Invesco

Compelling **Wealth Management** Conversations

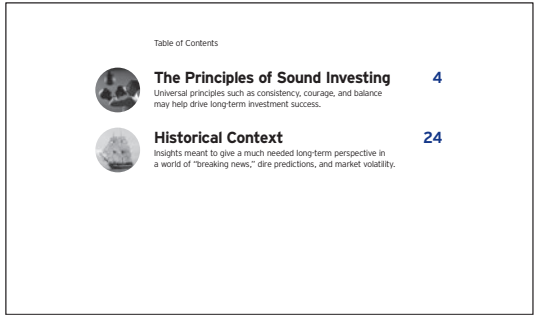
Compelling Wealth Management Conversations

Your single greatest challenge is not managing your clients' assets, but managing their emotions.

It's your clients' perceptions and misperceptions, fears and phobias, exacerbated by a 24-hour news cycle predicated on the crisis of the moment, that often stands between you and your clients' long-term financial success.

Our "Compelling Wealth Management Conversations" program is designed to provide the broad philosophical and historical perspective that your clients need to defuse both their fears and misperceptions.

Speaker Notes



Over the long term, the stock market historically reflects the objective performance of the macroeconomy and the individual companies within that economy. Over the short term, however, the stock market often reflects human emotion, perceptions, and misperceptions.

This book is designed to help provide philosophical and historical context and perspective, to help clients keep "buckled in" and stay the course during uncertain times, while also providing a framework to help identify the best current opportunities.

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Speaker Notes

When you listen to financial news commentators, it can feel as though financial markets and investment decisions are capricious and arbitrary. Over the short term, that might be accurate. However, over the long term, there are universal investment principles that may ultimately help govern your success and which guide all of our wealth management and investment decisions.

Adhering to principles like balance, consistency, and courage may help keep us on course and provide a buffer from the constant drone of crisis and fear promoted by some news and media outlets.

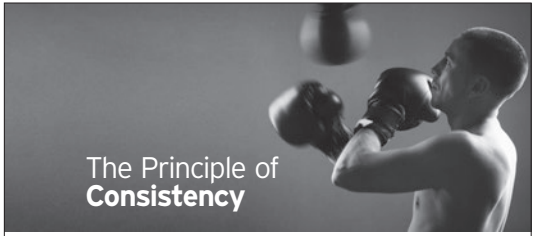
The Principles of Sound Investing

Consistency

Courage

Balance

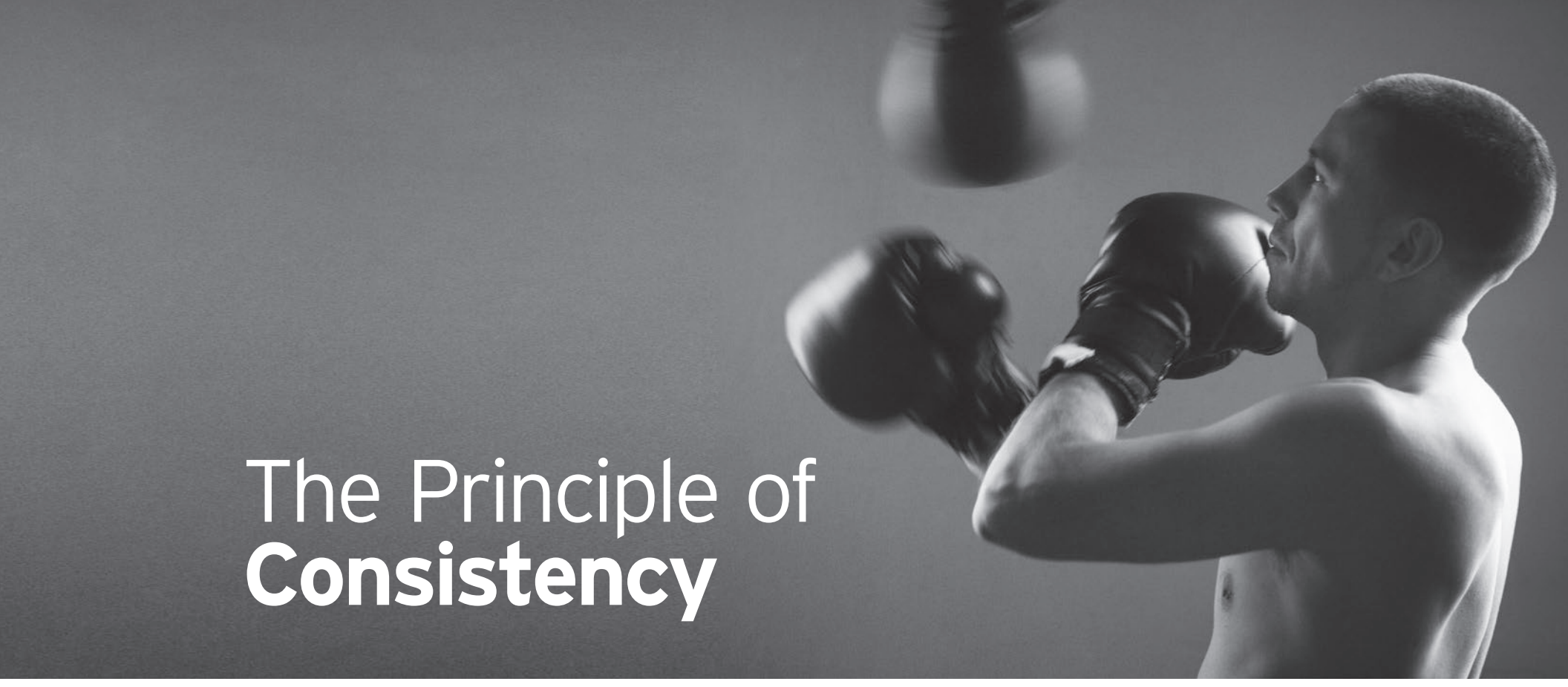
Speaker Notes



In our view, one of the most powerful principles is consistency; yet ironically, in today's society, it is the most "consistently" violated.

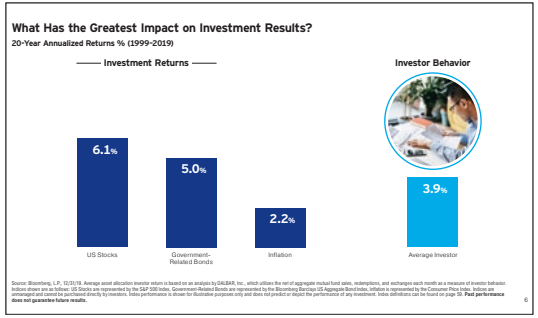
- Yo-yo dieting?
- A hit-or-miss exercise regimen?
- Inconsistent prospecting?
- A reactive investment strategy?

All of these examples have one thing in common: they each violate the principle of consistency. We work closely with our clients with the goal of establishing an overarching and highly personalized wealth management and investment strategy. We then exercise the principles of discipline and consistency in their long-term application, believing that this gives us the best opportunity to achieve long-term success for our clientele.



The Principle of **Consistency**

Speaker Notes

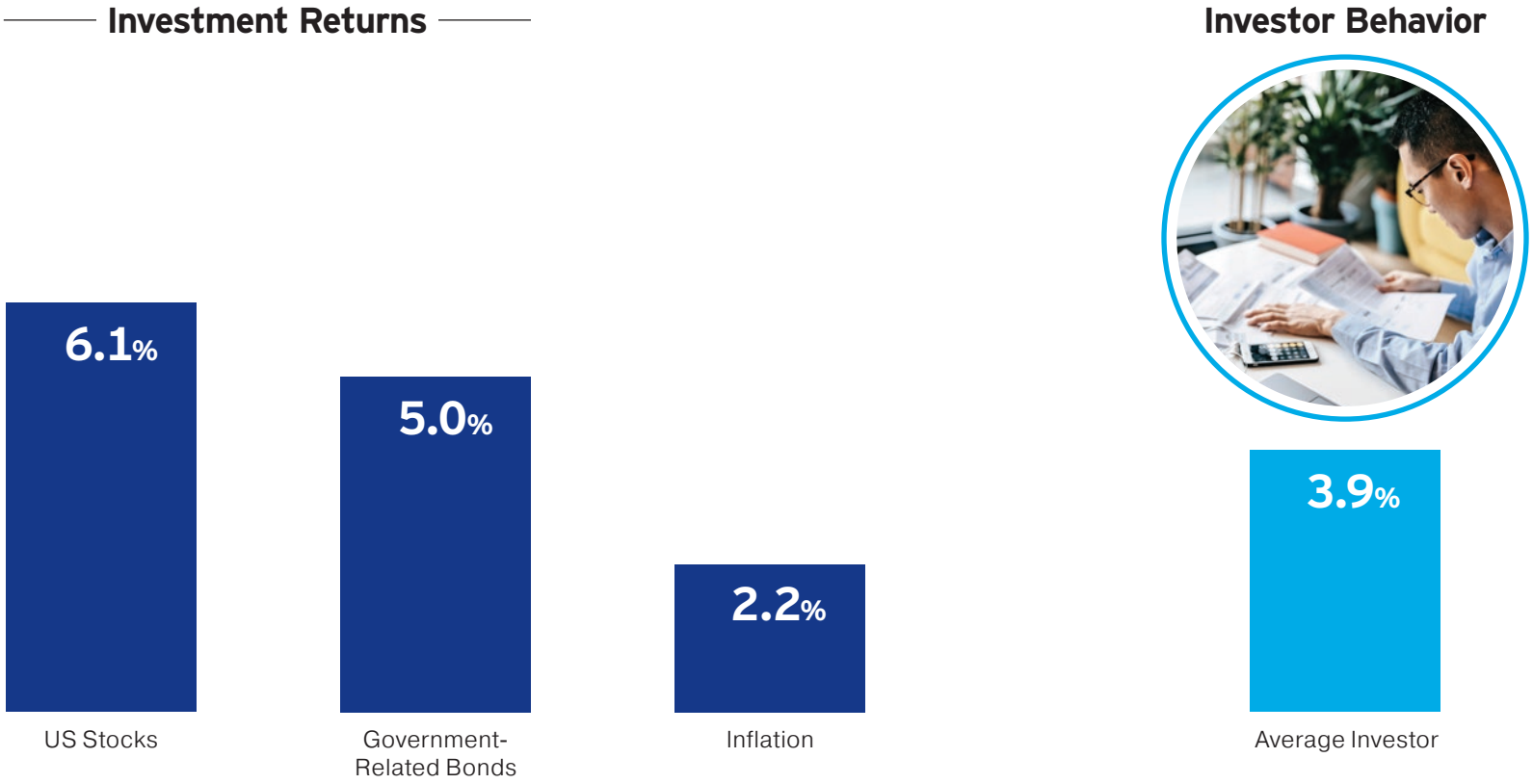


We believe the #1 threat to your investment portfolio is unbridled emotion. More money may be lost due to fear and greed (how we respond) than all of the financial, economic, and geopolitical events combined. It’s not the events themselves but our response to the events that can cause the greatest harm.

- **How harmful? The average investor doesn’t come close to beating the S&P 500 Index and government-related bonds.**

What Has the Greatest Impact on Investment Results?

20-Year Annualized Returns % (1999-2019)



Source: Bloomberg, L.P., 12/31/19. Average asset allocation investor return is based on an analysis by DALBAR, Inc., which utilizes the net of aggregate mutual fund sales, redemptions, and exchanges each month as a measure of investor behavior. Indices shown are as follows: US Stocks are represented by the S&P 500 Index, Government-Related Bonds are represented by the Bloomberg Barclays US Aggregate Bond Index, Inflation is represented by the Consumer Price Index. Indices are unmanaged and cannot be purchased directly by investors. Index performance is shown for illustrative purposes only and does not predict or depict the performance of any investment. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

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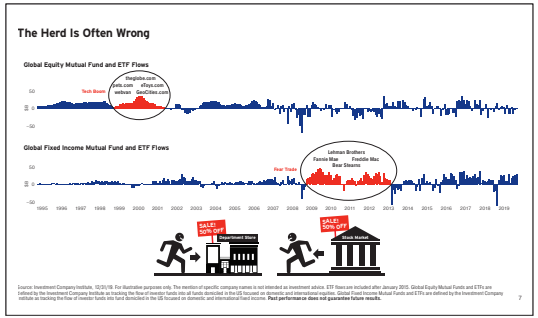


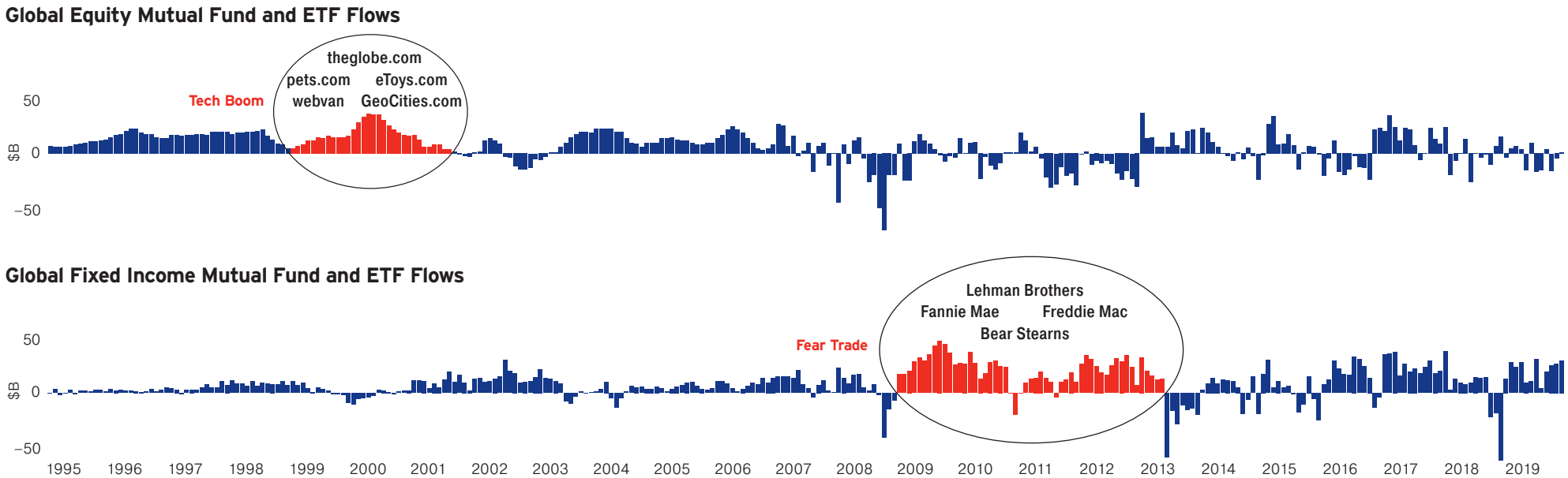
Be wary of the herd mentality. From the tech boom to the so-called fear trade to the COVID-19 outbreak, investors have often positioned themselves poorly at the most inopportune times.

Here's an analogy that we believe illustrates the single greatest challenge people face when dealing with the stock market:

How do people respond when there's a significant markdown in prices at their favorite department store? They run into the store searching for bargains.

How do they respond when there is a significant markdown in prices in the stock market? They often run out of the "store" and don't return until prices get back to "full retail."

The Herd Is Often Wrong



Source: Investment Company Institute, 12/31/19. For illustrative purposes only. The mention of specific company names is not intended as investment advice. ETF flows are included after January 2015. Global Equity Mutual Funds and ETFs are defined by the Investment Company Institute as tracking the flow of investor funds into all funds domiciled in the US focused on domestic and international equities. Global Fixed Income Mutual Funds and ETFs are defined by the Investment Company Institute as tracking the flow of investor funds into fund domiciled in the US focused on domestic and international fixed income. **Past performance does not guarantee future results.**

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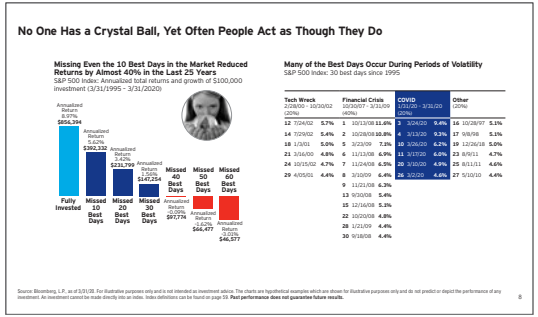


The most dramatic example of the folly of market timing is the chart on the left. Missing the 30 best days over that 25-year span dropped the investment return below the rate of inflation of 2.2%.

The best days in the stock market tended to cluster and are easily missed. Six of the top 30 price return days for US stocks since 1995 have happened during the COVID outbreak.

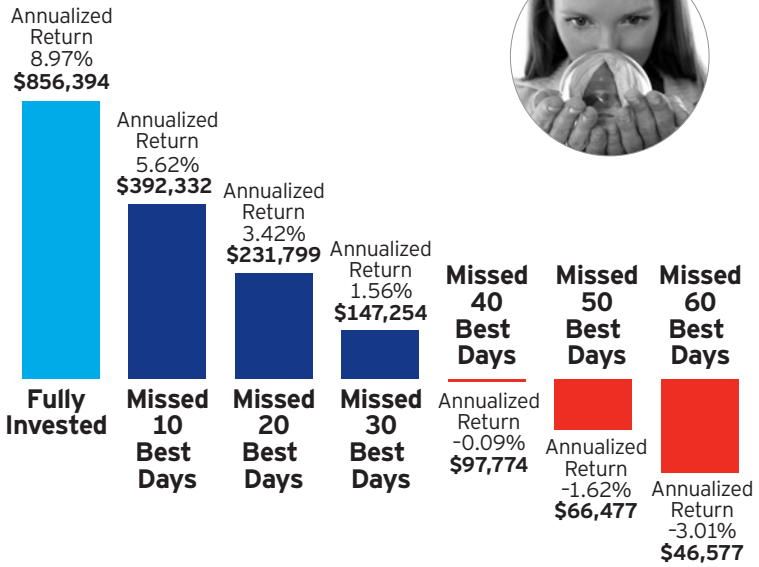
80% of the best days in the market over the past 25 years happened during the tech wreck, the financial crisis, and during the COVID outbreak.

Source: Bloomberg, L.P., 12/31/19.

No One Has a Crystal Ball, Yet Often People Act as Though They Do

Missing Even the 10 Best Days in the Market Reduced Returns by Almost 40% in the Last 25 Years

S&P 500 Index: Annualized total returns and growth of $100,000 investment (3/31/1995 – 3/31/2020)



Many of the Best Days Occur During Periods of Volatility

S&P 500 Index: 30 best days since 1995

Tech Wreck 2/28/00 - 10/30/02 (20%)			Financial Crisis 10/30/07 - 3/31/09 (40%)			COVID 1/31/20 - 3/31/20 (20%)			Other (20%)		
12	7/24/02	**5.7%**	**1**	10/13/08	**11.6%**	**3**	3/24/20	**9.4%**	**16**	10/28/97	**5.1%**
14	7/29/02	**5.4%**	**2**	10/28/08	**10.8%**	**4**	3/13/20	**9.3%**	**17**	9/8/98	**5.1%**
18	1/3/01	**5.0%**	**5**	3/23/09	**7.1%**	**10**	3/26/20	**6.2%**	**19**	12/26/18	**5.0%**
21	3/16/00	**4.8%**	**6**	11/13/08	**6.9%**	**11**	3/17/20	**6.0%**	**23**	8/9/11	**4.7%**
24	10/15/02	**4.7%**	**7**	11/24/08	**6.5%**	**20**	3/10/20	**4.9%**	**25**	8/11/11	**4.6%**
29	4/05/01	**4.4%**	**8**	3/10/09	**6.4%**	**26**	3/2/20	**4.6%**	**27**	5/10/10	**4.4%**
			9	11/21/08	**6.3%**						
			13	9/30/08	**5.4%**						
			15	12/16/08	**5.1%**						
			22	10/20/08	**4.8%**						
			28	1/21/09	**4.4%**						
			30	9/18/08	**4.4%**						

Source: Bloomberg, L.P., as of 3/31/20. For illustrative purposes only and is not intended as investment advice. The charts are hypothetical examples which are shown for illustrative purposes only and do not predict or depict the performance of any investment. An investment cannot be made directly into an index. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

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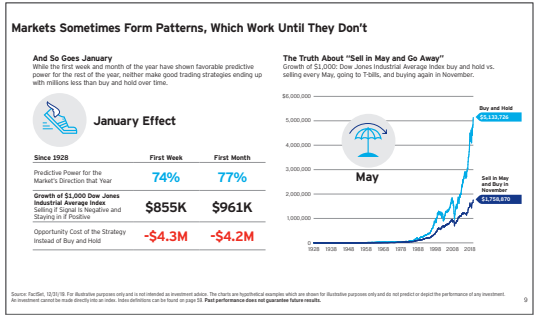


Markets form patterns because there are humans in the driver's seat. Even trading models are built by people. Investors try to squeeze insights out of data and shape it into a story, often without causation. This causes patterns to either persist or break, often without reason. Investors tend to enjoy a good slogan as well; the "January Effect" and "Sell in May and Go Away" are two of them. While both have proven successful at forecasting market patterns, the hook is that they aren't actionable. Putting actual money to work behind these patterns is a fool's errand that can cost millions.

Markets Sometimes Form Patterns, Which Work Until They Don't

And So Goes January

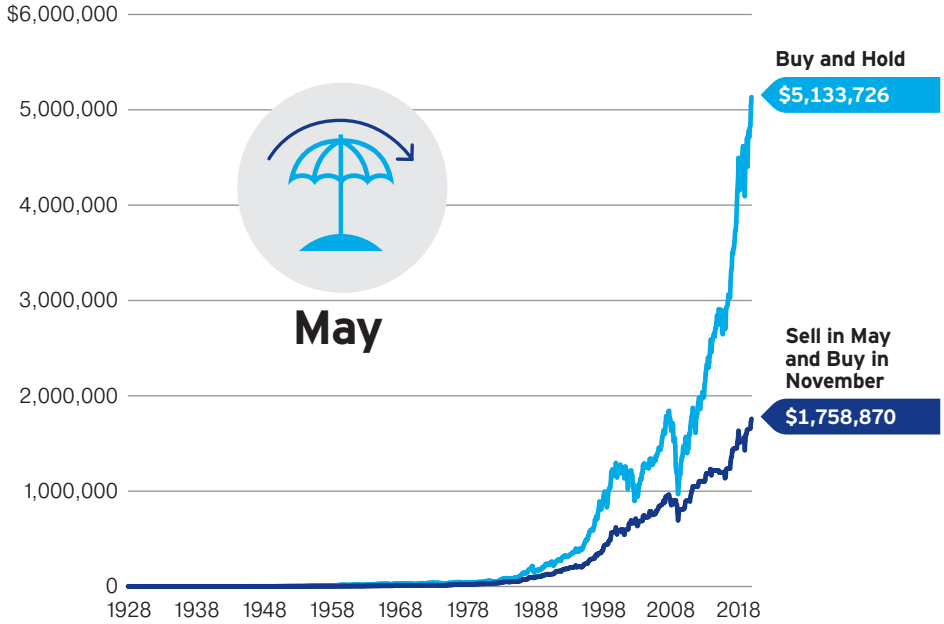
While the first week and month of the year have shown favorable predictive power for the rest of the year, neither make good trading strategies ending up with millions less than buy and hold over time.

January Effect

Since 1928	First Week	First Month
Predictive Power for the Market's Direction that Year	74%	77%
Growth of $1,000 Dow Jones Industrial Average Index Selling if Signal Is Negative and Staying in if Positive	$855K	$961K
Opportunity Cost of the Strategy Instead of Buy and Hold	-$4.3M	-$4.2M

The Truth About "Sell in May and Go Away"

Growth of $1,000: Dow Jones Industrial Average Index buy and hold vs. selling every May, going to T-bills, and buying again in November.



