

CCEDC

Annual Economic Outlook
January 10, 2020

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KEY FINANCIAL, INC.

Wealth Management With Wisdom & Care

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Undercurrents 12/31/2018 :

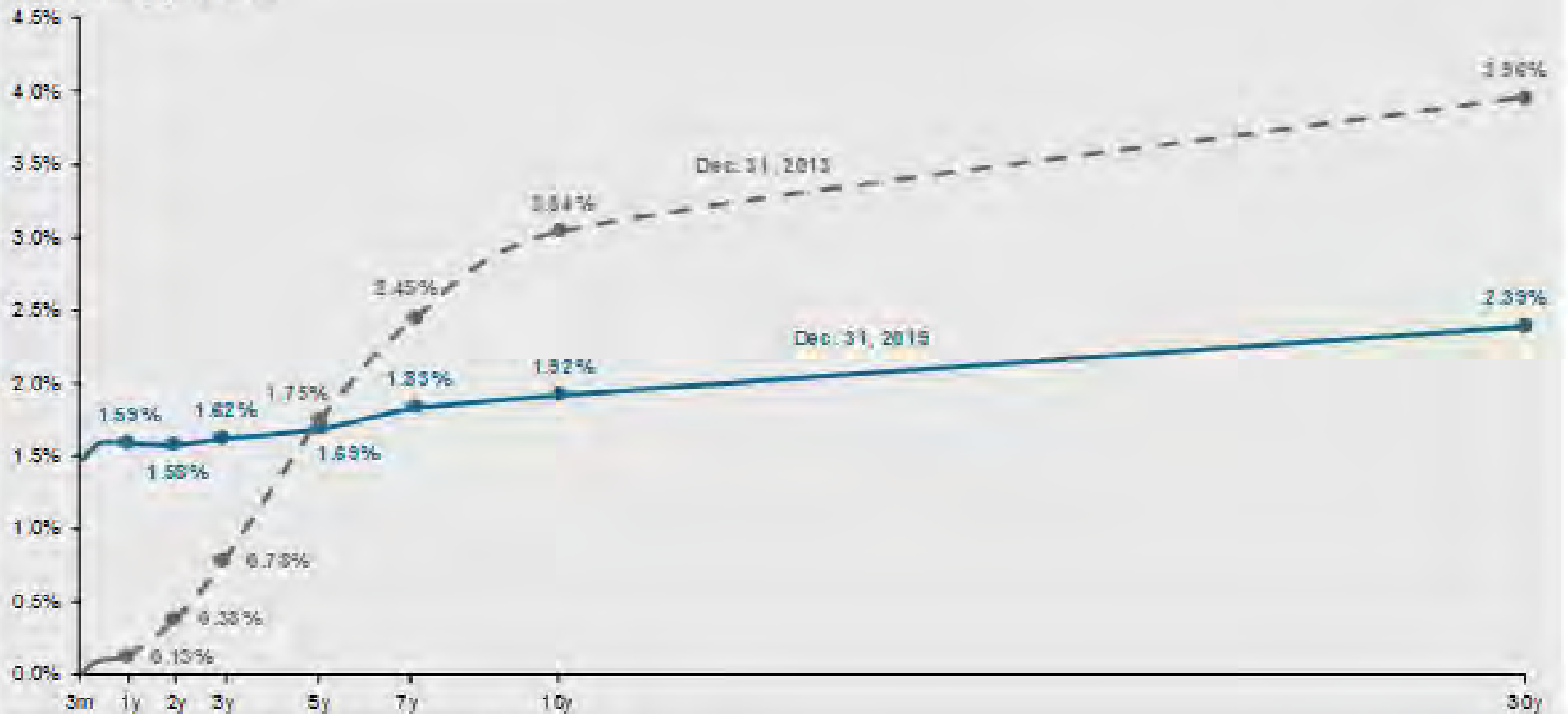
- 1. Rising Interest Rates**
- 2. Trade War and Tariffs**
- 3. Earnings headwind from one time impact of tax law changes**
- 4. Manufacturing slipping into decline**
- 5. Steep decline of almost (20%) in the fourth quarter**
- 6. *Oh, and then....the yield curve inverted!***



Fixed income

Yield curve

U.S. Treasury yield curve



Source: FactSet, Federal Reserve, J.P. Morgan Asset Management
Guide to the Markets - U.S. Data are as of December 31, 2015.

This Wasn't Supposed to Happen:

| | |
|-------------------------------|---------------|
| NYSE Composite | 22.3% |
| S&P 500 | 28.9% |
| MSCI EAFE | 18.44% |
| Russel 2000 (small co) | 23.7% |
| Barclays Agg Bond | 8.72% |
| DJ Commodity | 12.12% |

Source: WSJ – 1/03/2020

(Yet, it did)



“The future ain’t what it used to be”.

– Yogi Berra.

How Atypical was 2019?

S&P 500 Index Stats Since 1926

| | |
|--------------------------|--------------|
| Total Years (1926-2018): | 93 |
| Positive Years | 68 yrs (73%) |
| Negative Years | 25 yrs (27%) |
| # of Years Gains >20%: | 34 yrs |
| # of Years Losses <20%: | 6 yrs |

S&P 500® Average Annual Return: 10.0%

The S&P 500® Index has grown at its average annual rate in only 6 years since 1926

less than
-20%

| | |
|------|--------|
| 2008 | -37.0% |
| 2002 | -22.1% |
| 1974 | -26.5% |
| 1937 | -35.0% |
| 1931 | -43.3% |
| 1930 | -24.9% |

-20% to -12%

| | |
|------|--------|
| 1973 | -14.7% |
|------|--------|

-12% to -8%

| | |
|------|--------|
| 2001 | -11.9% |
| 2000 | -9.1% |
| 1969 | -8.5% |
| 1966 | -10.1% |
| 1962 | -8.7% |
| 1957 | -10.8% |
| 1946 | -8.1% |
| 1941 | -11.6% |
| 1940 | -9.8% |
| 1932 | -8.2% |
| 1929 | -8.4% |

-8% to 0%

| | |
|------|-------|
| 2018 | -4.4% |
| 1990 | -3.2% |
| 1981 | -4.9% |
| 1977 | -7.2% |
| 1953 | -1.0% |
| 1939 | -0.4% |
| 1934 | -1.4% |

0% to 8%

| | |
|------|------|
| 2015 | 1.4% |
| 2011 | 2.1% |
| 2007 | 5.5% |
| 2005 | 4.9% |
| 1994 | 1.3% |
| 1992 | 7.7% |
| 1987 | 5.2% |
| 1984 | 6.3% |
| 1978 | 6.6% |
| 1970 | 4.0% |
| 1960 | 0.5% |
| 1956 | 6.6% |
| 1948 | 5.5% |
| 1947 | 5.7% |

8% to 12%

| | |
|------|-------|
| 2016 | 12.0% |
| 2004 | 10.9% |
| 1993 | 10.0% |
| 1968 | 11.1% |
| 1959 | 12.0% |
| 1926 | 11.6% |

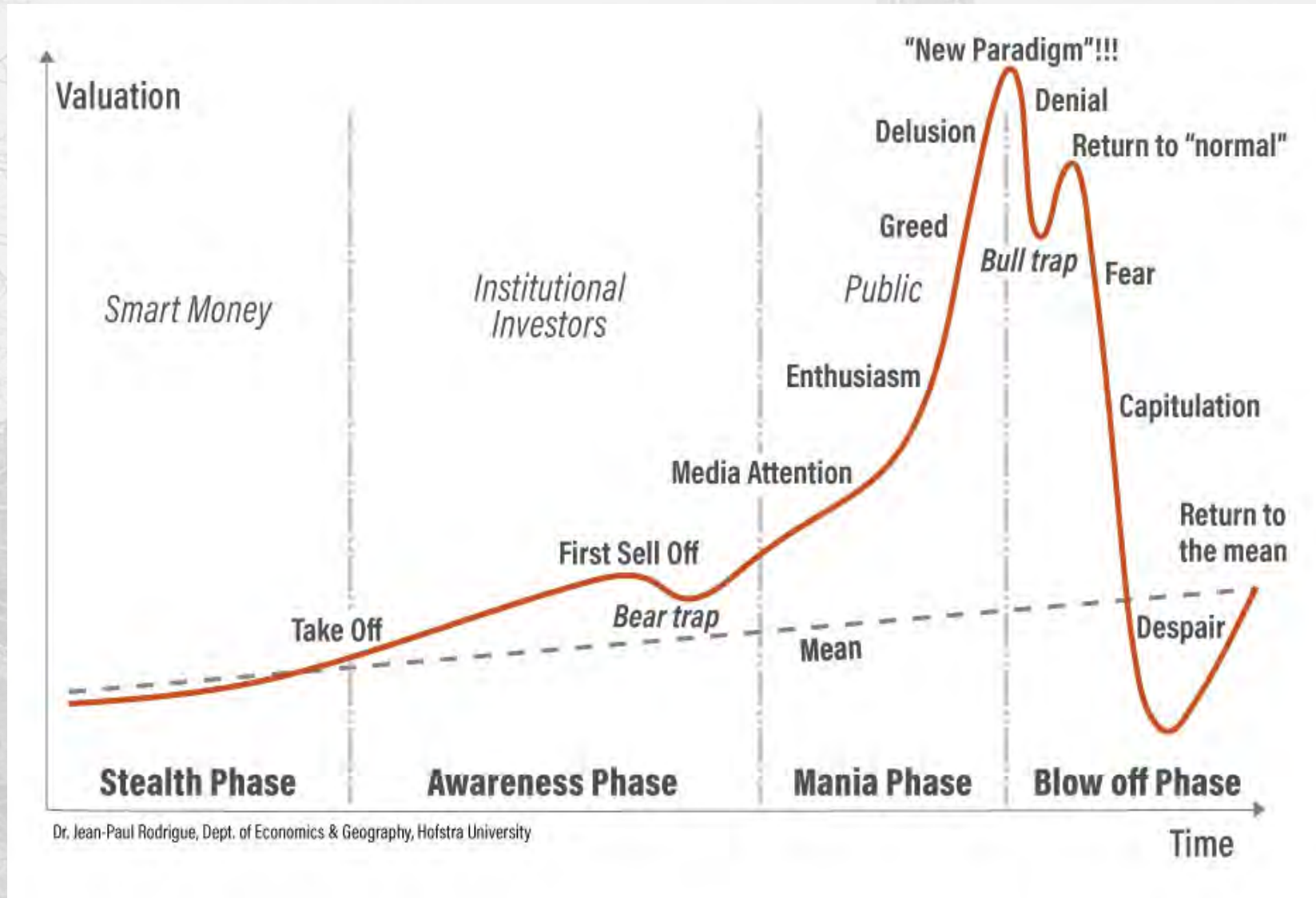
12% to 20%

| | |
|------|-------|
| 2014 | 13.7% |
| 2012 | 16.0% |
| 2010 | 15.1% |
| 2006 | 15.8% |
| 1988 | 16.8% |
| 1986 | 18.5% |
| 1979 | 18.4% |
| 1972 | 19.0% |
| 1971 | 14.3% |
| 1965 | 12.5% |
| 1964 | 16.5% |
| 1952 | 18.4% |
| 1949 | 18.8% |
| 1944 | 19.8% |

more than
20%

| | |
|------|-------|
| 2017 | 21.8% |
| 2013 | 32.4% |
| 2009 | 26.5% |
| 2003 | 28.7% |
| 1999 | 21.0% |
| 1998 | 28.6% |
| 1997 | 33.4% |
| 1996 | 23.1% |
| 1995 | 37.4% |
| 1991 | 30.5% |
| 1989 | 31.5% |
| 1985 | 32.2% |
| 1983 | 22.5% |
| 1982 | 21.4% |
| 1980 | 32.4% |
| 1976 | 23.8% |
| 1975 | 37.2% |
| 1967 | 24.0% |
| 1963 | 22.8% |
| 1961 | 26.9% |
| 1958 | 43.4% |
| 1955 | 31.6% |
| 1954 | 52.6% |
| 1951 | 24.0% |
| 1950 | 31.7% |
| 1945 | 36.4% |
| 1943 | 25.9% |
| 1942 | 20.3% |
| 1938 | 31.1% |
| 1936 | 33.9% |
| 1935 | 47.7% |
| 1933 | 54.0% |
| 1928 | 43.6% |
| 1927 | 37.5% |

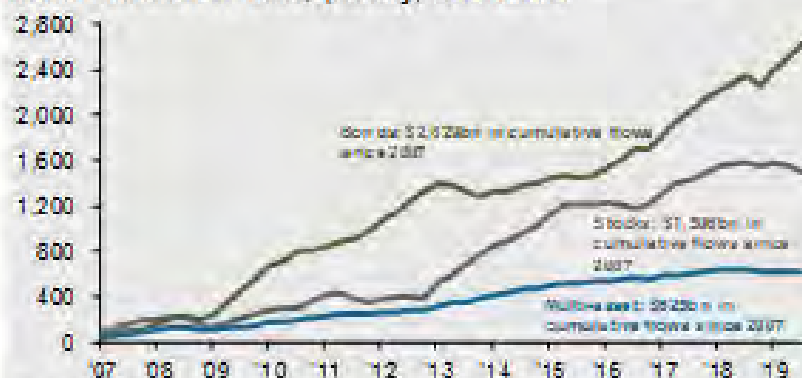
Where are we today?



