



Global Investment Research

The Goldman Sachs Group, Inc.

Where to Invest Now

From Fear to FOMO

April 28, 2020

David J. Kostin
Chief US Equity Strategist

Goldman, Sachs & Co.

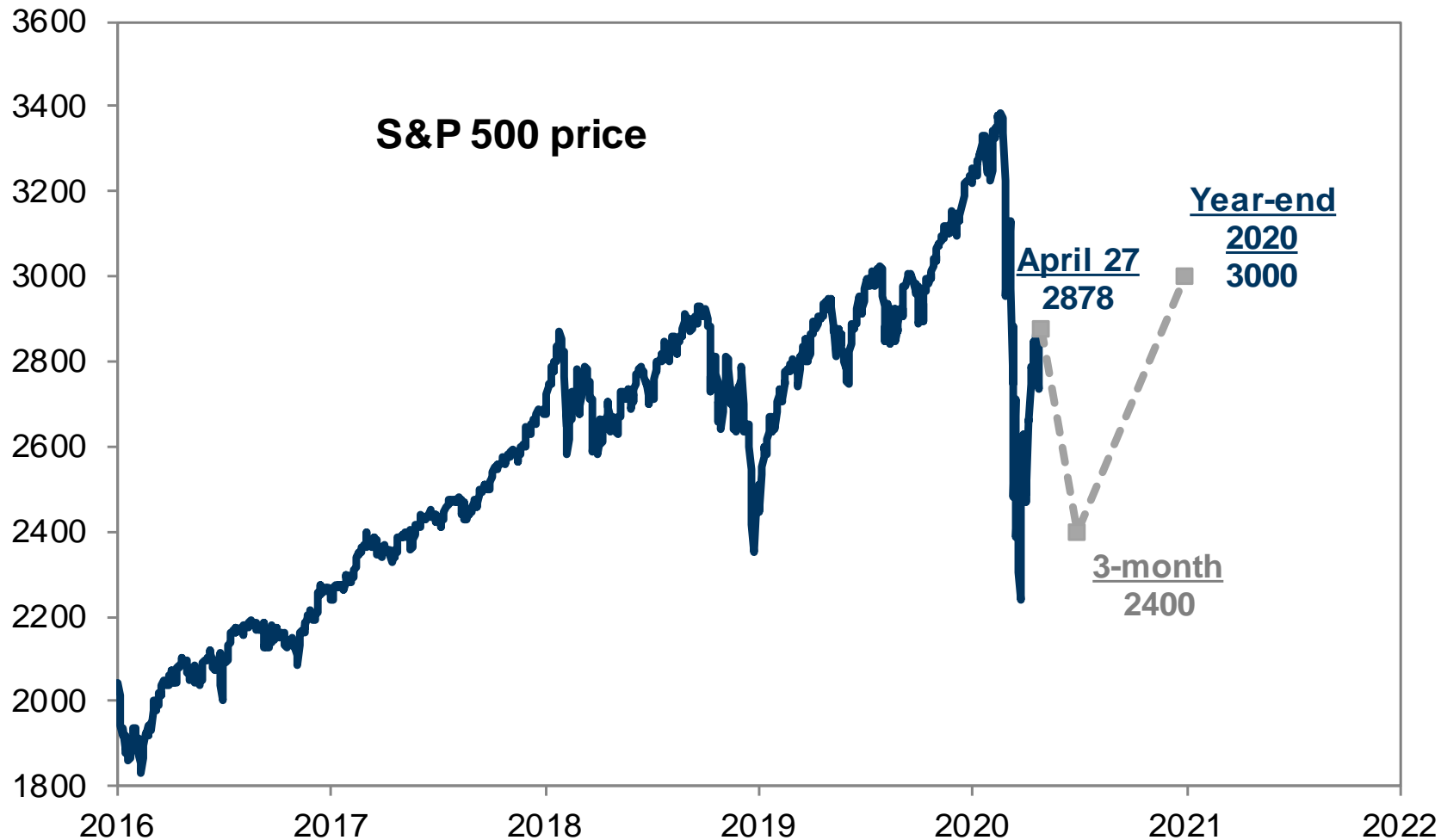
1-212-902-6781

david.kostin@gs.com

Path of the US equity market in 2020

S&P 500 will fall to 2400 mid-year before rallying to 3000 at year-end

Path of the S&P 500 market in 2020

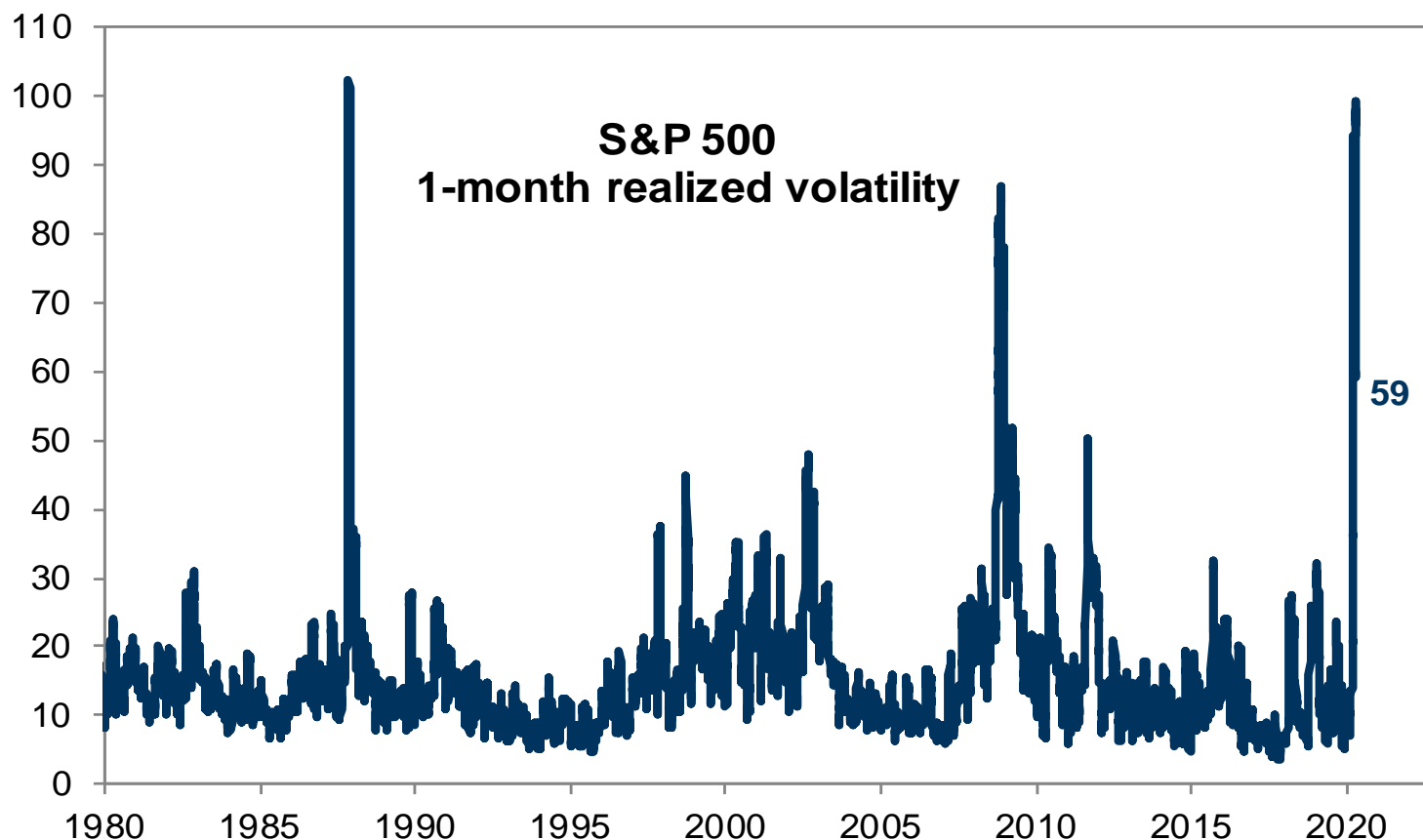


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Volatility hit a 30-year high and remains elevated

Extreme uncertainty around magnitude and duration of coronavirus shutdown

S&P 500 realized volatility since 1980



S&P 500 annualized realized volatility

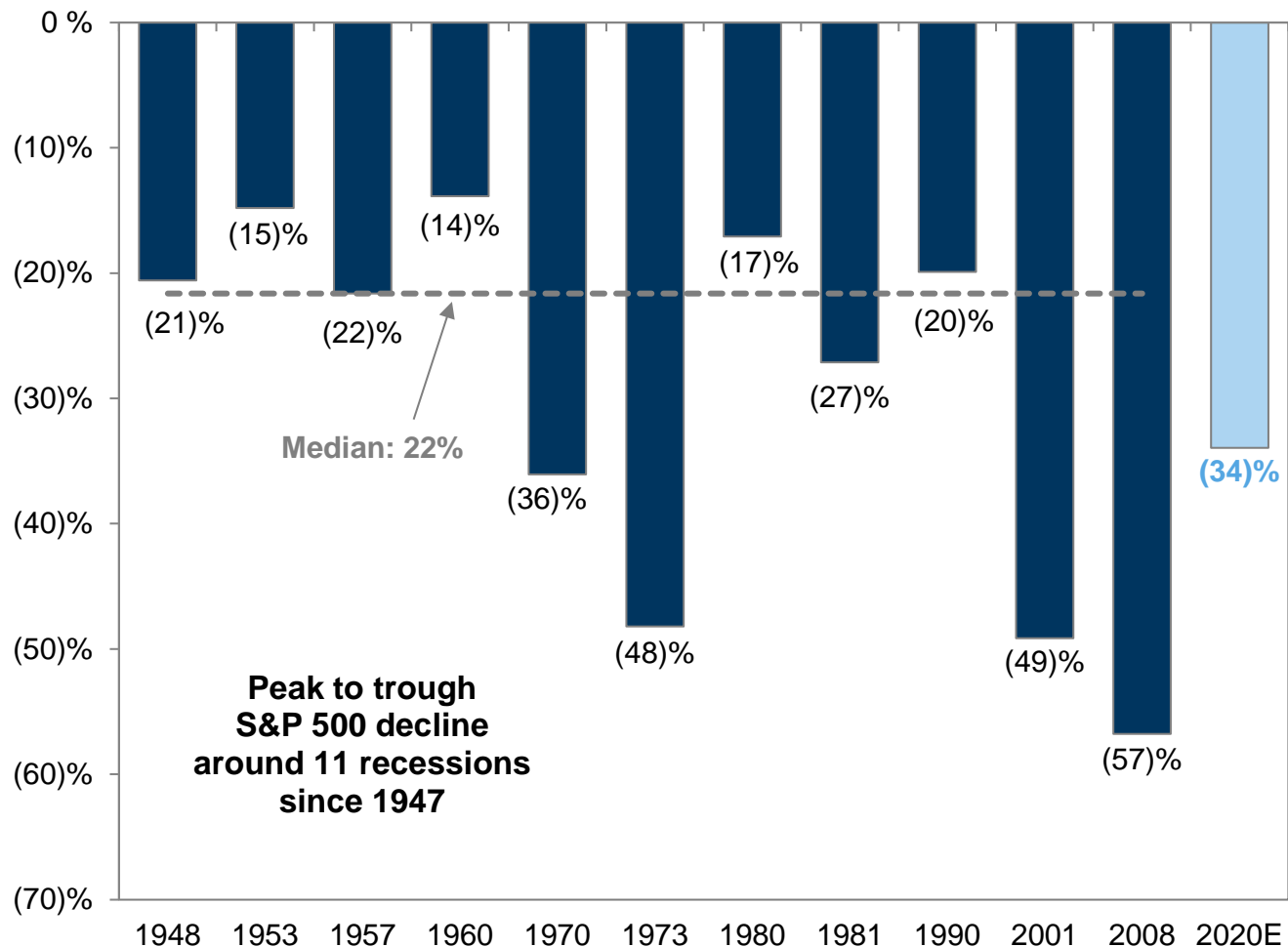
Month	Annualized realized vol
Oct 1987	97
Mar 2020	96
Oct 1929	85
Oct 2008	80
Nov 1929	78
Mar 1933	75
Nov 2008	71
Sep 1932	67
Jul 1933	62
Oct 1931	61
Apr 2020	59

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S&P 500 index fall during 11 recessions since 1948

22% median index decline from peak to trough during past 11 recessions

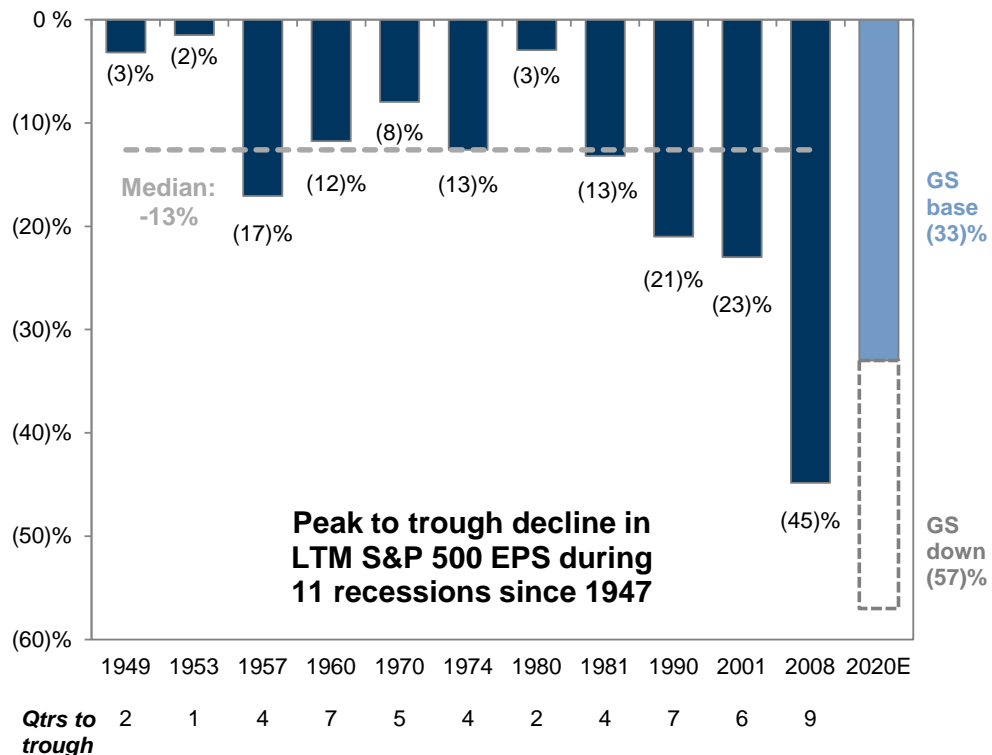
S&P 500 index declines around recessions



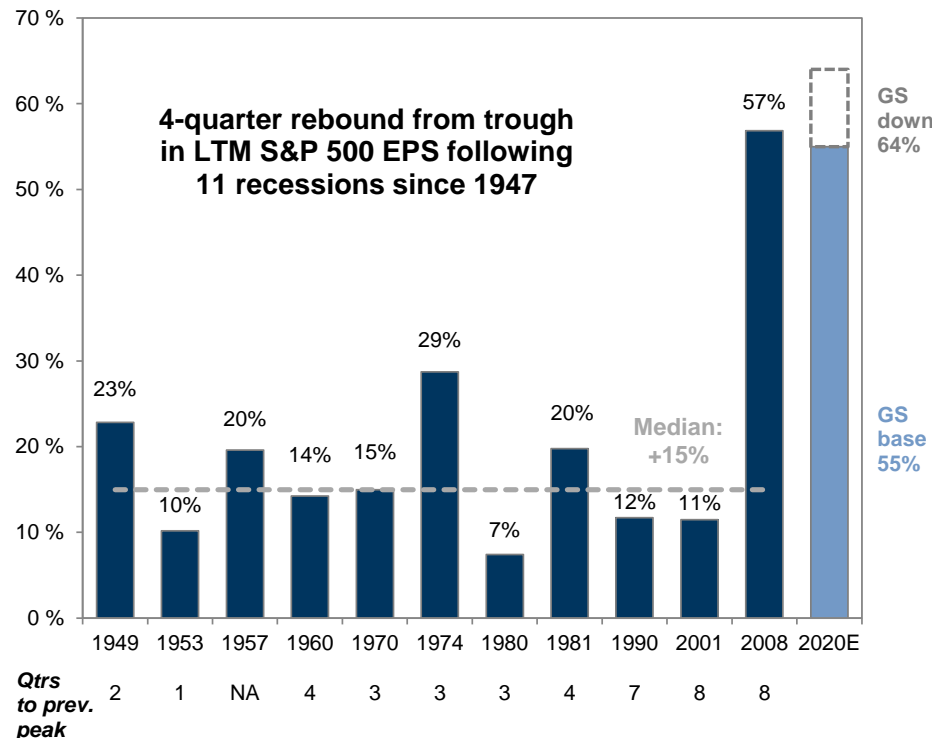
S&P 500 EPS changes during and after recessions

Goldman Sachs baseline and downside EPS scenarios for 2020 and 2021

EPS declines during recessions



EPS recoveries following recessions



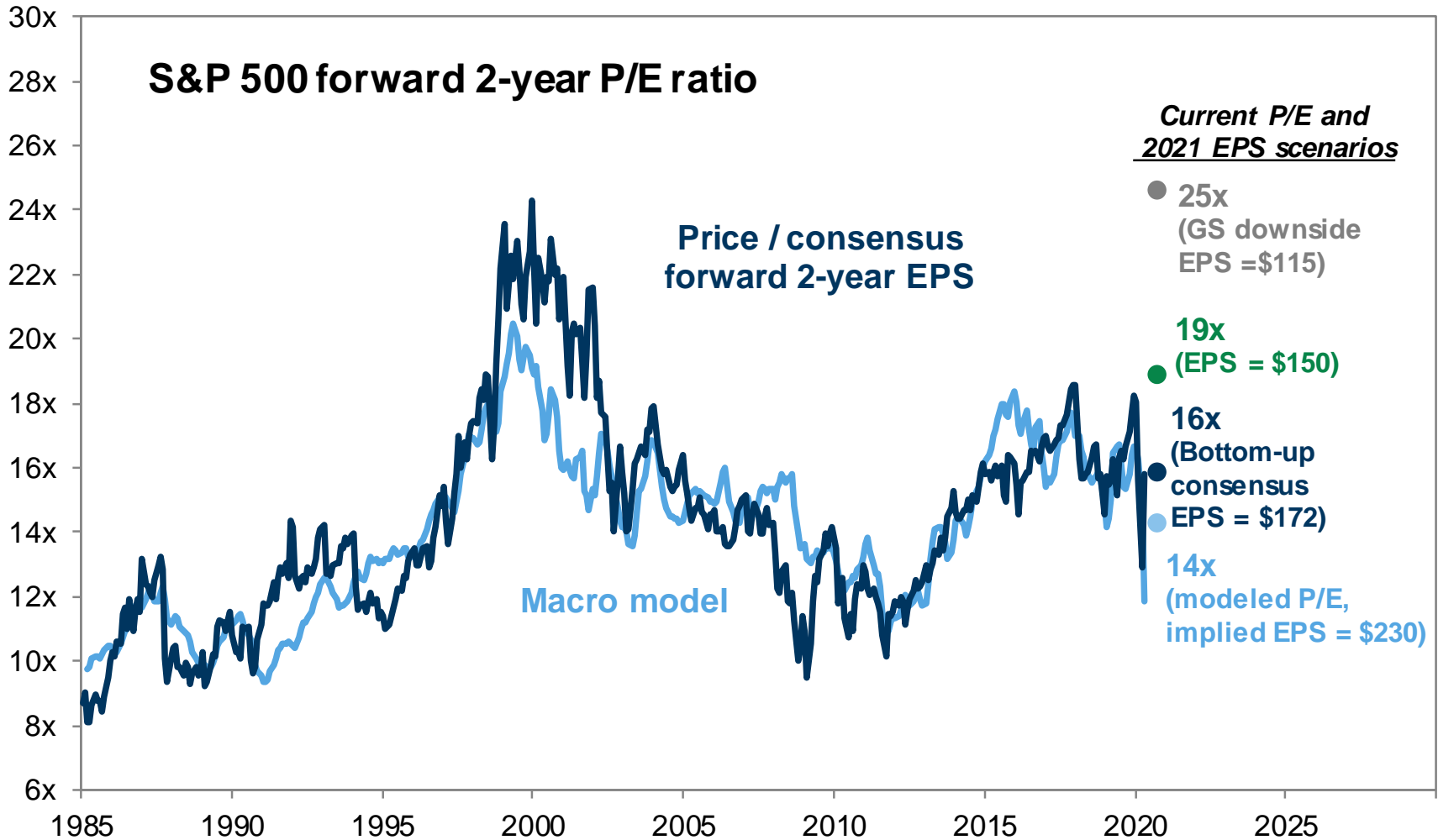
GS baseline and downside EPS scenarios

	S&P 500 EPS			EPS growth	
	2019	2020	2021	2020	2021
Consensus bottom-up	\$165	\$137	\$172	(17)%	26 %
GS baseline	165	110	170	(33)	55
GS downside	165	70	115	(57)	64

Current P/E valuation based on 2021 EPS scenarios

S&P 500 valuation is higher than the macro environment would normally indicate

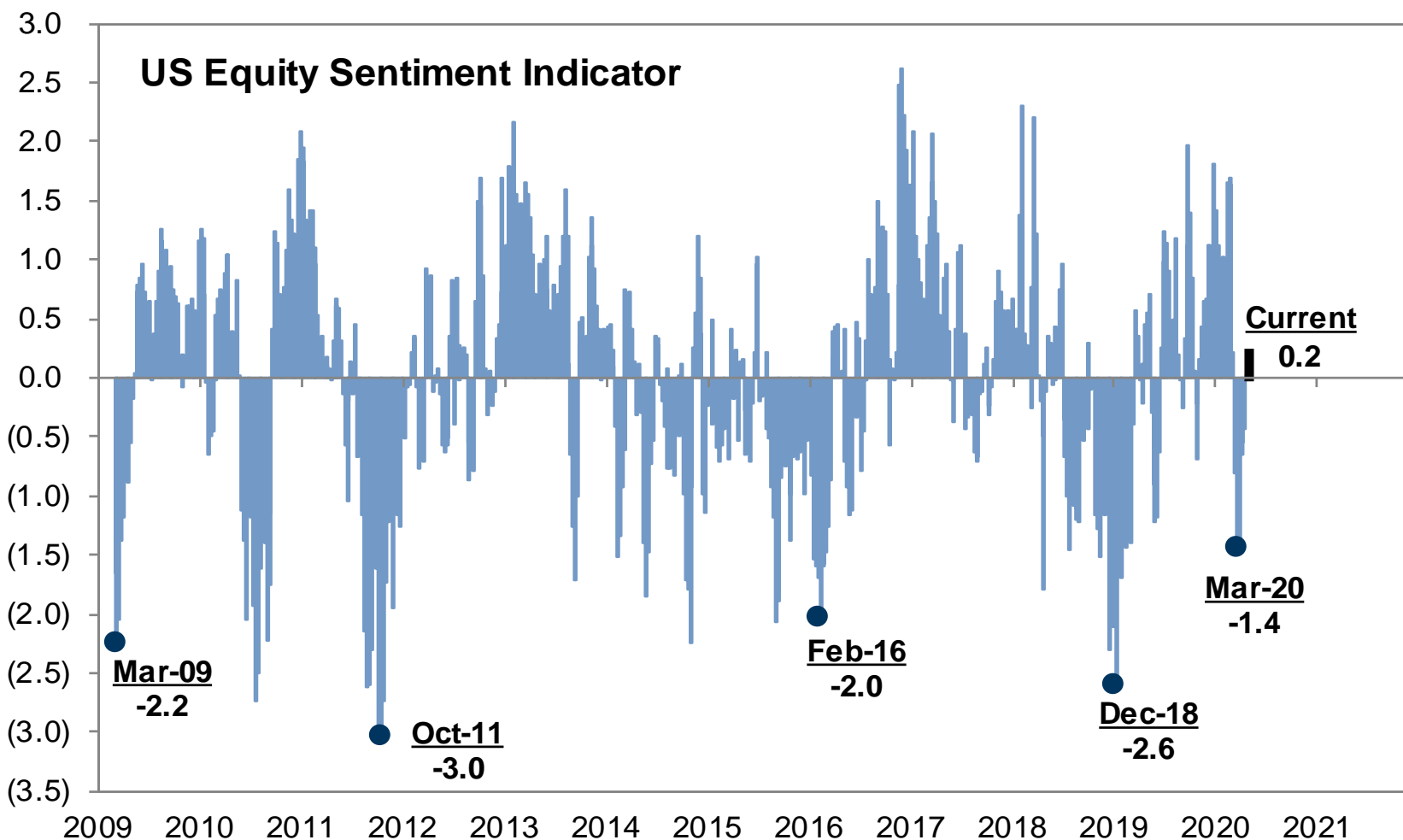
S&P 500 forward 2-year P/E ratio



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Goldman Sachs Equity Investor Sentiment Indicator

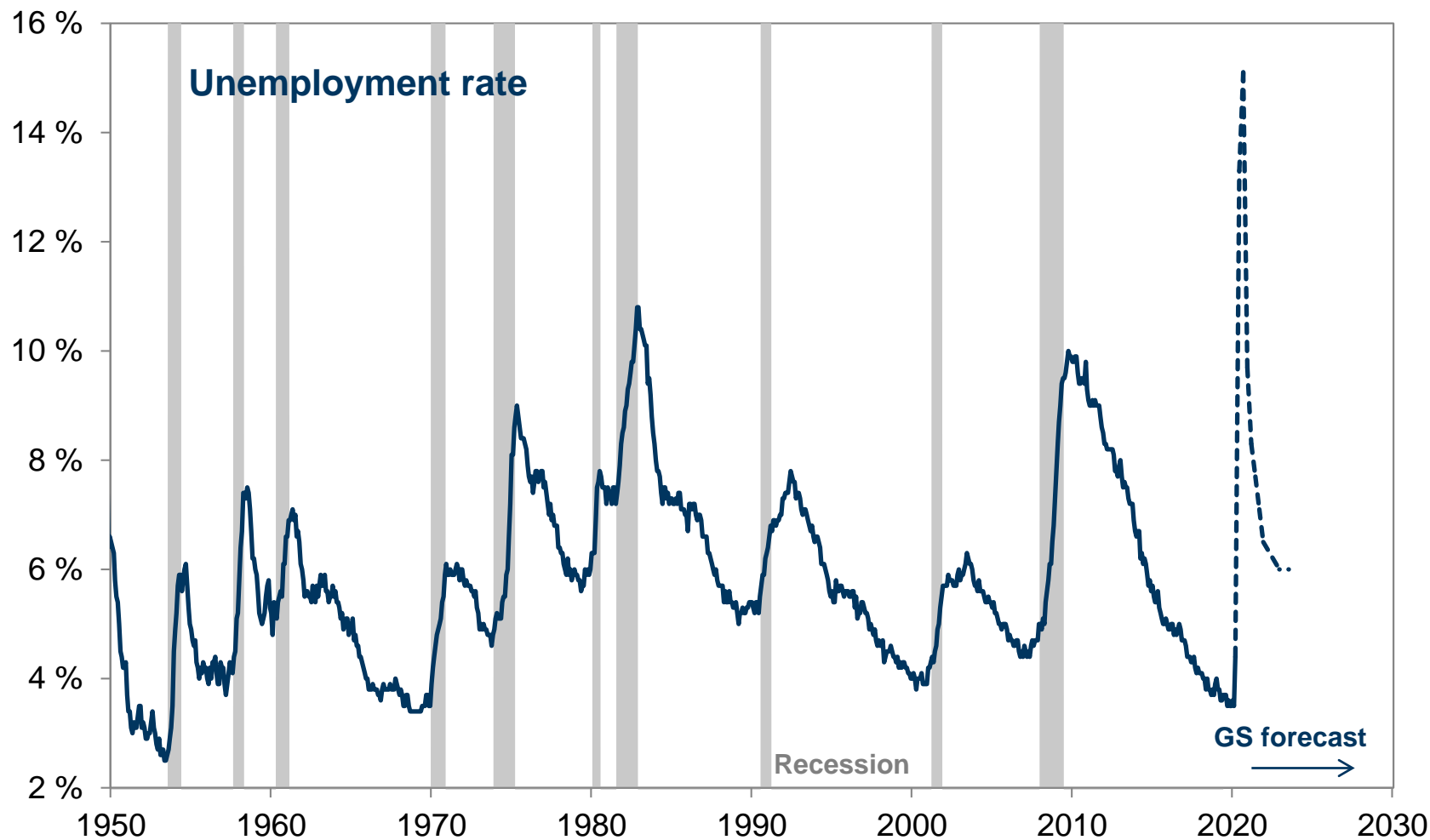
Indicator typically 2-3 standard deviations below trend at recent market troughs



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Unemployment rate surging towards 15% in 3Q

Many employers firing or furloughing workers but jobless rate will end 2020 at 10%