Source: FactSet, 12/31/19. For illustrative purposes only and is not intended as investment advice. The charts are hypothetical examples which are shown for illustrative purposes only and do not predict or depict the performance of any investment. An investment cannot be made directly into an index. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

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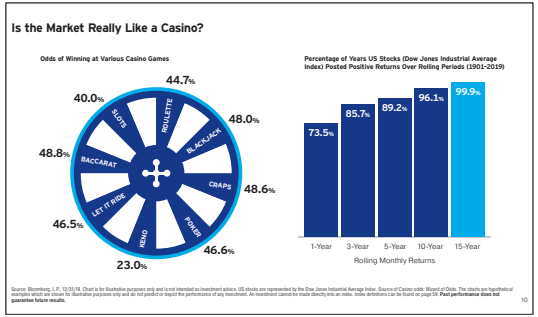
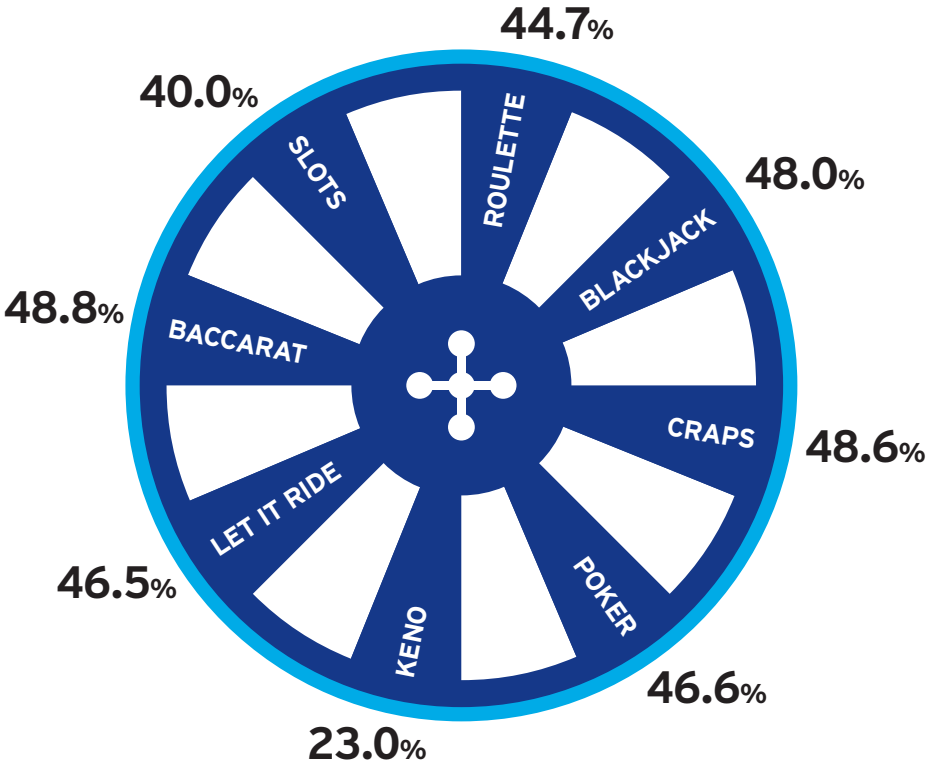


Is the stock market like a Vegas casino? Actually, no.

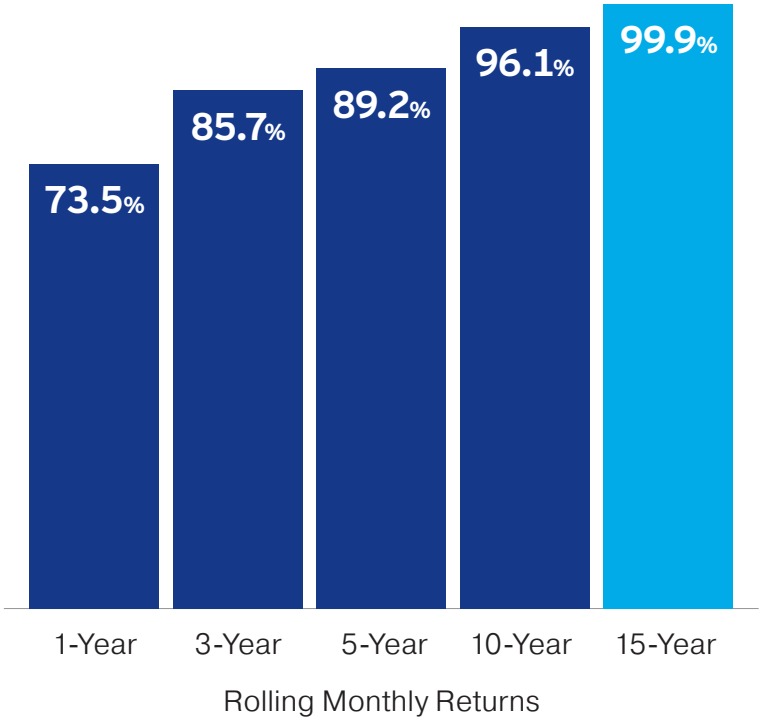
- Notice that the odds of winning any of the most popular games in Vegas never reach 50%; for comparison's sake, over rolling monthly one-year holding periods, the stock market has been up 73.5% of the time.
- The longer the investor remained at the "stock market table" the more likely they were to produce positive returns. Over rolling monthly 15-year periods (e.g. January 1901 to January 1916, all the way up to December 2004 to December 2019), stocks were up 99.9% of the time with the only nine down periods coming during the Great Depression.
- Ironically, the longer you sit at a table in Vegas the worse your odds get, because as we know, "the house always wins."

Is the Market Really Like a Casino?

Odds of Winning at Various Casino Games



Percentage of Years US Stocks (Dow Jones Industrial Average Index) Posted Positive Returns Over Rolling Periods (1901–2019)



Source: Bloomberg, L.P., 12/31/19. Chart is for illustrative purposes only and is not intended as investment advice. US stocks are represented by the Dow Jones Industrial Average Index. Source of Casino odds: Wizard of Odds. The charts are hypothetical examples which are shown for illustrative purposes only and do not predict or depict the performance of any investment. An investment cannot be made directly into an index. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

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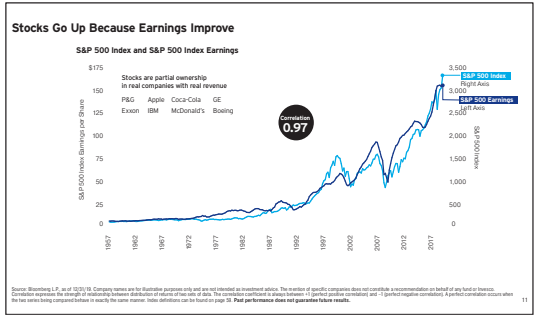


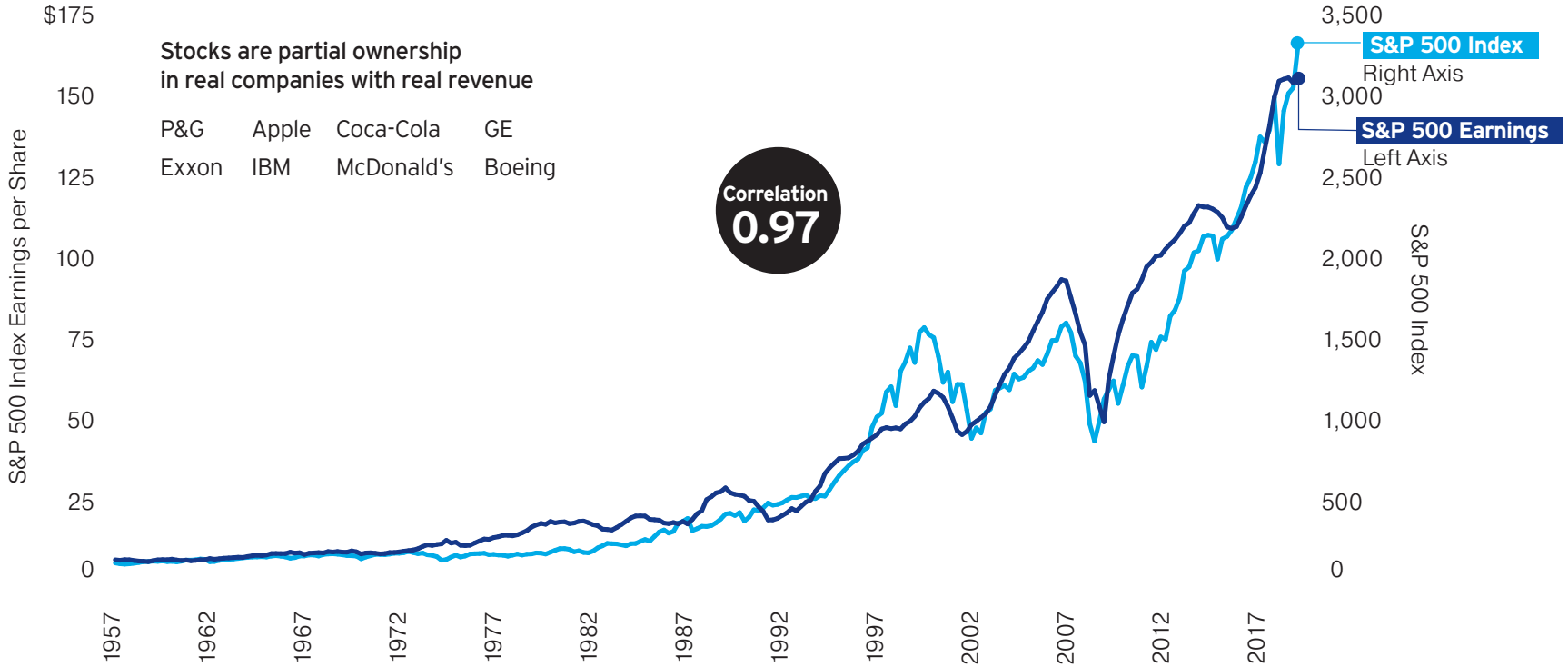
We often hear that equity returns are being manufactured by policymakers.

Stocks reflect partial ownership in **real companies, with real products and services, and real earnings.** The performance of those stocks simply reflects the performance of those companies over the long term.

- Over the short term, those stocks can reflect all kinds of external circumstances, but from 1957 to 2019, there was a 0.97 correlation between the S&P 500 Index and S&P 500 Index earnings.

Stocks Go Up Because Earnings Improve

S&P 500 Index and S&P 500 Index Earnings



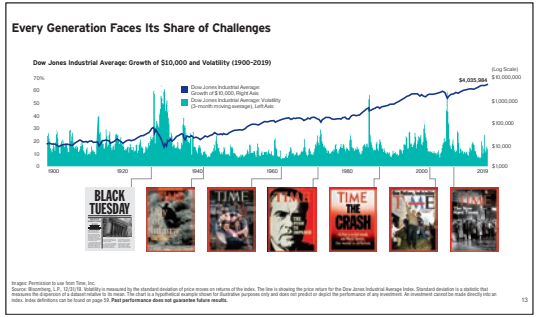
Source: Bloomberg L.P., as of 12/31/19. Company names are for illustrative purposes only and are not intended as investment advice. The mention of specific companies does not constitute a recommendation on behalf of any fund or Invesco. Correlation expresses the strength of relationship between distribution of returns of two sets of data. The correlation coefficient is always between +1 (perfect positive correlation) and –1 (perfect negative correlation). A perfect correlation occurs when the two series being compared behave in exactly the same manner. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

Speaker Notes

In our view, a historical perspective should inform and guide investment decisions. We believe maintaining that disciplined perspective often requires that we exercise the principle of courage during times of uncertainty and fear.

The Principle of **Courage**

Speaker Notes



Each generation faces challenges that often appear both unique and overwhelming, but when viewed through the sobering lens of history, we find they are neither.

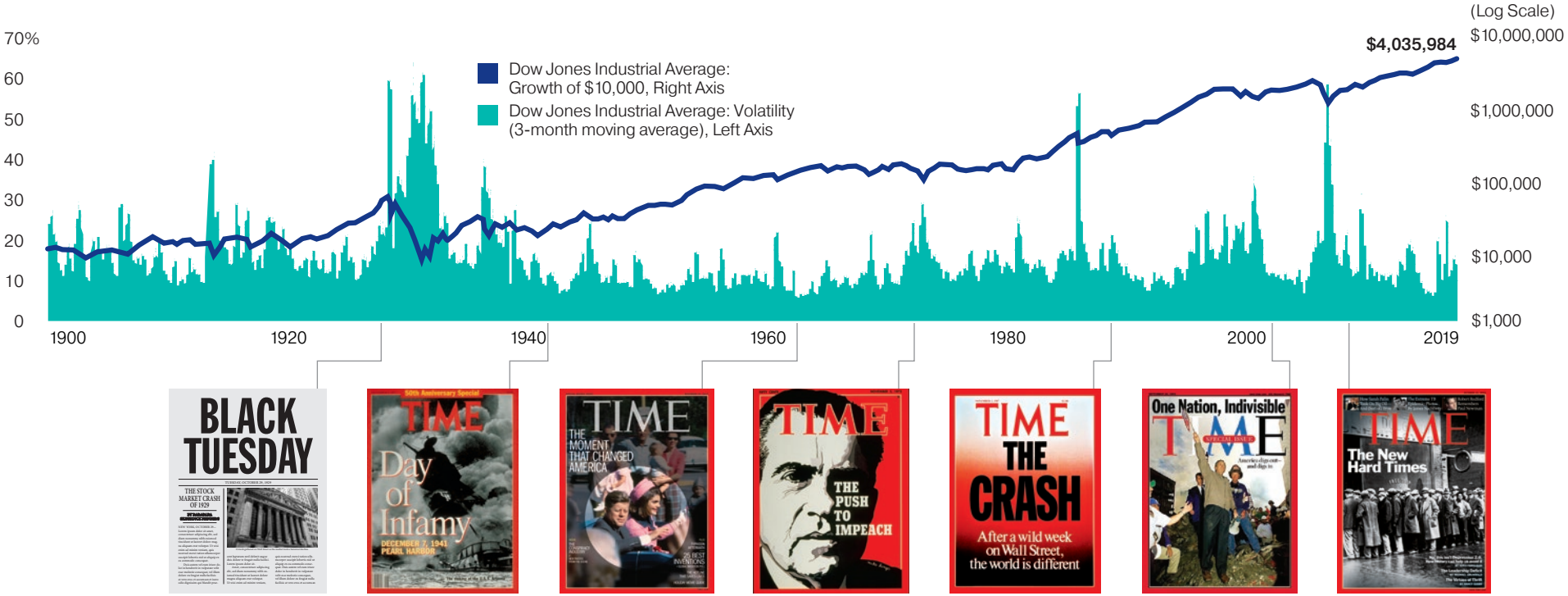
Today, we face any number of challenges which, while significant, are arguably no more daunting than:

- A global depression
- Two world wars
- The Cold War
- The assassination of one president and the resignation of another
- 9/11

And yet the market has continued its inexorable climb. Why? In our view, and in spite of our shortcomings, humans are remarkably resilient, as well as masterful inventors and innovators, often striving to make a better place for themselves, their families, and their societies.

Every Generation Faces Its Share of Challenges

Dow Jones Industrial Average: Growth of $10,000 and Volatility (1900–2019)



Images: Permission to use from Time, Inc.
Source: Bloomberg, L.P., 12/31/19. Volatility is measured by the standard deviation of price moves on returns of the index. The line is showing the price return for the Dow Jones Industrial Average Index. Standard deviation is a statistic that measures the dispersion of a dataset relative to its mean. The chart is a hypothetical example shown for illustrative purposes only and does not predict or depict the performance of any investment. An investment cannot be made directly into an index. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

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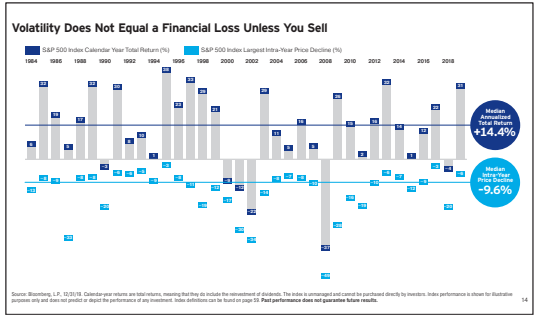
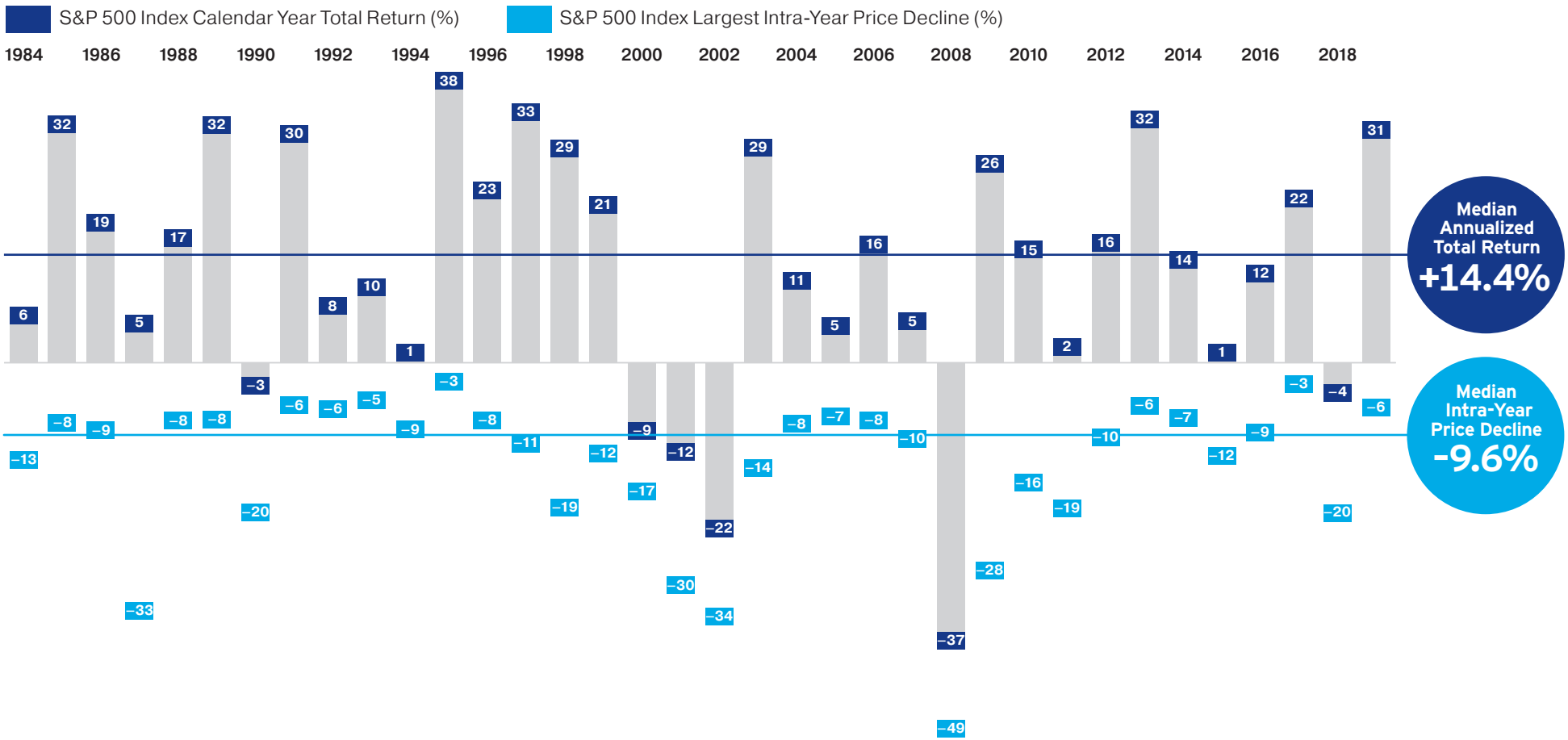


Market corrections happen fairly often and even in the good years, including fairly significant intra-year declines in recent strong-return years like 2010 and 2012.

- From 1984 to 2019, the S&P 500 Index experienced at least a 5% intra-year decline in every year but two. The median intra-year decline over the past 36 years has actually been –9.6%
- But notice, equities have still posted positive returns in 30 of those last 36 years with median annualized total returns over that period of 14.4%.

The bottom line is, market corrections do not equal a financial loss, unless you sell.

Volatility Does Not Equal a Financial Loss Unless You Sell



Source: Bloomberg, L.P., 12/31/19. Calendar-year returns are total returns, meaning that they do include the reinvestment of dividends. The index is unmanaged and cannot be purchased directly by investors. Index performance is shown for illustrative purposes only and does not predict or depict the performance of any investment. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

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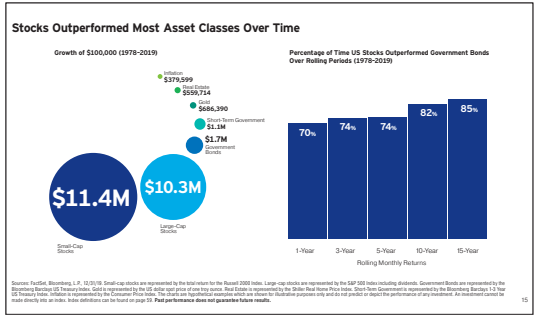
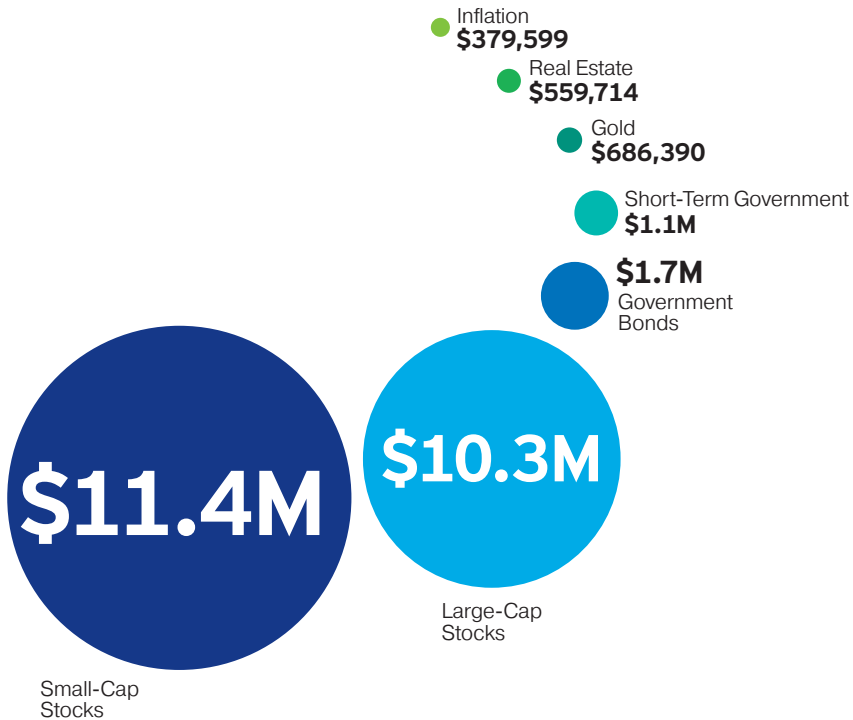


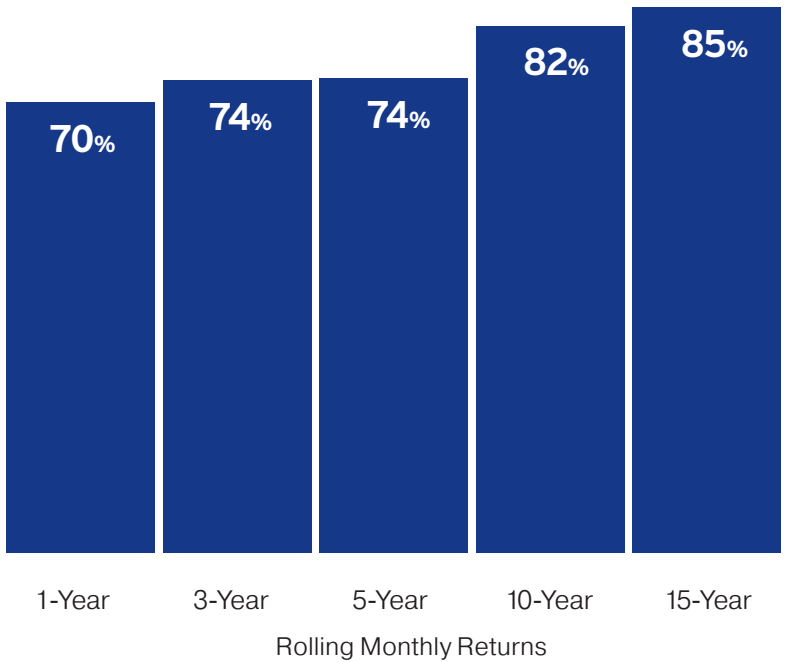
- Stocks have outperformed most asset classes, outperforming bonds over rolling monthly 15-year periods from 1978–2019 (e.g., January 1978 to December 1992, February 1978 to January 1993, all the way up to January 2005 to December 2019) 85% of the time.
- For investors with a growth objective, there are few (if any) better alternatives to stocks.