| | | Registered product flows | | | | | | | | | | | | | | | | | |
|---------------|-------|--------------------------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|------|------|
| USD billions | AUM | YTD | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 |
| U.S. equity | 9,268 | (81) | (4) | 22 | (14) | (15) | 107 | 176 | (55) | (23) | 32 | 22 | (4) | 19 | 72 | 111 | 173 | 142 | 58 |
| World equity | 3,575 | 3 | 64 | 244 | 13 | 208 | 150 | 202 | 62 | 21 | 65 | 56 | (34) | 135 | 169 | 133 | 98 | 40 | 12 |
| Taxable bond | 4,281 | 368 | 122 | 391 | 216 | 46 | 76 | 19 | 299 | 169 | 226 | 309 | 60 | 106 | 53 | 46 | 23 | 45 | 102 |
| Tax-free bond | 848 | 95 | 11 | 33 | 31 | 21 | 33 | (64) | 52 | (8) | 14 | 71 | 12 | 14 | 17 | 8 | (6) | (3) | 12 |
| Multi-asset | 2,714 | 12 | (10) | 60 | 29 | 67 | 91 | 94 | 49 | 29 | 62 | 39 | 15 | 97 | 76 | 31 | 31 | 50 | 22 |
| Liquidity | 3,414 | 472 | 240 | 115 | 145 | 48 | 40 | 31 | (8) | (58) | (345) | (236) | 642 | 503 | 164 | 50 | (51) | (50) | 0 |

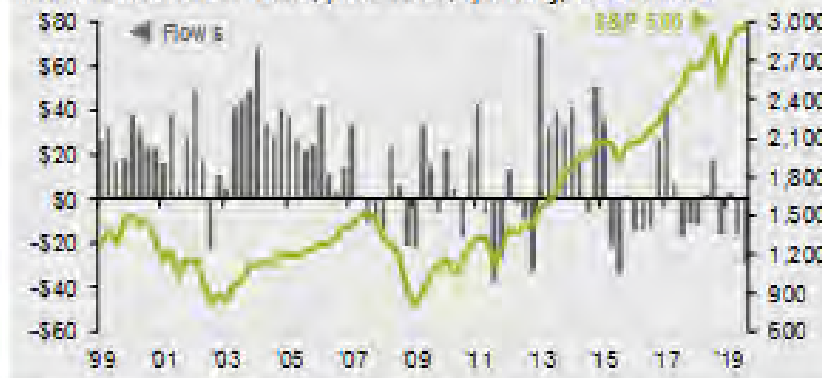
Cumulative flows into long-term asset products

Mutual fund and ETF flows, quarterly, USD billions



Flows into U.S. equity funds & S&P 500 performance

Mutual fund and ETF flows, price index, quarterly, USD billions



Source: Strategic Insight Simfund, J.P. Morgan Asset Management. All data include flows through November 2019 and capture all registered product flows (open-end mutual funds and ETFs). Simfund data are subject to periodic revisions. World equity flows are inclusive of emerging market, global equity and regional equity flows. Multi-asset flows include asset allocation, balanced fund, flexible portfolio and mixed income flows. Guide to the Markets – U.S. Data are as of December 31, 2019.

Investing principles

S&P 500 Index: Forward P/E ratio



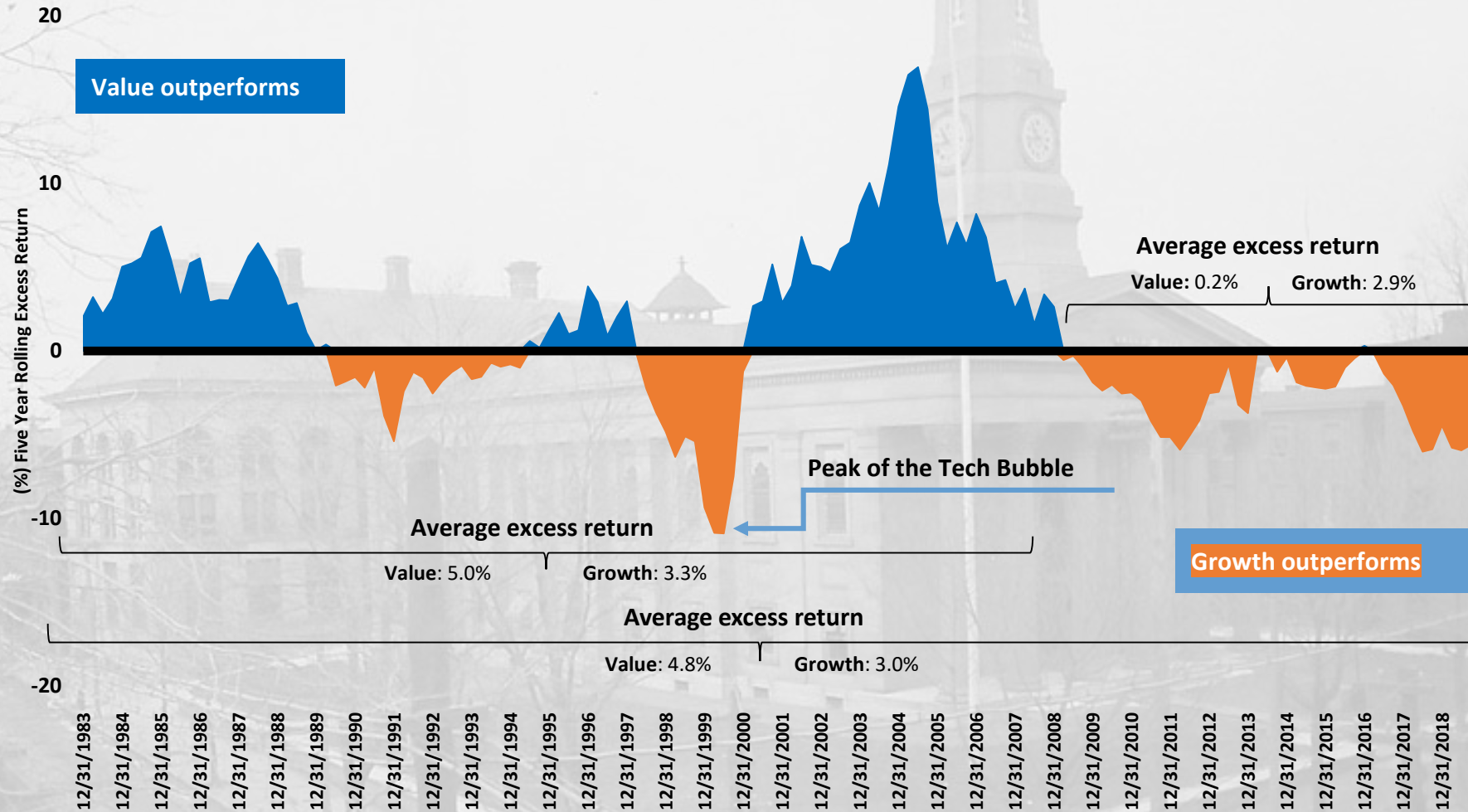
Source: FactSet, FRB, Robert Shiller, Standard & Poor's, Thomson Reuters, J.P. Morgan Asset Management.

Price to earnings is price divided by consensus analyst estimates of earnings per share for the next 12 months as provided by IBES since December 1994, 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 Bas yield is the forward earnings yield (consensus analyst estimates of EPS over the next 12 months divided by price) minus the Moody's Bas seasoned corporate bond yield. Std. dev. over-/under-valued is calculated using the average and standard deviation over 25 years for each measure.

¹P/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.

Value vs. growth

(Will value re-take leadership?)



Source: Morningstar Direct. Value: Russell 1000 Value Index, Growth: Russell 1000 Growth Index. Index returns represent past performance, are not a guarantee of future performance, and are not indicative of any specific investment.

Beware of Future Fallacy

Top Performing Sectors 2009-2019:

Technology – 328%

Consumer Discretionary – 301%

Health Care – 245%

Source CNBC; 12/26/2019

Beware Future Fallacy (Continued)

- ❖ The **Top 3** Performing Sectors a Decade Earlier earned an **80%** Total Return over the *following 10 years*, while
- ❖ The average outcome of the **Bottom 3** Sectors from 2000-2009 earned **184%** from 2010-2019.
- ❖ Markets are random – It could be the middle group outperforming next time!



The future ain't what it used to be.

– Yogi Berra.

MSCI All Country World ex-U.S. and S&P 500 Indices

Dec. 1998 = 100, U.S. dollar, price return

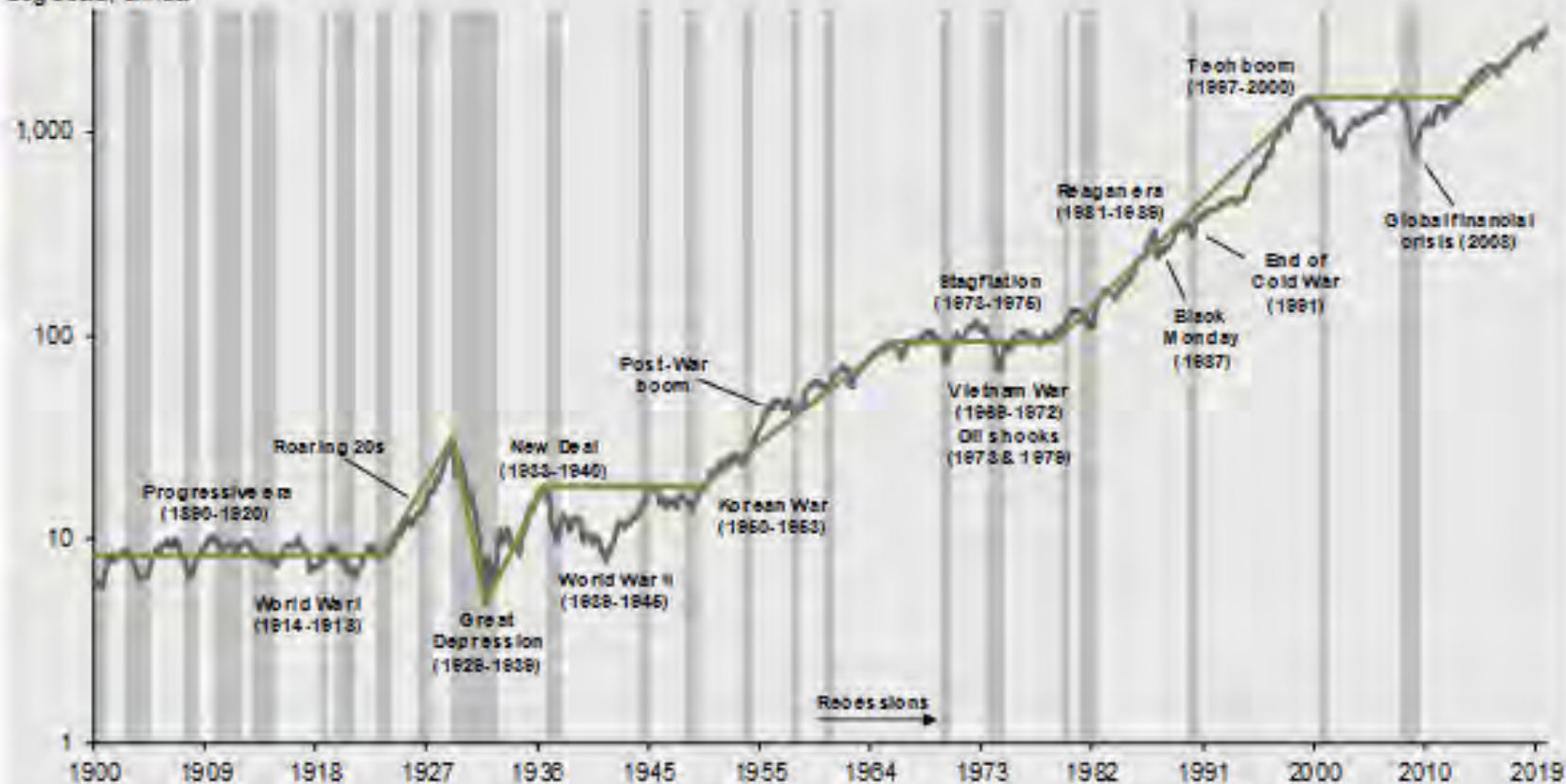


Source: FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management.

Forward price to earnings ratio 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. Returns are cumulative and based on price movement only, and do not include the reinvestment of dividends. Dividend yield is calculated as consensus estimates of dividends for the next 12 months, divided by most recent price, as provided by FactSet Market Aggregates. Past performance is not a reliable indicator of current and future results. Guide to the Markets - U.S. Data are as of December 31, 2019.

