

US Conviction List - Directors' Cut

September 2024 Update

US Conviction List - Directors' Cut

[See the list >](#)
CL

We add Conagra (CAG), International Business Machines (IBM), and Insmed (INSM) to the Americas Conviction List, while removing Ally Financial (ALLY), Dollar General (DG), Installed Building Products (IBP), and Royal Caribbean Cruises (RCL). We have a brief summary of these adds below, and include a more detailed write-up within, along with market commentary, a review of list performance and earnings and non-earnings catalysts.

Exhibit 1: Conviction List - Directors' Cut September 2024 Update

All price targets are for 12-months; Prices are as of 8/30; green indicates new

Ticker	Company	Mkt Cap (\$bn)	Price	Price Tgt	% upside	GS vs. Cons* FY2	Street % Buy
Consumer							
CAG	Conagra Brands Inc	\$14.9	\$31	\$36	15%	3%	17%
PM	Philip Morris International	191.7	\$123	\$126	2%	2%	72%
Financials							
BRX	Brixmor Property Group Inc	8.3	\$27	\$29	6%	2%	59%
C	Citigroup Inc	119.5	\$63	\$75	20%	5%	65%
TPG	TPG Inc	18.6	\$50	\$53	5%	3%	43%
Healthcare							
AMGN	Amgen Inc	179.4	\$334	\$370	11%	7%	55%
INSM	Insmed Inc	13.1	\$76	\$103	35%	4%	100%
Industrial							
PH	Parker Hannifin Corp	77.2	\$600	\$717	19%	-2%	85%
VMC	Vulcan Materials Co	32.4	\$245	\$310	26%	1%	67%
WWD	Woodward Inc	9.9	\$167	\$201	21%	5%	42%
Natural Resources							
ENPH	Enphase Energy Inc	16.4	\$121	\$170	40%	19%	55%
KMI	Kinder Morgan Inc	47.9	\$22	\$23	7%	1%	43%
SLB	SLB	62.5	\$44	\$58	32%	-3%	97%
SRE	Sempra	52.0	\$82	\$91	11%	4%	68%
TMT							
AMZN	Amazon.Com Inc	1,873.5	\$179	\$230	29%	4%	96%
FOXA	Fox Corp - Class A	18.3	\$41	\$44	6%	3%	41%
GLBE	Global-E Online Ltd	5.7	\$34	\$43	25%	3%	93%
GWRE	Guidewire Software Inc	12.3	\$149	\$170	14%	1%	75%
IBM	Intl Business Machines Corp	186.2	\$202	\$220	9%	3%	43%
NVDA	Nvidia Corp	2,928.1	\$119	\$135	13%	8%	89%
SNOW	Snowflake Inc	38.3	\$114	\$220	93%	3%	71%
SPGI	S&P Global Inc	164.3	\$513	\$561	9%	1%	92%
TER	Teradyne Inc	22.3	\$137	\$151	10%	7%	58%

*EPS:C,CAG,ENPH,IBM,NVDA,PM,SPGI,SRE,TER,TPG;EBITDA:FOXA,GLBE,KMI,PH,SLB,SNOW,VMC,WWD;EBIT:AMGN;AMZN;Rev:GWRE,INSM;FFO:BRX

Source: Goldman Sachs Global Investment Research, Bloomberg

Steven Kron

+1(212)902-1896 | steven.kron@gs.com
Goldman Sachs & Co. LLC

Chris Hussey

+1(212)902-7564 | chris.hussey@gs.com
Goldman Sachs & Co. LLC

John Marshall

+1(212)902-6848 |
john_marshall@goldmansachs.com
Goldman Sachs & Co. LLC

Sarah Herr

+1(212)357-0094 | sarah.herr@gs.com
Goldman Sachs & Co. LLC

Table of Contents

Market Commentary - volatility on display	5
Conviction List - what has worked, what has not and what has changed	8
Anatomy of the List	12
Conviction List Explained - refrain	14
Our 23 most differentiated Buy recommendations	15
Amazon.com Inc. (AMZN) - covered by Eric Sheridan	16
Amgen Inc. (AMGN) - covered by Salveen Richter	19
Brixmor Property Group (BRX) - covered by Caitlin Burrows	22
Citigroup Inc. (C) - covered by Richard Ramsden	24
Conagra Brands Inc. (CAG) - covered by Leah Jordan	26
Enphase Energy Inc. (ENPH) - covered by Brian Lee	28
Fox Corp. (FOXA) - covered by Michael Ng	30
Insmed Inc. (INSM) - covered by Andrea Tan	32
International Business Machines Corp. (IBM) - covered by Jim Schneider	35
Kinder Morgan Inc. (KMI) - covered by John Mackay	37
Global-E Online Ltd. (GLBE) - covered by Will Nance	40
Guidewire Software Inc. (GWRE) - covered by Kevin Kumar	42
Nvidia Corp. (NVDA) - covered by Toshiya Hari	45
Parker Hannifin Corp. (PH) - covered by Joe Ritchie	47
Philip Morris International Inc. (PM) - covered by Bonnie Herzog	50
S&P Global Inc. (SPGI) - covered by George Tong	52
Sempra (SRE) - covered by Carly Davenport	54
SLB (SLB) - covered by Neil Mehta	56
Snowflake Inc. (SNOW) - covered by Kash Rangan	59
Teradyne Inc. (TER) - covered by Toshiya Hari	61
TPG Inc. (TPG) - covered by Alex Blostein	63
Vulcan Materials Co. (VMC) - covered by Jerry Revich	66
Woodward Inc. (WWD) - covered by Noah Poponak	69

Financial Advisory disclosure	70
Disclosure Appendix	71

For **CAG**, Leah Jordan believes the company has a well-positioned frozen and snack portfolio that aligns with current convenience and consumption trends, while exposure to private label risk appears better than feared.

For **IBM**, Jim Schneider highlights how the company is on track to complete its pivot to long-term growth driven by stronger software performance and market share gains in consulting — a combination which should drive upside to earnings and multiple expansion.

For **INSM**, Andrea Tan believes that the biotech company is on the verge of becoming a 3-tiered, multi-product, commercial-stage biotech company with an initial focus in rare pulmonary diseases — an inflection point that has traditionally led to more predictable earnings and multiple expansion for Biotech stocks.

To see the full write-up of these three stocks, plus all the stocks in the Conviction List, page down to the Company sections.

Market Commentary - volatility on display

The S&P 500 traded in a 500+ point band in August (about 10%) as investors first became very concerned that an imminent recession was being ignored by the Fed, before becoming more convinced that a recession may not be that imminent and the Fed is poised to cut rates at its September meeting. Along the way, the Nikkei dropped 12% in one day (only to reclaim almost all the lost ground by Friday, Sep-30) and the VIX spiked to 40 before receding back to 15 as uncertainty receded.

Interestingly, our economists also changed their forecast of a recession twice in August: first raising the likelihood to 25% from 15% on the back of the weak July labor report, and then bringing it back down 20% when retail sales came in firm later in the month (see Jan Hatzius' Aug-17 note, "Renewed Progress on Recession Risk"). And as we exit August, our 3Q GDP growth tracker sits at +2.7% – only 30bp slower than the pace of growth we saw in 2Q24 (see Friday's Econ update, "USA: Core PCE Roughly in Line With Expectations; Saving Rate Declines to 2.9%; Boosting Q3 GDP Tracking to +2.7%").

Looking back at August, perhaps the volatility that we have seen reflects a few realities of the times we are in.

- Market valuations are high (by historical standards). The S&P 500 is trading at 22.2X our NTM EPS estimate (see David Kostin's Aug-23 "US Kickstart").
- The outcome of the Presidential election is very uncertain as Alec Phillips discusses in "US Election Monitor: August 28 Update" (see also his Aug-10 deep dive note, "10 Observations on the Election").
- Multiple geopolitical risks remain in place.
- And the Fed is poised to cut rates for the first time since the early days of the pandemic (see our economics notes above).

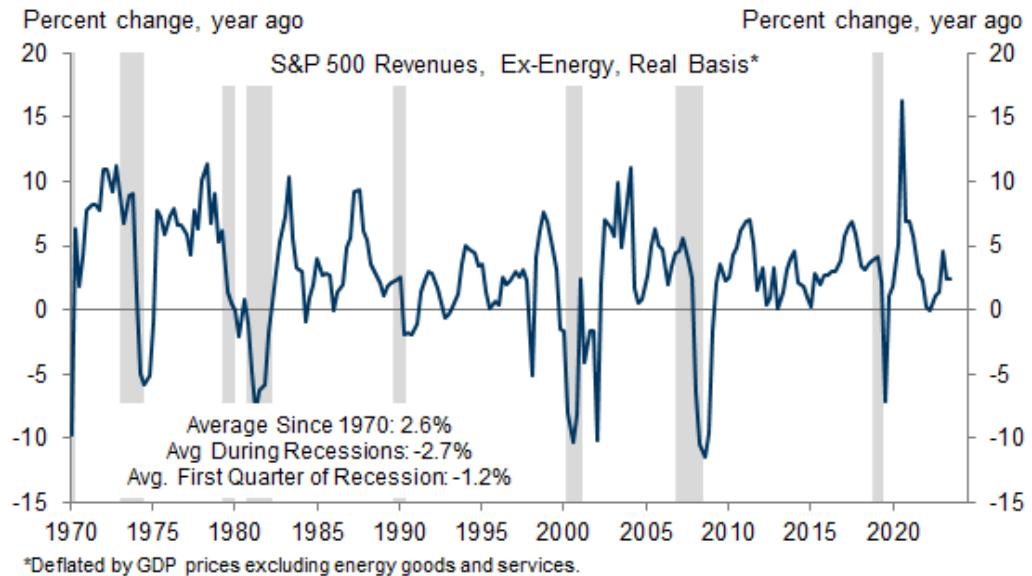
On top of these factors, the echoes of the pandemic continue to reverberate, making it particularly difficult to evaluate multiple trends that are important to markets. Labor markets, for example, are slowing. But how much of the slowdown is simply tied to a change in immigration policy as Elsie Peng discusses in the Aug-14 note, "The Immigration Surge and the Labor Market." Similarly, some have suggested that the US consumer is beginning to fade, yet commentary this earnings season from a host of consumer companies suggests that the consumer is actually holding up just fine (see Ronnie Walker's Aug-18 note, "Earnings Season Takeaways: Consumer Worries Overblown, Election Uncertainty Weighing on Capex, Labor Market Rebalanced").

But also in August, we wrapped up a strong 2Q earnings season where we learned that the consumer is probably stronger than some thought, and a rebalanced labor market is providing a bit of cost relief for Corporate America as Ronnie Walker discussed in the Aug-18 deep dive economics take, "Earnings Season Takeaways: Consumer Worries Overblown, Election Uncertainty Weighing on Capex, Labor Market Rebalanced".

Alongside the firm GDP growth trend that we saw in 2Q, we also got firm revenue

growth for an economy that is supposed to be descending towards a soft landing (see chart below).

Exhibit 2: Corporate Revenues Are Growing at a Historically Average Pace



Source: Standard & Poor's, Goldman Sachs Global Investment Research

Against this backdrop, we turn the page into a new 'school year' as we kick-off September and the traditional post-Labor Day season. Heading into fall, we are focused on a variety of themes, including:

- **AI.** Kash Rangan and team laid out a path to a \$2 trillion Software TAM by 2030, helped by AI platforms and applications in a deep dive note on Aug-25, "[Gen-AI Part VIII: Catalyst or Culprit?](#)". NVDA also reported results last week, showing revenue up 122% yoy as customers – hyperscalers, sovereigns, enterprises – continue to invest in compute power to fuel AI development (see Toshiya Hari's postview from Aug-28, "[NVDA FY2Q EPS Recap](#)"). We will be exploring the AI theme as well as a host of other issues impacting the Technology, Media, and Telecom (TMT) space in our annual *Communacopia + Tech Conference* taking place September 9-12th in San Francisco ("[click here for the Communacopia/Tech agenda](#)"). CL stocks with tangible exposure: **AMZN, NVDA, SNOW, and TER.**
- **The Consumer.** We are hosting our annual *Global Retail Conference* in New York this week (September 4-5th) where the health of the US consumer will be very much in focus ("[click here for the Retail agenda](#)"). Our latest GSTRE Raw Index of retail activity actually inflected positive for August, suggesting that the strength in retail activity we saw in July is being sustained (see Brooke Roach's Aug-27 update, "[Retail trends to watch: August MTD TRE +0.2%; same-store ShopperTrak traffic +0.7%](#)"). CL stocks with exposure: **AMZN, BRX, CAG, ENPH, FOXA, GLBE, and PM.**
- **Sustainability.** Madeline Meyer dives deep into climate change and how it's impacting land efficiency for the future in "[Nature & Biodiversity](#)." We introduce the GS SUSTAIN Nature Tool to assess vulnerability to nature loss. With the tool, we score 7,000 companies across the world on how they impact biodiversity. We also

discuss ways companies can offset the impact. For example, **MDLZ**, **BG**, and **COP** are all exposed to nature risks but are managing these risks very well by our measures. Not surprising, forestry company **WY** also scores well on this as it has a lot of programs in place to offset tree cutting. We also highlight companies like **PL** and **TRMB** that are offering solutions for companies to manage nature risk. Looking ahead, we are hosting a Sustainability Forum in New York on September 26th ([click here for the agenda](#)). CL stocks positively exposed: **KMI**.

Conviction List - what has worked, what has not and what has changed

We provide performance of each name on the list for the month of August and the life-to-date total return relative to the S&P 500 Index and the S&P 500 equal-weighted Index in the table below. Additionally, we present the Conviction List "hit rate" - a simple measure of the performance that calculates the percentage of stocks that have outperformed the stated benchmark during their time on the list, since inception. Lastly, we provide commentary on select names that saw strength and weakness during the month and highlight the names that were added to and removed from the list.

Exhibit 3: Conviction List - Directors' Cut stock performance

August and life-to-date returns

Ticker	Name	Calendar	Life-to-Date		Life-to-Date
		Days on the List	August 2024	S&P 500	EW S&P 500
FOXA	Fox Corp - Class A	61	8.8%	16.7%	13.3%
BRX	Brixmor Property Group Inc	89	7.5%	15.8%	16.5%
PH	Parker Hannifin Corp	242	7.3%	11.9%	18.9%
PM	Philip Morris International	30	7.1%	4.6%	4.6%
WWD	Woodward Inc	30	7.0%	4.6%	4.5%
SPGI	S&P Global Inc	30	6.1%	3.6%	3.6%
ENPH	Enphase Energy Inc	89	5.2%	-12.8%	-12.0%
TER	Teradyne Inc	89	4.2%	-10.4%	-9.6%
SRE	Sempra	89	2.6%	0.2%	1.0%
SPW	S&P 500 Equal Weight		2.5%		
SPX	S&P 500		2.4%		
KMI	Kinder Morgan Inc	122	2.1%	6.9%	10.0%
NVDA	Nvidia Corp	334	2.0%	141.0%	148.6%
¹	GS Americas Coverage		1.9%		
AMGN	Amgen Inc	183	1.1%	12.0%	14.7%
GLBE	Global-E Online Ltd	61	0.3%	-8.8%	-12.2%
TPG	TPG Inc	152	-0.2%	6.8%	10.6%
GWRE	Guidewire Software Inc	122	-0.9%	22.0%	25.1%
C	Citigroup Inc	152	-2.5%	-7.2%	-3.4%
AMZN	Amazon.Com Inc	457	-4.5%	10.4%	19.1%
SLB	SLB	152	-8.9%	-27.3%	-23.5%
VMC	Vulcan Materials Co	183	-10.5%	-18.9%	-16.2%
SNOW	Snowflake Inc-Class A	61	-12.4%	-19.1%	-22.5%

² Conviction List hit rate (n = 59)

Relative to:

S&P 500	53%
S&P 500 Equal Weight	58%
GICS Sector	56%
GS Americas Coverage	61%

Added to the list this month

Ticker	Name	Days on	LTD Return	
		the List	August 2024	Rel to SP500
CAG	Conagra Brands Inc			
IBM	Intl Business Machines Corp			
INSM	Insmed Inc			

Removed from the list this month

Ticker	Name	Days on	LTD Return		LTD Return Rel
		the List	August 2024	Rel to SP500	EW SP500
RCL	Royal Caribbean Cruises Ltd	152	5.0%	10.3%	14.1%
ALLY	Ally Financial Inc	212	-3.4%	1.9%	6.0%
IBP	Installed Building Products	212	-17.8%	-2.3%	1.7%
DG	Dollar General Corp	30	-31.1%	-33.5%	-33.6%

¹ Total return for Americas Research coverage² Hit rate is defined as the % of stocks that have outperformed the benchmark while on the list, since inception

Source: Goldman Sachs Global Investment Research, Bloomberg

What has worked

FOXA (+). Michael Ng has increased confidence in our 2025 profit forecast for the media conglomerate as a combination of Super Bowl programming, a streamlined sports and news portfolio, a favorable political ad cycle, and diminishing content costs should all contribute to a pick-up in EBITDA as he discussed in the Aug-6 note, “[FOXA F4Q24 review](#).”

BRX (+). Caitlin Burrows raised estimates the day before August on the back of strong results from the strip mall retailer as tenant renewals continue to come in at higher

rents and the development pipeline is solid as she details in the Jul-31 note, "BRX: Increasing estimates."

PH (+). Joe Ritchie was impressed with the strong results from PH mid-month and believes that the guidance it offered for FY25 is conservative, setting the company up for a beat-and-raise cycle that historically has been well received by investors as he discusses in the Aug-9 postview note, "PH: All-around strong results, guide better, orders improving."

What has not

SNOW (-). Forward guidance provided by SNOW this month fell short of high expectations, but Kash Rangan still likes what he is seeing from the software leader, as 2Q results were solid, product revenue growth remains strong, and backlog remains firm as he details in "SNOW: Solid Print." A shift in Tech spending priorities towards AI infrastructure should also eventually come around to SNOW as platforms and applications are developed as discussed in "Software: Gen-AI Part VIII: Catalyst or Culprit?"

VMC (-). Weaker concrete sales activity offset continued strong aggregates pricing power as Jerry Revich discussed in the Aug-7 update, "VMC: Unit profitability growth on track despite lower near-term demand." We continue see sustained double digit unit profitability growth and exposure to a bottoming residential construction market as making the stock particularly attractive today.

What has changed

With this update we add Conagra Foods (CAG), International Business Machines (IBM) and Insmed (INSM) while removing Ally Financial (ALLY), Dollar General (DG), Royal Caribbean (RCL) and Installed Building Products (IBP) - note that all stocks remain Buy-rated. As discussed in previous monthly updates, there are many reasons a stock could get removed from the list. They can include (but are not limited to), analysts no longer having conviction in their idea (e.g. a downgrade), price realization, the passage of catalysts or the subcommittee believing there are better opportunities elsewhere. In short, names will be removed if the committee determines a name is no longer a top investment idea (list will target 20-25 Buy-rated stocks) across the Americas coverage.

Importantly, inclusion on this list is not a stock rating and addition to or removal from this list does not necessarily represent a change in the analyst's investment rating for such stock.

Exhibit 4: Conviction List Changes since July 31, 2024

Changes to FY2 EPS, Price Targets and to the List

Ticker	Name	FY2 EPS %	PT %
AMGN	Amgen Inc	3%	6%
AMZN	Amazon.Com Inc	-3%	-8%
FOXA	Fox Corp - Class A	-8%	5%
GLBE	Global-E Online Ltd	-3%	-7%
NVDA	Nvidia Corp	3%	0%
SNOW	Snowflake Inc-Class A	-5%	0%
PH	Parker Hannifin Corp	0%	2%
SLB	SLB	0%	-6%
SRE	Sempra	0%	2%
TPG	TPG Inc	5%	8%
VMC	Vulcan Materials Co	-6%	0%

CL Additions	Date	
IBM	Intl Business Machines Corp	9/3/2024
INSM	Insmed Inc	9/3/2024
CAG	Conagra Brands Inc	9/3/2024

CL Removals	Date	
RCL	Royal Caribbean Cruises Ltd	9/3/2024
ALLY	Ally Financial Inc	9/3/2024
IBP	Installed Building Products	9/3/2024
DG	Dollar General Corp	9/3/2024

Source: Goldman Sachs Global Investment Research, Bloomberg

Anatomy of the List

Top 5 Snapshot

While our Conviction List process focuses on stocks where our analysts expect strong risk-adjusted returns, we recognize there are a broad range of investing styles across portfolio managers. Below, we highlight the top 5 stocks from the current Conviction List across four major metrics: Upside to 12-month price target, Upside to next year's consensus EPS, FY2 Revenue growth and current Dividend Yield.

Exhibit 5: The Conviction List contains stocks that are attractive across a number of metrics

Top 5 constituents by fundamental metric

	Upside to price target		Upside to consensus EPS		Revenue Growth		Dividend Yield
SNOW	93%	GLBE	>20%	ENPH	51%	KMI	5%
ENPH	40%	ENPH	19%	NVDA	45%	CAG	4%
INSM	35%	INSM	13%	INSM	41%	PM	4%
SLB	32%	NVDA	8%	GLBE	33%	C	4%
AMZN	29%	WWD	7%	TER	26%	TPG	3%

Source: Goldman Sachs Global Investment Research

By the Numbers

Our Conviction List should not be viewed as a portfolio as we will not attempt to weight these stocks or ensure diversification across our stock coverage. That said, we will continue to provide some context of the list construction to give investors a taste of the independent investment ideas on the list.

Exhibit 6: By The Numbers

14% median upside to price target	3% median upside to consensus FY2 KPI	8% median FY2 revenue growth
26% % names with 50% or less Street Buy	91% % names with upside to FY2 KPI	1.1 median beta

Source: Goldman Sachs Global Investment Research, Bloomberg

Upcoming Catalysts

Below we provide a rolling calendar of earnings events, their option implied moves and typical volatility. We also highlight select earnings and non-earnings catalysts that have the potential to drive investor sentiment toward our analysts' view.

Exhibit 7: Earnings Day option implied move

Current option implied moves relative to 8 quarter average actual moves

Ticker	Date	Earnings-day move		Implied minus historical
		Current Implied +/-	8Q Avg actual +/-	
GWRE	5-Sep	8%	7%	1%

Source: Goldman Sachs Global Investment Research

Exhibit 8: Non-earnings catalysts our analysts expect to be important

Potential 2024 catalysts

Ticker	Date	Event
TER	4-Sep	Semicon Taiwan
NVDA	11-Sep	NVDA CEO speaks with David Solomon at Communacopia
TMT	9 to 11 Sep	GS Communacopia + Technology Conference
AMGN	13-Sep	AMG-193 - Additional data from Ph1 dose escalation/expansion
AMGN	13-Sep	xaluritamig - Updated results from first-in-human trial at ESMO
AMGN	15-Oct	Ph3 data for Uplizna in myasthenia gravis at the MGFA session
AMZN	2-Dec	AWS re:Invent 2024 (12/2 - 12/6)
Industrials	4-Dec	GS Industrials and Materials Conference
Financials	10-Dec	GS US Financial Services Conference
AMGN	2H24	Ph3 data for rocatinlimab (anti-OX-40) in atopic dermatitis
AMGN	2H24	Ph3 data for Tezspire (anti-TSLP) in CRSwNP
AMGN	2H24	Ph2 data for Fipaxalparant (LPA1R) in IPF
AMGN	Late-2024	Ph2 data for MariTide (GLP-1R agonist/GIPR antagonist) in obesity
INSM	3Q24	Arikayce - Completion of patient screening for Ph3 ENCORE trial
INSM	YE24	Arikayce - FDA decision on accelerated approval in 1L NTM
INSM	YE24	Brensocatib - filing in non-cystic fibrosis (non-CF) bronchiectasis
INSM	YE24	Brensocatib - Initiation of Ph2 trial in hidradenitis suppurativa

Source: Company data, Goldman Sachs Global Investment Research

Conviction List Explained - refrain

On June 1, 2023 we introduced this new investment list which highlights a selection of fundamental Buy-rated US stocks across the Goldman Sachs Americas Global Investment Research department. These ideas are sourced from our US research analysts, but chosen by members of our Investment Review Committee. This new 'Conviction List - Directors' Cut' is designed to provide investors with a curated and active list of 20-25 of what we believe to be our most differentiated fundamental Buy ideas across our US stock coverage.

The subcommittee, which includes the Americas Director of Research and other senior research managers listed as authors of this report, will collaborate with each sector analyst to identify top ideas that offer a combination of conviction, a differentiated view and high risk-adjusted returns. The subcommittee will then choose what they view as the top 20-25 ideas across the department for the list. We intend to refresh and publish the list monthly to allow the list to become part of the investment process of Portfolio Managers.

Importantly, we do not express thematic or factor views with this list. Rather, this list will focus on bottom-up fundamental analysis from our analysts. While our analysts will incorporate their view of macro impacts on the fundamentals of their stocks, we will not intentionally express factor, rates, inflation or other macro views in the construction of this list. Our analysts appropriately incorporate the impact of these factors in their estimates which are a critical component to our selection process.

Finally, inclusion on this list is not a stock rating and addition to or removal from this list does not necessarily represent a change in the analyst's investment rating for such stock.