Stocks Outperformed Most Asset Classes Over Time

Growth of $100,000 (1978-2019)



Percentage of Time US Stocks Outperformed Government Bonds Over Rolling Periods (1978-2019)



Sources: FactSet, Bloomberg, L.P., 12/31/19. Small-cap stocks are represented by the total return for the Russell 2000 Index. Large-cap stocks are represented by the S&P 500 Index including dividends. Government Bonds are represented by the Bloomberg Barclays US Treasury Index. Gold is represented by the US dollar spot price of one troy ounce. Real Estate is represented by the Shiller Real Home Price Index. Short-Term Government is represented by the Bloomberg Barclays 1-3 Year US Treasury Index. Inflation is represented by the Consumer Price Index. The charts are hypothetical examples which are shown for illustrative purposes only and do not predict or depict the performance of any investment. An investment cannot be made directly into an index. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

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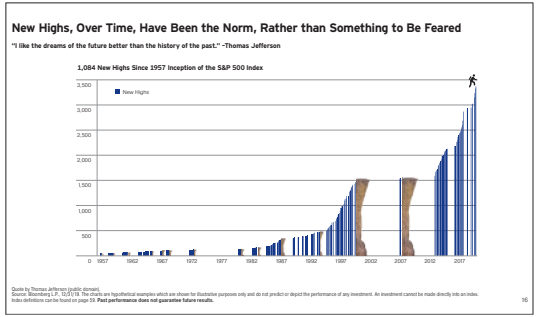
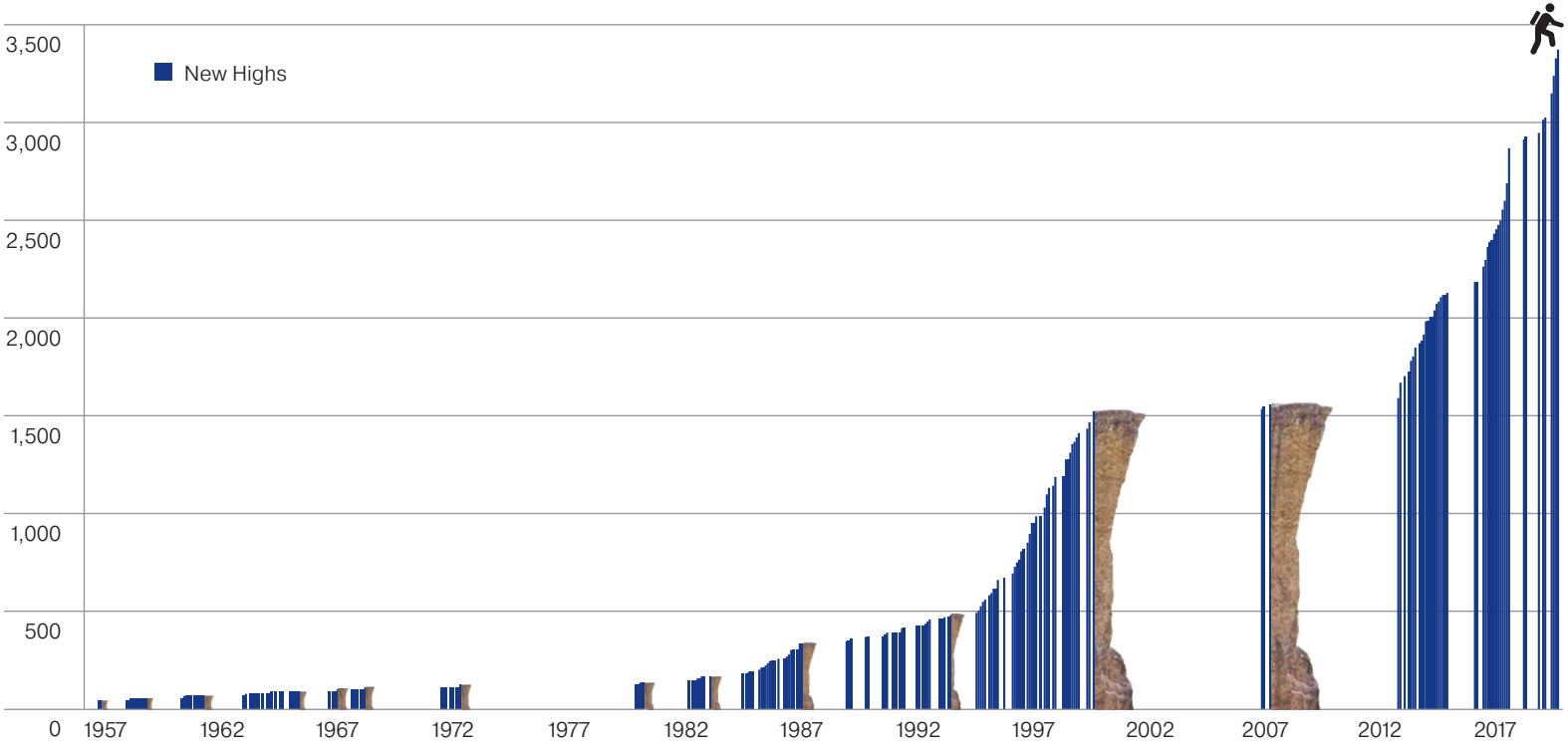


At the top of every mountain is a summit. A recent high in the market is often referred to as a “peak.” What isn’t defined in markets, though, is the mountain range—and whether there are any taller mountains after the current one. History shows us that there have been many previous peaks, and even after gaps of many years, taller ones have appeared.

New Highs, Over Time, Have Been the Norm, Rather than Something to Be Feared

"I like the dreams of the future better than the history of the past." –Thomas Jefferson

1,084 New Highs Since 1957 Inception of the S&P 500 Index



Quote by Thomas Jefferson (public domain).
Source: Bloomberg L.P., 12/31/19. The charts are hypothetical examples which are shown for illustrative purposes only and do not predict or depict the performance of any investment. An investment cannot be made directly into an index. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

Speaker Notes

An old adage says to buy when there is blood in the streets. This is often easier said than done and, of course, does not have a perfect track record. Still, we believe a key tenet in the principle of courage is to be greedy when others are fearful.

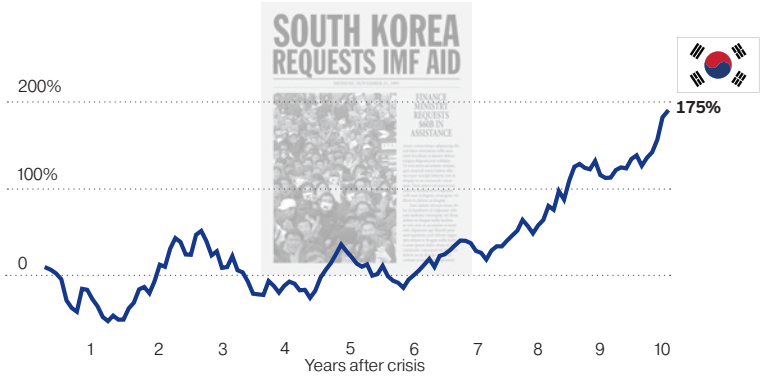
As the charts show, investing in markets when there is blood in the streets (figuratively with high-profile financial crises but more literally in other cases) has arguably proved to be sage investment practice.

"When there is blood on the street, I am buying"–Baron Rothschild

Cumulative Monthly Returns

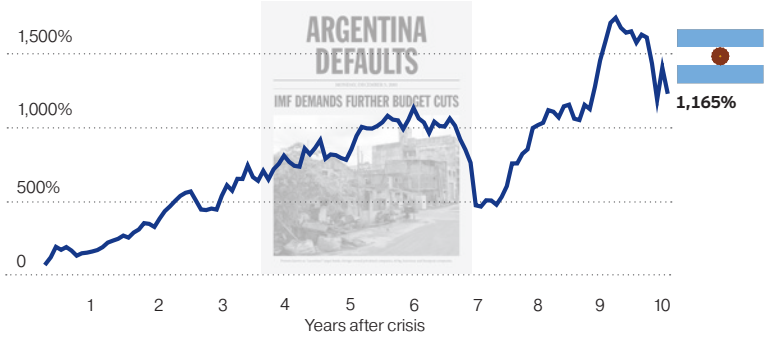
MSCI Mexico Index
December 1994

MSCI Korea Index
November 1997



MSCI Russia Index
August 1998

MSCI Argentina Index
December 2001



Quote: Available in Public Domain.
Source: Bloomberg L.P., 12/31/19. Most recent data available. The charts are hypothetical examples which are shown for illustrative purposes only and do not predict or depict the performance of any investment. An investment cannot be made directly into an index. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

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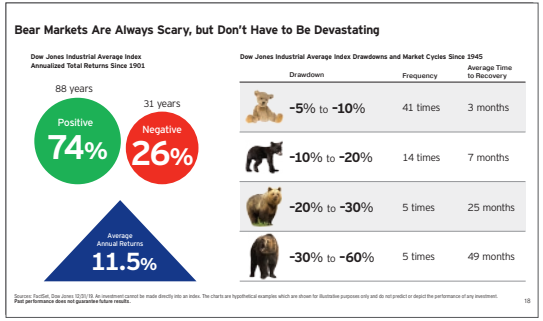
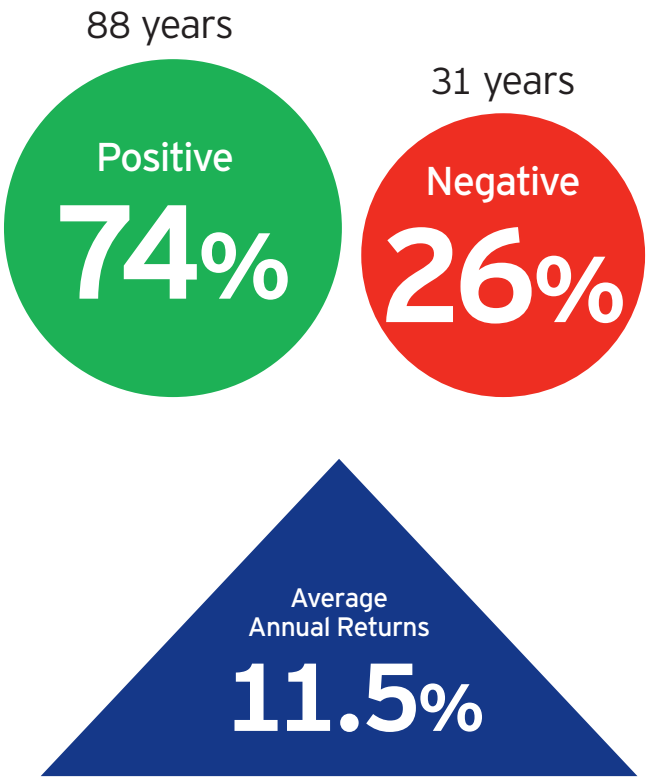


The vast majority of stock market bears, like most actual bear encounters, might be a shock to the system but are not actually life-threatening. Whether minor corrections or major selloffs, negative years only represented 26% of the long-term experience of the stock market since 1901 (and this includes the Great Depression, of course). And even with those bear markets included, the average annual return over that period was 11.5%.

Even if you look at our more recent history since 1945, there have been over 892 months, of which only 97 have given us a 20% downturn or greater (around 11% of the time), all of which inevitably recovered and climbed to new highs.

Bear Markets Are Always Scary, but Don't Have to Be Devastating

Dow Jones Industrial Average Index
Annualized Total Returns Since 1901

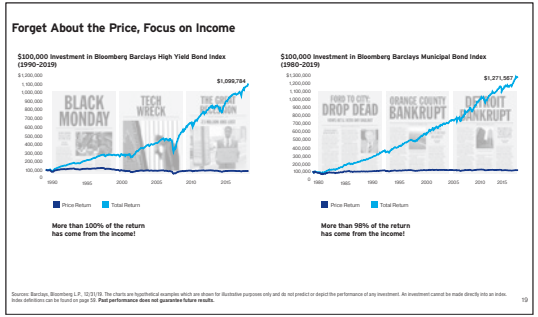


Dow Jones Industrial Average Index Drawdowns and Market Cycles Since 1945

	Drawdown	Frequency	Average Time to Recovery
	**-5%** to **-10%**	41 times	3 months
	**-10%** to **-20%**	14 times	7 months
	**-20%** to **-30%**	5 times	25 months
	**-30%** to **-60%**	5 times	49 months

Sources: FactSet, Dow Jones 12/31/19. An investment cannot be made directly into an index. The charts are hypothetical examples which are shown for illustrative purposes only and do not predict or depict the performance of any investment.
Past performance does not guarantee future results.

Speaker Notes

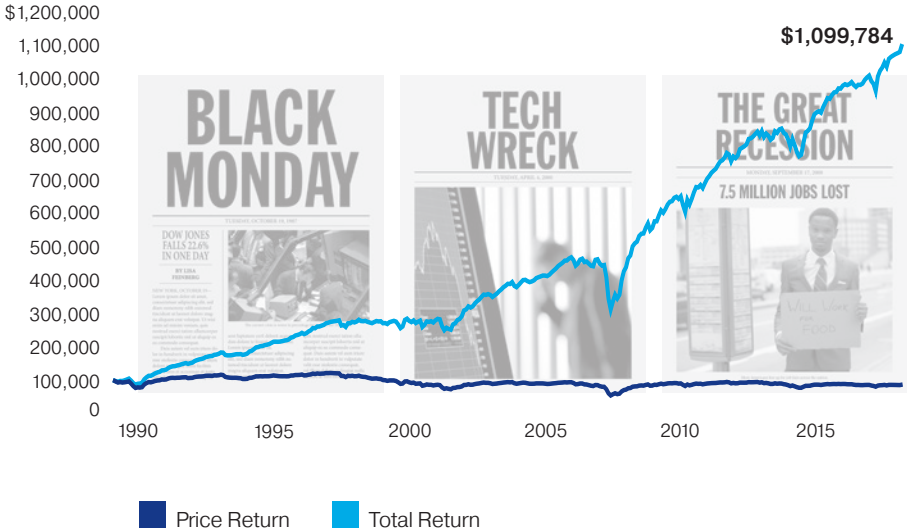


Notice the commonality between these two charts:

- Bond prices remained relatively steady over time, in spite of the inevitable crises that periodically hit the financial system. (As the old saying goes, “the difference between bonds and men…is that bonds ultimately mature.”)
- The return from both categories of bonds comes from the income, not from price appreciation.

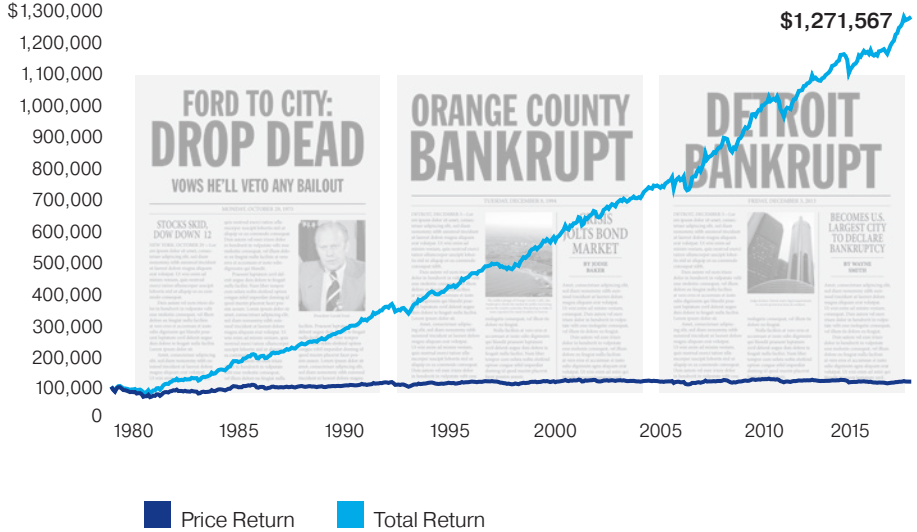
Forget About the Price, Focus on Income

$100,000 Investment in Bloomberg Barclays High Yield Bond Index (1990-2019)



More than 100% of the return has come from the income!

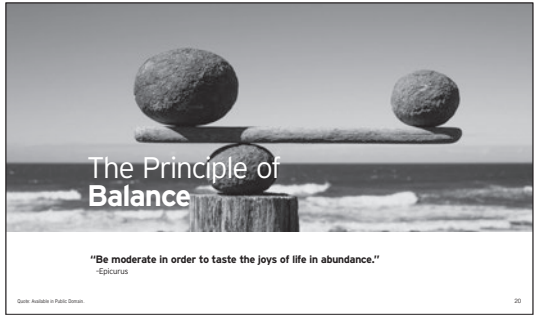
$100,000 Investment in Bloomberg Barclays Municipal Bond Index (1980-2019)



More than 98% of the return has come from the income!

Sources: Barclays, Bloomberg L.P., 12/31/19. The charts are hypothetical examples which are shown for illustrative purposes only and do not predict or depict the performance of any investment. An investment cannot be made directly into an index. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

Speaker Notes



Balance is a universal principle that works wherever it is applied. For example, a balanced nutritional program is better than an unbalanced one; a balanced exercise program is better than an unbalanced one; and a balanced life is better than an unbalanced life.

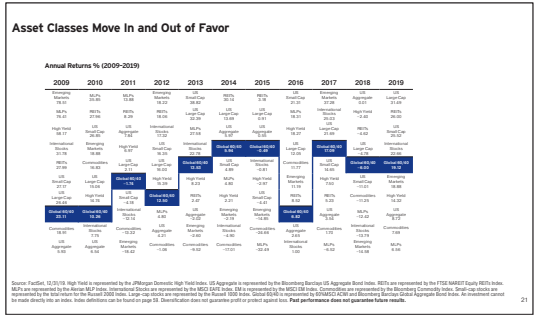
This same principle of balance has historically worked in portfolio management. Adding diversity of style, geography, and asset class has historically mitigated volatility, and made it easier for our clients to remain "buckled in."

The Principle of **Balance**

"Be moderate in order to taste the joys of life in abundance."
-Epicurus

Quote: Available in Public Domain.

Speaker Notes



Diversification across asset classes may keep investors from chasing last year's performance.

As the chart illustrates, what works in one doesn't necessarily work in the subsequent years. Oftentimes, last year's outperformer falls to the bottom of the pack and vice-versa.

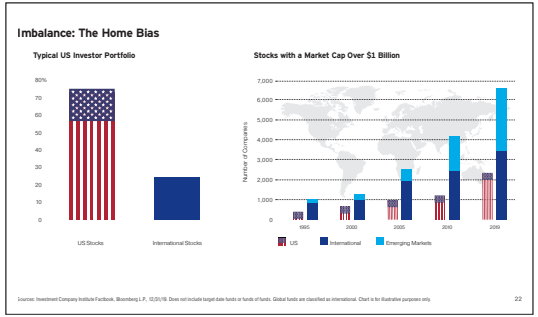
Asset Classes Move In and Out of Favor

Annual Returns % (2009–2019)

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Emerging Markets 78.51	MLPs 35.85	MLPs 13.88	Emerging Markets 18.22	US Small Cap 38.82	REITs 30.14	REITs 3.18	US Small Cap 21.31	Emerging Markets 37.28	US Aggregate 0.01	US Large Cap 31.49
MLPs 76.41	REITs 27.96	REITs 8.29	REITs 18.06	US Large Cap 32.39	US Large Cap 13.69	US Large Cap 0.91	MLPs 18.31	International Stocks 25.03	High Yield −2.40	REITs 26.00
High Yield 58.17	US Small Cap 26.85	US Aggregate 7.84	International Stocks 17.32	MLPs 27.58	US Aggregate 5.97	US Aggregate 0.55	High Yield 18.27	US Large Cap 21.69	REITs −4.62	US Small Cap 25.52
International Stocks 31.78	Emerging Markets 18.88	High Yield 6.97	US Small Cap 16.35	International Stocks 22.78	**Global 60/40 5.94**	**Global 60/40 −0.49**	US Large Cap 12.05	**Global 60/40 17.09**	US Large Cap −4.78	International Stocks 22.66
REITs 27.99	Commodities 16.83	US Large Cap 2.11	US Large Cap 16.00	**Global 60/40 13.53**	US Small Cap 4.89	International Stocks −0.81	Commodities 11.77	US Small Cap 14.65	**Global 60/40 −6.00**	**Global 60/40 19.12**
US Small Cap 27.17	US Large Cap 15.06	**Global 60/40 −1.74**	High Yield 15.39	High Yield 8.23	MLPs 4.80	High Yield −2.97	Emerging Markets 11.19	High Yield 7.50	US Small Cap −11.01	Emerging Markets 18.88
US Large Cap 26.46	High Yield 14.74	US Small Cap −4.18	**Global 60/40 12.50**	REITs 2.47	High Yield 2.21	US Small Cap −4.41	REITs 8.52	REITs 5.23	Commodities −11.25	High Yield 14.32
Global 60/40 23.11	**Global 60/40 10.26**	International Stocks −12.14	MLPs 4.80	US Aggregate −2.02	Emerging Markets −2.19	Emerging Markets −14.85	**Global 60/40 6.82**	US Aggregate 3.54	MLPs −12.42	US Aggregate 8.72
Commodities 18.91	International Stocks 7.75	Commodities −13.32	US Aggregate 4.21	Emerging Markets −2.60	International Stocks −4.90	Commodities −24.66	US Aggregate 2.65	Commodities 1.70	International Stocks −13.79	Commodities 7.69
US Aggregate 5.93	US Aggregate 6.54	Emerging Markets −18.42	Commodities −1.06	Commodities −9.52	Commodities −17.01	MLPs −32.49	International Stocks 1.00	MLPs −6.52	Emerging Markets −14.58	MLPs 6.56

Source: FactSet, 12/31/19. High Yield is represented by the JPMorgan Domestic High Yield Index. US Aggregate is represented by the Bloomberg Barclays US Aggregate Bond Index. REITs are represented by the FTSE NAREIT Equity REITs Index. MLPs are represented by the Alerian MLP Index. International Stocks are represented by the MSCI EAFE Index. EM is represented by the MSCI EM Index. Commodities are represented by the Bloomberg Commodity Index. Small-cap stocks are represented by the total return for the Russell 2000 Index. Large-cap stocks are represented by the Russell 1000 Index. Global 60/40 is represented by 60%MSCI ACWI and Bloomberg Barclays Global Aggregate Bond Index. An investment cannot be made directly into an index. Index definitions can be found on page 59. Diversification does not guarantee profit or protect against loss. **Past performance does not guarantee future results.**

Speaker Notes



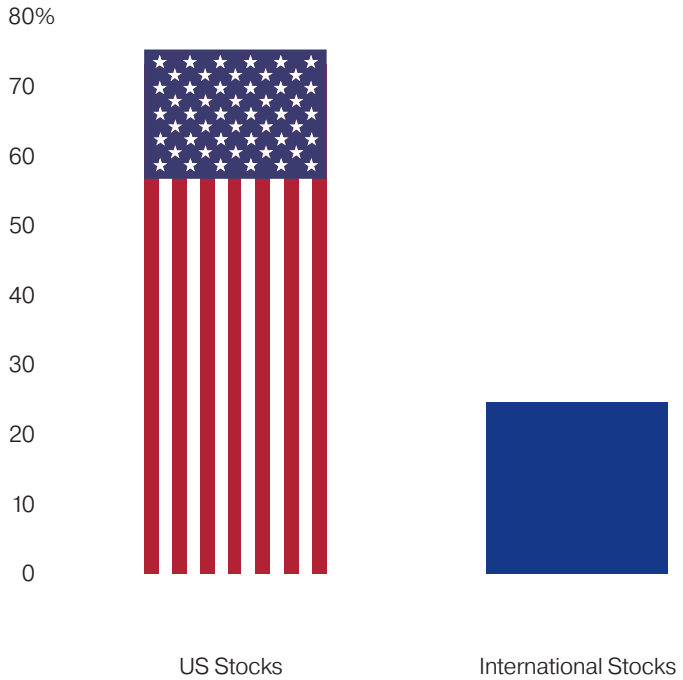
Although our lives have become increasingly globalized, our approach to investing, arguably, has not. Investors still have nearly 75% of their equity portfolios in US-domiciled companies, despite the fact that the US now represents less than half of the world's market capitalization.*

US-centric investors are missing out on a much larger opportunity set. Of the 8,897 actively traded companies with a market capitalization of over $1 billion, over 74% (39% in the developed world, 35% in the emerging world) are headquartered outside of the US.

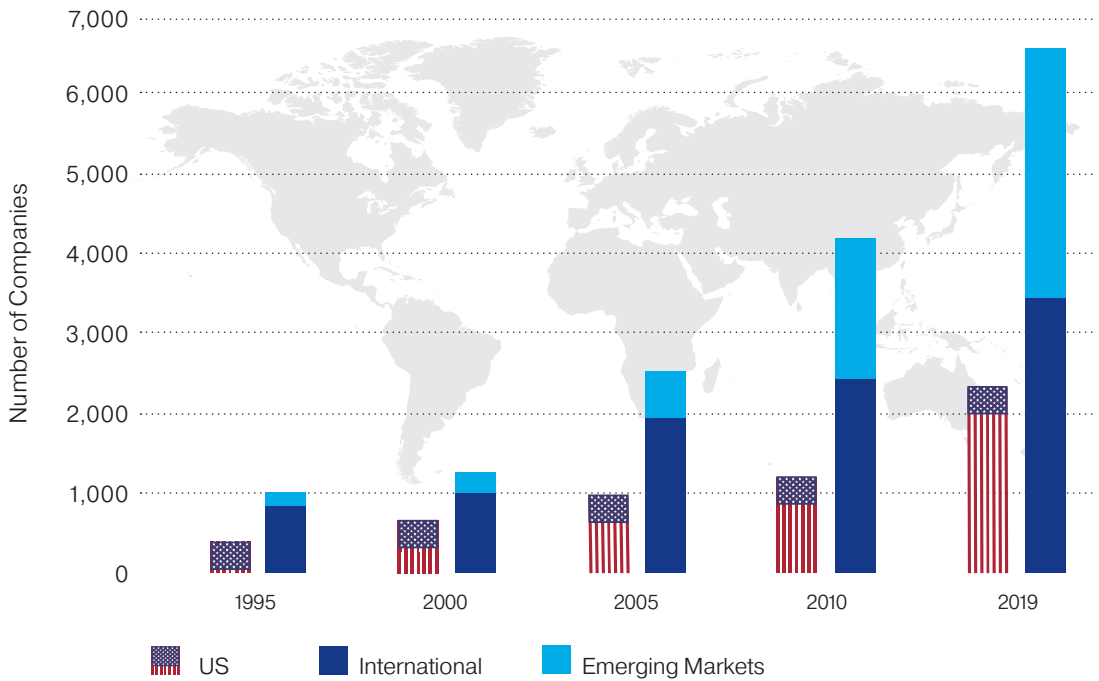
* Sources: Morningstar and MSCI, 12/31/19.