S&P Composite Index

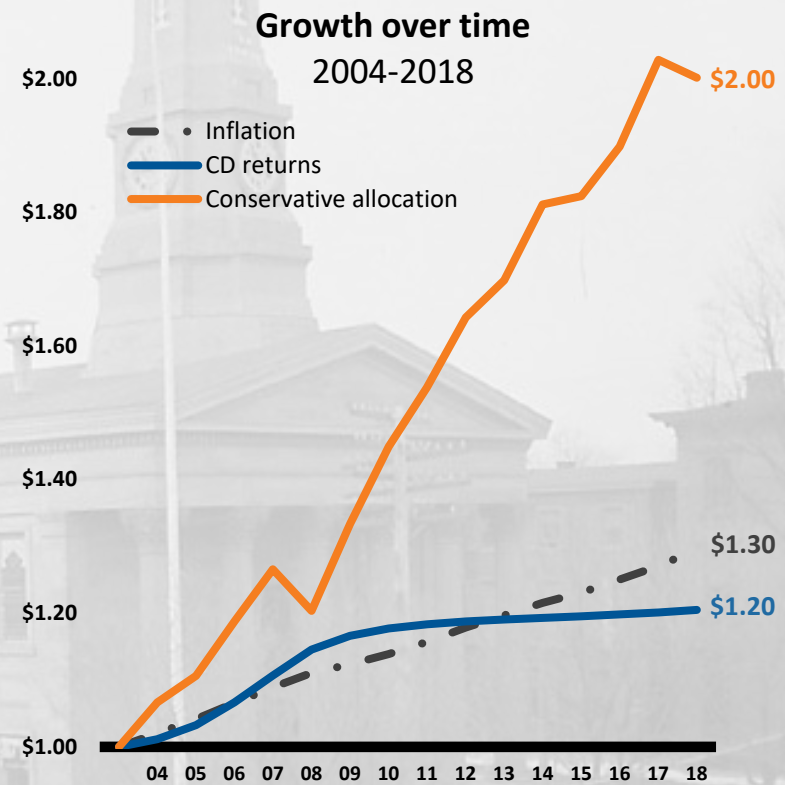
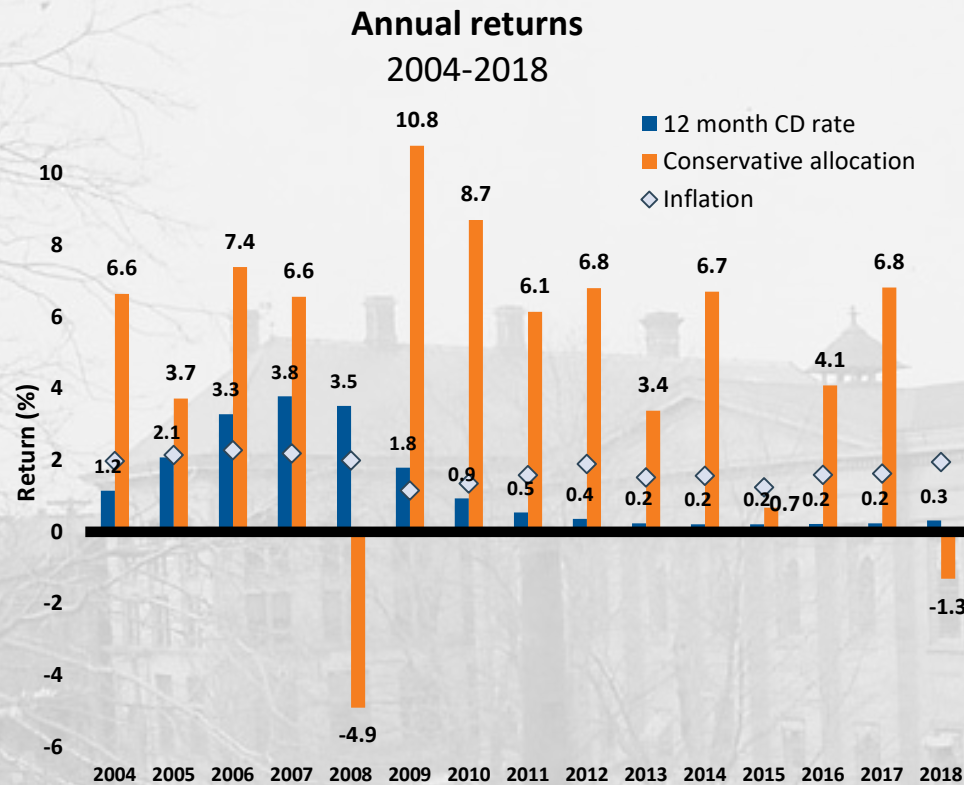
Log scale, annual



Source: FactSet, NBER, Robert Shiller, J.P. Morgan Asset Management.
 Data shown in log scale to best illustrate long-term index patterns. Past performance is not indicative of future returns. Chart is for illustrative purposes only.
 Guide to the Markets - U.S. Data are as of December 31, 2019.

Dangers of holding cash

Beware the impact of inflation

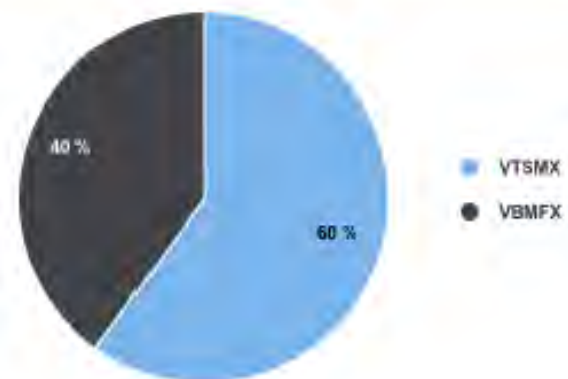


Cash investments provide certainty, but historically have not kept up with inflation
risk must be considered along with investment risk
A diversified portfolio could be more suitable than cash for investors with longer time horizons

Sources: Factset, Morningstar, Federal Reserve and Bankrate Conservative Allocation represented by 80% Bloomberg Barclays US Agg Bond, 13% Russell 3000, 5% MSCI EAFE and 2% FTSE NAREIT All Equity REITs. Index returns represent past performance, are not a guarantee of future performance, and are not indicative of any specific investment. Indexes are unmanaged and cannot be invested in directly. S&P 500 Index.

Portfolio 1

| Ticker | Name | Allocation |
|--------|--------------------------------------|------------|
| VTSMX | Vanguard Total Stock Mkt Idx Inv | 60.00% |
| VBMFX | Vanguard Total Bond Market Index Inv | 40.00% |


Portfolio Performance

| Metric | Portfolio 1 | Vanguard 500 Index Investor |
|-------------------------------------|-------------|-----------------------------|
| Start Balance | \$1,000,000 | \$1,000,000 |
| End Balance | \$1,623,462 | \$1,960,911 |
| End Balance (inflation adjusted) | \$1,201,148 | \$1,450,815 |
| CAGR | 3.30% | 4.62% |
| CAGR (inflation adjusted) | 1.24% | 2.53% |
| TWRR | 7.34% | 8.70% |
| MWRR | 6.98% | 7.99% |
| Stdev | 8.49% | 13.83% |
| Best Year | 19.72% | 32.18% |
| Worst Year | -20.20% | -37.02% |
| Max. Drawdown | -36.16% | -54.81% |
| Max. Drawdown (excluding cashflows) | -30.72% | -50.97% |
| Sharpe Ratio | 0.73 | 0.58 |
| Sortino Ratio | 1.08 | 0.84 |
| US Stock Market Correlation | 0.99 | 1.00 |

Portfolio 1 Returns

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total | Inflation | Adjustment | Balance |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|---------|-----------|------------|-------------|
| 2005 | -1.34% | 0.97% | -1.24% | -0.83% | 2.65% | 0.71% | 2.03% | -0.04% | 0.07% | -1.45% | 2.58% | 0.47% | 4.55% | 3.42% | -\$41,819 | \$1,003,646 |
| 2006 | 2.06% | 0.15% | 0.70% | 0.60% | -2.03% | 0.15% | 0.45% | 2.05% | 1.70% | 2.44% | 1.80% | 0.52% | 11.01% | 2.54% | -\$44,568 | \$1,069,621 |
| 2007 | 1.09% | -0.38% | 0.67% | 2.61% | 1.94% | -1.18% | -1.78% | 1.41% | 2.46% | 1.49% | -2.02% | -0.27% | 6.06% | -4.08% | -\$45,379 | \$1,089,085 |
| 2008 | -2.97% | -1.70% | -0.21% | 2.74% | 0.89% | -4.84% | -0.44% | 1.20% | -5.75% | -10.81% | -2.21% | 2.62% | -20.20% | 0.09% | -\$34,763 | \$834,310 |
| 2009 | -5.23% | -6.25% | 5.46% | 6.22% | 3.55% | 0.42% | 5.30% | 2.63% | 3.09% | -1.47% | 4.03% | 1.20% | 19.59% | 2.72% | -\$39,911 | \$957,862 |
| 2010 | -1.47% | 2.08% | 3.70% | 1.74% | -4.56% | -2.68% | 4.40% | -2.17% | 5.40% | 2.49% | 0.12% | 3.66% | 12.82% | 1.50% | -\$43,228 | \$1,037,477 |
| 2011 | 1.34% | 2.24% | 0.27% | 2.34% | -0.22% | -1.24% | -0.77% | -3.01% | -4.13% | 6.50% | -0.29% | 0.91% | 3.60% | 2.96% | -\$42,993 | \$1,031,837 |
| 2012 | 3.40% | 2.58% | 1.68% | 0.01% | -3.53% | 2.39% | 1.17% | 1.54% | 1.64% | -1.06% | 0.53% | 0.67% | 11.37% | 1.74% | -\$45,967 | \$1,103,200 |
| 2013 | 3.01% | 0.99% | 2.42% | 1.41% | 0.82% | -1.41% | 3.57% | -2.06% | 2.70% | 3.02% | 1.77% | 1.53% | 19.10% | 1.50% | -\$52,559 | \$1,261,406 |
| 2014 | -1.25% | 2.98% | 0.25% | 0.35% | 1.72% | 1.57% | -1.30% | 2.97% | -1.59% | 2.03% | 1.73% | 0.03% | 9.76% | 0.76% | -\$55,381 | \$1,329,147 |
| 2015 | -0.74% | 2.94% | -0.46% | 0.11% | 0.86% | -1.43% | 1.29% | -3.80% | -1.43% | 4.59% | 0.22% | -1.37% | 0.30% | 0.73% | -\$53,323 | \$1,279,753 |
| 2016 | -2.83% | 0.25% | 4.47% | 0.53% | 1.07% | 0.91% | 2.61% | 0.09% | 0.06% | -1.66% | 1.62% | 1.28% | 8.52% | 2.07% | -\$55,551 | \$1,333,225 |
| 2017 | 1.26% | 2.50% | 0.01% | 0.94% | 0.88% | 0.57% | 1.30% | 0.42% | 1.31% | 1.39% | 1.85% | 0.79% | 14.02% | 2.11% | -\$60,803 | \$1,459,280 |
| 2018 | 2.75% | -2.68% | -0.97% | -0.10% | 1.93% | 0.43% | 2.05% | 2.33% | -0.10% | -4.92% | 1.47% | -5.02% | -3.20% | 1.91% | -\$56,501 | \$1,356,015 |
| 2019 | 5.55% | 2.14% | 1.63% | 2.50% | -3.41% | 4.72% | 0.99% | -0.24% | 0.83% | 1.39% | 2.34% | | 19.72% | 2.38% | \$0.00 | \$1,623,462 |

Vanguard 500 Index Investor Returns

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total | Inflation | Adjustment | Balance |
|------|--------|---------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|---------|-----------|------------|-------------|
| 2005 | -2.45% | 2.09% | -1.76% | -1.91% | 3.17% | 0.13% | 3.71% | -0.91% | 0.79% | -1.68% | 3.76% | 0.02% | 4.77% | 3.42% | -\$41,910 | \$1,005,835 |
| 2006 | 2.65% | 0.26% | 1.23% | 1.33% | -2.90% | 0.13% | 0.61% | 2.36% | 2.56% | 3.25% | 1.89% | 1.39% | 15.64% | 2.54% | -\$46,527 | \$1,116,637 |
| 2007 | 1.49% | -1.97% | 1.11% | 4.42% | 3.48% | -1.68% | -3.08% | 1.50% | 3.72% | 1.58% | -4.19% | -0.70% | 5.39% | 4.08% | -\$47,071 | \$1,129,715 |
| 2008 | -8.02% | -3.25% | -0.44% | 4.85% | 1.29% | -8.44% | -0.83% | 1.45% | -8.91% | -16.79% | -7.17% | 1.07% | -37.02% | 0.09% | -\$28,459 | \$683,027 |
| 2009 | -8.41% | -10.66% | 8.76% | 9.56% | 5.62% | 0.22% | 7.58% | 3.60% | 3.72% | -1.87% | 5.98% | 1.95% | 26.49% | 2.72% | -\$34,557 | \$829,374 |
| 2010 | -3.60% | 3.09% | 6.01% | 1.58% | -8.01% | -5.24% | 7.00% | -4.53% | 8.92% | 3.79% | 0.00% | 6.67% | 14.91% | 1.50% | -\$38,123 | \$914,942 |
| 2011 | 2.36% | 3.42% | 0.03% | 2.95% | -1.15% | -1.67% | -2.05% | -5.45% | -7.04% | 10.91% | -0.23% | 1.02% | 1.97% | 2.96% | -\$37,317 | \$895,613 |
| 2012 | 4.46% | 4.31% | 3.28% | -0.64% | -6.02% | 4.11% | 1.37% | 2.24% | 2.58% | -1.86% | 0.56% | 0.90% | 15.82% | 1.74% | -\$41,494 | \$995,847 |
| 2013 | 5.18% | 1.34% | 3.74% | 1.91% | 2.33% | -1.35% | 5.07% | -2.91% | 3.12% | 4.59% | 3.03% | 2.51% | 32.18% | 1.50% | -\$52,651 | \$1,263,615 |
| 2014 | -3.47% | 4.56% | 0.82% | 0.72% | 2.33% | 2.05% | -1.39% | 3.98% | -1.41% | 2.42% | 2.68% | -0.26% | 13.51% | 0.76% | -\$57,372 | \$1,376,938 |
| 2015 | -3.02% | 5.74% | -1.59% | 0.95% | 1.27% | -1.93% | 2.08% | -8.04% | -2.49% | 8.42% | 0.29% | -1.59% | 1.25% | 0.73% | -\$55,765 | \$1,338,362 |
| 2016 | -4.98% | -0.15% | 6.78% | 0.37% | 1.78% | 0.25% | 3.68% | 0.13% | 0.01% | -1.83% | 3.70% | 1.96% | 11.82% | 2.07% | -\$59,861 | \$1,436,655 |
| 2017 | 1.88% | 3.96% | 0.10% | 1.02% | 1.39% | 0.61% | 2.04% | 0.29% | 2.06% | 2.32% | 3.06% | 1.10% | 21.67% | 2.11% | -\$69,918 | \$1,678,027 |
| 2018 | 5.71% | -3.69% | -2.56% | 0.37% | 2.39% | 0.61% | 3.71% | 3.25% | 0.55% | -8.85% | 2.03% | -9.04% | -4.52% | 1.91% | -\$64,084 | \$1,538,027 |
| 2019 | 8.00% | 3.20% | 1.94% | 4.04% | -6.36% | 7.03% | 1.43% | -1.59% | 1.88% | 2.15% | 3.62% | | 27.50% | 2.38% | \$0.00 | \$1,960,911 |