Recent Editions:

- " [US Conviction List - Directors' Cut: August 2024 Update](#)"
- " [US Conviction List-Directors' Cut: Sectors Focus: Spotlight on the Elections](#)"
- " [US Conviction List - Directors' Cut: June 2024 - One Year On](#)"
- Inaugural Edition: 6/1/23: " [Conviction List - Directors' Cut](#)"
- Visit the US Conviction List — Directors' Cut portal page for all previous editions, "[here](#)"

Visit the Conviction List portal page here: "[Americas Conviction List — Directors' Cut](#)"

Recent Podcasts:

- " [Research Unplugged: US Conviction List - Directors' Cut: August Spotlight](#)"
- " [Research Unplugged: US Conviction List - Directors' Cut: June 2024 Spotlight – One Year On](#)"
- " [Research Unplugged: US Conviction List - Directors' Cut: May Spotlight](#)"

Our 23 most differentiated Buy recommendations

The company specific discussion in the sections below reflect the views of the covering analyst.

Exhibit 9: Conviction List - Directors' Cut

Ticker	Company	Summary
Consumer		
CAG	Conagra Brands Inc	Positioned to grow in grocery store driving strong FCF that provides capital flexibility
PM	Philip Morris International	Leading the cigarette industry to a smoke-free future
Financials		
BRX	Brixmor Property Group Inc	A low occupancy strip mall REIT with room to grow tenants and rent prices
C	Citigroup Inc	A top-and bottom-line accelerator with upside cash return optionality
TPG	TPG Inc	EPS growth accelerator with growing private credit exposure
Healthcare		
AMGN	Amgen Inc	Catalyst rich biotech innovator
INSM	Insmed Inc	A product portfolio company emerging - at an inflection point
Industrial		
PH	Parker Hannifin Corp	US Mega Project beneficiary with order inflection on the come; aero exposure/synergies to drive sustained growth
VMC	Vulcan Materials Co	Reliable compounder leveraged to a housing recovery
WWD	Woodward Inc	The right products for the right planes in the right cycle at the right time
Natural Resources		
ENPH	Enphase Energy Inc	Renewables facilitator lapping inventory de-stocking with a tailwind from batteries
KMI	Kinder Morgan Inc	Core business inflecting, with underappreciated long-term tailwinds from growing Natural Gas demand
SLB	SLB	Best-positioned to benefit from international and off-shore oil growth
SRE	Sempra	Power demand beneficiary and decarbonization enabler at a discount
TMT		
AMZN	Amazon.Com Inc	Rebounding eCommerce margins and AWS is a key AI beneficiary, with reaccelerating growth
FOXA	Fox Corp - Class A	Deep value pure play news and sports organization
GLBE	Global-E Online Ltd	Value added FinTech company with exposure to some of the fastest growing segments of eCommerce
GWRE	Guidewire Software Inc	Software Cloud transition story with a reliable customer base (P&C Insurance Companies)
IBM	Intl Business Machines Corp	Underappreciated Tech transformer with a software business positioned to grow
NVDA	Nvidia Corp	The principal 'shovel supplier' in the AI 'gold rush'
SNOW	Snowflake Inc	Next layer Gen-AI winner with a new CEO focused on accelerating product innovation
SPGI	S&P Global Inc	Merger synergy story with industry tailwinds and an AI kicker
TER	Teradyne Inc	Dominant innovator on the cusp of cyclical recovery

Source: Goldman Sachs Global Investment Research

Amazon.com Inc. (AMZN) - covered by Eric Sheridan

Rebounding eCommerce margins and AWS is a key AI beneficiary, with reaccelerating growth

Look for Amazon to compound EBIT dollars at a nearly 30% multi-year CAGR, supported by sustained revenue growth and rising profitability as: i) eCommerce margins continue to expand, ii) high-margin advertising revenue scales, iii) and AWS revenue continues to reaccelerate at high margins.

- **AWS key AI beneficiary with reaccelerating revenue growth.** AWS revenue growth is reaccelerating, driven by the lapping of prior optimization headwinds, a pick-up in the number of enterprise Cloud migration projects and rising AI tailwinds. Sheridan expects these tailwinds will continue over the next several quarters as AWS executes against the long-tailed structural growth opportunity in the shifting computing needs of enterprise customers, with the emerging opportunity from AI workloads as an area of upside. AWS is the largest public Cloud provider by revenue and remains well-positioned to compete in an AI-first world across the infrastructure, platform, and application layers of enterprise Cloud computing.
- **Revenue growth algorithm intact.** Amazon is well-positioned to emerge as a leader in several aspects of secular growth over a multi-year horizon, including: eCommerce, digital advertising, media consumption, aggregated subscription offerings, and cloud computing. Revenue growth should also translate into an expanding EBIT margin as scale creates operating leverage and as some of the company's fastest-growing businesses are also among the most profitable (namely AWS and Advertising).
- **Residual eCommerce margin upside.** Look for further upside to retail profits driven by gross margin expansion, declines in cost to serve per unit, and operating leverage. Also, look for international markets to become an increasingly large profit pool over the long-term, with several more mature countries already profitable. Consumer demand remains strong as evidenced by double-digit paid unit growth and Sheridan remains constructive on Amazon's competitive positioning in eCommerce and believes that its large base of Prime subscribers, leading delivery speeds (supported by large capital investments), and highly competitive pricing/selection remain durable sources of competitive differentiation.

Where we are different.

Our Global Technology team's work on eCommerce, AI and Sheridan's detailed work on Amazon's retail P&L leave Sheridan above Street on 2025 EBIT and EPS and provide key points of differentiation on AMZN's long-term profit potential.

Valuation.

12-month target price of \$230 is based on: (1) An equal blend of EV/GAAP EBITDA applied to our NTM+1 estimates and a modified DCF using an EV/(FCF-SBC) multiple applied to our NTM+4 estimates discounted back 3 years; (2) SOTP of EV/Sales applied

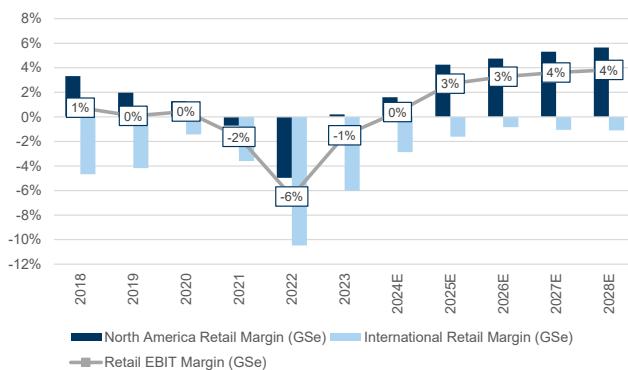
to our NTM+1 estimates for 1P, 3P, Retail Subscription, AWS and Other segments; (3) SOTP of EV/EBIT applied to North America and AWS segments, and EV/Sales applied to the International segment, all based on NTM+1 estimates. Key risks include: Any impact to eCommerce or Cloud growth from competition; lack of success in scaling high margin businesses including Advertising, Cloud, third-party selling and the subscription business; investments across any array of initiatives creating a headwind to gross or operating margin; any product or platform changes necessary to comply with changes to the global regulatory environment; exposure to the volatility caused by the global macroeconomic environment and investor risk appetite for growth stocks.

Catalysts.

Key events include: AWS CEO September 9th Fireside Chat at Goldman's *Communacopia + Technology Conference* (held September 9-12th in San Francisco), Amazon Accelerate (September 17-19); Prime Big Deal Days (October); and AWS re:Invent (December). Key fundamental drivers include: Continued AWS revenue acceleration and any further sizing of the momentum in AI; Pace of North America/International retail margin expansion with a focus on cost to serve and revenue per unit; Any incremental commentary on the trajectory of technology capital investments.

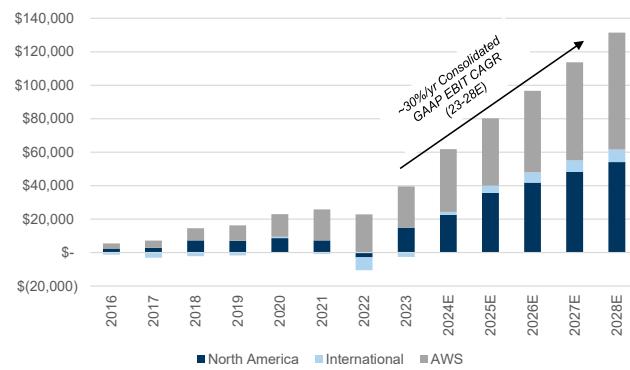
Key Charts.

Exhibit 10: Amazon GAAP EBIT Margin ex-AWS & Ads
Assumes a constant 30% GAAP EBIT margin for Advertising revenues



Source: Company data, Goldman Sachs Global Investment Research

Exhibit 11: Amazon GAAP EBIT by Segment



Source: Company data, Goldman Sachs Global Investment Research

Relevant Research.

- Aug-25: "[Gen-AI Part VIII: Catalyst or Culprit?](#)"
- Aug-2: "[AMZN: Q2'24 Review: Reiterating our View on Long Term Compounded Revenue & Margin Potential](#)"
- Jul-15: "[AMZN: Framing The Upside Path to 2025 Operating Income](#)"
- Jun-24: "[Generative AI Part VI: Examining the Consumer Internet Landscape](#)"
- Jun-17: "[2024 Global eCommerce Handbook: Focus Turns to Normalized Growth and Competitive Intensity](#)"

- May-17: "[Americas: Technology: Internet & Interactive Entertainment 10 Industry Themes for 2024 & Focus Stocks Going Forward \(Mid-Year Update\)](#)"
- Oct-4-23: "[Internet: The Rise of Asian eCommerce Platforms - Framing the Impact on US eCommerce, Retail and Digital Advertising](#)"
- Apr-5-23: "[Creator Economy Primer: Assessing the Emerging Creator Economy & Short-Form Video Landscape](#)"
- Mar-26-23: "[AMZN: Framing AWS Positioning Within a Cloud Computing Landscape With an AI Future](#)"
- Mar-26-23: "[Generative AI - Part I: Laying Out the Investment Framework](#)"
- Sep-12-21: "[Initiation: US Large Cap Internet: Framing Industry Growth, Margin Dynamics & Risk/Reward](#)"

Amgen Inc. (AMGN) - covered by Salveen Richter

Catalyst rich biotech innovator

AMGN is well positioned to add several multi-billion dollar opportunities to its portfolio through a robust pipeline of drugs in development – many of which have key clinical trial read-outs in 2024 – offsetting the loss of drug patent exclusivity that accelerates in the second half of this decade for the company. Additionally, the company's acquisition of Horizon Therapeutics late last year provides instant new revenue from the drugs that are currently commercially available from this platform. AMGN has started to execute on these key pipeline read-outs; however, at current levels Richter believes the stock is only pricing in the base business of approved products, plus net debt (~\$285 per Richter's DCF) and ~\$6bn in obesity sales (~5% market penetration, post the recent positive interim update). Richter continues to see favorable risk-reward as the company is poised for further execution through a catalyst-rich 2024.

- **Obesity, I&I, and more.** AMGN is pursuing a slew of drug discovery trials that have the potential to boost revenue significantly in the years ahead. Following the recent positive interim update, look for Phase 2 data on its obesity drug offering that requires only once-per-month (or potentially less frequent) injections by YE24. Richter notes we also should see further progress on the inflammation and immunology pipeline (I&I), with Phase 3 data in atopic dermatitis in 2H24, highlighting the recent positive Phase 2 proof-of-concept data in chronic obstructive pulmonary disease (COPD; update on the Ph3 development strategy in 2H24). AMGN is also testing drugs to treat rare diseases (e.g., myasthenia gravis) where 2024 trial readouts could yield additional upside. And finally, given the remarkable pivotal data, Richter is positive on the ongoing launch of Imdeltra in small cell lung cancer following the recent FDA approval.
- **Horizon integration.** AMGN closed the acquisition of Horizon Therapeutics in 4Q23, where Richter looks for: (1) a positive inflection in sales of recently acquired drug Tepezza to treat eye disease as a label expansion grows the TAM, AMGN better targets patients who need it, and an international expansion program begins to get rolled out; and (2) multiple indication expansions (e.g., myasthenia gravis, IgG4-related disease) for Uplinza to drive longer-term growth.
- **Patent cliff smoothed.** In the second half of the decade, AMGN's patent exclusivity expires for three major drugs — Prolia (for osteoporosis; 2025), Enbrel (for rheumatoid arthritis; 2029), and Otezla (for plaque psoriasis; 2028) — which combined represent about 30% of FY24E revenue. But the pipeline of new drug opportunities (including those acquired from Horizon) represent a potential revenue stream that would more than offset this sales loss — especially if AMGN is successful in obesity.

Where we are different.

Richter dives deep into the pipeline opportunity across obesity, I&I, cancer, and rare disease to size the potential TAM as well as the probability of success in a range of

studies currently being conducted by the company. As noted above, Richter believes the Street broadly discounts or does not ascribe value to AMGN's pipeline. However, on continued execution this year and positive obesity data, Richter expects the stock to inflect not only to reflect the potential revenue opportunities (including those of the aforementioned non-obesity assets, which are not yet priced in), but also to re-rate given this would alleviate concerns around revenue replacement in the second half of the decade (note AMGN currently trades at <16x FY25 consensus EPS, just slightly above its 5-year average of ~15x, and where Richter sees significant upside).

Valuation.

12-month price target of \$370 is based on a DCF analysis (2.5% TGR, 8% WACC). Downside risks include: commercial, clinical, and regulatory risks; the potential for the market share of AMGN's established products to erode faster-than-expected as more biosimilar and generics are available; a crowded competitive landscape; pipeline programs may be unsuccessful; the failure to secure reimbursement on new drugs could limit the commercial opportunities; the potential failure to protect the company's IP portfolio; and tax litigation risk.

Catalysts.

2024 drug pipeline catalysts include: MariTide Phase 2 obesity data (late-24); rocatinlimab Phase 3 atopic dermatitis data (2H24); Uplinza Phase 3 myasthenia gravis (2H24); Tezspire update on Ph3 development strategy in COPD; fipaxalparant Phase 2 idiopathic pulmonary fibrosis data (2H24).

Key Chart.

Exhibit 12: AMGN 2024 Catalysts

Timing	Drug	Event
October 15, 2024	Uplinza	Topline Ph3 data in myasthenia gravis at MGFA
Late-2024	MariTide (AMG 133; GLP-1/GIPR)	Ph2 data in obesity with or without diabetes
2H24	AMG 451 (OX-40)	Ph3 data in atopic dermatitis
2H24	Tezspire	Update on Ph3 development strategy in COPD
2H24	Tezspire	Ph3 data in chronic rhinosinusitis with nasal polyps
2H24	Fipaxalparant (AMG 670; LPA1R)	Ph2 data in IPF

Source: Company data

Relevant Research.

- Aug-15: "[Global Healthcare: Pharmaceuticals: IRA negotiated Medicare drug price levels broadly inline with expectations](#)"
- Aug-7: "[AMGN: Uneventful 2Q EPS heading into an eventful 2H](#)"
- Aug-4: "[Americas Healthcare: Election Considerations: Drug pricing policy implications under a potential Trump administration](#)"
- Jun-10: "[AMGN: 45th Annual Global Healthcare Conference— Key Takeaways](#)"
- May-20: "[AMGN: Full Tezspire data suggests differentiated profile in COPD; Ph3 planning underway](#)"

- May-17: "AMGN: FDA approves Imdelltra for small cell lung cancer"
- Feb-25: "AMGN: Catalyst-rich 2024 could unlock several major markets"
- Jan-26: "AMGN: 2024 updates to unlock the obesity opportunity"
- Dec-11-23: "Global Healthcare: 2024 Outlook: In Search Of A Floor In 2024"

Brixmor Property Group (BRX) - covered by Caitlin Burrows

Strip center REIT with occupancy and rent upside

BRX is an underappreciated strip center REIT that has upgraded its real estate to attract new tenants at higher lease rental rates and significantly raise occupancy. The company's relatively low occupancy level (91.4% as of 2Q24) leaves a lot of room for new tenants to come in, and at higher rents than the existing cohort. Plus, the REIT's balance sheet is relatively clean at 5.6x net debt to EBITDA with leverage coming down as cash flow improves.

- **Occupancy upside.** BRX is a strip center owner with the lowest occupancy among the public companies (91.4% as of 2Q24). BRX's 2Q24 signed-but-not-occupied (SNO) level is 400bps, above its historical average of 330bps. Burrows believes this sets BRX up well to continue realizing incremental occupancy gains. Additionally, 80% of its rents are grocery anchored — providing BRX with protection from online disintermediation, as well as some protection from economic volatility.
- **Inorganic growth upside.** BRX is seeking out acquisitions, giving it the potential for another growth lever if it is successful.
- **Pricing upside.** BRX's leases are being signed at rates more than 15% higher than previous leases. And when you look at just the new leases and exclude renewals and options – i.e., the tenants that are boosting occupancy – new lease rates are +40%-50%. As demand for retail space continues to be strong and supply remains limited, Burrows thinks solid pricing trends will persist.

Where we are different.

Burrows' 2024/25 FFO estimate is 13bps/170bps ahead of FactSet consensus, driven by higher NOI primarily due to higher contributions from development and acquisitions. She believes BRX's 5-6% annual earnings (FFO/share) growth rate in each of 2024-2026 is not being appreciated by the market, but that as occupancy improvements start to be seen, the multiple could expand. With the significant SNO pipeline, 100% fixed rate debt, and consistently strong leasing spreads, Burrows sees limited downside risk to estimates.

Valuation.

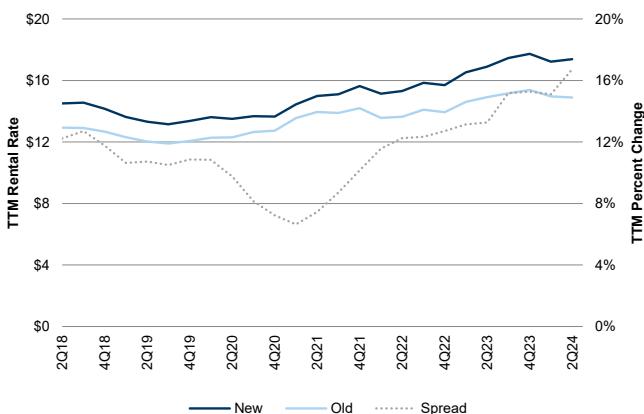
12-month price target of \$29 is based on a Q5-Q8 target AFFO multiple of 18.8x. Key risks include: deterioration in the open air retail environment with more retailer bankruptcies; lower demand for space; further increases in interest rates, increasing BRX's interest expense; slower recovery in the transaction markets leading to uncertainty around cap rates and valuation; and lower stabilization of reinvestment projects and/or lower average NOI yields.

Catalysts.

Earnings beats, guidance increases, announcement of accretive acquisitions.

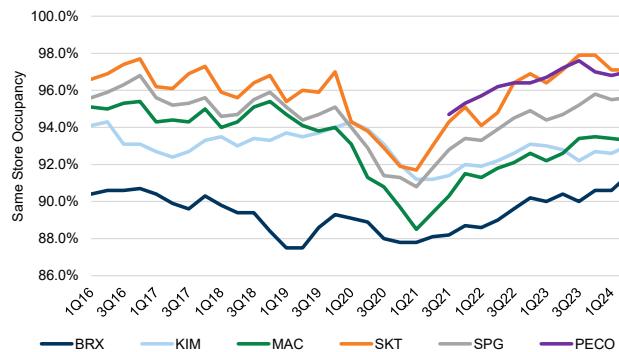
Key Charts.

Exhibit 13: TTM leasing spreads continue to be strong
TTM spread on new, renewal, and option leases by quarter, 2Q18-2024



Source: Company data, Goldman Sachs Global Investment Research

Exhibit 14: BRX has ample opportunity to continue increasing its occupancy
Retail REIT occupancy over time



Source: Company data

Relevant Research.

- Jul-31: "BRX: Increasing estimates: seeing the impact of the large SNO pipeline and below-market rents"
- Jun-4: "BRX: NAREIT management meeting takeaways; Buy (on CL)"
- May-20: "BRX: 1Q24 Update: Portfolio quality continuing to improve"
- Mar-6: "BRX: 4Q23 Update: Robust leasing and reinvestment pipeline driving growth"
- Nov-14: "BRX: NAREIT management meeting takeaways; Buy"

Citigroup Inc. (C) - covered by Richard Ramsden

A top- and bottom-line accelerator with upside cash return optionality

Citi is pulling three levers to drive outsized growth over the next three years that push our EPS estimates 4%/12% above consensus for 2025E/26E, putting the bank on a path to a ~10.2% ROTCE in 2026E (~90bps ahead of Visible Alpha Consensus Data expectations) — and driving upside to the shares for a stock that is currently trading at only ~0.7X P/TBV. The three levers: 1) accelerating topline growth by ~300bps per year; 2) cutting costs across a range of businesses; and 3) freeing up capital through strategic divestments to return capital to shareholders. Essentially, Citi can grow revenue and deliver on expense reductions simultaneously, and there is significant capacity for Citi to either buy back stock or expand its balance sheet, especially if Basel 3 Endgame (B3E) rules change materially.

- **Top-line growth.** Look for Citi to drive ~4% CAGR in its topline through 2026E (an acceleration from the 1% CAGR seen over the past 4 years). Key drivers to the acceleration: 1) solid fee growth in Services business as it leverages its global footprint; 2) capital markets expansion supported by modest wallet share gains across products (prime brokerage) as well as growth in M&A and underwriting; and 3) robust card volume growth supporting topline strength in its branded US credit card segment and retail services.
- **Execution.** Citi has announced a business simplification and reorganization strategy that has the potential to reduce the company's expense run-rate by \$2-\$2.5bn by 2026 — helping to lower Citi's expense ratio to ~60% (2019 levels). Key opportunities for expense control include headcount reductions (20,000 through 2026; ~8% of total as of 4Q23), technology and efficiency gains, and eliminating 'stranded costs' in the wake of the successful exit from non-core international consumer franchise businesses.
- **Free up capital.** Look for Citi to exit its remaining non-core international consumer franchise, freeing up capital to be deployed in higher yielding operations elsewhere. And if Basel 3 Endgame regulations are changed, Ramsden sees a path to notably increasing capital returns at Citi above our current forecast. Although Ramsden does not expect Citi to increase capital returns to a pre-COVID level in the near term, he does forecast that the bank will increase capital returns modestly YoY, mostly through buybacks (+\$0.5bn/+\$4.5bn YoY in 2024E/25E) as they benefit from continued improvement in earnings, RWA optimization, and business exits.

Where we are different.

Ramsden's 25E/26E efficiency ratio forecast is ~55bps/150bps below the Street, as he looks for the bank to achieve its efficiency goals. Plus, Ramsden's forecasts imply ~100bps of greater revenue CAGR than consensus through 2026 on ~100bps/200bps/100bps stronger Services/Banking/US Personal Banking revenue growth CAGR. Combined this drives 25E/26E EPS 4%/12% above Street estimates and ~30bps/90bps higher 25E/26E ROTCE.

Valuation.

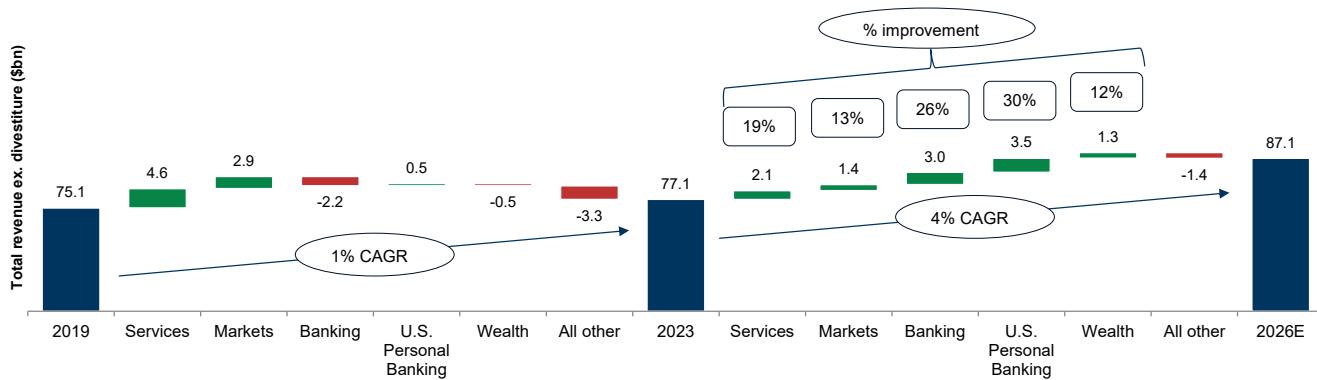
12-month price target of \$75 based on a target 2025e P/E of 10.0X. Downside risks include failure to realize target expense savings; slower revenue growth; higher credit card losses; international business underperformance; deterioration in global economy; lower than anticipated capital distribution authorizations.

Catalysts.

Citi's solid 1H24 performance and management's confidence to meet 2024 guidance despite the recent OCC and Fed regulatory actions, which Ramsden thinks is important to the overall topline revenue growth trajectory and ROTCE target. In addition, Ramsden believes that Citi should be a major beneficiary of any watering down of the Basel 3 proposals given that it could accelerate share buybacks.