Imbalance: The Home Bias

Typical US Investor Portfolio

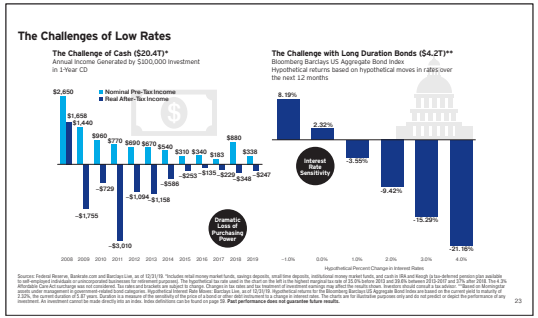


Stocks with a Market Cap Over $1 Billion



Sources: Investment Company Institute Factbook, Bloomberg L.P., 12/31/19. Does not include target date funds or funds of funds. Global funds are classified as international. Chart is for illustrative purposes only.

Speaker Notes



Another imbalance in investors' portfolios is the amount of money sitting in cash and cash equivalents ($20.4 trillion) and government-related bond funds ($4.2 trillion).

In our view, having money in cash today is akin to growing poor slowly given the negative real after-tax returns.

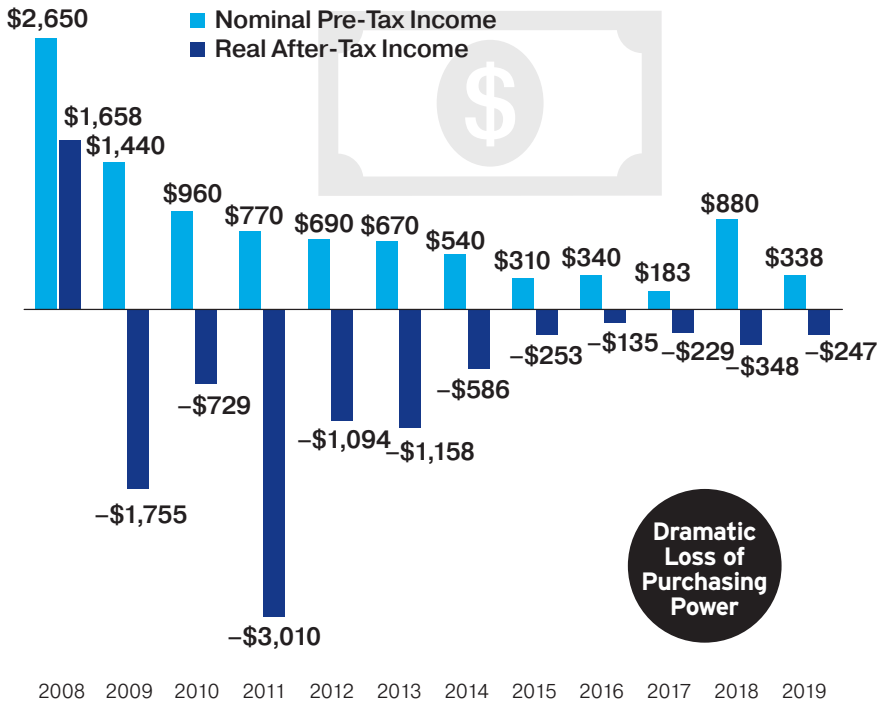
Fixed income mutual fund investors may be doing somewhat better from an income perspective but not significantly better. Government-related bonds are highly interest-rate sensitive.

- The chart on the right shows that if interest rates do nothing over the next 12 months, investors in Bloomberg Barclays US Aggregate Bond Index-like investments will simply earn the coupon, but if rates move higher by even 1%, returns will have turned negative.

The Challenges of Low Rates

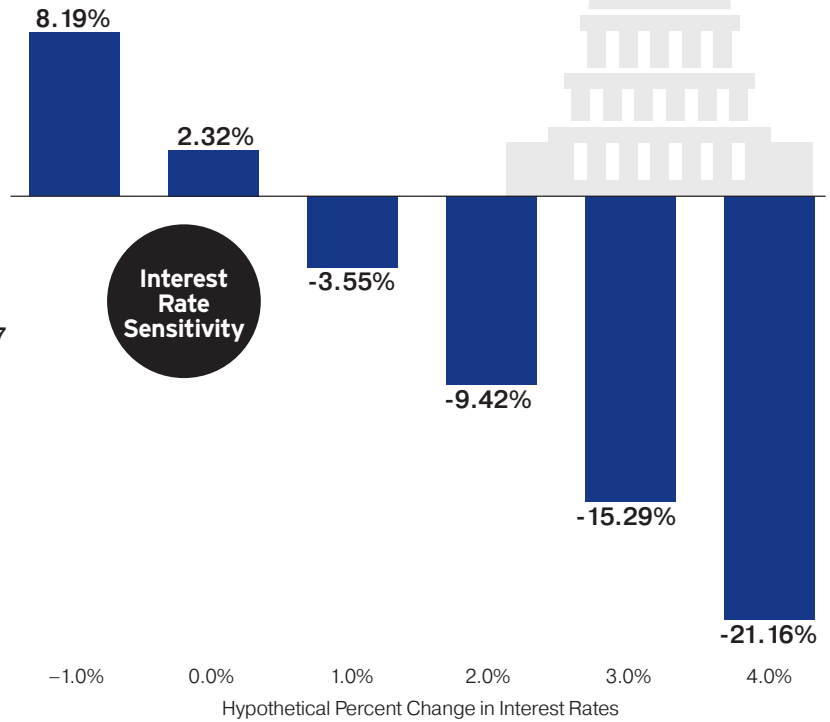
The Challenge of Cash ($20.4T)*

Annual Income Generated by $100,000 Investment in 1-Year CD



The Challenge with Long Duration Bonds ($4.2T)**

Bloomberg Barclays US Aggregate Bond Index
Hypothetical returns based on hypothetical moves in rates over the next 12 months



Sources: Federal Reserve, Bankrate.com and Barclays Live, as of 12/31/19. *Includes retail money market funds, savings deposits, small time deposits, institutional money market funds, and cash in IRA and Keogh (a tax-deferred pension plan available to self-employed individuals or unincorporated businesses for retirement purposes). The hypothetical tax rate used in the chart on the left is the highest marginal tax rate of 35.0% before 2013 and 39.6% between 2013-2017 and 37% after 2018. The 4.3% Affordable Care Act surcharge was not considered. Tax rates and brackets are subject to change. Changes in tax rates and tax treatment of investment earnings may affect the results shown. Investors should consult a tax advisor. **Based on Morningstar assets under management in government-related bond categories. Hypothetical Interest Rate Moves: Barclays Live, as of 12/31/19. Hypothetical returns for the Bloomberg Barclays US Aggregate Bond Index are based on the current yield to maturity of 2.32%, the current duration of 5.87 years. Duration is a measure of the sensitivity of the price of a bond or other debt instrument to a change in interest rates. The charts are for illustrative purposes only and do not predict or depict the performance of any investment. An investment cannot be made directly into an index. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

Speaker Notes

Historical Context:

These insights may provide a much-needed long-term perspective in a world of “breaking news,” dire predictions, and market volatility.

- In our view, what history shows us over and over again is the extraordinary resilience, creativity, invention, and innovation of mankind through the ages.
- We believe optimism is ultimately the only realism. Pessimism is counterintuitive because it rests on the concept of insoluble crises, which, the way we see it, simply doesn’t square with the facts. If humans have shown one aptitude, it is the capacity to adapt and to learn (compare our response to the financial crisis of 2008 to our response in 1929).
- Pessimism is often framed around an exponential problem addressed by a linear solution. Human ingenuity, technological innovation, and the inherent limits of long-term forecasting appear to rarely be factored into the debate.

Historical Context

Debunking Myths and Misperceptions

Human Condition

Government

Technology

Overpopulation, Demographics, and Energy

Speaker Notes

We believe the great underreported story of the last half-century is the dramatic improvement of the human condition around the globe. Even a cursory glance at the evening news would give you the opposite impression—that the world is “coming apart at the seams” as they say.

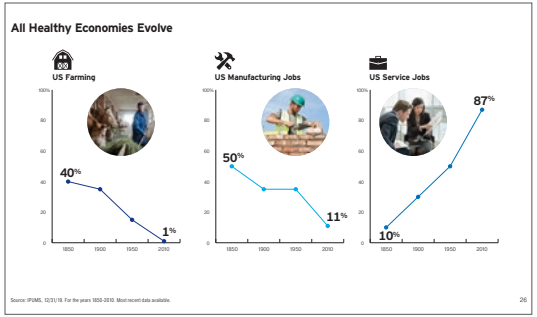
This is based on two factors:

1. Fear sells! Neuropsychology has demonstrated that human beings respond quickly and virtually unconsciously to fear; and the news media, along with advertisers and politicians, have arguably been exploiting this response throughout recorded history.
2. The explosion of news outlets with the advent of cable and the Internet has exacerbated this problem as they ratcheted up fear with the goal of capturing an increasingly fragmented market.

This section is designed to balance the scales and demonstrate the extraordinary achievements we’ve made as a society both here and abroad that you will likely never hear about on the nightly news.

The Improving **Human Condition**

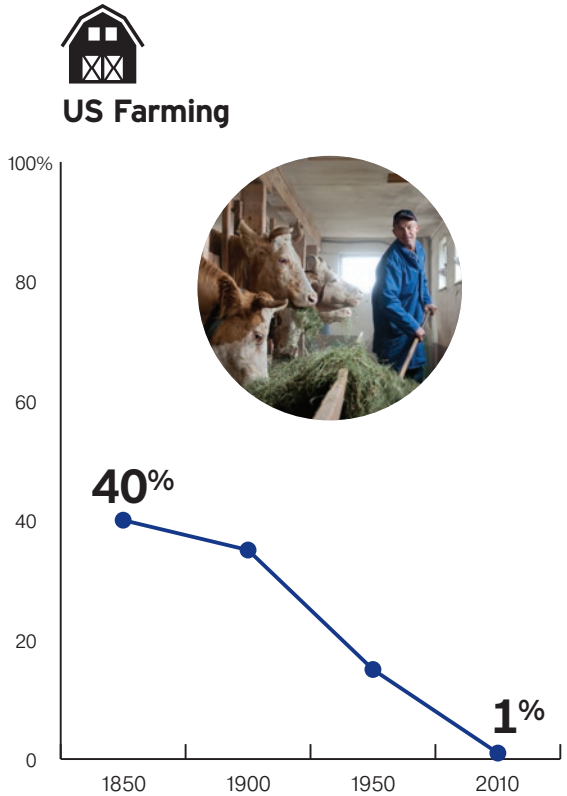
Speaker Notes

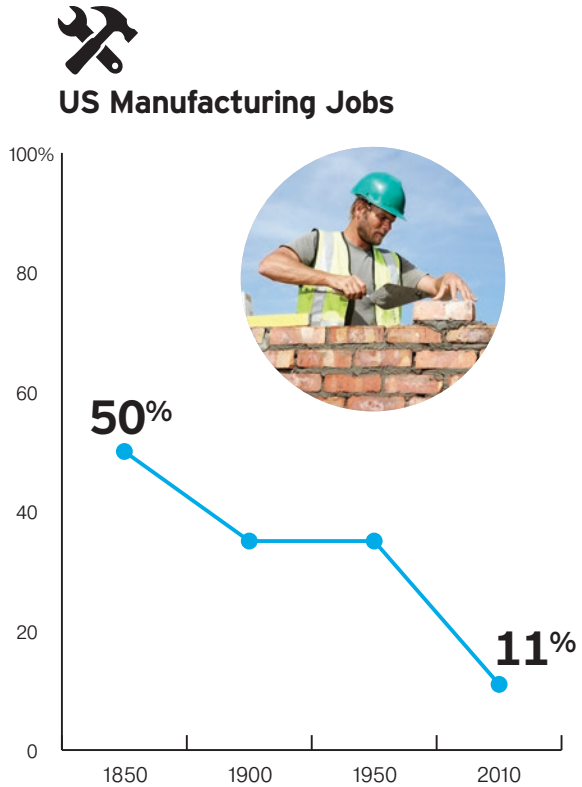


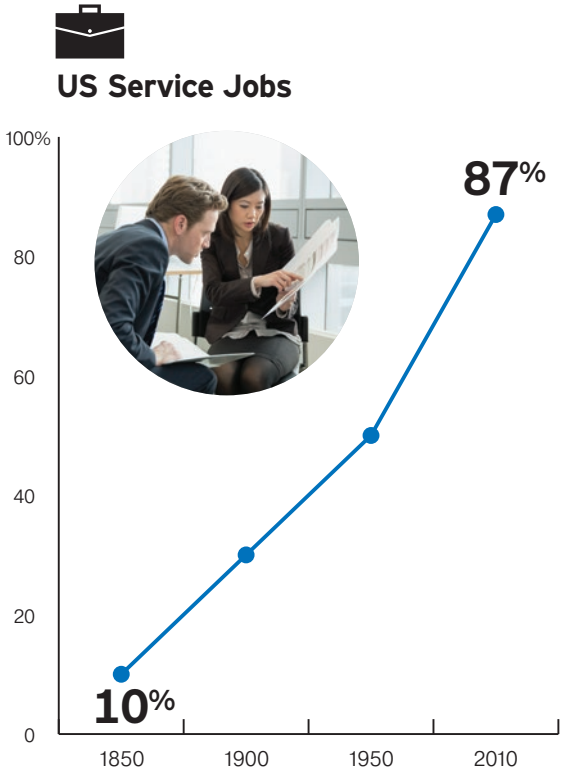
It is much easier to imagine a world in which everyone loses their jobs because of automation than a future where we're just doing something that is new, different, and has yet to have been dreamed up.

It can be argued that jobs are now less labor-intensive, require fewer resources, and are more lucrative than they were just a few decades ago. The migration from farm to office isn't new and hasn't stopped. While it is more mature in the US, it is just getting started in the emerging world.

All Healthy Economies Evolve

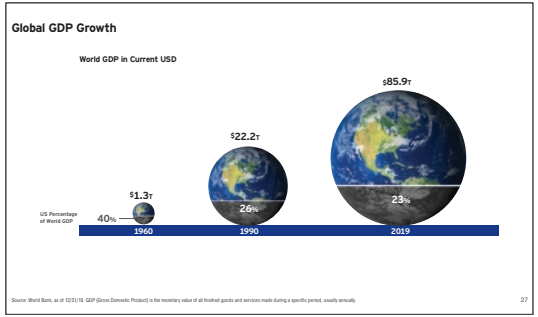






Source: IPUMS, 12/31/19. For the years 1850-2010. Most recent data available.

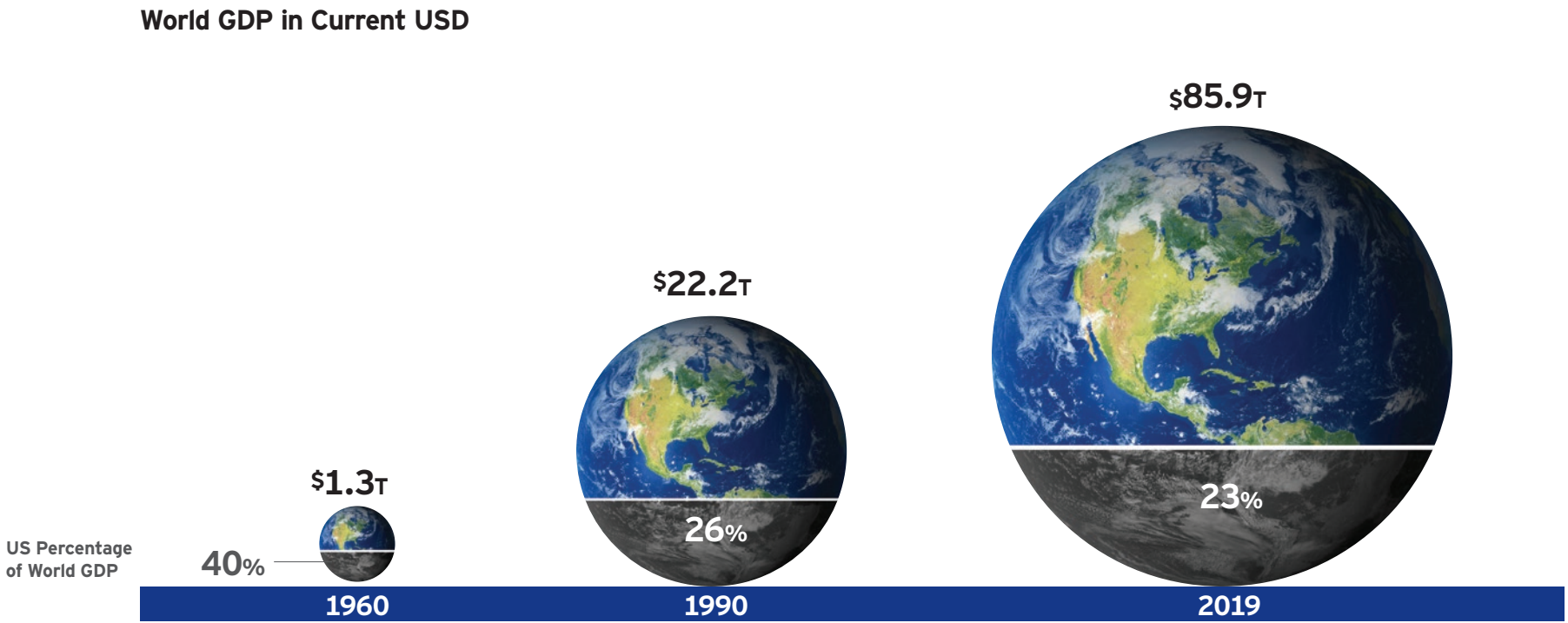
Speaker Notes



Global Gross Domestic Product (GDP) has exploded from $1.3 trillion in the 1960s to over $80 trillion today with the US making up a smaller share of the world's economic activity. The 62x more economic activity is being produced by only 2.5x the number of people.* As a result, the world has become significantly wealthier in a very short time.

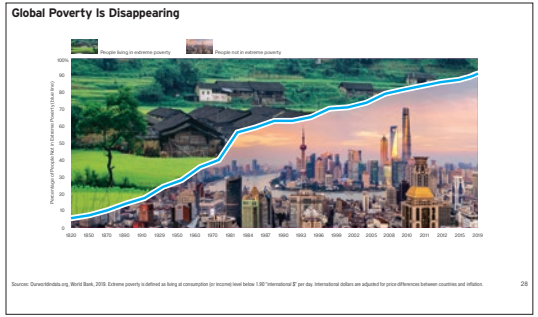
*Source: World Bank, 2019.

Global GDP Growth



Source: World Bank, as of 12/31/19. GDP (Gross Domestic Product) is the monetary value of all finished goods and services made during a specific period, usually annually.

Speaker Notes

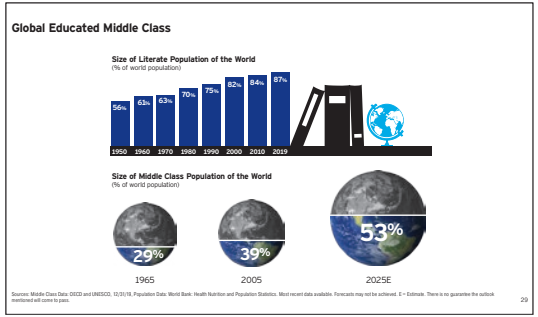


For us, another great untold story of the last two centuries is the virtual elimination of extreme poverty around the globe. In 1820, virtually 95% of the world lived in extreme poverty, while today, we have almost flipped those numbers. The link between economic freedom (the ability to control and own your intellectual, personal, and business property) and structural/technological innovation (thank you Walmart and Apple, to mention a couple) has often given ordinary people access to lifestyles only dreamed about less than a century ago (when the majority of governments had an iron grip on the economic levers within their societies). This is no small feat when you consider the previous 6,000 years of recorded history barely made a dent in these statistics.

Global Poverty Is Disappearing

Sources: Ourworldindata.org, World Bank, 2019. Extreme poverty is defined as living at consumption (or income) level below 1.90 “international $” per day. International dollars are adjusted for price differences between countries and inflation.

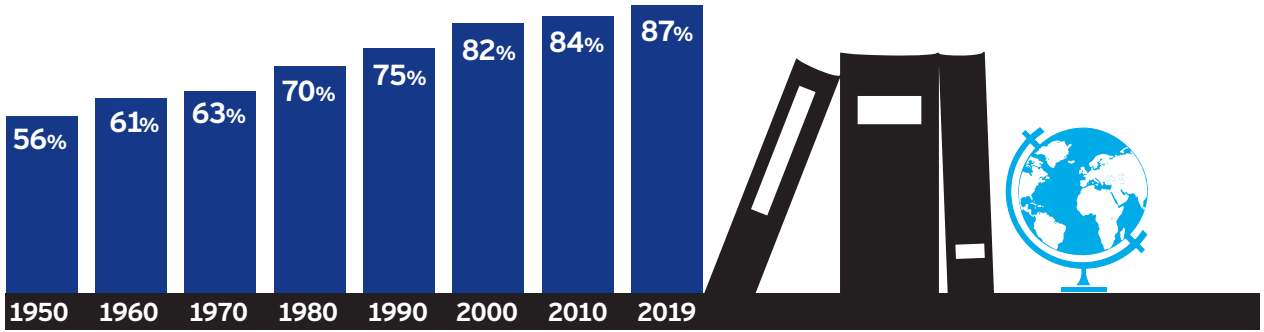
Speaker Notes



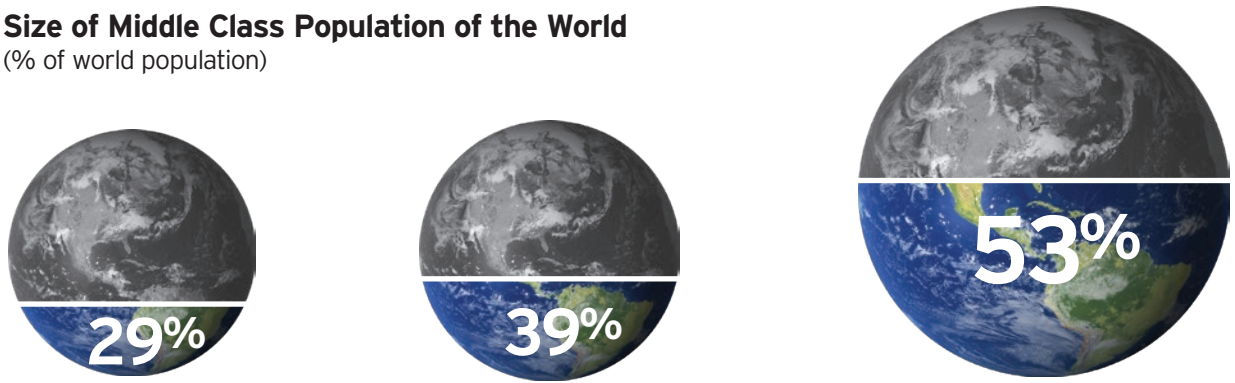
The extraordinary achievements of the past 50 years were marked by a dramatic expansion in global literacy and a significant rise in the number of people around the world enjoying middle-class lifestyles. It is estimated that by 2025, half of the world's population will be in the ranks of the middle class.

Global Educated Middle Class

Size of Literate Population of the World
(% of world population)

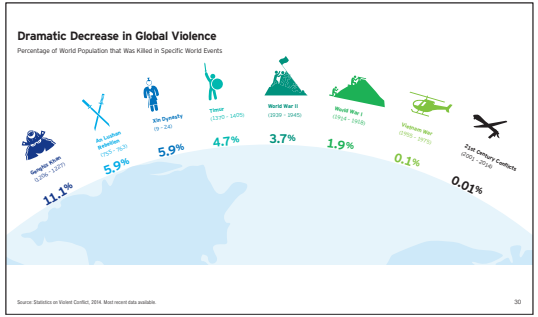


Size of Middle Class Population of the World
(% of world population)



Sources: Middle Class Data: OECD and UNESCO, 12/31/19, Population Data: World Bank: Health Nutrition and Population Statistics. Most recent data available. Forecasts may not be achieved. E = Estimate. There is no guarantee the outlook mentioned will come to pass.

Speaker Notes



Is the world more violent than it has ever been before? Let's look at this through the broad lens of history.