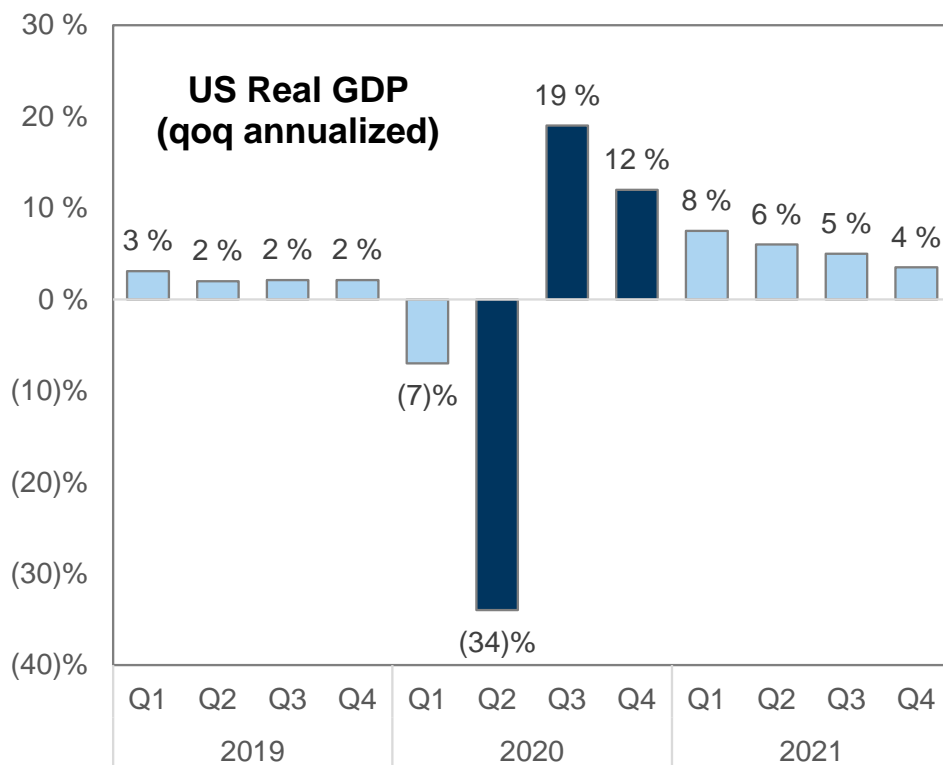


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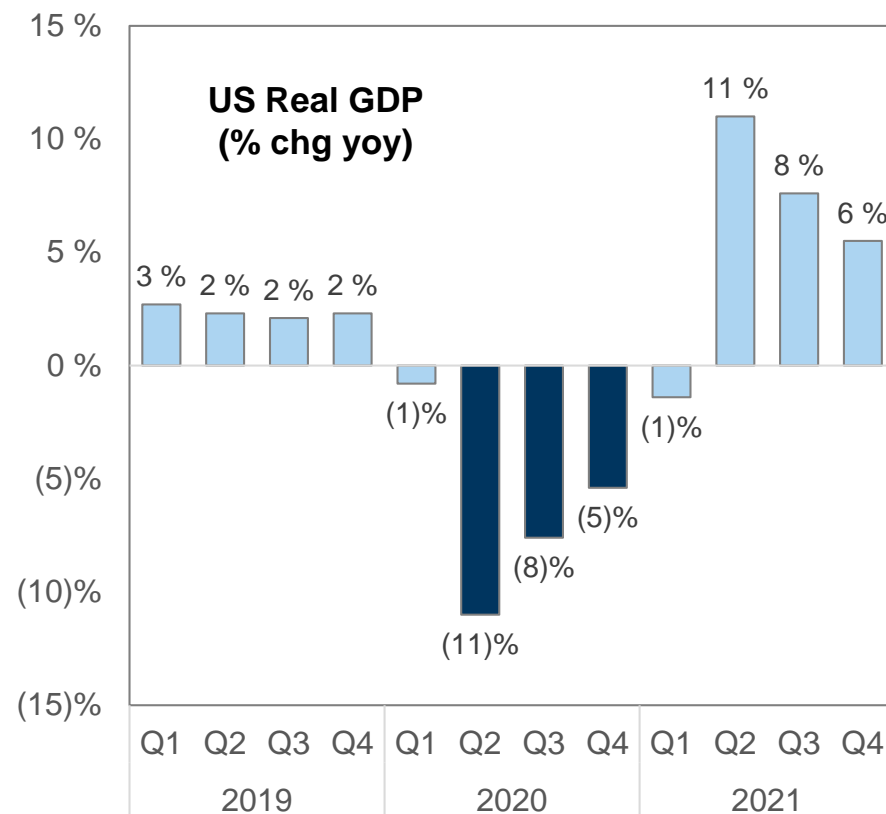
V-shaped or U-shaped recovery for US economy

Growth quarter/quarter annualized looks V-shaped but year/year is U-shaped

“V” – Quarter/quarter annualized US GDP growth



“U” – Year/year US GDP growth



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US economic growth scenarios in 2020

Annual average GDP growth: Baseline (-5.7%), Upside (-3.4%), Downside (-11%)

2020 US GDP growth forecasts

Scenario	Annualized, quarter/quarter				Year/year				Full-year growth
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
Small hit	(7)%	(20)%	11 %	7 %	(0.3)%	(6.1)%	(4.1)%	(3.0)%	(3.4)%
Baseline peak hit	(7)	(34)	19	12	(0.3)	(10.5)	(7.0)	(4.9)	(5.7)
Deep hit (6 month lockdown)	(7)	(53)	20	20	(0.3)	(18.0)	(14.6)	(11.1)	(11.0)

Baseline assumptions

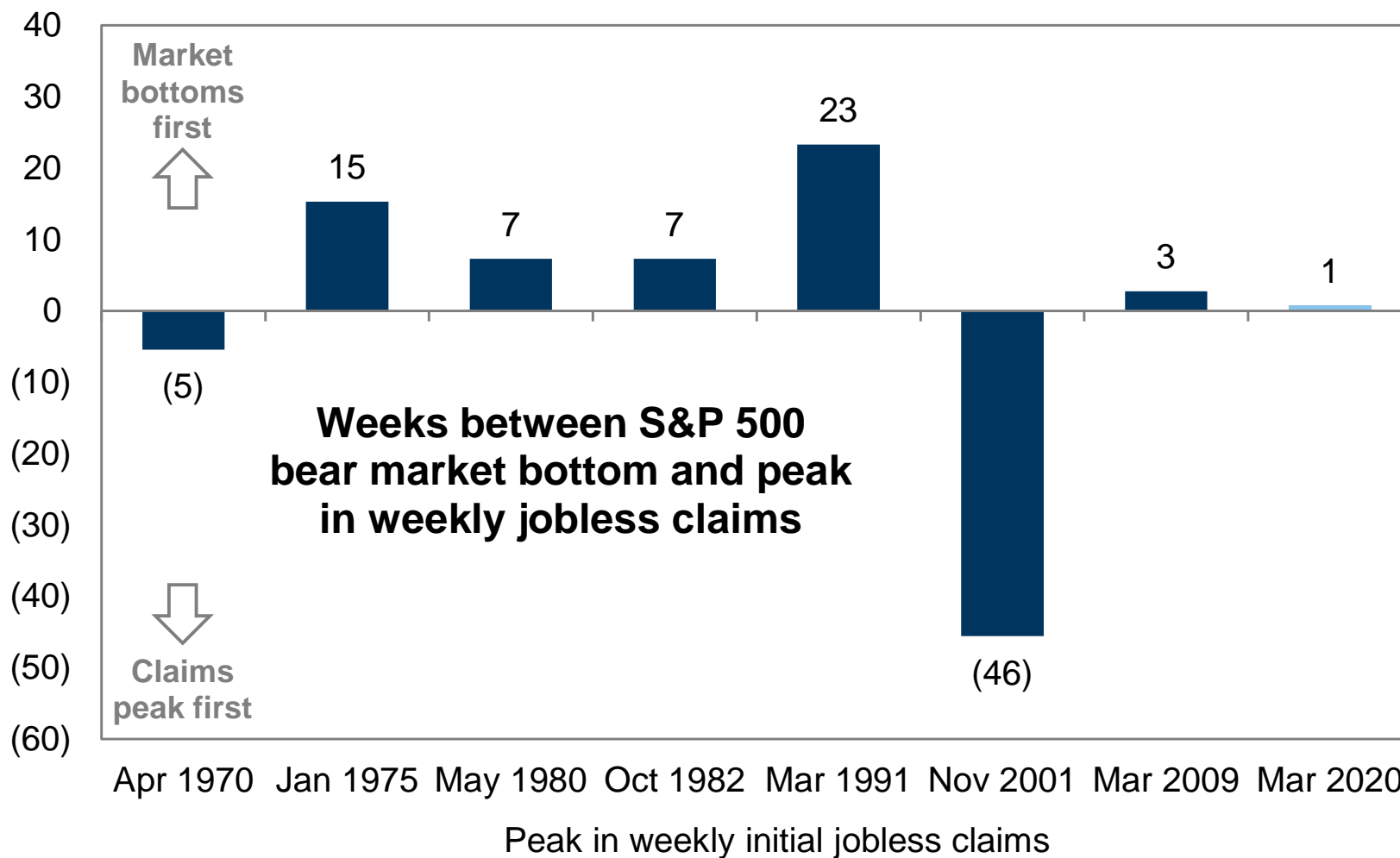
13% hit to level of activity (25% to manufacturing, 30% to construction, 14% to consumer services)

Peak hit in April with recovery starting in May and June and proceeding at a gradual pace

Equity market and economy bottomed concurrently

S&P 500 troughed on March 23rd and jobless claims peaked on March 27th

2020 bear market bottom concurrent with peak in initial jobless claims



Historical “event-driven” bear markets and recoveries

+21% median return 6 months after trough

Previous event-driven bear markets

US event-driven bear markets since 1950

Start	End	Length (months)	Decline	SPX return 6-mo after trough	Factors driving bear market
Aug-1956	Oct-1957	15	(22)%	10 %	Suez crisis and Hungarian Revolution
Dec-1961	Jun-1962	6	(28)	20	'Kennedy slide' - rising rates from 1959, Cold War tension
Feb-1966	Oct-1966	8	(22)	22	Inflation following Johnson Great Society program
Oct-1987	Dec-1987	2	(32)	19	Black Monday
Jul-1998	Aug-1998	1	(19)	28	Asian/Russian financial crises
Apr-2011	Oct-2011	5	(19)	29	European sovereign debt crisis, US credit rating downgrade
Event-driven median		6	(22)%	21 %	

If low on March 23rd at 2237

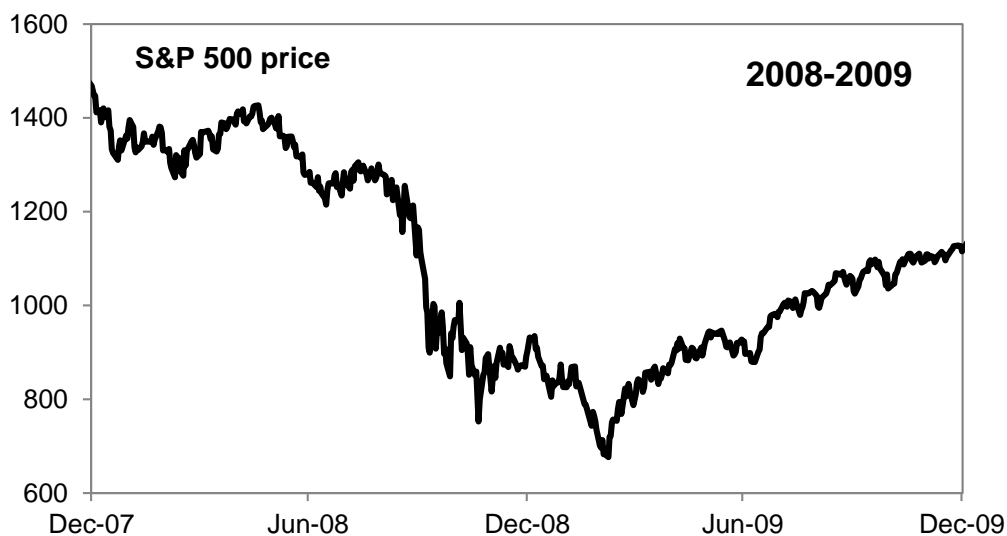
Feb-2020	Mar-2020	1	(34)%	26 % (to current)	COVID-19
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Bear market rallies are typical before index troughs

6 during 4Q 2008 (median rally +12%) and 15 from 1929-32 (+16%) before bottom

Bear market rallies: 1929-1932 and in 4Q 2008

Bear market rallies after 1929 Crash but before 1932 trough



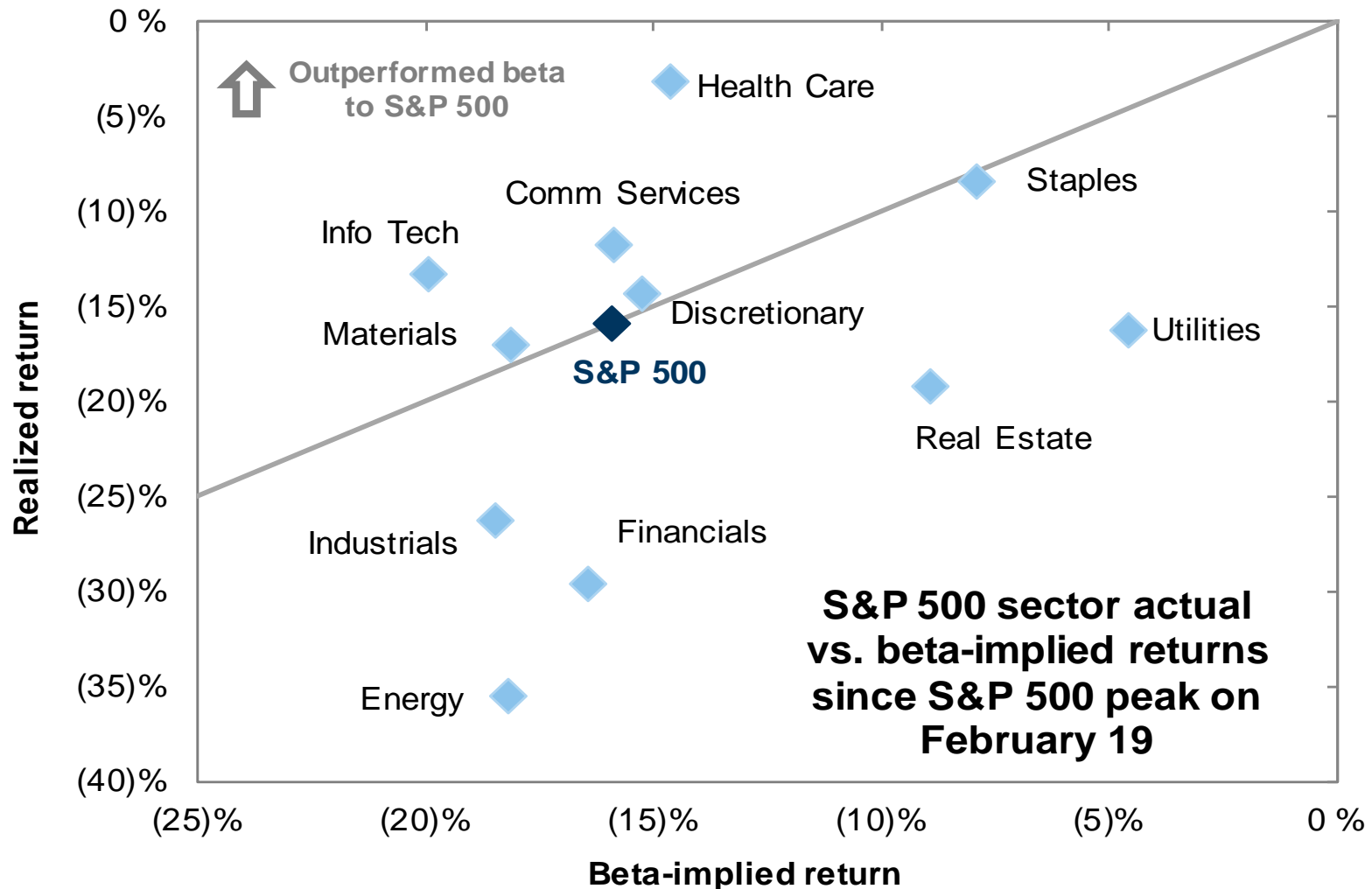
Start	End	Bounce size	Trading days
28-May-29	19-Sep-29	29 %	79
29-Oct-29	31-Oct-29	18	2
13-Nov-29	10-Dec-29	28	17
7-Feb-30	10-Apr-30	13	43
24-Jun-30	5-Aug-30	11	29
16-Dec-30	8-Jan-31	12	15
28-Jan-31	26-Feb-31	13	20
2-Jun-31	3-Jul-31	25	23
28-Oct-31	9-Nov-31	14	7
5-Jan-32	15-Jan-32	18	8
10-Feb-32	24-Feb-32	12	9
1-Jun-32	16-Jun-32	16	11
8-Jul-32	7-Sep-32	111	43
3-Nov-32	11-Nov-32	19	5
2-Dec-32	14-Dec-32	10	8
Median		16 %	15

Bear market rallies 4Q 2008 before trough in March 2009

Start	End	Bounce size	Trading days
17-Sep-08	19-Sep-08	9 %	2
10-Oct-08	13-Oct-08	12	1
15-Oct-08	20-Oct-08	9	3
27-Oct-08	4-Nov-08	18	6
20-Nov-08	28-Nov-08	19	5
1-Dec-08	8-Dec-08	11	5
Median		12 %	4

Sector realized vs beta-implied returns since peak

Health Care outperformed beta-implied return while Energy and Financials lagged



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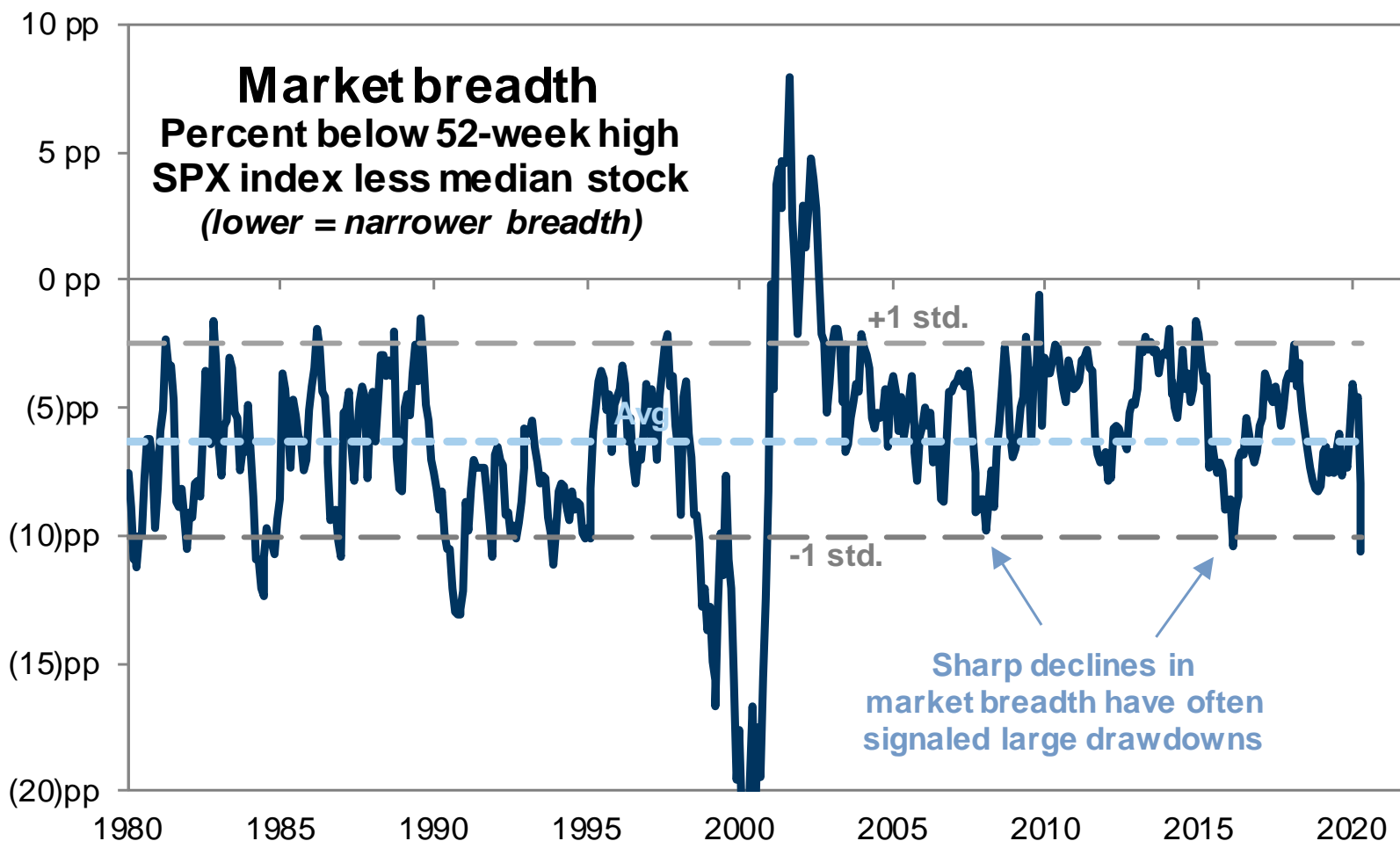
Sector actual vs beta-implied returns since peak

Health Care and Info Tech outperformed vs. beta-implied return

	Return (Feb. 19 - Apr. 24)		
	Total return	Beta implied return	Difference
Health Care	(3.1)%	(14.6)%	11.5 %
Info Tech	(13.4)	(19.9)	6.6
Discretionary	(11.8)	(15.8)	4.0
Materials	(17.0)	(18.1)	1.1
Comm Services	(14.4)	(15.2)	0.8
Staples	(8.4)	(7.9)	(0.5)
Industrials	(26.3)	(18.5)	(7.9)
Real Estate	(19.2)	(8.9)	(10.3)
Utilities	(16.2)	(4.6)	(11.7)
Financials	(29.6)	(16.4)	(13.2)
Energy	(35.5)	(18.2)	(17.3)
S&P 500	(15.9)%	(15.9)%	0.0 %

S&P 500 market breadth narrowest since Tech bubble

Sharp decline in market breadth consistent with previous downturns



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Median S&P 500 stock remains 28% below its high

But index is 17% below high and 11 percentage point gap is largest since 2000

Distance below 52-week high

Sector	Aggregate index	Median stock	Difference
Consumer Discretionary	13%	42%	29 pp
Communication Services	16	29	14
Materials	20	33	13
S&P 500	17	28	11
Real Estate	21	32	11
Health Care	6	16	10
Energy	48	56	8
Information Technology	15	23	8
Financials	31	37	6
Consumer Staples	10	14	4
Utilities	18	19	1
Industrials	28	27	(1)

S&P 500 index has surged 29% since March 23rd low

Top 20 stocks account for 35% of S&P 500 rally, in-line with market cap weight

Top 20 contributors to S&P 500 index rally

Ticker	Company	Total return	Contribution to SPX rally
MSFT	Microsoft Corp.	28 %	157 bp
AAPL	Apple Inc.	26	133
AMZN	Amazon.com Inc.	25	106
GOOGL	Alphabet Inc.	21	70
JNJ	Johnson & Johnson	39	61
FB	Facebook Inc.	27	51
UNH	UnitedHealth Group	51	51
CVX	Chevron Corp.	65	36
V	Visa Inc.	27	33
HD	Home Depot Inc.	34	33
ABT	Abbott Laboratories	52	31
MA	Mastercard Inc.	31	30
PFE	Pfizer Inc.	35	29
XOM	Exxon Mobil Corp.	40	29
JPM	JPMorgan Chase	21	28
NVDA	NVIDIA Corp.	40	28
PG	Procter & Gamble	21	28
BRK.B	Berkshire Hathaway	16	27
MRK	Merck & Co. Inc.	26	24
BAC	Bank of America	30	24
Top 20 contributors		28 %	1008 bp
Median S&P 500 stock		30	2
S&P 500		29	2885

Highest returning S&P 500 stocks

Ticker	Company	Total return	Contribution to SPX rally
APA	Apache Corp.	144 %	1 bp
LNC	Lincoln National	86	2
NBL	Noble Energy Inc.	79	1
FANG	Diamondback Energy	78	1
DRI	Darden Restaurants	76	2
HUM	Humana Inc.	74	11
DVN	Devon Energy Corp.	74	1
LH	Laboratory of America	71	4
VLO	Valero Energy Corp.	70	5
HAL	Halliburton	70	2
WHR	Whirlpool Corp.	70	2
HOLX	Hologic Inc.	69	3
MGM	MGM Resorts Intl	66	2
WMB	Williams Companies	66	5
CVX	Chevron Corp.	65	36
FCX	Freeport-McMoRan	64	3
PVH	PVH Corp.	64	1
LKQ	LKQ Corp.	64	1
INCY	Incyte Corp.	63	4
HFC	HollyFrontier Corp.	59	1
Top 20 performers		42 %	87 bp
Median S&P 500 stock		30	2
S&P 500		29	2885

Record concentration of market cap in 5 largest stocks

5 stocks account for 20% of S&P 500 equity cap: MSFT, AAPL, AMZN, GOOGL, FB



Concentration in 2000 vs. 2020

Five largest S&P 500 companies on March 31, 2000 and today

Largest 5 stocks in March 2000

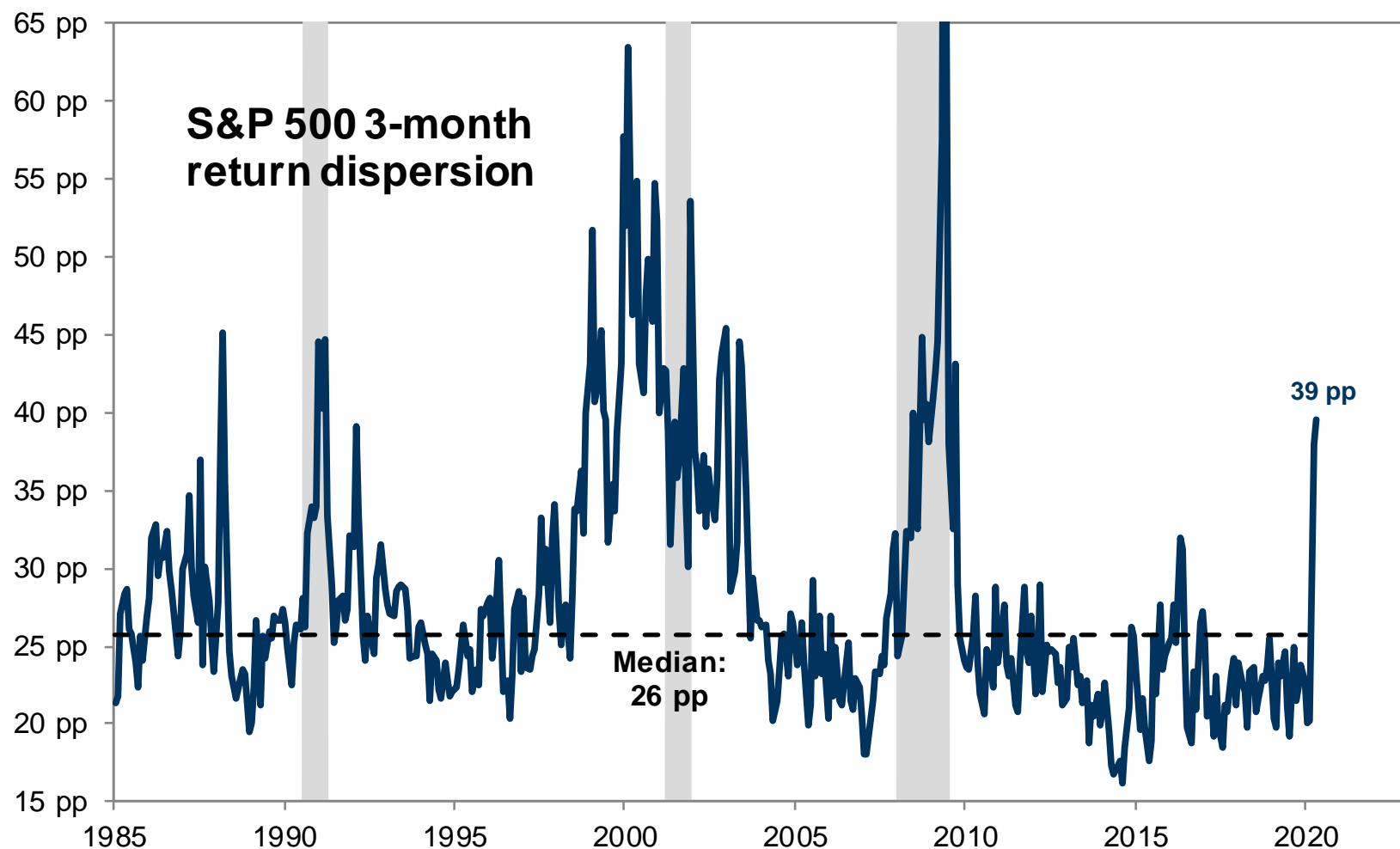
Company	Ticker	Market cap (\$ bn)	Total return		1999-2001 CAGR				Price/	EV /
			1999	2000	Sales		EPS		2001E	2001E
					Consensus	Realized	Consensus	Realized	EPS	Sales
Microsoft Corp	MSFT	\$557	68 %	(63)%	16 %	10 %	13 %	9 %	52 x	19 x
Cisco	CSCO	533	131	(29)	39	11	32	(33)	105	23
General Electric	GE	513	54	(6)	13	8	12	18	38	5
Intel	INTC	442	39	(27)	16	(5)	19	(33)	39	12
Exxon Mobil	XOM	271	13	10	NA	10	40	54	21	NA
Top 5 aggregate		\$2,316	59 %	(37)%	16 %	8 %	21 %	12 %	44 x	10 x
S&P 500 ex. Top 5		10,370	16	(4)	(6)	8	12	(3)	21	2
S&P 500		\$12,686	21 %	(9)%	(6)%	8 %	13 %	(1)%	24 x	3 x

