



Equities Asset Class Review

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Investment Officer
19 February, 2020



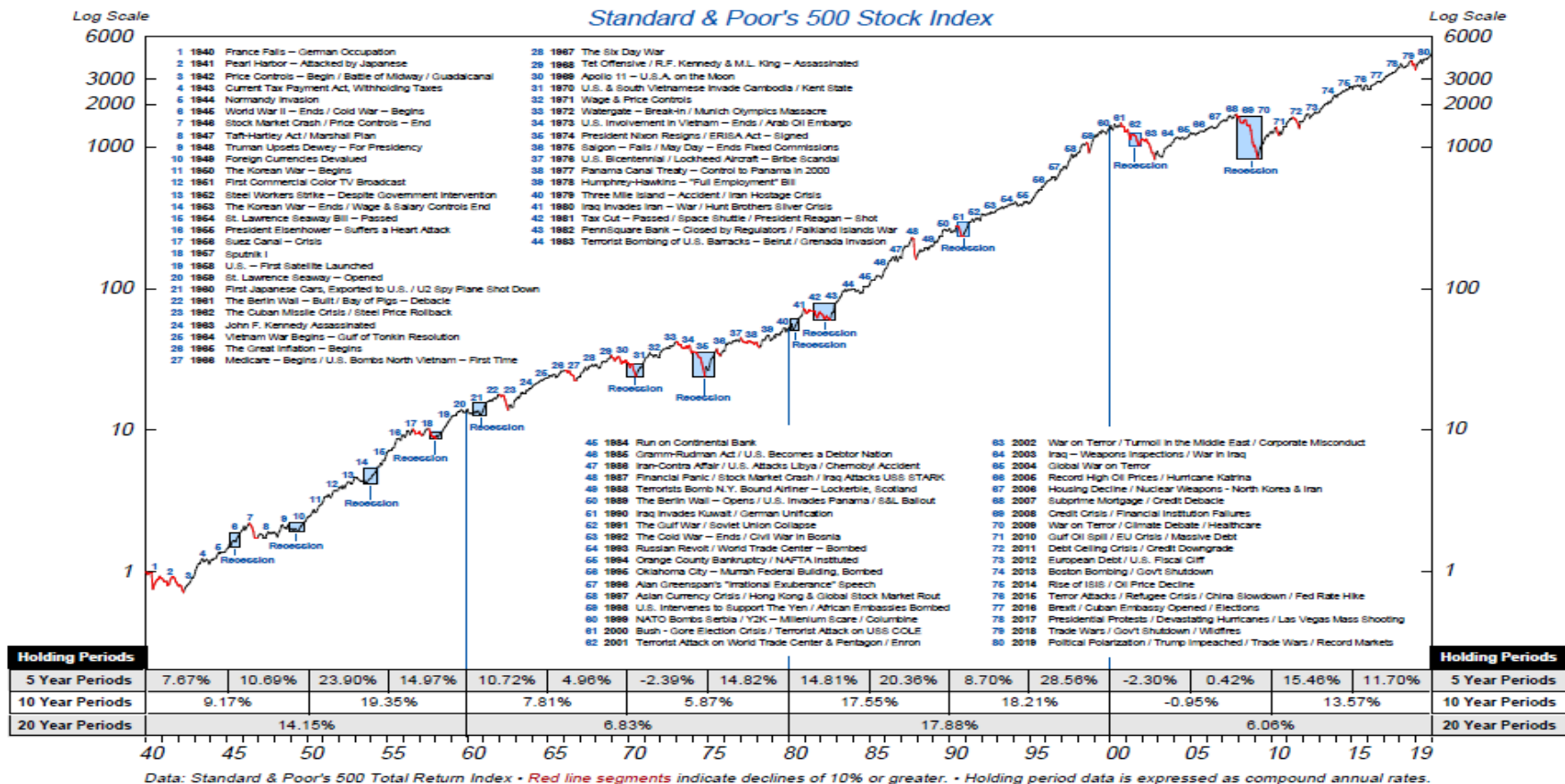
Executive Summary

- An asset class with very good long term returns, equities are essential for the FCERA portfolio to meet its long term return target of 7%
- In 2019, All types of equities delivered strong returns
- The FCERA passive equity portfolio (benchmarks only) returned 25.4%
- The FCERA portfolio as been underweight US, overweight value, overweight EM. Each of these has detracted from performance
- Active managers have not added value
- The Board is encouraged to select an overall benchmark, then select tilts or weighting decisions relative to that benchmark: e.g. value, emerging markets, small cap, and then to review all active managers



Investment Success in Volatile Markets

Standard & Poor's 500 Stock Index



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2019 Largest Stocks by Market Capitalization

\$1.9T	Saudi Aramco
\$1.3T	Apple
\$1.2T	Microsoft
\$922B	Alphabet (Google)
\$916B	Amazon
\$585B	Facebook
\$569B	Alibaba
\$553B	Berkshire Hathaway
\$461B	Tencent
\$461B	JP Morgan



1999 Largest Stocks by Market Capitalization

\$586B	Microsoft (MSFT)
\$475B	General Electric (GE)
\$349B	Cisco Systems (CSCO)
\$286B	Wal Mart (WMT)
\$277B	Intel (INTC)
\$275B	Nippon Tel & Tel (9433 JP)
\$266B	Exxon Mobil (XOM)
\$238B	Lucent (R.I.P.)
\$197B	Nokia (NOK)
\$196B	BP (BP)



“The Nifty 50” from the early 70’s aka “One Decision Stocks”

Only 29 are still publicly traded
Remember Eastman Kodak, SS Kresge, Polaroid?