A smarter, more educated world has become statistically more peaceful in several ways:

- The number of people killed in battle has dropped by 1,000-fold over the centuries as civilizations evolved. Battles once killed, on average, more than 500 out of every 100,000 people. Now, battlefield deaths are down to three-tenths of a person per 100,000.*

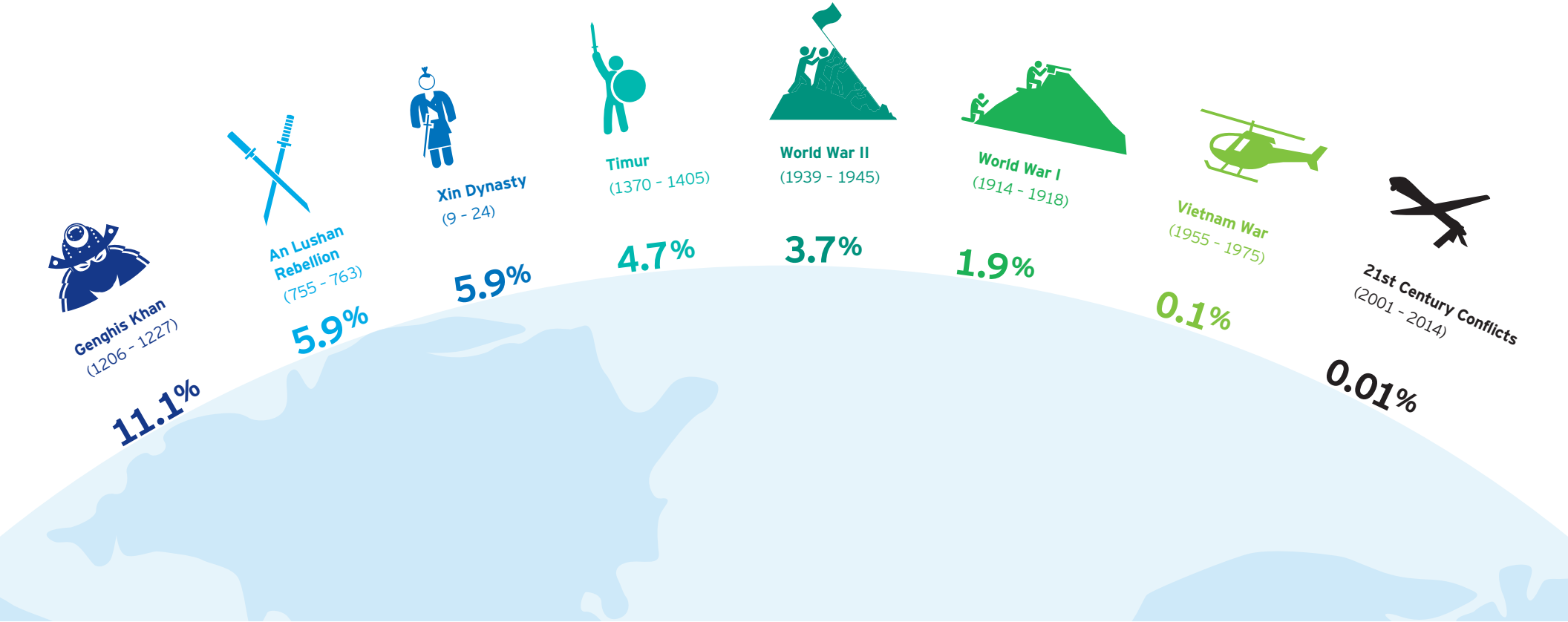
It is easy to forget how dangerous life used to be.

- During the times of Genghis Khan, over 11% of the Earth's population was killed in battle. Imagine 835 million people (11% of the world's population) dying in battle today. By comparison, less than 0.01% of the world's population has perished in the conflicts of the 21st century. One life is one too many, but the numbers simply pale in comparison to the violent world of the past.

*Source: Steven Pinker, "The Better Angels of Our Nature: Why Violence Has Declined," 2011. Latest data available.

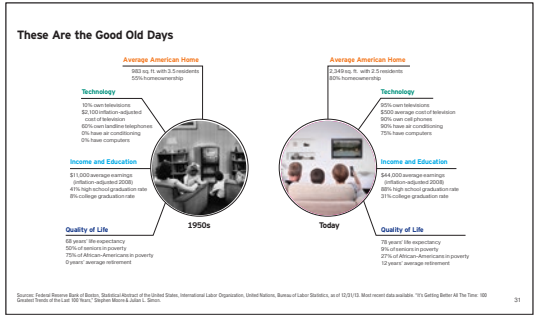
Dramatic Decrease in Global Violence

Percentage of World Population that Was Killed in Specific World Events



Source: Statistics on Violent Conflict, 2014. Most recent data available.

Speaker Notes



The world has never been a better place to live in than it is today, and if history is any guide, it will keep getting better.

Compared with the “golden” days of the 1950s, the average American not only lives longer, but better! People are more highly educated, earn more money and work less for it, operate in safer conditions, are far healthier, and enjoy a much more luxurious lifestyle than their brethren in the 1950s could possibly have imagined.

These Are the Good Old Days

1950s

Average American Home

983 sq. ft. with 3.5 residents
55% homeownership

Technology

10% own televisions
$2,100 inflation-adjusted cost of television
60% own landline telephones
0% have air conditioning
0% have computers

Income and Education

$11,000 average earnings (inflation-adjusted 2008)
41% high school graduation rate
8% college graduation rate

Quality of Life

68 years' life expectancy
50% of seniors in poverty
75% of African-Americans in poverty
0 years' average retirement

Today

Average American Home

2,349 sq. ft. with 2.5 residents
80% homeownership

Technology

95% own televisions
$500 average cost of television
90% own cell phones
90% have air conditioning
75% have computers

Income and Education

$44,000 average earnings (inflation-adjusted 2008)
88% high school graduation rate
31% college graduation rate

Quality of Life

78 years' life expectancy
9% of seniors in poverty
27% of African-Americans in poverty
12 years' average retirement

Sources: Federal Reserve Bank of Boston, Statistical Abstract of the United States, International Labor Organization, United Nations, Bureau of Labor Statistics, as of 12/31/13. Most recent data available. "It's Getting Better All The Time: 100 Greatest Trends of the Last 100 Years," Stephen Moore & Julian L. Simon.

Speaker Notes

Our "Great Recession"....Like the Great Depression?

		Length of Economic Contraction	Drop in Industrial Production	Peak Unemployment Rate	Change in Consumer Price Index	Number of Bank Failures	Drop in Dow Jones Industrial Average
The Great Depression		**43 months (8/31/1929-3/31/1933)**	**51.7%**	**24.8%**	**-27.2%**	**9,096 (50% of banks)**	**89.2%**
The Great Recession		**18 months (12/31/2007-6/30/2009)**	**14.9%**	**9.9%**	**+1.5%**	**57 (0.6% of banks)**	**53.8%**

Image: Great Depression: Public Domain.
Sources: Bureau of Labor Statistics, FDIC, Bureau of Economic Analysis, Bloomberg L.P., and US Federal Reserve, as of 12/31/15. For illustrative purposes only. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

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But didn't the world just live through its version of the Great Depression? In our view, comparing the 2008 financial crisis to the Great Depression is the height of hyperbolic rhetoric.

Our "Great Recession"....Like the Great Depression?

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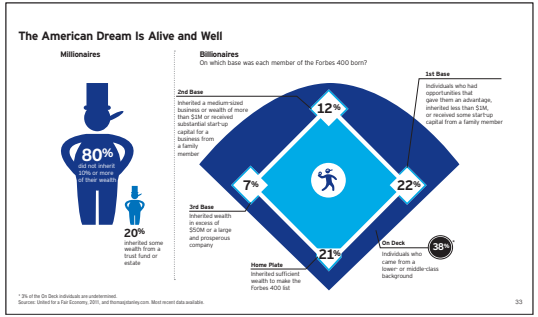
Sources: Bureau of Labor Statistics, FDIC, Bureau of Economic Analysis, Bloomberg L.P., and US Federal Reserve, as of 12/31/15. For illustrative purposes only. Index definitions can be found on page 59. **Past performance does not guarantee future results.**

Speaker Notes



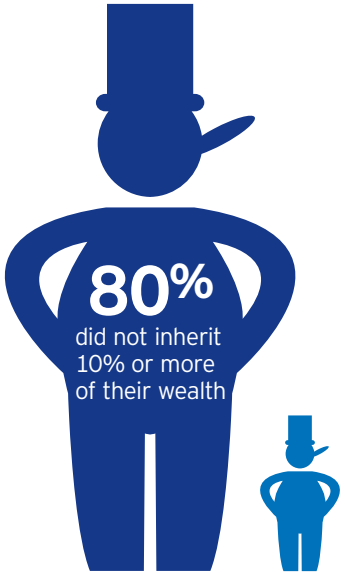
Contrary to opinion, we believe the American dream is alive and well!

- Of the nation's millionaires, more than 80% did not inherit 10% or more of their wealth.
- We all know people who were born on third base but act like they hit a triple. But how common is that? Of the Forbes 400 list, "only" 28% inherited wealth in excess of $50M (i.e., woke up on third base or home plate)!
- The remaining nearly 70% were either born "on deck" from a lower- to middle-class background, on first base inheriting less than $1M, or on second base inheriting more than $1M or substantial start-up capital from a family member. And turning any of those numbers into over $1 billion is still one heck of an achievement!

Being born with a silver spoon in your mouth may help, but it is not the only path to financial success.

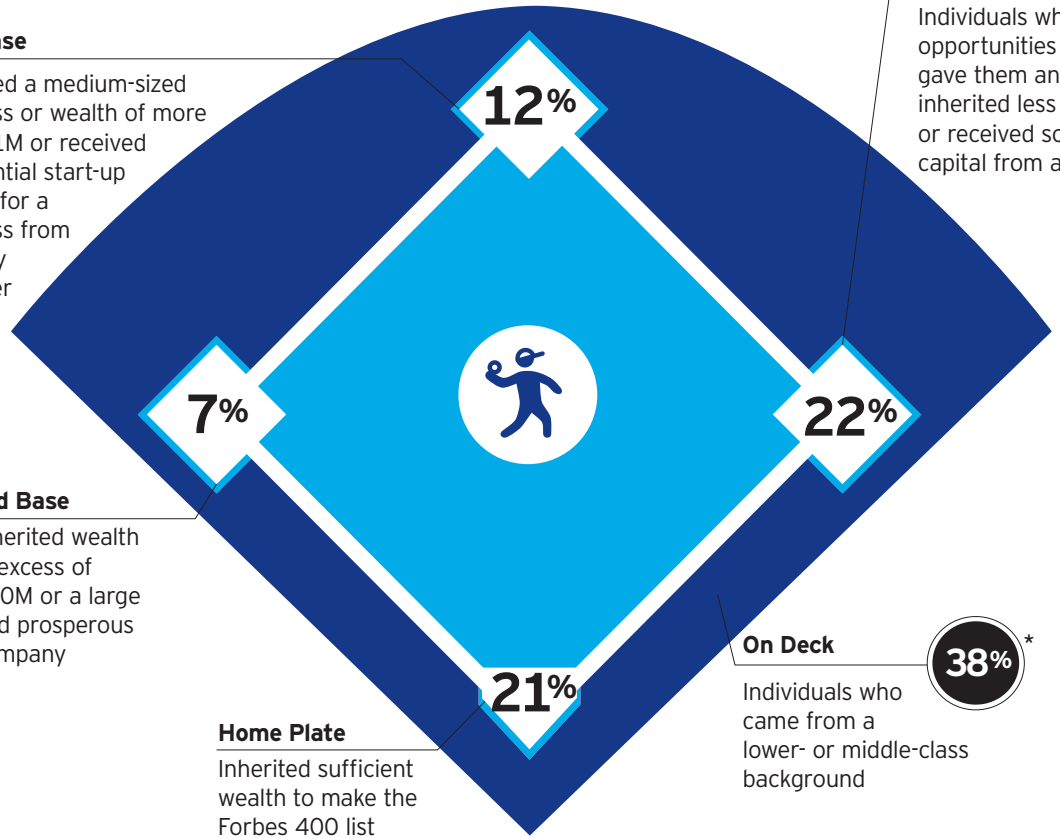
The American Dream Is Alive and Well

Millionaires



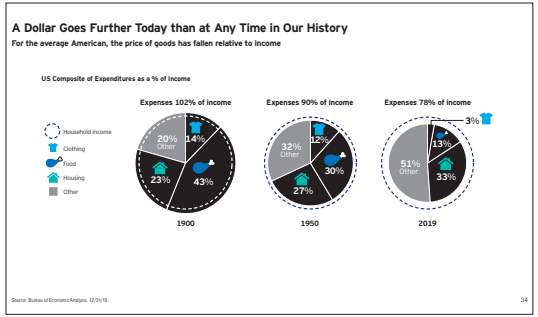
Billionaires

On which base was each member of the Forbes 400 born?



* 3% of the On Deck individuals are undetermined.
Sources: United for a Fair Economy, 2011, and thomasjstanley.com. Most recent data available.

Speaker Notes



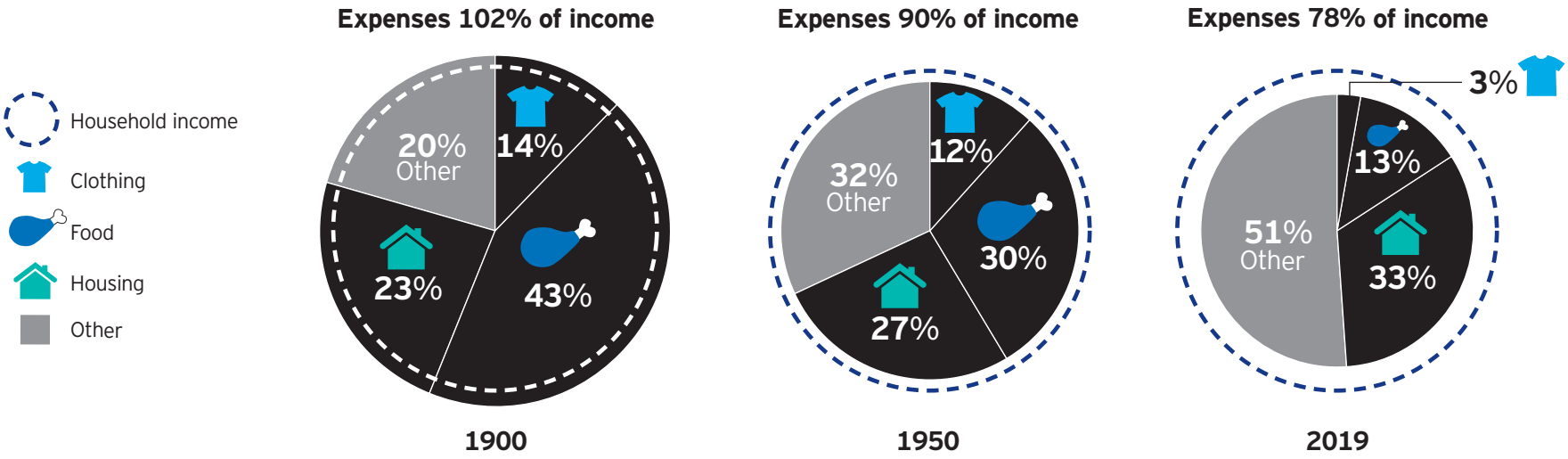
Many of us can remember when gasoline was $0.50 a gallon and going to see a movie was a buck; however, we tend to look at these prices relative to our incomes today. When you look at overall expenses relative to income between 1900 and today, you will see something remarkable.

1. In 1900, living expenses actually exceeded income. By 1950, expenses were only 90% of income, and most recently those expenses are only 80% of income.
2. An even more remarkable change has been the dramatic increase in discretionary income. In 1900, 80% of the average budget went to the basic necessities (food, shelter, and clothing). Today, over 50% of our income is discretionary and thus available for things of much higher purpose, comfort, and/or fun.

A Dollar Goes Further Today than at Any Time in Our History

For the average American, the price of goods has fallen relative to income

US Composite of Expenditures as a % of Income



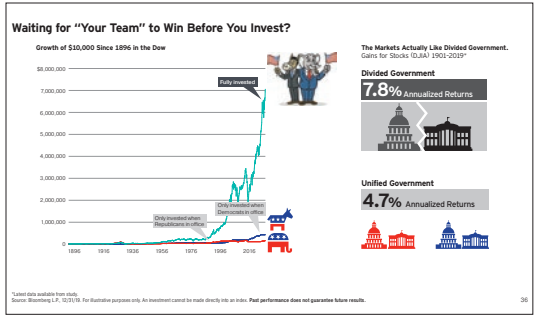
Source: Bureau of Economic Analysis, 12/31/19.

Speaker Notes

While hating the government has seemingly become mainstream, it is a really poor investment strategy.

Hating the Government Is Not an **Investment Strategy**

Speaker Notes



But isn't a Republican president better for the market than a president from the Democratic party? Not necessarily. In our view, there are far more important factors impacting both the economy and the stock market than which political party happens to occupy 1600 Pennsylvania Ave.

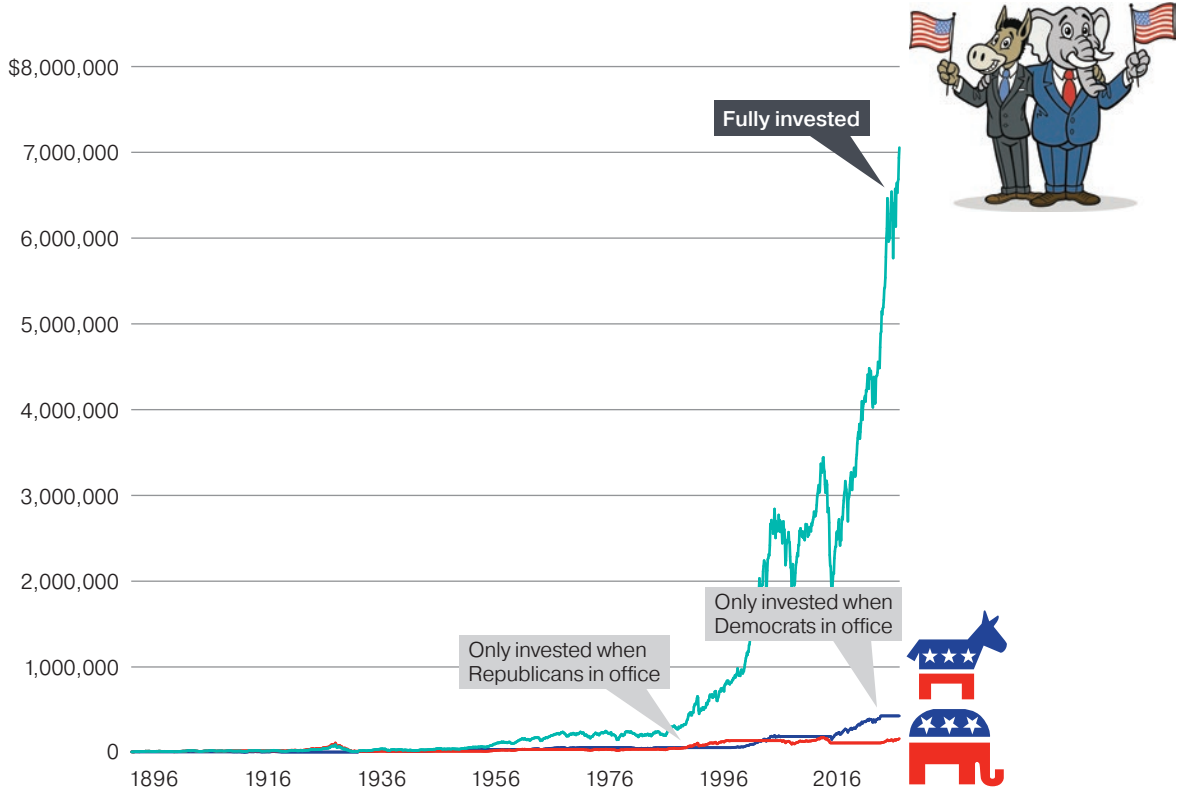
Investors considering waiting until the man or woman from their preferred political party occupies the White House should recognize how that would have worked out in the past:

- A $10,000 investment held in the Dow Jones Industrial Average from 1896 to 2019 would now be worth over $7 million.
- Incorporating a strategy where you own stocks whenever your party is in the White House and sell whenever the other party is in the White House would be worth roughly $6 million less!

But wouldn't we all be better off if the political parties were more cooperative and compromising and could get more accomplished? Again, not necessarily. Historically, the markets have done very well when there has been gridlock.

Waiting for "Your Team" to Win Before You Invest?

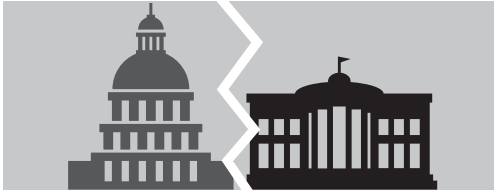
Growth of $10,000 Since 1896 in the Dow



The Markets Actually Like Divided Government.
Gains for Stocks (DJIA) 1901-2019*

Divided Government

7.8% Annualized Returns

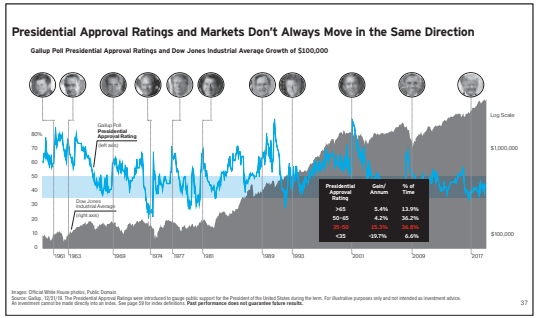


Unified Government

4.7% Annualized Returns

*Latest data available from study.
Source: Bloomberg L.P., 12/31/19. For illustrative purposes only. An investment cannot be made directly into an index. **Past performance does not guarantee future results.**

Speaker Notes



Today, many potential investors use "politics" as a rationale for staying on the sidelines. They claim they will invest when their favorite politician or party gets elected or when the latest policy-induced crisis is averted (like the fiscal cliff or the government shutdown). So, what do the facts show?

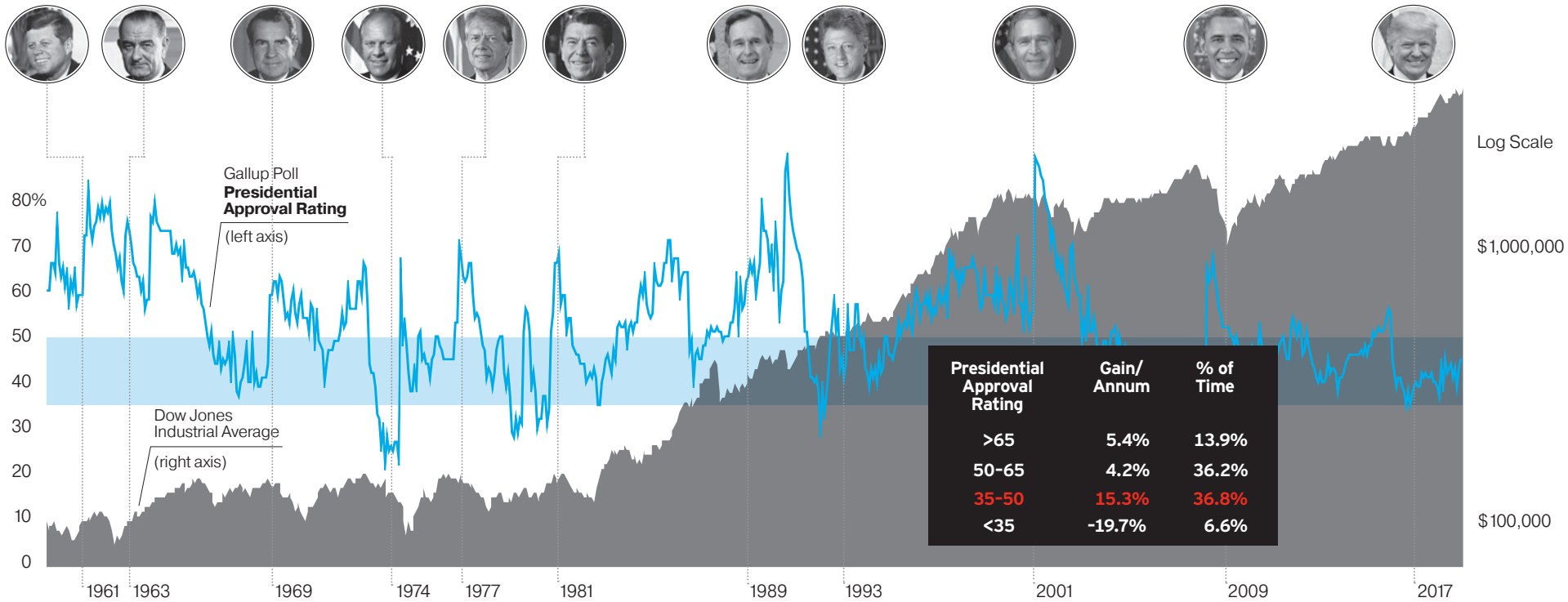
- Since the Kennedy administration, the sitting president has been viewed unfavorably by more than half of the country 45% of the time.*
- The reality is that over the past 55 years, the markets have performed best when the president's approval rating polled somewhere between 35%–50%.

In short, hating the government should not inform an investment strategy.

*Source: Gallup, 12/31/19.

Presidential Approval Ratings and Markets Don't Always Move in the Same Direction

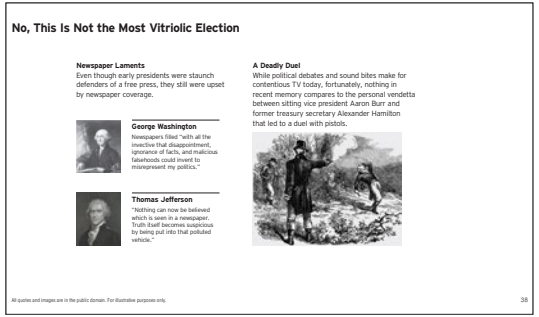
Gallup Poll Presidential Approval Ratings and Dow Jones Industrial Average Growth of $100,000



Presidential Approval Rating	Gain/ Annum	% of Time
>65	5.4%	13.9%
50-65	4.2%	36.2%
35-50	15.3%	36.8%
<35	-19.7%	6.6%

Images: Official White House photos, Public Domain.
Source: Gallup, 12/31/19. The Presidential Approval Ratings were introduced to gauge public support for the President of the United States during the term. For illustrative purposes only and not intended as investment advice.
An investment cannot be made directly into an index. See page 59 for index definitions. **Past performance does not guarantee future results.**

Speaker Notes



We are often told that our politics have never been so dysfunctional and the political discourse has never been filled with such vitriol. Is this true?

