2020 Economic Outlook: The Search for a New Normal

Travis A. Allen
Senior Investment Strategist and
National Managing Director
Global Macro Outlook: The Secular Backdrop Remains Challenging

Secular Trends Point to Soft Growth and Less Favorable Growth/Inflation Trade-Off

- Negative supply shock from demographics
- Debt overhang
- Weak productivity growth
- Rising populism
- Geopolitical competition/conflict

AB Scenario Probabilities
New Scenarios (Percent)

<table>
<thead>
<tr>
<th></th>
<th>Downside</th>
<th>Central Case</th>
<th>Upside</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Global Recession)</td>
<td>25</td>
<td>60</td>
<td>15</td>
</tr>
<tr>
<td>(Subdued Growth)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Global Reflation)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Current analysis does not guarantee future results.
As of 1 January 2020
Source: AB
2019 Was All About Policy Uncertainty and Trade

Global Economic Policy Uncertainty*

World Trade Volume

Historical analysis and current forecasts do not guarantee future results.

*Shaded areas show periods during which global economic growth was running at 3% or higher.

Left display through 30 November 2019; right display through 31 December 2019

Source: Haver Analytics and AB
Uncertain US CEOs Pull Back on Capital Expenditures
Corporate Confidence Weakened in Early 2018, with Capex Following Soon After

Deteriorating CEO confidence since early 2018

As of 9/30/2019

Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.

Source: Haver Analytics, Conference Board CEO Confidence Survey, Bureau of Economic Analysis, AB
Low US CEO Confidence Has Generally Led to Layoffs

Poor Current Sentiment Increases Risk of Labor Market Weakness

With ~70% of the US economy driven by consumption, the status of the labor market is critical.

As of 12/31/2019

Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.


Source: Haver Analytics, Conference Board CEO Confidence Survey, US Department of Labor, AB
US Consumer Is Strong Provided Employment Picture Is Robust

Confidence, Which Drives Spending, Is The Mirror Image Of Unemployment

As of 11/30/2019

Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.

Consumer confidence represented by: The Conference Board Consumer Confidence Index.

Unemployment rate represented by: Long-term unemployment—Unemployed, 16 Years & Over

Source: NBER, Conference Board, Business Roundtable, BLS, Bernstein Research Services
Most Recessions Are Far Less Severe Than the 2008 Great Recession

S&P 500 Total Return and US Recessions since 1970
Logarithmic Scale=10

As of 12/31/2019

Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.

*Percentage points

**Time period analyzed: from listed recession start through next recession start

Source: Bloomberg, S&P, NBER, BEA, BLS, and AB
Monetary Policy Reaches the End Of the Road

In Europe and Japan, but What About Elsewhere?

Global Nominal Short-Term Interest Rate By Decade

Policy Interest Rates

1Government, households and non-financial companies. Source: Haver Analytics
US Debt to Rise, and Rise, and Rise…

Projected Federal Debt/GDP

Source: Congressional Budget Office

Associated General Contractors of America  |  9
2020 Election: Historically, Politics Don’t Matter to Markets…

**Democratic President**

- 9.2%

**Republican President**

- 9.1%

**Divided Government**

- 10.0%

**Unified Government**

- 8.2%

Past performance does not guarantee future results.

Left display: returns reflect annualized returns for each presidential term dating back to 1937, based on the Dow Jones Industrial Average.

Right display: returns reflect annualized returns for each congressional term dating back to 1937, based on the Dow Jones Industrial Average.

As of 31 December 2019

Source: Bloomberg and AB
Past performance does not guarantee future results.

Right display: Indicates the cumulative real growth rates of pretax national income per adult over two 34-year periods: 1980 to 2014 and 1946 to 1980. The unit is the adult individual (aged 20 or above). Fractiles are defined relative to the total number of adults in the population. Income is split equally among spouses. Pretax national income fractiles are ranked by pretax national income while post-tax national income fractiles are ranked by post-tax national income.

As of 30 June 2019

This Time Around, Politics Matters

The Symptoms

+ Politics, in the form of populism, was the biggest driver of the global economy last year.

+ Trade wars, Brexit, Italian and Spanish elections, Argentina, Turkey, Hong Kong…these are all symptoms of a movement toward populism globally that shows no signs of abating.

+ That means we have to be focused on politics. Not partisanship, but populism, which cuts across partisan lines.

The Solutions

+ Governments have two basic levers they can pull to boost growth:
  - Monetary policy (interest rates)
  - Fiscal policy (government spending and/or tax policy).

+ Each lever has its place, but each also has its cost.

+ Different countries will opt for different mixes of the two.