Key Chart.

Exhibit 15: Ramsden expects total revenue to grow ~4% CAGR to 2026E, largely led by growth in Services and US personal Banking



Source: Company data, Goldman Sachs Global Investment Research

Relevant Research.

- Jul-29: "[Americas Banks: 2Q24 in pictures; outlook for 2H24 and into 2025](#)"
- Jul-12: "[C: Still on track to meet 2024 guidance despite the recent OCC and Fed regulatory actions](#)"
- Jul-1: "[Americas Banks: 2024 CCAR: Interim SCBs broadly in line with expectations although dividend increases are a bright spot](#)"
- Jun-20: "[C: Strategic transformation plan gains momentum, with cost of capital returns now in sight](#)"
- Jun-18: "[C: 2024 Services Investor Day First Take: Reiterated FY24 and medium term guidance, with more details in core business growth](#)"
- Mar-14: "[Citi: Upgrade to Buy \(from Neutral\): Path to higher returns and compelling valuation support](#)"
- Jan-15: "[Citi: Encouraging guidance but uncertainty remains around longer term ROTCE path](#)"

Conagra Brands Inc. (CAG) - covered by Leah Jordan

Positioned to grow in grocery store driving strong FCF that provides capital flexibility

Conagra has a well-positioned frozen and snack portfolio that aligns with current convenience and consumption trends, while exposure to private label risk appears better than feared. CAG also has an attractive valuation with the highest FCF yield in the food sector. Additionally, favorable changes that management has made to CAG's portfolio – revitalizing brands – are still underappreciated by the Street (even though many are five years old or longer) as much of the impact of new initiatives was masked by unusual food buying patterns during and just after the pandemic.

- **Market-leading frozen food presence has defensible moats.** Frozen food is a compelling category that should continue to gain share of stomach given its blend of convenience, taste, and value, while quality has improved over the years supported by innovation. Look for further innovation to boost growth as CAG ventures into snacks, appetizers, popables, handholdables, and dessert novelties. And while private label is big in frozen foods, Leah Jordan thinks that CAG's market leading presence and over-exposure to sub-categories with less private label competition make it less vulnerable to pricing pressure than many expect.
- **Distribution expansion opportunity in snacks.** CAG's snack portfolio is over-exposed to the fastest growing sub-categories – meat snacks, seeds, and microwave popcorn – where consumers are looking to increase protein and reduce carbs. Beyond product innovation, look for CAG to expand distribution through incremental channels and store level penetration efforts focused on Slim Jim, specifically.
- **Outsized FCF growth helped by operational improvements.** Leah Jordan forecasts solid FCF generation over the next few years, tracking solidly higher than its historical rate given operational improvements. As a result, the company has flexibility to invest in its business, support its dividend, and make further progress on its debt reduction plans.

Where we are different.

Jordan's analysis suggests competition from private label is lower than feared. Evaluating the top categories where private label is gaining share, CAG has the lowest sales exposure to those categories across her coverage while the company has been holding share within them as well. She also leverages her bottoms-up input costs analysis which suggests CAG's cost pressures are lower than current consensus expectations. Jordan's 2025E EPS sits 3% ahead of FactSet consensus.

Valuation.

12-month price target of \$36 is based on a risk-reward framework with 50/50 blend of target P/E with downside/base/upside of 11x/12.5x/14x and target EV/EBITDA with downside/base/upside of 9.5x/10.5x/11.5x, noting both sets track relatively in-line with the company's 1/3/10-year averages. Risks include: the economy and consumer

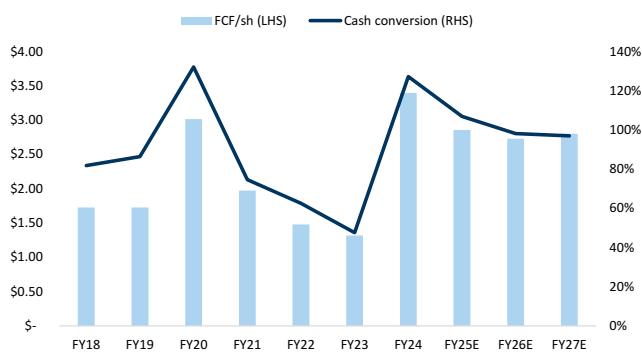
spending; consumer shifts away from food-at-home or frozen food; lower-than-expected execution on cost cutting efforts; failed innovation; and higher input costs.

Catalysts.

CAG's earnings results should be important for the stock as the Street focuses on its ability to execute. Next earnings: October 3rd (FactSet estimate).

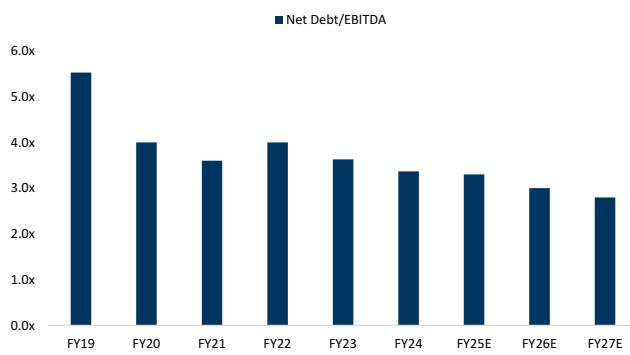
Key Charts.

Exhibit 16: CAG's strong FCF generation provides flexibility, including support for its debt reduction plans
CAG FCF metrics



Source: Company data, Goldman Sachs Global Investment Research

Exhibit 17: Jordan forecasts further debt reduction for CAG towards its 3.0x target
CAG leverage



Source: Company data, Goldman Sachs Global Investment Research

Relevant Research.

- Aug-12: "Americas Food: Category exposure is key as the competitive environment normalizes; Buy CAG, GIS, MDLZ; Sell HSY, KHC"

Enphase Energy Inc. (ENPH) - covered by Brian Lee

Renewables facilitator lapping inventory de-stocking with a tailwind from batteries

ENPH is poised to continue its recovery as 2Q24 results confirm 1Q24 was an inflection point in demand. Brian Lee believes that inventory issues within the US, that were largely due to the large slowdown in installations spurred by higher interest rates and NEM 3.0 in California, have been worked through and growth expectations have largely been reset. As under shipping is largely complete as of 2Q24, Brian Lee believes that the inventory channel is now normalized which will be a further tailwind to the revenue as ENPH ships into a more normalized demand environment. Furthermore, as US manufacturing ramps up, the company will benefit from increasing amounts of domestic manufacturing credits, boosting margins and profitability. Additionally, the company's still nascent home battery segment is poised to benefit from changing residential electricity economics that make it more profitable to store electricity at home than sell it back to the grid at certain times of day.

- **Inventory de-stocking cycle complete.** 2Q24 results largely seen as good enough and commentary on inventory destock being largely complete, confirms 1H24 was the bottom after about a year of destocking and demand headwinds. Brian Lee continues to see more sustained growth in 2H24 and 2025 as easing comps, green shoots in resi solar installs, declining interest rates, and increasing power demand all culminate to confirm ENPH will continue on track to see a more meaningful topline recovery over the coming quarters. Furthermore, sales outside the US continue to progress well as ENPH enters new geographies to further pursue geographic expansion plans.
- **Duopoly inverter market provides protection.** ENPH guided margins up ~140bps at the mid-point qoq with core margins flat qoq. Brian expects continued strength in battery sales to be a tailwind to revenue but might limit core margin expansion until microinverters growth rebounds in a more meaningful way. Still, we believe the company's technology commands a premium and continued margin expansion highlights the strength of pricing power in an inverter industry where 85% of revenue goes to only 2 suppliers. And as the cyclical recovery in US resi solar takes hold, these higher margin microinverter sales (vs. whole home batteries) should further boost profitability.
- **Whole home batteries poised to grow fast.** ENPH has enjoyed strong demand for its whole home battery since introducing it earlier this decade. But Brian Lee sees an opportunity to accelerate battery sales with inverter installations as customers look to optimize their total grid cost under new electricity net metering rules in California and reduce paybacks. ENPH noted recently that in California, under the state's new net metering rules, installations inclusive of battery component (attach rate) is north of 90%.

Where we are different.

Lee's F2024E-F2025E EPS forecasts sit 6%-16% above FactSet consensus as he

continues to see potential for share gain vs. peer SEDG and limited pricing competition enabling ENPH to maintain sector-leading gross margins, while the company also stands to incrementally benefit from US production that further adds IRA credits to margin upside going forward.

Valuation.

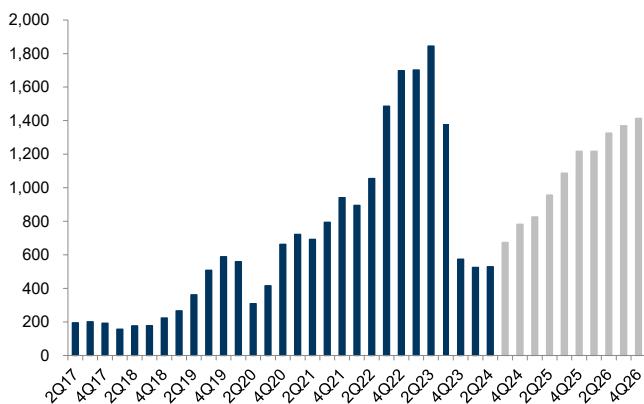
12-month target of \$170 is based on a target P/E multiple of 27.5X applied to the GS Q5-Q8 EPS estimate, and adding back ~\$7 of net cash per share. Key risks include lower-than-expected revenue growth and margins, changes in the competitive and technology landscape, US-China tariffs, and abnormal inventory builds across the channel.

Catalysts.

3Q24 sales.

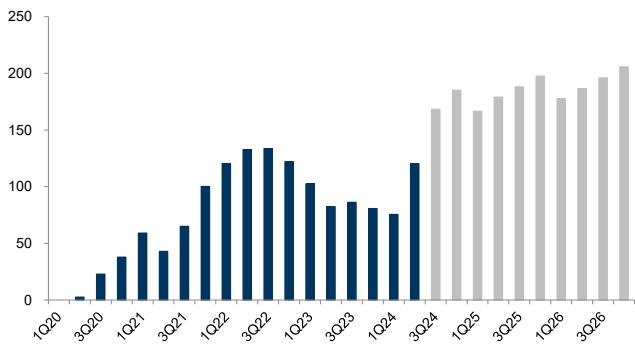
Key Charts.

Exhibit 18: Lee expects a -51% yoy decline and a 27% qoq increase in microinverter shipments in 3Q24
MWac shipped per quarter, 2Q17-4Q26E



Source: Company data, Goldman Sachs Global Investment Research

Exhibit 19: Lee expects battery shipments to increase 40% qoq in 3Q24



Source: Company data, Goldman Sachs Global Investment Research

Relevant Research.

- Jul-24: "[ENPH: The cleanest print and guide in some time; 2H24 recovery appears on track; Buy](#)"
- Jul-22: "[Inflation Reduction Act 2.0: Assessing potential implications of November election](#)"
- Jun-20: "[ENPH: Takeaways from investor meetings; remain Buy \(on CL\)](#)"
- Jan-5: "[ENPH: Energy, CleanTech & Utilities Conference — Key Takeaways](#)"
- Dec-17: "[Solar 2024 Outlook: Resi recovery, while utility-scale opportunities still abound](#)"
- Apr 4, 2022: "[Solar Takeaways: West coast solar and storage bus tour](#)"

Fox Corp. (FOXA) - covered by Michael Ng

Deep value pureplay news and sports organization

The US media industry is in a state of transition fueled by increasing competition in content and enabled by new distribution channels. Against this backdrop, Michael Ng favors companies with deep competitive moats including Fox Corporation (FOXA), whose sports and news focused network portfolio is more resilient to cord-cutting pressures. FOXA trades at a discount to peers, when accounting for the underappreciated value of its strategic/unconsolidated assets. Ng's 2025 EBITDA estimate is 12% above Street consensus.

- **Sports and news provide insulation to linear headwinds.** 100% of FOXA's cable network EBITDA is exclusively in sports and news, a format where TV still excels relative to streaming. Due to their 'must-have' nature within FOXA's focused portfolio, Ng believes Fox News Channel (FNC), Fox Sports 1 (FS1), Fox Sports 2 (FS2) are more resilient to cord-cutting pressures compared to peer networks.
- **Political tailwinds and cost prudence drive near-term TV upside.** FOXA's Television should contribute \$750-\$800mn of EBITDA, on average, over the next 6 years (F2024E-29E) with political advertising and the timing of sports events resulting in some EBITDA cyclical in certain years. Additionally, a record 2024 political season (per SNL Kagan) should contribute an incremental \$280mn of political advertising revenue (vs. \$250mn in the 2020 election).
- **Underestimated unconsolidated net asset value.** Ng estimates that FOXA has ~\$5.5bn of unconsolidated asset value comprised of 4.3mn shares in Flutter; option to acquire 18.6% of FanDuel with a \$4bn strike (as of F23) and 5% annual escalator with an intrinsic gross value of ~\$2.1bn (GSe); the Fox Studio lot (GSe \$2.0bn gross value); the tax shield associated with step-up in cost basis for the sale of assets to Disney (GSe \$2.3bn); and net of minority interests in consolidated businesses (e.g., 39% outside ownership of Big Ten Network).

Where we are different.

Ng estimates F2025 EBITDA of \$3.4bn, which is 12% ahead of consensus of \$3.0bn driven primarily by upside to Television EBITDA. In F2025, Television EBITDA should benefit from political advertising revenue, the Super Bowl, ongoing retrans/reverse growth, lower Tubi losses, and sports rights optimization (e.g., no WWE), which should more than offset core advertising declines. Ng's above consensus estimates are informed by his analysis of sports rights.

Valuation.

12-month target price of \$44 reflects 5.0X Ng's NTM+1Y EBITDA and the value of unconsolidated investments. Key risks include: Faster than expected cord-cutting; Failure to renew carriage agreements with pay-TV distributors or longer than anticipated blackouts; Rising programming costs, notably sports rights; Macro/economic weakness; Fluctuations in FLTR's operating performance and FanDuel's valuation; Intensifying

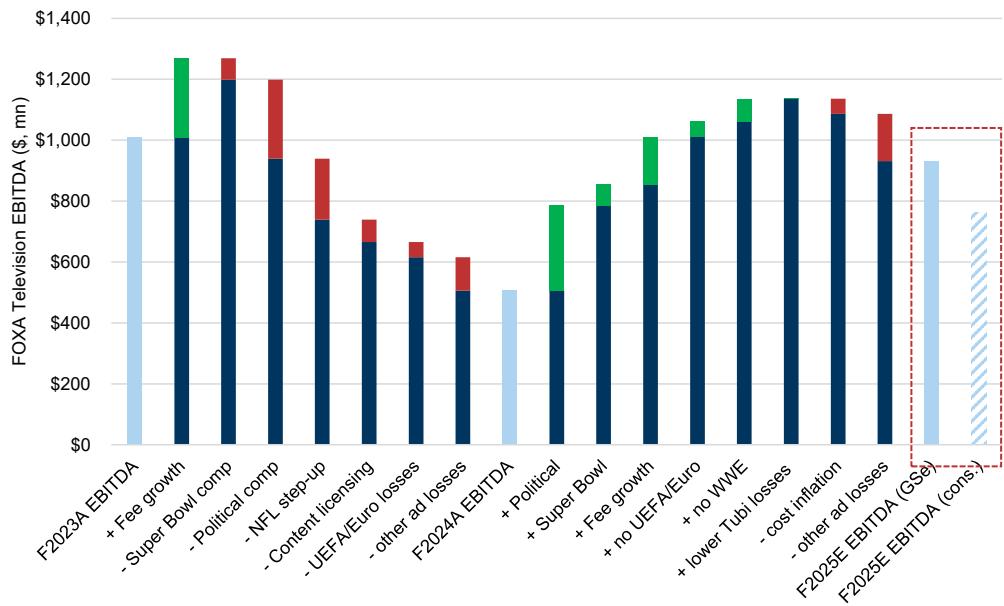
competition.

Catalysts.

Key catalysts should be the political advertising cycle in C2H24, Super Bowl LIX in 2025, and any realization of strategic asset values.

Key Chart.

Exhibit 20: Ng sees upside to FOXA F2025E Television consensus EBITDA given several tailwinds
FOXA Television F2023A to F2025E EBITDA bridge (\$, mn)



Source: Company data, Goldman Sachs Global Investment Research, Visible Alpha Consensus Data

Relevant Research.

- Aug-20: "[Americas Media: TV Viewership Tracker: C3 through week ending August 4th, 2024](#)"
- Aug-6: "[FOXA: F4Q24 review: Growing confidence in F2025 EBITDA upside; reiterate Buy \(on CL\)](#)"
- Jul-9: "[Americas Media: Investor feedback to US Media initiation](#)"
- Jun-24: "[Americas Media: Initiate DIS, FOXA, and CMCSA at Buy; WBD and STGW at Neutral; PARA at Sell](#)"

Insmed Inc. (INSM) - covered by Andrea Tan

A product portfolio company emerging - at an inflection point

INSM is on the verge of becoming a 3-tiered multi-product commercial-stage biotech company with an initial focus in rare pulmonary diseases – an inflection point that has traditionally led to more predictable earnings and multiple expansion for Biotech stocks. The company's existing in-market drug – Arikayce in refractory NTM – continues to grow and there are expansion opportunities into earlier line settings. Additionally, Andrea Tan believes INSM has the potential to add two more drugs to its commercial stage portfolio over the next few years, creating a powerful earnings engine that should also be attractive to potential Biopharma companies looking to replace depleting drug portfolios.

- **Market expansion opportunity for brensocatib.** INSM's brensocatib treatment for bronchiectasis – a pulmonary disease – already received positive Phase 3 trial results, but Tan believes the drug is still underestimated in both how it can treat patients across the disease severity spectrum and its potential reach. Brensocatib is an oral once daily tablet that reduces pulmonary exacerbations, slows lung function decline, and improves quality of life, while being safe and well tolerated. And Tan's KOL (doctors who treat patients with bronchiectasis) conversations suggest rapid prescribing for severe bronchiectasis patients and immediate interest in expanding use to mild/moderate patients which could more than double the addressable population. The drug also has the potential for expansion into additional adjacent neutrophil-mediated diseases, including asthma, COPD, CRSsNP, HS, lupus, and rheumatoid arthritis.
- **Strong catalyst path for TPIP, laying the groundwork for a third blockbuster.** The company's drug for pulmonary arterial hypertension (PAH) and pulmonary hypertension associated with interstitial lung disease (PH-ILD) had solid Phase 2 results earlier this year for the latter indication (Phase 2 PAH data in 2H25) with a Phase 3 registrational program scheduled to commence in 2025. Plus, Tan believes TPIP is mechanistically de-risked per competitor data with an opportunity to be a best-in-class (1x/day vs. 4x/day administration with favorable tolerability) drug.
- **INSM's commercial/late-stage pulmonary portfolio is attractive to biopharma companies.** With management estimates of \$8bn+ in peak sales for Arikayce, brensocatib, and TPIP (GSe of \$8.2bn for Arikayce and brensocatib alone), INSM is an attractive target for biopharma companies with upcoming loss of drug patent exclusivities looking for near-term revenue.

Where we are different.

Tan conducted a round of KOL checks for refreshed views on brensocatib's clinical profile, and how physicians would utilize the drug, assuming approval (in mid-25). Based on her conversations, she conservatively estimates a peak global sales opportunity in bronchiectasis of \$5.9bn in 2034 (above management's estimates of \$5bn+), and sees scope for significant upside given multiple levers (penetration, addressable population, and range of pricing). Tan also thinks the Street is not yet fully appreciating the

magnitude of the opportunity, and expect there to be a re-rating as (1) additional data from the Ph3 ASPEN study are presented alongside supportive KOL commentary (next disclosure at CHEST 2024 meeting (Oct 6-9) and (2) details on the label, pricing strategy, and launch plans emerge upon approval (mid-25).

Valuation.

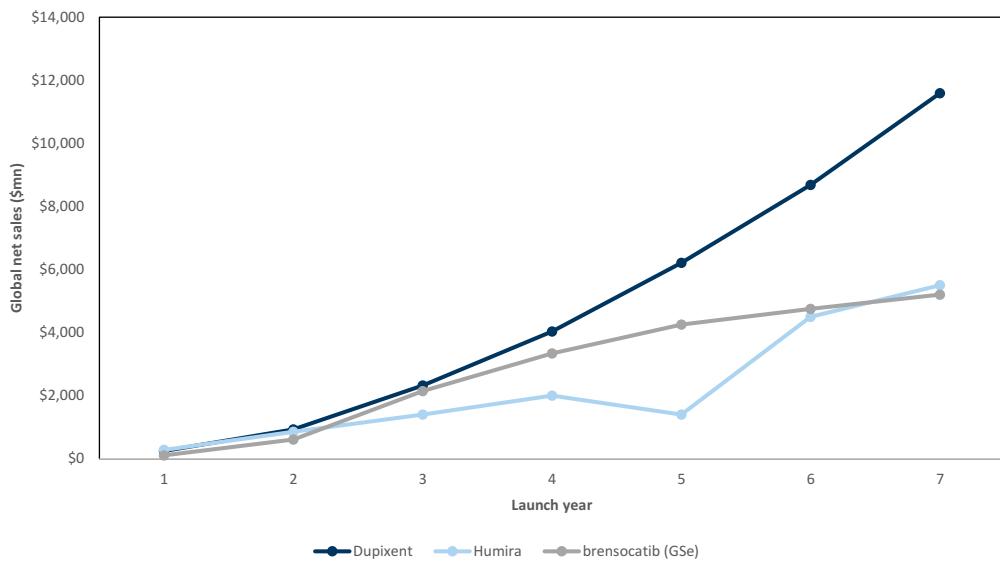
12-month price target of \$103 based on a 70%/30% blend of DCF value of \$92 (12% WACC; 2% TGR) and M&A theoretical value of \$128 (11x 2027E sales based on historical multiples on biotech transactions, consistent with the framework used across the Goldman Sachs biotechnology coverage). Downside risks include: i) Clinical/technology risk: Negative trial outcomes could put pipeline assets at risk and failure to expand use in additional indications would limit the commercial opportunity; ii) Regulatory risk: Failure to obtain regulatory approvals could lead to a lack of commercial success in the US and ex-US and pose significant downside risk to our sales estimates; iii) Competitive risk: potential competitive threats across multiple indications. Should patents be challenged, commercial success could be at risk. iv) Financing risk: INSM is not currently profitable and will likely need to turn to the capital markets to fund operations (e.g. R&D expenses for asset development and clinical trials; SG&A costs to support hiring of additional personnel). Failure to raise additional funding would be an impediment to INSM's ability to complete development and commercialization of product candidates.

Catalysts.

Additional Ph3 ASPEN data (subgroup analyses) at CHEST 2024 (Oct 6-9); brensocatib NDA filing (by YE) and approval (mid-25) in bronchiectasis; Ph2 brensocatib data in CRSsNP (2H25); Ph2 TPIP data in PAH (2H25); and Ph3 Arikayce ENCORE data in 1L NTM (1Q26).

Key Chart.

Exhibit 21: Early projected launch trajectory for brensocatib compared to Dupi and Humira
 Brensocatib sales for non-CF bronchiectasis only



Source: Data compiled by Goldman Sachs Global Investment Research

Relevant Research.

- Aug-9: [INSM: Solid Arikayce quarter, though brensocatib opportunity continues to take center stage](#)
- July 10: [Framing brensocatib's blockbuster opportunity; Raising PT to \\$102](#)
- June 11: [45th Annual Global Healthcare Conference— Key Takeaways](#)
- June 4: [Commercial event outlines the path to \\$8bn+ peak sales](#)
- May 28: [Positive Ph3 ASPEN data unlocks \\$3bn+ opportunity](#)
- May 15: [Increased conviction into imminent ASPEN data](#)

International Business Machines Corp. (IBM) - covered by Jim Schneider

Underappreciated Tech transformer with a software business positioned to grow

IBM is on track to complete its pivot to long-term growth driven by stronger software performance and market share gains in consulting — a combination which should drive upside to earnings and multiple expansion. Look for the company to improve its mix of infrastructure software assets focused on open-source and AI offerings aimed at driving enterprise business transformation. At the same time, IBM's uniquely complementary consulting business is decisively gaining market share.

- **Underappreciated software strength.** Look for IBM's Software segment to compound at a 6%-7% CAGR (including M&A) as the company realizes tailwinds from recent acquisitions and AI initiatives. IBM has undertaken a significant overhaul in its software portfolio and growth has improved markedly following IBM's acquisition of Red Hat in 2019, in contrast to consensus expectations. In addition, IBM's organic investments in AI offerings (WatsonX) have finally begun to pay dividends, and Schneider thinks its integrated software/service offerings and use of open-source LLMs are a compelling differentiator that provide a competitive edge in client engagements.
- **A low bar to clear.** As its software business grows faster than Consulting, look for Software to grow to 65% of gross profit over the next few years — and Software carries a higher multiple than Consulting given its superior revenue visibility. And even its cyclical hardware business is heading towards a product cycle that should boost revenue in 2025 with the IBM Z-series.
- **Consulting segment set to surprise to the upside.** IBM is poised to sustain a 5%-6% revenue CAGR in its Consulting segment over the next few years. The company is on track to gain a meaningful amount of share in the IT Services market over the next two years, driven by the expansion of its relationships with Amazon, Microsoft, Salesforce, Oracle, SAP, and Adobe. Improved performance is coming as a direct result of the revitalization of IBM's software partnerships over the past 3-4 years which was catalyzed by IBM's leadership change.