Largest 5 stocks today

Company	Ticker	Market cap (\$ bn)	Total return		GS 2019-21E CAGR				Price/	EV/
			2019	YTD	Sales		EPS		2021E	2021E
					Estimated	Realized	Estimated	Realized	EPS	Sales
Microsoft Corp.	MSFT	\$1,328	58 %	11 %	10%		12%		27x	7x
Apple Inc.	AAPL	1,258	89	(3)	3		6		22	5
Amazon.com Inc.	AMZN	1,178	23	30	22		28		63	2
Alphabet Inc.	GOOGL	762	28	(5)	11		7		21	4
Facebook Inc.	FB	451	57	(7)	13		24		19	6
Top 5		\$4,977	54 %	6 %	12%		11%		27x	4x
S&P 500 ex. Top 5		20,132	28	(15)	0		4		17	2
S&P 500		\$25,110	31 %	(12)%	1%		4%		17x	2x

Dispersion of S&P 500 stock returns has spiked

Stock return dispersion has jumped to the highest level since the financial crisis



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S&P 500 return dispersion by sector

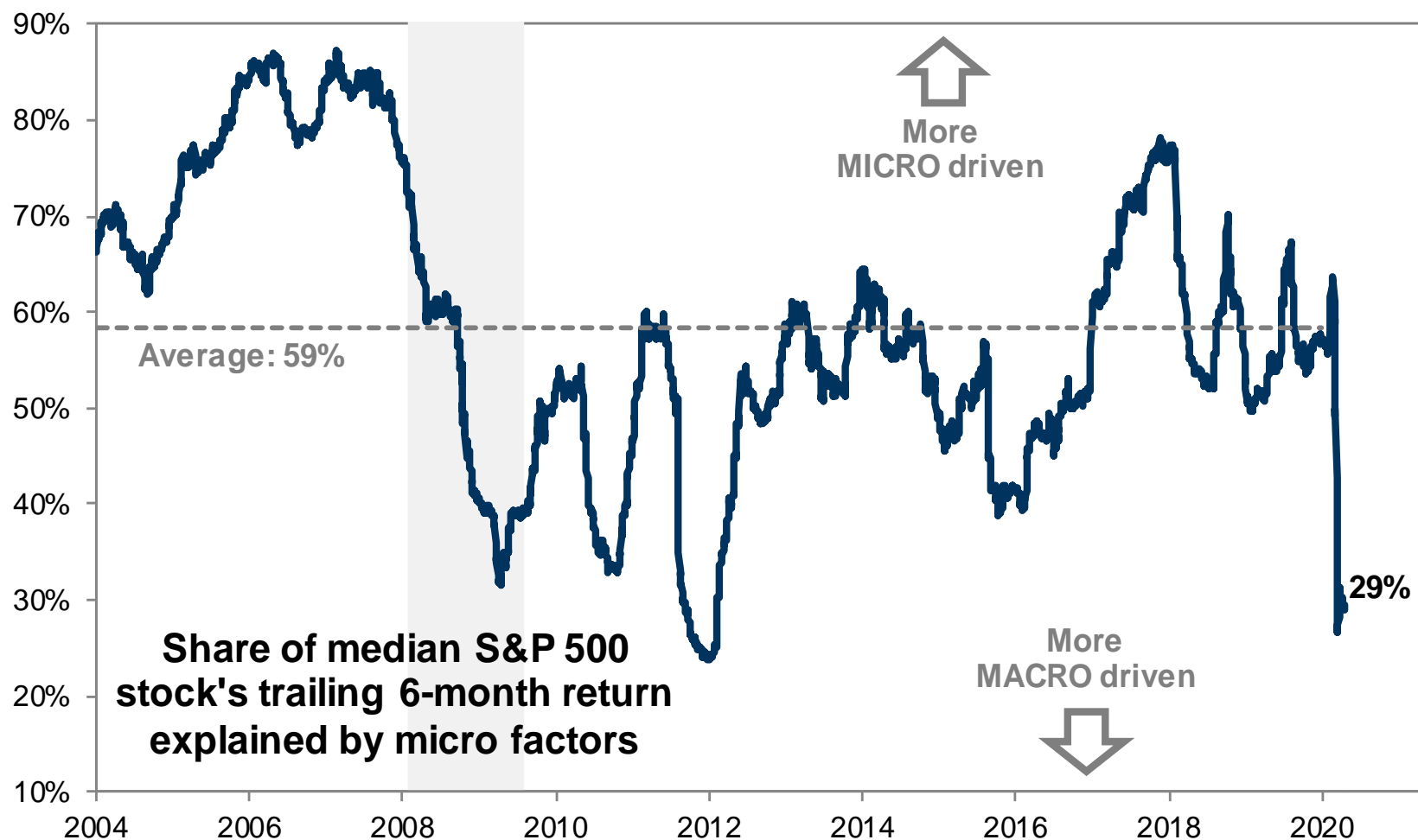
3-month return dispersion ranks at 87th percentile vs. past 30 years

+/- 1 Standard Deviation

	1-Month Returns			3-Month Returns		
	Current Apr 23	30-Year Average	Historical %ile	Current Apr 23	30-Year Average	Historical %ile
S&P 500	29 pp	17 pp	96 %	39 pp	28 pp	87 %
Real Estate	28 pp	9 pp	98 %	45 pp	15 pp	98 %
Energy	48	14	100	39	24	96
Consumer Discretionary	29	17	97	42	29	93
Consumer Staples	20	13	94	32	22	92
Communication Services	16	15	70	41	26	90
Industrials	25	14	96	31	23	88
Financials	26	13	95	32	22	88
Materials	20	15	88	33	25	87
Health Care	28	15	98	31	25	82
Utilities	14	10	84	19	18	68
Information Technology	18	20	53	31	35	49

Macro driven market: Beta, sector, size, valuation

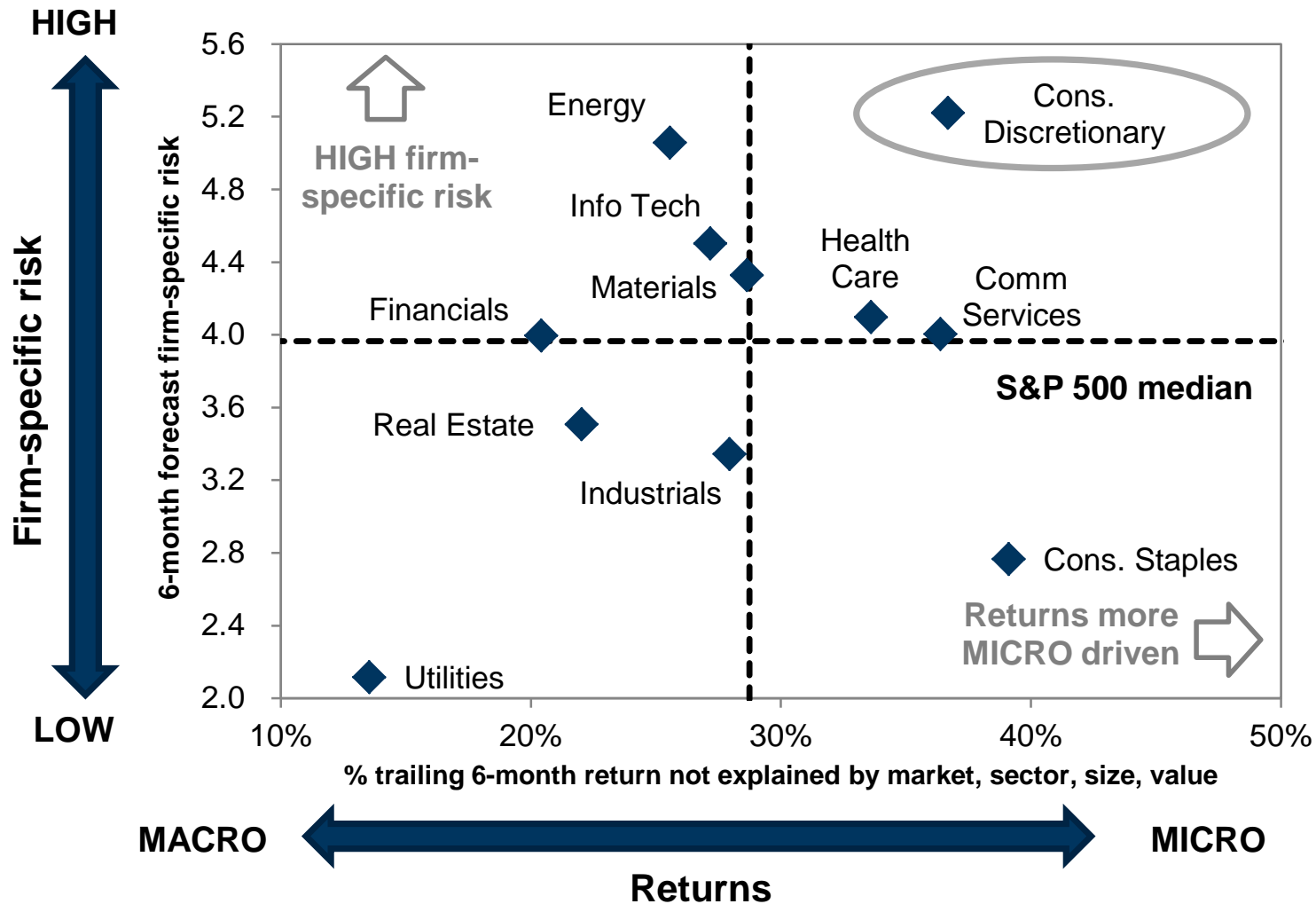
Only 29% of median stock's trailing 6-month return explained by micro factors



Micro-driven return is defined as the proportion of stock returns that cannot be explained by market, sector, size, or value factors

Drivers of sector-level dispersion scores

Share of returns driven by micro factors and forecast of volatility of those factors

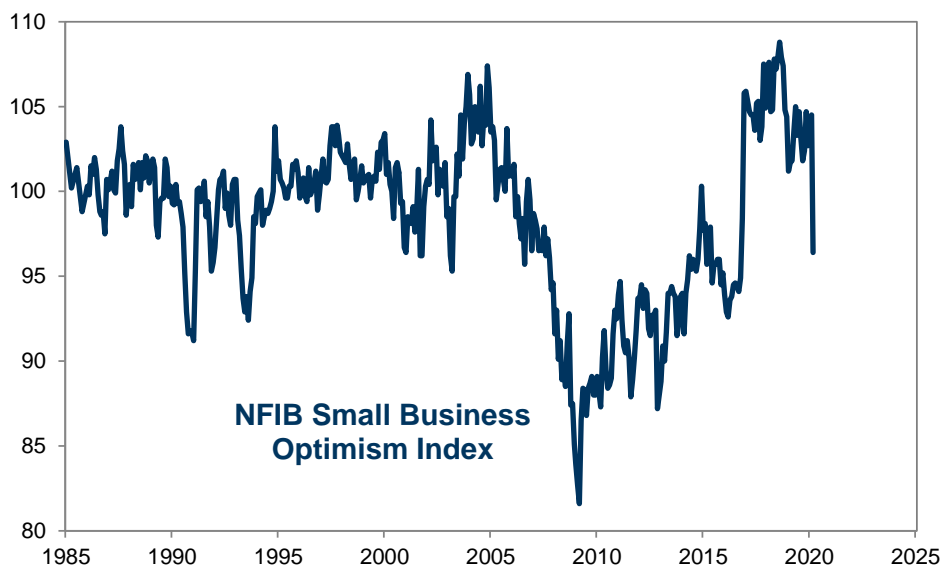


Micro-driven return is defined as the proportion of stock returns that cannot be explained by market, sector, size, or value factors
Firm-specific risk is defined as the forecast 6M volatility of the proportion of returns driven by micro factors

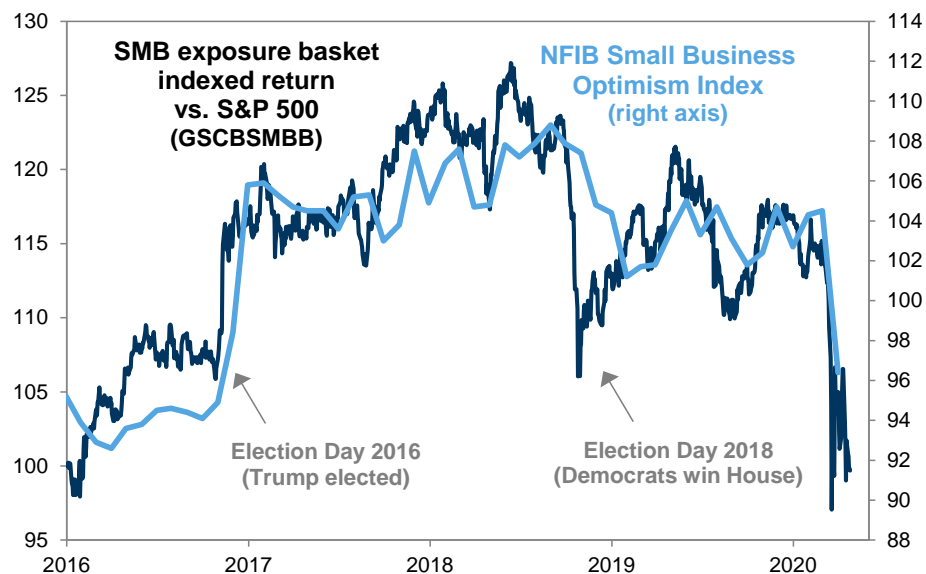
Small business optimism plunged in March

Stocks exposed to small business have tracked small business optimism

Small business optimism



Return of stocks exposed to small businesses



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Avoid firms with high sales exposure to small business

Median firm generates 80% of sales from small and mid-sized businesses

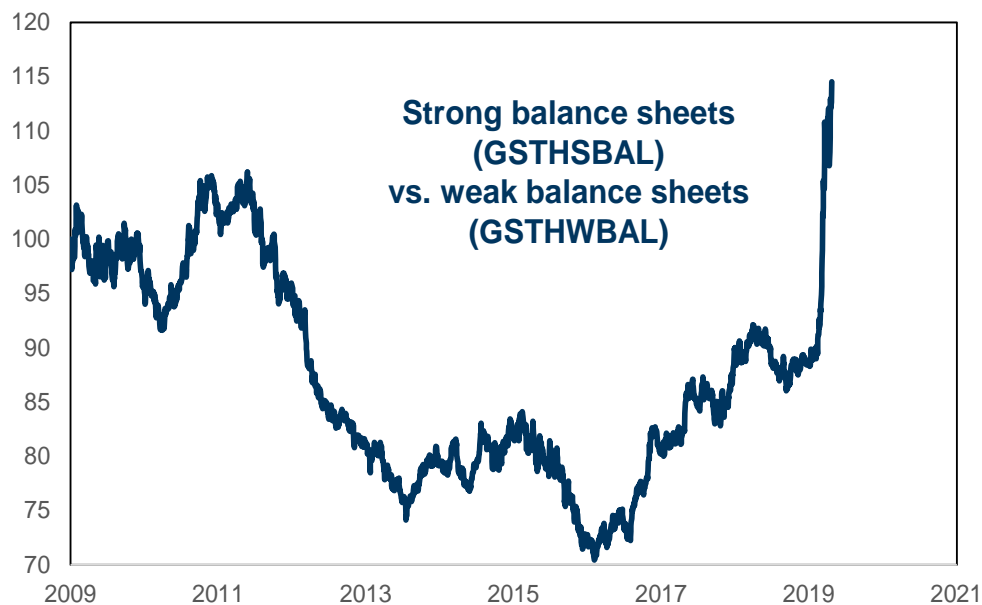
US stocks with high share of revenues from small and medium size businesses (GSCBSMBB)

Company	Ticker	Sector	YTD return	Mkt cap (\$ bil)	EPS CAGR 2019-21	Price/2021 EPS	% of sales to SMBs
AGCO Corporation	AGCO	Industrials	(37)%	\$4	(4)%	12x	100 %
Corteva Inc	CTVA	Materials	(14)	19	9	15	100
Align Technology, Inc.	ALGN	Health Care	(32)	15	15	24	95
Deere & Company	DE	Industrials	(20)	43	(6)	16	95
Paychex, Inc.	PAYX	Information Technology	(21)	24	2	21	95
Brown & Brown, Inc.	BRO	Financials	(12)	10	7	22	90
Patterson Companies, Inc.	PDCO	Health Care	(25)	1	8	9	90
Henry Schein, Inc.	HSIC	Health Care	(23)	7	2	14	85
Arrow Electronics, Inc.	ARW	Information Technology	(37)	4	(1)	7	80
Avnet, Inc.	AVT	Information Technology	(35)	3	(27)	12	80
Cintas Corporation	CTAS	Industrials	(26)	21	7	22	80
Lamar Advertising Company Class A	LAMR	Real Estate	(43)	5	(16)	19	80
Navistar International Corporation	NAV	Industrials	(24)	2	(40)	14	80
PACCAR Inc	PCAR	Industrials	(16)	23	(20)	15	80
WEX Inc.	WEX	Information Technology	(49)	5	5	11	80
Herc Holdings, Inc.	HRI	Industrials	(55)	1	(17)	10	70
United Rentals, Inc.	URI	Industrials	(38)	8	(6)	6	70
Arthur J. Gallagher & Co.	AJG	Financials	(21)	14	10	17	60
Martin Marietta Materials, Inc.	MLM	Materials	(36)	11	1	18	60
Vulcan Materials Company	VMC	Materials	(30)	13	2	21	60
W. R. Berkley Corporation	WRB	Financials	(27)	9	4	16	60
Terex Corporation	TEX	Industrials	(55)	1	(39)	11	56
Bright Horizons Family Solutions, Inc.	BFAM	Consumer Discretionary	(27)	6	5	27	50
BrightView Holdings, Inc.	BV	Industrials	(37)	1	1	9	50
HD Supply Holdings, Inc.	HDS	Industrials	(32)	4	(10)	9	50
OUTFRONT Media Inc.	OUT	Real Estate	(52)	2	(8)	16	50
Median			(31)%	\$7	1 %	15x	80 %
S&P 500 median			(20)	19	3	15	<50

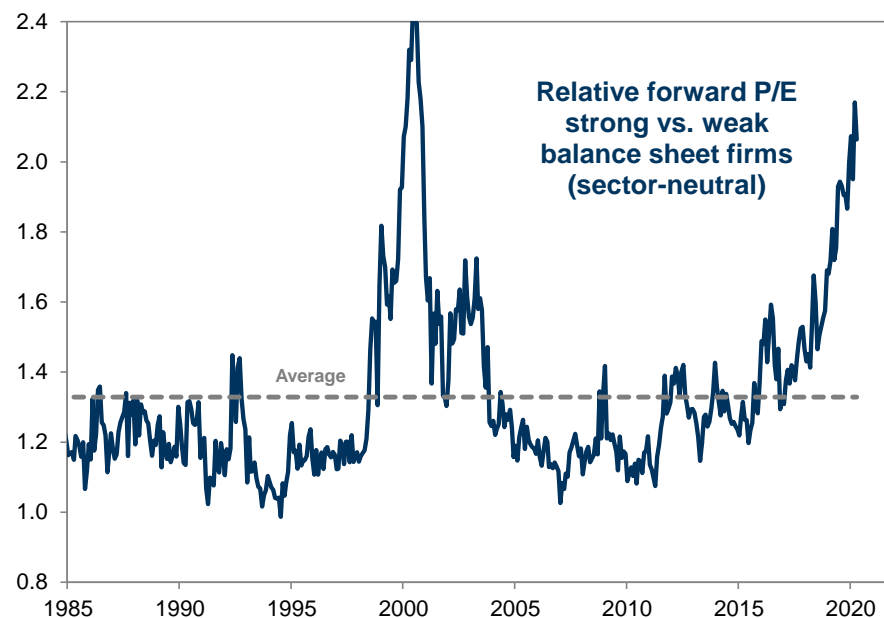
Strong balance sheet stocks outperforming weak

Solvency and liquidity risk have led investors to reward balance sheet strength

Strong balance sheet stocks outperforming weak



Strong balance sheets trade at valuation premium



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Quality-at-a-reasonable-price

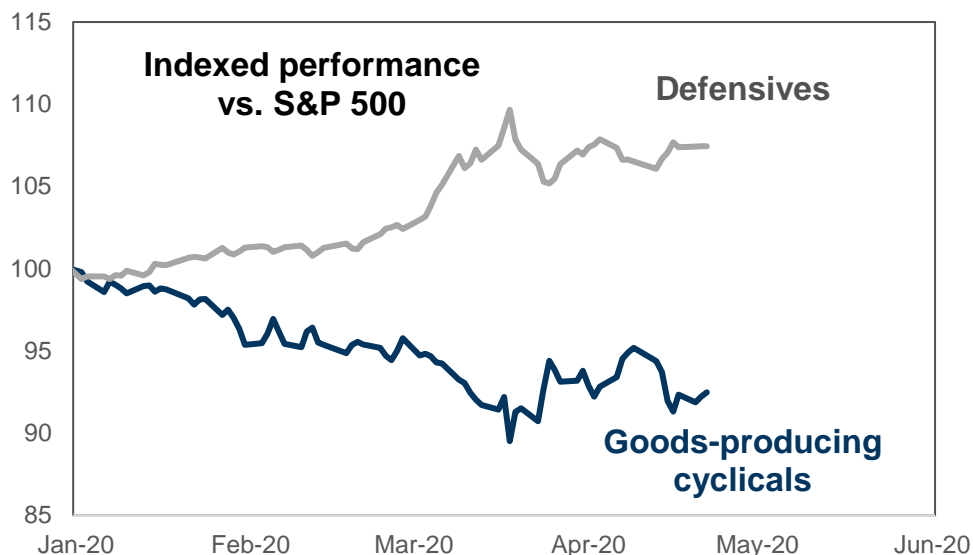
Top 20% of balance sheet strength in sector but not top or bottom quintile valuation

Quality-at-a-Reasonable-Price							
Company	Ticker	Sector	Mkt cap (\$ billions)	YTD return	EPS CAGR 2019-21	Price/2021 EPS	Altman Z-Score
Facebook Inc.	FB	Communication Services	\$446	(10)%	6 %	19 x	11.8
Alphabet Inc.	GOOGL	Communication Services	762	(5)	3	23	9.1
Electronic Arts	EA	Communication Services	33	6	4	21	8.0
Garmin Ltd.	GRMN	Consumer Discretionary	15	(18)	2	17	9.4
Home Depot Inc.	HD	Consumer Discretionary	221	(7)	3	19	7.0
Ross Stores Inc.	ROST	Consumer Discretionary	30	(29)	0	18	6.0
Booking Holdings	BKNG	Consumer Discretionary	57	(34)	(1)	14	5.2
Ulta Beauty Inc.	ULTA	Consumer Discretionary	12	(17)	(1)	18	5.2
Tractor Supply	TSCO	Consumer Discretionary	11	2	7	18	4.7
TJX Companies Inc.	TJX	Consumer Discretionary	55	(25)	(1)	17	4.6
Monster Beverage	MNST	Consumer Staples	32	(6)	10	24	22.7
Colgate-Palmolive	CL	Consumer Staples	61	5	4	23	6.4
Cabot Oil & Gas	COG	Energy	8	16	(12)	15	4.0
Valero Energy Corp.	VLO	Energy	21	(44)	(12)	12	3.5
Exxon Mobil Corp.	XOM	Energy	184	(37)	(18)	27	3.0
HollyFrontier Corp.	HFC	Energy	5	(43)	(28)	11	3.0
Regeneron Pharmaceuticals	REGN	Health Care	61	51	35	13	12.7
Expeditors Intl	EXPD	Industrials	12	(10)	3	19	8.9
C.H. Robinson Worldwide	CHRW	Industrials	10	(9)	(3)	18	7.2
W.W. Grainger Inc.	GWW	Industrials	14	(23)	1	15	6.8
Robert Half Intl	RHI	Industrials	5	(30)	(9)	14	6.6
Rockwell Automation	ROK	Industrials	20	(16)	(2)	21	5.2
Skyworks Solutions	SWKS	Information Technology	16	(23)	10	13	15.8
IPG Photonics Corp.	IPGP	Information Technology	6	(20)	4	25	13.0
Arista Networks	ANET	Information Technology	16	3	0	21	12.2
Texas Instruments	TXN	Information Technology	103	(13)	(3)	23	12.1
Mastercard Inc.	MA	Information Technology	255	(14)	10	27	11.2
Avery Dennison	AVY	Materials	9	(18)	3	15	3.7
Nucor Corp.	NUE	Materials	11	(32)	(12)	12	3.7
PPG Industries Inc.	PPG	Materials	21	(32)	2	14	3.6
Quality-at-a-Reasonable-Price median			\$20	(16)%	2 %	18 x	6.7
Strong Balance Sheet basket (GSTHSBAL) median			25	(5)	6	25	10.8
S&P 500 median			19	(20)	3	15	3.0

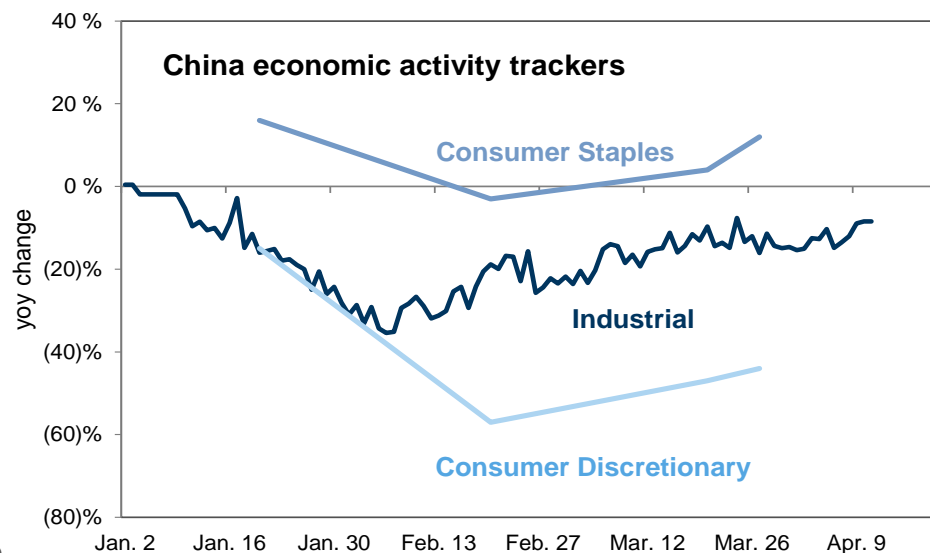
US goods-producing cyclicals have lagged YTD

China industrial activity has recovered faster than consumer cyclicals

Relative return of Defensives vs. Good-producing cyclicals



China economic activity trackers



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Goods-producing Cyclical with low consumer sales

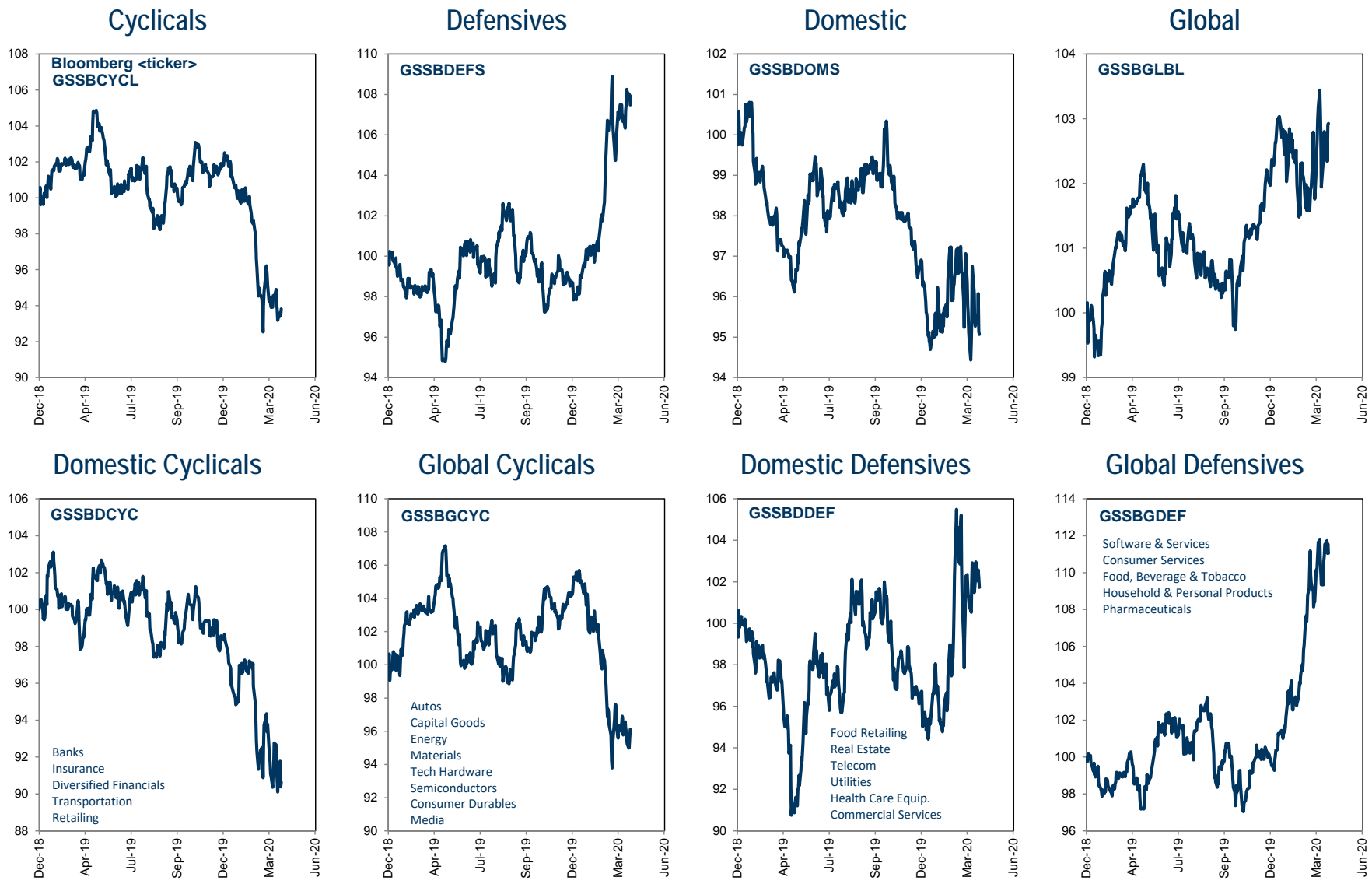
Limited direct-to-consumer revenue exposure and low inventory-to-sales ratios