Slow Growth Isn’t an Acceptable Option
Reinventing Autos: The Path to Autonomous Driving

From level 0 to level 5: The Path to Autonomous Driving

- **Level 0: Driver Only**
  - Driver only

- **Level 1: Assisted**
  - “Feet-off”

- **Level 2: Partial Automation**
  - “Hands-off”

- **Level 3: High Automation**
  - “Eyes-off”

- **Level 4: Full Automation**
  - “Mind-off”

- **Level 5: Driverless**
  - No driver

**Timeline:**
- 2015–2018e
- 2018e–2021e
- 2021e–2025e

For illustrative purposes only. Current analysis and estimates do not guarantee future results. Source: HSBC
The Healthcare Mandate

Lowering Costs

Holy Grail

Improving Patient Outcomes
Amazon’s Forecasted Market Share of Retail Pharmacy

Acquisition of PillPack in 2018 marked start of push into pharmacy

Source: IMS, Company filings, Bernstein estimates and analysis
Our Top Five Predictions For the 2020s
With the 2010s now over, we provide five areas to watch

1. **Returns will be lower than during the 2010s**
   - Due to slower economic growth, profit margin contraction, limited valuation expansion and low interest rates

2. **Non-US Equities outperform US Equities**
   - Rotation occurs, narrowing the performance and valuation gap between US and non-US equities

3. **Real interest rates remain at current levels**
   - Flat deficit to GDP, and mixed demographics leave the supply and demand for capital largely unchanged

4. **Responsible Investing and Alternatives will grow in importance to investors**
   - A generational shift for many investors looking to align their values with their financial assets
   - Diversification continues to proliferate, benefiting greater numbers of high-net-worth investors

5. **Tax rates will be higher**
   - Current individual tax cuts are set to expire mid-decade and likely stay high due to fiscal challenges

As of 12/31/2019

**Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.**

Source: AB
U.S. Construction Spending, Labor & Materials Outlook

Ken Simonson
Chief Economist, AGC of America
ken.simonson@agc.org
Highlights

• U.S. economy should continue to increase and add jobs in 2020 but coronavirus may cause short-term disruption
• Contractors remain optimistic
• Single-family homebuilding, power & energy, highways and transportation have best prospects
• Segments most susceptible to coronavirus impacts: lodging, high-end retail & entertainment, travel-related construction, some manufacturing
• Lack of qualified labor, not materials costs or demand, remains top worry

Source: Author
AGC members’ expectations for 2020 compared to 2019 survey

<table>
<thead>
<tr>
<th>US Net % who expect dollar value of projects to be higher (2020 survey/2019 survey)</th>
<th>25%/14%</th>
<th>Water/Sewer</th>
<th>16%/11%</th>
<th>Higher Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%/16%   Bridge/Highway</td>
<td></td>
<td></td>
<td>11%/5%</td>
<td>Multifamily Residential</td>
</tr>
<tr>
<td>20%/16%   K-12 school</td>
<td></td>
<td></td>
<td>11%/12%</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>20%/16%   Hospital</td>
<td></td>
<td></td>
<td>10%/17%</td>
<td>Public Building</td>
</tr>
<tr>
<td>20%/14%   Transportation (e.g., transit, rail, airport)</td>
<td></td>
<td></td>
<td>10%/15%</td>
<td>Retail, Warehouse, Lodging</td>
</tr>
<tr>
<td>17%/10%   Power</td>
<td></td>
<td></td>
<td>8%/13%</td>
<td>Private Office</td>
</tr>
<tr>
<td>17%/15%   Federal (e.g., VA, GSA, USACE, NAVFAC)</td>
<td></td>
<td></td>
<td></td>
<td>Note: Net = % who expect dollar value to increase - % who expect decrease</td>
</tr>
</tbody>
</table>

Source: AGC 2020 Outlook Survey, Dec 2019
Construction spending, 1/06-1/20

trillion $, seasonally adjusted annual rate; not inflation-adjusted

1/20 Change from:

<table>
<thead>
<tr>
<th>1/19</th>
<th>Prior peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>6.8%</td>
</tr>
<tr>
<td>Private Residential</td>
<td>9.0%</td>
</tr>
<tr>
<td>Private Nonresidential</td>
<td>0.5%</td>
</tr>
<tr>
<td>Public</td>
<td>12.6%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau
## Nonresidential spending by segment