Where we are different.

Schneider is modeling faster and more sustainable Software segment growth than the Street expects, and also believes the Street is under-modeling the impact of IBM's z-series mainframe refresh in 2025.

Valuation.

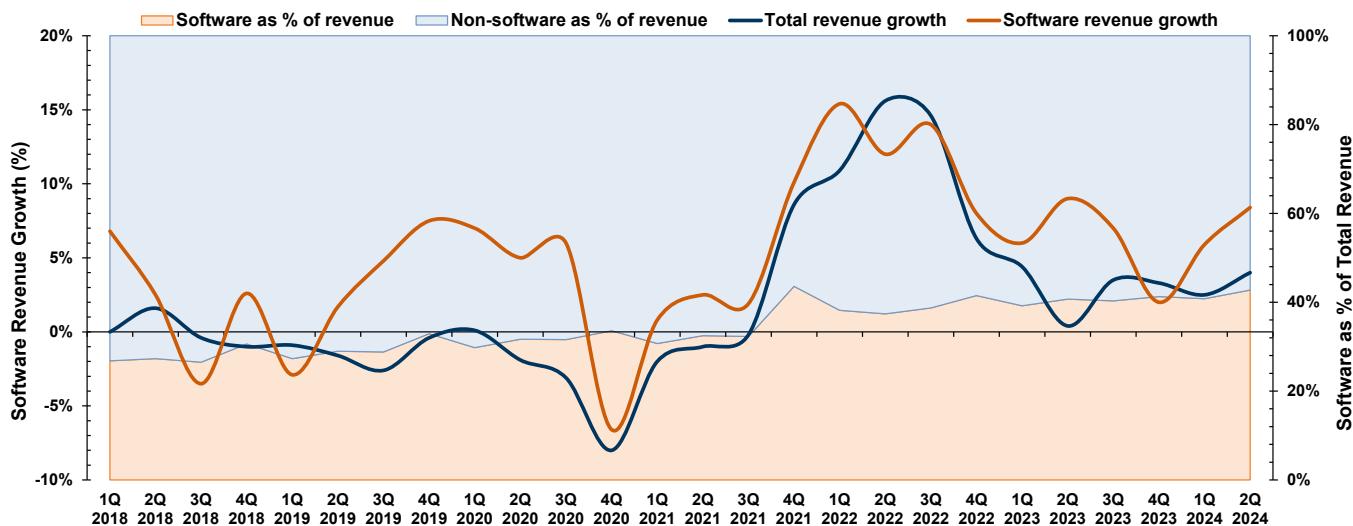
12-month price target of \$220 is based on a target P/E of 18X forward one-year earnings. And 18X target multiple represents a premium to IBM's historical range given improving revenue growth and free cash flow dynamics, as well as greater visibility as execution continues to improve. Downside risks: 1) cyclical headwinds in software, 2) further slowdown in consulting, 3) AI bookings deceleration, 4) dilutive M&A.

Catalysts.

Quarterly results showing gross profit share improvement; Z-series launch in 2025; Consulting client wins; further momentum in Gen-AI Software and Consulting revenue beyond the \$2 bn of bookings already achieved

Key Chart.

Exhibit 22: Top-line growth has markedly improved following Red Hat acquisition in 2019, with a richer mix of software revenue



Source: Company data, Goldman Sachs Global Investment Research

Relevant Research.

- Aug-24: "[IBM: Takeaways from management meetings](#)"
- July-24: "[IBM: Upside in software, better margins, and AI bookings should drive the stock higher - Buy](#)"
- June-24: "[IT Services Initiation: Cyclical or Secular? Near a fundamental bottom; we see compelling risk/reward in IBM, GLOB](#)"

Kinder Morgan Inc. (KMI) - covered by John Mackay

Core business inflecting, with underappreciated long-term tailwinds from growing Natural Gas demand

John Mackay believes the US natural gas infrastructure company is at an inflection point, especially in its core business, as re-contracting headwinds dissipate and operating leverage to improving gas demand materializes, with additional support from better overall execution. Mackay also looks for growth from KMI's project backlog and improving project returns, particularly as KMI should benefit from growing power demand in the US, driven by AI adoption and data center growth.

- **Core Business Inflecting.** Mackay believes KMI's core business is set to turn a corner after several years of re-contracting and more recent other one-off headwinds. KMI recently reported in-line 1Q24 results and maintained guidance, despite those latter headwinds coming into play, which Mackay believes is indicative of strong underlying operating performance in KMI's core asset base. From here, Mackay expects the business to see positive operating leverage across its core natural gas pipeline and storage assets as gas demand continues to grow.
- **Beneficiary of growing power demand.** In addition to more 'traditional' growth projects, Mackay and the broader Resources team see data center-driven power demand to fuel ~3.3 bcf/d of incremental natural gas demand by 2030, or a ~10% increase in the amount of gas consumed in the power market today. Mackay believes this growth could require the construction of ~6.1 bcf/d of new pipeline capacity, and these projects could provide another ~2% incremental growth for KMI over the next several years.
- **Strong project backlog.** Mackay highlights KMI's improving business mix shift toward its core natural gas business through its natural gas-focused backlog where projects include gas pipelines to support LNG exports, exports to Mexico, backstops for renewables intermittency, continued Permian Basin production, and re-emerging industrial demand on the Gulf Coast. Recent meetings with management at the EIC conference added to Mackay's conviction that KMI is well positioned to capture incremental growth from these demand themes where focus remains on a potential near term announcement of additional Permian gas takeaway as well as gas storage, Texas to Louisiana connectivity, and data center demand opportunities. Notably, these projects should come with longer contract tenures, higher rates, and more favorable project economics vs. KMI's historical realized returns; Mackay believes the market is implying KMI will capture only ~12% returns on capex in the current backlog vs. management's guidance of 20%+.

Where we are different.

Relative to investor conversations, Mackay continues to have more conviction in the strength of the core gas business, particularly his view that KMI has finally exited its 7-8 year period of recontracting headwinds – and that improving natural gas demand growth at YE24 should support further the inflection. Looking out, Mackay believes that higher

investor confidence in the resilience and quality of underlying earnings should also bring higher confidence in the growth outlook, particularly around KMI's ability to win new projects and to realize strong returns on them.

Valuation.

12-month price target of \$23 based on a 10x multiple to Mackay's 2025 EBITDA estimate. Key downside risks include: 1) Slower-than-expected ramp in natural gas demand, 2) new unexpected re-contracting headwinds, 3) worse-than-expected rate gas headwinds for TGP, 4) lower-than-expected returns on new projects, 5) execution on RNG strategy, 6) lower commodity prices, especially for oil given the impact on the EOR business, 7) high-multiple acquisitions, and 8) over extension of balance sheet capacity for buybacks or new projects.

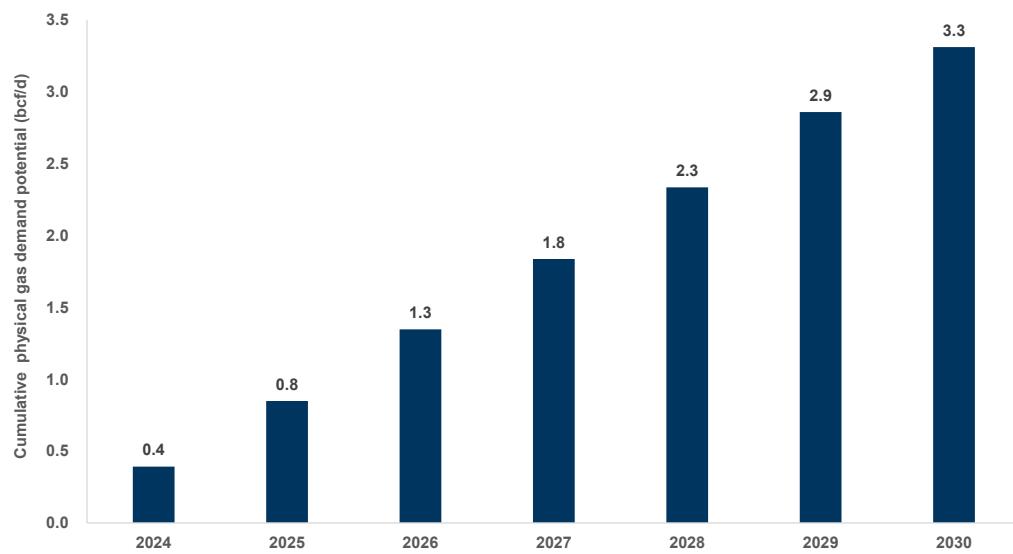
Catalysts.

Mackay expects new natural gas projects to be announced over the coming months, including storage to support LNG demand and pipelines to serve Permian gas growth – as well as potential new projects to bring gas to utility customers to serve new data center demand. Beyond projects, he looks to 2Q and 3Q results for confirmation that performance of the core business continues to improve.

Key Chart.

Exhibit 23: Mackay sees incremental data center power demand driving ~3.3 bcf/d of new natural gas demand by 2030

Potential incremental physical gas demand, cumulative (2024E-2030E)



Source: Goldman Sachs Global Investment Research

Relevant Research.

- Jul-25: "KMI: Further Drill-Down on 2Q Largely Confirms Softness is Transitory; Medium-to-Long-Term Growth Intact"

- Jul-2: "[Research Unplugged: Takeaways from our Power Demand & Data Center Day](#)"
- Jun-11: "[Americas Pipelines and MLPs: Basin by Basin Pipeline Infrastructure Update - FIDs Needed for Permian Gas, and Potentially the Haynesville](#)"
- May-19: "[Americas Pipelines and MLPs: Ten Key Themes, Plus Company Question Lists Ahead of EIC Conference](#)"
- May-16: "[Americas Pipelines and MLPs: Data Center Power Demand - Key Investor Feedback on Natural Gas Infrastructure Opportunities](#)"
- Apr-28: "[Generational Growth: AI, data centers and the coming US power demand surge](#)"
- Mar-14: "[KMI: Revisiting the Bull Case: Leverage to Gas Demand Growth, Improving Project Returns, Modest Re-Rating](#)"
- Jan-25: "[KMI: 2024 Analyst Day Recap: Underlining Their Leverage to Natural Gas Demand Growth - Buy](#)"
- Oct-4-23: "[Americas Pipelines and MLPs: Reinstating Coverage on North America Midstream Energy - Shifting from Macro to Micro Differentiation.](#)"

Global-E Online Ltd. (GLBE) - covered by Will Nance

Value added FinTech company with exposure to some of the fastest growing segments of eCommerce

Will Nance believes the cross-border e-commerce payments and logistics company provides attractive exposure to some of the fastest growing segments of eCommerce: cross-border eCommerce and Direct-to-Consumer (DTC) eCommerce. Look for GLBE to accelerate organic revenue growth into 2H24 and into 2025 as it benefits from a stabilizing consumer backdrop, product enhancements to its existing Shopify Markets Pro (recently renamed Managed Markets), a robust pipeline of new partnerships, and improving profitability.

- **Ramping Shopify Markets Pro/Managed Markets.** Nance expects a growing contribution from Shopify Markets Pro/Managed Markets— GLBE's white labeling 'merchant of record' offering for Shopify (SHOP)— as planned product enhancements over the next 2-3 quarters should open the product aperture up to account for larger mid-market sellers on the markets pro product. Look for >\$200mn in Markets Pro GMV this year.
- **Robust Partnership Pipeline.** GLBE has a strong pipeline of new partnerships — which also tend to be very sticky — as it continues to grow and diversify its business beyond SHOP, which should drive a revenue reacceleration in 2H24. Look for two more large merchants, as well as a number of smaller ones to come online by the end of year.
- **Improving profitability.** Look for the combination of ramping contributions from Shopify Markets Pro, the addition of multiple new clients, a stable consumer backdrop, and improving take rates to drive <\$5bn in GMV this year and double-digit revenue growth over the next 5-7 years.

Where we are different.

Nance's bottom up math on the company's Shopify partnership supports the company reaching >\$200mn in Markets Pro GMV this year and up to ~\$600mn in 2025, which should further support growth rates into next year. Additionally, recent management commentary on pipelines into next year also gives us confidence on execution through 2024. Finally, Nance's 2025 and 2026 EBITDA estimates are ~3.5%/8.4% above Bloomberg consensus.

Valuation.

12-month price target of \$43 based on a ~32x multiple on Nance's Q5-Q8 adjusted EBITDA estimates. Key downside risks include adverse regulation, high vendor concentration, increased competition, and supply chain constraints.

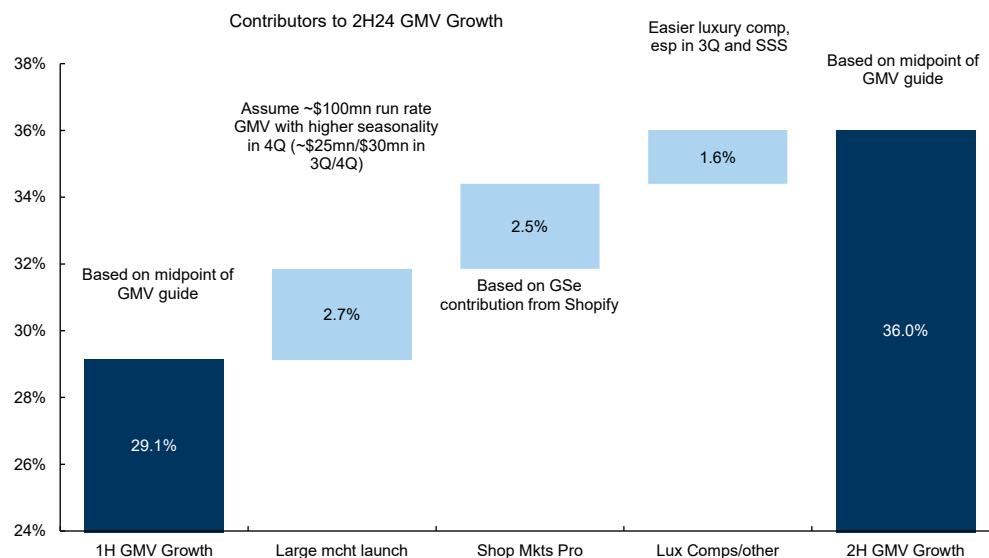
Catalysts.

The launch of two large merchants in 2H, as well as updates on traction with SHOP given the recent SHOP updates around Markets Pro/Managed Markets. Additionally,

GLBE management commentary points to no deterioration in macro (supported by easier 2H comps for GLBE) amidst a backdrop of softer European luxury data points.

Key Chart.

Exhibit 24: Acceleration into 2H24 for GMV will be driven by large merchant go lives and the ramp of Shop Markets Pro



Source: Company data, Goldman Sachs Global Investment Research

Relevant Research.

- Aug-14: "GLBE: Key Takeaways 2Q24 EPS: Customer bankruptcy weighs on headline metrics, but underlying fundamentals remain strong"
- Jun-10: "GLBE: Key takeaways from mgmt call: robust pipeline should drive accelerating top-line into year end; Reiterate Buy"
- May-20: "GLBE: Key Takeaways 1Q24 EPS: Shares rebound on better than feared guidance"
- Jun-8-23: "GLBE: Key Takeaways from Meetings with Mgmt: Benefiting from accelerating cross border e-comm and upcoming Shopify Markets Pro launch"
- Dec-20-21: "Online payments: Initiating on attractive subsector with leverage to e-commerce growth: Buy GLBE, Sell RSKD"

Guidewire Software Inc. (GWRE) - covered by Kevin Kumar

Software Cloud transition story with a reliable customer base (P&C Insurance Companies)

Kevin Kumar believes the US software company is best positioned to benefit from a multi-decade IT investment cycle as P&C insurers – Guidewire's primary customers – seek to upgrade their Tech stack. Specifically, like so many software companies over the past decade, GWRE finds itself transitioning its customers from legacy 'on-premise' installations to more flexible (and profitable) Cloud-based applications — a transition that should enable greater visibility into future revenue, a more efficient scalable infrastructure, accompanied by strong pricing power. And Kumar believes that GWRE is reaching a tipping point in terms of product capabilities and maturity (70% of Cloud customers are in production today), which coupled with healthy macro tailwinds within the P&C insurance industry should continue to drive strong results.

- **Cloud transition driving revenue visibility.** At its analyst day back in November, GWRE indicated that it is on a path to generating \$1bn of annualized recurring revenue (ARR) by 2025 as customers adopt the company's Cloud platform offering. Kumar believes there is an upside scenario in which GWRE raises guidance for FY25 ARR after F4Q earnings in September given demand trends continue to be healthy with improvements to sales processes driving better bookings linearity YTD (cloud deals up 33% yoy).
- **GWRE's customers have cash to spend.** P&C carriers have been raising rates after regulatory approvals, in part due to elevated claims activity post-COVID. Kumar believes this eases the path towards more ambitious IT modernization projects given the amount of legacy infrastructure still in place at even the largest carriers. Kumar expects GWRE to be the main beneficiary of this trend, grabbing the lion's share of new deals from large Tier 1 & 2 carriers. GWRE's pricing is also based on a percentage of direct written premiums, which had enabled GWRE to raise pricing at renewal of contracts given broad based increases to direct written premiums within the customer base over the last 12-18 months.
- **Cloud margins are improving as platform reaches critical mass.** Also, at its November analyst day, the company illustrated how the development of a modern Cloud platform at GWRE enabled the company to grow its InsuranceSuite customer base to 100 in 2023 from 79 in 2022 – with 75%+ Cloud gross margins on incremental new ARR (vs current cloud gross margins at ~60%). Kumar sees a path for GWRE to reach 75-80% Cloud gross margins longer term, inline with other software vendors with a single/hybrid tenant model. Kumar believes this dynamic sets up a base case in which FCF can grow at a 44% CAGR over the next 3 years, among the fastest in vertical software.

Where we are different.

Kumar is modeling FY25/FY26 subscription revenue 3%/3% above consensus and EBIT margins 1%/14% above. While the margin expansion story is becoming better

understood by investors, Kumar is also more constructive on the longer term growth and serviceable obtainable market for GWRE's products relative to investor expectations.

Valuation.

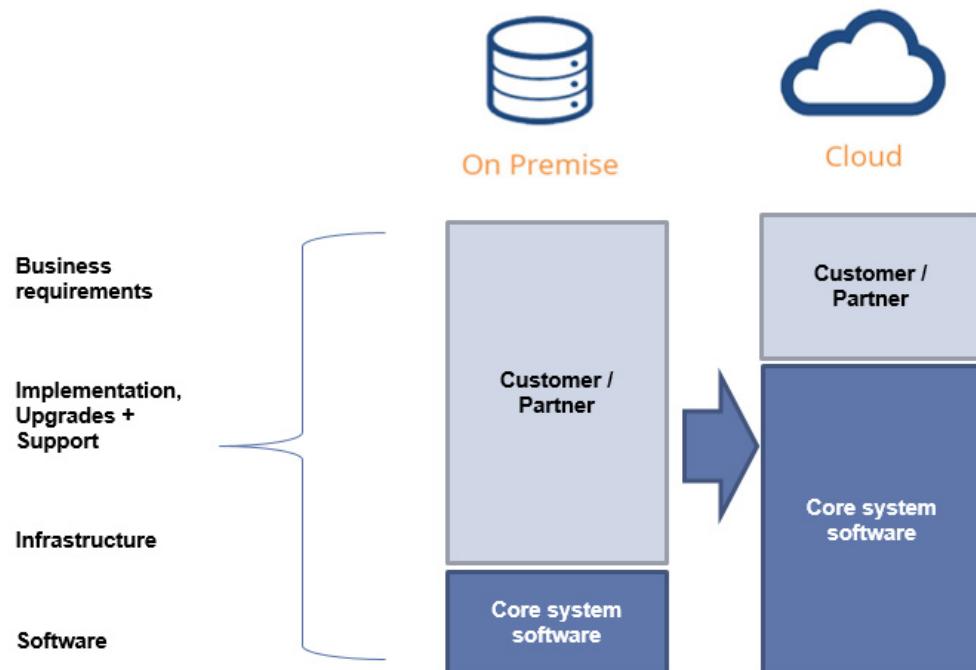
12-month price target of \$170 based on a 50%/50% weighting of a target EV/revenue multiple for Q5-Q8 of 11.5x and a DCF. GS DCF assumes an ~11% WACC, perpetuity growth rate of ~2%, a 10-year revenue sales CAGR of ~19% and CY33 operating margins of 43%. Downside risks include lower-than-expected adoption of its Cloud solution, lower-than-expected Cloud gross margin expansion, and declining sales productivity.

Catalysts.

4Q24 earnings results on September 5th, where Kumar expects the company to announce new Tier 1 & 2 customer wins as well as additional migration deals (historically GWRE's most active quarter for closing cloud deals). GWRE will also be hosting an Analyst Day on October 10th, where Kumar expects updates to medium term targets for both topline growth and margins. Lastly, Kumar expects increasing uptake of Guidewire's analytics modules (HazardHub and Predict) driven by growing demand among carriers to improve risk selection to be a tailwind to ARR over the coming quarters.

Key Chart.

Exhibit 25: Cloud delivery enables vendors to capture a larger portion of customer spend



Source: Company data, Goldman Sachs Global Investment Research

Relevant Research.

- Jul-21: "[GWRE: The Path to \\$5 in FCF / share becoming clearer](#)"
- Jun-4: "[GWRE: Strong cloud momentum sets path towards ARR upside in FY25](#)"
- Nov-14-23: "[GWRE: Cloud transition reaching critical mass - Analyst Day Takeaways](#)"
- Jan-22-23: "[Americas Emerging Software: Launching on software solutions for the Insurance industry; Buy rated on GWRE & SPNS](#)"
- Mar-22 Rob Cox: "[Americas Insurance: Property & Casualty: Prefer ALL in Personal Auto on Underappreciated Profitability Inflection; PGR in Unique Growth Position](#)"

Nvidia Corp. (NVDA) - covered by Toshiya Hari

The principal 'shovel supplier' in the AI 'gold rush'

Look for NVDA to maintain its status as the accelerated computing industry standard for the foreseeable future given its competitive moat, string of new product launches and the urgency with which customers are developing and deploying increasingly complex AI models. We see a broadening demand profile in the Data Center, new product introductions, growth in existing products plus an improving supply backdrop supporting sustained revenue growth through CY2025.

- **Sustained strength in overall Data Center through CY2025.** Remain constructive on Nvidia's Data Center revenue opportunity that spans Cloud, Consumer Internet and Enterprise customers and Training and Inference workloads. Expect sustained near-term qoq (%) growth in Data Center driven by a) yoy growth in demand for Hopper-based products in FY2H, b) launch of Blackwell (next-gen Data Center platform) in FY4Q followed by a subsequent ramp in FY2026, and c) growth in Infiniband and Ethernet Networking revenues.
- **Supply to increase over time.** Although management spoke to potential supply tightness for certain products, our industry conversations continue to favor Hari's long-held view that capacity increases in critical components and capabilities at NVDA's supply chain partners will support Data Center revenue growth on a sequential basis through the end of CY2024 and into CY2025.
- **Capital return.** Expect robust FCF generation to support strong/growing shareholder returns as evidenced by the company's recent announcement of a \$50bn share repurchase authorization. Hari expects FY25/26/27 total shareholder returns of \$32bn/\$61bn/\$81bn, respectively.

Where we are different.

Hari's FY2025/26 non-GAAP EPS (excl. SBC) estimates are 5%/8% above Street consensus, respectively. Hari believes the Street is underestimating the sustainability of growth in the company's core Data Center business in 2025 predicated on a) strong demand signals from U.S. Tier-1 hyperscalers for 2025 Gen AI related capex, b) growing contribution from enterprise and sovereign customers, and c) the ramp in Blackwell-based products.

Valuation.

12-month price target of \$135 is based on 50x our normalized EPS estimate of \$2.70. Hari's \$135 implies a 28x multiple on GS Q5-Q8 non-GAAP EPS (excl. SBC) estimate of \$4.79. Key downside risks include: 1) a sudden decline in Gen AI infrastructure spend by the major CSPs and/or enterprises; 2) further restrictions on GPU exports; 3) weaker-than-expected demand for Gaming GPUs; 4) delays in new product introductions and their impact on revenue and profitability; and 5) supply chain issues.

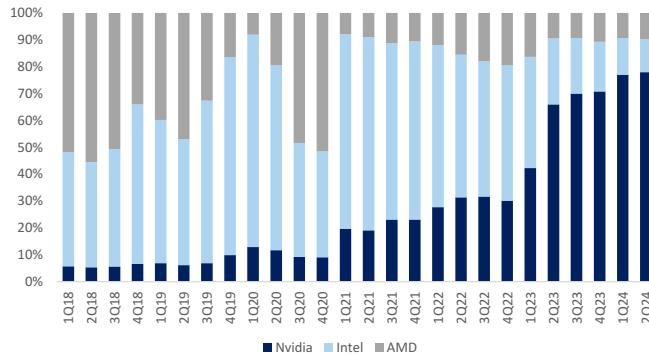
Catalysts.