Goods-producing Cyclical									
Company	Ticker	Industry	Mkt cap (\$ bil.)	YTD return	Beta to SPX	EPS CAGR 2019-21	Price/2021 EPS	Altman Z-Score	Inventory/Sales
NVIDIA Corp.	NVDA	Semiconductors	\$174	21 %	1.8	22 %	33 x	26.0	11 %
Intel Corp.	INTC	Semiconductors	257	(1)	1.4	(0)	12	4.3	11
Lockheed Martin	LMT	Aerospace & Defense	106	(3)	0.8	10	14	3.4	6
Keysight Technologies	KEYS	Electronic Equipment	18	(7)	1.4	4	17	4.7	16
Ecolab Inc.	ECL	Chemicals	50	(9)	1.0	5	28	4.1	11
Air Products & Chemicals	APD	Chemicals	47	(9)	1.1	10	21	5.3	4
Xilinx Inc.	XLNX	Semiconductors	22	(11)	1.6	(2)	27	7.9	10
IDEX Corp.	IEX	Machinery	12	(11)	1.2	(2)	27	6.7	12
Illinois Tool Works	ITW	Machinery	50	(13)	1.3	(3)	21	6.3	9
Xylem Inc.	XYL	Machinery	12	(13)	1.2	(0)	23	2.9	11
Analog Devices Inc.	ADI	Semiconductors	37	(14)	1.6	3	20	3.3	11
Maxim Integrated Products	MXIM	Semiconductors	14	(14)	1.5	8	21	6.9	11
Sherwin-Williams	SHW	Chemicals	46	(14)	1.1	8	20	3.3	11
Linde plc	LIN	Chemicals	97	(14)	1.1	9	21	2.2	6
QUALCOMM Inc.	QCOM	Semiconductors	84	(16)	1.8	32	13	3.1	8
Rockwell Automation	ROK	Electrical Equipment	20	(16)	1.4	(2)	21	5.2	9
A. O. Smith Corp.	AOS	Building Products	5	(16)	1.2	2	17	4.9	10
Broadcom Inc.	AVGO	Semiconductors	103	(17)	1.6	7	11	1.8	4
Avery Dennison	AVY	Containers & Packaging	9	(18)	0.9	3	15	3.7	10
Garmin Ltd.	GRMN	Household Durables	15	(18)	0.7	2	17	9.4	18
Fortive Corp.	FTV	Machinery	20	(23)	1.3	5	15	2.3	9
Honeywell Intl	HON	Industrial Conglomerates	96	(23)	1.2	2	16	3.4	12
Microchip Technology	MCHP	Semiconductors	19	(24)	1.7	5	13	1.6	14
General Dynamics	GD	Aerospace & Defense	38	(25)	0.9	4	10	2.6	16
Raytheon Technologies	RTX	Aerospace & Defense	96	(28)	NM	2	7	1.9	14
TE Connectivity	TEL	Electronic Equipment	23	(29)	1.3	(2)	13	3.5	15
Whirlpool Corp.	WHR	Household Durables	6	(30)	1.0	(3)	7	1.8	14
Emerson Electric	EMR	Electrical Equipment	32	(30)	1.2	(4)	16	4.4	11
PPG Industries Inc.	PPG	Chemicals	21	(32)	1.1	2	14	3.6	12
NetApp Inc.	NTAP	Tech Hardware Storage	9	(33)	1.4	5	9	2.1	2
Newell Brands Inc.	NWL	Household Durables	5	(33)	1.1	(8)	9	0.9	17
BorgWarner Inc.	BWA	Auto Components	6	(38)	1.7	(7)	7	2.9	8
Dow Inc.	DOW	Chemicals	24	(39)	1.6	(11)	12	1.5	15
CF Industries Holdings	CF	Chemicals	6	(41)	1.4	2	13	1.2	8
Leggett & Platt	LEG	Household Durables	4	(43)	1.0	(6)	13	2.9	14
LyondellBasell Industries	LYB	Chemicals	16	(47)	1.4	(9)	6	2.4	13
Otis Worldwide	OTIS	Machinery	20	NM	NM	NA	21	NM	4
Carrier Global	CARR	Building Products	14	NM	NM	NA	10	NM	7
Median			\$21	(17)%	1.3	2 %	15 x	3.3	11 %
S&P 500 median			19	(20)	1.0	3	15	3.0	12

US Portfolio Strategy baskets

Cyclicals, Defensives, Domestic, and Global relative performance vs. S&P 500

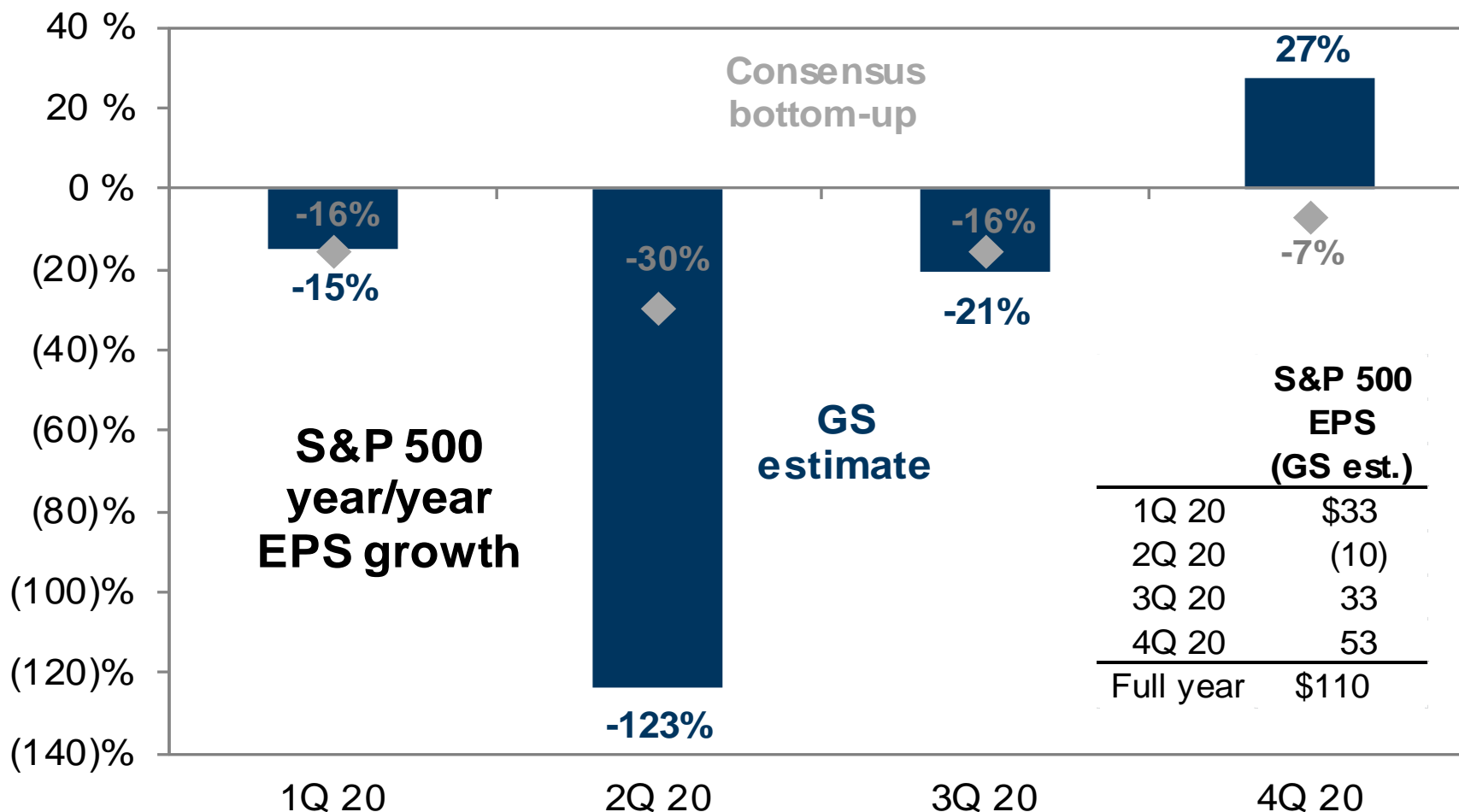
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S&P 500 earnings will decline by 33% to \$110 in 2020

Anticipate recovery during 2H and EPS will climb by 55% to \$170 in 2021

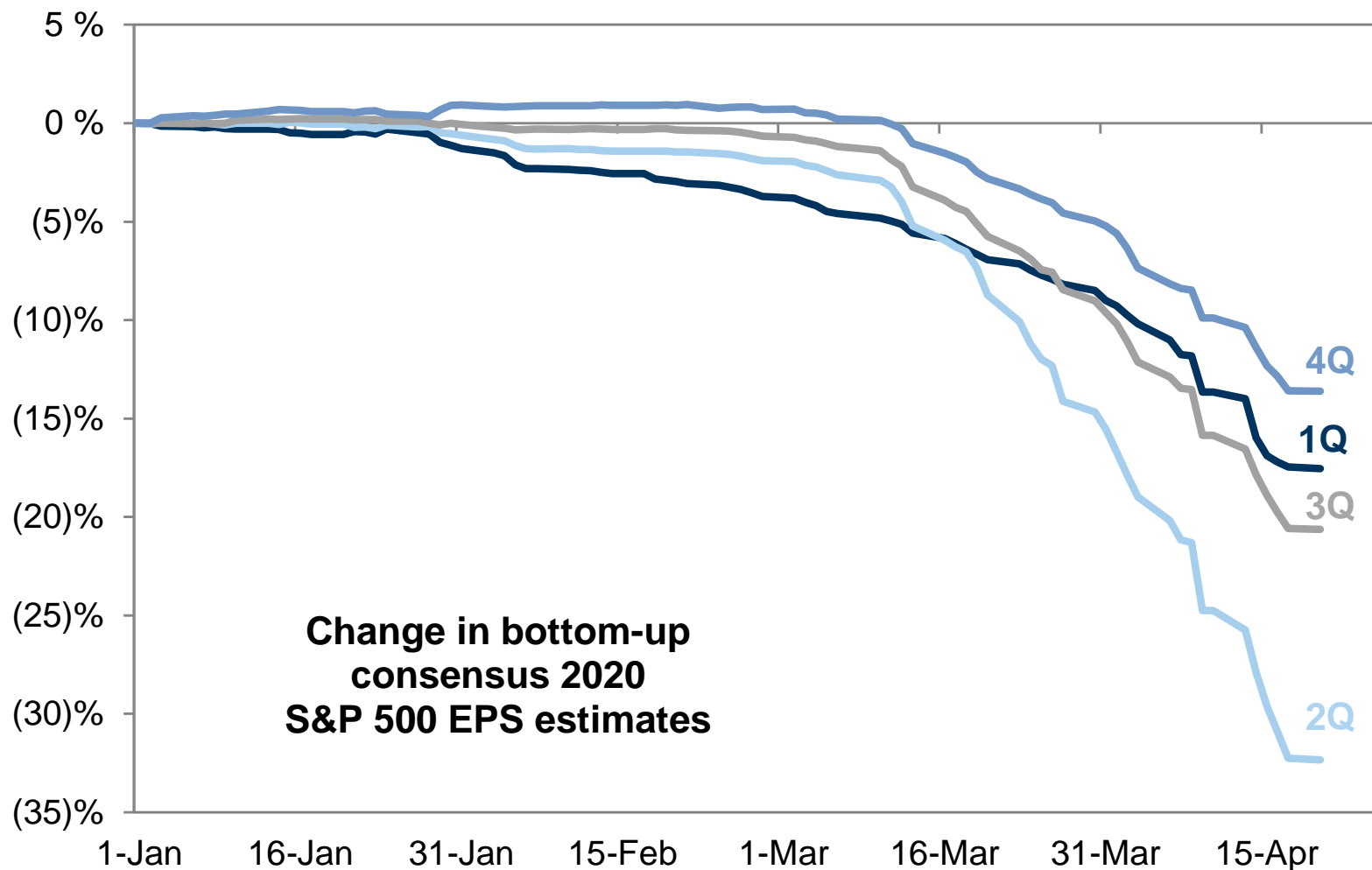
S&P 500 year/year EPS growth



2020 earnings outlook continues to deteriorate

Consensus bottom-up 2Q EPS estimate has been lowered by 32% YTD

YTD revisions to consensus bottom-up EPS estimates



Note: Current change in bottom-up consensus data point reflects a 30-day lookback window for estimates

Consensus bottom-up EPS estimates for 1Q 2020

Consensus forecasts S&P 500 firms will report -16% year/year growth in 1Q EPS

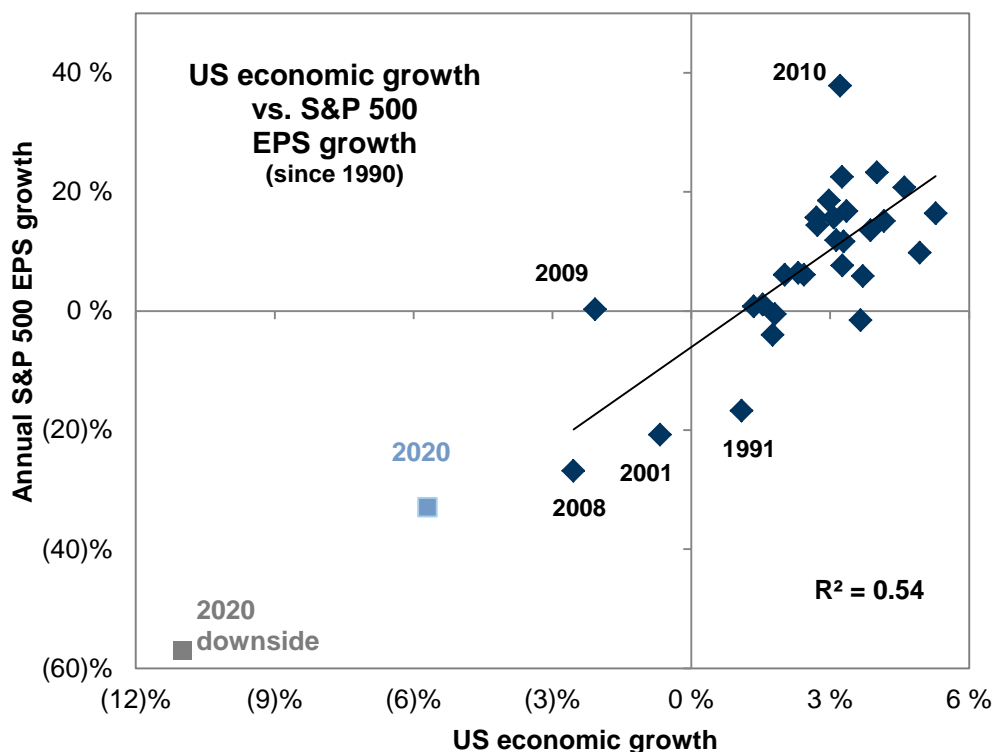
Consensus bottom-up EPS estimates for 1Q 2020

Sector	1QE 2020 Consensus Bottom-up				
	EPS		Sales	Margin	
	\$/Share	Growth	Growth	Level	Change
Utilities	\$1.4	4 %	NM	NM	NM
Consumer Staples	2.6	3	7	6.8	(24)
Info Tech	7.3	1	6	20.3	(95)
Health Care	6.6	1	5	10.1	(40)
Real Estate	1.1	(0)	NM	NM	NM
Materials	0.8	(3)	(1)	7.7	(13)
Communication Services	3.7	(8)	11	13.4	(278)
Industrials	2.5	(28)	(8)	7.1	(205)
Consumer Discretionary	1.9	(37)	(3)	4.5	(244)
Financials	4.7	(40)	NM	NM	NM
Energy	0.4	(67)	(12)	1.8	(297)
S&P 500	\$33.0	(16)%			
<i>ex. Financials and Utilities</i>	25.8	(11)	1 %	9.3%	(121)bp
<i>ex. Energy</i>	32.5	(14)	2	10.0	(113)

Macro drivers to our top-down earnings model

Economic growth, inflation, tax rates, interest rates, oil, and the dollar

Economic growth drives earnings growth



Sensitivity of S&P 500 EPS to macro variables

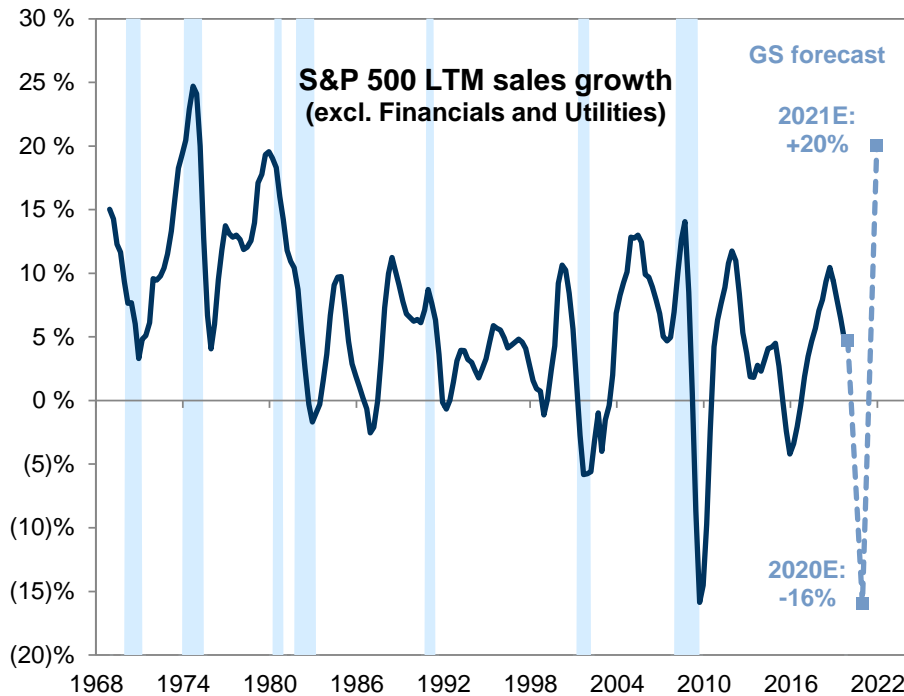
Variable	Sensitivity	
	Chg from baseline	S&P 500 EPS impact
US GDP	+100 bp	+\$5
World GDP	+100 bp	+2
Core CPI inflation	+100 bp	+1
Brent crude oil	+10 pp	+0.5
10-year UST yield	+100 bp	+0.5
Trade-weighted US dollar	+10 pp	-3
Statutory corporate tax rate	+1 pp	-2.5

S&P 500 EPS

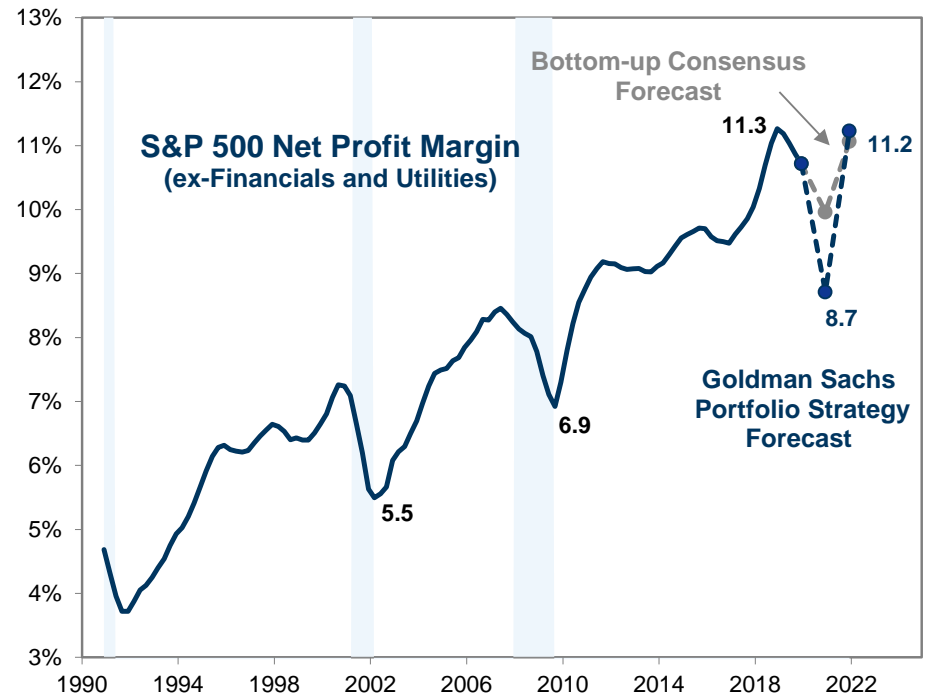
Sales expected to fall by 16% in 2020, then rebound

Net margins will contract to 8.7% in 2020, the lowest level since 2010

Sales expected to plunge by 16% in 2020



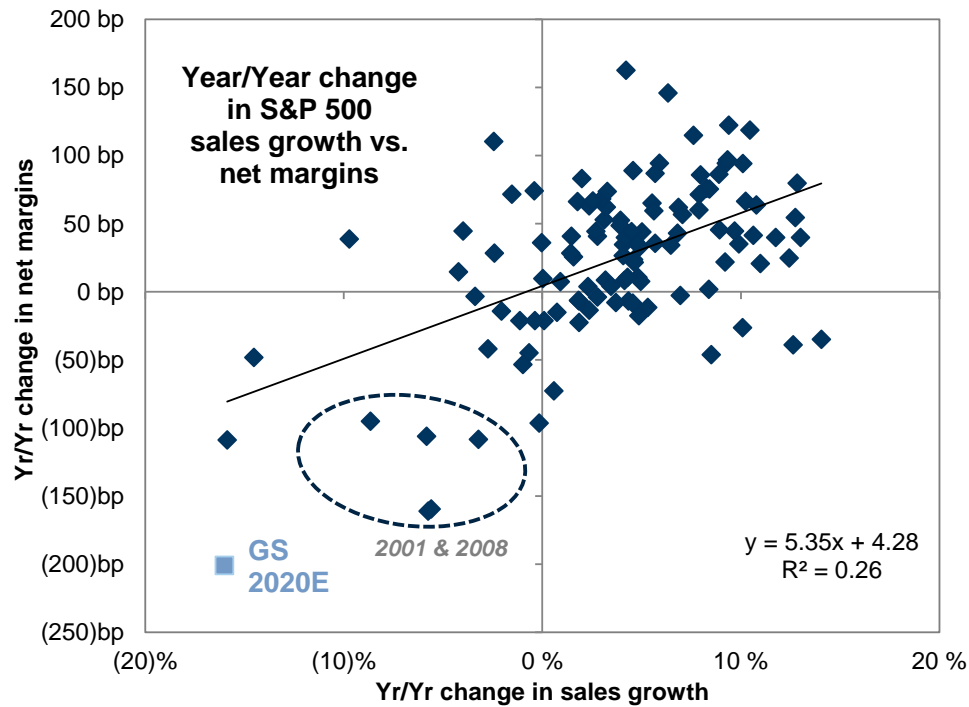
Net margins will contract by 200 bp to 8.7%



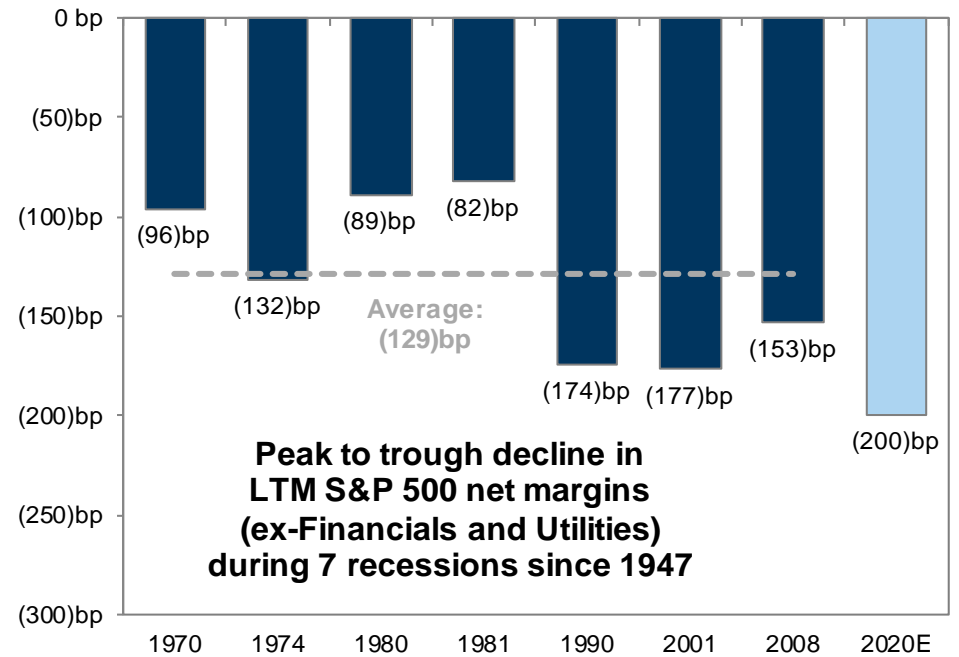
Margins declined by 129 bp in previous recessions

Our forecast is slightly more negative than the historical recession average

Historical relationship between sales and margins changes



Typical peak to trough decline in S&P 500 net margins



Note: Net margins use peak to trough declines, which may not align with peak to trough decline in earnings

Sector-level EPS forecasts

We expect Energy and Discretionary earnings will experience the largest declines

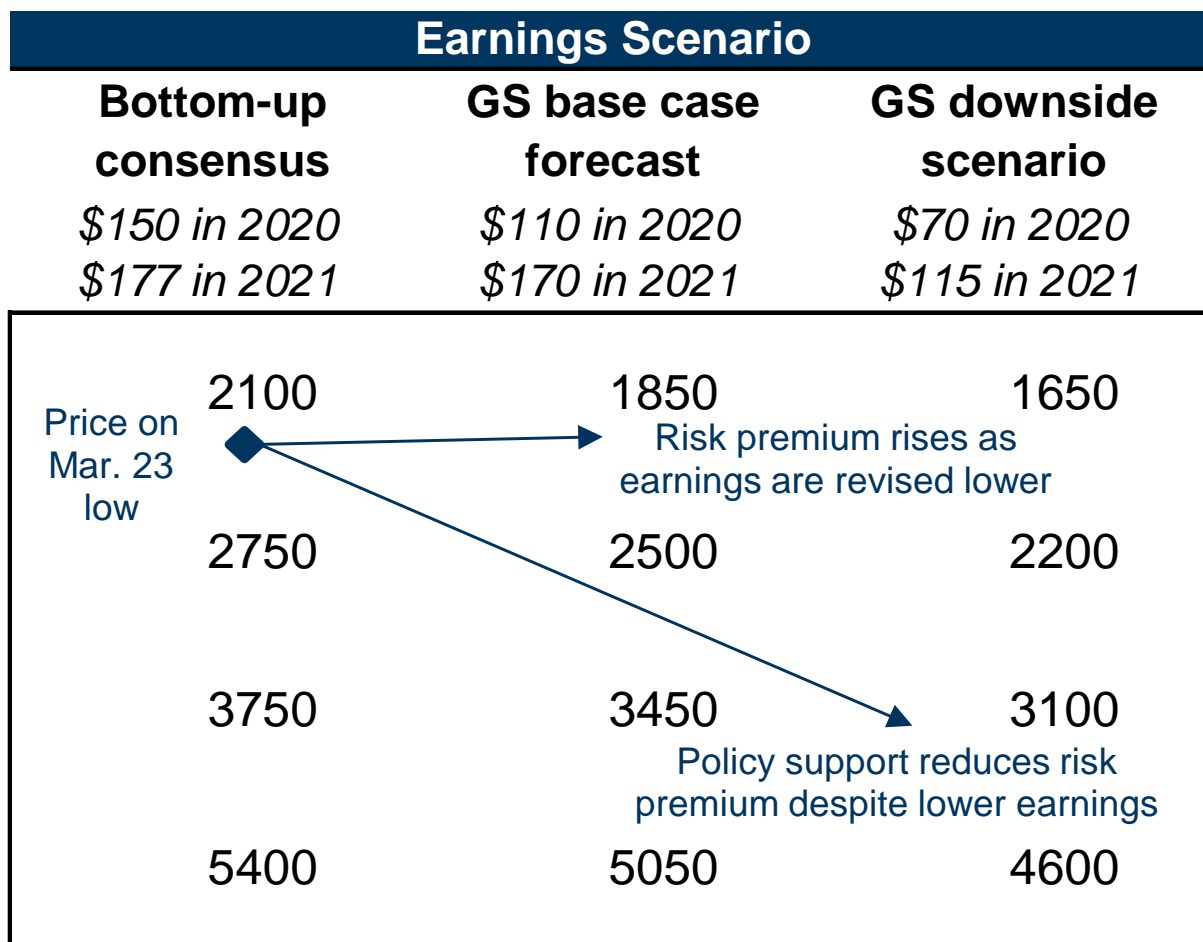
GS top-down vs. consensus bottom-up sector EPS estimates