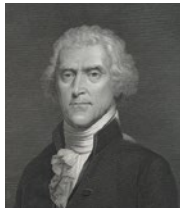
- On July 11, 1804, a sitting (sitting!) vice president, Aaron Burr, shot and killed a former Secretary of the Treasury, Alexander Hamilton. Today, political attack ads can get pretty intense, but none have ended with any duels on the White House lawn.
- In fact, some of the worst incidences of press-facilitated slander against national heroes like Thomas Jefferson and even George Washington himself induced these men to be frustrated with the free press.

No, This Is Not the Most Vitriolic Election

Newspaper Laments
Even though early presidents were staunch defenders of a free press, they still were upset by newspaper coverage.

George Washington

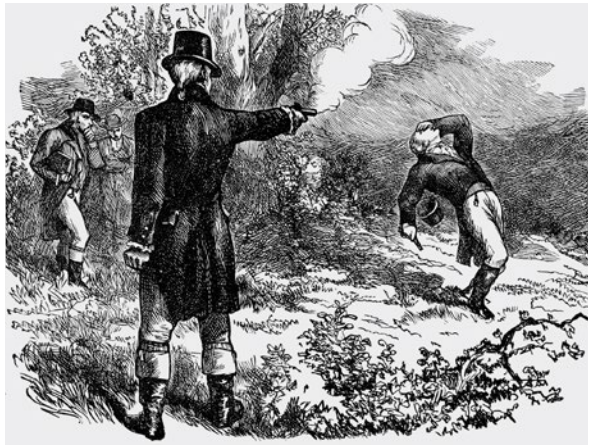
Newspapers filled "with all the invective that disappointment, ignorance of facts, and malicious falsehoods could invent to misrepresent my politics."



Thomas Jefferson

"Nothing can now be believed which is seen in a newspaper. Truth itself becomes suspicious by being put into that polluted vehicle."

A Deadly Duel
While political debates and sound bites make for contentious TV today, fortunately, nothing in recent memory compares to the personal vendetta between sitting vice president Aaron Burr and former treasury secretary Alexander Hamilton that led to a duel with pistols.



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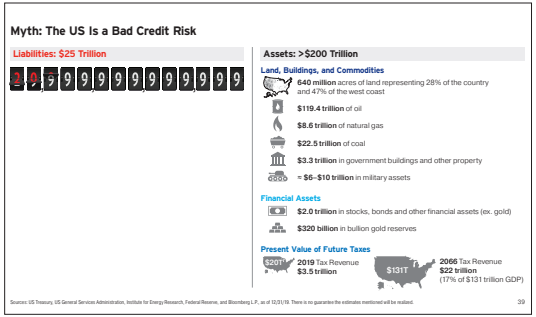


When the bank lends you money, the loan officer considers the assets against which you are borrowing. Well, what are the assets of the federal government?

A. **Land:** The US Government owns 640 million acres of land. That's 28% of the nation's total surface and includes 47% of all the land in the west. What's it all worth? A lot.

B. **Commodities:** It is estimated that the US sits atop $119 trillion in oil, $22 trillion in coal, and more than $8 trillion in natural gas.

C. **Military equipment:** What are the P-8A Poseidon and F-35 Lightning aircraft, the CVN-78 aircraft carriers, the Arleigh Burke DDG 51 destroyer warships, and the Trident II submarine-launched ballistic missiles all worth? All US military equipment is estimated at $6–$10 trillion.

D. **Present value of future taxes:** The average nominal growth rate since 1980 has been 5.5% annually. If the economy grows at a rate of only 4% for the next 50 years, the economy will grow to be $131 trillion. The US, on average, collects tax revenue equal to 17% of gross domestic product. In this scenario, by 2066, the country will be collecting $22 trillion per year in tax revenue.

In short, the assets and taxing power of the US Government dwarf its liabilities, which aren't even close to threatening the country's solvency.

Myth: The US Is a Bad Credit Risk

Liabilities: $25 Trillion

Assets: >$200 Trillion

Land, Buildings, and Commodities

640 million acres of land representing 28% of the country and 47% of the west coast

$119.4 trillion of oil

$8.6 trillion of natural gas

$22.5 trillion of coal

$3.3 trillion in government buildings and other property

≈ **$6–$10 trillion** in military assets

Financial Assets

$2.0 trillion in stocks, bonds and other financial assets (ex. gold)

$320 billion in bullion gold reserves

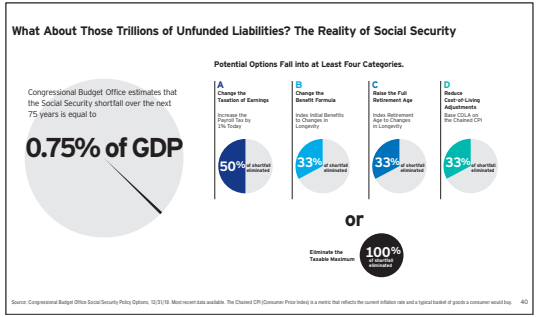
Present Value of Future Taxes

2019 Tax Revenue
$3.5 trillion

2066 Tax Revenue
$22 trillion
(17% of $131 trillion GDP)

Sources: US Treasury, US General Services Administration, Institute for Energy Research, Federal Reserve, and Bloomberg L.P., as of 12/31/19. There is no guarantee the estimates mentioned will be realized.

Speaker Notes



Over the next 75 years, the federal government has promised benefits to Social Security recipients in excess of anticipated payroll tax revenues equal to $10 trillion. The Congressional Budget Office estimates that the Social Security shortfall will be equal to 0.75% of GDP.

Social Security is something to be paid in the future which allows us to make adjustments in the present.

Potential options include:

A. Changing the taxation of earnings

B. Changing the benefit formula

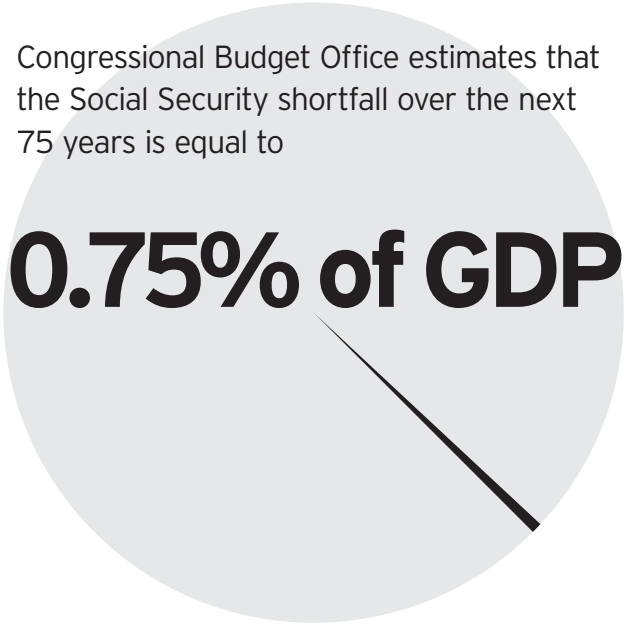
C. Raising the retirement age

D. Reducing cost-of-living adjustments

Or, for example, the government could eradicate the shortfall today by simply eliminating the taxable maximum.

What About Those Trillions of Unfunded Liabilities? The Reality of Social Security

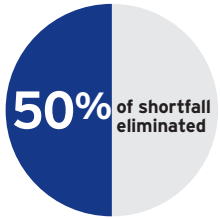
Congressional Budget Office estimates that the Social Security shortfall over the next 75 years is equal to



Potential Options Fall into at Least Four Categories.

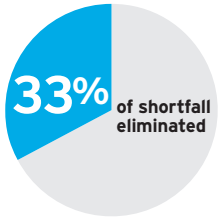
A
Change the Taxation of Earnings

Increase the Payroll Tax by 1% Today



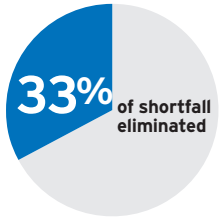
B
Change the Benefit Formula

Index Initial Benefits to Changes in Longevity



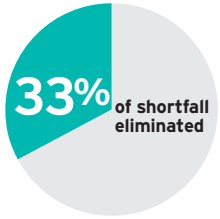
C
Raise the Full Retirement Age

Index Retirement Age to Changes in Longevity



D
Reduce Cost-of-Living Adjustments

Base COLA on the Chained CPI



or

Eliminate the Taxable Maximum

Source: Congressional Budget Office Social Security Policy Options, 12/31/19. Most recent data available. The Chained CPI (Consumer Price Index) is a metric that reflects the current inflation rate and a typical basket of goods a consumer would buy.

Speaker Notes

Technology down through the ages has been the catalyst for virtually all human progress; but with that blessing comes the challenge of disruption, disintermediation, or as Joseph Schumpeter coined “creative destruction” in the short term. This section is designed to help you as both an investor and as a participant in a rapidly evolving economy by helping you anticipate trends and prepare for the inevitable disruptions. While these might appear to be a recent societal challenge, this is far from the case. Previous generations have had to adapt as the economy shifted from an agricultural to a handcrafted industrial focus:

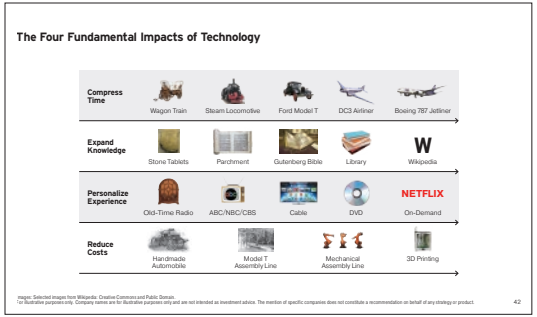
- To the human assembly line model of Henry Ford,
- To the more automated assembly line model first perfected in Japan in the 1970s and 80s,
- To an increasingly service-oriented economy beginning in the late 50s and early 60s, and
- To the more sophisticated service/technology economy we see today.

Each evolution required the development of a whole new set of skills and an increasingly higher level of education to remain relevant and prosper.

Creative destruction can be described as the discontinuation of established processes to make way for improved methods of production.

Technology: Drives Growth and Is Nothing to Fear

Speaker Notes



When you look at technology through a historical lens, it has had one or more of the following four impacts: it compresses time, expands knowledge, personalizes experience and/or reduces costs, all of which, in our view, have had positive impacts on society as a whole.

- **Compress Time** For example, travel time between New York and Chicago went from almost six weeks via wagon train to just around two hours today. Consider the remarkable impact on human productivity this compression of time has had!
- **Expand Knowledge** For most of human history, knowledge was passed verbally or individually in written form using parchment. With the advent of the Gutenberg press and later, libraries, the average person had much greater access but still had to travel some distance and burn a fair amount of time to find what they were looking for. Today, you can sit in the privacy of your home and access information and knowledge that would have seemed miraculous just a few years ago.
- **Personalize Experience** Throughout most of history, whatever you wanted was in limited supply and on someone else's timetable; whether going down to the local store and hoping they had what you wanted, to turning on the radio or television and listening to what they wanted to broadcast, when they wanted to broadcast it. Today, you can find whatever you need whenever you want it. This is revolutionary!
- **Reduce Cost** And finally, the cost of goods and services today is infinitesimal compared to years past.

The Four Fundamental Impacts of Technology

Compress Time


Wagon Train


Steam Locomotive


Ford Model T


DC3 Airliner


Boeing 787 Jetliner

Expand Knowledge


Stone Tablets


Parchment


Gutenberg Bible


Library

W

Wikipedia

Personalize Experience


Old-Time Radio

ABC/NBC/CBS


Cable


DVD

NETFLIX

On-Demand

Reduce Costs


Handmade Automobile


Model T Assembly Line


Mechanical Assembly Line


3D Printing

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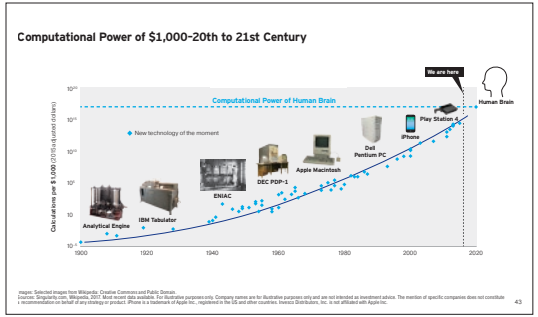
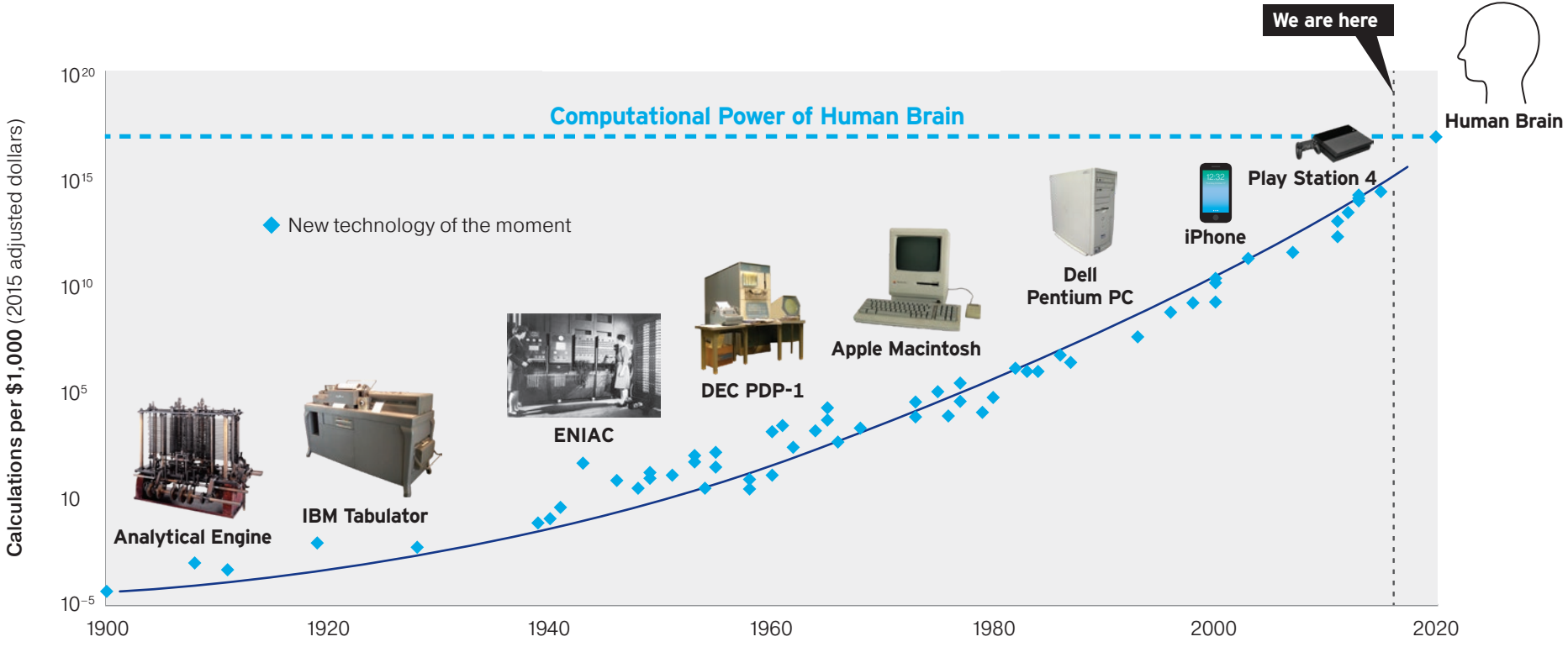
Speaker Notes



The technology we take for granted today would've been unimaginable 20 years ago and considered some form of magic at the turn of the 20th century. We are rapidly approaching what Ray Kurzweil's coined "the singularity," where computers' computational power begins to approach that of the human brain.

The impact this could have on our ability to fight disease, expand agricultural output, solve the world's freshwater crisis, address the world's energy needs, to name but a very few, borders on the world of science fiction.

Computational Power of $1,000–20th to 21st Century



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Sources: Singularity.com, Wikipedia, 2017. Most recent data available. For illustrative purposes only. Company names are for illustrative purposes only and are not intended as investment advice. The mention of specific companies does not constitute a recommendation on behalf of any strategy or product. iPhone is a trademark of Apple Inc., registered in the US and other countries. Invesco Distributors, Inc. is not affiliated with Apple Inc.

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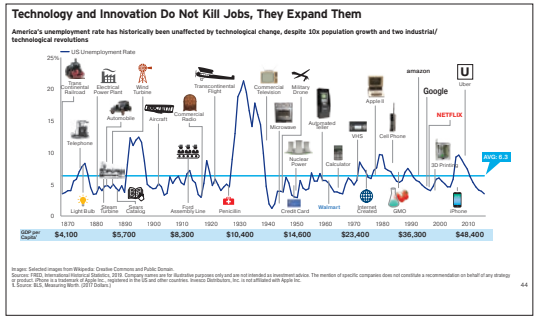


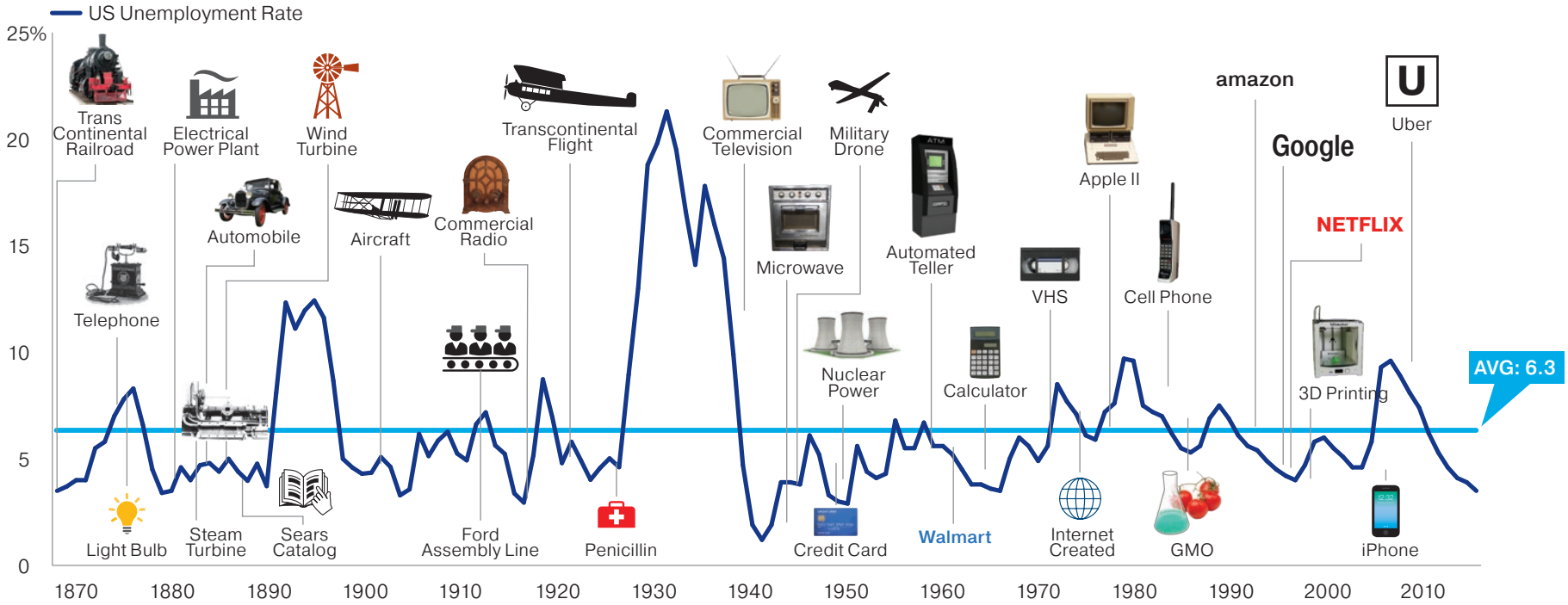
You will notice four things about this chart:

1. That the average unemployment rate since 1870 has averaged 6.3%;
2. That the fluctuations in the annual unemployment rate can be volatile but are uncorrelated to any major innovation or technology;
3. And finally, the two most important pieces due to the dramatic rise in per capita GDP are more productive and wealthier societies;
4. Which, of course, spurs the dramatic rise in personal income and much lower cost of average goods (which fosters a much higher standard of living).

Throughout recorded time, economies that prosper have been in constant states of evolution and innovation, practicing a concept codified and popularized by the Austrian economist Joseph Schumpeter, “creative destruction.” This process “revolutionizes the economic structure from within, incessantly destroying the old with the new.” He argued that this process could be disruptive situationally over the short term; it is far outweighed by the benefits to society as a whole over the long term.

Technology and Innovation Do Not Kill Jobs, They Expand Them

America's unemployment rate has historically been unaffected by technological change, despite 10x population growth and two industrial/ technological revolutions



GDP per Capita[1]	$4,100	$5,700	$8,300	$10,400	$14,600	$23,400	$36,300	$48,400

Images: Selected images from Wikipedia: Creative Commons and Public Domain.
Sources: FRED, International Historical Statistics, 2019. Company names are for illustrative purposes only and are not intended as investment advice. The mention of specific companies does not constitute a recommendation on behalf of any strategy or product. iPhone is a trademark of Apple Inc., registered in the US and other countries. Invesco Distributors, Inc. is not affiliated with Apple Inc.
1. Source: BLS, Measuring Worth. (2017 Dollars.)

Speaker Notes

There are five themes that have always been part of the story of technology through the ages but have accelerated dramatically in our lifetime:

1 **Democratization** Technology has made access to high-quality goods and services far more pervasive than at any time in human history. The lower and middle class today live far better than the middle class and wealthy of a century ago, and sometimes I think we forget what a remarkable journey this has been.

2 **Dematerialization** The synthesis of many items into one has made life much more convenient and efficient.

3 **Deflation** Technology makes goods and services progressively less expensive.

4 **Big Data** We know there's an answer to virtually every question we have, the challenge is finding it. Big data allows us to connect and collect vast stores of human intelligence and search for solutions within that data on a scale that is truly mind-boggling.

5 **Disruption** What might've taken decades and sometimes centuries to unfold in the past now takes a few years. The good news is that solutions to our challenges come much more rapidly than at any time in human history, but it also means individuals and companies must be extremely nimble and constantly evolving to remain relevant.

5 D's of Technology

Democratization

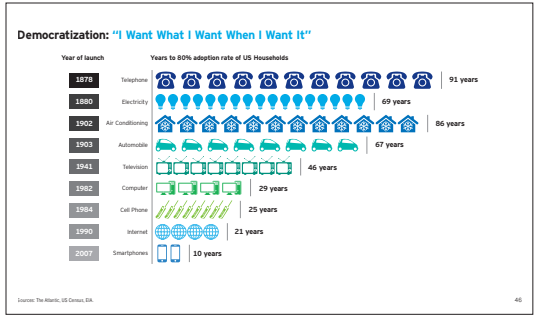
Dematerialization

Deflation

Big Data

Disruption

Speaker Notes



The deflationary impact and dematerialization of multiple purchases into a single item allow for many more people to enjoy a whole range of products and services that previously they could not afford to purchase separately. Here are a couple of examples:

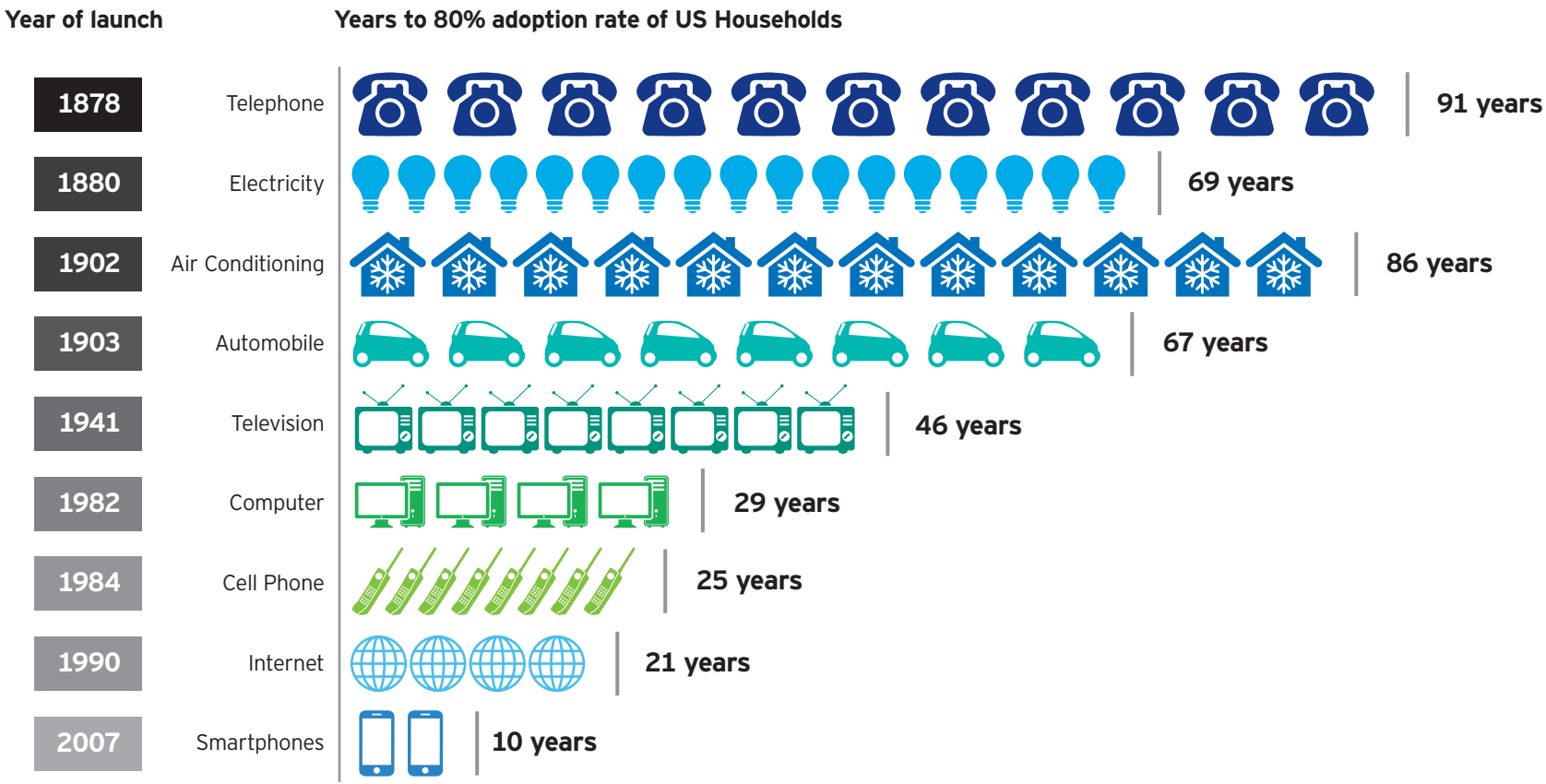
- To have access to a broad range of knowledge, it used to cost thousands of dollars to have an encyclopedia set in your home, or required the time and energy to run down to your local library. Now, with Wikipedia, everyone has access to this knowledge on demand.
- If I wanted to get around any large city in the United States, I either had to find a bus or subway schedule, try to hail a taxi, or if I lived there, purchase an expensive car, insure that car and pay the exorbitant garage and/or paid parking rates to actually use that car. Today, I can request my own private chauffeur, on my schedule, utilizing Uber.