Hari expects NVDA's CEO Jensen Huang's keynote at the Goldman Sachs Communacopia + Tech Conference in San Francisco on 9/11 to be a positive catalyst for the stock. (visit the conference website, "[here](#)"). Hari expects Mr. Huang to address investor concerns related to customer ROI and speak to its competitive moat in accelerated computing. Also, look for constructive data points and industry commentary that support the sustainability of AI spending to serve as positive catalysts for the stock.

Key Chart.

Exhibit 26: Nvidia's share of the Data Center Compute market has grown from ~15% five years ago to ~80% today

Data Center Compute Wallet Share



Source: Company data, Goldman Sachs Global Investment Research

Relevant Research.

- Aug-28: "[NVDA: Clarity on Blackwell and Strong Data Center Demand Met with Margin Re-Set; FY2Q EPS Recap](#)"
- Aug-25: "[Gen-AI Part VIII: Catalyst or Culprit?](#)"
- Jul-15: "[NVDA: Management Meeting Takeaways; Reiterate Buy as we expect positive EPS revisions to support continued outperformance](#)"
- Mar-20: "[NVDA: GTC 2024 Financial Analyst Q&A Takeaways; Maintain Buy \(on CL\)](#)"
- Mar-19: "[NVDA: GTC 2024 Keynote Takeaways; Unique Ability to Innovate at Data Center Scale on Full Display; Reiterate Buy \(on Conviction List\)](#)"
- Feb-5: "[NVDA: Reiterate Buy \(CL\) on Favorable Risk-Reward; Raise 12-Month Price Target to \\$800](#)"
- Jan-12: "[Semiconductors: CES 2024 Takeaways; Reiterate Buy on NVDA \(Conviction List\), MRVL, MU and CRDO](#)"
- Nov-22-23: "[NVDA: Strong visibility in Data Center and improving supply to drive another round of positive EPS revisions; FY3Q EPS recap](#)"
- Jul-9-23: "[Generative AI - Part III: Framing the Generative AI opportunity for Nvidia; Reiterate Buy](#)"

Parker Hannifin Corp. (PH) - covered by Joe Ritchie

US Mega Project beneficiary with order inflection on the come and aero exposure/synergies to drive sustained growth

Joe Ritchie believes Parker Hannifin is uniquely positioned to benefit from the proliferation of 'Mega Projects' we are seeing in the US today as it has one of the largest networks of Industrial distributors domestically with one of the broadest Industrial product offerings. The company also has a sizable exposure to the Aero end market (>30% of sales) along with self-help opportunities stemming from its acquisition of Meggitt (\$300mn in cost synergies, \$50mn in FY25/another \$50mn in FY26). Joe Ritchie sees PH's valuation as attractive at 15.3x FY2 consensus EV/EBITDA (vs. Multis Median 14.7x) as the company is on track to deliver top quartile EBITDA margins of 27.1% vs. Multis median 24.3% (FY3).

- **US Mega Project tailwinds to accelerate in CY24 and PH is favorably exposed to this theme.** Joe Ritchie recently introduced the GS Mega Project tracker to help investors better understand how this will ultimately translate into orders/growth in the coming years. Ritchie is tracking >\$500bn in Mega Project investments (>\$1bn in size), and believes that it is still early stages as only ~\$170bn in Mega Projects have broken ground with most of the investment so far in structures. Ritchie has high conviction that orders for equipment providers should positively inflect in the coming quarters. And PH is uniquely positioned to benefit from this theme as it has one of the largest network of Industrial distributors in the US with one of the broadest Industrial product offerings.
- **Secular tailwinds from Aero/Meggitt synergies should continue to benefit PH.** Over the years, PH has transformed its portfolio from ~20% long cycle exposure to approaching over 50% today (current backlog as a % of LTM sales at 55%). This has been aided by Aero making up more than 30% of PH's sales now post its acquisition of Meggitt. Demand trends in Aero remain robust with Aero backlog accelerating and driving solid visibility for PH (backlog as a % of NTM sales at 122% in F4Q24 vs. 81% in FY19). And regardless of the macro environment, Meggitt synergies (\$300mn in cost synergies, \$50mn in FY25/another \$50mn in FY26) should drive solid margin expansion for PH.
- **PH's Industrial North America (NA) orders could be at the cusp of an inflection.** Recently, some of PH's channel partners in NA have started participating in Mega projects, and this should continue benefiting PH in FY25. As such, Ritchie sees potential for positive order inflection in the coming quarters (NA Industrial orders have been down for five quarters in a row and were flat in F4Q24).

Where we are different.

Ritchie's differentiated and contrarian US Mega Project tracker suggests order inflection for PH's North America Industrial business in the coming quarters. This supports his above consensus view (FY25/FY26/FY27 GS EPS is +1%/+2%/+4% vs. Visible Alpha consensus).

Valuation.

12-month price target of \$717 is based on a Q5-Q8 EBITDA multiple of 18.0x and implies a 4.5% FY26 FCF yield. Key risks: Orders do not convert into sales growth, demand environment slows meaningfully, higher than expected price/cost headwinds, lower synergies from Meggitt.

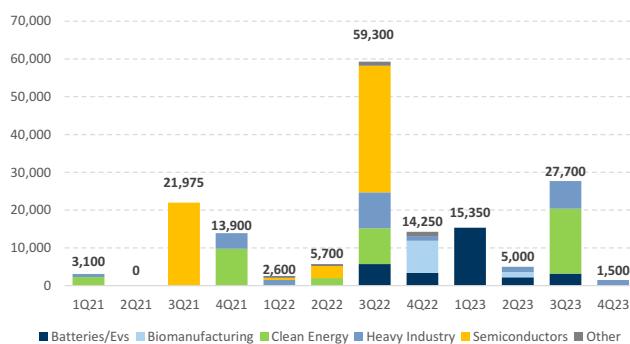
Catalysts.

Focus on commentary around Mega Project trends; Stronger than expected orders and better F1Q25 earnings.

Key Charts.

Exhibit 27: > 50% of the \$170bn in Mega Projects broke ground from 3Q22 to 1Q23

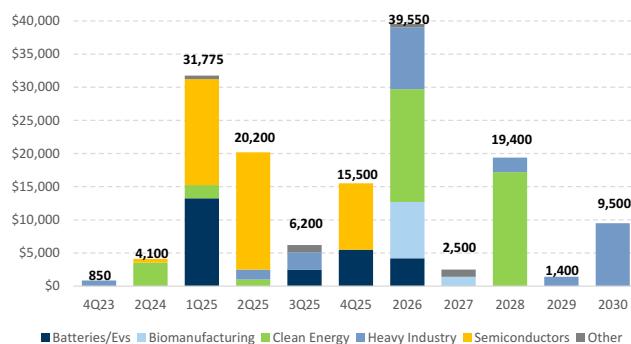
Mega Projects (\$1bn+ value) breaking ground in the US by key verticals (value in \$ mn)



Source: Goldman Sachs Global Investment Research

Exhibit 28: Look for PH orders to inflect given ~\$74bn Mega Projects are expected to start production in 2025

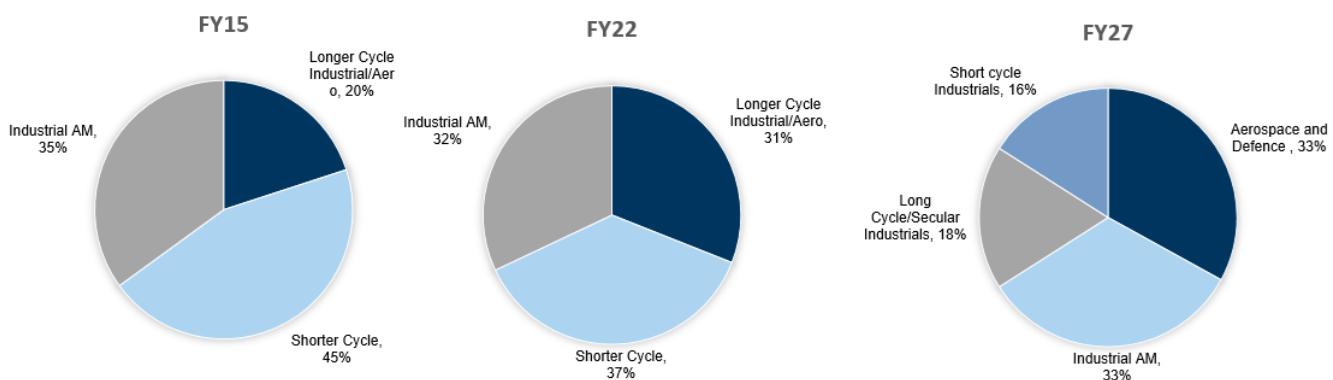
Mega Projects (\$1bn+ value) production timing in the US by key verticals (value in \$ mn)



Source: Goldman Sachs Global Investment Research

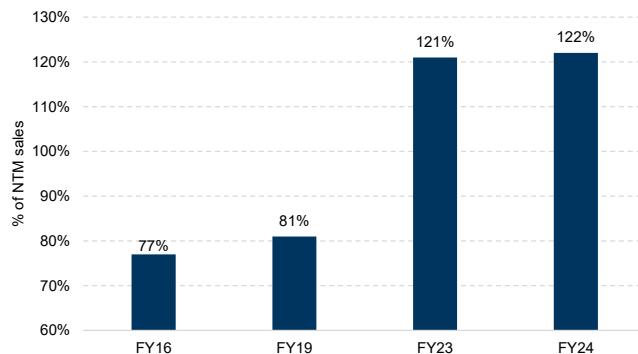
Exhibit 29: PH's portfolio has transformed to more Aero/long cycle exposure

PH's sales exposure



Source: Company data

Exhibit 30: Aero demand trends are strong
Aero backlog as a % of NTM Aero sales for PH



Source: Company data

Relevant Research.

- Aug-9: "[PH: All-around strong results, guide better, orders improving](#)"
- May-17: "[PH: Takeaways from Investor Day](#)"
- May-2: "[PH: Strong beat and raise, NA orders off to good start in April](#)"
- Feb-13: "[PH: Takeaways from our PH investor meeting](#)"
- Dec-13-23: "[Americas Multi-Industry 2024 Outlook: Mega project inflection \(HVAC, Electrical, Industrial\), mean reversion, Aero](#)"
- Dec-11-23: "[Americas Multi-Industry: Introducing our Mega Project tracker, order inflection in 1H24](#)"
- Nov-2-23: "[PH: Strong results, raising estimates and PT](#)"

Philip Morris International Inc. (PM) - covered by Bonnie Herzog

Leading the cigarette industry to a smoke-free future

PM is an underappreciated growth story in the secularly declining cigarette industry that is innovating its way to a sustained expansion. PM's intense focus on developing smoke-free alternatives to cigarettes (iQOS and Zyn) should make it a faster growing and more profitable company benefitting from an accelerating revenue and volume pool in the global nicotine market. PM is also best-positioned among peers given its first-mover advantage with iQOS, established manufacturing and marketing scale in reduced-risk products (RRPs), unmatched R&D in RRPs (>\$12.5B invested since 2008), and direct exposure to the US market – the world's largest and most profitable nicotine market.

- **A long runway for iQOS and Zyn profitable growth.** Bonnie Herzog sees a long runway of accelerating growth ahead fueled by the tremendous compounding effect of iQOS' razor/razor blade model. Look for PM to drive further price segmentation of iQOS, which is key to penetrating lower-income markets globally and increasing new user acquisitions. As PM's US growth comes into focus, look for profits to grow even faster as PM's nicotine pouch product Zyn carries 6X the profitability of PM's international cigarette business, and iQOS is 3-4X more profitable. And look for Zyn to expand outside the US, fueling another leg of growth.
- **New products provide support for the long growth runway.** Beyond the market growth of iQOS, look for further upside potential from a broader and more aggressive global roll-out of PM's ILUMA product – a heat-but-not-burn iQOS variant that removes the final pain point for consumers, creating a stronger, bladeless and effortless experience and accelerates conversion from combustible cigarettes. ILUMA is slated to be introduced into the US market in 2H25 assuming FDA authorization – a potential major catalyst for accelerated revenue and profit growth given the US is the world's most lucrative nicotine market with a total nicotine profit pool valued at >\$20B, according to PM.
- **Near-term momentum backs up long-term path.** 2Q results were very strong and management raised its FY24 currency-neutral guidance – and substantially so – highlighting management's near-term visibility into the company's growth trajectory.

Where we are different.

While there is some debate about whether iQOS will ultimately resonate with the US consumer, Herzog believes ILUMA, once authorized, will make a considerable impact with US adult smokers, similar to its impact in the 60+ markets ILUMA is now available in. Herzog's insights into the US nicotine market are also supported by feedback from her 'Nicotine Nuggets' retailer contacts, as well as proprietary HundredX survey data that should provide 'real-time' insight into PM's brands as they evolve in the US.

Valuation.

12-month price target of \$126 is based on an equal-weighted P/E multiple of 17.0x and

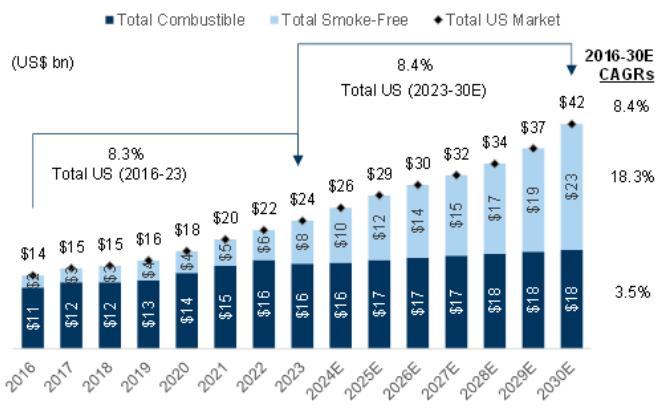
an EV/EBITDA multiple of 13.5x, both on Herzog's CY25 estimates. Key risks include: Competition risk, particularly from smoke-free alternatives; Regulatory & Legislative risk; execution risk on the expansion of iQOS, supply chain disruptions; Economic risk given PM's premium pricing and duty-free channel.

Catalysts.

Herzog highlights a catalyst-rich path, including: (1) the potential introduction of ILUMA to the US market in 2H25 following an anticipated FDA authorization; and (2) easing supply constraints for Zyn in the US.

Key Chart.

**Exhibit 31: US Nicotine Industry Operating Profit Opportunity
2016-2030E**



Source: Goldman Sachs Global Investment Research

Relevant Research.

- Jul-23: PM: Strong Q2 results with positive catalysts in sight - FY24 guidance raised - Reiterate Buy
- Jul-16: "Nicotine Nuggets" Q2 survey – Cautious outlook as consumers lean into value & promo activity ticks up
- Jan-25-23: Upgrade to Buy - We see a stepped-up growth algo & compelling risk/reward as PM enters the important US market

S&P Global Inc. (SPGI) - covered by George Tong

Merger synergy story with industry tailwinds and an AI kicker

George Tong believes SPGI is well-positioned to continue to benefit from a strong debt issuance business at the same time that it is able to realize revenue synergies from its merger with IHS Markit Group (completed in February 2022). Look for debt issuance to remain strong through at least year-end feeding its ratings agency segment. And we expect the company to generate \$350m of revenue synergies from the merger over the next 2-3 years. Finally, SPGI is developing AI-driven solutions for its customers that should help it to gain pricing power, market share, and sustainable revenue streams.

- **Secular tailwinds driving growth at Ratings and Non-Ratings businesses.** SPGI – along with competitors MCO and Fitch — serves as a gatekeeper to the debt capital markets, creating a wide competitive moat and durable long-term revenue growth outlook. Elevated corporate high yield and leveraged refinancing needs, coupled with credit investors' demand for yield ahead of the expected Fed cutting cycle, is driving strong debt issuance volume growth – supporting further growth in SPGI's core business. Beyond SPGI's core Ratings business, look for high-single-digit revenue growth in SPGI's non-Ratings businesses, supported by market share leadership, pricing power, a wide competitive moat and secular tailwinds, such as the ongoing shift from active to passive asset management in Indices.
- **Merger Synergies.** SPGI has exhibited strong execution in achieving IHS Markit merger synergies, delivering \$199mn in run-rate revenue synergies through 2Q, ahead of its target of achieving 45% of its \$350mn revenue synergy target in 2024. Revenue synergies are arising from cross-selling and, increasingly, from new product development, and are concentrated in SPGI's Market Intelligence and Commodity Insights segments.
- **AI opportunity driving growth today (and tomorrow).** Look for investments into Gen AI tools, Chat IQ, S&P Spark Assist, and S&P Benchmark — to drive both near-term and long-term revenue and margin benefits across segments.

Where we are different.

Tong's differentiation lies in a series of proprietary data trackers, including a weekly global debt issuance tracker and a weekly AUM tracker, that have correlations with SPGI's Ratings and Indices segment revenue growth.

Valuation.

12-month price target of \$561 is based on 32.0x Tong's NTM + 1YR EPS estimate of \$17.53. Key risks to the rating include global debt issuance volume volatility, macroeconomic headwinds that could reduce customer demand for the company's data, analytics and content, and strengthening of the USD relative to other currencies.

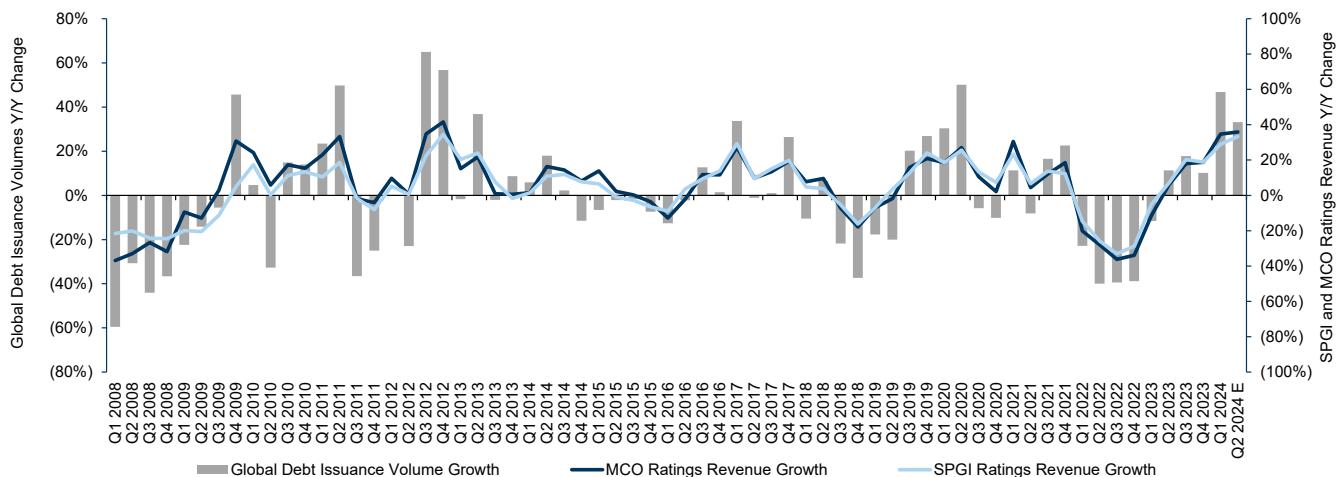
Catalysts.

Approaching rate cuts and improving M&A volumes are positive catalysts for debt issuance and ratings revenue at S&P. Rising AUM volumes from the shift from active to passive and market appreciation could also drive further upside to Indices revenue. An improving cyclical backdrop in Market Intelligence should additionally unlock accelerating segment revenue growth as renewal rates increase. Further realization of revenue synergies over the next 1-2 years serves as a source of upside for the shares, as well.

Key Chart.

Exhibit 32: Ratings Revenue Growth Is Highly Correlated with Global Debt Issuance Volume Growth

Debt Issuance Volume Y/Y Growth Correlation with SPGI Ratings Revenue Y/Y Growth of 84.2%



Since 1Q 2008

Source: Company data, Goldman Sachs Global Investment Research, Dealogic

Relevant Research.

- Aug-25: "[Gen-AI Part VIII: Catalyst or Culprit?](#)"
- Aug-25: "[Americas Business & Information Services: Weekly debt issuance, AUM, exchange traded derivative volumes and fund formation as of 8/26/24](#)"
- Aug-21: "[Gen AI Part VII: Takeaways From Our Silicon Valley AI Field Trip](#)"
- Aug-19: "[Key themes and takeaways in Business & Info Services post 2Q earnings](#)"
- Aug-11: "[Americas Business & Information Services: July global debt issuance volumes grow strong double-digits and accelerate from June](#)"
- Jul-31: "[SPGI: Healthy 2Q results accompanied by increased full year outlook led by Ratings strength](#)"
- Apr-25: "[SPGI: 1Q upside led by Ratings revenue growth, while diversified revenue mix is insulating the business from macro volatility](#)"
- Mar-7-22: "[SPGI: The new S&P Global post IHS merger creates increased opportunity for shareholder value creation; Reinstate at Buy](#)"

Sempra (SRE) - covered by Carly Davenport

Power demand beneficiary and decarbonization enabler at a discount

Carly Davenport believes Sempra has leading load growth exposure through its regulated Texas utility, Oncor. Look for Oncor to benefit from business, infrastructure, and population growth in a business-friendly location, with limited regulatory risk. Davenport is also positive on SRE's capex growth outlook and its solid LNG pipeline, which she expects will help drive expansion at SRE's regulated utilities.

- **Attractive exposure to Texas growth market.** SRE's regulated utility, Oncor, gives the company exposure to the fast-growing Texas market. Davenport expects to see average rate base growth of 13% from 2023-2027, driven by above average customer (population) growth, as well as power demand growth from robust data center development, oil & gas electrification, and other industries.
- **Deep LNG pipeline.** SRE has a robust queue of LNG projects on both the US Gulf Coast and the Pacific Coast of Mexico via its 70% ownership stake in Sempra Infrastructure Partners (SIP), making it a beneficiary of rising LNG demand amid global decarbonization efforts. Look for the ECA Phase 1 LNG project to be complete by mid-2026, which will add another cash flow stream to fund SRE's regulated growth while minimizing equity needs.
- **Capex growth & Grid Reliability.** Increasing power demand, plus a focus on renewables and resiliency means utilities need to invest more in grid modernization. SRE raised its capital plan by 20% in 4Q23, with the bulk of the capex raise at Oncor. Additionally, Oncor's System Resiliency Plan (SRP) could raise Oncor's capital plan by an additional ~10%, if approved. Davenport believes there is further upside for incremental capex, particularly around transmission, as data centers continue to grow in its service territory.

Where we are different.

Davenport's deep-dive work on Electrification, Power Demand, and Grid Reliability illustrates the importance of utility capex and why utilities are an essential part of the puzzle. SRE is positively exposed to all three secular themes, especially through Oncor.

Valuation.

12-month SOTP based price target of \$91. Key risks for SRE include (1) delays with its various LNG projects, (2) Texas customer growth slowing or the regulatory environment becoming less favorable, and (3) unfavorable rate case outcomes at the California utilities or challenging regulatory constructs.

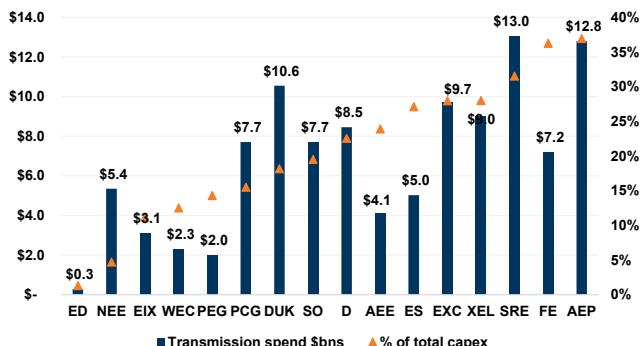
Catalysts.

Resolution of the General Rate Case (GRC) for SRE's California utilities to remove the remaining regulatory overhang for the company (expected in 4Q). Additional catalysts include: the Texas commission ruling on its System Reliability Plan (SRP) in 4Q, further potential upside on capex with a likely update on the 4Q call, and certain LNG projects

potentially reaching Final Investment Decision (FID) in 2025.

Key Charts.

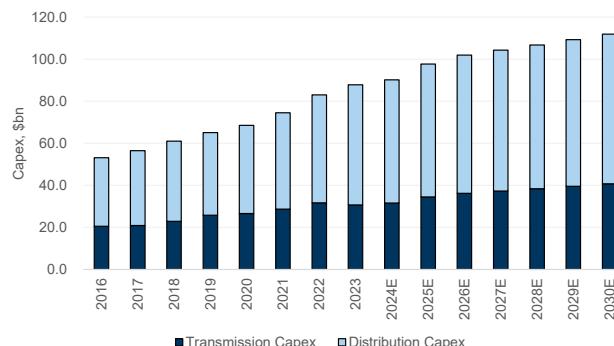
Exhibit 33: AEP and SRE spend the highest % of capex on transmission in Davenport's coverage, per her estimates
Transmission as a total % of capex, 2023-2027 GSe



Source: Company data, Goldman Sachs Global Investment Research

Exhibit 34: Davenport expects to see ~50bn of incremental capital investment in generation to support data centers through 2030, or about 8% of total generation capex

Capital investment in generation to support data center growth, \$ mn/share of total generation spend, %



Source: Goldman Sachs Global Investment Research

Relevant Research.