2018 & 2019 actual change; 2020 forecast

<table>
<thead>
<tr>
<th>Nonresidential total (public+private)</th>
<th>2018 vs. 2017</th>
<th>2019 vs. 2018</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (incl. oil &amp; gas field structures, pipelines)</td>
<td>-3</td>
<td>8</td>
<td>5-10%</td>
</tr>
<tr>
<td>Highway and street</td>
<td>2</td>
<td>9</td>
<td>5-10%</td>
</tr>
<tr>
<td>Educational</td>
<td>1</td>
<td>0.2</td>
<td>0-5%</td>
</tr>
<tr>
<td>Office</td>
<td>8</td>
<td>6</td>
<td>near 0</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>0.1</td>
<td>5</td>
<td>near 0</td>
</tr>
<tr>
<td>Transportation (air, land, water)</td>
<td>12</td>
<td>6</td>
<td>5-10%</td>
</tr>
<tr>
<td>Health care</td>
<td>-1</td>
<td>4</td>
<td>0-5%</td>
</tr>
<tr>
<td>Retail</td>
<td>5</td>
<td>-23</td>
<td>-15 to -20%</td>
</tr>
<tr>
<td>Warehouse</td>
<td>16</td>
<td>0.4</td>
<td>near 0</td>
</tr>
<tr>
<td>Lodging</td>
<td>10</td>
<td>7</td>
<td>near 0</td>
</tr>
<tr>
<td>Sewage &amp; waste disposal</td>
<td>4</td>
<td>9</td>
<td>0-5</td>
</tr>
<tr>
<td>Other* (13% of 2019 total)</td>
<td>6</td>
<td>1</td>
<td>0-5</td>
</tr>
</tbody>
</table>

*Amusement, communication, water supply, public safety, conservation, farm and religious

Source:
U.S. Census Bureau construction spending report; Author’s forecast

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Construction spending: public works
Annual total, 2008-18; monthly, Jan. ‘19-Jan. ‘20 (seasonally adjusted annual rate); billion $

<table>
<thead>
<tr>
<th>Category</th>
<th>2019 Public Shares</th>
<th>Jan ‘19–Jan ‘20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highways</td>
<td>99.7%</td>
<td>12%</td>
</tr>
<tr>
<td>Transportation</td>
<td>70%</td>
<td>5% (air 10%; other 2%)</td>
</tr>
<tr>
<td>Sewage/wastewater &amp; water supply</td>
<td>2019 public shares: sewage 97%; water 98%</td>
<td>sewage/waste 13%, water 35%</td>
</tr>
<tr>
<td>Conservation and development</td>
<td>99.7%</td>
<td>24%</td>
</tr>
</tbody>
</table>
Key points: roads, transportation, sewer/water

- Any federal infrastructure spending increase won’t occur until 2021 or later, but state highway funding and toll projects are increasing
- Ongoing high level of airport projects; record level of transit construction/reconstruction
- Water & sewer/wastewater spending are at or near record levels after large drop in 2016-17; little long-term new funding likely
- Federal $ for conservation have increased; Corps of Engineers is struggling to award and manage additional projects

Source: Author
Construction spending: industrial, heavy
Annual total, 2008-18; monthly, Jan. ‘19-Jan. ‘20
(seasonally adjusted annual rate); billion $

**Power** (94% private in 2019)
- Jan ‘19–Jan ‘20 8% (oil & gas -10%; electric 14%)

**Manufacturing** (99.7% private in 2019)
- Jan ‘19–Jan ‘20: 5% (chemical 8%; other 3%)

**Amusement & recreation** (51% private in 2019)
- Jan ‘19–Jan ‘20: 3% (private -12%; public 21%)

**Communication** (99.4% private in 2019)
- Jan ‘19–Jan ‘20: -5%
Key points: power & energy, mfg, amusement, communication

- Solar, wind power are growing; oil & natural gas pipelines have hit court & regulatory delays; new drilling is down as oil, gas prices fall
- Manufacturing construction recovery likely to stall as tariffs, foreign retaliation, sluggish global economy lead to project cancellations
- Amusement & recreation spending is very “lumpy”—a few big stadiums at irregular intervals; but funding for local, state, federal parks keeps eroding
- Communication may revive as wireless firms build out 5G networks

Source: Author
Construction spending: education, health
Annual total, 2008-18; monthly, 1/19-1/20 (seasonally adjusted annual rate); billion $

**Education (81% public in 2019)**

- Jan ‘19–Jan ‘20: -0.7% (state/local preK-12 4%; state/local higher ed 0%; private -19%)

**Health care (80% private in 2019)**

- Jan ‘19–Jan ‘20: -4% (hospital 0%; medical building -23%; special care 32%)

Source: U.S. Census Bureau construction spending report
Key points: education & health care

• Rising house & commercial property values are supporting school district tax receipts & bond issues for preK-12 projects
• More school spending is on urban/older suburban school reconstruction & expansion, less on new schools in new subdivisions
• Higher-ed enrollment is shrinking and some small colleges are closing; decrease in full-tuition foreign students will hurt budgets
• State of stock market affects college construction capital campaigns
• Health care spending is shifting from hospitals to special-care facilities (urgent care, surgery, rehab, hospices) and doctors’ offices

Source: Author
Construction spending: developer-financed

Annual total, 2008-18; monthly, Jan. ‘19-Jan. ‘20 (seasonally adjusted annual rate); billion $

- **Retail (private)**: Jan ‘19–Jan ‘20: -6%
- **Warehouse (private)**: Jan ‘19–Jan ‘20: 13%
- **Office** (87% private in 2019): Jan ‘19–Jan ‘20: 3% (private 0%; public 19%)
- **Lodging (private)**: Jan ‘19–Jan ‘20: -8%