And the speed with which these new technologies are becoming available to the average citizen is truly breathtaking.

- It took over 90 years before 80% of US households had a telephone.
- It took nearly 67 years before 80% of US households had an automobile.
- It took nearly 46 years for 80% of us to get a television.
- However, it only took 20 years for 80% of us to get the Internet.
- And amazingly, we are at 80% penetration of smartphones after only 10 years!

The impact that democratization of ideas, knowledge, products, and services has had on our society is truly profound.

Democratization: "I Want What I Want When I Want It"



Sources: The Atlantic, US Census, EIA.

Speaker Notes

As technology continues to get smaller, faster and denser, more and more functional capability can reside in smaller and smaller spaces. This has the effect of dematerializing entire suites of products, services, and ultimately companies and professions. A couple of easy examples are:

- The Garmin GPS system that used to come in cars is now in my phone.
- My entire record collection is also now on my phone.
- I no longer lug a camera, much less a large video recorder around Disney World!
- When I need a flashlight, I don't have to hunt through 15 drawers to find one.
- And if I want to catch up on the news, I don't have to buy a newspaper.

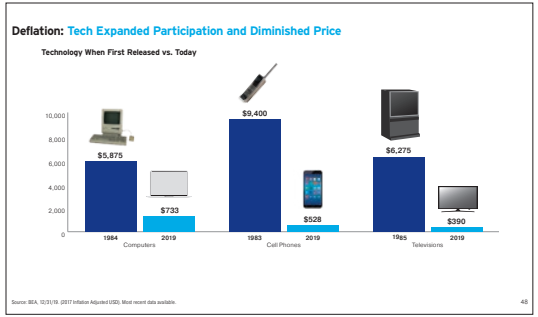
This has a number of major impacts on society and productivity by:

- Much more seamless and rapid access to tools and services on demand.
- The capacity to get much more done in much less time.
- Reducing the number of products clogging our landfills around the country.
- The ability to redeploy human intelligence and assets more productively.

Dematerialization: One Device to Conquer Them All

For illustrative purposes only and not intended as investment advice.

Speaker Notes

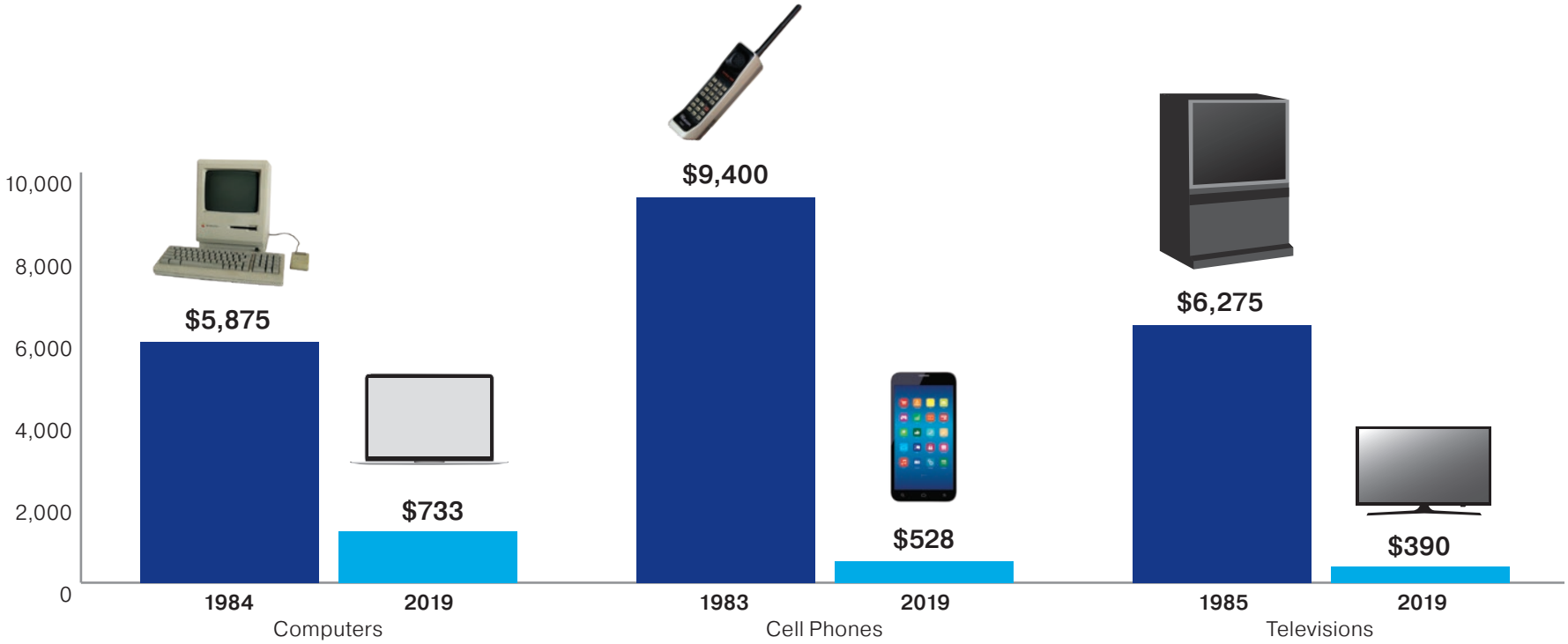


Throughout the supply chain, technology has historically reduced the costs of goods and services to the end-user. This allows labor and capital to be redeployed for greater impact and purpose. You can see this demonstrably in three popular individual items: computers, cell phones, and television sets.

- The cost and computational power of Steve Jobs' Macintosh Computer compared to an Apple desktop today is breathtaking.
- The phone used by Michael Douglas in the movie Wall Street has gone from clunky and expensive to elegant, sophisticated, and cheap.
- The early big screen TVs have also gone from clunky and expensive to elegant, high resolution, and dirt cheap.

Deflation: Tech Expanded Participation and Diminished Price

Technology When First Released vs. Today



Source: BEA, 12/31/19. (2017 Inflation Adjusted USD). Most recent data available.

Speaker Notes

Throughout most of human history, cooperation and collaboration between businesses, organizations, and professions in general, and people in particular, was based on proximity. This meant a limited pool of knowledge, expertise, and insights to solve the challenges facing people both domestically and globally. With the rise of the Internet, mobile technologies and cloud-based storage, we can now connect the best minds around the globe virtually on demand, and then store and analyze massive amounts of data to find the best solutions for our global and/or localized challenges.

Whether it's:

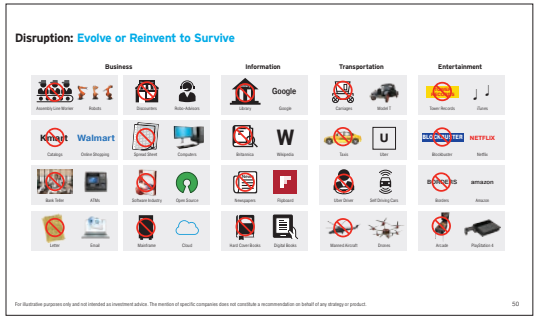
- Mapping the human genome to find better-targeted solutions to what ails us.
- Creating a logistical infrastructure for real-time delivery of goods and services.
- Monitoring and filtering real-time feedback necessary to create driverless cars.

The impact of Big Data to help mankind make better decisions has been truly revolutionary.

Big Data: Driving Greater Insights, Collaboration, and Solutions

For illustrative purposes only.

Speaker Notes



Technology and/or major innovations invariably cause short-term disruptions within industries, in general, and companies, in particular (and one day, who knows, it might actually have an impact on the efficiency of the federal government; one can only hope). The difference between our generation and previous ones is the speed with which these changes occur. Previous generations often had decades to anticipate and adapt to these changes:

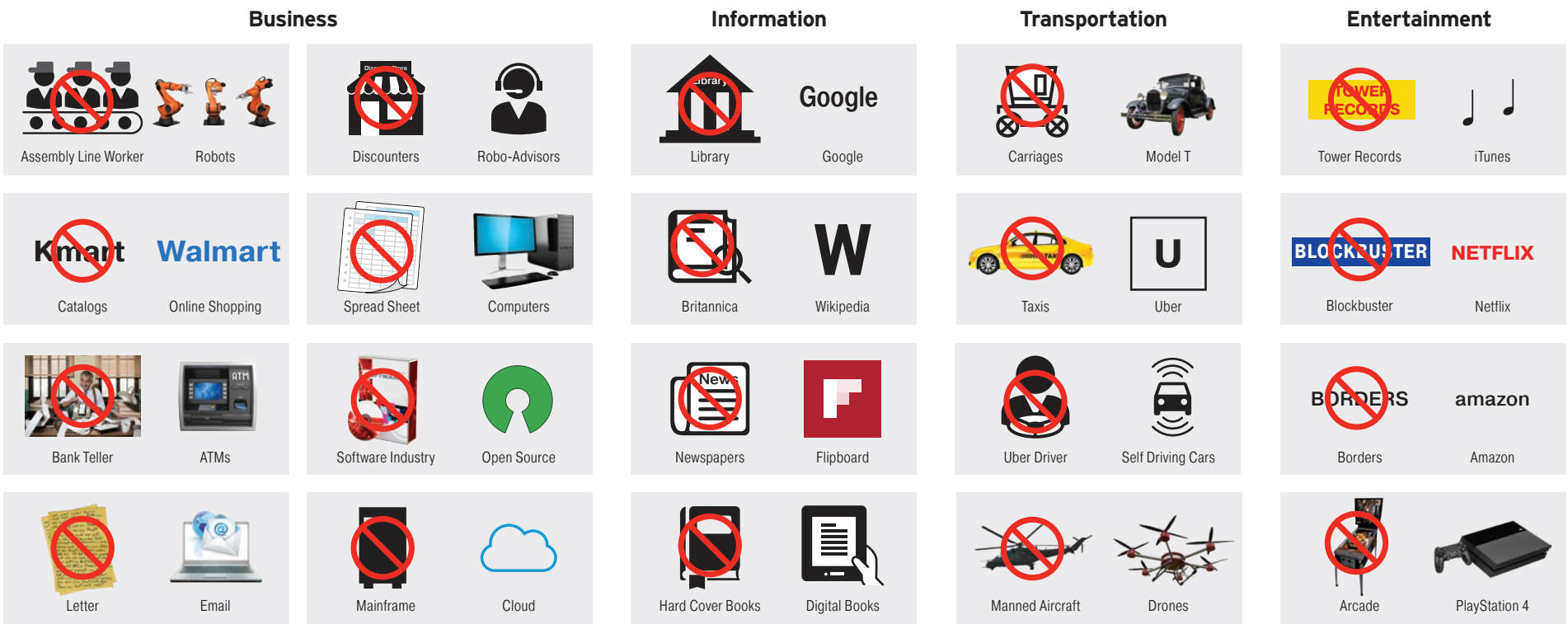
- General Motors installed the first robotic arm in 1961, but it took decades before machines did the majority of the “heavy lifting” (pun intended).

Today these disruptions happen at hyper speed:

- The venerable Encyclopedia Britannica, founded in 1768, was preeminent until 2001, which of course is the year Wikipedia was started. Within less than a decade the last published set of Encyclopedia Britannicas went to market.
- Blockbuster entered the saturated video rental market in 1985 and rapidly became the preeminent player in that space. Turning down an opportunity to purchase the fledgling Netflix in the year 2000, it filed for bankruptcy 13 years later.

To make a long story short, companies and people must adapt or find themselves “disrupted.” This has always been the case in a free market and upwardly mobile economy, the big difference is the window of change closes much more rapidly today than it did in the past. We must be much more nimble, curious, and on a cycle of constant improvement and refinement if we hope to remain economically relevant in the years ahead.

Disruption: Evolve or Reinvent to Survive



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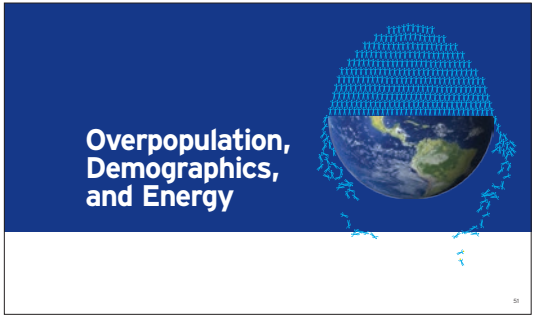
Speaker Notes

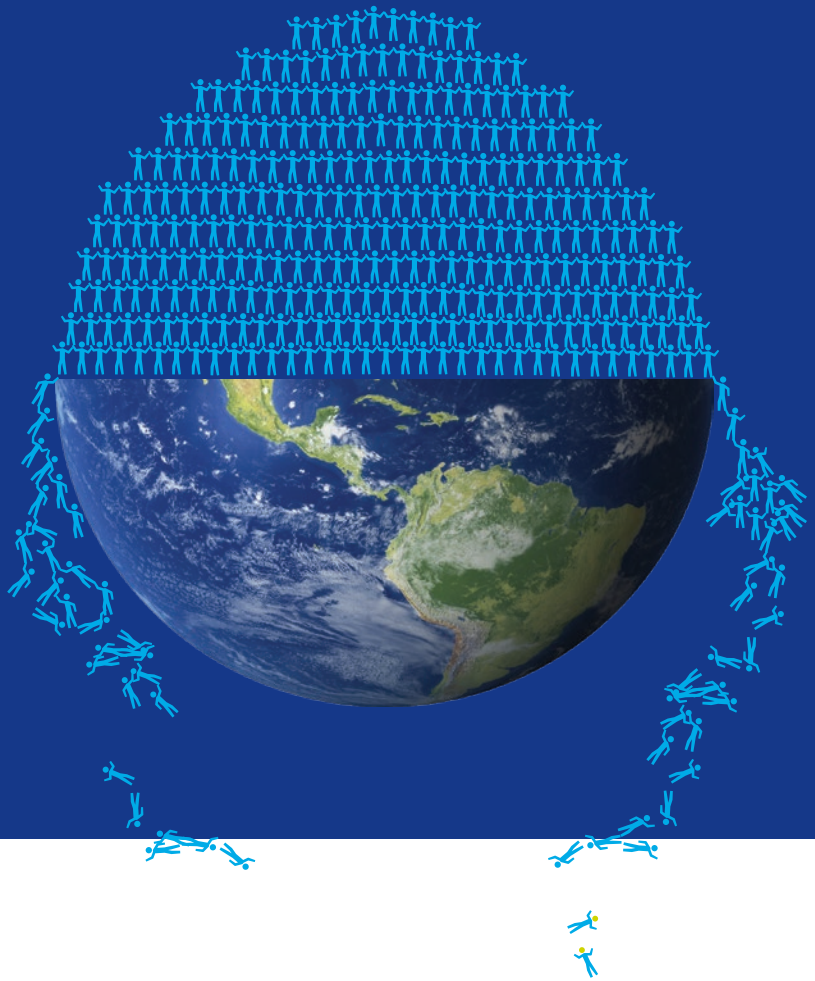


In 1798, Thomas Malthus made his legendary prediction: “The power of population is infinitely greater than the power in the earth to produce subsistence for man.”

Doom-and-gloom forecasters always fail to factor in mankind’s remarkable intellect and ingenuity.

Quote: Available in Public Domain.

Overpopulation, Demographics, and Energy



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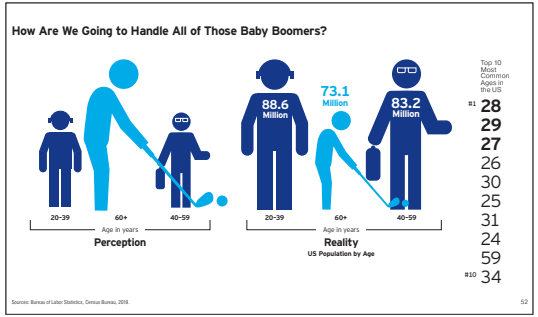
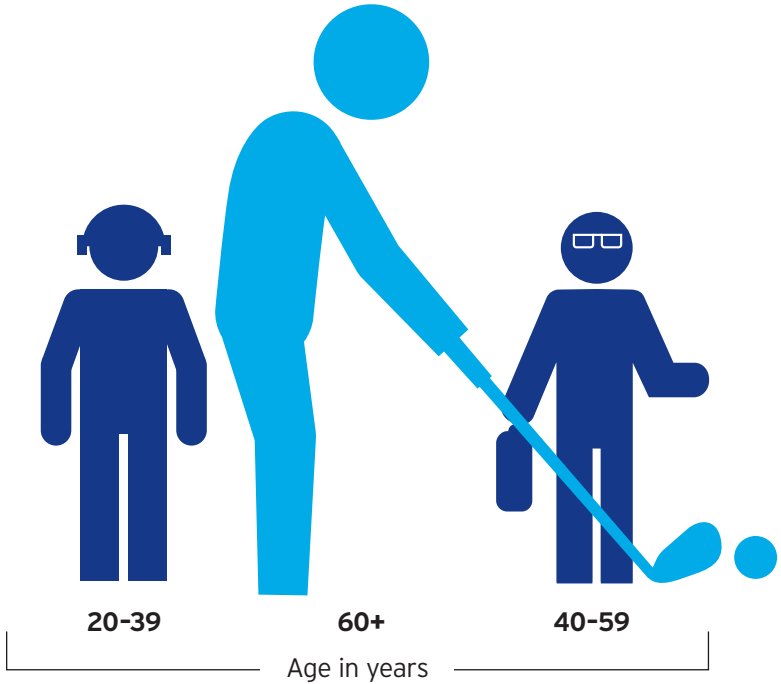


There is a common misperception, illustrated by the images on the left, that the size of the population at or near retirement age (59 and over) dwarfs the size of the population of their younger brethren, and that when they all hit retirement, it could wreak financial havoc on the economy.

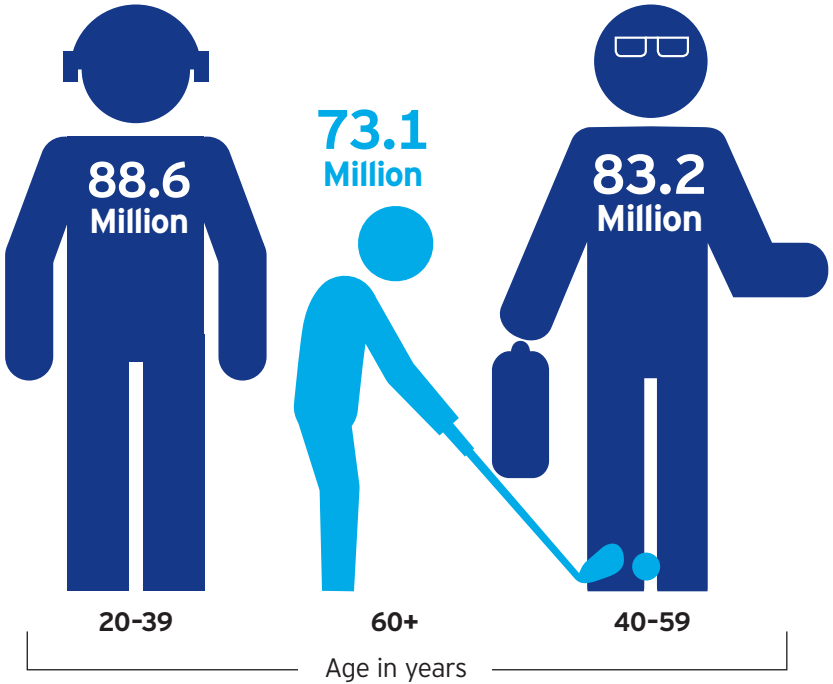
- The reality is far more encouraging. The two younger generations are larger individually and larger collectively than the vaunted Baby Boomers.
- In fact, of the 72 million Baby Boomers, approximately 41 million are between the ages of 55 (people like Michelle Obama and Michael Jordan) and 64 (people like Bill Gates and Eddie Van Halen). These are hardly the faces of a graying population.
- Oh, and by the way, a June 2014 study from Merrill Lynch finds that 72% of pre-retirees over the age of 50 say their ideal retirement will include working—often in new, more flexible and fulfilling ways.

* Source: US Census Bureau, 2019.

How Are We Going to Handle All of Those Baby Boomers?



Perception



Reality

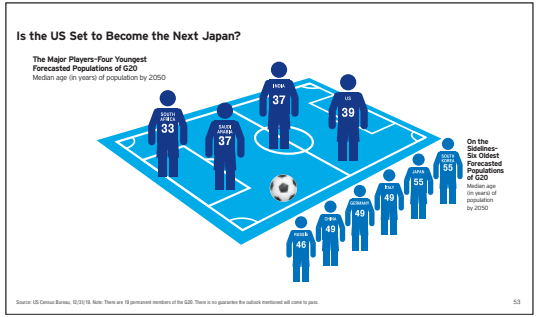
US Population by Age

Top 10 Most Common Ages in the US

#1	**28**
	29
	27
	26
	30
	25
	31
	24
	59
#10	34

Sources: Bureau of Labor Statistics, Census Bureau, 2019.

Speaker Notes



How does the US stack up globally?

What do you think the median age is in the US today?

- 37 years old. That means the average American is closer to Peyton Manning than those who actually watched the first season of Peyton Place (1964–1969).

Yeah, but the US population is aging, right? What about in the future?

- It is estimated that by 2050, there will be over 400 million* Americans, and the median age will be 39 years old!
- Not only will the US have the fourth-youngest population of the G20, but the third-largest population of the world behind just India and China.

For the US, demographics remain a tailwind, as it is for many of the countries of the emerging world. The same can't necessarily be said for Japan, China, Germany, and Russia.

*Sources: Ned Davis Research and US Census Bureau, 12/31/19.

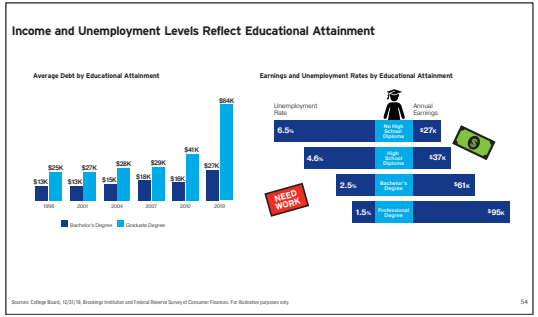
Is the US Set to Become the Next Japan?

The Major Players–Four Youngest Forecasted Populations of G20
Median age (in years) of population by 2050

On the Sidelines–Six Oldest Forecasted Populations of G20
Median age (in years) of population by 2050

Source: US Census Bureau, 12/31/19. Note: There are 19 permanent members of the G20. There is no guarantee the outlook mentioned will come to pass.