The Still Publicly Traded Nifty 50 Companies

Company (Ticker)	DJIA Member	S&P Index	P/E (x)	5-yr Sales Growth (%)	5-yr EPS Growth (%)	3–5 yr Estimated EPS Growth (%)	Yield (%)
3M Co. (MMM)	Yes	500	18.1	1.2	6.4	4.2	3.4
American Express Co. (AXP)	Yes	500	16.5	4.5	8.5	--	1.3
Avon Products, Inc. (AVP)		SmallCap 600	--	(8.1)	(21.7)	155.3	0.0
Baxter International Inc. (BAX)		500	29.6	3.4	35.3	10.7	1.2
Bristol-Myers Squibb Co. (BMY)		500	15.1	6.6	14.5	5.0	3.4
Coca-Cola Co. (KO)	Yes	500	31.2	(7.4)	(3.9)	5.1	3.2
Dow Inc. (DOW)		500	10.1	--	--	7.5	5.6
Eastman Kodak Co. (KODK)		--	--	(10.8)	(15.0)	--	0.0
Eli Lilly and Co. (LLY)		500	43.5	1.2	(5.3)	10.7	2.2
General Electric Co. (GE)		500	--	2.0	(39.4)	8.2	0.4
Halliburton Co. (HAL)		500	12.6	(4.0)	(4.7)	18.7	2.9
IBM Corp. (IBM)	Yes	500	11.6	(4.1)	(5.2)	2.7	4.8
International Flavors & Fragrances (IFF)		500	35.7	6.1	(0.2)	6.8	2.1
ITT Inc. (ITT)		MidCap 400	17.6	1.9	(8.4)	--	1.0
J C Penney Co. (JCP)		SmallCap 600	--	0.3	32.0	(21.2)	0.0
Johnson & Johnson (JNJ)	Yes	500	25.7	2.7	3.1	6.5	2.7
McDonald’s Corp. (MCD)	Yes	500	26.2	(5.6)	6.6	6.7	2.3
Merck & Co. (MRK)	Yes	500	25.5	(0.8)	9.6	9.8	2.7
MGIC Investment Corp. (MTG)		--	7.7	1.6	67.4	2.2	0.0
PepsiCo, Inc. (PEP)		500	14.8	(0.5)	15.2	4.9	2.9
Pfizer Inc. (PFE)	Yes	500	23.3	0.8	1.0	4.8	3.4
Philip Morris International Inc. (PM)		500	17.2	(1.0)	(0.6)	5.7	5.3
Procter & Gamble Co. (PG)	Yes	500	25.6	(3.6)	1.5	6.2	2.8
Revlon Inc. (REV)		--	--	11.4	(69.9)	--	0.0
Schlumberger Limited (SLB)		500	26.3	(6.7)	(21.4)	21.3	5.2
Sears Holdings Corp. (SHLDQ)		--	--	(16.0)	2.0	--	0.0
Texas Instruments (TXN)		500	19.4	5.3	23.8	8.0	2.9
Walt Disney Co. (DIS)	Yes	500	15.1	5.7	16.4	1.9	1.3
Xerox Corp. (XRX)		500	15.5	(13.2)	(13.5)	9.1	3.1

Source: AAIL Stock Investor Pro; Data as of May 22, 2019.



Dow Jones Industrials, September 1929

Allied Chemical and Dye Corporation	General Foods Corporation † (formerly Postum Incorporated)	Paramount Publix Corporation
American Can Company	General Motors Corporation	Radio Corporation of America
American Smelting & Refining Company	General Railway Signal Company	Sears Roebuck & Company
The American Sugar Refining Company	B.F. Goodrich Corporation	Standard Oil Co. of New Jersey
American Tobacco Company (B shares)	International Harvester Company	The Texas Company
Atlantic Refining Company	International Nickel Company, Ltd.	Texas Gulf Sulphur Company
Bethlehem Steel Corporation	Mack Trucks, Inc.	Union Carbide Corporation
Chrysler Corporation	Nash Motors Company	United States Steel Corporation
Curtiss-Wright Corporation † (formerly Wright Aeronautical)	National Cash Register Company	Westinghouse Electric Corporation
General Electric Company	North American Company	F. W. Woolworth Company

Wright Aeronautical merged with the Curtiss Aeroplane and Motor Company to become Curtiss-Wright. Postum Inc. changed its name to General Foods.