Drawdowns for Portfolio 1 (worst 10)

| Rank | Start | End | Length | Recovery By | Recovery Time | Underwater Period | Drawdown |
|------|----------|----------|-----------------|-------------|-----------------|-------------------|----------|
| 1 | Nov 2007 | Feb 2009 | 1 year 4 months | Oct 2010 | 1 year 8 months | 3 years | -30.72% |
| 2 | May 2011 | Sep 2011 | 5 months | Jan 2012 | 4 months | 9 months | -9.08% |
| 3 | Sep 2018 | Dec 2018 | 4 months | Mar 2019 | 3 months | 7 months | -8.46% |
| 4 | Jun 2015 | Sep 2015 | 4 months | Apr 2016 | 7 months | 11 months | -5.33% |
| 5 | Feb 2018 | Apr 2018 | 3 months | Jul 2018 | 3 months | 6 months | -3.72% |
| 6 | May 2012 | May 2012 | 1 month | Aug 2012 | 3 months | 4 months | -3.53% |
| 7 | May 2019 | May 2019 | 1 month | Jun 2019 | 1 month | 2 months | -3.41% |
| 8 | Jun 2007 | Jul 2007 | 2 months | Sep 2007 | 2 months | 4 months | -2.94% |
| 9 | Jan 2005 | Apr 2005 | 4 months | May 2005 | 1 month | 5 months | -2.45% |
| 10 | Aug 2013 | Aug 2013 | 1 month | Sep 2013 | 1 month | 2 months | -2.06% |

Drawdowns for Vanguard 500 Index Investor (worst 10)

| Rank | Start | End | Length | Recovery By | Recovery Time | Underwater Period | Drawdown |
|------|----------|----------|-----------------|-------------|------------------|-------------------|----------|
| 1 | Nov 2007 | Feb 2009 | 1 year 4 months | Aug 2012 | 3 years 8 months | 4 years 10 months | -50.97% |
| 2 | Oct 2018 | Dec 2018 | 3 months | Apr 2019 | 4 months | 7 months | -13.55% |
| 3 | Aug 2015 | Sep 2015 | 2 months | May 2016 | 8 months | 10 months | -8.38% |
| 4 | May 2019 | May 2019 | 1 month | Jun 2019 | 1 month | 2 months | -8.36% |
| 5 | Feb 2018 | Mar 2018 | 2 months | Jul 2018 | 4 months | 6 months | -6.16% |
| 6 | Jun 2007 | Jul 2007 | 2 months | Sep 2007 | 2 months | 4 months | -4.71% |
| 7 | Jan 2005 | Apr 2005 | 4 months | Jul 2005 | 3 months | 7 months | -4.04% |
| 8 | Jan 2014 | Jan 2014 | 1 month | Feb 2014 | 1 month | 2 months | -3.47% |
| 9 | Dec 2014 | Jan 2015 | 2 months | Feb 2015 | 1 month | 3 months | -3.27% |
| 10 | Aug 2013 | Aug 2013 | 1 month | Sep 2013 | 1 month | 2 months | -2.91% |

Portfolio Components

| Ticker | Name | CAGR | Stdev | Best Year | Worst Year | Max DD | Sharpe Ratio | Sorfino Ratio | US Mkt Correlation |
|--------|--------------------------------------|-------|--------|-----------|------------|---------|--------------|---------------|--------------------|
| VTSMX | Vanguard Total Stock Mkt Idx Inv | 8.85% | 14.29% | 33.35% | -37.04% | -50.89% | 0.58 | 0.83 | 1.00 |
| VBMFX | Vanguard Total Bond Market Index Inv | 4.05% | 3.26% | 8.77% | -2.26% | -3.99% | 0.84 | 1.48 | -0.04 |

The above funds are being used purely for informational and statistical purposes as a component to this illustration only (this is not a solicitation).

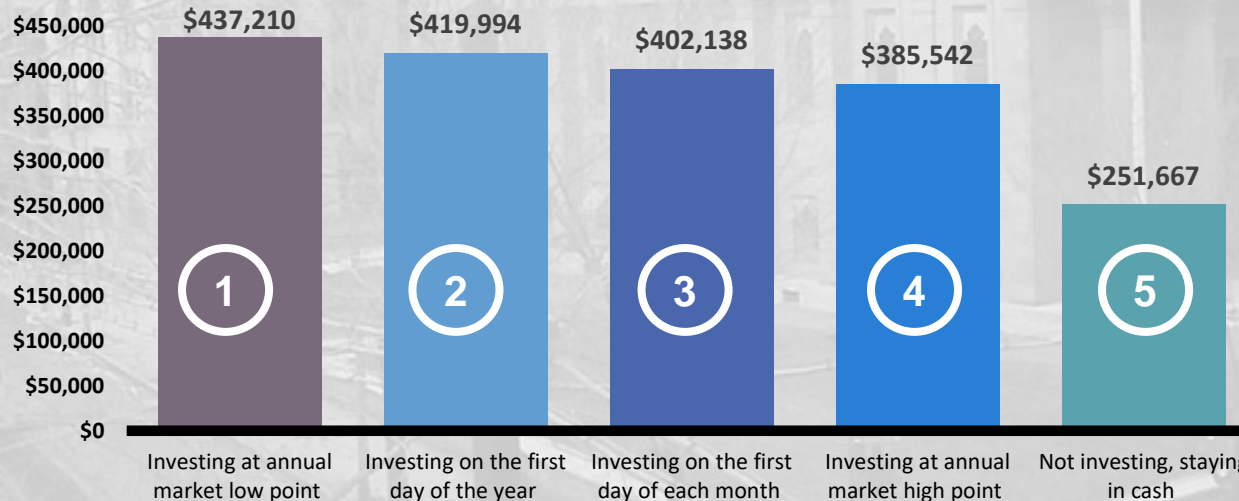
Be invested, stay invested

Focusing on long-term outcomes- \$12,000 per year for 20 Years

| 1 Perfect timing | 2 First of year | 3 Dollar cost averaging | 4 Perfectly wrong timing | 5 Holding cash, no investment |
|--|--|---|---|---|
| This strategy is ideal, yet implausible. | Investing your money for the most amount of time can yield the most gain in most market environments | A popular rules-based strategy. Can help investors cope with uncertain or volatile markets. | Despite bad timing, assets invested in the market may grow faster than if left in cash. | Holding cash too long can result in the least growth of wealth. |

Hypothetical ending wealth after investing \$12,000 per year

Period ending September 30th, 2019



Note that one year represents a 12-month period ending September 30th.

Assumes a one-time investment of \$12,000 per year into a hypothetical balanced portfolio with no withdrawals between June 30th, 2001 and September 30th, 2019.

Source: Russell Investments.

Cash return based on return of \$12,000 invested each year in a hypothetical portfolio of 3-month Treasury bonds represented by the FTSE Treasury Bill 3-month Index without any withdrawals between June 30th, 2001 and September 30th, 2019.

Source: Morningstar.

Indexes are unmanaged and cannot be invested in directly. Returns represent past performance, are not a guarantee of future performance, and are not indicative of any specific investment.

Hypothetical analysis provided for illustrative purposes only.

What Can Soccer Teach us About Portfolio Management?



| | | | | | | | | | | | | | | | 2005 - 2019 | |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | Ann. | Vol. |
| EM Equity | REITs | DM Equity | Fixed Income | EM Equity | REITs | REITs | REITs | Small Cap | REITs | REITs | Small Cap | DM Equity | Cash | Large Cap | Large Cap | REITs |
| 34.3% | 33.1% | 33.3% | 9.2% | 19.3% | 27.9% | 8.3% | 19.7% | 28.8% | 28.0% | 2.8% | 31.5% | 37.3% | 1.8% | 31.8% | 9.8% | 22.2% |
| Comdty. | DM Equity | Comdty. | Cash | High Yield | Small Cap | Fixed Income | High Yield | Large Cap | Large Cap | Large Cap | High Yield | DM Equity | Fixed Income | REITs | REITs | DM Equity |
| 21.4% | 12.3% | 19.2% | 1.8% | 39.4% | 28.9% | 7.3% | 19.6% | 32.4% | 13.7% | 1.4% | 14.3% | 25.6% | 8.3% | 28.7% | 8.3% | 22.7% |
| DM Equity | DM Equity | DM Equity | Asset Alloc. | DM Equity | DM Equity | High Yield | DM Equity | DM Equity | Fixed Income | Fixed Income | Large Cap | Large Cap | REITs | Small Cap | Small Cap | Comdty. |
| 14.0% | 28.9% | 15.6% | 25.4% | 32.3% | 13.2% | 3.1% | 18.5% | 23.3% | 8.3% | 4.3% | 12.0% | 21.8% | -4.0% | 25.3% | 7.3% | 18.6% |
| REITs | Small Cap | Asset Alloc. | High Yield | REITs | Comdty. | Large Cap | DM Equity | Asset Alloc. | Asset Alloc. | Cash | Comdty. | Small Cap | High Yield | DM Equity | DM Equity | Small Cap |
| 12.2% | 16.4% | 7.1% | -25.9% | 29.8% | 16.8% | 2.1% | 17.9% | 14.9% | 5.2% | 0.0% | 11.8% | 19.8% | -4.1% | 22.7% | 7.4% | 17.7% |
| Asset Alloc. | Large Cap | Fixed Income | Small Cap | Small Cap | Large Cap | Cash | Small Cap | High Yield | Small Cap | DM Equity | DM Equity | Asset Alloc. | Large Cap | Asset Alloc. | High Yield | DM Equity |
| 8.1% | 13.3% | 7.9% | -33.8% | 27.2% | 19.7% | 0.1% | 16.3% | 7.3% | -4.9% | -0.4% | 15.6% | 14.8% | -4.4% | 19.3% | 7.2% | 17.3% |
| Large Cap | Asset Alloc. | Large Cap | Comdty. | Large Cap | High Yield | Asset Alloc. | Large Cap | REITs | Cash | Asset Alloc. | REITs | High Yield | Asset Alloc. | DM Equity | Asset Alloc. | Large Cap |
| 4.3% | 15.3% | 5.3% | -35.8% | 26.3% | 14.8% | -0.7% | 18.0% | 2.3% | 0.0% | -2.0% | 8.6% | 10.4% | -5.8% | 16.3% | 8.2% | 14.8% |
| Small Cap | High Yield | Cash | Large Cap | Asset Alloc. | Asset Alloc. | Small Cap | Asset Alloc. | Cash | High Yield | High Yield | Asset Alloc. | REITs | Small Cap | High Yield | DM Equity | High Yield |
| 6.8% | 13.7% | 4.3% | -37.8% | 25.8% | 13.3% | -4.2% | 12.2% | 0.0% | 0.0% | -2.7% | 8.3% | 8.7% | -11.0% | 12.8% | 5.3% | 18.9% |
| High Yield | Cash | High Yield | REITs | Comdty. | DM Equity | DM Equity | Fixed Income | Fixed Income | DM Equity | Small Cap | Fixed Income | Fixed Income | Comdty. | Fixed Income | Fixed Income | Asset Alloc. |
| 3.8% | 4.3% | 3.2% | -37.7% | 18.9% | 8.2% | -11.7% | 4.2% | -2.2% | -5.8% | -4.8% | 2.8% | 3.3% | -11.2% | 9.7% | 4.7% | 10.0% |
| Cash | Fixed Income | Small Cap | DM Equity | Fixed Income | Fixed Income | Comdty. | Cash | DM Equity | DM Equity | DM Equity | DM Equity | Comdty. | DM Equity | Comdty. | Cash | Fixed Income |
| 3.0% | 4.2% | -1.8% | -41.7% | 5.3% | 9.5% | -13.3% | 0.1% | -2.3% | -4.3% | -14.8% | 1.3% | 1.7% | -13.4% | 7.7% | 1.3% | 3.4% |
| Fixed Income | Comdty. | REITs | DM Equity | Cash | Cash | DM Equity | Comdty. | Comdty. | Comdty. | Comdty. | Cash | Cash | DM Equity | Cash | Comdty. | Cash |
| 2.4% | 2.1% | -13.7% | -55.2% | 0.1% | 0.1% | -9.2% | -1.1% | -9.5% | -17.0% | -24.7% | 0.3% | 0.8% | -14.2% | 2.2% | -2.6% | 1.0% |