- Aug-6: "SRE: Challenging quarter but Texas growth outlook remains intact, opportunity for capex upside is significant; Buy"
- Jul-11: "Americas Utilities: Regulatory Refresh for 2H2024; Buy SO, PCG for lower near-term regulatory risk"
- Jul-2: "Research Unplugged: Takeaways from our Power Demand & Data Center Day"
- May-22: "Americas Utilities: Takeaways from AGA: Data centers, EPA regulations, and IRPs top of mind"
- Apr-28: "Generational Growth: AI, data centers and the coming US power demand surge"
- Jan-10: "Future of Utilities Capex: Assessing Resiliency Capex Opportunities to Mitigate Physical Risk"
- Jan-8: "Future of Utilities Capex: Why Capex Matters and How Utilities Allocate Spend"
- Dec-18-23: "Americas Utilities: 2024 Outlook: Attractive combination of yield and growth from utility capex cycle drive positive view into 2024"
- Jun-7-23: "Initiating on 10 Utilities: Enablers of Decarbonization and Grid Transformation; Buy AEP, NEE, SO, SRE, and XEL"

SLB (SLB) - covered by Neil Mehta

Best-positioned to benefit from international and off-shore oil growth

Neil Mehta continues to see value in SLB shares where, even in the context of moderated activity expectations, the company is levered to key growth regions and the stock screens attractive. While Mehta acknowledges continued investor conversations around Middle East growth, we continue to believe SLB has an attractive growth profile driven by its leading market position in key international regions including the Middle East and Brazil. Despite generating over 20% ROEs, the stock trades at 10x and 9x 2025 and 2026 P/E which, in Mehta's view, is relatively low given the company's leverage to key macro themes and high quality growth profile.

- **Still expect solid growth in SLB's international business despite tempered industry activity expectations.** Mehta continues to see attractive growth levels for SLB despite the stock implying significantly softer top-line growth. He estimates mid-teens international growth in 2024 and, per management commentary, expects 2/3rds of international spending to be focused in the Middle East. In addition to the Middle East, Mehta sees compelling opportunities in Brazil which will support longer-term growth; he estimates 7-9% international revenue growth in 2025 and 4-5% in 2026 and 2027.
- **Solid FCF generation support capital returns and growth investments.** In 2024, Mehta estimates SLB can achieve a 45% FCF from EBITDA conversion which implies a 7% yield at current prices. Additionally, he believes management will return 60%+ of free cash flow to shareholders through a combination of dividends and share repurchase.
- **Underappreciated Digital Business.** Mehta believes SLB is uniquely positioned to expand its digital business given the industry is not as digitized and SLB is the only digital provider in the space that carries competitive moat. Look for revenue to double by 2026/27 at about 40-45% EBITDA margins and expect it to be accretive to the bottom line.

Where we are different.

While he lowered our global rig count expectations and there continue to be investor discussions about the appropriate growth rate for SLB, Mehta expects to see continued strength in the international markets and, as such, estimates an 8% revenue growth rate in 2024-2026, on average. The Top Projects analysis and long-term oil and gas supply/demand modeling through 2030 highlight areas of growth including Brazil, Suriname/Guyana, the Middle East, West Africa and improved activity levels in Asia, as well. Some investors are concerned about the decision by Saudi Aramco to cancel key long-term oil project expansions, but leveraging the work of our colleagues in the Middle East, Mehta estimates only a 3% negative impact to earnings in 2026-2027 relative to the stock underperforming the Energy sector by 15% in the last 6 months. His base case is other key customers in the Middle East including UAE will continue investing at a healthy clip. He continues to also have a positive view on the potential of SLB's digital

business - a leading provider of digital applications to the oil and gas industry, a sector that historically has been highly analog - where he expects 2024 revenue to grow at 17-19% to ~\$2.5-2.6bn and EBITDA margins to approach 50%, representing one of the highest value offerings/most profitable segments in the entire Energy ecosystem.

Valuation.

12-month target of \$58 is based on a through-cycle EV/EBITDA and FCF yield target of 8.0x and 7.5%, respectively. Key risks include: 1) Weaker oil price environment could lead to lower activity levels than expected. 2) A pickup in North America production over international could result in a missed opportunity for the company due to its greater international exposure. 3) Absence of long cycle offshore opportunities might result in lost revenues due to operator preference for short cycle investments. 4) Slower adoption of digital across the industry could result in slower EBITDA growth.

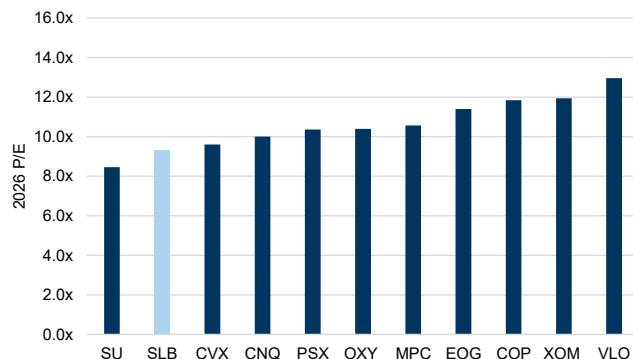
Catalysts.

SLB will host a Digital Day in September, in Europe, which could be a positive catalyst for the stock, as investors continue to unpack the potential of this segment.

Key Chart.

Exhibit 35: Mehta views SLB's 9.3x 2026 P/E as relatively low given its high quality growth profile

This compares to large-cap energy companies that are trading at an average 2026 P/E of 10.6x



Source: FactSet, Goldman Sachs Global Investment Research

Relevant Research.

- Aug-28: "[Americas Energy Services: Updating Global Rig Count Given Lower Activity; Focus on Relative Value: Prefer Large-Cap Services to HP, NOV](#)"
- Jul-21: "[SLB: Maintain Conviction in Long-Term Revenue Growth; Buy](#)"
- Jun-18: "[Americas Energy Services: Takeaways from Meetings with SLB, XPRO and BKR Management](#)"
- Mar-12: "[Americas Energy Services: Aramco Capex Announcement Clears Deck, In Our View; Buy SLB and WFRD](#)"
- Mar-1: "[Global Energy: Brazil's Oil Growth: Commodity, Macro, and Equities](#)"

Implications"

- Jan-31: "Americas Energy Services: Pullback in International OFS Seems Overdone on Saudi Spare Capacity News; Buy SLB and WFRD"
- Oct-18-23: "Research Unplugged: Saudi Arabia CapexSuper-Cycle: Diversifying, Decarbonizing, Digitalizing"

Snowflake Inc. (SNOW) - covered by Kash Rangan

Next layer Gen-AI winner with a new CEO focused on accelerating product innovation

Snowflake's shares are -41% YTD (NASDAQ: +18%) driven by a lower-than-expected F2Q25 beat (F2Q25: 2%, F1Q25: 5%), a management change, perceived competition from private competitor Databricks, and general investor apathy towards software as a vertical. However, Kash Rangan believes this dislocation has created a compelling entry point. Look for Snowflake's growth to reaccelerate to 30%+ over time, given it is structurally advantaged as a long-term Gen-AI winner. Namely, Rangan believes data will be the enabling factor moving investment from the infrastructure, to platform, and finally the application phase of the AI Revolution.

- **Long-term Gen-AI winner.** Snowflake's software enables companies to maximize the structured and unstructured data their business collects. Rangan sees Snowflake as structurally advantaged in enabling Gen-AI due to its extensive data moat, augmented by the growing functional use cases provided through its platform outside core warehousing, including transactional and analytical processing, data interoperability, application development, unstructured data, data sharing, and managed AI services.
- **New CEO's Strategy to position well in the Modern AI Stack.** Rangan believes Snowflake's new CEO, Dr. Sridhar Ramaswamy (since February 2024), has accelerated platform innovation (best evidenced by the number of product announcements at [Summit](#)), which should increase velocity and provide customers with fresh incentive to adopt a wider array of platform services going forward, presenting new vectors for consumption on top of steady core data warehousing utilization. This innovation, coupled with new, better aligned salesforce incentives, should drive more predictable and reaccelerated growth.
- **Top FCF margin at a compelling risk-reward.** Snowflake provides a rare combination of both growth and profitability that Rangan believes is underappreciated by the market. On a 'Rule Of' basis (Revenue growth + FCF Margin), Snowflake operated at a Rule of 64 in FY24, with our expectations for the company to deliver a Rule of 50 profile in FY25 - placing the company in the top decile of software companies, rivaled only by ADBE, NOW, DDOG, MNDY, MSFT and TEAM. Relative to its closest consumption peer, Datadog, Snowflake trades at wide discount on both CY25 EV/S (9.4x vs. 12.1x) and EV/FCF (34x vs. 43x). Rangan sees a compelling risk-reward at current levels.

Where we are different.

Rangan believes Snowflake is well positioned to outperform Street expectations following the C-suite transition and re-set expectations. Additionally, accelerating RPO growth (+47% in F2Q25 vs. +30% in F2Q24) suggests growing strategic commitments and the opportunity to drive broader platform standardization amongst high-budget G2K accounts. Rangan also believes that the near-term investment cycle around AI can unlock material new revenue streams, adding growth optionality on top of a

best-in-class data warehousing product where a significant on-premise migration opportunity still remains. Finally, Rangan sees Operating Margin's returning to an expansion cadence in FY26 (GS modeling +6% in FY26, ~300 bps of expansion) as new monetization vectors take hold following the FY25 AI investment cycle.

Valuation.

12-month price target of \$220 (86% upside) is derived from an equal weighting of a DCF analysis and EV/Sales multiple. The DCF analysis is based on a terminal growth rate of ~4% and relative valuation is based on a 17x Q5-Q8 EV/Sales multiple. Key risks include: 1) Adverse changes in the IT spending environment, 2) Competition – particularly from cloud service providers (CSPs) and Databricks, and 3) Outages from reliance on CSPs.

Catalysts.

After delivering against reset expectations over the last two quarters (Product Revenue Growth: 34% (F1Q25) / 30% (F2Q25)), the continued delivery of ~30% top-line growth can help restore investor confidence that Snowflake remains favorably positioned against an increasingly competitive landscape. Additionally, C3Q24 Hyperscaler results in late-October / early-November could also serve as a potential read-through on broader cloud spending activity. A healthy ramp in revenue contributions from already GA products such as Snowpark and Cortex AI in late-F25 or early-F26 would augment investor confidence in Snowflake's Gen-AI positioning.

Key Charts

Exhibit 36: Products Discussed at Summit 2024

Product	General Availability Status	Date	Adoption	Contribution
Snowpark	Yes	FY23	>10%	FY25
Cortex AI	Yes	FY25	<10%	FY25
Unstructured Data	Yes	FY23	>10%	FY25
Iceberg Tables	Yes	FY25	<10%	FY26
Native Apps	Yes	FY24	<10%	FY26
Snowpark Containers	Yes	FY25	<10%	FY26
Streamlit in Snowflake	Yes	FY24	>10%	FY26
Unistore	No	FY25	<10%	FY27

Adoption: Represents percentage of customer base using the respective product as of 04/30/2024

Source: Company data, Goldman Sachs Global Investment Research

Relevant Research.

- Aug-25: "[Gen-AI Part VIII: Catalyst or Culprit?](#)"
- Aug-21: "[Gen AI Part VII: Takeaways From Our Silicon Valley AI Field Trip](#)"
- Aug-21: "[SNOW: Solid Print, Guidance Raise Fall Short of High Expectations; Constructive on Stabilizing Trends, Emerging AI Product Cycle](#)"
- Jun-5: "[SNOW: Laying the Technical and Operational Foundation to Deliver Compounding Growth Against \\$340B+ TAM Opportunity](#)"
- June-3: "[Cyclical or Structural: Don't Count Software Out of Gen-AI](#)"
- Jan-21-21: "[Initiation: Cloud Software Investing Framework in a \\$1 Trn TAM; Buy MSFT, CRM, SPLK, NOW, Sell ORCL, ADSK](#)"

Teradyne Inc. (TER) - covered by Toshiya Hari

Dominant innovator on the cusp of cyclical recovery

TER is one of two companies in the world that dominate the system-on-chip (SoC) testing market - a critical function required in the manufacturing of semiconductor chips. While the company's 3Q24 outlook fell below expectations, and Hari now envisions a slower recovery in Test and Robotics, TER continues to be positioned as a beneficiary of the current build-out of AI data center infrastructure. Additionally, the ongoing cyclical recovery in Semiconductor Test, TER's competitive position in Compute and HBM Test, and ramp up of collaborative robot and autonomous mobile robot (AMR) adoption are key growth drivers for the upcoming earnings.

- **Ongoing cyclical recovery in Semiconductor Test.** Hari believes that given the strong correlation that exists between the SoC Test market and semiconductor industry units (excluding Memory), and as units reverse back to the long-term trendline, after an extended period of under shipment, that market for TER is set to recover into 2025. Following 9 consecutive quarters of yoy revenue declines (1Q22 through 1Q24) in TER's SoC Test business, Hari views the reversion back to yoy growth in 2Q24 positively (i.e. +29% yoy), and forecasts that segment to grow revenue by 40%/28% in 2025/26.
- **Compelling position in Compute and HBM Test.** Although the SoC Test market TAM remained unchanged for TER in 2024 (i.e. \$3.6-4.2bn), Hari notes that the company aims to gain share among the VIPs (vertically integrated producers), as Compute revenue expectations are now roughly in-line with Mobile for 2024. Specific to HBM, management continues to anticipate a 5x yoy TAM growth scenario from ~\$100mn in 2023 to approximately \$500mn in 2024, as they comment on further progress in securing a second large HBM supplier.
- **Inflection in collaborative robot and autonomous mobile robot (AMR) adoption.** While the Robotics business for TER has fallen below its original growth outlook (i.e. 20-30% CAGR), the company has outperformed its competitors, in part underpinned by its OEM channel strategy (note 70% growth yoy for 1H24) and its investments in the pallet jack business for AMR. Moving forward, these initiatives serve as the foundation that couple with a secular growth backdrop of broader-based collaborative robot and autonomous mobile robot (AMR) adoption.

Where we are different.

Hari's recently updated 2024/25/26 operating EPS estimates of \$3.17/\$5.02/\$7.17 are 5%/7%/9% above Street consensus, respectively. Additionally, Hari's bull/bear framework also indicates a favorable risk/reward profile.

Valuation.

12-month price target of \$151 is based on a target multiple of 27x Hari's normalized EPS estimate of \$5.60. Key risks include: Persistent weakness in Semiconductor Test demand; Renewed weakness in Robotics demand (~12% of revenue); Negative market

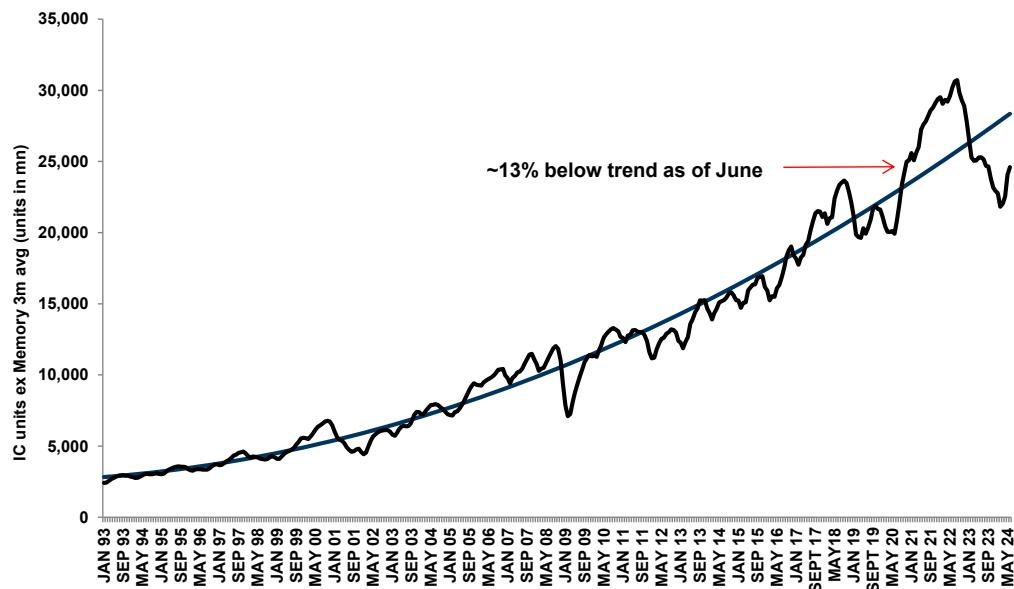
share dynamics in Semiconductor Test; and Potential dilution from any future M&A.

Catalysts.

Signs of a positive inflection in semiconductor demand excluding Memory should serve as an important catalyst.

Key Chart.

Exhibit 37: IC (ex. Memory) units were tracking ~13% below trend as of June
IC (ex. Memory) units (monthly) and our estimation of the long-term trend-line



Source: SIA, Goldman Sachs Global Investment Research

Relevant Research.

- Jul-26: "[TER: Maintain Buy as Cyclical/Secular Thesis Remains Intact; 2Q24 EPS Recap](#)"
- May-27: "[Semiconductors - Memory: HBM TAM to reach US\\$30bn by 2026E, 2023-2026 CAGR of ~100%.](#)"
- May-20: "[Semiconductors: 1Q'24 EPS Review: Mixed Results and Outlook Outside of AI; Upgrade TER to Buy and Downgrade PI to Neutral.](#)"

TPG Inc. (TPG) - covered by Alex Blostein

EPS growth accelerator with private credit exposure

TPG's business model is transitioning into a more durable AUM compounder as it integrates last year's acquisition of Angelo Gordon, expands into Private Credit, and continues to raise Private Equity capital at a rate significantly above the industry's pace. Against this backdrop, look for management fee growth of 19% / 18% in both 2025E/26E as the firm's next leg of fundraising kicks off and as TPG AG begins deploying its private credit available capital. Blostein sees an acceleration in FRE growth to 22%+ range in 2025/2026E as flagship fees hit full year run-rate and FRE margin expansion accelerates. In addition, a building pipeline of deal opportunities on both deployment and monetization fronts, adds to the stock's total EPS trajectory in 2024 after a slow 2023.

- **Recent acquisition provides a meaningful growth lever.** In 2023, TPG bought Angelo Gordon laying the groundwork for a meaningful acceleration in TPG's growth profile, a more diversified AUM mix with ~20% of management fees in Private Credit, and a shift in the firm's earnings mix toward more stable sources (pro forma Fee Related Earnings estimated at ~80% of DE). Within Credit, the firm has over ~\$7bn of capital not yet earning full run-rate management fees (billed on deployment), creating lots of visibility into near-term growth. Plus, look for significant revenue synergy opportunities as TPG cross-sells private credit opportunities into its existing customer base (management reiterated \$10bn+ Credit fundraising target for 2024 at August earnings call), builds out Capital Markets syndication capabilities, expands further into Retail and explores opportunities in Insurance that are yet to be reflected in Street growth assumptions.
- **Private equity fundraising super-house.** TPG is one of the only Alternative Managers expecting more Private Equity fundraising in 2024E than it saw in 2023 due to newer, adjacent PE strategies, with 2Q earnings also implying a 2025 launch of the firm's next gen flagship PE fund. TPG management reiterated their targets for a large fundraising year in 2024 at standalone TPG, boosted by organic launches into new asset classes – specifically, TPG's Impact (Rise Climate, Climate Infrastructure) and Growth Platforms will be fundraising through 2024E, and activating fees later in the year. Importantly, the launch of TPG X in 2025E would suggest an incremental ~\$12bn+ in fundraising stretching into 2026E, which was upside to expectations and Following 2Q results in August. PE growth in 2025E would be further bolstered by an inaugural Retail PE fund from TPG, which management is looking to launch early next year.
- **Margin expansion.** Look for FRE margin expansion fueled by the integration of AG. Blostein forecasts margins to grow to over 45% over time from ~38% pro forma in 2023, with a near-term target of 40% margins in 2024.

Where we are different.

Goldman Sachs' estimates are 5% ahead of consensus management fee revenues on

average across 25/26E, and 7% ahead of consensus on FRE per share over the same period. Blostein is looking for better fundraising, better Credit deployment in the remainder of 2024 (with the view that opportunistic refi impacted 1Q results), stronger cross-selling opportunities, and the firm exceeding margin targets.

Valuation.

12-month target price of \$53 based on a SOTP valuation of the various cash flows, including a target FRE multiple of 23.5X and a target PRE multiple of 7.0X. Current 2025 P/E of 20.1X does not seem to reflect the firm's durable growth trajectory and evolving asset mix (peer average '25 P/E is >24X). Risks include: Potential increase in supply / secondary sales amid shareholder lock-up expirations, growing stock-based compensation, slower pace of fundraising, leverage to Private Equity as asset class.

Catalysts.

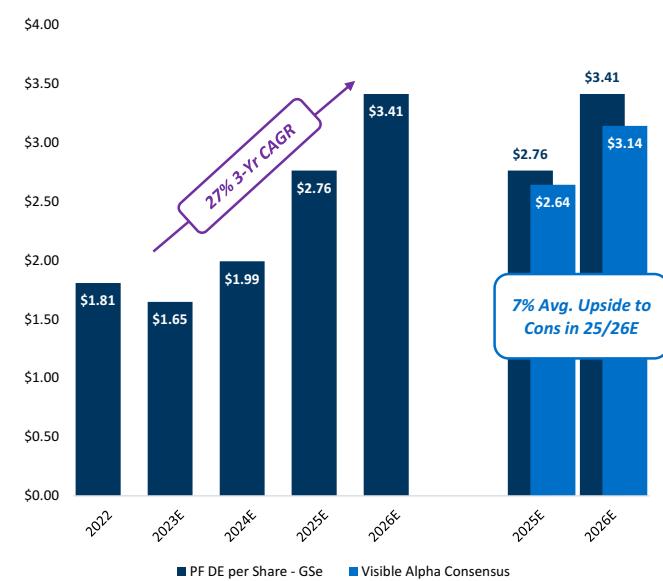
Look for flagship fundraising and AG integration updates with earnings, along with new channel distribution initiatives (retail and insurance) over the course of 2024.

Key Charts.

Exhibit 38: Blostein sees a 18% 3-Yr FRE CAGR at TPG, ~7% upside to Consensus estimates



Exhibit 39: Blostein sees a 21% DE/share CAGR through 2026E; on avg. GS is 7% above Consensus in '25/26E, as our higher FRE estimates are offset by lower PRE



Source: Company data, Goldman Sachs Global Investment Research, Visible Alpha Consensus Data

Source: Company data, Goldman Sachs Global Investment Research, Visible Alpha Consensus Data

Relevant Research.

- Aug-13: "Americas Asset Managers: Macro-driven volatility opens up compelling risk/reward across the group"
- Aug-7: "Asset Managers: Key Highlights from CG, TPG, HLNE post-2Q24 results"

- Jul-1: "Americas Capital Markets: 2Q24 shows range-bound trends; zoom in on micro opportunities"
- May-15: "Americas Asset Managers: Dispersion remains the name of the game"
- May-9: "TPG: Solid growth ahead remains, but jumping-off point marginally lower"
- Feb-13: "TPG: A smooth hand-off from a strong finish in PE fundraising to robust outlook in Credit, Impact, new initiatives; reiterate Buy"
- Nov-29-23: "TPG: Enhanced growth profile with greater earnings durability; reinstate at Buy"

Vulcan Materials Co. (VMC) - covered by Jerry Revich

Reliable compounder leveraged to a housing recovery

VMC brings a favorable combination of structurally improving profitability, US homebuilding activity exposure, and value enhancing capital deployment opportunities that should help to drive up earnings by almost 50% over the next two years. Additionally, as net debt falls back towards zero, look for the company to employ strategic tuck-in acquisitions in a sector that is multi-local but where the two largest national participants control a combined market share of only 18% on a nationwide basis.