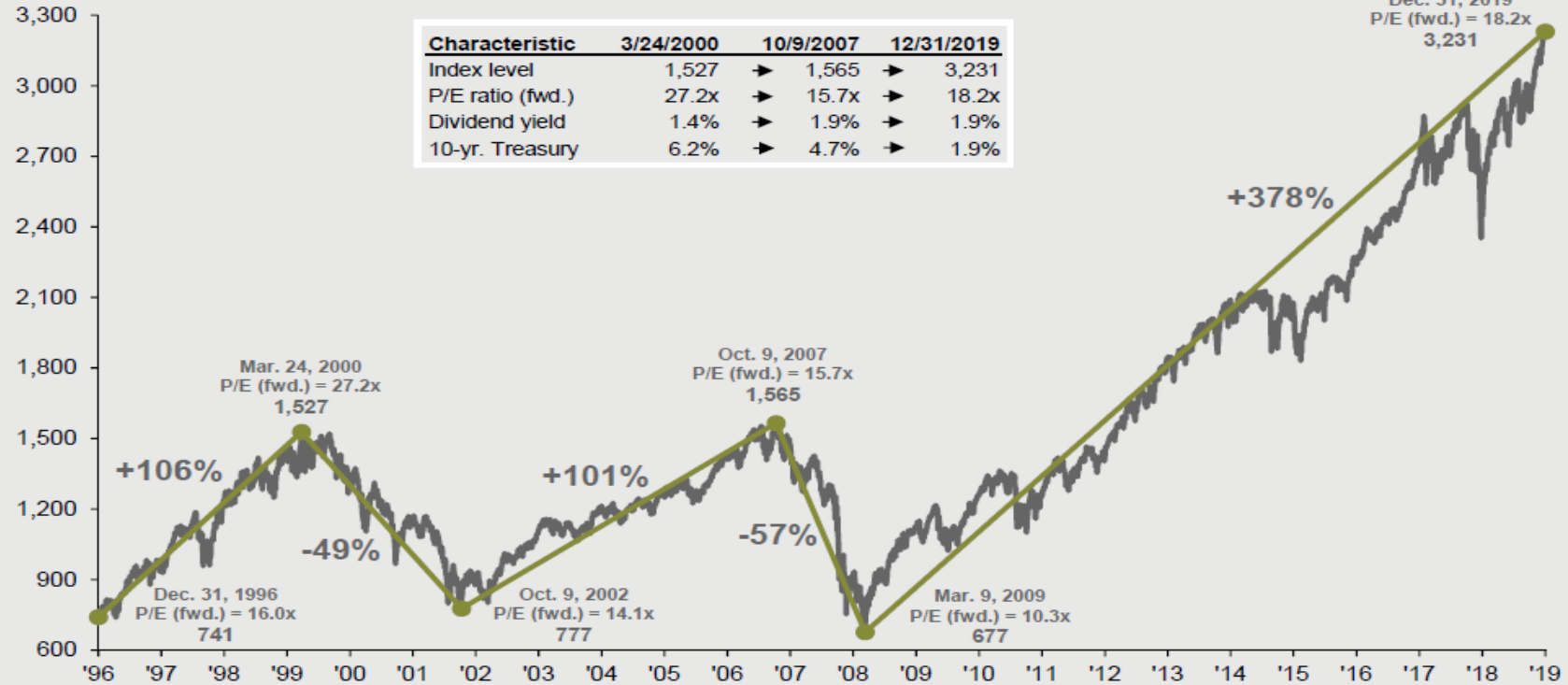
This may be the longest running bull market in history

S&P 500 Index at inflection points

GTM - U.S. | 4

Equities

S&P 500 Price Index



Source: Compustat, FactSet, Federal Reserve, Standard & Poor's, J.P. Morgan Asset Management.
 Dividend yield is calculated as consensus estimates of dividends for the next 12 months, divided by most recent price, as provided by Compustat.
 Forward price to earnings ratio is a bottom-up calculation based on the most recent S&P 500 Index price, divided by consensus estimates for earnings in the next 12 months (NTM), and is provided by FactSet Market Aggregates. Returns are cumulative and based on S&P 500 Index price movement only, and do not include the reinvestment of dividends. Past performance is not indicative of future returns.
 Guide to the Markets – U.S. Data are as of December 31, 2019.