	2018A	2019A	GS Top-Down				Cons. Bottom-Up	
			Contribution		EPS growth		EPS growth	
			2020E	2021E	2020E	2021E	2020E	2021E
Utilities	\$5	\$5	\$5	\$5	1 %	6 %	5 %	5 %
Consumer Staples	11	11	11	12	1	10	(0)	8
Health Care	25	27	26	30	(1)	14	(1)	15
Comm Services	16	17	14	19	(17)	34	(13)	21
Information Technology	32	32	24	35	(26)	49	0	17
Real Estate	4	4	3	4	(30)	30	2	7
Financials	29	30	17	29	(45)	70	(33)	34
Materials	5	4	2	4	(51)	95	(11)	27
Industrials	16	15	6	15	(61)	149	(30)	51
Consumer Discretionary	13	13	3	13	(78)	374	(31)	51
S&P 500 ex-Energy	154	158	111	166	(30)	50	(13)	23
Energy	9	6	(1)	4	(108)	NM	(110)	NM
S&P 500 EPS	\$163	\$165	\$110	\$170	(33)%	55 %	(17)%	26 %

Year-end 2020 'fair value' levels implied by DDM

Implied index levels based on various earnings and risk premium scenarios

S&P 500 'fair value' levels implied by our Dividend Discount Model under various earnings and risk scenarios

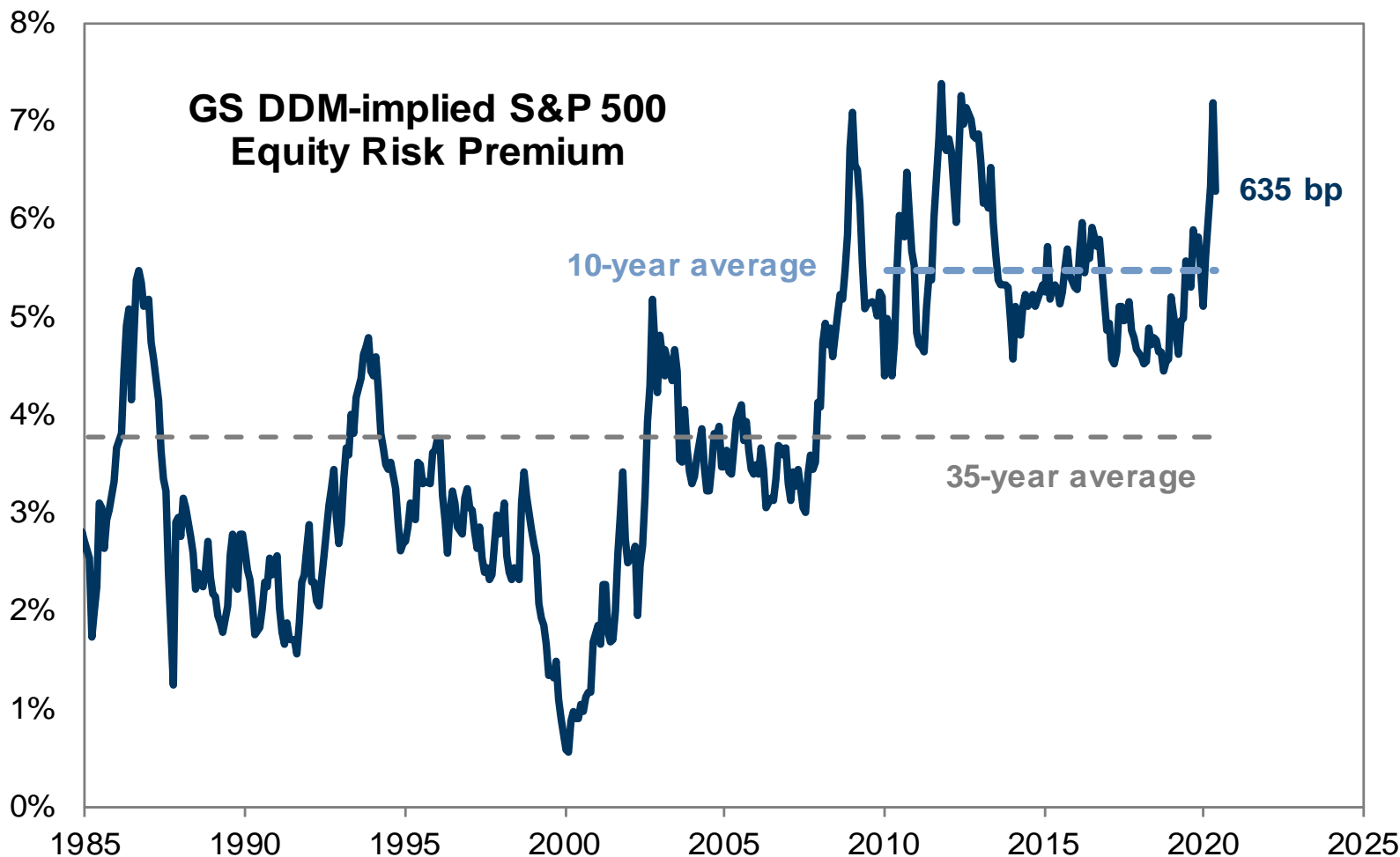


Note: Assumes a constant 10-year Treasury yield of 0.75%

S&P 500 equity risk premium

GS DDM-implied S&P 500 ERP at 635 bp vs. historical average of 380 bp

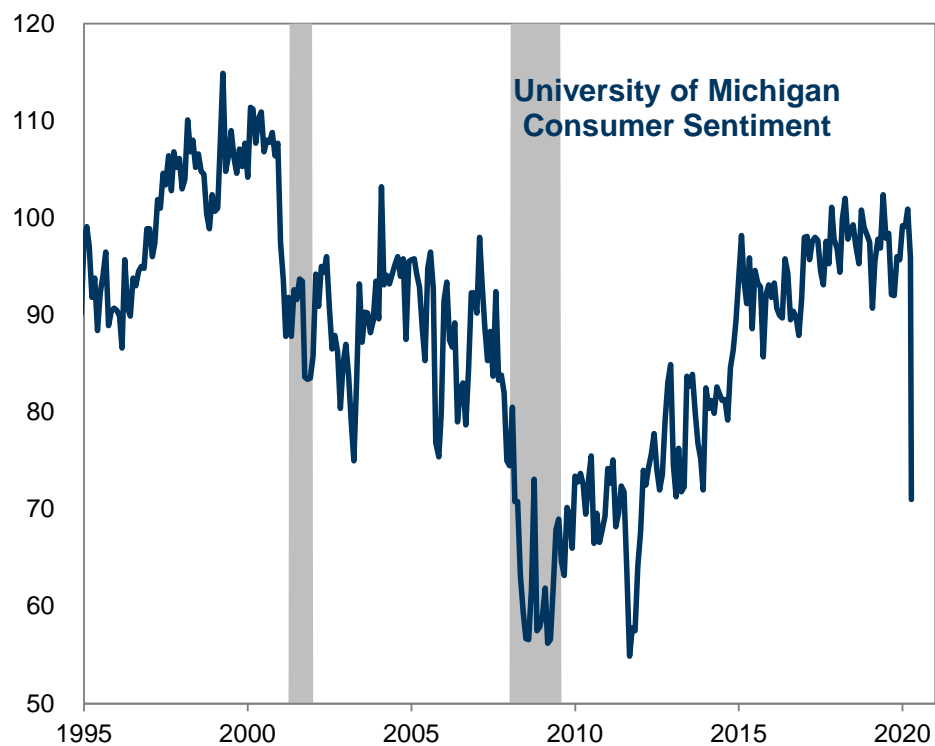
2020 Bear market bottom concurrent with peak in initial jobless claims



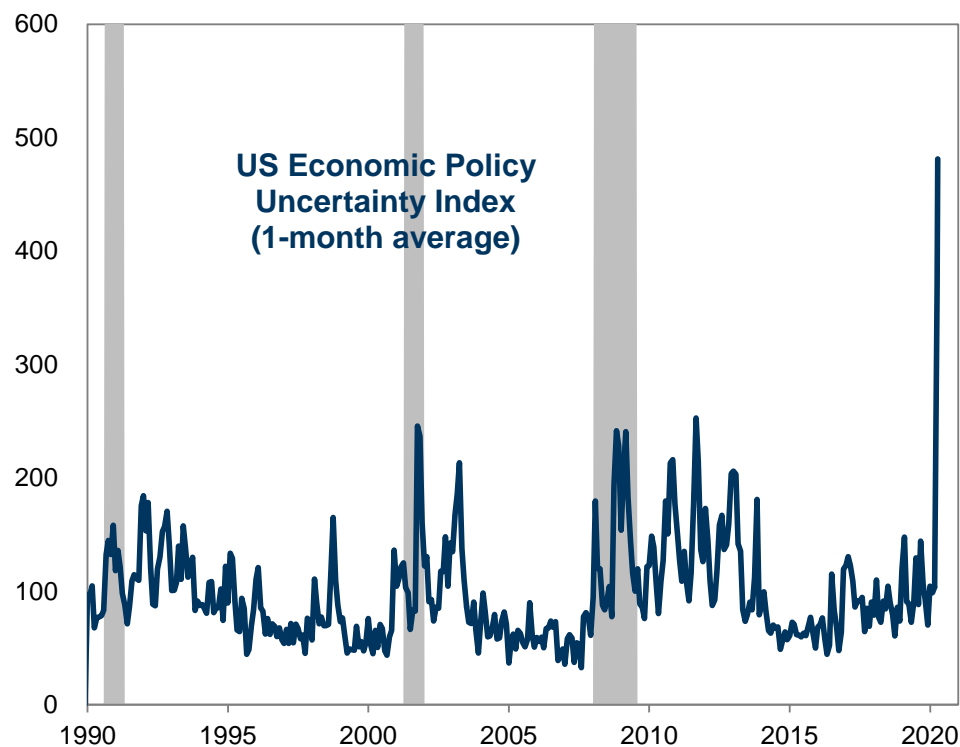
Consumer confidence and policy uncertainty

Both metrics have shifted dramatically during the past month

Consumer Sentiment Index plunged in April

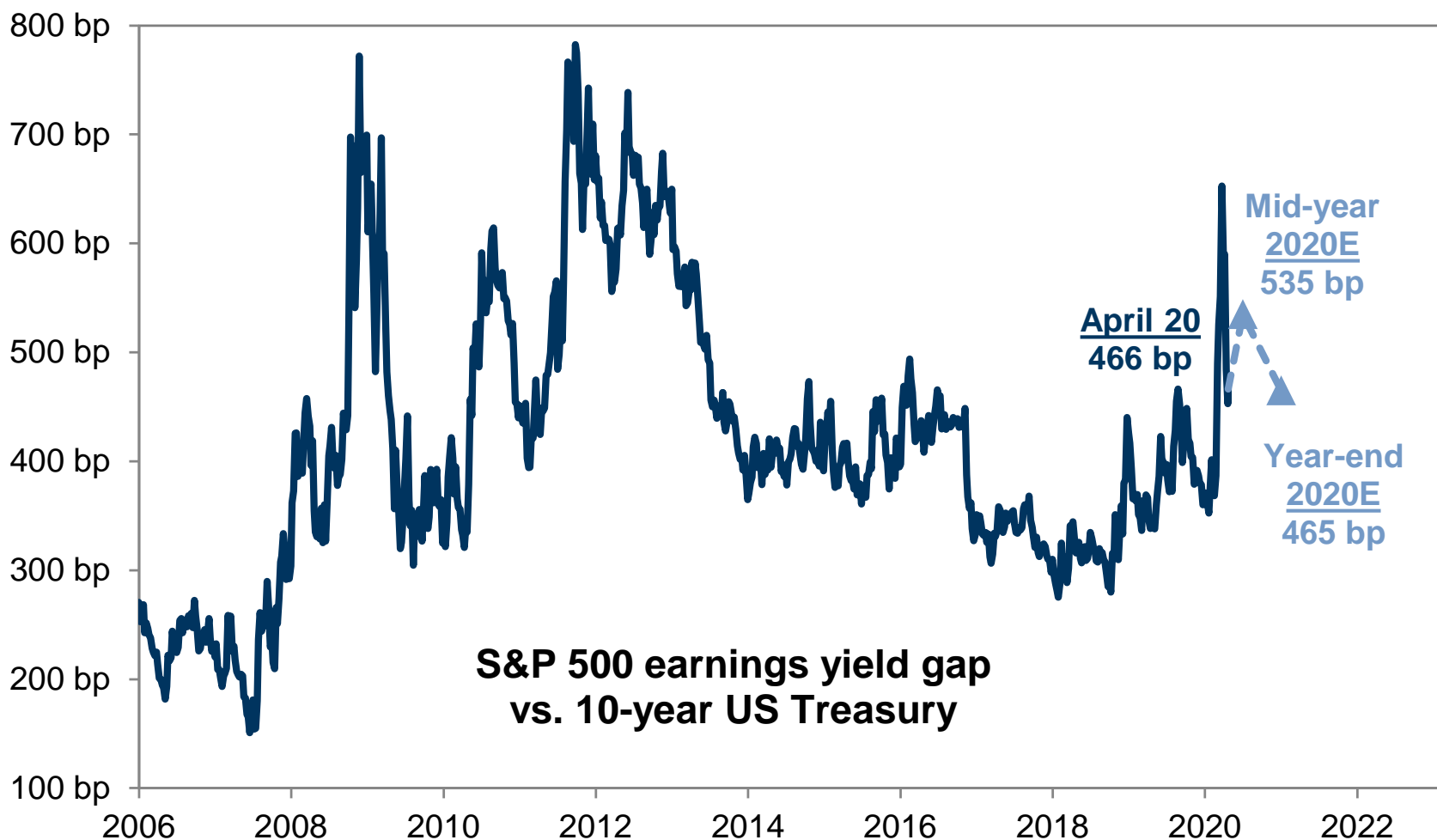


Policy Uncertainty has spiked to 5x the long-term average



Fed Model: S&P 500 yield gap vs. 10-year Treasury

Assumes 10-yr UST yield of 0.5% by mid-year and 1% by year-end

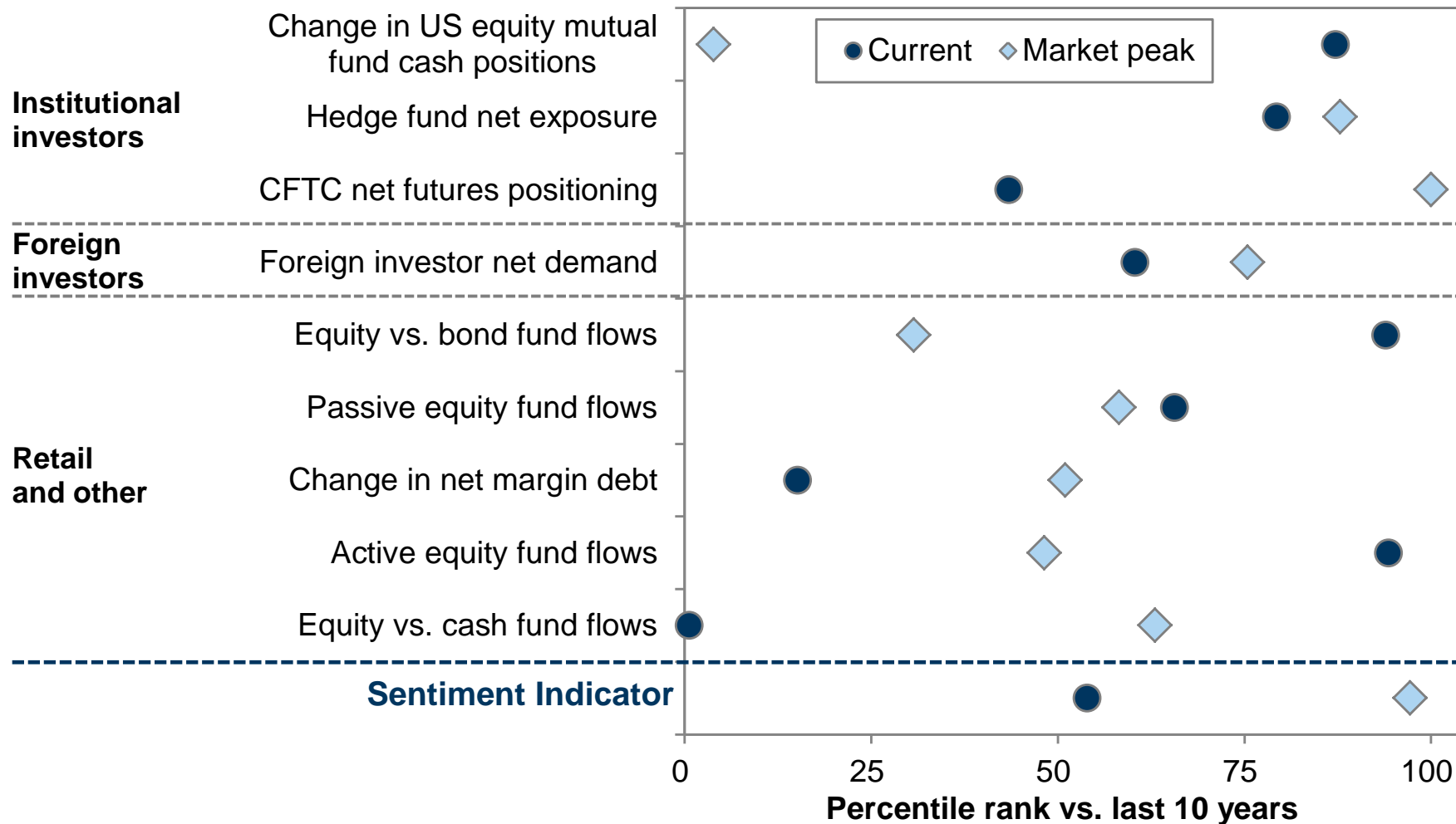


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Sentiment Indicator components

Some of the 9 investor metrics still positioned relatively bullish vs. last 10 years

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Mutual fund and ETF flows

Inflows into money market funds and ETFs vs. mutual fund outflows YTD

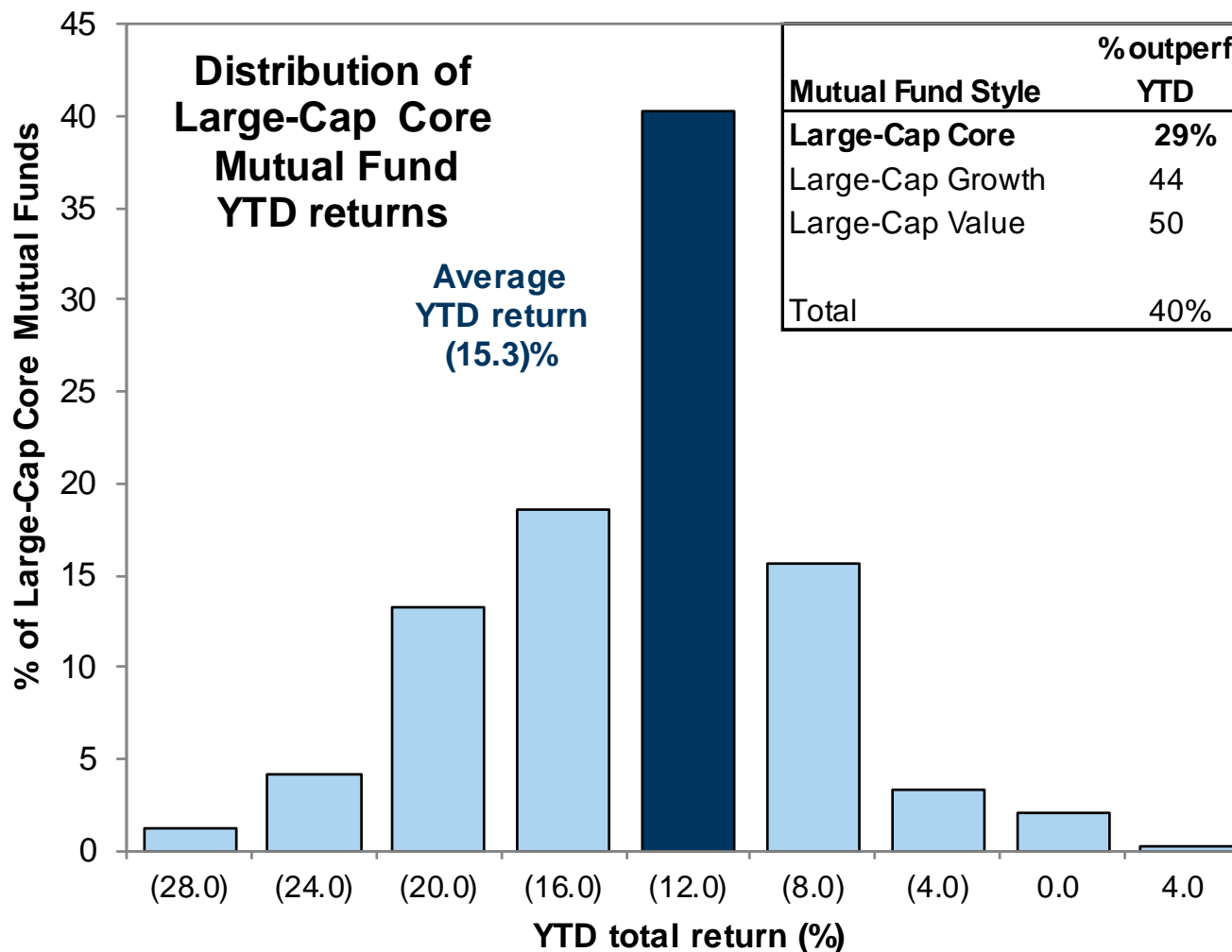
Weekly fund flows

(\$ billions)	EPFR Mutual Fund Flows			EPFR ETF Fund Flows		
	Total Assets	4-Wk Avg Flows	Total Flows YTD	Total Assets	4-Wk Avg Flows	Total Flows YTD
All Equity	6,213	3.7	(100.7)	4,095	3.7	97.1
U.S. Equity	2,644	1.3	(68.5)	2,453	4.7	57.0
Int'l Equity	3,118	2.8	(22.5)	1,297	(0.1)	28.3
Equity Income	508	(0.0)	(12.2)	245	(0.7)	1.7
Global	452	(0.4)	(9.7)	345	(0.9)	11.7
Real Estate	271	0.2	0.9	81	(0.1)	(0.5)
All Bonds	4,477	(5.3)	(134.5)	1,168	4.5	24.2
All Taxable Bond	3,729	(4.6)	(122.7)	841	5.1	(3.4)
Municipal Bond	432	(0.2)	(11.4)	49	(0.1)	0.6
Gov't Treasury	315	(0.6)	(0.4)	279	(0.5)	26.9
Money Market	5,868	117.7	1,079.3	41	0.9	13.3

Large-cap core mutual fund performance

40% of Core, Growth, and Value funds outperforming style benchmarks YTD

Mutual fund performance 2020 YTD



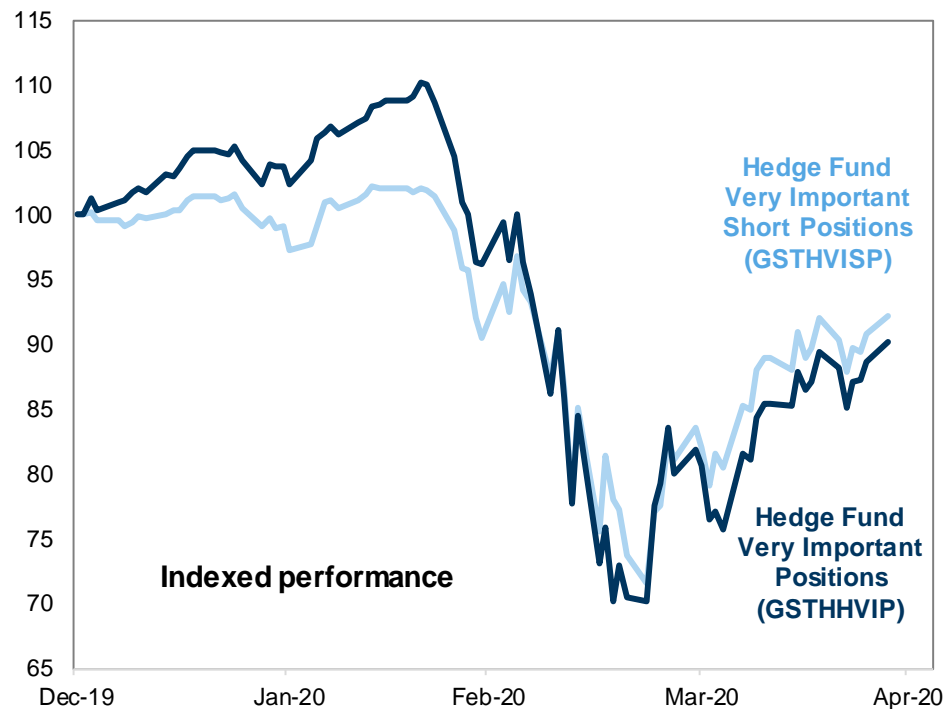
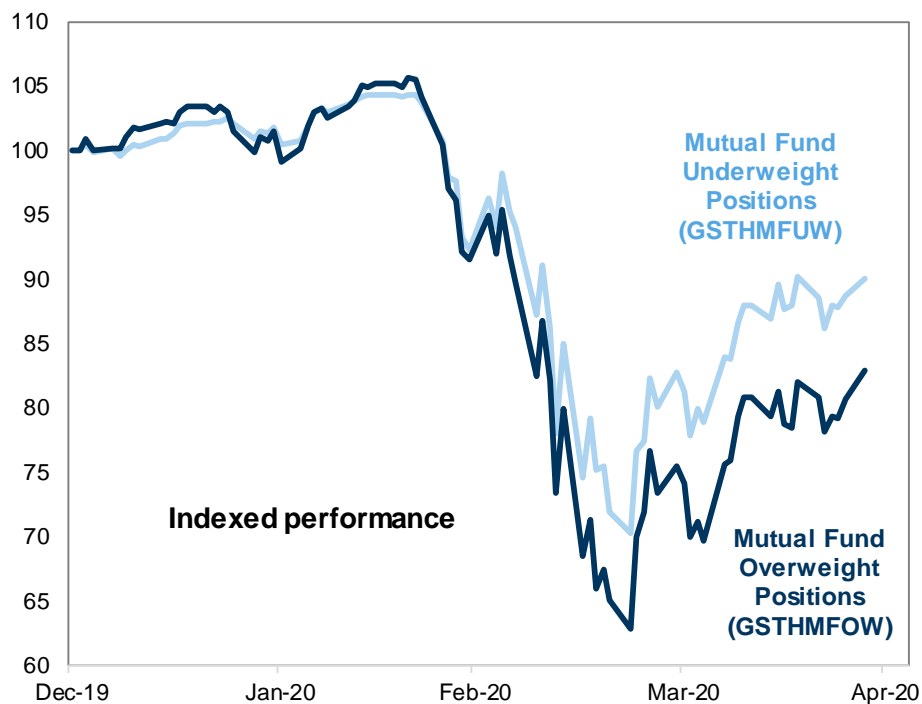
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Stock selection explains performance YTD

Mutual fund overweight positions lagging underweights; Hedge Fund longs trailing shorts

Mutual fund overweight positions -17% vs. underweights -10%

Hedge fund VIP long positions -10% vs. shorts -8%



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Summary of our S&P 500 cash spending estimates