Investing principles

Source: Barclays, Bloomberg, FactSet, MSCI, NAREIT, Russell, Standard & Poor's, J.P. Morgan Asset Management.
 Large cap: S&P 500, Small cap: Russell 2000, EM Equity: MSCI EME, DM Equity: MSCI EAFE, Comdty: Bloomberg Commodity Index, High Yield: Bloomberg Barclays Global HY Index, Fixed Income: Bloomberg Barclays US Aggregate, REITs: NAREIT Equity REIT Index, Cash: Bloomberg Barclays 1-3m Treasury. The "Asset Allocation" portfolio assumes the following weights: 25% in the S&P 500, 10% in the Russell 2000, 15% in the MSCI EAFE, 5% in the MSCI EME, 25% in the Bloomberg Barclays US Aggregate, 5% in the Bloomberg Barclays 1-3m Treasury, 5% in the Bloomberg Barclays Global High Yield Index, 5% in the Bloomberg Commodity Index and 5% in the NAREIT Equity REIT Index. Balanced portfolio assumes annual rebalancing. Annualized (Ann.) return and volatility (Vol.) represents period of 12/31/04 - 12/31/19. Please see disclosure page at end for index definitions. All data represents total return for stated period. The "Asset Allocation" portfolio is for illustrative purposes only. Past performance is not indicative of future returns.
 Guide to the Markets - U.S. Data are as of December 31, 2019.

Snapshot of U.S. Household Health

Household asset growth has been outpacing household debt growth. This is primarily due to a slowdown in net mortgage creation. **U.S. Household net worth stands at \$113.8 Trillion.**

Condition of U.S. Household Sector

| | 2010 | 2018 | Absolute Growth | CAGR |
|----------------------------------|-----------|------------|-----------------|-------|
| Net Worth (in billions) | \$ 67,125 | \$ 113,832 | \$ 46,707 | 6.82% |
| <u>Assets:</u> | \$ 81,161 | \$ 130,218 | \$ 49,057 | 6.09% |
| Nonfinancial Assets | \$ 25,551 | \$ 39,243 | \$ 13,692 | 5.51% |
| Financial Assets | \$ 55,611 | \$ 90,975 | \$ 35,364 | 6.35% |
| <u>Liabilities:</u> | \$ 14,037 | \$ 16,386 | \$ 2,349 | 1.95% |
| Mortgages | \$ 9,994 | \$ 10,517 | \$ 524 | 0.64% |
| Consumer Debt | \$ 4,043 | \$ 5,868 | \$ 1,825 | 4.77% |
| Net Worth % to Disposable Income | 583% | 688% | | |
| Net Worth % to GDP | 440% | 553% | | |

20 Year History of Debt Growth by U.S. Sector

Growth in mortgage debt rapidly decline after 2006.

Household sector experienced a prolonged deleveraging to repair balance sheets.

Debt Growth Rate (%) - By U.S. Sector Over Last 20 years (1999-2018)

| Date | Household Debt Growth (Total) | Household Mortgages | Household Consumer Credit | Non-Corporate Business | Corporate Businesses | Federal Government | State & Local Governments | Financial Sector | Foreign |
|------|-------------------------------|---------------------|---------------------------|------------------------|----------------------|--------------------|---------------------------|------------------|---------|
| 1999 | 9.36 | 9.35 | 7.8 | 10.39 | 9.48 | -0.68 | 3.26 | 16.71 | 2.77 |
| 2000 | 8.82 | 8.65 | 11.36 | 9.05 | 8.2 | -6.3 | 1.43 | 11.71 | 7.36 |
| 2001 | 8.6 | 10.55 | 8.65 | 4.7 | 3.12 | 1.35 | 8.8 | 11.05 | -1.26 |
| 2002 | 9.73 | 13.26 | 5.56 | 2.3 | 0.14 | 6.81 | 11.09 | 8.63 | 7.51 |
| 2003 | 12.34 | 14.51 | 5.3 | 0.85 | -0.3 | 9.5 | 8.32 | 11.16 | 1.71 |
| 2004 | 11.57 | 13.44 | 5.57 | 5.89 | 3.41 | 8.31 | 11.54 | 9.45 | 7.98 |
| 2005 | 10.82 | 13.76 | 4.52 | 8.03 | 5.3 | 6.61 | 6.66 | 9.01 | 7.81 |
| 2006 | 10.55 | 11.19 | 5.18 | 10.02 | 7.67 | 3.92 | 4.42 | 10.35 | 21.42 |
| 2007 | 7.14 | 7.2 | 6.11 | 12.52 | 11.67 | 4.66 | 6.24 | 13.66 | 15.44 |
| 2008 | -0.03 | 0.75 | 1.31 | 5.72 | 3.99 | 21.44 | 1.42 | 4.58 | -10.4 |
| 2009 | 0.45 | 0.88 | -3.58 | -3.9 | -4.85 | 20.41 | 4.72 | -9.62 | 14.53 |
| 2010 | -0.58 | -1.5 | -1.1 | -0.76 | -0.91 | 18.53 | 2.71 | -4.07 | 9.52 |
| 2011 | -0.01 | -0.68 | 4.15 | 2.62 | 5.25 | 10.82 | -1.17 | -2.57 | 7.19 |
| 2012 | 1.04 | -0.74 | 5.77 | 5.03 | 5.34 | 10.12 | 0.06 | -0.63 | 8.42 |
| 2013 | 1.66 | 0.06 | 6.1 | 4.47 | 5.54 | 6.67 | -1.66 | 1.38 | 9.48 |
| 2014 | 2.14 | 0.2 | 7.15 | 6.52 | 6.34 | 5.37 | -1.24 | 1.91 | 8.63 |
| 2015 | 2.36 | 1.47 | 7.06 | 7.04 | 7.87 | 5.02 | 0.35 | 1.21 | 0.97 |
| 2016 | 3.24 | 2.24 | 6.84 | 5.32 | 3.61 | 5.56 | 1.09 | 3.07 | 1.17 |
| 2017 | 3.97 | 3.2 | 5.05 | 5.99 | 6.49 | 3.74 | -0.04 | 2.07 | 12.02 |
| 2018 | 3.23 | 2.88 | 4.75 | 4.05 | 2.84 | 7.58 | -1.64 | 2.16 | 4.57 |

Households Deleveraging

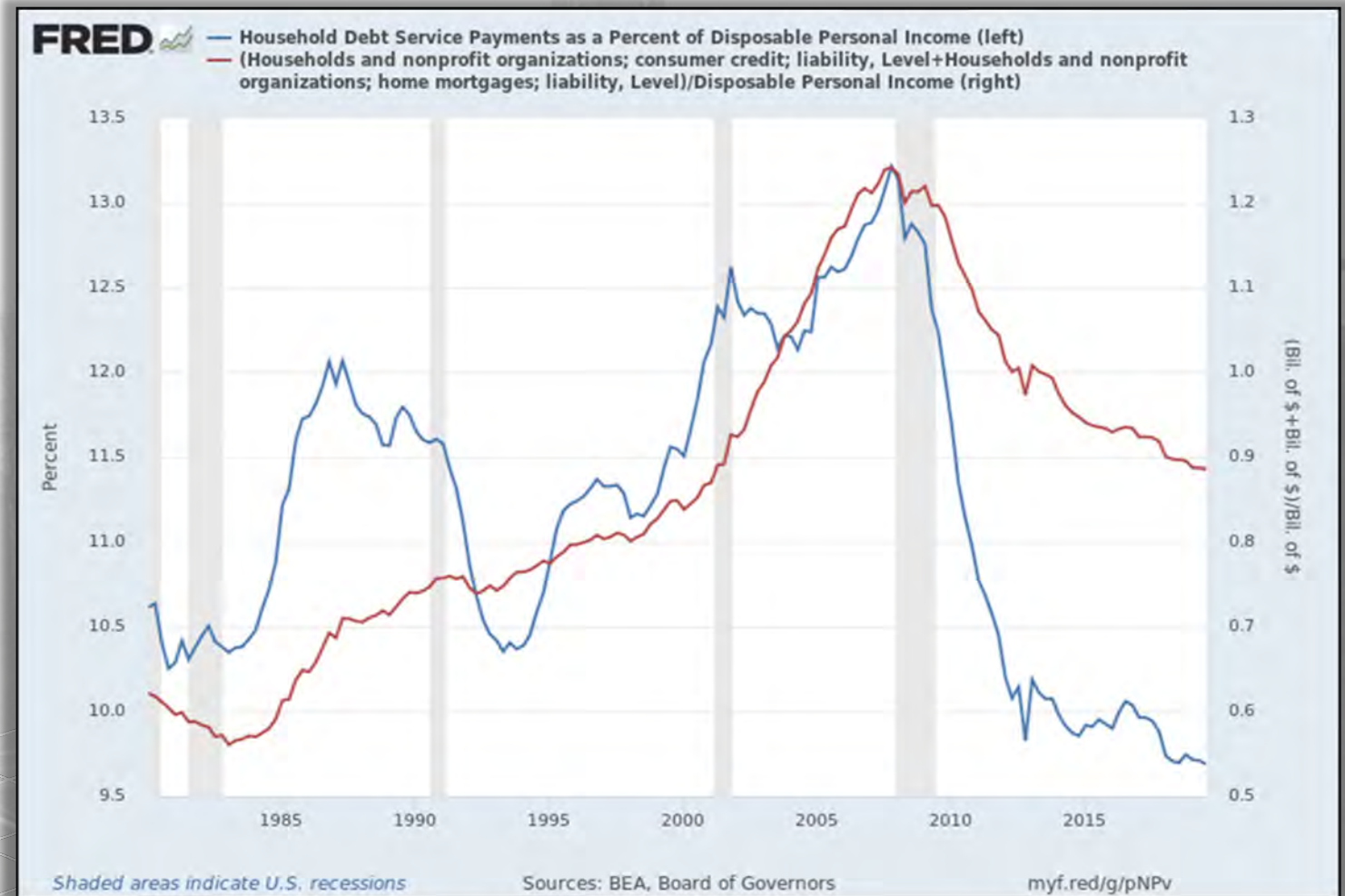
Build up to Subprime crisis

Government attempts to offset falling demand in private sector.

Households are still deleveraging their balance sheets

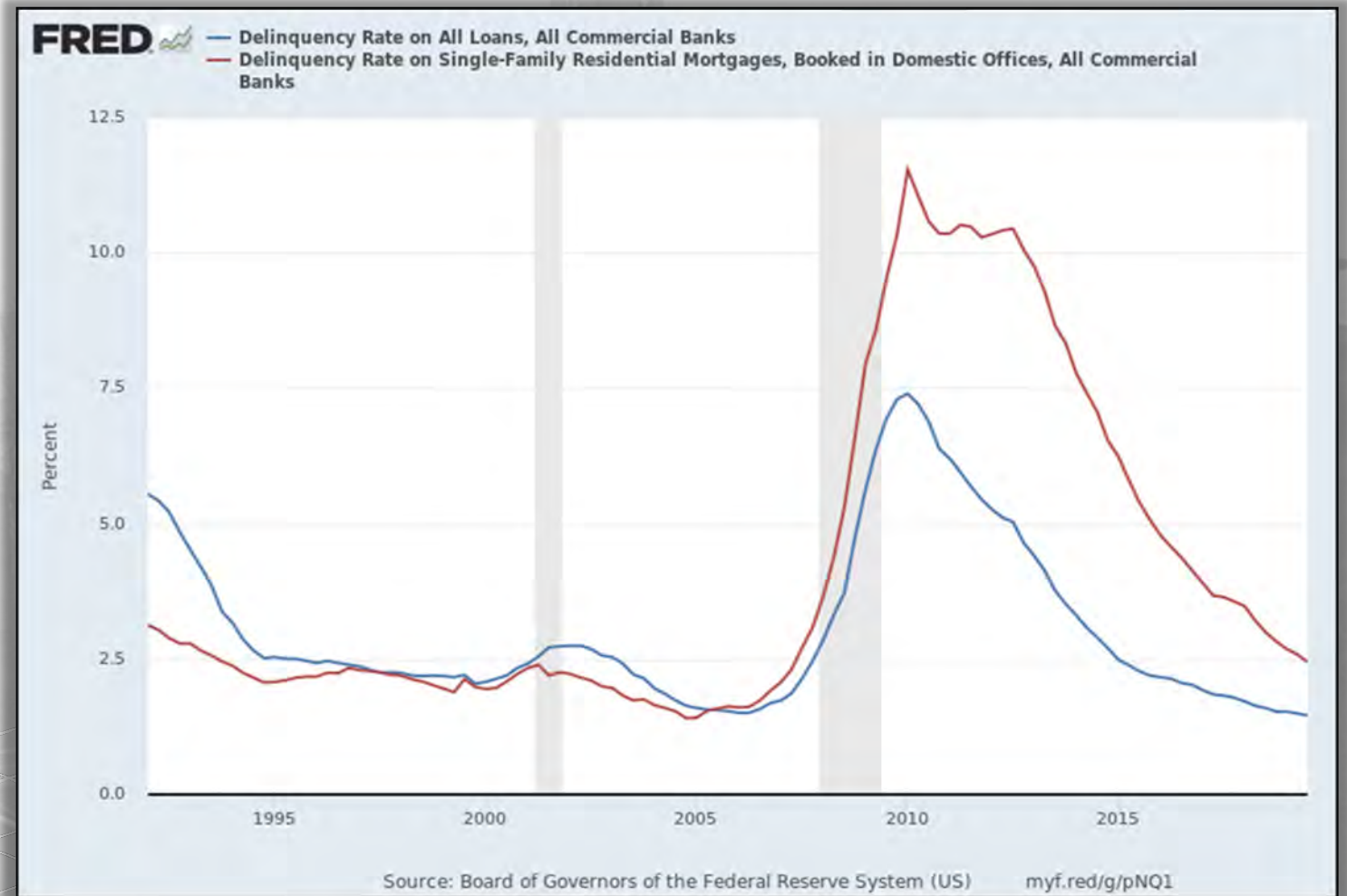
Total household debt as a % of disposable personal income* (red line, right scale) continues to fall, but is still high relative to income. Debt servicing costs (blue line, left scale) fell precipitously during the recovery due to lower interest rates, but will increase if rates rise. Peaks in debt service payments tend to coincide with recessions.