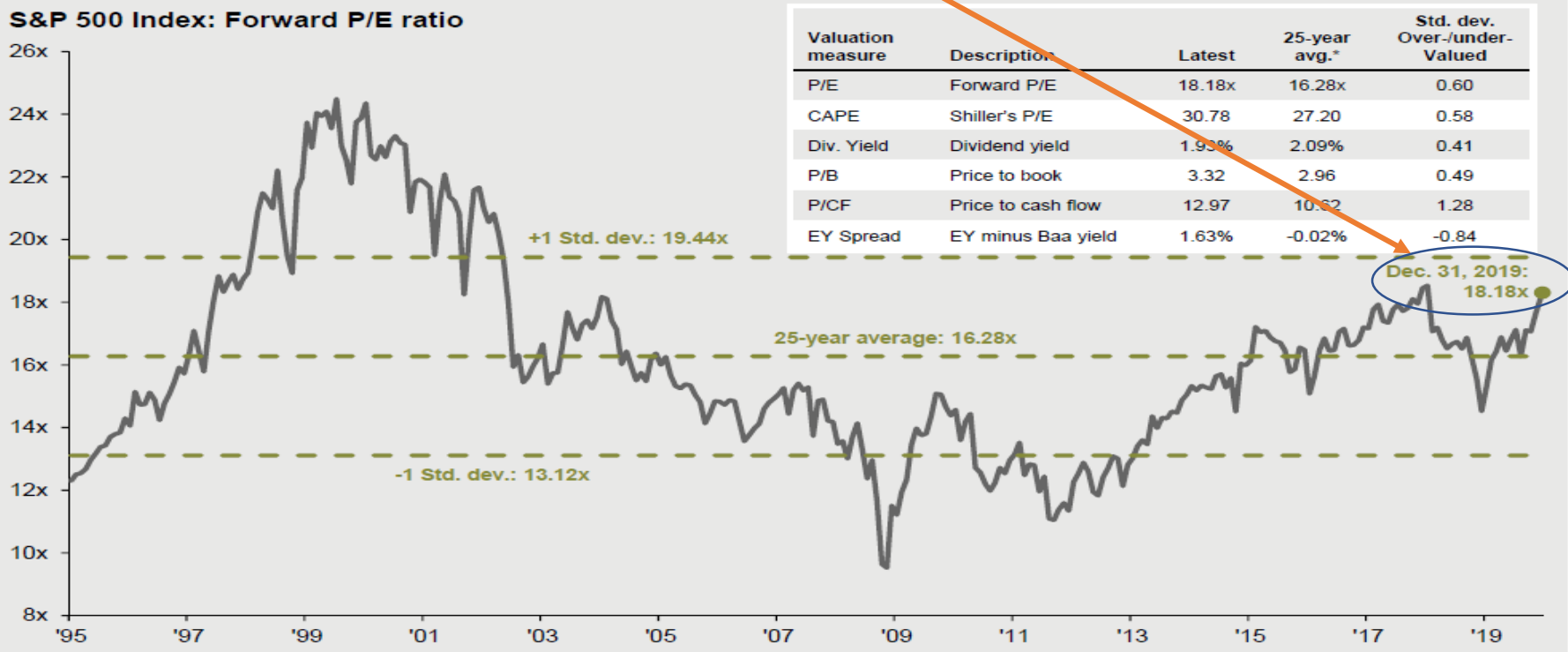
J.P.Morgan
 Asset Management



Price/Earnings is a valuation measure, now very rich

S&P 500 valuation measures GTM - U.S. | 5

Equities



Source: FactSet, FRB, Robert Shiller, Standard & Poor's, Thomson Reuters, J.P. Morgan Asset Management.
 Price to earnings is price divided by consensus analyst estimates of earnings per share for the next 12 months as provided by IBES since January 1995, and FactSet for December 31, 2019. Average P/E and standard deviations are calculated using 25 years of IBES history. Shiller's P/E uses trailing 10-years of inflation-adjusted earnings as reported by companies. Dividend yield is calculated as the next 12-month consensus dividend divided by most recent price. Price to book ratio is the price divided by book value per share. Price to cash flow is price divided by NTM cash flow. EY minus Baa yield is the forward earnings yield (consensus analyst estimates of EPS over the next 12 months divided by price) minus the Moody's Baa seasoned corporate bond yield. Std. dev. over-/under-valued is calculated using the average and standard deviation over 25 years for each measure.
 *P/CF is a 20-year average due to cash flow data availability.
 Guide to the Markets – U.S. Data are as of December 31, 2019.

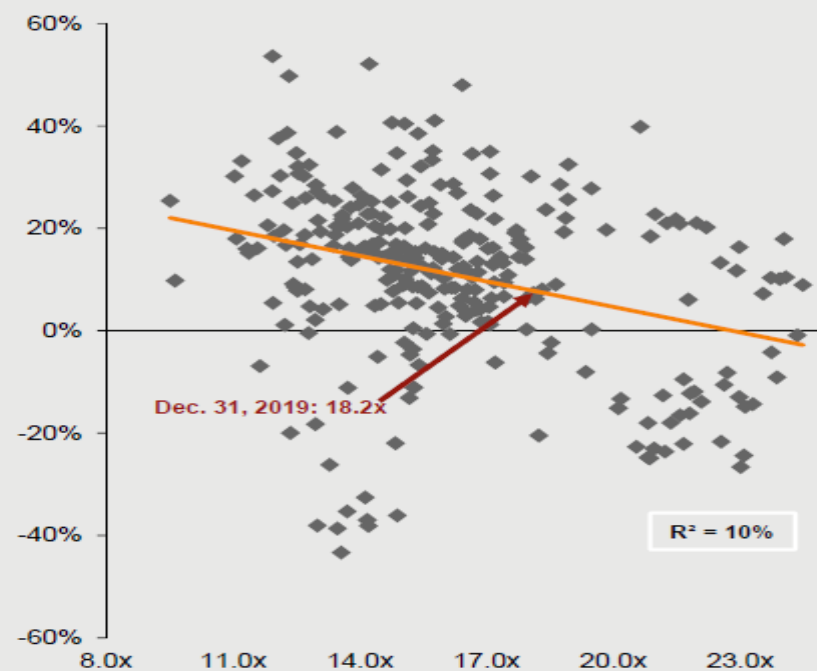
High P/E is not a sell signal, but does suggest lower returns in the future

P/E ratios and equity returns

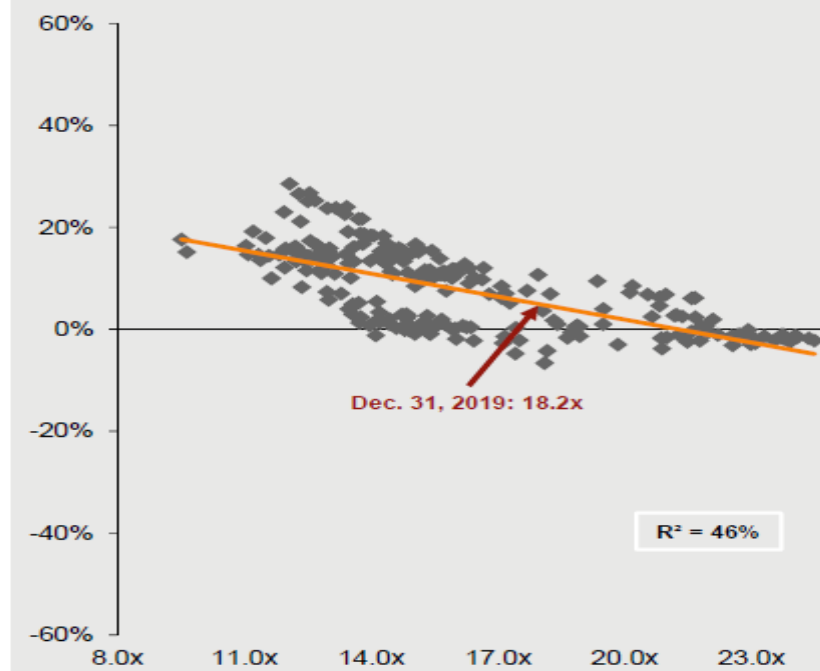
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Equities