Capex will fall by 27%, Cash M&A by 49%, Dividends by 23%, Buybacks by 50%

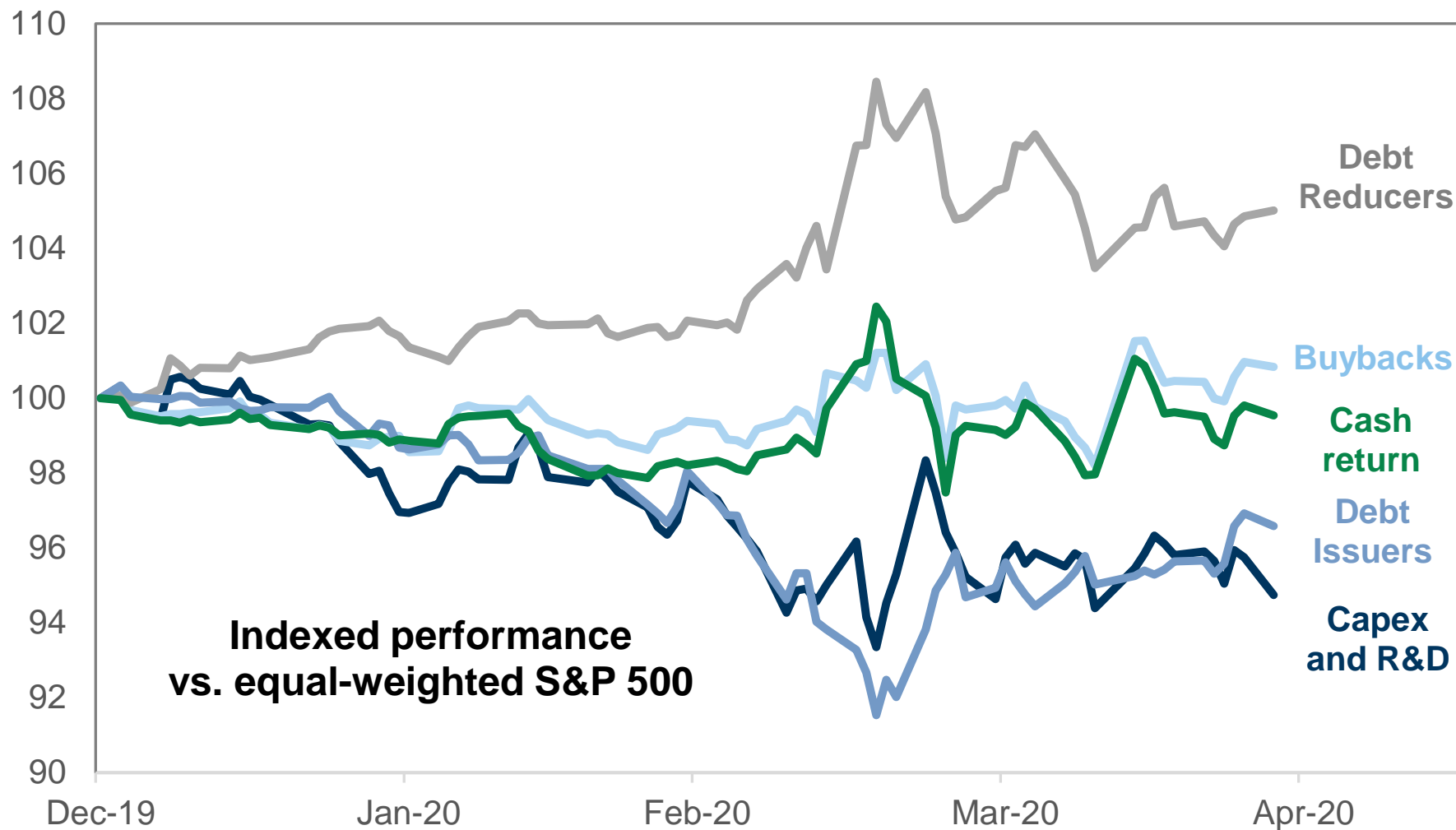
	Level (\$ billions)					
Capital usage	2015	2016	2017	2018	2019	2020E
Investing for Growth						
Capital Expenditures	\$661	\$617	\$626	\$719	\$731	\$534
R&D	259	278	305	337	359	327
Cash Acquisitions	401	362	321	431	262	134
Return to Shareholders						
Share Buybacks	592	553	540	838	749	371
Dividends	415	434	452	483	514	398
Total Capital Usage	\$2,327	\$2,244	\$2,245	\$2,808	\$2,615	\$1,763

	Annual growth (% , yr/yr)					
Capital usage	2015	2016	2017	2018	2019	2020E
Investing for Growth						
Capital Expenditures	(5)%	(7)%	1 %	15 %	2 %	(27)%
R&D	6	8	10	10	7	(9)
Cash Acquisitions	118	(10)	(11)	34	(39)	(49)
Return to Shareholders						
Share Buybacks	5	(7)	(2)	55	(11)	(50)
Dividends	10	5	4	7	6	(23)
Total Capital Usage	13 %	(4)%	0 %	25 %	(7)%	(33)%

Cash spending basket performance vs. S&P 500 YTD

Debt Reducers (GSTHDRED) has outperformed in 2020

Performance of cash spending baskets vs. S&P 500



Indexed performance vs. equal-weighted S&P 500

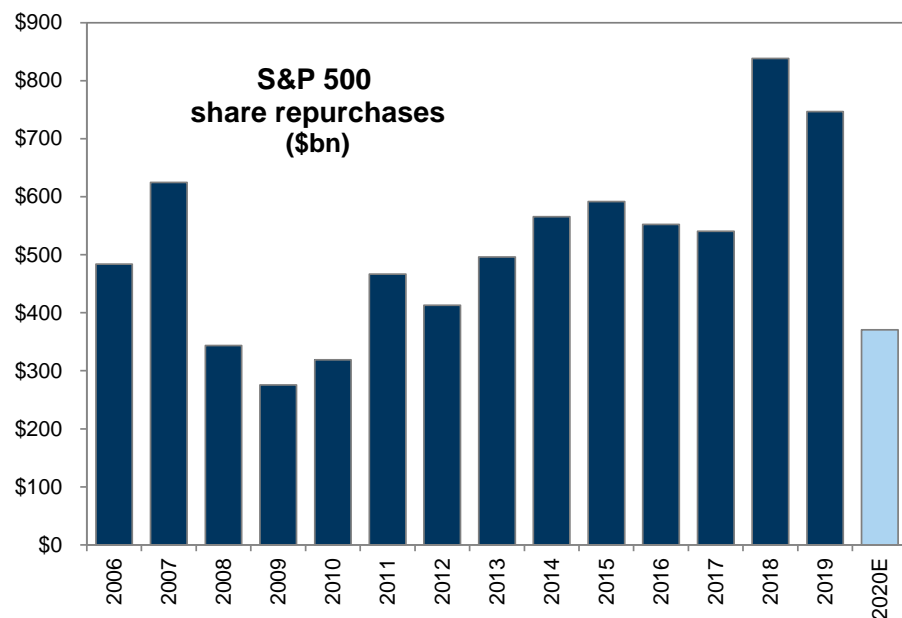
Debt Reducers
Buybacks
Cash return
Debt Issuers
Capex and R&D

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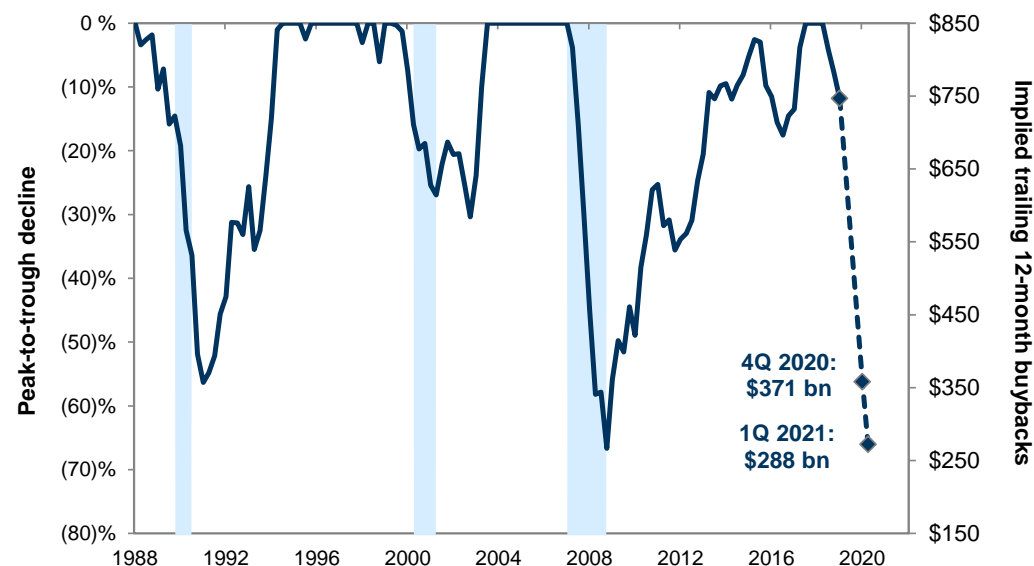
S&P 500 buybacks will fall 50% to \$371 billion in 2020

A peak-to-trough decline of 70% would match drop in repurchases in 2008-09

S&P 500 share repurchases



Peak-to-trough declines in trailing 12-month buybacks

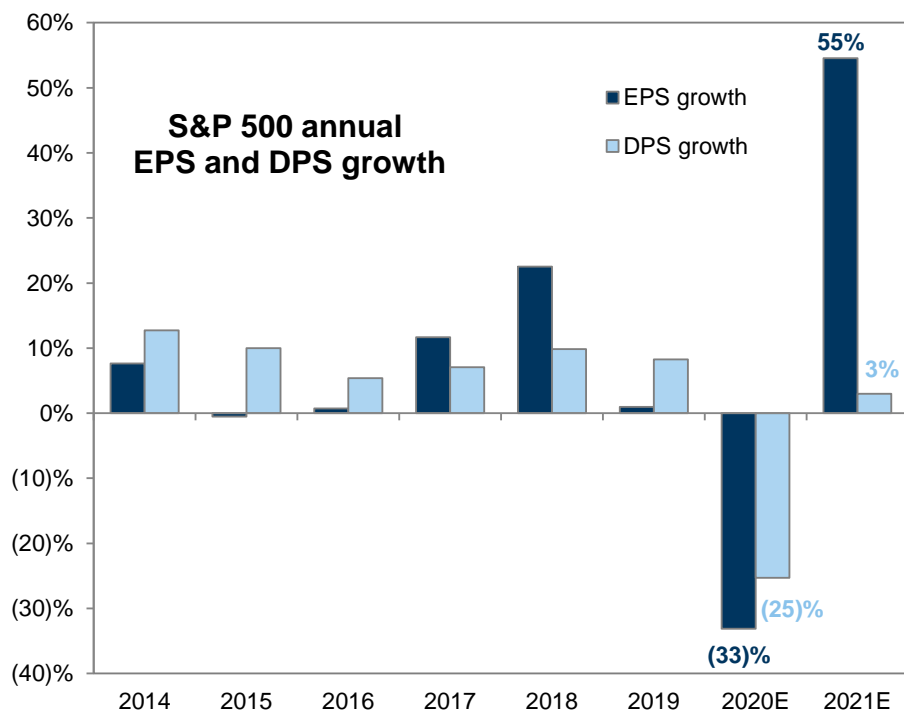


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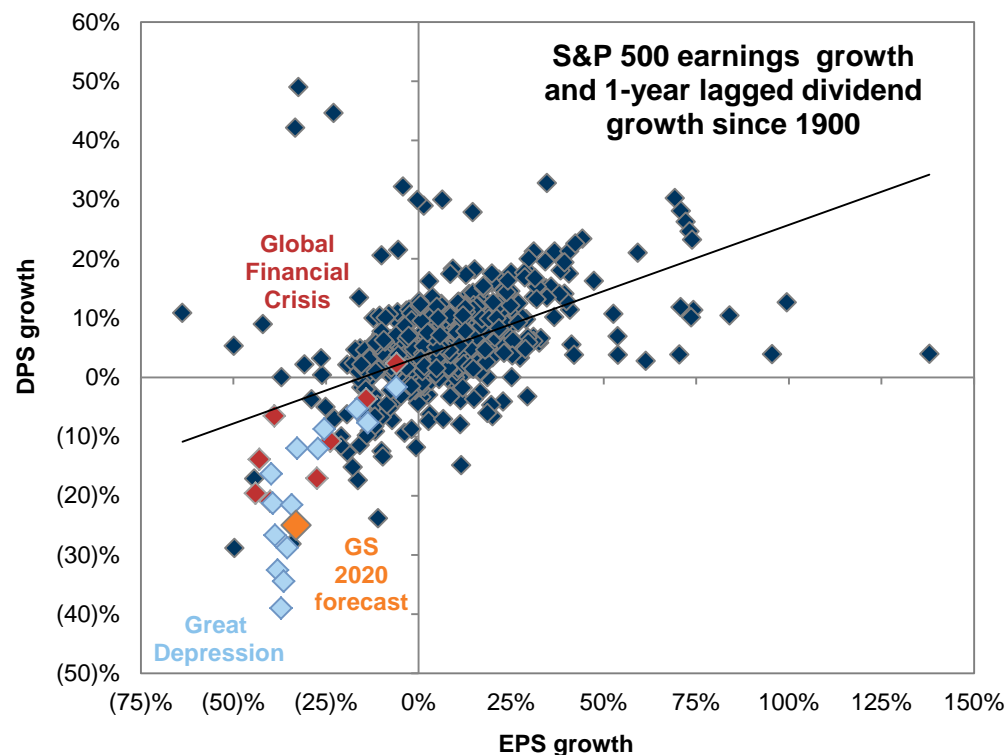
S&P 500 dividends will fall 23% to \$398 billion in 2020

A wave of dividend suspensions, cuts, and eliminations will lower 2020 payouts

S&P 500 EPS and DPS growth



S&P 500 EPS vs. DPS growth



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Dividend suspensions and reductions

30 S&P 500 companies have reduced their dividends YTD

Ticker	Company	Sector	Mkt cap (\$bn)	YTD return	Annual dividend rate		
					Old	New	Change
APTV	Aptiv PLC	Consumer Discretionary	\$16	(36)%	\$0.88	\$0.00	(100)%
BA	Boeing Co.	Industrials	78	(57)	8.22	0.00	(100)
CCL	Carnival Corp.	Consumer Discretionary	7	(76)	2.00	0.00	(100)
DRI	Darden Restaurants	Consumer Discretionary	9	(38)	3.52	0.00	(100)
DAL	Delta Air Lines	Industrials	15	(61)	1.61	0.00	(100)
EL	Estee Lauder Companies	Consumer Staples	36	(21)	1.92	0.00	(100)
F	Ford Motor Co.	Consumer Discretionary	19	(47)	0.60	0.00	(100)
FCX	Freeport-McMoRan	Materials	11	(40)	0.20	0.00	(100)
GPS	Gap Inc.	Consumer Discretionary	3	(59)	0.97	0.00	(100)
HCA	HCA Healthcare Inc.	Health Care	36	(29)	1.72	0.00	(100)
HLT	Hilton Worldwide Hldgs	Consumer Discretionary	20	(35)	0.60	0.00	(100)
KSS	Kohl's Corp.	Consumer Discretionary	3	(67)	2.82	0.00	(100)
LB	L Brands Inc.	Consumer Discretionary	3	(41)	1.20	0.00	(100)
LVS	Las Vegas Sands	Consumer Discretionary	35	(32)	3.16	0.00	(100)
M	Macy's Inc.	Consumer Discretionary	2	(70)	1.51	0.00	(100)
MAR	Marriott Intl	Consumer Discretionary	27	(46)	1.92	0.00	(100)
JWN	Nordstrom Inc.	Consumer Discretionary	3	(57)	1.48	0.00	(100)
PVH	PVH Corp.	Consumer Discretionary	3	(62)	0.15	0.00	(100)
TPR	Tapestry Inc.	Consumer Discretionary	4	(48)	1.35	0.00	(100)
TJX	TJX Companies Inc.	Consumer Discretionary	55	(25)	0.92	0.00	(100)
APA	Apache Corp.	Energy	4	(59)	1.00	0.10	(90)
OXY	Occidental Petroleum	Energy	12	(64)	3.16	0.44	(86)
PGR	Progressive Corp.	Financials	48	17	2.81	0.40	(86)
NBL	Noble Energy Inc.	Energy	4	(68)	0.48	0.08	(83)
SLB	Schlumberger	Energy	23	(58)	2.00	0.50	(75)
ADS	Alliance Data Systems	Information Technology	2	(64)	2.52	0.84	(67)
HP	Helmerich & Payne	Energy	2	(57)	2.84	1.00	(65)
IVZ	Invesco Ltd.	Financials	3	(59)	1.24	0.62	(50)
CNP	CenterPoint Energy	Utilities	8	(39)	1.16	0.60	(48)
CME	CME Group Inc.	Financials	64	(11)	5.90	3.40	(42)

High-yielding Russell 1000 stocks with safe dividends

High dividend yields, healthy balance sheets, and reasonable payout ratios

Ticker	Company	PERFORMANCE		BALANCE SHEET			PAYOUT RATIO		DIVIDEND YIELD		TRACK RECORD		
		YTD return	Mkt cap (\$ bn)	Return since 19-Feb-20 market peak	S&P LT issuer rating	Cash/assets	Assets/equity	2019 realized	Shocked payout ratio	Ann. dividend yield	%ile vs. past 40 years	Consec. quarters without DPS cut	Trailing P/E
COMMUNICATION SERVICES													
OMC	Omnicom Group Inc.	(35)%	11	(3)%	BBB+	13 %	-	43 %	65 %	5.0 %	99 %	50	9 x
CONSUMER DISCRETIONARY													
HD	Home Depot Inc.	(2)	213	(2)	A	4	-	59	89	2.8	90	128	20
CONSUMER STAPLES													
ADM	Archer-Daniels-Midland	(22)	20	(3)	A	12	-	55	83	4.0	99	23	13
SYU	Sysco Corp.	(37)	23	(1)	BBB-	3	-	48	73	3.4	93	130	14
FINANCIALS													
WFC	Wells Fargo & Co.	(49)	116	(1)	A-	-	11.5 x	47	71	7.6	96	39	8
BEN	Franklin Resources	(38)	8	(5)	A+	-	1.5	40	61	6.8	100	112	7
PBCT	People's United Financial	(29)	5	(1)	BBB+	-	7.6	53	80	6.0	91	105	8
TFC	Truist Financial	(36)	42	(2)	A-	-	8.0	44	67	5.1	96	39	9
USB	U.S. Bancorp	(42)	51	(3)	A+	-	10.8	39	59	4.9	88	40	9
PNC	PNC Financial Svc. Grp	(36)	39	(3)	A-	-	9.0	40	61	4.6	82	39	9
EV	Eaton Vance Corp.	(28)	4	(6)	A-	-	3.5	42	63	4.5	95	81	10
MTB	M&T Bank Corp.	(38)	13	(3)	A-	-	8.4	31	48	4.2	97	156	8
RE	Everest Re Group	(38)	9	(3)	A-	-	3.0	29	44	3.6	100	94	9
HIG	Hartford Financial Svc.	(40)	14	(3)	BBB+	-	4.5	23	35	3.6	98	40	7
BAC	Bank of America	(37)	194	(6)	A-	-	10.1	26	39	3.2	54	40	9
AFL	Aflac Inc.	(31)	26	(5)	A-	-	5.4	25	38	3.1	98	138	8
CINF	Cincinnati Financial	(25)	13	(5)	BBB+	-	2.6	57	86	3.1	64	136	20
HEALTH CARE													
MRK	Merck & Co. Inc.	(10)	207	(1)	AA-	10	-	47	71	3.0	72	156	16
BMJ	Bristol-Myers Squibb	(2)	135	(3)	A+	31	-	39	58	2.9	48	114	12
JNJ	Johnson & Johnson	7	389	(1)	AAA	11	-	47	71	2.6	87	156	17

Source: FactSet, Goldman Sachs Global Investment Research. Pricing as of April 24, 2020.

For details, see Dividends to fall by 25% in 2020: Highlighting 40 stocks for income-oriented investors (median yield of 4.0%), March 30, 2020.

High-yielding stocks with safe dividends (cont.)

High dividend yields, healthy balance sheets, and reasonable payout ratios

Ticker	Company	PERFORMANCE		BALANCE SHEET		PAYOUT RATIO		DIVIDEND YIELD		TRACK RECORD			
		YTD return	Mkt cap (\$ bn)	Return since 19-Feb-20 market peak	S&P LT issuer rating	Cash/assets	Assets/equity	2019 realized	Shocked payout ratio	Ann. dividend yield	%ile vs. past 40 years	Consec. quarters without DPS cut	Trailing P/E
INDUSTRIALS													
UTX	Raytheon Technologies	(28)	95	(3)	BBB+	5	-	36	54	4.6	73	156	14
UPS	United Parcel Service	(14)	70	(7)	A	9	-	54	81	4.0	98	76	14
MMM	3M Co.	(16)	84	(4)	A+	10	-	64	97	4.0	96	156	17
EMR	Emerson Electric	(29)	29	(4)	A	7	-	55	84	3.7	100	156	14
CAT	Caterpillar Inc.	(22)	61	(3)	A	10	-	37	56	3.6	95	108	11
CMI	Cummins Inc.	(17)	22	(2)	A+	8	-	36	54	3.5	90	111	11
CHRW	C.H. Robinson Worldwide	(7)	9	(2)	BBB+	9	-	49	74	2.8	100	86	18
INFORMATION TECHNOLOGY													
IBM	International Bus. Machines	(6)	105	(3)	A	14	-	51	77	5.2	99	102	9
NTAP	NetApp Inc.	(29)	9	(6)	BBB+	43	-	47	71	4.5	100	26	10
CSCO	Cisco Systems Inc.	(10)	176	(5)	AA-	33	-	45	68	3.4	98	35	13
MATERIALS													
NUE	Nucor Corp.	(32)	11	(1)	A-	9	-	38	58	4.3	99	41	10
SON	Sonoco Products Company	(23)	5	(4)	BBB	2	-	49	74	3.7	96	124	13
REAL ESTATE													
REG	Regency Centers	(43)	7	1	BBB+	-	1.8	61	93	6.7	63	39	26
MAA	Mid-America Apt. Communities	(18)	13	1	BBB+	-	1.9	61	93	3.8	15	69	38
ESS	Essex Property Trust	(19)	16	1	BBB+	-	2.1	62	94	3.4	43	100	39
UTILITIES													
CNP	CenterPoint Energy	(38)	8	(5)	BBB+	3	-	65	98	7.0	68	55	9
EXC	Exelon Corp.	(19)	36	(2)	BBB+	1	-	48	72	4.2	45	23	11
MDU	MDU Resources Group Inc	(24)	5	(1)	BBB+	1	-	49	75	3.7	60	120	13
AEP	American Electric Power	(11)	41	(3)	A-	1	-	66	100	3.4	7	63	20
NI	NiSource Inc.	(6)	10	(3)	BBB+	0	-	64	96	3.2	22	14	19
List median		(26)%	22	(3)%	A-	9 %	4.9 x	47 %	71 %	3.7 %	94 %	90	12 x
Russell 1000 median		(22)	8	(4)		6	7.4	27	41	1.7			16

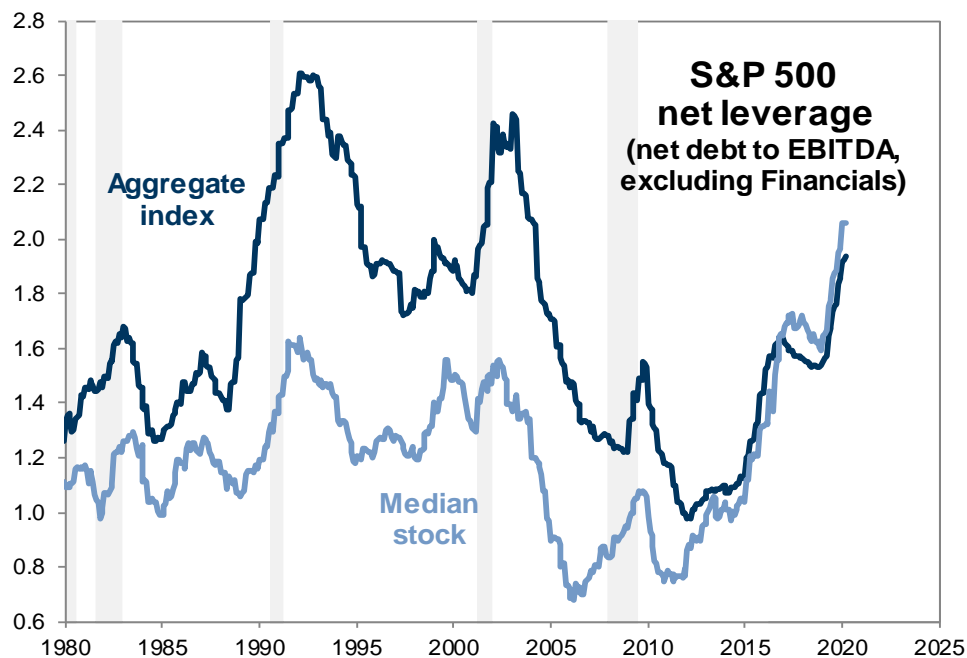
Source: FactSet, Goldman Sachs Global Investment Research. Pricing as of April 24, 2020.

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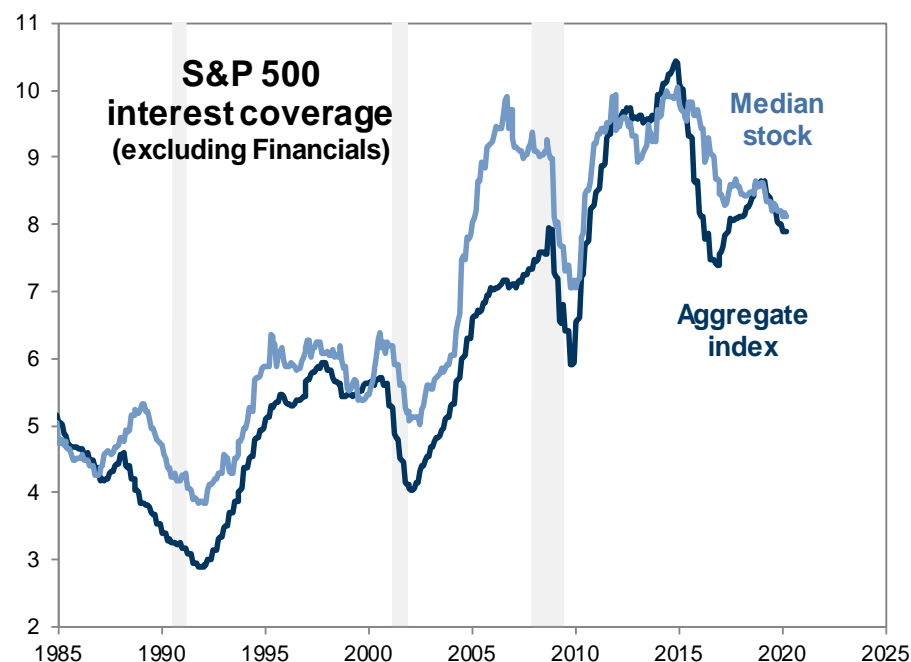
Median S&P 500 firm has highest leverage in 40 years

Interest coverage ratio remains strong because absolute borrowing cost is low

S&P 500 net leverage has inflected higher



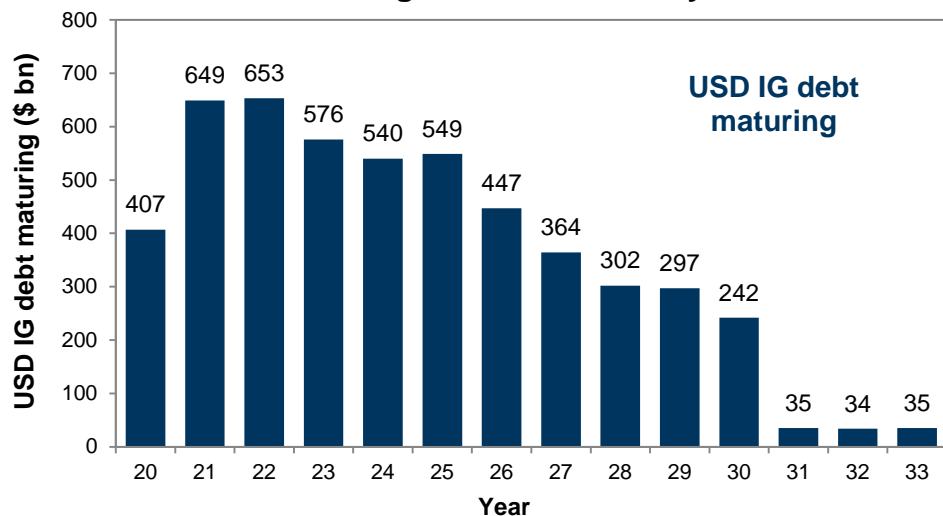
Interest coverage ratios have fallen, but remain benign



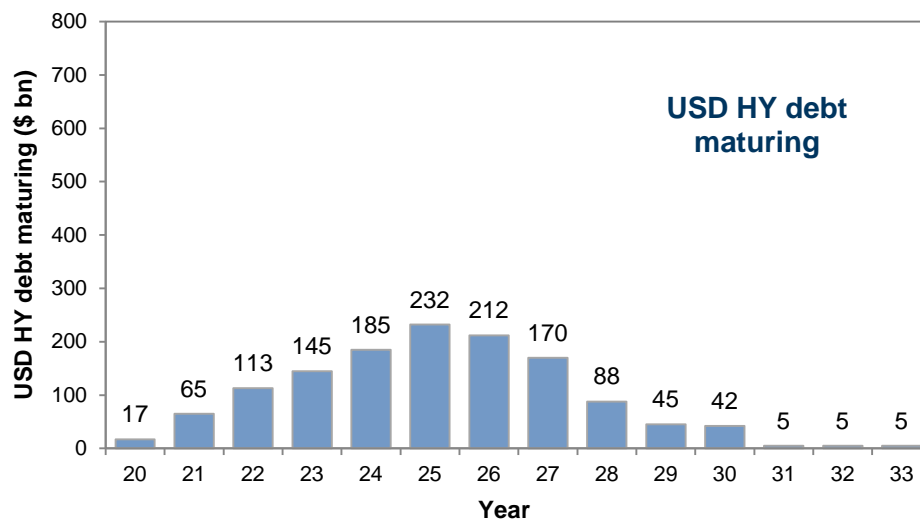
Investment Grade (IG) vs. High Yield (HY) credit