Source: U.S. Census Bureau construction spending report

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Key points: retail, warehouse, office, hotel, data centers

• Retail now tied to mixed-use buildings & renovations, not stand-alone structures; massive store closings imply ongoing downturn

• Warehouse growth is still benefiting from e-commerce but trade wars are reducing inbound and outbound shipments

• Office employment is still rising but space per worker is shrinking; more urban & renovation work than new suburban office parks

• Hotel “pipeline” is still large but sector is very sensitive to interest rates and travel disruptions (e.g., coronavirus)

• Data centers remain a strong niche but data is not reported separately (most are included in office total)

Source: Author
Private residential spending levels and change (seasonally adjusted annual rate)

Spending put in place (billion $), 1/06-1/20

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Residential Peak: 02/06</th>
<th>Single-Family Peak: 02/06</th>
<th>Improvements Peak: 02/18</th>
<th>Multifamily Peak: 05/19</th>
</tr>
</thead>
</table>

12-month % change, 1/18-1/20

<table>
<thead>
<tr>
<th>Category</th>
<th>Jan vs. Peak</th>
<th>1/19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Residential Total</td>
<td>-18%</td>
<td>9%</td>
</tr>
<tr>
<td>Single-family</td>
<td>-37%</td>
<td>10%</td>
</tr>
<tr>
<td>Improvements</td>
<td>-8%</td>
<td>14%</td>
</tr>
<tr>
<td>Multifamily</td>
<td>-10%</td>
<td>-8%</td>
</tr>
</tbody>
</table>
2020 Residential spending forecast: 5 to 9% (-5% in 2019; 3% in 2018)

• Single-family: **5-10%** (-6% in 2019; 7% in 2018); low interest rates, rising income & wealth will boost home buying, but builders face challenges getting permits and finding workers

• Multifamily: **0-5%** (3% in 2019; -1% in 2018)
  • occupancy rates, rents have leveled off; some millennials moving to houses but some seniors moving to apartments
  • millennials are staying longer in apartments than previous generations
  • nearly all multifamily construction is rental, not condo; more high-rises

• Improvements: **5-10%** (3% in 2019; -2% in 2018); additions and renovations should track homebuying closely but data is unreliable

Source: Author
Population change by state, July 2018–July 2019 (U.S.: 0.48%)

**Top 5**
- **ID**: 2.1%
- **NV**: 1.7%
- **AZ**: 1.7%
- **UT**: 1.7%
- **TX**: 1.3%

**Bottom 5**
- **WV**: -0.7%
- **AK**: -0.5%
- **IL**: -0.4%
- **NY**: -0.4%
- **HI**: -0.3%
Population change: implications for construction

• Important determinant over time of: demand for housing, several types of nonresidential construction; public funding; labor supply

• 2019 U.S. growth of 0.48% was slowest in 101 years

• 10 states lost population; growth slowed in 32 states, DC

• Growth rate slowed the most from ‘18 in DC, FL, CO, MA

• CA growth was 300,000/year in ‘11-’15; 51,000 in ‘19

Source: Author
State construction employment change (U.S.: 2.0%)

12/18 to 12/19: 34 states and DC up, 16 states down

**Top 5**
- Maine: 11.5%
- New Mexico: 10.8%
- Utah: 8.6%
- Texas: 7.4%
- New Hampshire: 7.4%

**Bottom 5**
- Wyoming: -9.5%
- West Virginia: -7.2%
- Connecticut: -5.5%
- Louisiana: -4.8%
- Vermont: -4.1%

Note: Shading based on unrounded numbers
Source: BLS
**Construction workforce indicators (not seasonally adjusted)**

**Construction openings: near all-time high despite increased hiring**
(December data, 2001-19)

- **Hires**: 278,000
- **Openings**: 239,000

**Pay not accelerating despite high job openings rate**
(December data, 2010-19)

- **Job openings rate in construction**: 3.1%
- **12-mo % change in construction average hourly earnings**: 2.3%
Outlook 2020: Firms plan to add workers but expect continued difficulty finding them

- 75% of firms planning to add workers
- 81% reporting difficulty hiring
- 65% who expect as much or more difficulty in coming year

Source: AGC 2020 Outlook Survey, Dec 2019
Outlook 2020: Firms with staffing challenges face higher costs and delays

- Costs have been higher than anticipated: 44%
- Putting higher prices into bids or contracts: 41%
- Projects took longer than anticipated: 40%
- Putting longer completion times into bids or contracts: 23%

Source: AGC 2020 Outlook Survey, Dec 2019
Outlook 2020: Firms adopt labor-saving methods to replace workers or skills

- **Labor-saving equipment** (e.g., drones, robots, 3-D printers, laser-or GPS-guided equipment)
- **Methods to reduce onsite worktime** (e.g., lean construction, virtual construction such as BIM, offsite fabrication)
- **Added specialists** (e.g., architects, BIM or lean construction personnel, drone or other equipment operators, data or IT personnel)