*(DPI = personal income – taxes)



Delinquency Rates on Loans nearing all-time lows

Only 1.46% of all loans held by Commercial Banks are presently past due by 30 days or more. The peak was 7.40% in the 1st quarter of 2010. Mortgages reached a delinquency rate of **11.54%** at the same time period.



The New “SECURE” Act

1. RMDs don't start until age 72
2. Stretch IRAs now limited to 10 years.
 1. Workers can contribute to IRAs after age 70.
 2. Businesses can group together to keep administrative costs down; incentives to Start Plans
 3. Add annuities under a safe harbor as an investment option, and auto-escalate employees contributions up to 15%.



Key Financial and MIT



Key Financial and MIT



The MIT Age Lab – Four 8000 Day Segments

- Our lives are broken into:

First 8000 Days

- Birth to about 21
- Learn to walk, talk, and communicate (sometimes)
- Importance of sharing
- Go to school, maybe college
- First kiss
- Do a few things we don't want to tell our parents about!

Second 8000 Days

- Life after school to about 40
- Get a job
- Get married
- Buy a house
- Maybe have a couple kids
- “Busy” takes on new meaning here

Third 8000 Days

- Forties and Fifties
- From soccer fields to graduation parties
- Tuition expenses loom
- Perhaps a trip to a professional to bail kids out of some sort of trouble
- Peak earning years
- Retirement

- The Longevity Economy: Dr. Joseph Coughlin, MIT

The Last 8000 Days

- By 60 or 65, the standard script is unwritten – It's different for everyone
 - Professional identity is gone
 - Relationships change
 - Rituals are gone
- There is just so much travel we can do and golf we can play...



Unless you're Drew

Phase 1 – Managing Ambiguity

- The Honeymoon – First few months are wonderful – filled with projects and activities
- Answers to two questions:
 - “Are we going to be OK?”
 - “Are there any blind spots?”
- Creating tax efficient cash flow, guardrails for bucket list, and a portfolio that can last a lifetime.

“What am I going to do on Day 240?”



This phase is about Money and Meaning

Phase 2 – Big Decision Phase

- Taking care of your home presents challenges:
 - “Who’s going to mow my lawn?”
 - “Who’s going to change the light bulbs?”
- Socioemotional selective theory:
(Shrinking Worlds)
 - Less focus on new things
 - *Double down on known*



- Laura Carstensen – Stanford Center on Longevity
- The Longevity Economy – Dr. Joseph Coughlin

Phase 4 – Living Solo

- Reset back through the first three stages
 - Phase 1 - Managing Ambiguity
 - Phase 2 - Making big decisions, tough choices
 - Phase 3 - Dealing with complexity...even more difficult during the grieving process

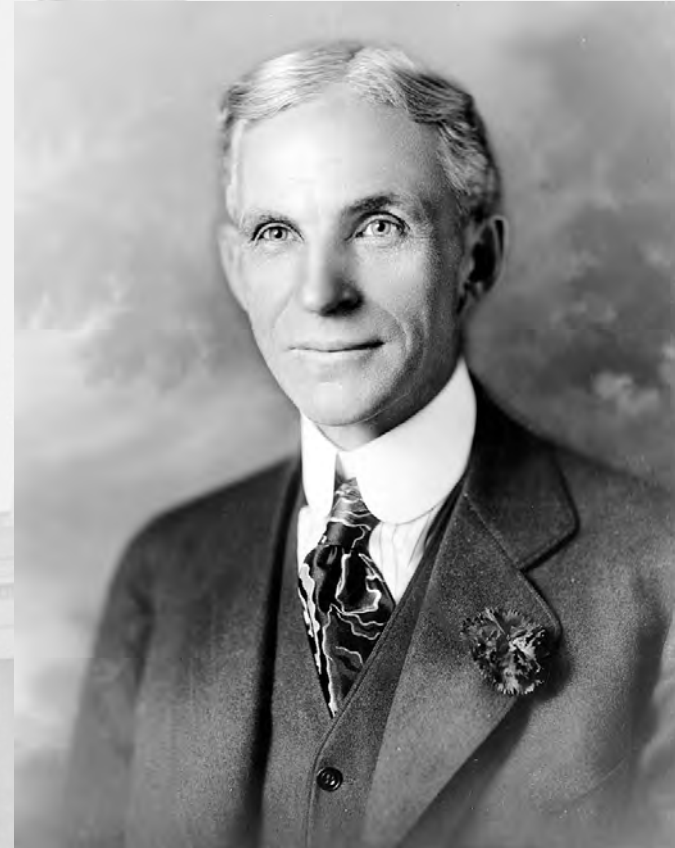


**Anyone who *stops* learning is old,
*whether at twenty or eighty.***

**Anyone who keeps learning stays
young.**

**The greatest thing in life is to
keep your mind young.**

—Henry Ford





How quickly will that be upon us?

How fast have the last 15 years gone?

“I thought getting older would
take much longer”



Kristopher Thompson

Retired Executive

FaceApp



The future ain't what it used to be.

– Yogi Berra.



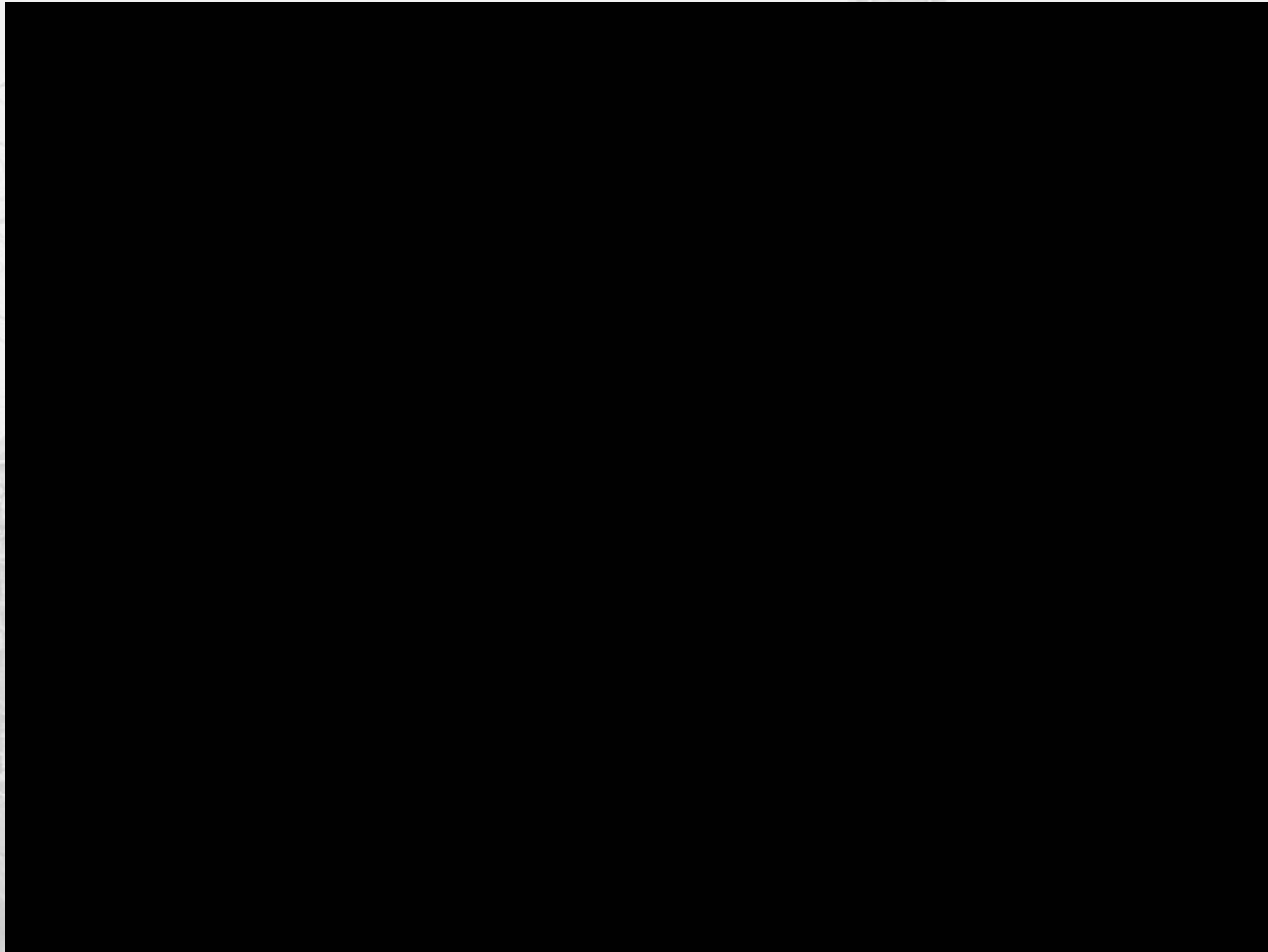
THE **Patti** **SHOW**
Brennan

Dedicated to helping improve your net worth.

Listen Now!

<https://keyfinancialinc.com/podcast/>

Play video



To Our Friends at CCEDC:
***May the Next Decade Bring You and Your Family:
Peace, Prosperity (Lots of it! 😊), Good Health and
Happiness”***



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- 31-33 Retirement Through the Lens of the Longevity Economy
- 29-30 Medicare Strategies
- 26-28 Its Leadership, Not Likership
- 25 Alzheimer's- What's Next for the Cure?
- 24 Emergency Preparedness
- 21 Estate Planning Mistakes
- 18-19 Selling Your Business
- 13-14-15 Top 3 Questions Anyone Over 45 Should Be Asking
- 11 Optimizing the Affordable Care Act
- 7 Market Crisis and Portfolio Recovery Rates
- 3 Man vs. Machine

Total Debt Outstanding by U.S. Sector

Mortgage debt accounts for the largest share of debt held by the household sector.

Gross mortgages debt outstanding has declined over the past 9 years resulting in tepid debt growth for the entire household sector.