- **Structurally attractive industry structure underpins 10% growth in unit profitability.** Over the past decade, the public aggregates producers (MLM & VMC) have compounded unit profitability (gross profit per ton) at a ~10% CAGR – leveraging their strong local market share to drive selling price growth in excess of costs. VMC has been able to push revenue per unit well ahead of costs, driving gross profit per ton for VMC of \$8.52 in 2024E compared to \$3.35 in 2014. They are able to do this because it is a locally consolidated industry. VMC has 47% local market share within 25 miles of its quarry sites – nearly double the 23% for the industry. And the top two companies in VMC's average market hold 67% market share. And Revich's market share tracker underpins his confidence in sustained unit profitability growth and the pricing trajectory at VMC.
- **Scope for value enhancing capital deployment following accretive concrete divestiture.** Look for VMC to monetize the ~\$700mn of sales proceeds from the divestiture of marginally profitable USCR ready-mix concrete assets into new aggregates businesses that fit the company's current industry leading market share profile.
- **Residential recovery.** Residential construction (homes and apartments) is the core driver of aggregates volumes for VMC as new homes ultimately drive the infrastructure investment that is literally the foundation of crushed rock sales. As the US housing cycle improves, look for aggregates stock valuation multiples to expand. Volumes slowed over the course of 2023 and 2024 YTD, setting up for favorable volume comparisons in 1H25.
- **Price/cost spread positioned to widen in 2024.** Vulcan Materials has already implemented ~10% price increases for 2024, but operating costs are now slowing due to stabilizing maintenance, parts, and subcontractor costs. In 2Q24, COGS/ton for VMC grew +6% yoy compared to +7% yoy in 1Q24 – a 1% slowdown from first quarter levels vs. normal seasonality. Vulcan is also benefiting from repricing of longer-cycle contract work, driving pricing sequentially higher over the course of this year – ahead of normal seasonality – and providing visibility on higher than expected pricing to start 2025E.

Where we are different.

Differentiated research includes: (1) Revich's local market share analysis that points to

VMC's ~47% market share within 25 miles of their quarry sites compared to 23% for the industry, ultimately driving pricing gains, (2) analysis of accelerating unit profitability amid widening price/cost spread as inflation slows, (3) infrastructure orders and state-level department of transportation budget deep dive, and (4) Revich's real-estate based valuation framework.

Valuation.

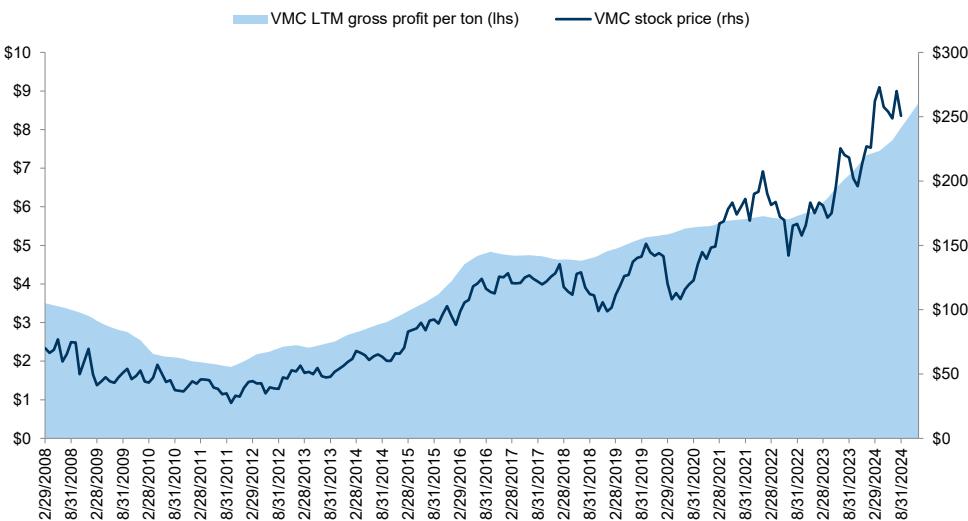
12-month price target of \$320 based on 19.5x mid-cycle EV/EBITDA. Downside risks: US financial conditions, slower than expected aggregates pricing, residential construction spending deteriorates, delay in Department of Transportation budgets translating into public construction spending.

Catalysts.

(1) Look for signs of aggregates volumes bottoming in upcoming quarters to be a key catalyst for the stock on earnings day. (2) Price/cost spread: VMC has already implemented ~10% price increases for 2024, but operating costs are now slowing due to stabilizing maintenance, parts, and subcontractor costs which should drive upside to margins. (3) Positive residential data points.

Key Chart.

Exhibit 40: VMC's unit profitability is up nearly 40% over the past two years



Source: Company data, FactSet, Goldman Sachs Global Investment Research

Relevant Research.

- Jul-17: "[GS US Infrastructure Toolkit: GS DOT budget tracker points to slowing state infrastructure spending plans in 2026+](#)"
- May-16: "[VMC: Notes from the road: Pricing, capital deployment, efficiency gains](#)"
- Mar-8: "[VMC: Top 5 questions on VMC following CL addition](#)"

- Dec-13-23: Americas Machinery, Infrastructure, Sustainable Tech: 2024 Outlook: Prefer Environmental Services & Construction Materials; awaiting Machinery entry point
- Jun-27-23: GS Aggregates Share Tracker: Local share points to sustained unit profitability growth
- Apr-3-23: Rotating into Construction Materials from Machinery; Six rating changes (April 2023)
- Jun-17-20 - Demographics 2.0: Which aggregates producers have the most attractive demographic trends?

Woodward Inc. (WWD) - covered by Noah Poponak

The right products for the right planes in the right cycle at the right time

WWD is poised to deliver more products to planes just as the OE airplane cycle takes off. Additionally, Noah Poponak sees a path for WWD to follow these content gains with a higher participation in high margin after-market activity as planes are serviced. All of this, alongside a now-proven relatively new management team (started in May 2022), should drive upside to consensus forecasts through the cycle. And the late-July WWD stock sell-off due to volatility in its relatively small China truck equipment business provides a particularly attractive entry point for a perennial compounder.

- **Content gains just as the cycle takes off.** Woodward has content gains on nearly every current generation aircraft in the market compared to prior generation. As air travel continues to recover from pre-pandemic, then eventually move back into its normal long-term secular growth rate, airline demand for airplanes to satisfy that travel has been strong. Boeing and Airbus are still delivering new airplane supply well below that demand, which provides visibility into a high likelihood of strong Aerospace OE growth for the next several years.
- **Shareholder friendly free cash flow machine.** Poponak has a favorable view of the new management team which is driving significant operational improvements and therefore higher margins and returns on capital. That should translate to high rates of free cash flow growth, and he expects the company to buy back stock and deploy capital towards accretive M&A.
- **Aftermarket margin expansion story.** WWD has a relatively high % of earnings derived from aerospace aftermarket, given the maintenance intensive nature of its components, and aerospace aftermarket has high pricing power and margins. In particular, it has substantial market share gains on the GE Aerospace LEAP engine, which itself has high market share of the future aircraft fleet, and aftermarket shop visit activity is set to accelerate meaningfully now.

Where we are different.

Poponak's 2025 EBITDA estimates are 4% above consensus, in part due to higher aerospace segment revenue and margins, where he has detailed modeling of the GE Aerospace LEAP engine, which is set to flow to WWD at high margins given its content gains. He also views the China truck business through a longer term lens, expecting long term growth and solid margins from that product set, while the stock recently reset significantly seemingly entirely due to lower China truck revenue in just one quarter.

Valuation.

12-month price target of \$201 is based on a target 2025E EV/EBITDA multiple of 19X. Following the recent pullback, WWD now trades at 14.5X CY25E EV/EBITDA, whereas other aftermarket-rich or high quality aerospace suppliers like GE, TDG, HWM all trade 18-20X EBITDA. Key risks include (1) pace of aerospace growth, (2) industrial drivers, and (3) a relatively high valuation for a stock where earnings estimates were just

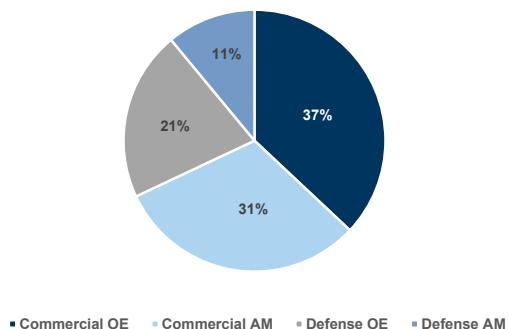
lowered.

Catalysts.

Poponak sees aerospace sector outperformance continuing as demand for new planes remains strong, and global travel growth continues to push aftermarket results higher. He expects earnings outperformance from WWD, from its market and product positioning, plus new management operating initiatives. Soon the LEAP engine shop visit growth rate should accelerate, which could bring more attention to that part of the financial model. The recent earnings report resets China truck expectations to a much lower bar.

Key Chart.

Exhibit 41: Nearly ~70% of WWD's FY23 Aerospace segment revenue was derived from the Commercial OE/AM end markets
 FY23 Aerospace revenue was ~\$1.8bn



Source: Company data, Goldman Sachs Global Investment Research

Relevant Research.

- Aug-28: "WWD: Company meeting takeaways: several unique growth and margin upside drivers; Buy"
- Jul-31: "WWD: No change to our medium-to-long term view; Buy"
- May-22: "WWD: Company meeting takeaways"
- Jan-10: "Aerospace & Defense: Ratings changes in mid-cap: upgrade WWD to Buy, HXL to Neutral, downgrade MRCY to Sell"

Financial Advisory disclosure

Goldman Sachs and/or one of its affiliates is acting as a financial advisor in connection with an announced strategic matter involving the following company or one of its affiliates: Schlumberger N.v

Disclosure Appendix

Reg AC

We, Steven Kron, Chris Hussey, John Marshall and Sarah Herr, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs' Global Investment Research division.

GS Factor Profile

The Goldman Sachs Factor Profile provides investment context for a stock by comparing key attributes to the market (i.e. our coverage universe) and its sector peers. The four key attributes depicted are: Growth, Financial Returns, Multiple (e.g. valuation) and Integrated (a composite of Growth, Financial Returns and Multiple). Growth, Financial Returns and Multiple are calculated by using normalized ranks for specific metrics for each stock. The normalized ranks for the metrics are then averaged and converted into percentiles for the relevant attribute. The precise calculation of each metric may vary depending on the fiscal year, industry and region, but the standard approach is as follows:

Growth is based on a stock's forward-looking sales growth, EBITDA growth and EPS growth (for financial stocks, only EPS and sales growth), with a higher percentile indicating a higher growth company. **Financial Returns** is based on a stock's forward-looking ROE, ROCE and CROCI (for financial stocks, only ROE), with a higher percentile indicating a company with higher financial returns. **Multiple** is based on a stock's forward-looking P/E, P/B, price/dividend (P/D), EV/EBITDA, EV/FCF and EV/Debt Adjusted Cash Flow (DACP) (for financial stocks, only P/E, P/B and P/D), with a higher percentile indicating a stock trading at a higher multiple. The **Integrated** percentile is calculated as the average of the Growth percentile, Financial Returns percentile and (100% - Multiple percentile).

Financial Returns and Multiple use the Goldman Sachs analyst forecasts at the fiscal year-end at least three quarters in the future. Growth uses inputs for the fiscal year at least seven quarters in the future compared with the year at least three quarters in the future (on a per-share basis for all metrics).

For a more detailed description of how we calculate the GS Factor Profile, please contact your GS representative.

M&A Rank

Across our global coverage, we examine stocks using an M&A framework, considering both qualitative factors and quantitative factors (which may vary across sectors and regions) to incorporate the potential that certain companies could be acquired. We then assign a M&A rank as a means of scoring companies under our rated coverage from 1 to 3, with 1 representing high (30%-50%) probability of the company becoming an acquisition target, 2 representing medium (15%-30%) probability and 3 representing low (0%-15%) probability. For companies ranked 1 or 2, in line with our standard departmental guidelines we incorporate an M&A component into our target price. M&A rank of 3 is considered immaterial and therefore does not factor into our price target, and may or may not be discussed in research.

Quantum

Quantum is Goldman Sachs' proprietary database providing access to detailed financial statement histories, forecasts and ratios. It can be used for in-depth analysis of a single company, or to make comparisons between companies in different sectors and markets.

Disclosures

Rating and pricing information

Ally Financial Inc. (Buy, \$43.19), Amazon.com Inc. (Buy, \$178.50), Amgen Inc. (Buy, \$333.83), Brixmor Property Group (Buy, \$27.39), Citigroup Inc. (Buy, \$62.64), Conagra Brands Inc. (Buy, \$31.20), Dollar General Corp. (Buy, \$82.97), Enphase Energy Inc. (Buy, \$121.04), Fox Corp. (Buy, \$41.37), Global-E Online Ltd. (Buy, \$34.42), Guidewire Software Inc. (Buy, \$148.77), Insmed Inc. (Buy, \$76.47), Installed Building Products Inc. (Buy, \$222.31), International Business Machines Corp. (Buy, \$202.13), Kinder Morgan Inc. (Buy, \$21.57), Nvidia Corp. (Buy, \$119.37), Parker Hannifin Corp. (Buy, \$600.20), Philip Morris International Inc. (Buy, \$123.29), Royal Caribbean Cruises Ltd. (Buy, \$164.62), S&P Global Inc. (Buy, \$513.24), SLB (Buy, \$43.99), Sempra (Buy, \$82.18), Snowflake Inc. (Buy, \$114.23), TPG Inc. (Buy, \$50.45), Teradyne Inc. (Buy, \$136.73), Vulcan Materials Co. (Buy, \$245.21) and Woodward Inc. (Buy, \$166.65)

The rating(s) for Fox Corp. is/are relative to the other companies in its/their coverage universe: Apple Inc., Arista Networks Inc., Axon Enterprise Inc., Blend Labs, Cisco Systems Inc., Comcast Corp., Compass Inc., Dell Technologies Inc., F5 Inc., Fox Corp., HP Inc., Offerpad Solutions Inc., Opendoor Technologies Inc., Redfin Corp., SoFi Technologies Inc., Stagwell Inc., Super Micro Computer Inc., TD SYNNEX Corp., Upstart Holdings, Walt Disney Co., Warner Bros Discovery Inc., Zillow Group

The rating(s) for TPG Inc. is/are relative to the other companies in its/their coverage universe: Affiliated Managers Group, AllianceBernstein Holding, Ameriprise Financial Inc., Apollo Global Management Inc., Ares Management Corp., Artisan Partners Asset Management, AssetMark Financial Holdings Inc., Bank of New York Mellon Corp., BlackRock Inc., Blackstone Group, Blue Owl Capital, Brookfield Asset Management, CME Group, Carlyle Group, Cboe Global Markets Inc., Charles Schwab Corp., Franklin Resources Inc., Hamilton Lane Inc., Intercontinental Exchange Inc., Invesco Ltd., Janus Henderson Group, KKR & Co., LPL Financial Holdings, Marex Group, MarketAxess Holdings, Nasdaq Inc., Northern Trust Corp., Raymond James Financial Inc., State Street Corp., StepStone Group, Stifel Financial Corp., T. Rowe Price Group, TPG Inc., Tradeweb Markets Inc., Victory Capital Holdings, Virtu Financial Inc., WisdomTree Inc.

The rating(s) for Installed Building Products Inc. is/are relative to the other companies in its/their coverage universe: A.O. Smith Corp., AZEK Company Inc., Armstrong World Industries Inc., Boise Cascade Co., Carlisle Companies Inc., D.R. Horton Inc., Fortune Brands Innovations Inc., Installed Building Products Inc., JELD-WEN Holding, KB Home, Latham Group Inc., Leggett & Platt Inc., Lennar Corp., Louisiana-Pacific Corp., Masco Corp., Meritage Homes Corp., Mohawk Industries Inc., Owens Corning, Pool Corp., PulteGroup Inc., Toll Brothers Inc., TopBuild Corp., Trex Company Inc., Weyerhaeuser Co., Whirlpool Corp., Worthington Enterprises Inc.

The rating(s) for Royal Caribbean Cruises Ltd. is/are relative to the other companies in its/their coverage universe: Aramark Holdings, Avis Budget Group, Carnival Corp., Hertz Global Holdings, Norwegian Cruise Line Holdings, Royal Caribbean Cruises Ltd., Six Flags, United Parks & Resorts Inc.

The rating(s) for Insmed Inc. is/are relative to the other companies in its/their coverage universe: Arrowhead Pharmaceuticals Inc., Day One Biopharmaceuticals, Insmed Inc., Iovance Biotherapeutics, Jazz Pharmaceuticals, Kodiak Sciences, Krystal Biotech Inc., Madrigal Pharmaceuticals Inc., Relmada Therapeutics Inc., Sagimet Biosciences, Tarsus Pharmaceuticals Inc.

The rating(s) for Philip Morris International Inc. is/are relative to the other companies in its/their coverage universe: Altria Group, Boston Beer

Co., Brown-Forman Corp., Casey's General Stores Inc., Church & Dwight Co., Clorox Co., Coca-Cola Co., Coca-Cola Europacific Partners, Coca-Cola European Partners, Colgate-Palmolive Co., Constellation Brands, Estee Lauder Co., Kenvue Inc., Keurig Dr Pepper Inc., Kimberly-Clark Corp., Molson Coors Beverage Co., Monster Beverage Corp., Murphy USA Inc., PepsiCo Inc., Philip Morris International Inc., Procter & Gamble Co., The Vita Coco Co. Inc., Zevia PBC

The rating(s) for Ally Financial Inc. is/are relative to the other companies in its/their coverage universe: Ally Financial Inc., American Express Co., Bank of N.T. Butterfield & Son Ltd., BankUnited Inc., Bread Financial Holdings, Capital One Financial Corp., Citizens Financial Group, Comerica Inc., Enact Holdings Inc., Essent Group, Fifth Third Bancorp, First Citizens Bancshares Inc., First Hawaiian Inc., First Horizon National Corp., First Republic Bank, Huntington Bancshares Inc., KeyCorp, LoanDepot Inc., M&T Bank Corp., Regions Financial Corp., Rocket Cos., Synchrony Financial, Synovus Financial Corp., Truist Financial, UVM Holdings Corp., Zions Bancorporation

The rating(s) for International Business Machines Corp. is/are relative to the other companies in its/their coverage universe: AT&T Inc., Accenture Plc, Altice USA Inc., American Tower Corp., Charter Communications Inc., Cogent Communications Holdings, Cognizant Technology Solutions, Crown Castle International Corp., Digital Realty Trust Inc., EPAM Systems Inc., Equinix Inc., Frontier Communications Parent Inc., Globant SA, IHS Holding, International Business Machines Corp., Lumen Technologies Inc., SBA Communications Corp., Softchoice Corp., T-Mobile US Inc., TaskUs Inc., Verizon Communications

The rating(s) for SLB is/are relative to the other companies in its/their coverage universe: Atlas Energy Solutions, Baker Hughes Co., Cameco Corp., Chart Industries, Expro Group Holdings NV, Halliburton Co., Helmerich & Payne Inc., Liberty Energy Inc., MYR Group, MasTec Inc., NOV Inc., Patterson-UTI Energy Inc., Quanta Services, SLB, Weatherford International Ltd.

The rating(s) for Woodward Inc. is/are relative to the other companies in its/their coverage universe: Boeing Co., Bombardier Inc., Booz Allen Hamilton, CACI International Inc., CAE Inc., Ducommun Inc., Embraer, GE Aerospace, General Dynamics Corp., Heico Corp., Hexcel Corp., Howmet Aerospace Inc., Huntington Ingalls Industries Inc., Kratos, L3Harris Technologies Inc., Leidos Holdings, Lockheed Martin Corp., Mercury Systems Inc., Northrop Grumman Corp., Parsons Corp., Planet Labs, RTX Corp., Rocket Lab USA Inc., Science Applications International, Teledyne Technologies Inc., Textron Inc., TransDigm Group, Triumph Group, Virgin Galactic Holdings, Wheels Up, Woodward Inc.

The rating(s) for Citigroup Inc. is/are relative to the other companies in its/their coverage universe: Bank of America Corp., Citigroup Inc., Evercore Inc., FTI Consulting Inc., Houlihan Lokey Inc., Interactive Brokers Group, J.P. Morgan Chase & Co., Jefferies Financial Group, Lazard Ltd., Moelis & Co., Morgan Stanley & Co., PJT Partners, PNC Financial Services, Perella Weinberg Partners, Piper Sandler Cos., U.S. Bancorp, Wells Fargo & Co.

The rating(s) for Nvidia Corp. and Teradyne Inc. is/are relative to the other companies in its/their coverage universe: ARM Holdings, Advanced Micro Devices Inc., Amkor Technology Inc., Analog Devices Inc., Applied Materials Inc., Arrow Electronics Inc., Avnet Inc., Broadcom Inc., Cohu Inc., Credo Technology Group, Entegris Inc., Impinj Inc., Intel Corp., IonQ Inc., KLA Corp., Lam Research Corp., Marvell Technology Inc., Microchip Technology Inc., Micron Technology Inc., NXP Semiconductors NV, Nvidia Corp., ON Semiconductor Corp., Qorvo Inc., Seagate Technology, Skyworks Solutions Inc., Teradyne Inc., Texas Instruments Inc., Western Digital Corp.

The rating(s) for Conagra Brands Inc. is/are relative to the other companies in its/their coverage universe: Conagra Brands Inc., General Mills Inc., Hershey Co., Kraft Heinz Co., Mondelez International Inc.

The rating(s) for Amgen Inc. is/are relative to the other companies in its/their coverage universe: 2Seventy Bio, 4D Molecular Therapeutics, Acadia Pharmaceuticals Inc., Adaptive Biotechnologies Corp., Agios Pharmaceuticals Inc., Alnylam Pharmaceuticals Inc., Amgen Inc., Amicus Therapeutics Inc., Apellis Pharmaceuticals, Arcus Biosciences Inc., Atara Biotherapeutics Inc., BioMarin Pharmaceutical Inc., Biogen Inc., Blueprint Medicines Corp., CRISPR Therapeutics, Denali Therapeutics Inc., Gilead Sciences Inc., Incyte Corp., Intellia Therapeutics, Ionis Pharmaceuticals Inc., Moderna Inc., Regeneron Pharmaceuticals Inc., Sage Therapeutics Inc., Sarepta Therapeutics Inc., Ultradex Pharmaceutical, Vertex Pharmaceuticals Inc., bluebird bio, uniQure

The rating(s) for Amazon.com Inc. is/are relative to the other companies in its/their coverage universe: ACV Auctions Inc., Airbnb Inc., Alphabet Inc., Amazon.com Inc., Angi Inc., AppLovin Corp., Booking Holdings Inc., Bumble Inc., Chewy Inc., Clear Secure Inc., Corsair Gaming Inc., Coursera Inc., Cricut Inc., DoorDash Inc., DoubleVerify Inc., DraftKings Inc., Duolingo Inc., Electronic Arts Inc., Etsy Inc., Expedia Group, Fiverr International Ltd., Frontdoor Inc., Genius Sports Ltd., GoodRx Holdings Inc., Groupon Inc., IAC Inc., Ibotta Inc., Instacart, Lyft Inc., Match Group, MediaAlpha Inc., Meta Platforms Inc., Nerdy Inc., Netflix Inc., Nextdoor Holdings, Opera Ltd., Peloton Interactive Inc., Pinteresr Inc., Playtika, Reddit Inc., Roblox, Snap Inc., Spotify Technology S.A., Take-Two Interactive Software Inc., Tripadvisor Inc., Uber Technologies Inc., Ubisoft Entertainment SA, Upwork Inc., Vacasa Inc., Wayfair Inc., Webtoon Entertainment Inc., Xometry Inc., Yelp Inc., ZipRecruiter Inc., eBay Inc.

The rating(s) for Brixmor Property Group is/are relative to the other companies in its/their coverage universe: BXP Inc., Brixmor Property Group, Broadstone Net Lease Inc., Essential Properties Realty Trust, Extra Space Storage Inc., First Industrial Realty Trust, Gaming and Leisure Properties Inc., Hudson Pacific Properties Inc., Kilroy Realty Corp., Kimco Realty Corp., Lineage Inc., Macerich Co., Phillips Edison & Co., Prologis Inc., Public Storage Inc., SL Green Realty Corp., Safehold Inc., Simon Property Group, Tanger Inc., Terreno Realty Corp., VICI Properties Inc., Vornado Realty Trust

The rating(s) for Parker Hannifin Corp. is/are relative to the other companies in its/their coverage universe: ATS Corp., Allegion Plc, Cognex Corp., Core & Main Inc., Dover Corp., Eaton Corp., Flowserve Corp., GE Vernova, Graco Inc., Honeywell International Inc., ITT Inc., Illinois Tool Works, Ingersoll Rand Inc., Johnson Controls International Plc, Kennametal Inc., Lennox International Inc., Mirion Technologies Inc., Parker Hannifin Corp., RBC Bearings Inc., Regal Rexnord Corp., Rockwell Automation Inc., Roper Technologies Inc., Stanley Black & Decker Inc., Timken Co., Trane Technologies Plc, Vontier Corp., Zurn Elkay Water Solutions Corp., nVENT Electric Plc.

The rating(s) for Guidewire Software Inc. is/are relative to the other companies in its/their coverage universe: Appian Corp., AvePoint, BigCommerce Holdings, Braze Inc., CCC Intelligent Solutions Holding, Check Point, Clearwater Analytics Holdings, Cloudflare, CrowdStrike, Dayforce Inc., DigitalOcean Holdings, Docebo Inc., Enfusion Inc., EverCommerce Inc., Fortinet, Guidewire Software Inc., HubSpot Inc., Kaltura Inc., Klaviyo, Okta, Olo Inc., Palantir Technologies, Palo Alto Networks, Paycor HCM Inc., Pegasystems Inc., Sapiens International Corp., SentinelOne, Shopify Inc., Tyler Technologies Inc., Veeva Systems Inc., Zscaler

The rating(s) for Kinder Morgan Inc. is/are relative to the other companies in its/their coverage universe: Antero Midstream Corp., Aris Water Solutions Inc., Cheniere Energy Inc., Cheniere Energy Partners, DT Midstream Inc., Energy Transfer LP, Enterprise Products Partners LP, Enviva Inc., Kinder Morgan Inc., Kinetik Holdings, Kodiak Gas Services Inc., LandBridge, MPLX LP, Plains All American Pipeline LP, Plains GP Holdings, TC Energy Corp., Targa Resources Corp., Williams Cos.