Source: AGC 2020 Outlook Survey, Dec 2019
Producer price index for key inputs
12-month % change, not seasonally adjusted

January 2018 – January 2019

Copper & brass mill shapes: -13%
Aluminum mill shapes: 3%
Diesel fuel: -12%
Steel mill products: 18%

January 2019 – January 2020

Lumber & plywood: -6%
Gypsum products: 0%
Ready-mixed concrete: 2%
Paving mixtures: 7%

Source: Bureau of Labor Statistics
Cumulative changes in bid prices vs. materials & labor costs, 1/16-1/20

Source: Bureau of Labor Statistics
## Summary: 2018 & 2019 actual change; 2020 forecast

<table>
<thead>
<tr>
<th></th>
<th>2018 actual</th>
<th>2019 actual</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total spending</td>
<td>3.3%</td>
<td>-0.1%</td>
<td>2-6%</td>
</tr>
<tr>
<td>Private – residential</td>
<td>2.8%</td>
<td>-4.6%</td>
<td>5-9%</td>
</tr>
<tr>
<td>– nonresidential</td>
<td>3.7%</td>
<td>0.5%</td>
<td>0-4%</td>
</tr>
<tr>
<td>Public</td>
<td>3.6%</td>
<td>7.0%</td>
<td>0-4%</td>
</tr>
<tr>
<td>Goods &amp; services inputs PPI</td>
<td>4.0%*</td>
<td>1.5%**</td>
<td>3-4%</td>
</tr>
<tr>
<td>Wages &amp; salaries (avg. hourly earnings)</td>
<td>4.0%*</td>
<td>2.3%**</td>
<td>3.5-4.5%</td>
</tr>
</tbody>
</table>

* Dec. 2017-Dec.2018

** Dec 2018- Dec 2019
AGC economic resources
(email ken.simonson@agc.org)

• *The Data DIGest*: weekly 1-page email
  (subscribe at [http://store.agc.org](http://store.agc.org))

• Monthly press releases: spending; producer price indexes; national, state, metro employment with ranking

• Yearly employment & outlooks surveys, state and metro data, fact sheets:
  [www.agc.org/learn/construction-data](http://www.agc.org/learn/construction-data)
What to Know about Election Years
It’s Hard to Find a Causal Relationship

<table>
<thead>
<tr>
<th>Year</th>
<th>Winner</th>
<th>S&amp;P Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1928</td>
<td>Hoover</td>
<td>38%</td>
</tr>
<tr>
<td>1932</td>
<td>Roosevelt</td>
<td>(15)%</td>
</tr>
<tr>
<td>1936</td>
<td>Roosevelt</td>
<td>34%</td>
</tr>
<tr>
<td>1940</td>
<td>Roosevelt</td>
<td>(10)%</td>
</tr>
<tr>
<td>1944</td>
<td>Roosevelt</td>
<td>20%</td>
</tr>
<tr>
<td>1948</td>
<td>Truman</td>
<td>5%</td>
</tr>
<tr>
<td>1952</td>
<td>Eisenhower</td>
<td>18%</td>
</tr>
<tr>
<td>1956</td>
<td>Eisenhower</td>
<td>6%</td>
</tr>
<tr>
<td>1960</td>
<td>Kennedy</td>
<td>0%</td>
</tr>
<tr>
<td>1964</td>
<td>Johnson</td>
<td>16%</td>
</tr>
<tr>
<td>1968</td>
<td>Nixon</td>
<td>11%</td>
</tr>
<tr>
<td>1972</td>
<td>Nixon</td>
<td>19%</td>
</tr>
<tr>
<td>1976</td>
<td>Carter</td>
<td>24%</td>
</tr>
<tr>
<td>1980</td>
<td>Reagan</td>
<td>33%</td>
</tr>
<tr>
<td>1984</td>
<td>Reagan</td>
<td>6%</td>
</tr>
<tr>
<td>1988</td>
<td>Bush (H.W.)</td>
<td>17%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Winner</th>
<th>S&amp;P Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>Clinton</td>
<td>8%</td>
</tr>
<tr>
<td>1996</td>
<td>Clinton</td>
<td>23%</td>
</tr>
<tr>
<td>2000</td>
<td>Bush (W.)</td>
<td>(9)%</td>
</tr>
<tr>
<td>2004</td>
<td>Bush (W.)</td>
<td>11%</td>
</tr>
<tr>
<td>2008</td>
<td>Obama</td>
<td>(37)%</td>
</tr>
<tr>
<td>2012</td>
<td>Obama</td>
<td>16%</td>
</tr>
<tr>
<td>2016</td>
<td>Trump</td>
<td>12%</td>
</tr>
</tbody>
</table>

Average Return Election Years: 9%
Average Return 1928-2016: 9%
Election Years Positive: 19
Election Years Negative: 4
Non-Recessionary Negative Election Years: 2 ('40, '00)

As of 12/31/2019
Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.
Source: S&P, Bloomberg, Bernstein Research Services, AB
Stocks Are Not Created Equal—Some More Attractive Than Others

Historically Wide Discounts In Value, International and Small Cap

As of 12/31/2019.

Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.

Representative indices – top left: Russell 1000 Growth/ Russell 1000 Value; top right: S&P 500+top 500 by market cap/Next 1000; bottom left: MSCI ACWI USA Minimum Volatility/ MSCI ACWI USA Value; bottom right: S&P 500/ MSCI ACWI Ex US

Percentile rank start date 8/31/1999

Source: I/B/E/S, Factset, S&P, and AB

As of 12/31/2019.
Notes on Bernstein Wealth Forecasting System

1. **Purpose and Description of Wealth Forecasting Analysis**
   Bernstein's Wealth Forecasting Analysis is designed to assist investors in making their long-term investment decisions as to their allocation of investments among categories of financial assets. Our planning tool consists of a four-step process: (1) Client-Profile Input: the client's asset allocation, income, expenses, cash withdrawals, tax rate, risk-tolerance level, goals, and other factors; (2) Client Scenarios: in effect, questions the client would like our guidance on, which may touch on issues such as when to retire, what his/her cash-flow stream is likely to be, whether his/her portfolio can beat inflation long-term, and how different asset allocations might affect his/her long-term security; (3) The Capital-Markets Engine: our proprietary model that uses our research and historical data to create a vast range of market returns, which takes into account the linkages within and among the capital markets, as well as their unpredictability; and (4) A Probability Distribution of Outcomes: based on the assets invested pursuant to the stated asset allocation, 90% of the estimated ranges of returns and asset values the client could expect to experience are represented within the range established by the 5th and 95th percentiles on “box-and-whiskers” graphs. However, outcomes outside this range are expected to occur 10% of the time; thus, the range does not establish the boundaries for all outcomes. Expected market returns on bonds are derived taking into account yield and other criteria. An important assumption is that stocks will, over time, outperform long bonds by a reasonable amount, although this is in no way a certainty. Moreover, actual future results may not meet Bernstein's estimates of the range of market returns, as these results are subject to a variety of economic, market, and other variables. Accordingly, the analysis should not be construed as a promise of actual future results, the actual range of future results, or the actual probability that these results will be realized. The information provided here is not intended for public use or distribution beyond our private meeting.

2. **Retirement Vehicles**
   Each retirement plan is modeled as one of the following vehicles: Traditional IRA, 401(k), 403(b), Keogh, or Roth IRA/401(k). One of the significant differences among these vehicle types is the date at which mandatory distributions commence. For traditional IRA vehicles, mandatory distributions are assumed to commence during the year in which the investor reaches the age of 70½. For 401(k), 403(b), and Keogh vehicles, mandatory distributions are assumed to commence at the later of: (i) the year in which the investor reaches the age of 70½, or (ii) the year in which the investor retires. In the case of a married couple, these dates are based on the date of birth of the older spouse. The minimum mandatory withdrawal is estimated using the Minimum Distribution Incidental Benefit tables as published on www.irs.gov. For Roth IRA/401(k) vehicles, there are no mandatory distributions. Distributions from Roth IRA/401(k) that exceed principal will be taxed and/or penalized if the distributed assets are less than five years old and the contributor is less than 59½ years old. All Roth 401(k) plans will be rolled into a Roth IRA plan when the investor turns 59½ years old, to avoid Minimum Distribution requirements.

3. **Rebalancing**
   Another important planning assumption is how the asset allocation varies over time. We attempt to model how the portfolio would actually be managed. Cash flows and cash generated from portfolio turnover are used to maintain the selected asset allocation between cash, bonds, stocks, REITs, and hedge funds over the period of the analysis. Where this is not sufficient, an optimization program is run to trade off the mismatch between the actual allocation and targets against the cost of trading to rebalance. In general, the portfolio is expected to be maintained reasonably close to the target allocation. In addition, in later years, there may be contention between the total relationship's allocation and those of the separate portfolios. For example, suppose an investor (in the top marginal federal tax bracket) begins with an asset mix consisting entirely of municipal bonds in his personal portfolio and entirely of stocks in his/her retirement portfolio. If personal assets are spent, the mix between stocks and bonds will diverge from targets. We put primary weight on maintaining the overall allocation near target, which may result in an allocation to taxable bonds in the retirement portfolio as the personal assets decrease in value relative to the retirement portfolio's value.
Notes on Bernstein Wealth Forecasting System

4. Expenses and Spending Plans (Withdrawals)
All results are generally shown after applicable taxes and after anticipated withdrawals and/or additions, unless otherwise noted. Liquidations may result in realized gains or losses, which will have capital-gains tax implications.