Forward P/E and subsequent 1-yr. returns
S&P 500 Total Return Index



Forward P/E and subsequent 5-yr. annualized returns
S&P 500 Total Return Index



Source: FactSet, Standard & Poor's, Thomson Reuters, J.P. Morgan Asset Management.
Returns are 12-month and 60-month annualized total returns, measured monthly, beginning December 31, 1994. R^2 represents the percent of total variation in total returns that can be explained by forward P/E ratios.
Guide to the Markets – U.S. Data are as of December 31, 2019.



Value continues
to lag growth

Returns and valuations by style

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Equities

4Q 2019

	Value	Blend	Growth
Large	7.4%	9.1%	10.6%
Mid	6.4%	7.1%	8.2%
Small	8.5%	9.9%	11.4%

2019

	Value	Blend	Growth
Large	26.5%	31.5%	36.4%
Mid	27.1%	30.5%	35.5%
Small	22.4%	25.5%	28.5%

Since market peak (October 2007)

	Value	Blend	Growth
Large	111.6%	167.8%	236.6%
Mid	143.1%	165.6%	193.6%
Small	107.6%	134.0%	160.5%

Since market low (March 2009)

	Value	Blend	Growth
Large	427.7%	498.5%	586.5%
Mid	520.8%	541.0%	578.7%
Small	413.4%	464.2%	514.6%

Current P/E vs. 20-year avg. P/E

	Value	Blend	Growth
Large	15.2 / 13.6	18.2 / 15.5	23.1 / 19.1
Mid	15.3 / 14.1	18.2 / 16.1	25.2 / 20.8
Small	15.6 / 16.2	23.4 / 20.4	44.4 / 29.7

Current P/E as % of 20-year avg. P/E

	Value	Blend	Growth
Large	111.9%	117.1%	120.8%
Mid	108.5%	112.6%	120.9%
Small	96.7%	114.8%	149.5%

Source: FactSet, Russell Investment Group, Standard & Poor's, J.P. Morgan Asset Management.
All calculations are cumulative total return, including dividends reinvested for the stated period. Since Market Peak represents period 10/9/07 – 12/31/19, illustrating market returns since the S&P 500 Index high on 10/9/07. Since Market Low represents period 3/9/09 – 12/31/19, illustrating market returns since the S&P 500 Index low on 3/9/09. Returns are cumulative returns, not annualized. For all time periods, total return is based on Russell style indices with the exception of the large blend category, which is based on the S&P 500 Index. Past performance is not indicative of future returns. The price to earnings is a bottom-up calculation based on the most recent index price, divided by consensus estimates for earnings in the next 12 months (NTM), and is provided by FactSet Market Aggregates.
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J.P.Morgan
Asset Management

The US was strongest
in 2019

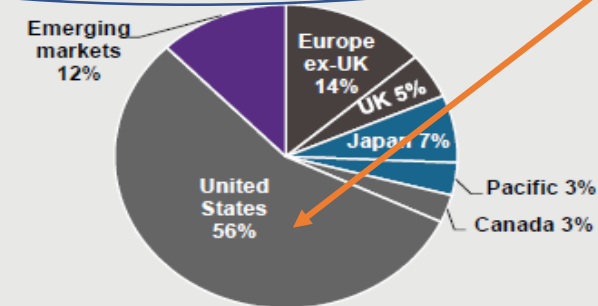
Note the weights
in the ACWI
benchmark

Global equity markets

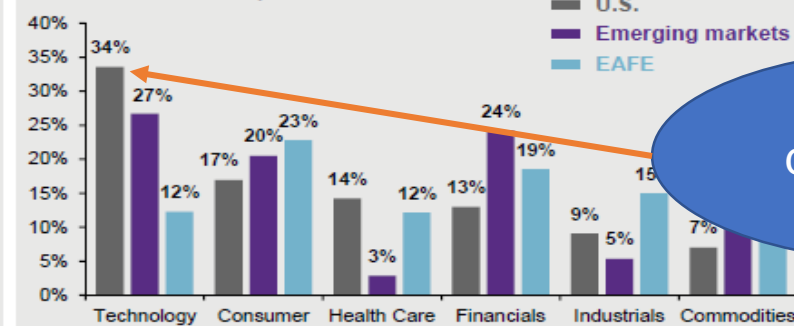
GTM - U.S.