Debt Outstanding (in billions) by U.S. Sector Since the Subprime Crisis

| Date | Household Debt Outstanding (Total) | Household Mortgages | Household Consumer Credit | Non-Corporate Business | Corporate Businesses | Federal Government | State & Local Governments | Financial Sector | Foreign |
|----------------------------|------------------------------------|---------------------|---------------------------|------------------------|----------------------|--------------------|---------------------------|------------------|----------|
| 2009 | \$ 13,953 | \$ 10,443 | \$ 2,555 | \$ 10,160 | \$ 6,175 | \$ 8,883 | \$ 3,121 | \$ 16,552 | \$ 1,968 |
| 2010 | \$ 13,737 | \$ 9,993 | \$ 2,647 | \$ 10,022 | \$ 6,070 | \$ 10,529 | \$ 3,206 | \$ 15,520 | \$ 2,246 |
| 2011 | \$ 13,588 | \$ 9,778 | \$ 2,757 | \$ 10,277 | \$ 6,389 | \$ 11,667 | \$ 3,168 | \$ 15,042 | \$ 2,468 |
| 2012 | \$ 13,589 | \$ 9,564 | \$ 2,914 | \$ 10,781 | \$ 6,722 | \$ 12,848 | \$ 3,170 | \$ 14,870 | \$ 2,825 |
| 2013 | \$ 13,726 | \$ 9,481 | \$ 3,091 | \$ 11,247 | \$ 7,083 | \$ 13,705 | \$ 3,117 | \$ 15,019 | \$ 2,971 |
| 2014 | \$ 13,974 | \$ 9,455 | \$ 3,313 | \$ 11,978 | \$ 7,533 | \$ 14,441 | \$ 3,079 | \$ 15,287 | \$ 3,281 |
| 2015 | \$ 14,167 | \$ 9,579 | \$ 3,411 | \$ 12,796 | \$ 8,104 | \$ 15,166 | \$ 3,090 | \$ 15,262 | \$ 3,228 |
| 2016 | \$ 14,596 | \$ 9,764 | \$ 3,644 | \$ 13,470 | \$ 8,392 | \$ 16,008 | \$ 3,123 | \$ 15,707 | \$ 3,308 |
| 2017 | \$ 15,149 | \$ 10,051 | \$ 3,828 | \$ 14,413 | \$ 9,074 | \$ 16,607 | \$ 3,122 | \$ 15,995 | \$ 3,881 |
| 2018 | \$ 15,619 | \$ 10,321 | \$ 4,010 | \$ 15,322 | \$ 9,658 | \$ 17,865 | \$ 3,071 | \$ 16,322 | \$ 3,960 |
| Net Debt Growth | \$ 1,666 | \$ (122) | \$ 1,455 | \$ 5,162 | \$ 3,483 | \$ 8,982 | \$ (51) | \$ (229) | \$ 1,992 |
| Rate of Debt Growth | 1.26% | -0.13% | 5.13% | 4.67% | 5.10% | 8.07% | -0.18% | -0.15% | 8.08% |



Who will
change my
light bulbs?



How will I
get an ice
cream cone?



Who will
I have
lunch with?



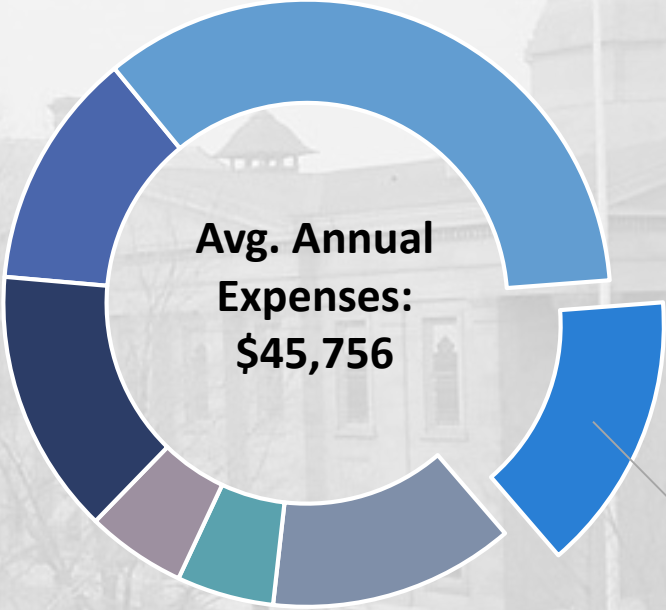
Two Themes for 2020 CCEDC Economic Outlook:

1. Fifteen years...
2. “The future ain’t what it used to be” (Yogi Berra)

Average Annual Expenditures by Age

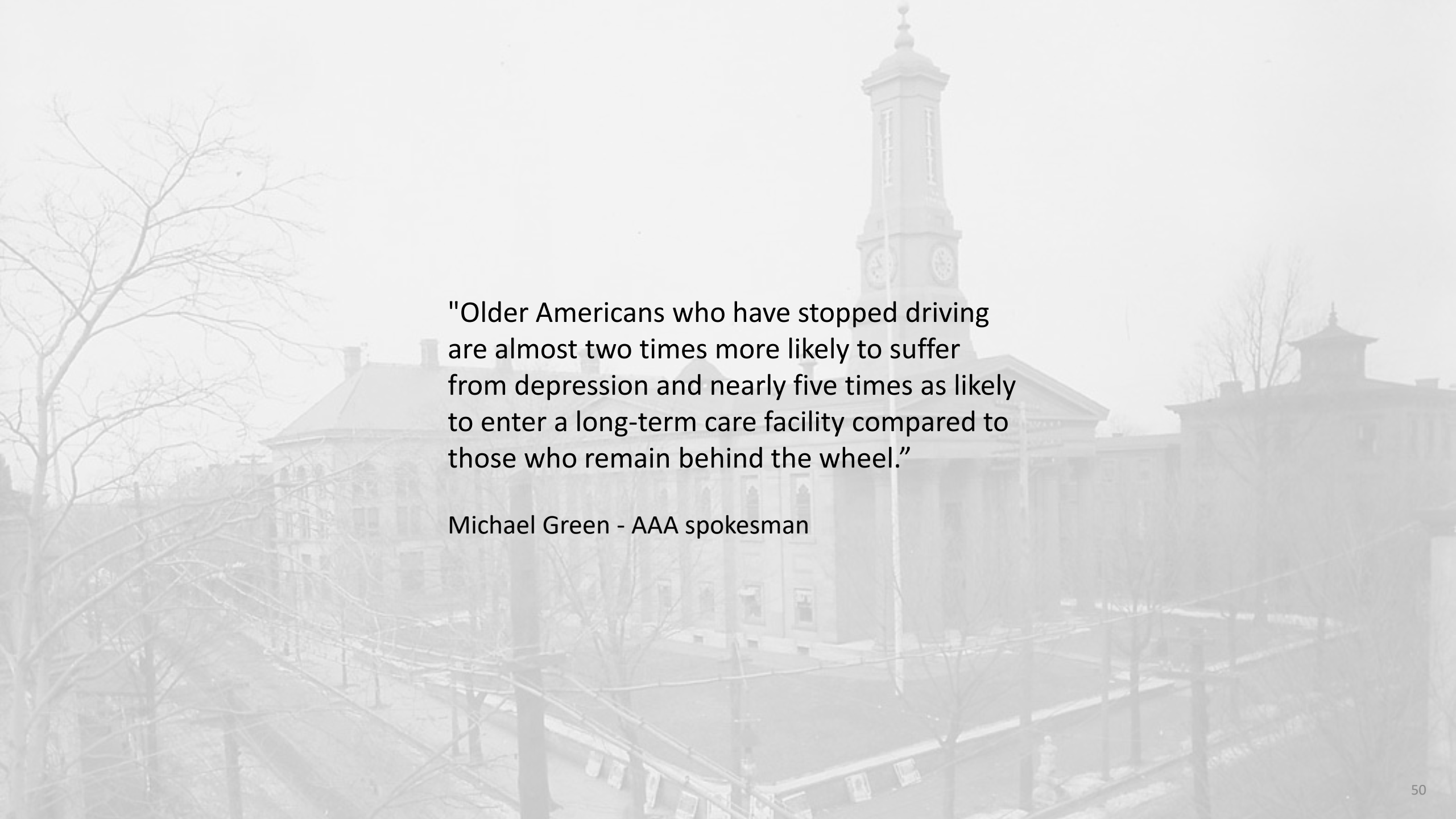
65 years and older – Avg. Income \$48,035

- Food
- Housing
- Transportation
- Healthcare
- Entertainment
- Cash contributions
- Other



Transportation: No. 2
15%

Source: Bureau of Labor Statistics Consumer Expenditure Survey, 2016



"Older Americans who have stopped driving are almost two times more likely to suffer from depression and nearly five times as likely to enter a long-term care facility compared to those who remain behind the wheel."

Michael Green - AAA spokesman

The Cost of Staying Mobile



Vs.

UBER

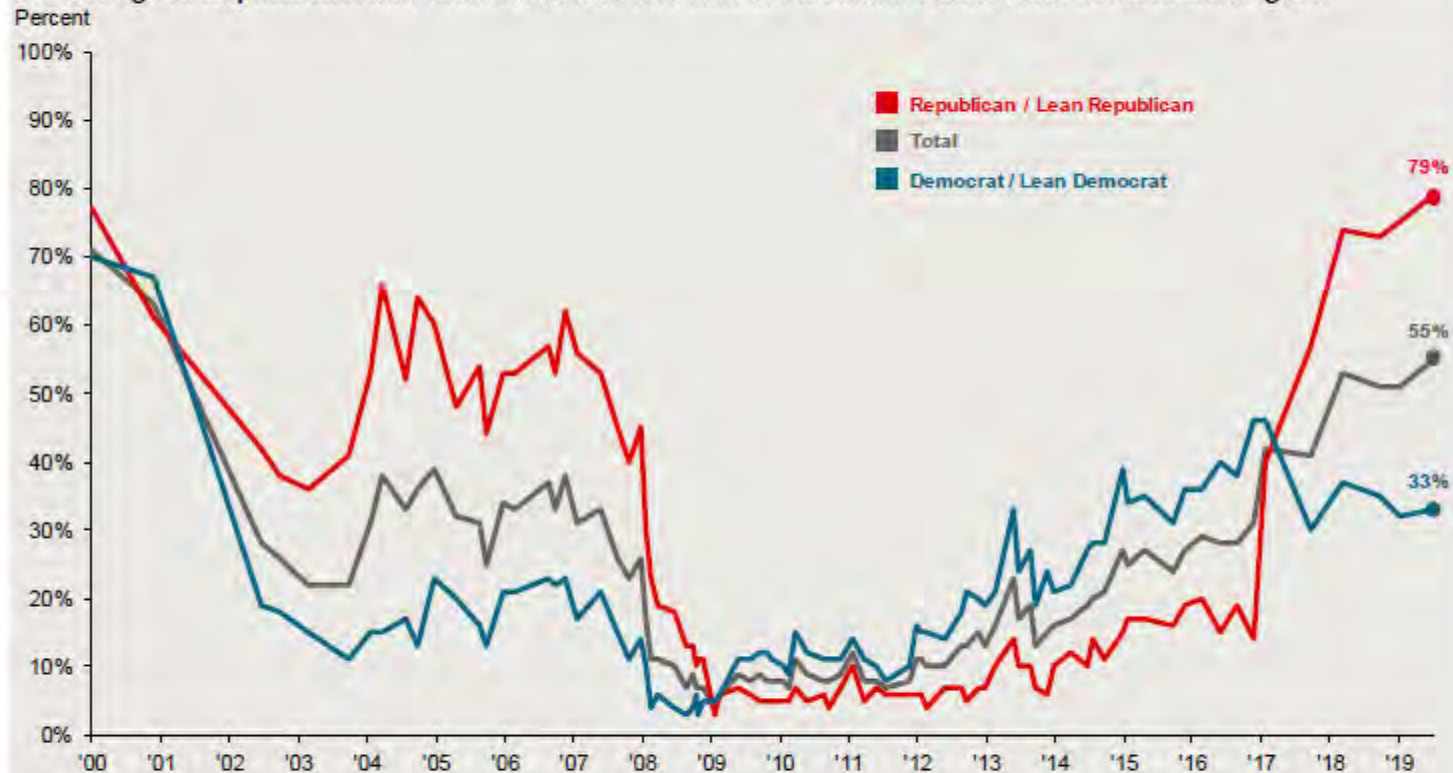
Large Sedan

\$10,879*

?

*Source: AAA, Your Driving Costs, Statistic is based on driving 15,000 miles per year, 2017.

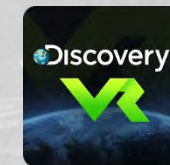
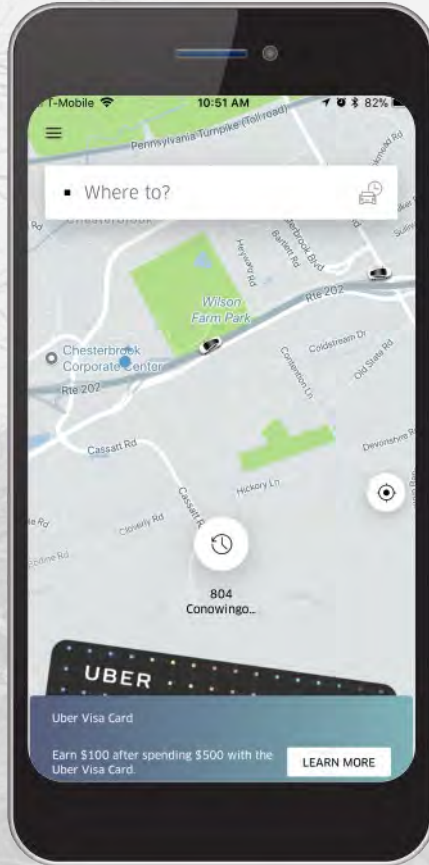
Percentage of Republicans and Democrats who rate national economic conditions as excellent or good



Source: Pew Research Center, J.P. Morgan Asset Management. Pew Research Center, July 2019, "Public's Views of Nation's Economy Remain Positive and Deeply Partisan." Question: Thinking about the nation's economy, how would you rate economic conditions in this country today... as excellent, good, only fair, or poor?
 Guide to the Markets - U.S. Data are as of November 30, 2019.