5. Modeled Asset Classes
The following assets or indexes were used in this analysis to represent the various model classes:

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Modeled As</th>
<th>Annual Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Equivalents</td>
<td>3-month US Treasury bills</td>
<td>100%</td>
</tr>
<tr>
<td>Short-Term Treasuries</td>
<td>US Treasuries of 2-year maturity</td>
<td>50%</td>
</tr>
<tr>
<td>Short-Term Taxables</td>
<td>Taxable bonds of 2-year maturity</td>
<td>50%</td>
</tr>
<tr>
<td>Short-Term Diversified Municipals</td>
<td>AA-rated diversified municipal bonds of 2-year maturity</td>
<td>50%</td>
</tr>
<tr>
<td>Int.-Term Treasuries</td>
<td>US Treasuries of 7-year maturity</td>
<td>30%</td>
</tr>
<tr>
<td>Int.-Term Taxables</td>
<td>Taxable bonds of 7-year maturity</td>
<td>30%</td>
</tr>
<tr>
<td>Int.-Term Corporates</td>
<td>US investment-grade corporate debt of 7-year maturity</td>
<td>30%</td>
</tr>
<tr>
<td>Int.-Term Diversified Municipals</td>
<td>AA-rated diversified municipal bonds of 7-year maturity</td>
<td>30%</td>
</tr>
<tr>
<td>Global Int.-Term Taxables (Hedged)</td>
<td>50% sovereign and 50% investment-grade corporate debt of developed countries of 7-year maturity</td>
<td>30%</td>
</tr>
<tr>
<td>Int.-Term TIPS</td>
<td>US TIPS of 7-year maturity</td>
<td>30%</td>
</tr>
<tr>
<td>High Yield</td>
<td>Taxable bonds of 7-year maturity with credit characteristics of CSFB High Yield Index II</td>
<td>30%</td>
</tr>
<tr>
<td>Global Large-Cap (Unhedged)</td>
<td>MSCI World Index (NDR) Index</td>
<td>15%</td>
</tr>
<tr>
<td>US Diversified</td>
<td>S&amp;P 500 Index</td>
<td>15%</td>
</tr>
<tr>
<td>US Value</td>
<td>S&amp;P/Barra Value Index</td>
<td>15%</td>
</tr>
<tr>
<td>US Growth</td>
<td>S&amp;P/Barra Growth Index</td>
<td>15%</td>
</tr>
<tr>
<td>US Mid-Cap</td>
<td>Russell Mid-Cap Index</td>
<td>15%</td>
</tr>
<tr>
<td>US Small-/Mid-Cap</td>
<td>Russell 2500 Index</td>
<td>15%</td>
</tr>
<tr>
<td>US Small-Cap</td>
<td>Russell 2000 Index</td>
<td>15%</td>
</tr>
<tr>
<td>Developed International</td>
<td>MSCI EAFE Index (Unhedged)</td>
<td>15%</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>MSCI Emerging Market Index</td>
<td>20%</td>
</tr>
<tr>
<td>Global REITs</td>
<td>NAREIT Index</td>
<td>30%</td>
</tr>
<tr>
<td>Real Assets</td>
<td>1/3 NAREIT, 1/3 MSCI ACWI Commodity Producer Index, 1/3 DJ-UBS Commodity Futures Index</td>
<td>30%</td>
</tr>
<tr>
<td>Diversified Hedge Fund</td>
<td>Diversified Hedge Fund Asset Class</td>
<td>33%</td>
</tr>
</tbody>
</table>
6. Volatility
Volatility is a measure of dispersion of expected returns around the average. The greater the volatility, the more likely it is that returns in any one period will be substantially above or below the expected result. The volatility for each asset class used in this analysis is listed on the Capital-Market Projections page before these Notes. In general, two-thirds of the returns will be within one standard deviation. For example, assuming that stocks are expected to return 8.0% on a compounded basis and the volatility of returns on stocks is 17.0%, in any one year it is likely that two-thirds of the projected returns will be between (8.9)% and 28.8%. With intermediate government bonds, if the expected compound return is assumed to be 5.0% and the volatility is assumed to be 6.0%, two-thirds of the outcomes will typically be between (1.1)% and 11.5%. Bernstein’s forecast of volatility is based on historical data and incorporates Bernstein’s judgment that the volatility of fixed-income assets is different for different time periods.

7. Technical Assumptions
Bernstein’s Wealth Forecasting System is based on a number of technical assumptions regarding the future behavior of financial markets. Bernstein’s Capital-Markets Engine is the module responsible for creating simulations of returns in the capital markets. These simulations are based on inputs that summarize the current condition of the capital markets as of the date in the footnotes of that page. A description of these technical assumptions is available on request.