Returns	2019		2018		15-years	
	Local	USD	Local	USD	Ann.	Beta
Regions						
U.S. (S&P 500)	-	31.5	-	-4.4	9.0	0.87
AC World ex-U.S.	21.4	22.1	-10.2	-13.8	5.7	1.10
EAFE	22.3	22.7	-10.5	-13.4	5.3	1.06
Europe ex-UK	27.5	25.9	-10.6	-14.4	5.9	1.20
Emerging markets	18.5	18.9	-9.7	-14.2	7.8	1.26
Selected Countries						
United Kingdom	16.5	21.1	-8.8	-14.1	4.2	1.01
France	29.3	27.0	-7.5	-11.9	5.9	1.22
Germany	23.9	21.7	-17.7	-21.6	6.4	1.32
Japan	18.9	20.1	-14.9	-12.6	4.3	0.75
China	23.3	23.7	-18.6	-18.7	11.3	1.26
India	10.0	7.6	1.4	-7.3	9.2	1.31
Brazil	31.5	26.7	16.7	-0.1	9.5	1.49
Russia	38.8	52.7	18.1	0.5	7.4	1.53

Weights in MSCI All Country World Index
% global market capitalization, float adjusted



Global equities by sector
% of index market capitalization



Note: US is
dominated by
Big Tech

Source: FactSet, Federal Reserve, MSCI, Standard & Poor's, J.P. Morgan Asset Management.
All return values are MSCI Gross Index (official) data. 15-year history based on U.S. dollar returns. 15-year return and beta figures are calculated for the time period 12/31/04-12/31/19. Beta is for monthly returns relative to the MSCI AC World Index. Annualized volatility is calculated as the standard deviation of quarterly returns multiplied by the square root of 4. Chart is for illustrative purposes only. Please see disclosure page for index definitions. Past performance is not a reliable indicator of current and future results. Sector breakdown includes the following aggregates: Technology (communication services and technology), consumer (consumer discretionary and staples) and commodities (energy and materials). The graph excludes the utilities and real estate sectors for illustrative purposes.
Guide to the Markets – U.S. Data are as of December 31, 2019.

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Asset Management

International



This is a one year chart of the “NY Fang” Index, which comprises the big tech stocks plus Amazon and Netflix



But, Long Term, Econ Growth is the justification for EM Equities
(Verus Cap Mkt assumptions are for 9% return vs. 5.5% US)