The rating(s) for Vulcan Materials Co. is/are relative to the other companies in its/their coverage universe: AGCO Corp., Allison Transmission Holdings, Atmus Filtration Technologies Inc., Casella Waste Systems Inc., Caterpillar Inc., Clean Harbors Inc., Cummins Inc., Deere & Co., Eagle Materials Inc., Fluor Corp., GFL Environmental, Gates Industrial Corp., Generac Holdings, Granite Construction Inc., Herc Holdings, Hyzon Motors, KBR Inc., Manitowoc Co., Martin Marietta Materials, OPAL Fuels Inc., Oshkosh Corp., Paccar Inc., Primoris Services Corp., REV Group, Republic Services Inc., Summit Materials Inc., Terex Corp., Trimble Inc., United Rentals Inc., Vulcan Materials Co., Wabtec Corp., Waste Connections Inc., Waste

Management Inc.

The rating(s) for Sempra is/are relative to the other companies in its/their coverage universe: Ameren Corp., American Electric Power, Consolidated Edison Inc., Duke Energy Corp., Edison International, Eversource Energy, Exelon Corp., FirstEnergy Corp., NextEra Energy Inc., PG&E Corp., Public Service Enterprise Group, Sempra, Southern Co., WEC Energy Group, Xcel Energy Inc.

The rating(s) for Snowflake Inc. is/are relative to the other companies in its/their coverage universe: Adobe Inc., Altair Engineering Inc., Atlassian Corp., Autodesk Inc., Bentley Systems Inc., Confluent Inc., Couchbase Inc., Datadog Inc., Definitive Healthcare Corp., Dropbox Inc., Dynatrace Inc., Elastic NV, GitLab Inc., Informatica Inc., Intuit Inc., Microsoft Corp., Monday.Com Ltd., MongoDB Inc., Oracle Corp., PagerDuty, Procure Technologies Inc., RingCentral, Rubrik Inc., Salesforce Inc., Samsara Inc., ServiceNow Inc., Snowflake Inc., SolarWinds Corp., Twilio, Unity Software Inc., Weave Communications Inc., Workday Inc., Zoom Video Communications Inc., ZoomInfo Technologies Inc.

The rating(s) for Enphase Energy Inc. is/are relative to the other companies in its/their coverage universe: Acuity Brands Inc., Array Technologies Inc., Canadian Solar Inc., Energy Vault Holdings, Enphase Energy Inc., First Solar Inc., Fluence Energy Inc., Hannon Armstrong, Hayward Holdings, JinkoSolar Holding, Maxeon Solar Technologies Ltd., Mueller Water Products Inc., Nextracker, Pentair Plc, Shoals Technologies, SolarEdge Technologies Inc., Stem Inc., Sunnova Energy, Sunrun Inc., Universal Display Corp., Veeco Instruments Inc., Veralto Corp., Watts Water Technologies Inc., Wolfspeed Inc., Xylem Inc.

The rating(s) for Dollar General Corp. is/are relative to the other companies in its/their coverage universe: Academy Sports & Outdoors Inc., Advance Auto Parts Inc., AutoZone Inc., BJ's Wholesale Club Holdings, Bath & Body Works Inc., Best Buy Co., Big Lots Inc., Boyd Group, Container Store Group, Costco Wholesale, Dick's Sporting Goods, Dollar General Corp., Dollar Tree Stores Inc., Driven Brands Holdings, Five Below Inc., Floor & Decor Holdings, Foot Locker Inc., Genuine Parts Co., Grocery Outlet Holding, Home Depot Inc., Leslie's Inc., Life Time Group Holdings, Lithia Motors Inc., Lowe's Cos., Mister Car Wash Inc., National Vision Holdings, O'Reilly Automotive Inc., Ollie's Bargain Outlet Inc., Petco Health and Wellness Co., RH, Sprouts Farmers Market Inc., Target Corp., Topgolf Callaway Brands Corp., Tractor Supply Co., Ulta Beauty Inc., United Natural Foods Inc., Valvoline Inc., Walmart Inc., Williams-Sonoma Inc.

The rating(s) for S&P Global Inc. is/are relative to the other companies in its/their coverage universe: ADT Inc., Bright Horizons Family, BrightView Holdings, Cintas Corp., Clarivate, CoStar Group, Dun & Bradstreet, Equifax Inc., FactSet Research Systems Inc., Fair Isaac Corp., Gartner Inc., H&R Block Inc., Iron Mountain Inc., Korn Ferry, MSCI Inc., Manpower Group, Moody's Corp., NCR Atleos, Robert Half International Inc., Rollins Inc., S&P Global Inc., The Brink's Co., Thomson Reuters Corp., TransUnion, UL Solutions, Verisk Analytics Inc., Vestis Corp.

The rating(s) for Global-E Online Ltd. is/are relative to the other companies in its/their coverage universe: Affirm Holdings, AvidXChange Holdings, Bill.com Holdings, Block Inc., Coinbase Global Inc., Fidelity National Information Services, Fiserv Inc., Flywire Corp., Global Payments Inc., Global-E Online Ltd., Jack Henry & Associates Inc., Marqeta Inc., Mastercard Inc., PAR Technology Corp., PayPal Holdings, Paymentus Holdings, Payoneer Global, Remitly Global Inc., Riskified Ltd., Robinhood Markets Inc., Shift4 Payments, Toast Inc., Visa Inc., Western Union Co.

Option Specific Disclosures

Price target methodology: Please refer to the analyst's previously published research for methodology and risks associated with equity price targets.

Pricing Disclosure: Option prices and volatility levels in this note are indicative only, and are based on our estimates of recent mid-market levels(unless otherwise noted). All prices and levels exclude transaction costs unless otherwise stated.

General Options Risks – The risks below and any other options risks mentioned in this research report pertain both to specific derivative trade recommendations mentioned and to discussion of general opportunities and advantages of derivative strategies. Unless otherwise noted, options strategies mentioned in this report may be a combination of the strategies below and therefore carry with them the risks of those strategies.

Buying Options - Investors who buy call (put) options risk loss of the entire premium paid if the underlying security finishes below (above) the strike price at expiration. Investors who buy call or put spreads also risk a maximum loss of the premium paid. The maximum gain on a long call or put spread is the difference between the strike prices, less the premium paid.

Selling Options - Investors who sell calls on securities they do not own risk unlimited loss of the security price less the strike price. Investors who sell covered calls (sell calls while owning the underlying security) risk having to deliver the underlying security or pay the difference between the security price and the strike price, depending on whether the option is settled by physical delivery or cash-settled. Investors who sell puts risk loss of the strike price less the premium received for selling the put. Investors who sell put or call spreads risk a maximum loss of the difference between the strikes less the premium received, while their maximum gain is the premium received.

For options settled by physical delivery, the above risks assume the options buyer or seller, buys or sells the resulting securities at the settlement price on expiry.

Company-specific regulatory disclosures

Compendium report: please see disclosures at <https://www.gs.com/research/hedge.html>. Disclosures applicable to the companies included in this compendium can be found in the latest relevant published research

Distribution of ratings/investment banking relationships

Goldman Sachs Investment Research global Equity coverage universe

	Rating Distribution			Investment Banking Relationships		
	Buy	Hold	Sell	Buy	Hold	Sell
Global	48%	35%	17%	64%	57%	41%

As of July 1, 2024, Goldman Sachs Global Investment Research had investment ratings on 2,925 equity securities. Goldman Sachs assigns stocks as Buys and Sells on various regional Investment Lists; stocks not so assigned are deemed Neutral. Such assignments equate to Buy, Hold and Sell for the purposes of the above disclosure required by the FINRA Rules. See 'Ratings, Coverage universe and related definitions' below. The Investment Banking Relationships chart reflects the percentage of subject companies within each rating category for whom Goldman Sachs has provided investment banking services within the previous twelve months.

Price target and rating history chart(s)

Compendium report: please see disclosures at <https://www.gs.com/research/hedge.html>. Disclosures applicable to the companies included in this compendium can be found in the latest relevant published research

Regulatory disclosures

Disclosures required by United States laws and regulations

See company-specific regulatory disclosures above for any of the following disclosures required as to companies referred to in this report: manager or co-manager in a pending transaction; 1% or other ownership; compensation for certain services; types of client relationships; managed/co-managed public offerings in prior periods; directorships; for equity securities, market making and/or specialist role. Goldman Sachs trades or may trade as a principal in debt securities (or in related derivatives) of issuers discussed in this report.

The following are additional required disclosures: **Ownership and material conflicts of interest:** Goldman Sachs policy prohibits its analysts, professionals reporting to analysts and members of their households from owning securities of any company in the analyst's area of coverage.

Analyst compensation: Analysts are paid in part based on the profitability of Goldman Sachs, which includes investment banking revenues. **Analyst as officer or director:** Goldman Sachs policy generally prohibits its analysts, persons reporting to analysts or members of their households from serving as an officer, director or advisor of any company in the analyst's area of coverage. **Non-U.S. Analysts:** Non-U.S. analysts may not be associated persons of Goldman Sachs & Co. LLC and therefore may not be subject to FINRA Rule 2241 or FINRA Rule 2242 restrictions on communications with subject company, public appearances and trading securities held by the analysts.

Distribution of ratings: See the distribution of ratings disclosure above. **Price chart:** See the price chart, with changes of ratings and price targets in prior periods, above, or, if electronic format or if with respect to multiple companies which are the subject of this report, on the Goldman Sachs website at <https://www.gs.com/research/hedge.html>.

Additional disclosures required under the laws and regulations of jurisdictions other than the United States

The following disclosures are those required by the jurisdiction indicated, except to the extent already made above pursuant to United States laws and regulations.

Australia: Goldman Sachs Australia Pty Ltd and its affiliates are not authorised deposit-taking institutions (as that term is defined in the Banking Act 1959 (Cth)) in Australia and do not provide banking services, nor carry on a banking business, in Australia. This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act, unless otherwise agreed by Goldman Sachs. In producing research reports, members of Global Investment Research of Goldman Sachs Australia may attend site visits and other meetings hosted by the companies and other entities which are the subject of its research reports. In some instances the costs of such site visits or meetings may be met in part or in whole by the issuers concerned if Goldman Sachs Australia considers it is appropriate and reasonable in the specific circumstances relating to the site visit or meeting. To the extent that the contents of this document contains any financial product advice, it is general advice only and has been prepared by Goldman Sachs without taking into account a client's objectives, financial situation or needs. A client should, before acting on any such advice, consider the appropriateness of the advice having regard to the client's own objectives, financial situation and needs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests and a copy of Goldman Sachs' Australian Sell-Side Research Independence Policy Statement are available at: <https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html>. **Brazil:** Disclosure information in relation to CVM Resolution n. 20 is available at <https://www.gs.com/worldwide/brazil/area/gir/index.html>. Where applicable, the Brazil-registered analyst primarily responsible for the content of this research report, as defined in Article 20 of CVM Resolution n. 20, is the first author named at the beginning of this report, unless indicated otherwise at the end of the text. **Canada:** This information is being provided to you for information purposes only and is not, and under no circumstances should be construed as, an advertisement, offering or solicitation by Goldman Sachs & Co. LLC for purchasers of securities in Canada to trade in any Canadian security. Goldman Sachs & Co. LLC is not registered as a dealer in any jurisdiction in Canada under applicable Canadian securities laws and generally is not permitted to trade in Canadian securities and may be prohibited from selling certain securities and products in certain jurisdictions in Canada. If you wish to trade in any Canadian securities or other products in Canada please contact Goldman Sachs Canada Inc., an affiliate of The Goldman Sachs Group Inc., or another registered Canadian dealer. **Hong Kong:** Further information on the securities of covered companies referred to in this research may be obtained on request from Goldman Sachs (Asia) L.L.C. **India:** Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (India) Securities Private Limited, Research Analyst - SEBI Registration Number INH000001493, 951-A, Rational House, Appasaheb Marathe Marg, Prabhadevi, Mumbai 400 025, India, Corporate Identity Number U74140MH2006FTC160634, Phone +91 22 6616 9000, Fax +91 22 6616 9001. Goldman Sachs may beneficially own 1% or more of the securities (as such term is defined in clause 2 (h) the Indian Securities Contracts (Regulation) Act, 1956) of the subject company or companies referred to in this research report. Investment in securities market are subject to market risks. Read all the related documents carefully before investing. Registration granted by SEBI and certification from NISM in no way guarantee performance of the intermediary or provide any assurance of returns to investors. Goldman Sachs (India) Securities Private Limited Investor Grievance E-mail: india-client-support@goldmansachs.com. Compliance Officer: Anil Rajput | Tel: + 91 22 6616 9000 | Email: anil.m.rajput@goldmansachs.com. **Japan:** See below. **Korea:** This research, and any access to it, is intended only for "professional investors" within the meaning of the Financial Services and Capital Markets Act, unless otherwise agreed by Goldman Sachs. Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (Asia) L.L.C., Seoul Branch. **New Zealand:** Goldman Sachs New Zealand Limited and its affiliates are neither "registered banks" nor "deposit takers" (as defined in the Reserve Bank of New Zealand Act 1989) in New Zealand. This research, and any access to it, is intended for "wholesale clients" (as defined in the Financial Advisers Act 2008) unless otherwise agreed by Goldman Sachs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests is available at: <https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html>. **Russia:** Research reports distributed in the Russian Federation are not advertising as defined in the Russian legislation, but are information and analysis not having product promotion as their main purpose and do not provide appraisal within the meaning of the Russian legislation on appraisal activity. Research reports do not constitute a personalized investment recommendation as defined in Russian laws and regulations, are not addressed to a specific client, and are prepared without analyzing the financial circumstances, investment profiles or risk profiles of clients. Goldman Sachs assumes no responsibility for any investment decisions that may be taken by a client or any other person based on this research report. **Singapore:** Goldman Sachs (Singapore) Pte. (Company Number: 198602165W), which is regulated by the Monetary Authority of Singapore, accepts legal responsibility for this research, and should be contacted with respect to any matters arising from, or in connection with, this research. **Taiwan:** This material is for reference only and must not be reprinted without permission. Investors should carefully consider their own investment risk. Investment results are the responsibility of the individual investor. **United Kingdom:** Persons who would be categorized as retail clients in the United Kingdom, as such term is defined in the rules of the Financial Conduct Authority, should read this research in conjunction with prior Goldman Sachs research on the covered companies referred to herein and should refer to the risk warnings that have been sent to them by Goldman Sachs International. A copy of these risks warnings, and a glossary of certain financial terms used in this report, are available from Goldman Sachs International on request.

European Union and United Kingdom: Disclosure information in relation to Article 6 (2) of the European Commission Delegated Regulation (EU) (2016/958) supplementing Regulation (EU) No 596/2014 of the European Parliament and of the Council (including as that Delegated Regulation is implemented into United Kingdom domestic law and regulation following the United Kingdom's departure from the European Union and the European Economic Area) with regard to regulatory technical standards for the technical arrangements for objective presentation of investment recommendations or other information recommending or suggesting an investment strategy and for disclosure of particular interests or indications of conflicts of interest is available at <https://www.gs.com/disclosures/europeanpolicy.html> which states the European Policy for Managing Conflicts of Interest in Connection with Investment Research.

Japan: Goldman Sachs Japan Co., Ltd. is a Financial Instrument Dealer registered with the Kanto Financial Bureau under registration number Kinsho 69, and a member of Japan Securities Dealers Association, Financial Futures Association of Japan Type II Financial Instruments Firms Association, The Investment Trusts Association, Japan, and Japan Investment Advisers Association. Sales and purchase of equities are subject to commission pre-determined with clients plus consumption tax. See company-specific disclosures as to any applicable disclosures required by Japanese stock

exchanges, the Japanese Securities Dealers Association or the Japanese Securities Finance Company.

Ratings, coverage universe and related definitions

Buy (B), Neutral (N), Sell (S) Analysts recommend stocks as Buys or Sells for inclusion on various regional Investment Lists. Being assigned a Buy or Sell on an Investment List is determined by a stock's total return potential relative to its coverage universe. Any stock not assigned as a Buy or a Sell on an Investment List with an active rating (i.e., a stock that is not Rating Suspended, Not Rated, Coverage Suspended or Not Covered), is deemed Neutral. Each region manages Regional Conviction lists, which are selected from Buy rated stocks on the respective region's Investment lists and represent investment recommendations focused on the size of the total return potential and/or the likelihood of the realization of the return across their respective areas of coverage. The addition or removal of stocks from such Conviction lists are managed by the Investment Review Committee or other designated committee in each respective region and do not represent a change in the analysts' investment rating for such stocks.

Total return potential represents the upside or downside differential between the current share price and the price target, including all paid or anticipated dividends, expected during the time horizon associated with the price target. Price targets are required for all covered stocks. The total return potential, price target and associated time horizon are stated in each report adding or reiterating an Investment List membership.

Coverage Universe: A list of all stocks in each coverage universe is available by primary analyst, stock and coverage universe at <https://www.gs.com/research/hedge.html>.

Not Rated (NR). The investment rating, target price and earnings estimates (where relevant) are not provided or have been suspended pursuant to Goldman Sachs policy when Goldman Sachs is acting in an advisory capacity in a merger or in a strategic transaction involving this company, when there are legal, regulatory or policy constraints due to Goldman Sachs' involvement in a transaction, when the company is an early-stage biotechnology company, and in certain other circumstances. **Rating Suspended (RS)**. Goldman Sachs Research has suspended the investment rating and price target for this stock, because there is not a sufficient fundamental basis for determining an investment rating or target price. The previous investment rating and target price, if any, are no longer in effect for this stock and should not be relied upon. **Coverage Suspended (CS)**. Goldman Sachs has suspended coverage of this company. **Not Covered (NC)**. Goldman Sachs does not cover this company. **Not Available or Not Applicable (NA)**. The information is not available for display or is not applicable. **Not Meaningful (NM)**. The information is not meaningful and is therefore excluded.

Global product; distributing entities

Goldman Sachs Global Investment Research produces and distributes research products for clients of Goldman Sachs on a global basis. Analysts based in Goldman Sachs offices around the world produce research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy. This research is disseminated in Australia by Goldman Sachs Australia Pty Ltd (ABN 21 006 797 897); in Brazil by Goldman Sachs do Brasil Corretora de Títulos e Valores Mobiliários S.A.; Public Communication Channel Goldman Sachs Brazil: 0800 727 5764 and / or contatogoldmanbrasil@gs.com. Available Weekdays (except holidays), from 9am to 6pm. Canal de Comunicação com o Públíco Goldman Sachs Brasil: 0800 727 5764 e/ou contatogoldmanbrasil@gs.com. Horário de funcionamento: segunda-feira à sexta-feira (exceto feriados), das 9h às 18h; in Canada by Goldman Sachs & Co. LLC; in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs New Zealand Limited; in Russia by OOO Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman Sachs & Co. LLC. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom.

Goldman Sachs International ("GSI"), authorised by the Prudential Regulation Authority ("PRA") and regulated by the Financial Conduct Authority ("FCA") and the PRA, has approved this research in connection with its distribution in the United Kingdom.

European Economic Area: GSI, authorised by the PRA and regulated by the FCA and the PRA, disseminates research in the following jurisdictions within the European Economic Area: the Grand Duchy of Luxembourg, Italy, the Kingdom of Belgium, the Kingdom of Denmark, the Kingdom of Norway, the Republic of Finland and the Republic of Ireland; GSI - Succursale de Paris (Paris branch) which is authorised by the French Autorité de contrôle prudentiel et de resolution ("ACPR") and regulated by the Autorité de contrôle prudentiel et de resolution and the Autorité des marchés financiers ("AMF") disseminates research in France; GSI - Sucursal en España (Madrid branch) authorized in Spain by the Comisión Nacional del Mercado de Valores disseminates research in the Kingdom of Spain; GSI - Sweden Bankfilial (Stockholm branch) is authorized by the SFSA as a "third country branch" in accordance with Chapter 4, Section 4 of the Swedish Securities and Market Act (Sw. lag (2007:528) om värdepappersmarknaden) disseminates research in the Kingdom of Sweden; Goldman Sachs Bank Europe SE ("GSBE") is a credit institution incorporated in Germany and, within the Single Supervisory Mechanism, subject to direct prudential supervision by the European Central Bank and in other respects supervised by German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin) and Deutsche Bundesbank and disseminates research in the Federal Republic of Germany and those jurisdictions within the European Economic Area where GSI is not authorised to disseminate research and additionally, GSBE, Copenhagen Branch filial of GSBE, Tyskland, supervised by the Danish Financial Authority disseminates research in the Kingdom of Denmark; GSBE - Sucursal en España (Madrid branch) subject (to a limited extent) to local supervision by the Bank of Spain disseminates research in the Kingdom of Spain; GSBE - Succursale Italia (Milan branch) to the relevant applicable extent, subject to local supervision by the Bank of Italy (Banca d'Italia) and the Italian Companies and Exchange Commission (Commissione Nazionale per le Società e la Borsa "Consob") disseminates research in Italy; GSBE - Succursale de Paris (Paris branch), supervised by the AMF and by the ACPR disseminates research in France; and GSBE - Sweden Bankfilial (Stockholm branch), to a limited extent, subject to local supervision by the Swedish Financial Supervisory Authority (Finansinpektionen) disseminates research in the Kingdom of Sweden.

General disclosures

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. The information, opinions, estimates and forecasts contained herein are as of the date hereof and are subject to change without prior notification. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by Global Investment Research. Goldman Sachs & Co. LLC, the United States broker dealer, is a member of SIPC (<https://www.sipc.org>).

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and principal trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, principal trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research.

The analysts named in this report may have from time to time discussed with our clients, including Goldman Sachs salespersons and traders, or may discuss in this report, trading strategies that reference catalysts or events that may have a near-term impact on the market price of the equity securities discussed in this report, which impact may be directionally counter to the analyst's published price target expectations for such stocks. Any such trading strategies are distinct from and do not affect the analyst's fundamental equity rating for such stocks, which rating reflects a stock's return

potential relative to its coverage universe as described herein.

We and our affiliates, officers, directors, and employees will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research, unless otherwise prohibited by regulation or Goldman Sachs policy.

The views attributed to third party presenters at Goldman Sachs arranged conferences, including individuals from other parts of Goldman Sachs, do not necessarily reflect those of Global Investment Research and are not an official view of Goldman Sachs.

Any third party referenced herein, including any salespeople, traders and other professionals or members of their household, may have positions in the products mentioned that are inconsistent with the views expressed by analysts named in this report.

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options and futures disclosure documents which are available from Goldman Sachs sales representatives or at <https://www.theocc.com/about/publications/character-risks.jsp> and

https://www.fiadocumentation.org/fia/regulatory-disclosures_1/fia-uniform-futures-and-options-on-futures-risk-disclosures-booklet-pdf-version-2018.

Transaction costs may be significant in option strategies calling for multiple purchase and sales of options such as spreads. Supporting documentation will be supplied upon request.

Differing Levels of Service provided by Global Investment Research: The level and types of services provided to you by Goldman Sachs Global Investment Research may vary as compared to that provided to internal and other external clients of GS, depending on various factors including your individual preferences as to the frequency and manner of receiving communication, your risk profile and investment focus and perspective (e.g., marketwide, sector specific, long term, short term), the size and scope of your overall client relationship with GS, and legal and regulatory constraints. As an example, certain clients may request to receive notifications when research on specific securities is published, and certain clients may request that specific data underlying analysts' fundamental analysis available on our internal client websites be delivered to them electronically through data feeds or otherwise. No change to an analyst's fundamental research views (e.g., ratings, price targets, or material changes to earnings estimates for equity securities), will be communicated to any client prior to inclusion of such information in a research report broadly disseminated through electronic publication to our internal client websites or through other means, as necessary, to all clients who are entitled to receive such reports.

All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Goldman Sachs responsible for the redistribution of our research by third party aggregators. For research, models or other data related to one or more securities, markets or asset classes (including related services) that may be available to you, please contact your GS representative or go to <https://research.gs.com>.

Disclosure information is also available at <https://www.gs.com/research/hedge.html> or from Research Compliance, 200 West Street, New York, NY 10282.

© 2024 Goldman Sachs.

You are permitted to store, display, analyze, modify, reformat, and print the information made available to you via this service only for your own use. You may not resell or reverse engineer this information to calculate or develop any index for disclosure and/or marketing or create any other derivative works or commercial product(s), data or offering(s) without the express written consent of Goldman Sachs. You are not permitted to publish, transmit, or otherwise reproduce this information, in whole or in part, in any format to any third party without the express written consent of Goldman Sachs. This foregoing restriction includes, without limitation, using, extracting, downloading or retrieving this information, in whole or in part, to train or finetune a machine learning or artificial intelligence system, or to provide or reproduce this information, in whole or in part, as a prompt or input to any such system.