8. Tax Implications
Before making any asset-allocation decisions, an investor should review with his/her tax advisor the tax liabilities incurred by the different investment alternatives presented herein, including any capital gains that would be incurred as a result of liquidating all or part of his/her portfolio, retirement-plan distributions, investments in municipal or taxable bonds, etc. Bernstein does not provide tax, legal, or accounting advice. In considering this material, you should discuss your individual circumstances with professionals in those areas before making any decisions.

9. Tax Rates
Bernstein’s Wealth Forecasting System has used various assumptions for the income tax rates of investors in the case studies. See the assumptions in each case study (including footnotes) for details. The federal income tax rate is Bernstein’s estimate of either the top marginal tax bracket or an “average” rate calculated based upon the marginal rate schedule. For 2014 and beyond, the maximum federal tax rate on investment income is 43.4% and the maximum federal long-term capital-gains tax rate is 23.8%. Federal tax rates are blended with applicable state tax rates by including, among other things, federal deductions for state income and capital-gains taxes. The state tax rate generally represents Bernstein’s estimate of the top marginal rate, if applicable.

10. Core Capital Analysis
The term “core capital” means the amount of money necessary to cover anticipated lifetime net spending. All noncore capital assets are termed “surplus capital.” Bernstein estimates core capital by inputting information supplied by the client, including expected future income and spending, into our Wealth Forecasting System, which simulates a vast range of potential market returns over the client’s anticipated life span. From these simulations, we develop an estimate of the core capital the client will require to maintain his/her spending level over time. Variations in actual income, spending, applicable tax rates, life span, and market returns may substantially affect the likelihood that a core capital estimate will be sufficient to provide for future expenses. Accordingly, the estimate should not be construed as a promise of actual future results, the actual range of results, or the actual probability that the results will be realized.
Index Descriptions

The Dow Jones–UBS Commodity Index is a rolling index composed of futures contracts on physical commodities.

The FTSE EPRA/NAREIT Global Real Estate Index is a market-capitalization-weighted index that tracks the performance of listed real estate companies and REITs across a range of property types worldwide.

The FTSE NAREIT Equity Index is an unmanaged, market-capitalization-weighted index that tracks the performance of publicly traded REITs across a range of US geographies and property types.

HFRI Fund of Funds Composite Index is an equal-weighted performance index that includes more than 650 constituent fund of funds that report their monthly net-of-fee returns to Hedge Fund Research, Inc. and have at least $50 million under management and have been actively trading for at least 12 months.

HFRI Fund Weighted Composite Index is an equal-weighted performance index that includes more than 2,000 constituent funds that report their monthly net-of-fee returns to Hedge Fund Research, Inc. and have at least $50 million under management and have been actively trading for at least 12 months.

The Lipper Intermediate Municipal Debt Funds Index tracks funds that invest in municipal debt issues with dollar-weighted average maturities of five to 10 years.

The Lipper Short/Intermediate Municipal Debt Funds Index tracks funds that invest in municipal debt issues with dollar-weighted average maturities of one to five years.

The Lipper Short Municipal Debt Funds Index tracks funds that invest in municipal debt issues with dollar-weighted average maturities of less than three years.

The Lipper TASS Hedge Fund Index provides monthly net-of-fee returns on an equal-weighted basis of those funds that report returns to the Lipper TASS database.

The Lipper TIPS Fund Index tracks funds that invest primarily in inflation-indexed fixed-income securities issued in the United States. Inflation-indexed bonds are fixed-income securities that are structured to provide protection against inflation.
Index Descriptions (cont.)

The **MSCI All-Country World Index (ACWI)** is a market-capitalization-weighted index designed to provide a broad measure of equity market performance throughout the world.

The **MSCI ACWI Commodity Producers Index** is a free-float-adjusted market-capitalization-weighted index that is designed to track the performance of global listed commodity producers.

The **MSCI EAFE (Europe, Australasia, Far East) Index** is a free-float-adjusted, market-capitalization-weighted index that is designed to measure developed-market equity performance, excluding the US and Canada.

The **MSCI Emerging Markets Index** is a free-float-adjusted, market-capitalization-weighted index that is designed to measure equity market performance in the global emerging markets.

The **MSCI USA Index** is a free-float-adjusted, market-capitalization-weighted index that is designed to measure large- and mid-cap US equity market performance.

The **MSCI USA Minimum Volatility Index** aims to reflect the performance characteristics of a minimum variance strategy applied to the US large- and mid-cap equity universe. The index is calculated by optimizing the MSCI USA Index, its parent index, for the lowest absolute risk (within a given set of constraints). Historically, the index has shown lower beta and volatility characteristics relative to the MSCI USA Index.

The **MSCI World Index** is a free-float-adjusted, market-capitalization-weighted index that is designed to measure global developed-market equity performance.

The **Russell 1000® Growth Index** measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.*

The **Russell 1000® Value Index** measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.*

The unmanaged **S&P 500 Index** comprises 500 large-capitalization US stocks and is a common measure of the performance of the US stock market.

*The Russell Index methodology results in some companies appearing in both the growth and value indexes.
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