Investing principles

Apps that Can Reduce the Need to Drive



Health & Caregiving Apps



Pillboxie



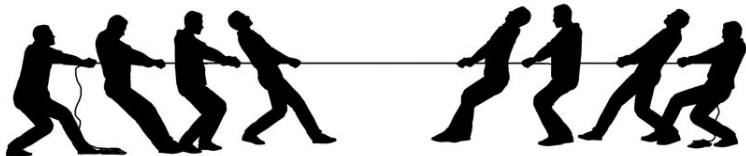
MedCoach





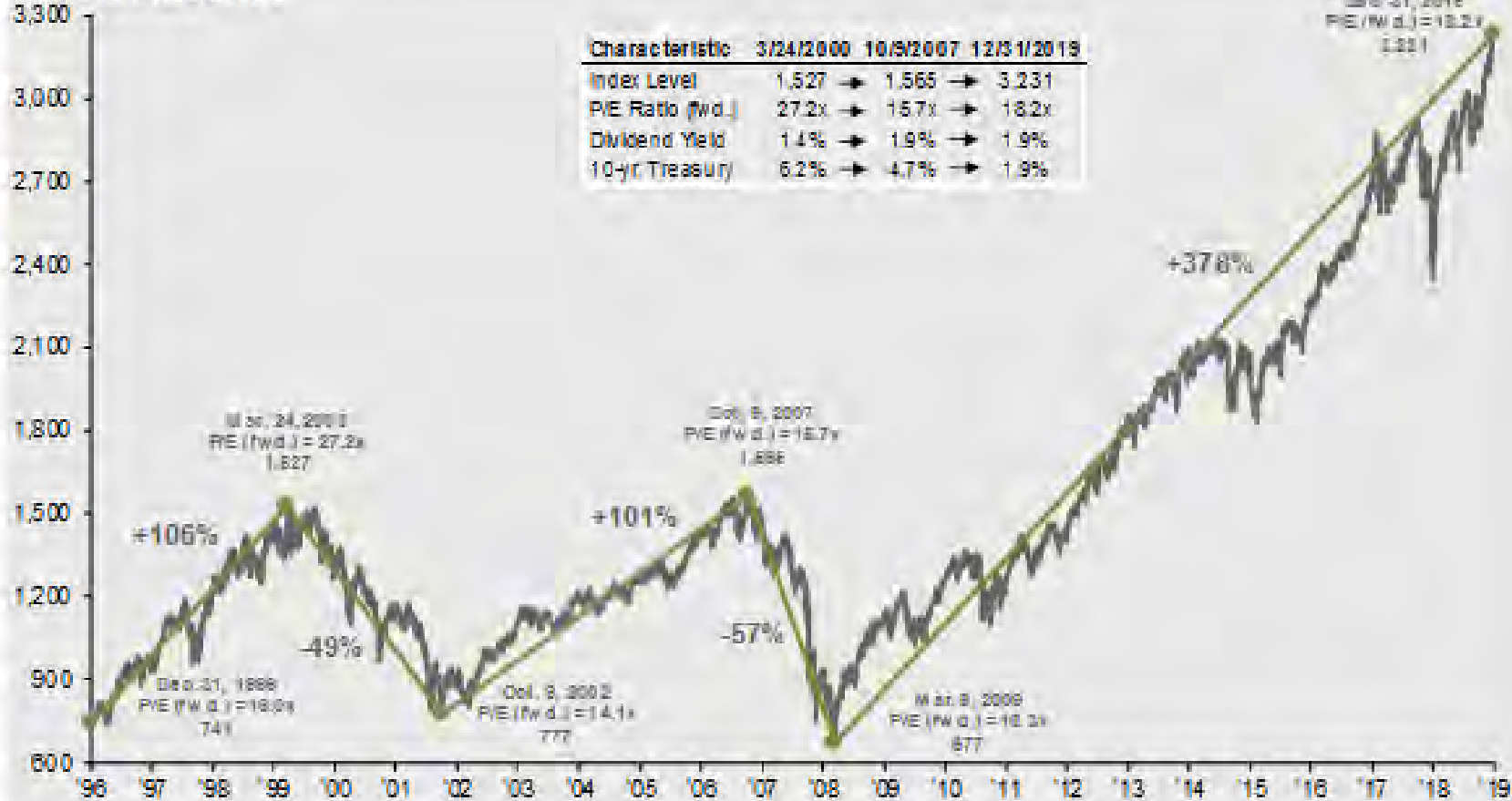
Which half are you?

- According to *Prudential's First-Ever Financial Wellness Census*, the nation is almost evenly split between ***people who are doing well financially (46%) and those who are struggling (54%)***.
- A 2017 study found that when asked how confident they were about their retirement security **55% responded that they were very confident (6-7 on a scale of 1-8)**. Yet in **this same group, Only 28.6% passed** a financial literacy quiz with a score of 60% or higher! (the mean score was 47%).
- Perception is not enough...**You only get to do this once.**



Source, Journal of Financial Planning, January 2019.
Retirement Income Literacy. A Key to a Sustainable Retirement. .Jamie Hopkins, JD, LLM CFP and John Pearce, Phd.

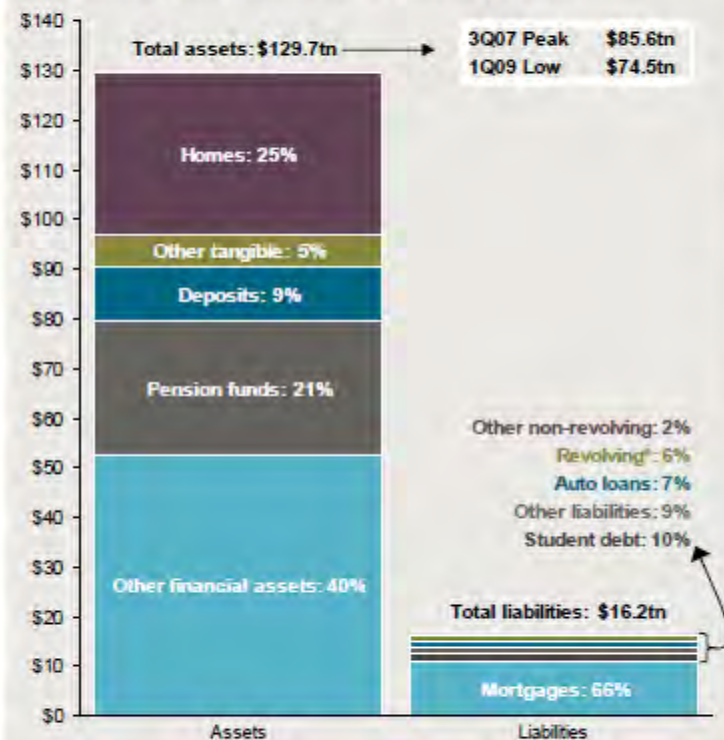
S&P 500 Price Index



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, 2018.

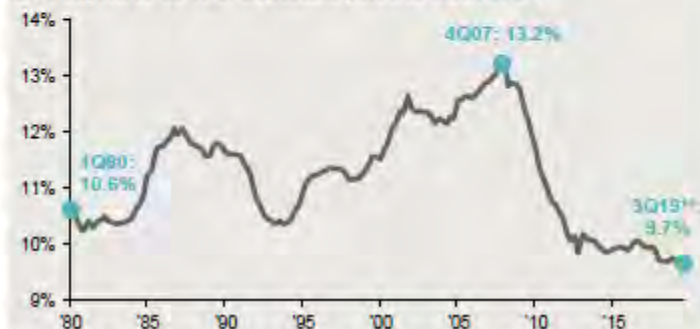
Consumer balance sheet

2Q19, trillions of dollars outstanding, not seasonally adjusted



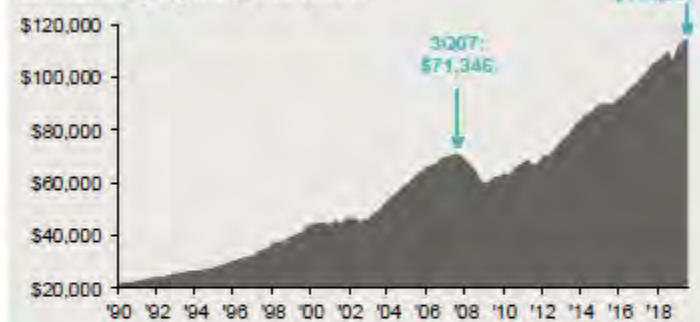
Household debt service ratio

Debt payments as % of disposable personal income, SA



Household net worth

Not seasonally adjusted, USD billions



Source: FactSet, FRB, J.P. Morgan Asset Management; (Top and bottom right) BEA. Data include households and nonprofit organizations. SA – seasonally adjusted. *Revolving includes credit cards. Values may not sum to 100% due to rounding. **3Q19 figures for debt service ratio and household net worth are J.P. Morgan Asset Management estimates. Guide to the Markets – U.S. Data are as of November 30, 2019.

How Anchors Influence Us

Hidden Anchor

How We Are Swayed



A salesman asks if you think the car is worth more or less than \$50,000.



Your estimate will be closer to \$50k than it would be otherwise.



A real estate agent shows you the most expensive house first.



All other homes seem fairly priced by comparison.



A charity asks for \$1,000 vs. \$50.



A larger ask results in larger donations.



A restaurant offers suggested tipping amounts.



You'll be more likely to choose an offered percentage than to come up with your own amount or to not tip at all.



A price tag shows an original price of \$150, now reduced to \$85.



You'll consider the item a bargain, regardless of its true worth.

Beware of Anchors!

Exposure to
the first number
in a decision making process
creates an unmovable
reference point.



Disproportionate
Influence

Flawed judgment

Flawed judgment

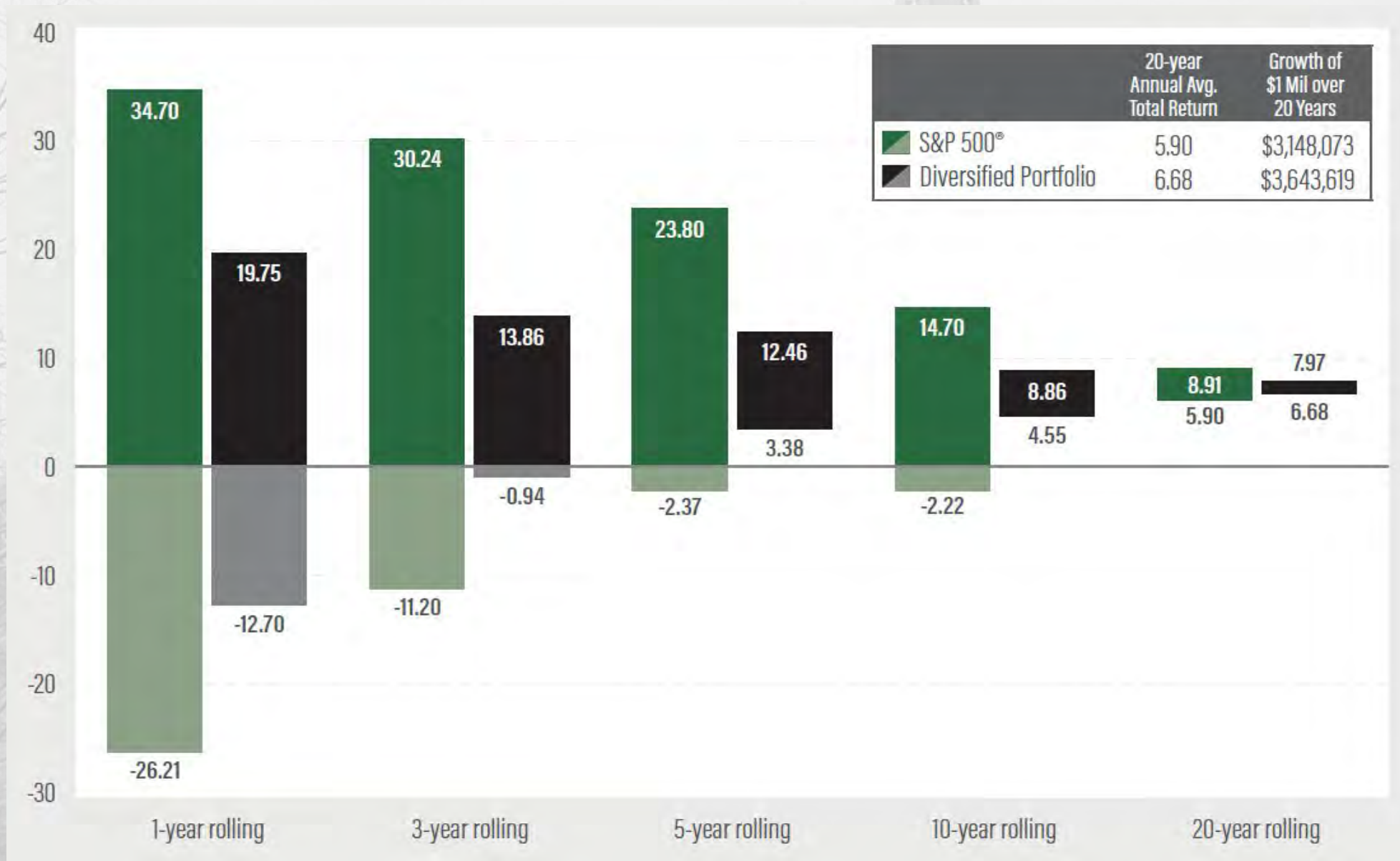
Flawed judgment

Flawed judgment

Risk...Relative to *Time*



Twenty Years of Rolling Returns



Tell Soccer Story (Michael- Sudden Death kick)

