024**	**2025**	**2026F**	**2027F**
Taiex	3,917	3,771	2,682	3,780	4,344	6,526	8,193
Taiex excl. TSMC	3,320	2,755	1,844	2,607	2,626	3,719	4,583
Tech	1,914	2,147	1,698	2,249	3,101	4,881	6,399
Tech excl. TSMC	1,317	1,130	860	1,075	1,383	2,074	2,789
TSMC	597	1,017	838	1,173	1,718	2,807	3,610
EPS growth (%)							
Taiex	78.1	(3.7)	(28.9)	40.9	14.9	50.2	25.5
Taiex excl. TSMC	97.4	(17.0)	(33.1)	41.4	0.7	41.6	23.2
Tech	51.7	12.2	(20.9)	32.4	37.9	57.4	31.1
Tech excl. TSMC	77.1	(14.2)	(23.9)	25.1	28.6	49.9	34.5
TSMC	15.2	70.4	(17.5)	39.9	46.4	63.4	28.6
P/E (x)							
Taiex	38.2	39.7	55.8	39.6	34.5	22.9	18.3
Taiex excl. TSMC	26.4	31.8	47.5	33.6	33.4	23.6	19.1
Tech	63.6	56.7	71.7	54.1	39.3	24.9	19.0
Tech excl. TSMC	45.3	52.8	69.4	55.5	43.1	28.8	21.4
TSMC	104.1	61.1	74.1	52.9	36.2	22.1	17.2

Source: KGI Research

Figure 9: Taiex currently valued at 2027F PE of 19x, above long-term average by 1-2 standard deviations, which is reasonable for an upcycle

Taiex PE (one-year forward), x



Source: TEJ; KGI Research

Figure 10: Taiex valuations & corresponding index levels

2026F PE (x)	**Equivalent index level (points)**	**2027F PE (x)**	**Equivalent index level (points)**	**26-27F Avg.PE (x)**	**Equivalent index level (points)**
15	30,545	15	37,794	15	34,170
16	32,581	16	40,314	16	36,448
18	36,654	18	45,353	18	41,003
20	40,726	20	50,393	20	45,559
21	42,763	21	52,912	21	47,837
22	44,799	22	55,432	22	50,115
23	46,835	23	57,952	23	52,393