IG fixed income represents majority of the credit market

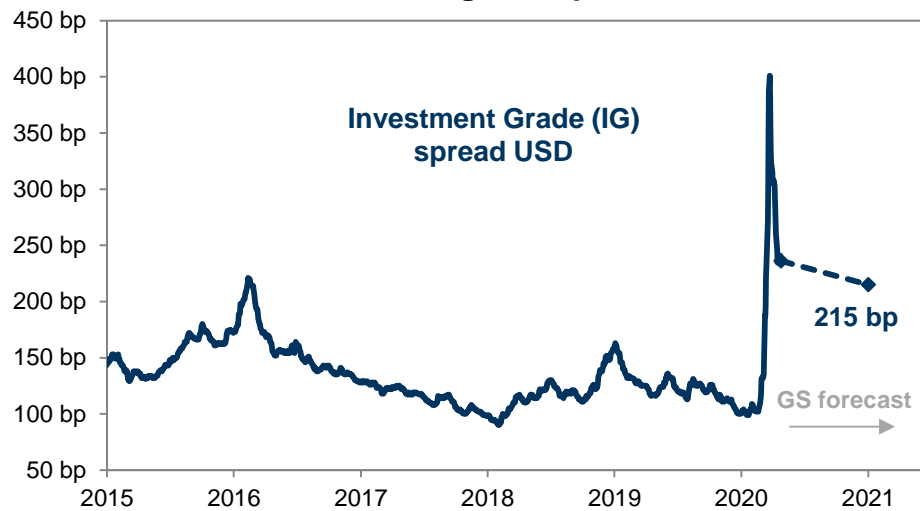
Investment grade bond maturity wall



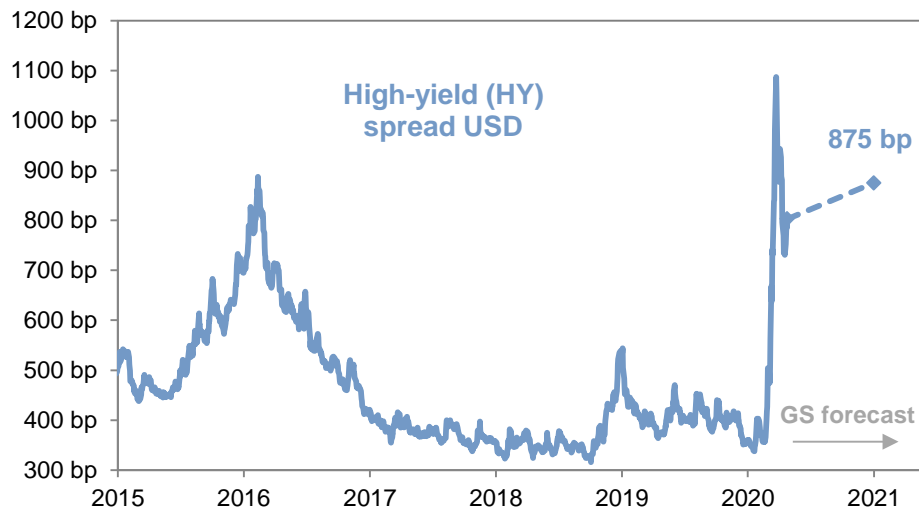
High yield bond maturity wall



Investment grade spread

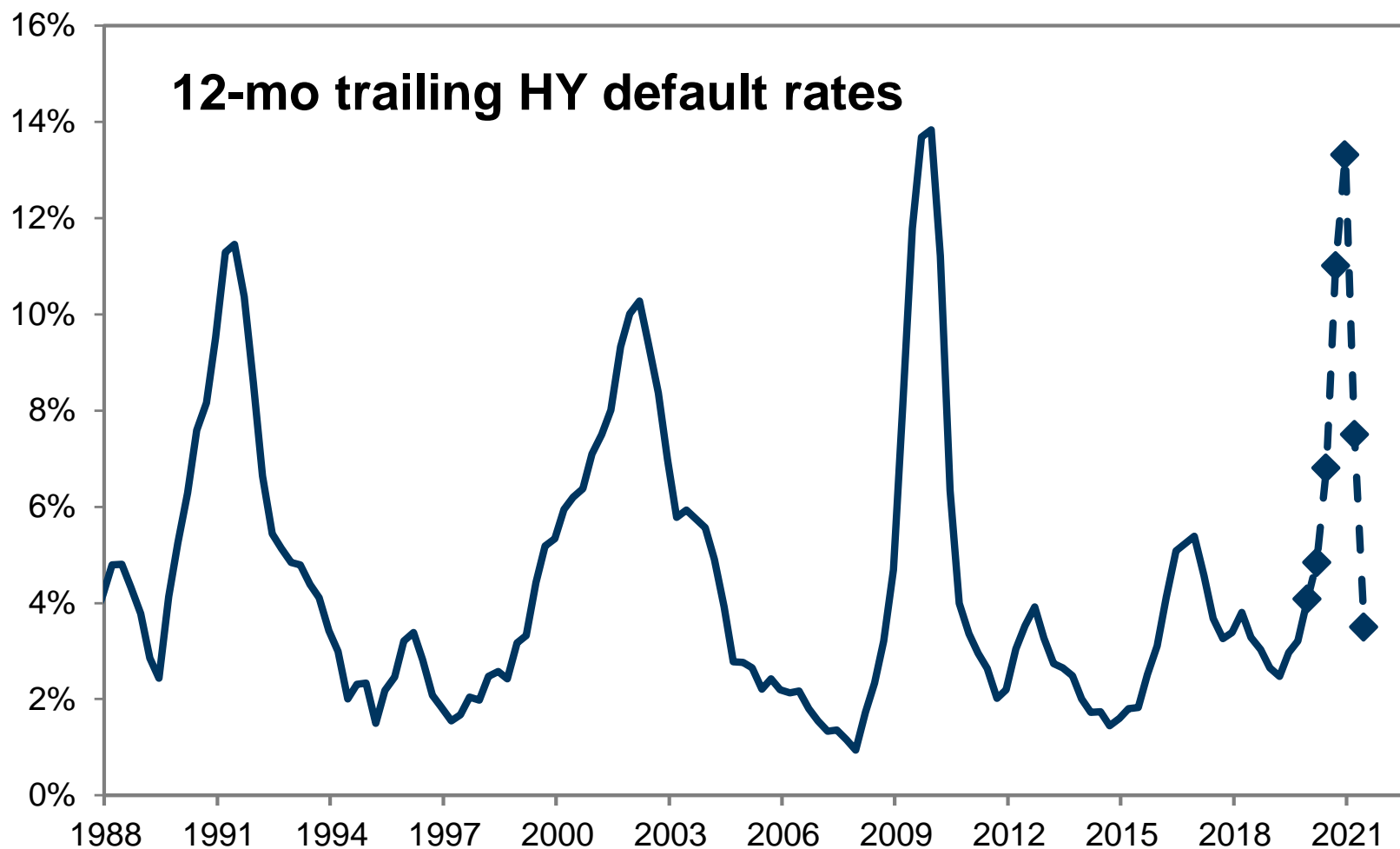


High yield spread



High yield default rates will rise to 13% by year-end

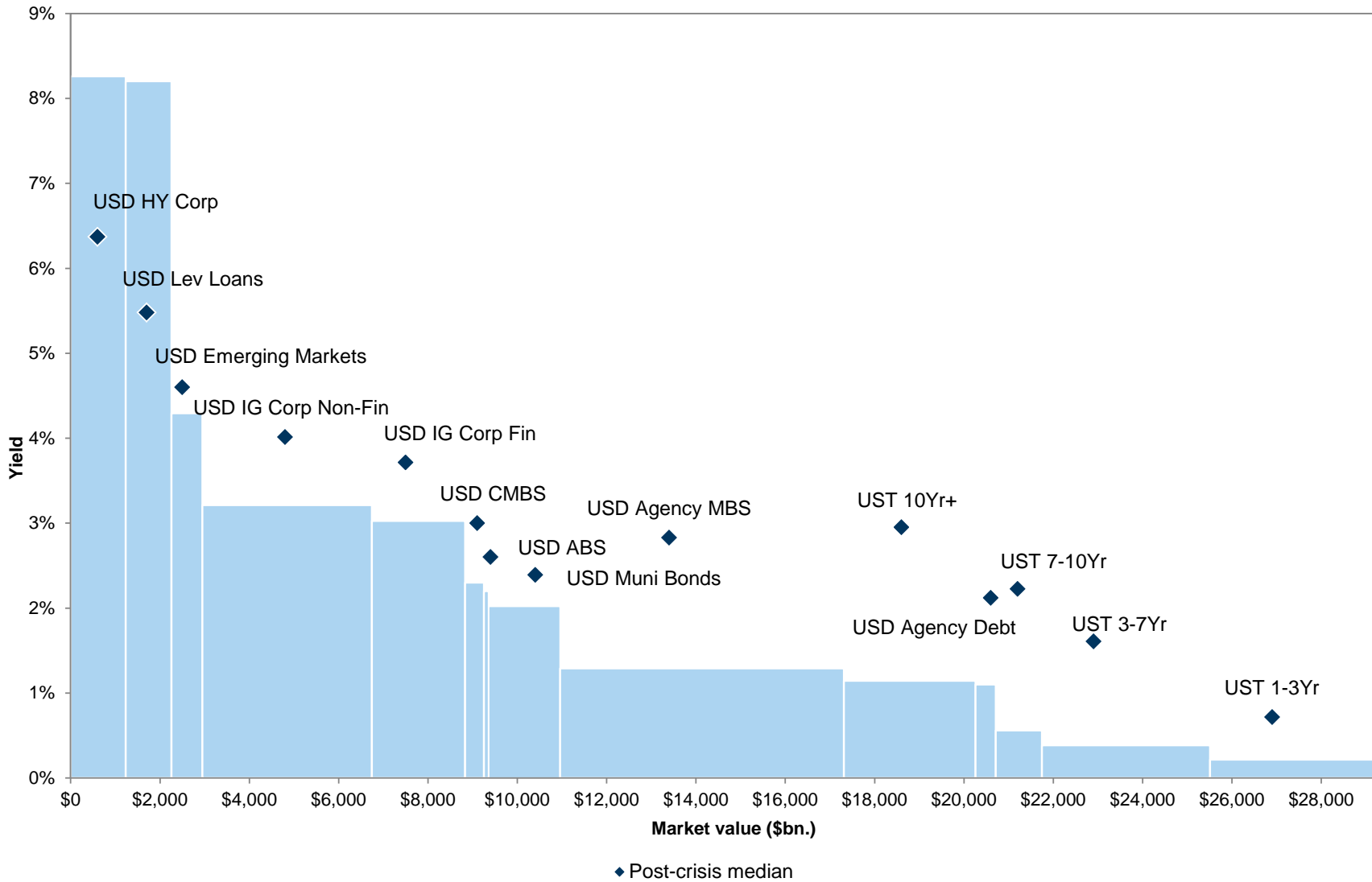
Trailing 12-month high yield default rates should decline in 2021



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Yields across US dollar fixed income markets

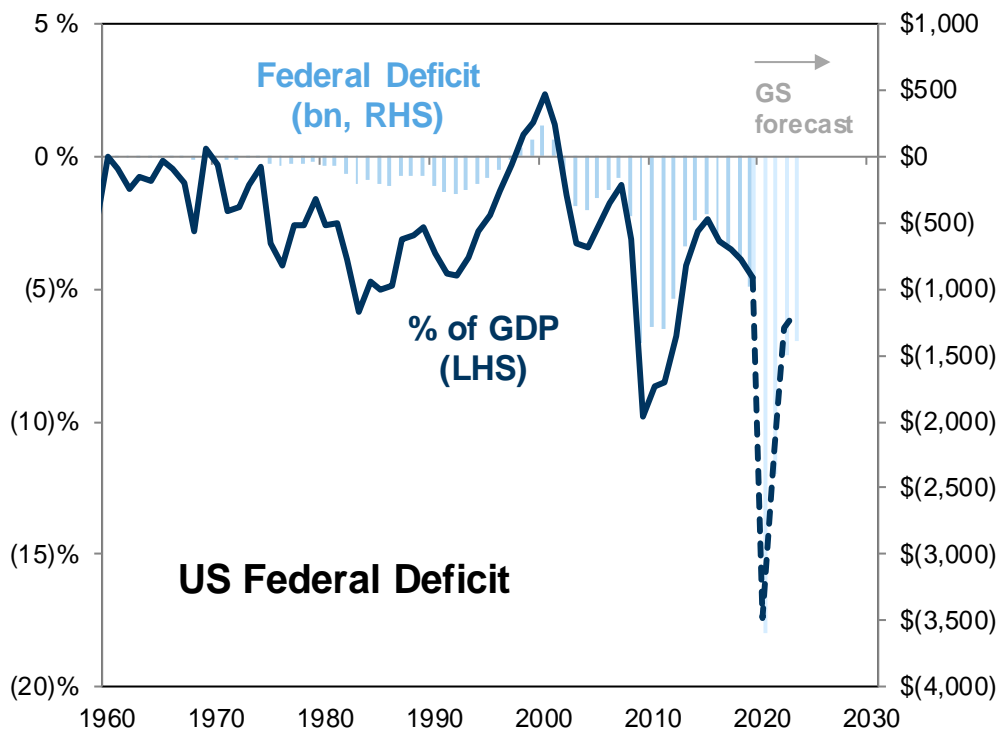
Average yield and total market value outstanding for USD fixed income markets



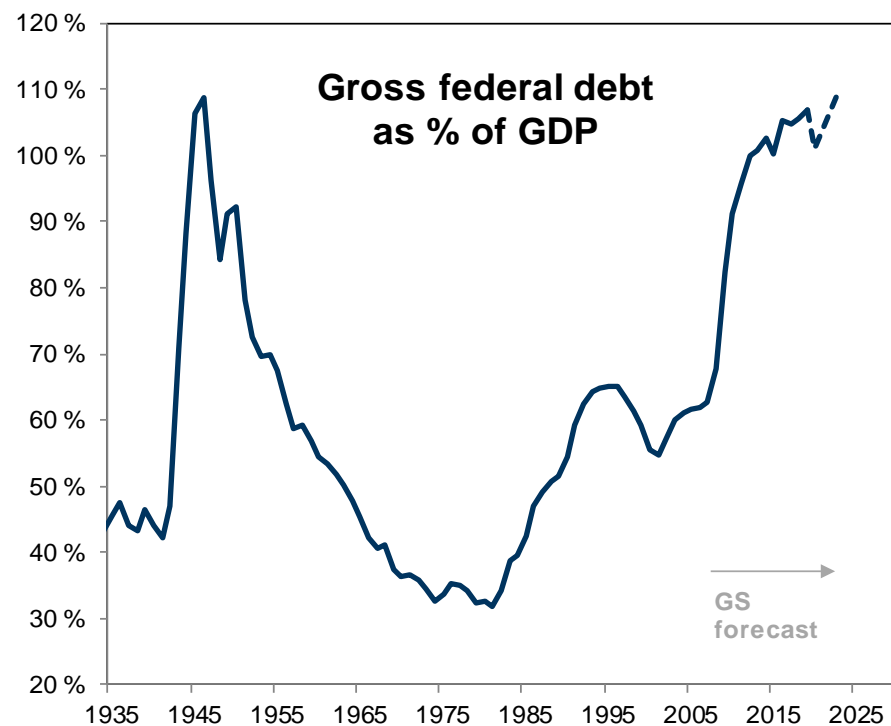
107% federal debt/GDP ratio is highest since WWII

Federal budget deficit of \$3.6 trillion in 2020 is nearly 20% of US GDP

Annual US federal deficit since 1960



Debt as a share of GDP



History of federal government relief to industries/firms

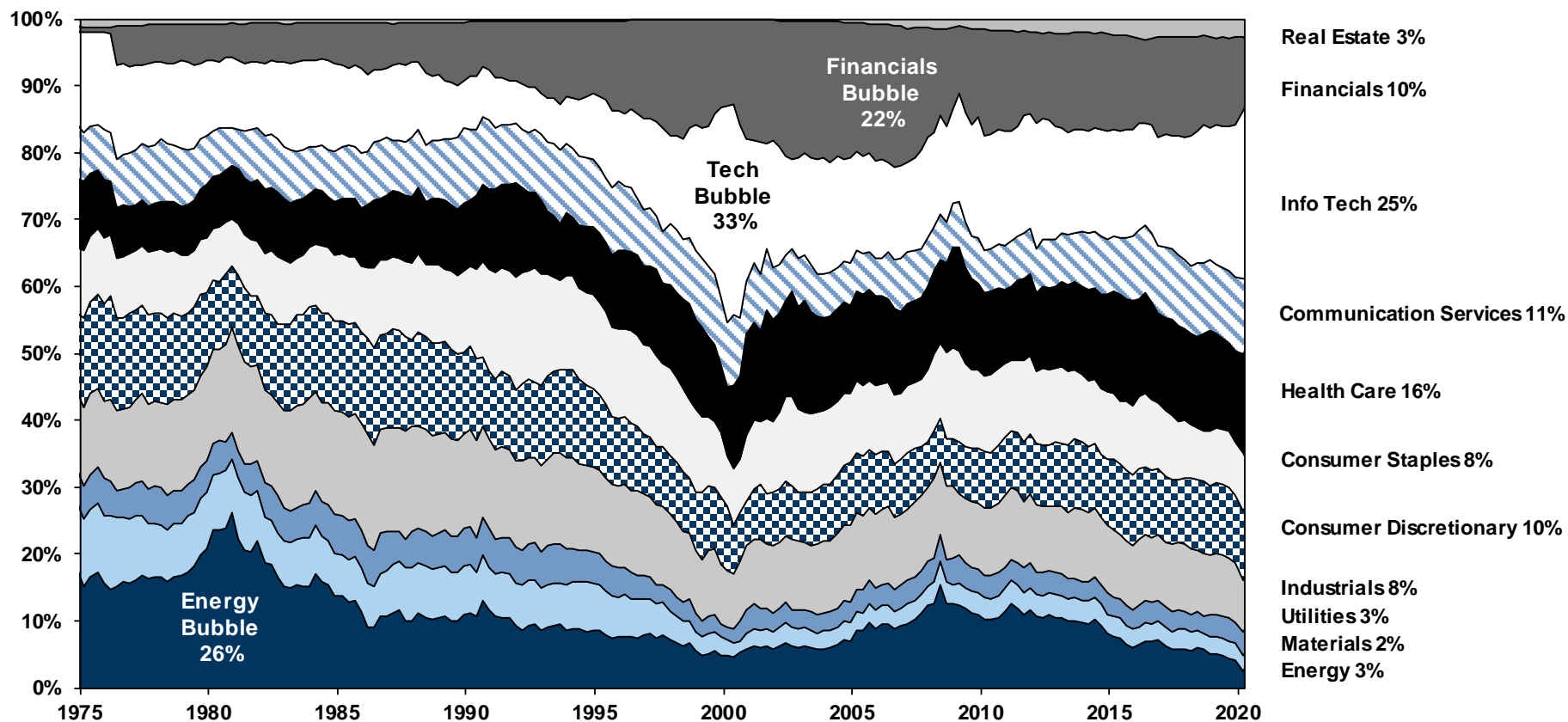
Performance of companies and industries after receiving government assistance

Company	Performance vs. S&P 500 following government relief			
	1-week	1-month	3-months	12-months
Chrysler (1980)	10 pp	18 pp	(5)pp	(58)pp
Fannie Mae (2008)	(90)	(67)	(58)	(57)
Continental Illinois (1984)	(19)	(41)	(58)	(47)
Freddie Mac (2008)	(92)	(57)	(54)	(43)
American International Group (2008)	35	(13)	(27)	(34)
Citigroup (2008)	108	65	(36)	(25)
Financials (2008)	(4)	(5)	(17)	(18)
Airlines (2001)	2	(0)	15	(8)
JP Morgan (2008)	23	10	3	6
Bank of America (2009)	(11)	(20)	42	93
Median	(1)pp	(9)pp	(22)pp	(30)pp
<i>Hit rate of outperformance</i>	<i>50 %</i>	<i>30 %</i>	<i>30 %</i>	<i>20 %</i>

Sector composition of S&P 500 by equity cap

Information Technology comprises 25% of the index compared with 33% in 2000

S&P 500 sector composition since 1975

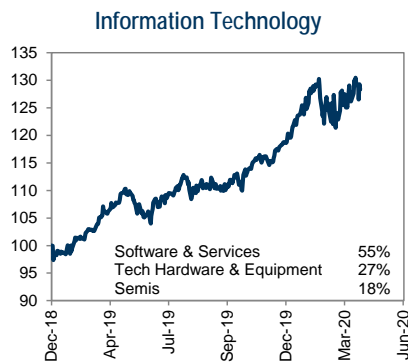
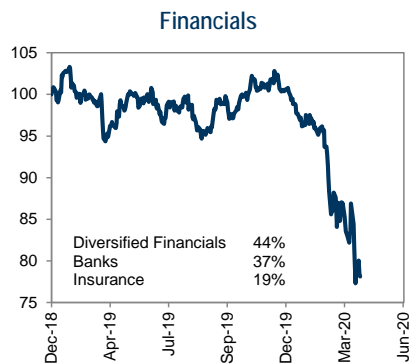
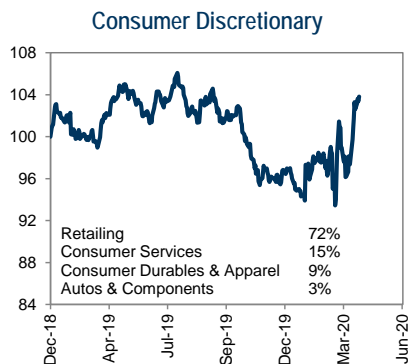


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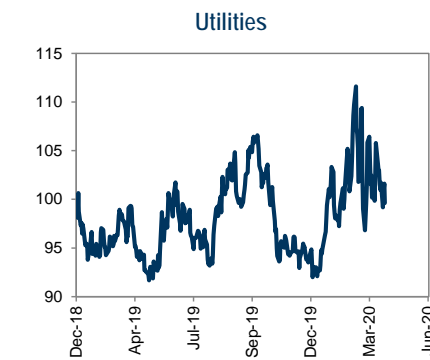
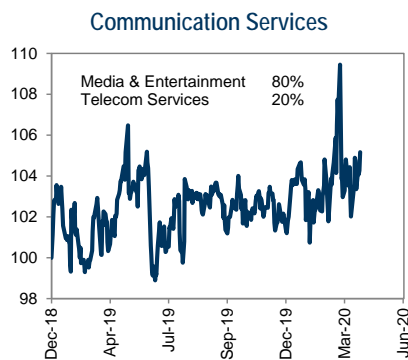
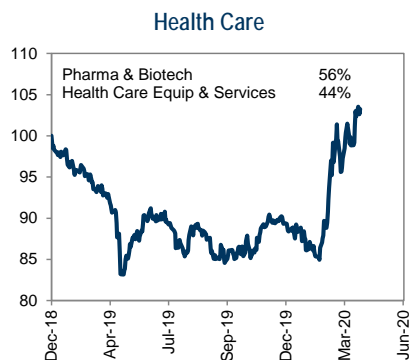
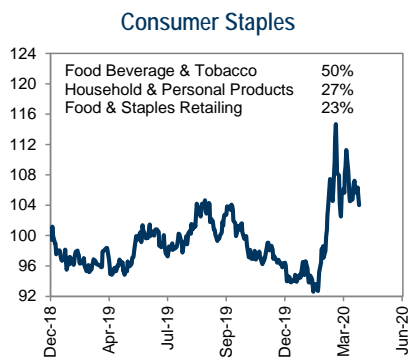
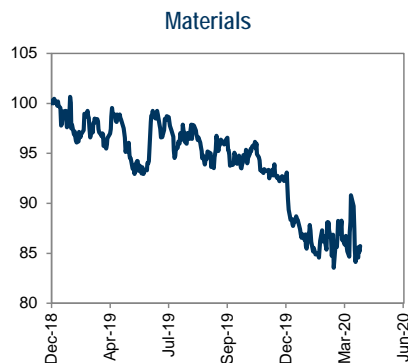
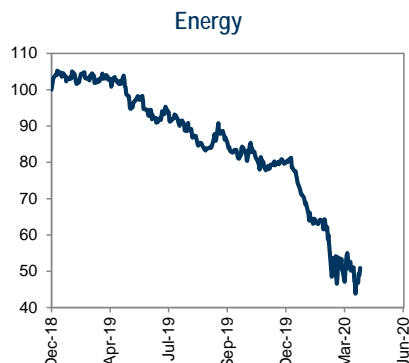
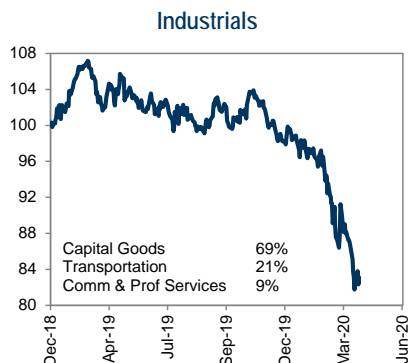
Sector – Performance vs. S&P 500

The largest Industry Groups and their weight in each sector

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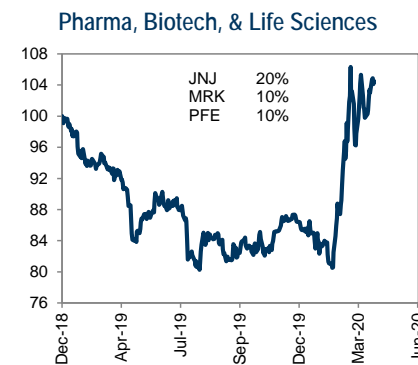
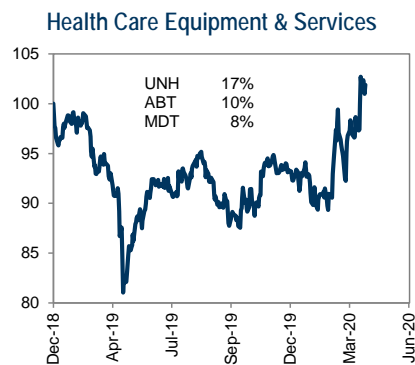
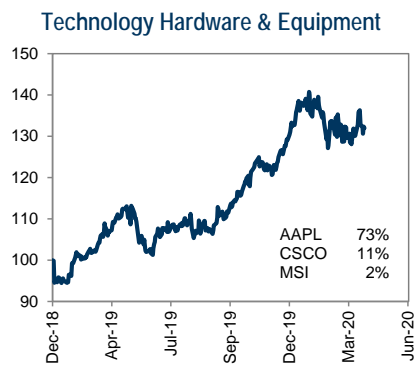
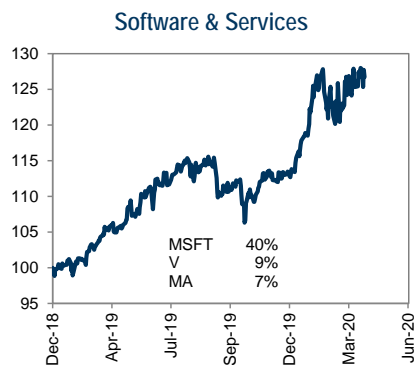
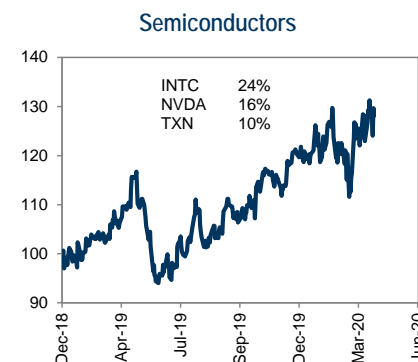
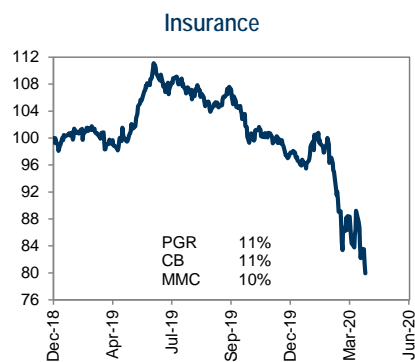
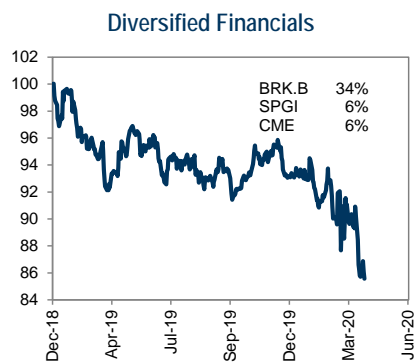
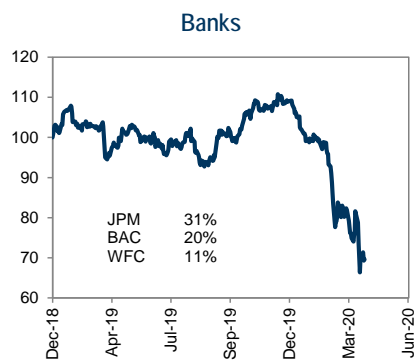
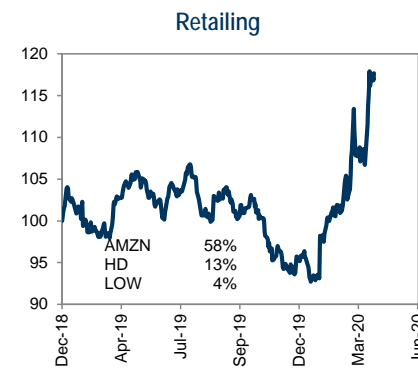
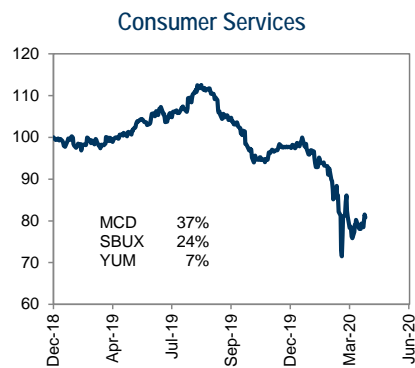
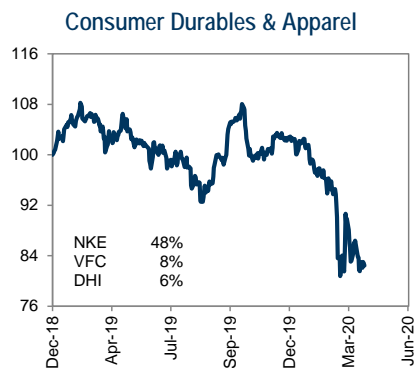
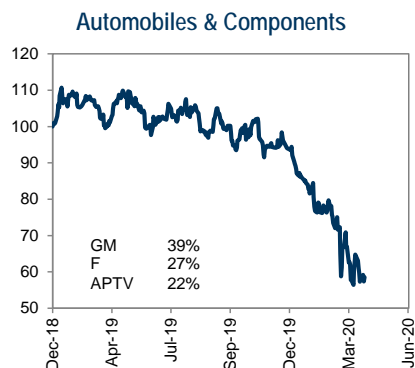
Recommended Sector Positioning			
Sectors	Goldman Sachs Weighting	S&P 500 Wgt	YTD
Info Tech	Overweight	25%	(5)%
Real Estate		3	(14)
Utilities	Neutral	3	(10)
Comm Services		11	(10)
Materials		2	(19)
Industrials		8	(25)
Health Care	Underweight	16	(2)
Consumer Staples		8	(7)
Consumer Discr		10	(7)
Financials		10	(30)
Energy		3	(41)
S&P 500		100%	(13)%