Speaker Notes



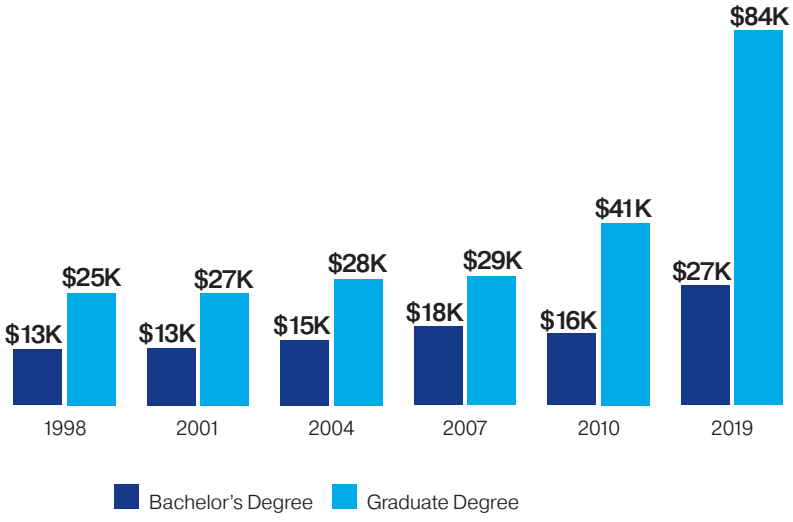
You often hear that student loans are skyrocketing and that the average student is suffocating under a mountain of debt. While this makes good headlines, it's a grossly incomplete picture of what's actually going on.

- According to a recent Brookings Institution study, since 1998, the average debt for a bachelor's degree graduate has been basically flat; going from only approximately $13,000 to $16,000 over almost 20 years. Not exactly the hundreds of thousands of dollars that you would believe if you read the popular press.
- The real increase has occurred at the graduate school level, rising from roughly $30,000 to $40,000 from 2007 to 2010.
- Are the degrees worth it? Absolutely! With each additional degree, the average unemployment rate has historically gone down, and average annual earnings have gone up.

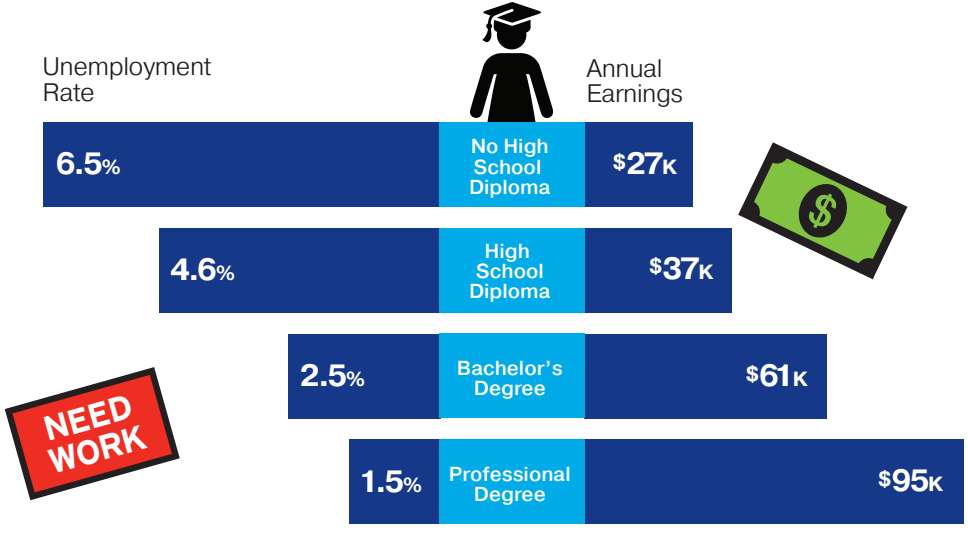
In our view, the majority of young Americans are not going to end up being unemployed and living in their parents' basements, crippled by mountainous student loan payments.

Income and Unemployment Levels Reflect Educational Attainment

Average Debt by Educational Attainment

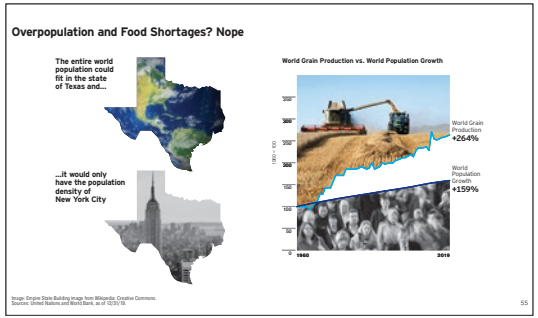


Earnings and Unemployment Rates by Educational Attainment



Sources: College Board, 12/31/19, Brookings Institution and Federal Reserve Survey of Consumer Finances. For illustrative purposes only.

Speaker Notes



Thomas Malthus, the godfather of all demographic and economic pessimists, stated in 1798, “All the children born, beyond what would be required to keep the population level, must necessarily perish.” In our view, that’s pretty harsh.

- Here’s a reality check: You could place the entire population of the globe, all 7.6 billion people, in the state of Texas and it would have the population density of New York City! Maybe a little cramped, but not exactly uninhabitable!
- Whether or not we’re big fans of kippers and Yorkshire pudding, we can likely all agree that the people of London are doing just fine.
- As a result of innovation, world grain production since 1960 has outpaced world population growth by over 40%.

All of these pessimists see geometric problems and linear solutions; when history demonstrates the majority of problems are, in fact, linear.

Quote: Available in Public Domain.

Overpopulation and Food Shortages? Nope

The entire world population could fit in the state of Texas and...

...it would only have the population density of New York City

World Grain Production vs. World Population Growth

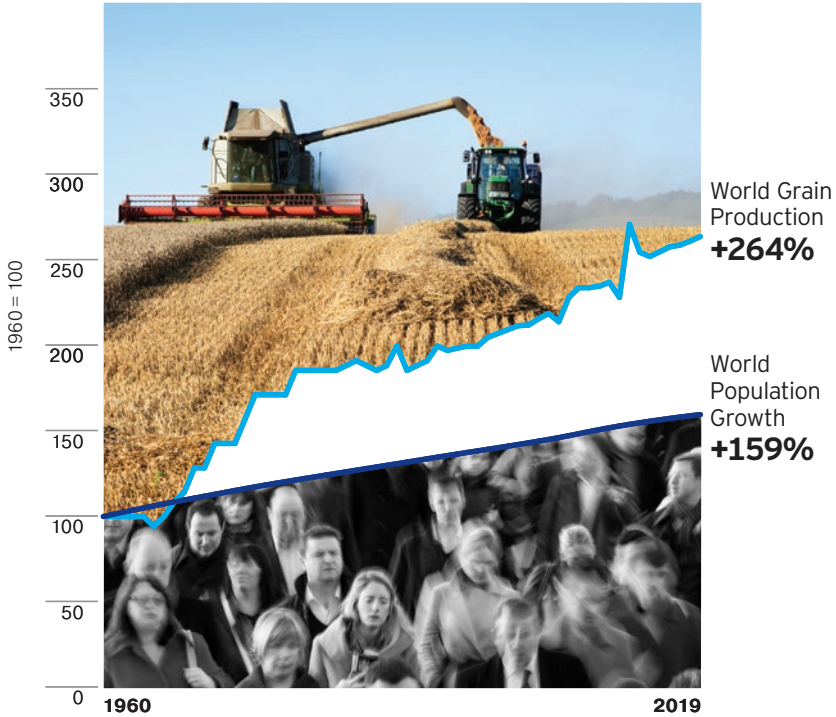
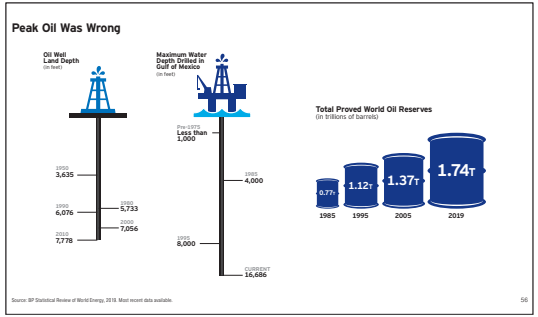


Image: Empire State Building image from Wikipedia: Creative Commons.
Sources: United Nations and World Bank, as of 12/31/19.

Speaker Notes



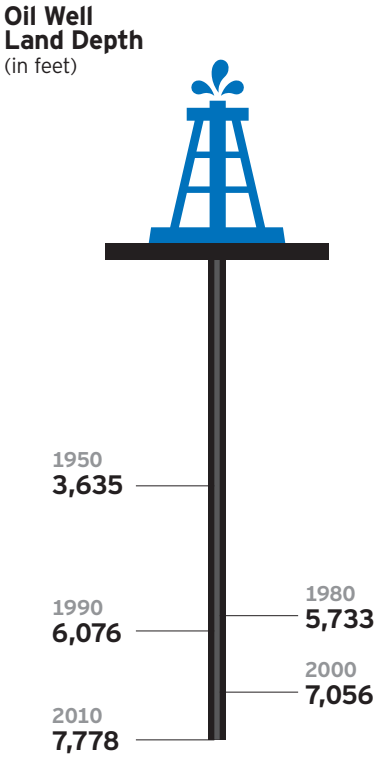
The concept of “peak oil” was first popularized by Marion Hubbert in 1956. Like so many pessimists, Hubbert failed to account for human ingenuity and extraordinary technological innovations, that in this case allow oil exploration companies to drill deeper and to uncover oil in less conventional places.

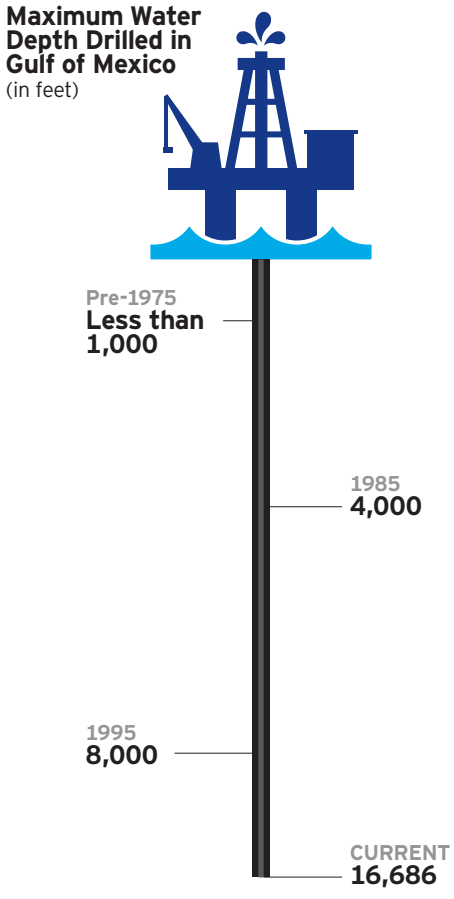
- As a result, technological innovations have allowed land-drilling depth to more than double in the last 70 years. Ocean drilling is even more dramatic, going from less than 1,000 feet pre-1975 to 16,686 feet in 2019.

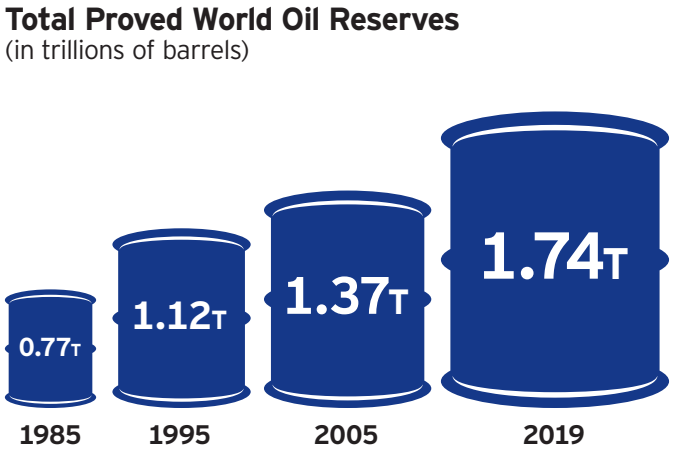
Combine this with the revolutionary technique of fracking, and we’ve gone from lines at the gas station in the 1970s to a virtual oil glut today.

In our view, the long and short of it is that the world has more than enough energy resources to fuel the global economy for quite some time.

Peak Oil Was Wrong

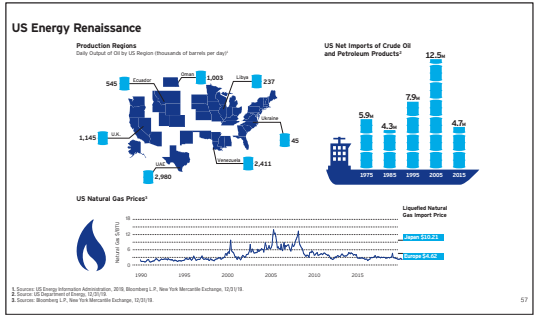






Source: BP Statistical Review of World Energy, 2019. Most recent data available.

Speaker Notes



A decade ago, it seemed almost impossible to imagine that America might break its dependence on Middle East oil imports.

The US now has states or regions that produce as much oil as some well-known oil producing countries. And total US annual production in the 50 states now stands only behind Russia and Saudi Arabia.*

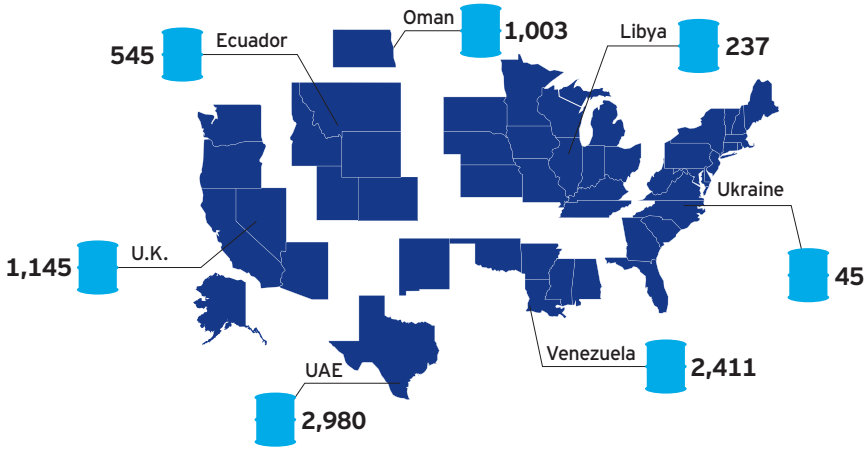
- US net imports of crude oil and petroleum products have plunged by 45% since 2003.**
- The revolution in the US has caused natural gas prices to fall sharply there, even as they have risen in Europe, China, and Japan because gas, unlike oil, cannot be easily transported around the world.

*Source: BP, 2014. Most recent data available.
**Source: EIA, 2019.

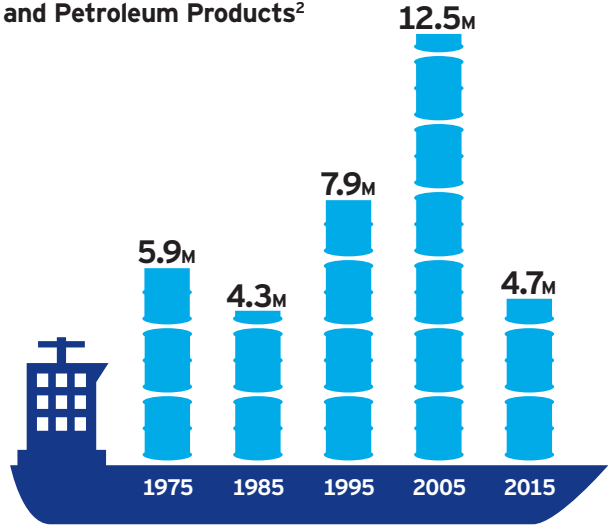
US Energy Renaissance

Production Regions

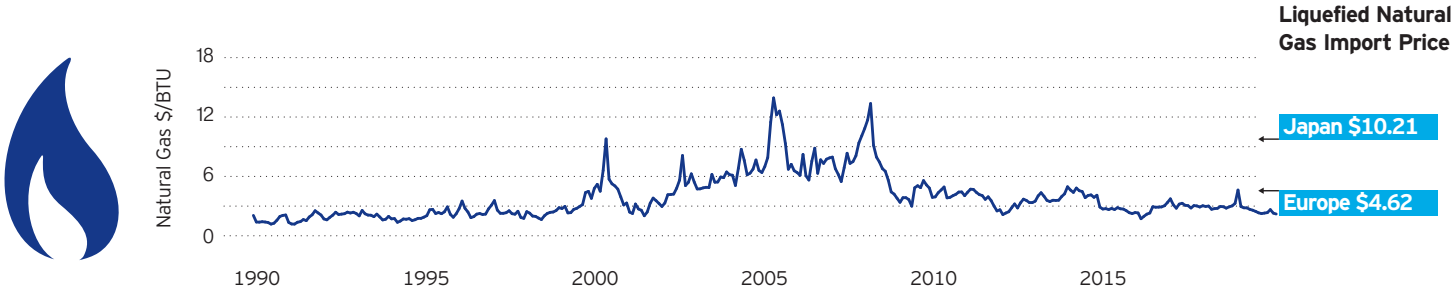
Daily Output of Oil by US Region (thousands of barrels per day)[1]



US Net Imports of Crude Oil and Petroleum Products[2]

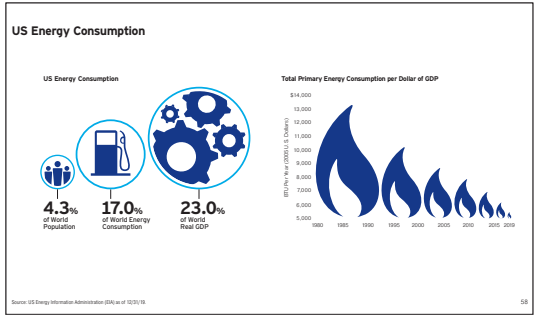


US Natural Gas Prices[3]



1. Sources: US Energy Information Administration, 2019, Bloomberg L.P., New York Mercantile Exchange, 12/31/19.
2. Source: US Department of Energy, 12/31/19.
3. Sources: Bloomberg L.P., New York Mercantile Exchange, 12/31/19.

Speaker Notes

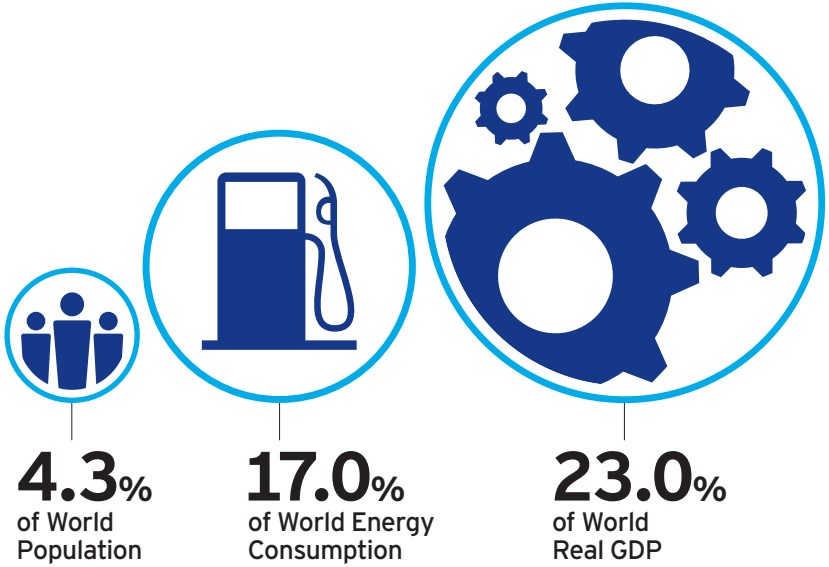


At some point, our inefficient ways will catch up to us, right? After all, the gluttonous United States uses 17.0% of the world's energy with only 4.3% of the world's population! Not so fast. People don't consume energy, economic activity consumes energy. The more a country produces, the more energy it consumes.

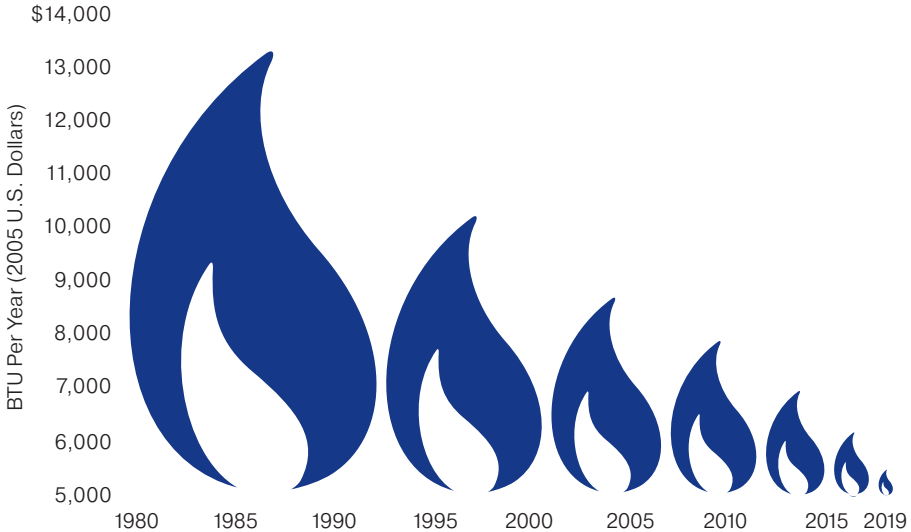
- The US accounts for 23.0% of the world's economic activity but only consumes 17.0% of the world's energy. Seen from this lens, the US seems actually very efficient.
- And getting better every year: between 1992 and 2019, US energy use per dollar of GDP has declined an average of 2.4% per year.

US Energy Consumption

US Energy Consumption



Total Primary Energy Consumption per Dollar of GDP



Source: US Energy Information Administration (EIA) as of 12/31/19.

Index Definitions

The 10-Year US Treasury Yield is generally considered to be a barometer for long-term interest rates.

The Alerian MLP Index is a composite of the 50 most prominent energy Master Limited Partnerships (MLPs).

The Bloomberg Barclays US Aggregate Bond Index is an index of US Government and corporate bonds that includes reinvestment of dividends.

The Bloomberg Barclays Global Aggregate Index is is an unmanaged index considered representative of global investment-grade, fixed-income markets.

The Bloomberg Barclays High Yield Bond Index covers the universe of fixed rate, non-investment-grade debt.

The Bloomberg Barclays Municipal Bond Index is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market and includes bonds rated investment-grade by at least two of the three major rating agencies (Moody's, S&P and Fitch).

The Bloomberg Barclays US Treasury Index is an unmanaged index of public obligations of the US Treasury with remaining maturities of one year or more.

The Bloomberg Barclays 1-3 Year US Treasury Index is an unmanaged index of public US Treasury obligations with remaining maturities of one to three years.

The Bloomberg Commodity Index is comprised of commodities traded on US exchanges, with the exception of aluminum, nickel and zinc, which trade on the London Metal Exchange.

Consumer Price Index (CPI) program produces monthly data on changes in the prices paid by urban consumers for a representative basket of goods and services.

The Dow Jones Industrial Average is a price-weighted average of 30 blue-chip stocks that are generally the leaders in their industry.

The FTSE National Association of Real Estate Investment Trusts (NAREIT) Equity REITs Index is an index consisting of certain companies that own and operate income-producing real estate that have 75% or more of their respective gross invested assets in the equity or mortgage debt of commercial properties.

The Gold Spot price is quoted as US dollar per troy ounce.

The JPMorgan Domestic High Yield Index tracks the investable universe of domestic below-investment-grade bonds in the United States.

The MSCI All Country World Index (AC WI) is an unmanaged index considered representative of large- and mid-cap stocks across developed and emerging markets. The index is computed using the net return, which withholds applicable taxes for non-resident investors.

The MSCI EAFE Index is designed to measure developed market equity performance, excluding the US and Canada.

The MSCI Emerging Markets (EM) Index is designed to measure global emerging market equity performance.

The MSCI Mexico, MSCI Korea, MSCI Russia, and MSCI Argentina represent equity market performance in those countries or regions.

The Russell 1000 Index measures the performance of large-capitalization stocks.

The Russell 2000 Index measures the performance of small-capitalization stocks.

The S&P 500 Index is a market-capitalization-weighted index of the 500 largest domestic US stocks.

Shiller Home Price Index tracks changes in home prices throughout the United States.

Indices are unmanaged and cannot be purchased directly by investors. Index performance is shown for illustrative purposes only and does not predict or depict the performance of any investment. **Past performance does not guarantee future results.**

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About Risk

Fixed income investments have interest rate risk, which refers to the risk that bond prices generally fall as interest rates rise and vice versa.

High yield (junk) bonds involve a higher risk of default and price movement due to changes in the issuer's credit quality, while foreign bonds, including those of emerging markets, may fluctuate more due to increased political concerns, taxation issues, and movements in foreign exchange rates.

Foreign securities have additional risks, including exchange rate changes, political and economic upheaval, relative lack of information, relatively low market liquidity, and the potential lack of strict financial and accounting controls and standards.

Investments in real estate related instruments may be affected by economic, legal, or environmental factors that affect property values, rents or occupancies of real estate. Real estate companies, including REITs or similar structures, tend to be small and mid-cap companies and their shares may be more volatile and less liquid.

Stocks of small- and mid-sized companies tend to be more vulnerable to adverse developments, may be more volatile, and may be illiquid or restricted as to resale.

Stock and other equity securities values fluctuate in response to activities specific to the company as well as general market, economic and political conditions.

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