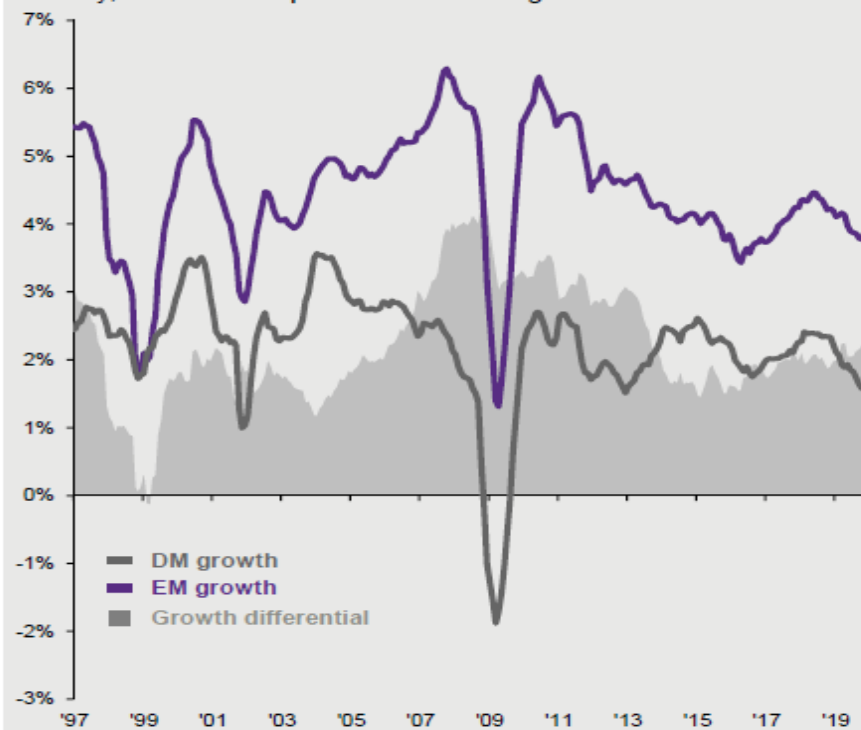
Emerging markets

GTM - U.S. | 54

International

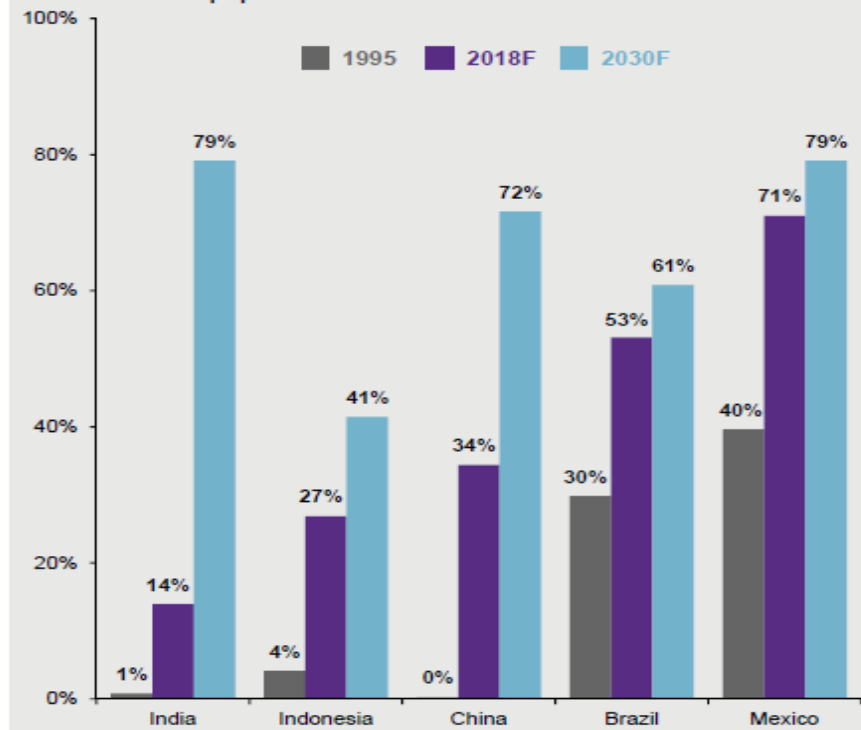
EM vs. DM growth

Monthly, consensus expectations for GDP growth in 12 months



Growth of the middle class

Percent of total population

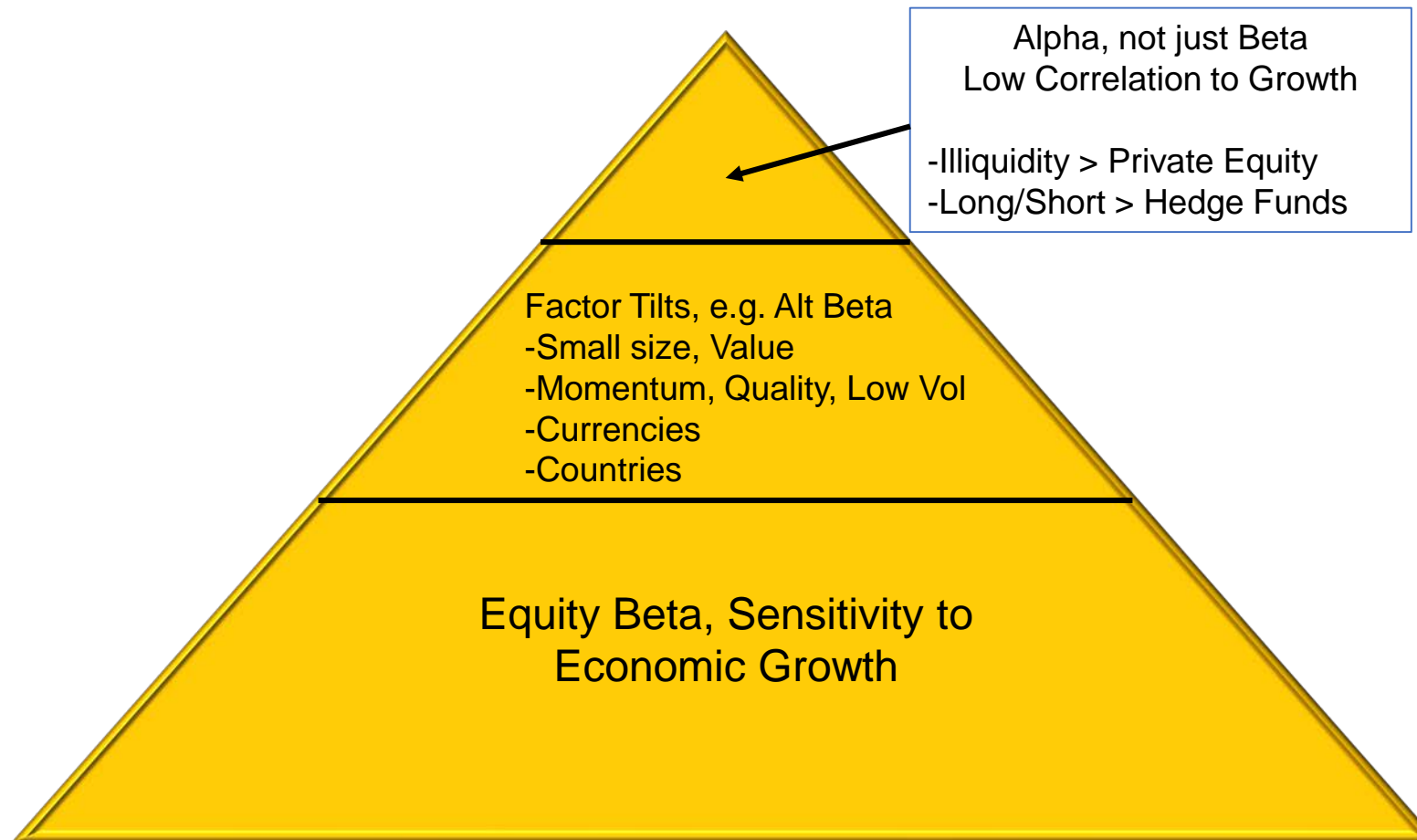


Source: J.P. Morgan Asset Management; (Left) Consensus Economics; (Right) Brookings Institute. "Growth differential" is consensus estimates for EM growth in the next 12 months minus consensus estimates for DM growth in the next 12 months, provided by Consensus Economics. Middle class is defined as \$3,600-\$36,000 annual per capita income in purchasing power parity terms. Historical and forecast figures come from the Brookings Development, Aid and Governance Indicators.
Guide to the Markets - U.S. Data are as of December 31, 2019.



The Equities Portfolio Risk Factor Pyramid

Beyond the Growth Factor Beta, Can We Get Paid Adequately for Taking on other “Risks” and/or find Alpha?





The Active vs. Passive Debate

- Asset allocation is the primary driver of investment returns
- Asset allocation outweighs manager selection as a return driver
- Passive exposure to Equity Beta or asset class lowers tracking risk & fees
- Factor tilts can add incremental value (“Alternate Beta”)
- Active management (manager selection) adds risk, might add return
- “Pure alpha” or uncorrelated (low/no Beta) returns with low correlation benefit are the best diversifiers, aka absolute return
- FCERA made a shift in 2019 toward passive equities

(Alpha is elusive, difficult to prove, and more difficult to sustain.)