Source: TEJ; KGI Research

Figure 11: Our top picks

Sector/ theme	Company	Code	Investment rating	Target price (NT$)	Mkt cap (US$mn)	Share price (NT$)	Change +/- (%)	EPS (NT$)		EPS YoY (%)		PE (x)		PEG (x)		P/B (x)		ROE (%)		Cash yield (%)	
								2026F	2027F	2026F	2027F	2026F	2027F	2026F	2027F	2026F	2027F	2026F	2027F	2026F	2027F
Semiconductor	TSMC	2330 TT	Outperform	3,200	2,033,427	2,470.0	29.6	108.25	139.22	63.4	28.6	22.8	17.7	0.4	0.6	8.4	6.1	43.0	39.9	1.2	1.3
	MediaTek	2454 TT	Outperform	6,600	239,979	4,710.0	40.1	71.34	123.26	7.9	72.8	66.0	38.2	8.4	0.5	19.4	16.5	28.7	46.3	1.4	1.5
	Alchip	3661 TT	Outperform	6,180	11,041	4,030.0	53.3	130.60	171.62	89.8	31.4	30.9	23.5	0.3	0.7	6.6	5.6	23.5	25.9	1.6	2.1
	GUC	3443 TT	Outperform	5,870	25,356	5,960.0	(1.5)	50.99	130.40	81.3	155.7	116.9	45.7	1.4	0.3	40.4	24.7	41.8	67.0	0.6	1.6
	Chipbond	6147 TT	Outperform	280	4,408	186.5	50.1	5.30	7.45	41.6	40.8	35.2	25.0	0.8	0.6	2.6	2.5	8.2	11.2	2.1	3.0
	HON	7769 TT	Outperform	9,000	39,813	6,970.0	29.1	129.97	226.71	89.2	74.4	53.6	30.7	0.6	0.4	18.0	13.3	36.6	49.7	1.3	2.3
	WinWay	6515 TT	Outperform	12,000	8,914	7,700.0	55.8	92.10	184.01	96.3	99.8	83.6	41.8	0.9	0.4	37.8	26.6	47.6	73.8	0.9	1.7
	MPI	6223 TT	Outperform	10,000	18,025	5,795.0	72.6	76.08	137.53	134.7	80.8	76.2	42.1	0.6	0.5	33.5	26.6	47.3	70.3	0.8	1.4
AI server	AVC	3017 TT	Outperform	4,000	41,131	3,285.0	21.8	103.17	160.03	110.7	55.3	31.8	20.5	0.3	0.4	19.3	12.6	72.0	73.3	1.3	2.1
	Jentech	3653 TT	Outperform	7,365	25,936	5,550.0	32.7	70.19	146.88	95.2	109.3	79.1	37.8	0.8	0.3	30.3	23.0	41.4	69.1	0.8	1.6
	DELTA	2308 TT	Outperform	2,505	148,843	1,805.0	38.8	40.57	66.29	75.3	63.4	44.5	27.2	0.6	0.4	13.3	9.9	33.9	41.7	1.1	1.8
	Fositek	6805 TT	Outperform	2,685	4,690	2,155.0	24.6	63.66	103.26	105.3	62.2	33.9	20.9	0.3	0.3	15.4	11.0	52.0	61.3	1.3	2.2
	EMC	2383 TT	Outperform	7,625	60,744	5,340.0	42.8	108.84	190.64	166.2	75.2	49.1	28.0	0.3	0.4	26.2	16.2	63.1	71.4	1.2	2.1
	Unimicron	3037 TT	Outperform	1,175	49,776	954.0	23.2	16.10	32.71	283.4	103.1	59.3	29.2	0.2	0.3	11.6	8.8	22.6	35.8	0.8	1.5
	ZDT	4958 TT	Outperform	685	17,916	505.0	35.6	15.61	26.33	155.0	68.6	32.3	19.2	0.2	0.3	3.3	3.0	12.1	17.0	1.5	2.6
	Chenbro	8210 TT	Outperform	1,440	3,617	907.0	58.8	48.10	67.10	68.4	39.5	18.9	13.5	0.3	0.3	8.2	6.3	48.4	52.3	2.6	3.7
	King Slide	2059 TT	Outperform	15,000	37,877	12,520.0	19.8	336.97	500.02	226.4	48.4	37.2	25.0	0.2	0.5	26.9	17.5	88.8	84.7	1.4	2.1
	Wiwynn	6669 TT	Outperform	7,750	41,536	2,340.0	231.2	370.69	566.42	34.8	52.8	6.3	4.1	0.2	0.1	2.8	2.1	49.2	58.7	8.7	13.3
	Wistron	3231 TT	Outperform	300	18,828	186.5	60.9	17.65	26.40	101.4	50.3	10.6	7.1	0.1	0.1	2.8	2.3	28.2	34.8	5.6	8.4
Memory	NTC	2408 TT	Outperform	720	58,161	531.0	35.6	75.16	130.67	3775.8	75.9	7.1	4.1	0.0	0.1	3.9	2.1	86.9	74.3	4.2	7.4
	WEC	2344 TT	Outperform	200	26,922	188.0	6.4	29.03	69.97	3197.6	141.0	6.5	2.7	0.0	0.0	3.8	1.7	78.6	86.8	4.6	11.2
AI Applications	Hiwin	2049 TT	Outperform	478	3,931	350.0	36.6	9.06	12.52	110.0	38.3	38.7	28.0	0.4	0.7	3.2	3.0	8.4	11.0	1.2	1.7
	Silergy	6415 TT	Outperform	530	5,077	410.0	29.3	11.59	17.73	81.5	52.9	35.4	23.1	0.4	0.4	0.9	0.8	11.3	14.9	1.2	1.8
High-yield	CTBC Holding	2891 TT	Outperform	74	42,600	68.2	8.5	4.24	4.70	3.4	10.9	16.1	14.5	4.7	1.3	1.7	1.5	12.9	10.7	4.1	4.5
	SINOPAC Holdings	2890 TT	Outperform	44	20,390	43.5	1.3	2.84	2.74	67.5	(3.5)	15.3	15.9	0.2	(4.5)	2.3	2.0	16.3	13.8	4.0	4.1
	QCI	2382 TT	Outperform	500	42,771	328.0	52.4	27.06	31.75	39.1	17.3	12.1	10.3	0.3	0.6	4.8	4.4	41.1	44.2	6.6	7.7
	Hiyes	2348 TT	Outperform	100	364	71.9	39.1	11.48	10.73	64.9	(6.4)	6.3	6.7	0.1	(1.1)	1.3	1.2	21.5	19.3	10.7	13.4

Source: KGI Research

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Rating	Definition
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Neutral (N)	We take a neutral view on the stock. The stock is expected to perform in line with the expected total return* of the KGI coverage universe in the related market over a 12-month investment horizon.
Under perform (U)	We take a negative view on the stock. The stock is expected to underperform the expected total return* of the KGI coverage universe in the related market over a 12-month investment horizon.
Not Rated (NR)	The stock is not rated by KGI.
Restricted (R)	KGI policy and/or applicable law regulations preclude certain types of communications, including an investment recommendation, during the course of KGI's engagement in an investment banking transaction and in certain other circumstances.

Total return = (12M target price - current price) / current price