Industry Groups – Performance vs. S&P 500

Three largest stocks and their weight in each Industry Group

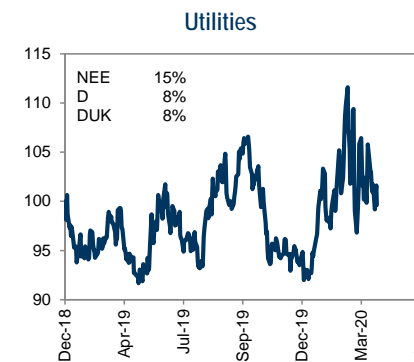
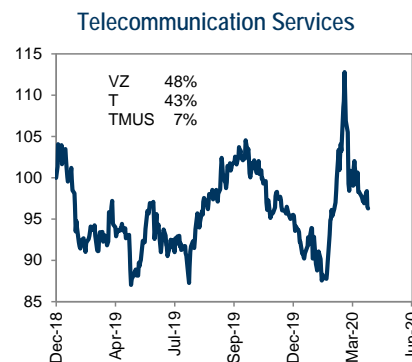
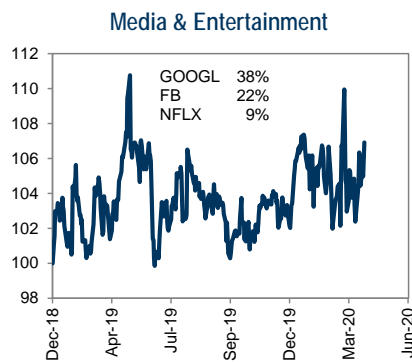
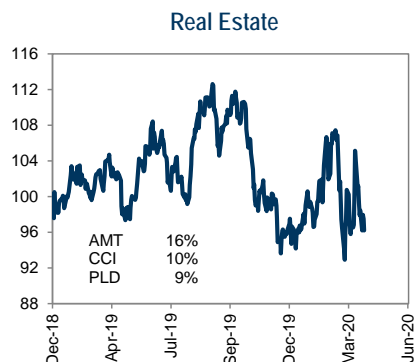
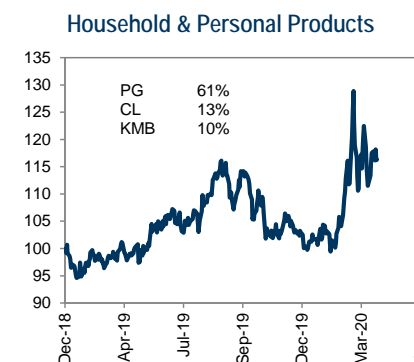
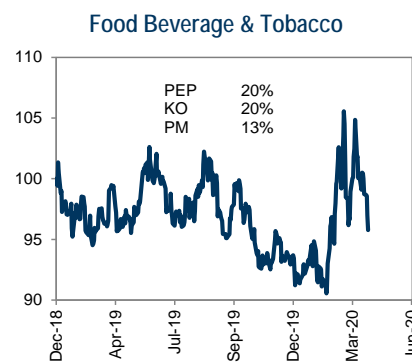
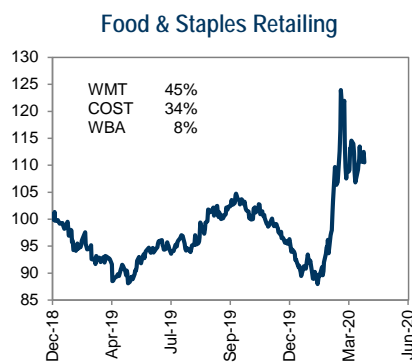
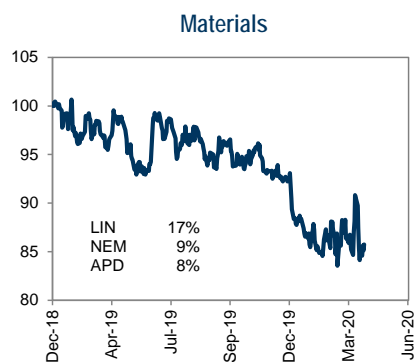
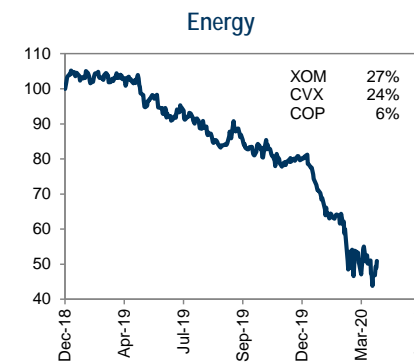
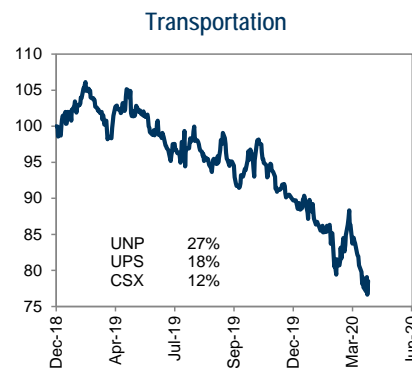
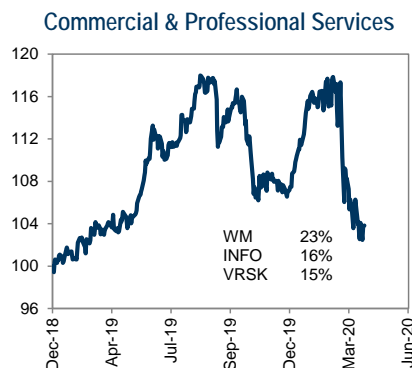
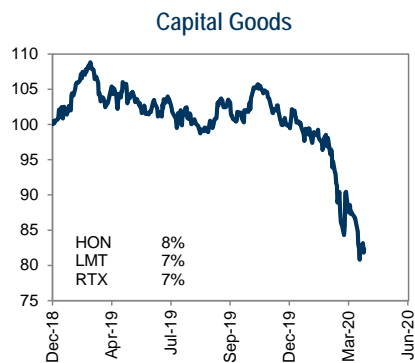
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Industry Groups – Performance vs. S&P 500

Three largest stocks and their weight in each Industry Group

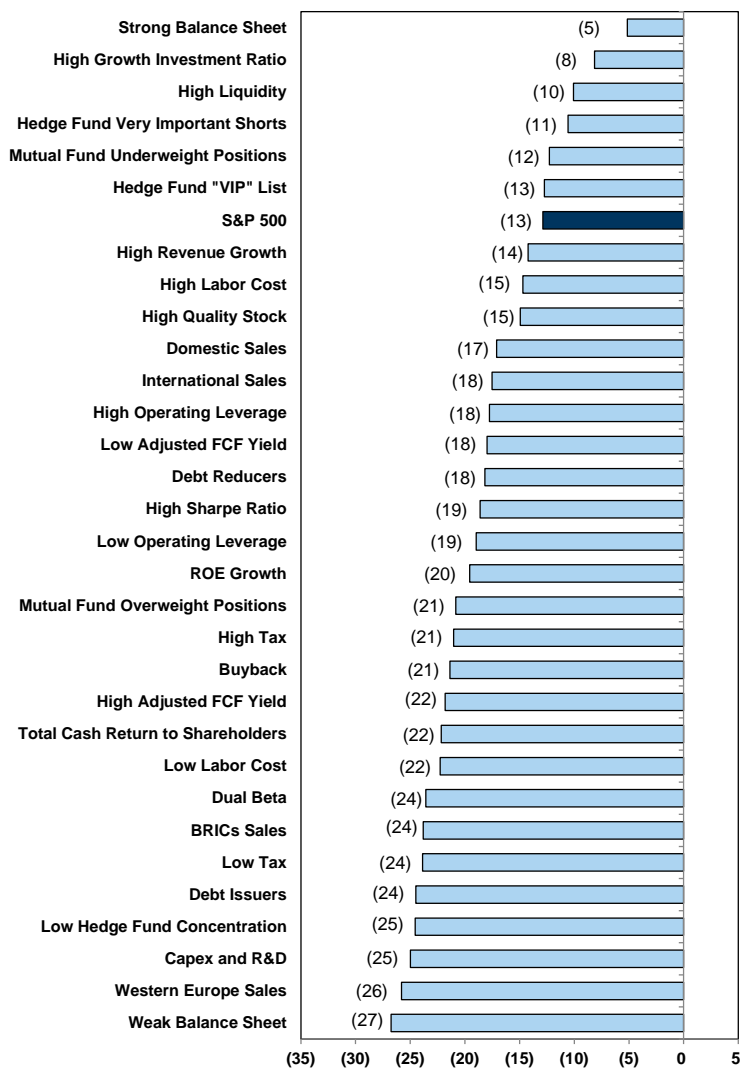
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US Portfolio Strategy Baskets

Performance and valuation

YTD Performance



	Ticker	Total Return			P/E	P/B	Div	
		1 wk	1 mo	YTD	NTM	LTM	Yield	
Macroeconomic	Dual Beta	GSTHBETA	1.4 %	25 %	(24)%	18x	2.2x	1.8 %
	Interest Rate Sensitive	GSTHUSTY	1.0	21	(32)	12	1.6	2.4
	High Tax	GSTHTTAX	1.3	25	(21)	21	3.4	1.7
	Low Tax	GSTHLTAX	(0.8)	22	(24)	18	2.8	2.1
	High Labor Cost	GSTHHLAB	(0.3)	24	(15)	19	4.4	1.0
	Low Labor Cost	GSTHLLAB	(0.7)	23	(22)	13	2.7	2.0
Geographic Sales	Domestic Sales	GSTHAINT	0.7 %	27 %	(17)%	18x	3.0x	2.0 %
	International Sales	GSTHINTL	(0.0)	25	(18)	19	3.9	1.7
	BRICs Sales	GSTHBRIC	0.5	24	(24)	21	3.2	2.0
	Western Europe Sales	GSTHWEUR	1.6	25	(26)	15	1.8	0.9
Fundamental	High Revenue Growth	GSTHREVG	0.4 %	27 %	(14)%	28x	5.5x	0.4 %
	High Operating Leverage	GSTHOPHI	1.1	21	(18)	22	3.2	0.9
	Low Operating Leverage	GSTHOPLO	0.8	26	(19)	19	4.3	1.8
	ROE Growth	GSTHGROE	1.5	25	(20)	18	2.2	1.9
	High Quality Stock	GSTHQUAL	0.0	28	(15)	24	5.2	0.9
	High Adjusted FCF Yield	GSTHHACF	0.2	21	(22)	12	2.3	3.5
	Low Adjusted FCF Yield	GSTHLACF	1.5	27	(18)	27	4.0	0.5
	Strong Balance Sheet	GSTHSBAL	0.8	27	(5)	32	7.8	0.3
	Weak Balance Sheet	GSTHWBAL	0.6	23	(27)	12	1.2	2.3
Uses of Cash	Capex and R&D	GSTHCAPX	0.5 %	22 %	(25)%	13x	2.0x	2.5 %
	Total Cash Return to Shareholders	GSTHCASH	0.6	25	(22)	11	2.3	3.6
	Buyback	GSTHREPO	0.8	25	(21)	12	3.0	2.6
	Dividend Growth	GSTHDIVG	1.6	23	(28)	11	2.0	4.2
	High Growth Investment Ratio	GSTHHGIR	0.7	26	(8)	20	5.4	1.9
	Debt Issuers	GSTHDISS	1.9	29	(24)	18	4.0	2.0
	Debt Reducers	GSTHDRED	(0.3)	21	(18)	13	1.9	2.5
Risk & Liquidity	High Sharpe Ratio	GSTHSHRP	2.0 %	26 %	(19)%	14x	2.4x	1.8 %
	High Liquidity	GSTHHLIQ	(0.1)	25	(10)	24	5.6	2.2
	Low Liquidity	GSTHLLIQ	7.2	29	(30)			
Hedge Funds & Mutual Funds	Hedge Fund "VIP" List	GSTHHVIP	0.3 %	24 %	(13)%	23x	4.7x	0.0 %
	Hedge Fund Very Important Shorts	GSTHVISP	(0.4)	25	(11)	18	4.9	2.7
	High Hedge Fund Concentration	GSTHHFHI	2.5	27	(37)	10	1.3	0.6
	Low Hedge Fund Concentration	GSTHHFSL	0.5	23	(25)	18	1.6	3.3
	Mutual Fund Overweight Positions	GSTHMFOW	0.9	26	(21)	17	2.5	1.4
	Mutual Fund Underweight Positions	GSTHMFUW	(0.2)	25	(12)	20	4.3	2.7
S&P 500 Average					22	5.5	2.7	
S&P 500 Median					18	2.8	2.2	

For details and constituents of our baskets see [Strategy Baskets: Anatomy of our US Portfolio Strategy Thematic and Sector Baskets](#), February 5, 2020.

S&P 500 stocks with highest dispersion scores

Firms with high proportion of stock-specific return and forecast stock-specific risk

Company	Ticker	Sector	Market cap (\$ bn)	YTD return	LTM P/B	% of trailing 6m returns micro-driven	Dispersion score
Apache Corp.	APA	Energy	\$4	(59)%	0.7 x	42 %	41.0
United Airlines Holdings	UAL	Industrials	7	(71)	0.6	46	32.7
L Brands Inc.	LB	Consumer Discretionary	3	(41)	NM	52	26.2
MGM Resorts Intl	MGM	Consumer Discretionary	7	(58)	1.0	37	20.3
Delta Air Lines	DAL	Industrials	15	(61)	1.0	44	13.7
Live Nation Entertainment	LYV	Communication Services	8	(45)	7.2	52	13.1
TransDigm Group	TDG	Industrials	17	(44)	NM	47	13.0
Royal Caribbean Cruises	RCL	Consumer Discretionary	8	(72)	0.7	36	12.9
Ulta Beauty Inc.	ULTA	Consumer Discretionary	12	(17)	6.4	39	11.7
CBRE Group Inc.	CBRE	Real Estate	13	(35)	2.4	34	10.6
Align Technology	ALGN	Health Care	15	(32)	11.3	35	10.6
Lennar Corp.	LEN	Consumer Discretionary	12	(26)	0.7	46	10.3
Mohawk Industries	MHK	Consumer Discretionary	6	(43)	0.7	40	10.2
ABIOMED Inc.	ABMD	Health Care	8	0	7.8	77	9.7
FLIR Systems Inc.	FLIR	Information Technology	5	(25)	2.8	70	9.5
Paycom Software	PAYC	Information Technology	12	(20)	26.9	37	9.3
Regeneron Pharmaceuticals	REGN	Health Care	61	51	6.0	70	9.1
AES Corp.	AES	Utilities	8	(36)	2.7	40	8.7
Akamai Technologies	AKAM	Information Technology	17	18	4.8	57	8.7
American Intl Group	AIG	Financials	20	(55)	0.3	22	8.6
Darden Restaurants	DRI	Consumer Discretionary	9	(38)	3.7	34	8.2
Newell Brands Inc.	NWL	Consumer Discretionary	5	(33)	1.1	35	8.2
Hartford Financial Svc.	HIG	Financials	13	(40)	0.9	43	8.1
HollyFrontier Corp.	HFC	Energy	5	(43)	0.8	46	7.8
ViacomCBS Inc.	VIAC	Communication Services	9	(62)	1.3	46	7.6
Top 25 Median:			\$9	(40)%	1.3 x	43 %	10.2
S&P 500 Median:			19	(20)	2.8	29	2.0

Micro-driven return is defined as the proportion of stock returns that cannot be explained by market, sector, size, or value factors

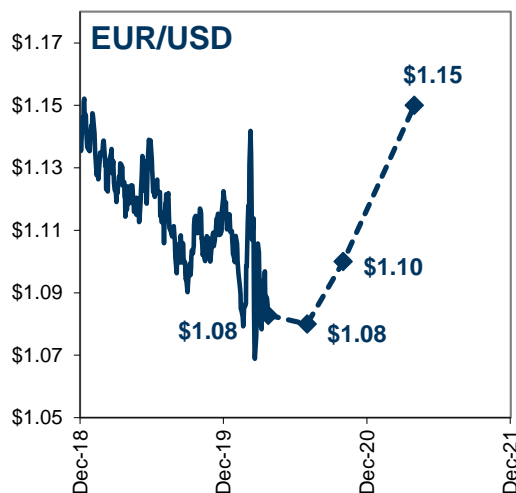
Firm-specific risk is defined as the forecast 6M volatility of the proportion of returns driven by micro factors

Dispersion score is a product of 6-month firm-specific risk forecasts and the square root of trailing 6-month % micro-driven returns

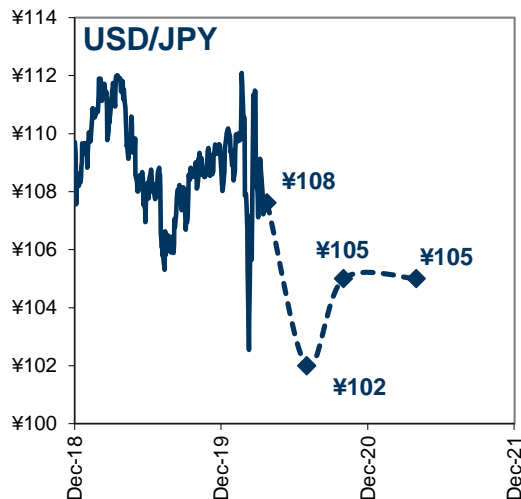
Goldman Sachs Global Macro Forecasts

FX, Oil, and Credit Forecasts and global equity market performance

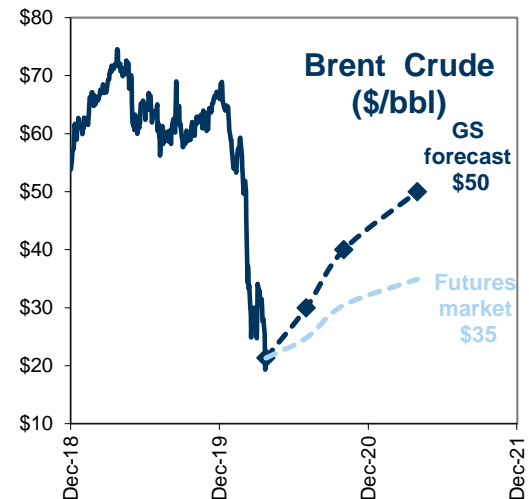
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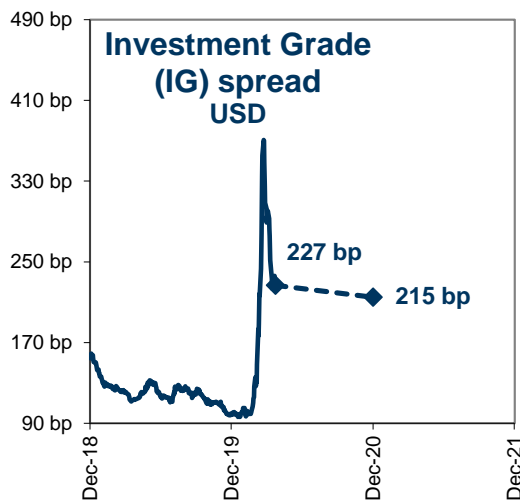
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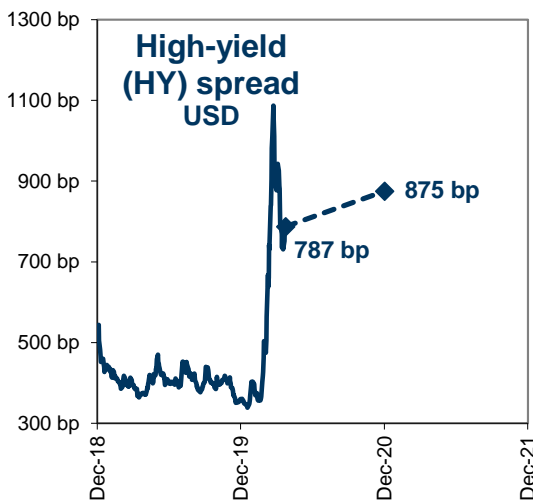
OIL



Investment Grade (IG) spread



High-Yield (HY) spread



Global Equity Market performance

Market	Price Return (%) US Dollar				Local Currency
	1-Wk	1-Mo	3-Mo	YTD	
China (MSCI China)	(0)%	14 %	(7)%	(6)%	(7)%
U.S. (S&P 500)	(0)	25	(16)	(13)	(13)
Japan (TOPIX)	0	14	(16)	(16)	(17)
Korea (KOSPI)	3	33	(19)	(18)	(13)
Europe (DJ Stoxx 600)	2	20	(22)	(23)	(20)
Germany (Dax)	2	21	(23)	(23)	(21)
UK (FTSE 100)	3	26	(27)	(28)	(23)
France (CAC 40)	2	14	(27)	(28)	(26)
Australia (ASX 200)	(2)	27	(31)	(29)	(22)
Spain (IBEX 35)	(0)	9	(31)	(32)	(29)
Mexico (Bolsa)	(0)	6	(42)	(40)	(21)
Brazil (Bovespa)	(2)	18	(49)	(49)	(31)
Average	1 %	19 %	(26)%	(25)%	(20)%

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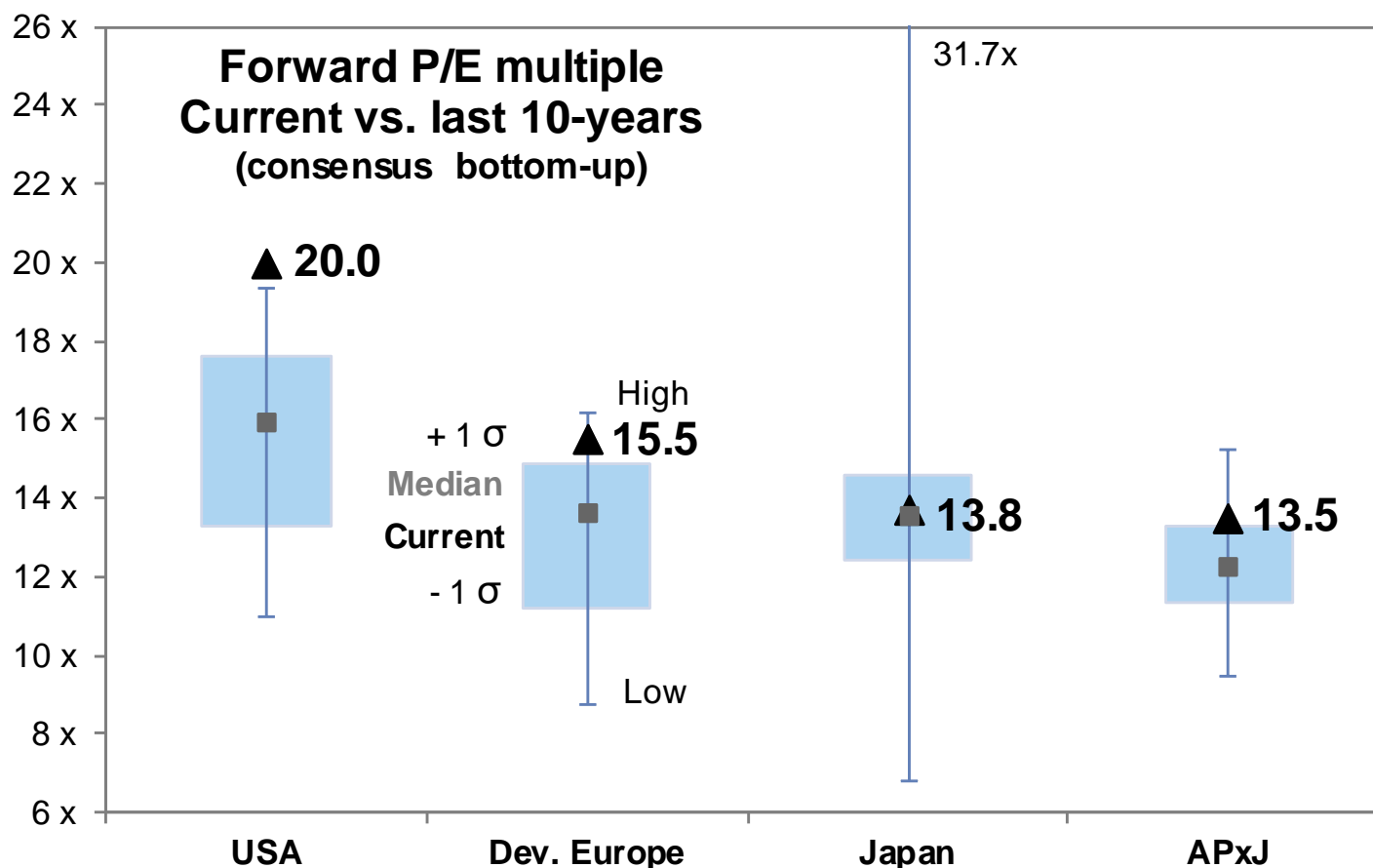
Global equity market returns, valuation, and growth

Earnings plunge in 2020 followed by expected rebound in 2021

INDEX	INDEX level		EARNINGS			VALUATION			RETURN	
	Current	12-month target	Adjusted EPS Growth			NTM P/E (GS)		Div Yield	12-month Total Return	
		2019	2020	2021	Current	@ YE 2020	Local		USD	
STOXX Europe 600	335	370	(1)%	(45)%	50 %	20.7 x	17.7 x	3.7 %	14 %	20 %
S&P 500	2878	3100	1	(33)	55	21.7	17.6	2.1	10	10
TOPIX	1447	1500	(14)	(18)	33	16.5	14.4	2.8	6	9
MXAPJ	465	470	(6)	(22)	30	15.5	13.3	3.0	4	4

Global equity market valuation vs. history

Current US valuation highest in 10-years while Japan in line with average



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Regional index sector weightings: US is 58% of world

Information Technology accounts for 25% of the US vs. only 7% in Europe

Regional index sector weightings

GICS sector	AC				
	US	Europe	Japan	EM	World
Info Tech	25 %	7 %	12 %	17 %	19 %
Health Care	16	18	10	4	14
Financials	11	15	10	21	14
Comm Services	11	4	10	13	9
Cons Disc	10	10	17	16	11
Industrials	8	13	21	5	9
Cons Staples	8	16	10	7	9
Utilities	3	5	2	3	3
Real Estate	3	1	3	3	3
Energy	3	5	1	6	4
Materials	2	7	6	7	4
Total	100 %	100 %	100 %	100 %	100 %
Market cap (tn)	\$25.1	\$7.3	\$0.3	\$5.0	\$43.2
Percent of World	58 %	17 %	1 %	12 %	100 %

Reg AC

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