Sample Benchmark Nest



- **Equities: MSCI ACWI (All Country World Index)**
 - 23 developed markets, 26 EM countries
 - 8820 constituents, so broadly representative
 - Primarily Large Cap, but the IMI variant includes small caps
 - Easily replicated, broadly representative of global equities
 - Investable passively
- **MSCI US: US-only subset of ACWI**
- **World ex-US (Hedged or un-Hedged?) : dev non-US**
- **ACWI EM: Emerging Markets**

FCERA has not historically had an overall equities benchmark, which would have facilitated a conscious discussion on geographic weightings



Equity Benchmarks Implications



ACWI Benchmark geographic mix as of 12/31/2019

- US: 55.6%
- Developed Non-US: 34.4%
- EM: 11%

FCERA geographic mix as of 12/31/2019

- US: 51.3% (with Parametric overlay)
- Developed Non-US: 35.3%
- EM: 13.4%

For Example,
FCERA remains
underweight the
US relative to the
ACWI index

FCERA has been
consistently
overweight EM

*Since US stocks have materially outperformed, this
has cost performance historically. What will the
future hold?*



FCERA Equity Portfolio 2019

Benchmark(s) Performance

Growth better than value, US better than non-US





Relative to ACWI, assuming no changes in 2019

- The geographic weighting decision cost 170bp, 24.9 vs. 26.6%
- The factor tilts added back 50bp, 25.4 vs. 24.9%
- All together, benchmark decisions cost 120bp, 25.4 vs. 26.6%

Index	Category	2019 Perf	2019 BOY FCERA %	2020 BOY Equities %	2019 Perf weighted
MSCI ACWI	Index	26.6%	36.8%	100.0%	26.60%
Russell 3000	Index	28.5%	17.9%	48.7%	13.88%
MSCI ACWI ex-US	Index	21.5%	18.9%	51.3%	11.03%
Total Equities					24.91%
S&P 500	Large Cap	28.9%	3.8%	10.42%	3.01%
Russell 1000 Growth	Large Cap Growth	36.4%	5.9%	15.94%	5.80%
Russell 1000 Value	Large Cap Value	26.5%	5.5%	14.89%	3.95%
Russell 2500 Value	Small Cap Value	23.6%	1.4%	3.77%	0.89%
Russell 2000	Small Cap	25.5%	1.4%	3.70%	0.94%
EAFE	Large Cap	22.0%	4.6%	12.44%	2.74%
EAFE	Large Cap	22.0%	4.5%	12.35%	2.72%
S&P Dev ex- US Sm Cap	Small Cap	24.7%	3.0%	8.16%	2.02%
MSCI EM	EM	18.4%	3.2%	8.80%	1.62%
MSCI EM	EM	18.4%	3.5%	9.53%	1.75%
Memo: total portfolio			36.8%	100.00%	25.43%

The Broadest
equity
benchmark

FCERA
weighted
geographic
benchmarks

FCERA
composite
benchmark



Assuming no change to the portfolio during 2019,
manager performance was roughly even with
benchmarks, but still reflect a very strong year

Manager	Actuals	Actual vs. Benchmark	Weighted Actuals
State Street	28.90%	0.00%	3.01%
T Rowe Price	29.80%	-6.60%	4.75%
AJO	21.70%	-4.80%	3.23%
Systematic	27.78%	4.18%	1.05%
Pimco StocksPlus	27.65%	2.15%	1.02%
Artisan	30.85%	8.85%	3.84%
RAFI	17.44%	-4.56%	2.15%
Mondrian	25.90%	1.20%	2.11%
Baillie Gifford	28.00%	9.60%	2.46%
Mondrian	18.30%	-0.10%	1.74%
NT EAFE			
		Weighted FY performance	25.38%
		Existing Benchmark Performance	25.43%



But Changes *were* made to Equity Portfolio 2019

- Terminated Systematic mandate
- Changed TIPS provider from SSGA to Northern Trust
- Changed S&P500 passive from SSGA to Northern Trust
- Redeemed \$195mil from T Rowe Price
- Redeemed \$157mil from AJO
- Added to S&P 500 passive with Northern Trust: total \$540mil
- Redeemed \$146mil from Artisan International Large Cap
- Redeemed \$ 125mil from Research Affiliates
- Initiated investment in EAFE passive with Northern Trust: \$275mil



2019 Continued along Rebalancing Glidepath

With Very Strong Equity Markets, this will Prove Additive to Performance

	At 12/2018		Target 12/2019	Actual 12/2019
Domestic Equities	18.0%		23.0%	23.4%
Large Cap	15.0%		18.0%	16.2%
Small Cap	3.0%		5.0%	5.0%
overlay				2.2%
International Equities	20.0%		22.0%	22.2%
Large Cap	10.0%		13.0%	12.9%
Small Cap	3.0%		3.0%	3.2%
Emerging Mkts	7.0%		6.0%	6.1%
overlay	0.0%			0.0%
Total Equities	38.0%		45.0%	45.6%
NOTE: private equity	4.7%		6.0%	4.8%
overlay	1.3%			1.3%
All Equity	44.0%		51.0%	51.7%



Potential Board Considerations For Equities

- Establish Overall equities benchmark: common or custom
- Revisit Sub Asset Class benchmarks: Value? Growth? Small?
- Set geographic weightings, relative to benchmark
- Consider various factor tilts to add Alternate Beta, esp. quality, low vol
- Revisit Active Manager lineup against passive alternatives