The Fed’s “Easy Money” Gets Tougher
A Macro and Markets Review

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Our Perspective

The financial markets are entering 2022 much like they did the beginning of 2021: uncertain. Their newest uncertainty is perhaps the most significant: inflation—which is why central banks are now pivoting away from their “easy money” regime.

Our analysis suggests the economy and markets will be able to navigate the near term, but those investors that are the most vulnerable to higher-than-normal inflation should act now to inoculate against the risk that inflation poses.

Other issues will also be in investors’ sights: COVID, consumer excess savings, and market concentration, among others. But earnings growth will matter above all else since it’s the end result of every uncertainty and controversy. Markets will take notice if those earnings figures need to be revised lower…or higher from current consensus.

So, what’s an investor to do?

WHAT TO DO:

• Stay invested, if you are; markets rarely reward long-term investors in cash
• Put capital to work if you have it; opportunities exist but selectivity is key
• Execute lifetime wealth transfer strategies, where appropriate

Current analysis does not guarantee future results.
Snapshot: Key Economic and Market Forecasts

- **Global Growth**: Growth will remain above-trend, but fiscal and monetary tightening will take their toll by slowing the pace vs. 2021.

- **Inflation**: Inflation is the key variable in 2022. The longer it stays elevated the tougher the job will be for central bankers to navigate the implications.

- **Monetary Policy**: We expect nearly all policy makers to tighten in 2022. The outliers are Japan and China.

- **Bond Yields**: We expect global rates to rise modestly and for yield curves to flatten (i.e. the more significant move will occur at the short end as policy tightens).

- **Earnings Growth**: Growth remains solid. Consensus growth expectations for S&P 500 earnings in 2022 are now 9%—still strong growth two years past the contraction. Early 2023 forecasts are for a similar pace.

### AB Forecast

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>US GDP</td>
<td>6.1%</td>
<td>3.4%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Global GDP</td>
<td>5.9%</td>
<td>4.1%</td>
<td>3.0%</td>
</tr>
<tr>
<td>10Y Treasury Rate</td>
<td>1.5%†</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>US Inflation</td>
<td>4.9%†</td>
<td>2.7%</td>
<td>1.9%</td>
</tr>
<tr>
<td>EUR/USD</td>
<td>1.14†</td>
<td>1.05</td>
<td>1.02</td>
</tr>
<tr>
<td>S&amp;P 500 EPS Growth*</td>
<td>45%</td>
<td>9%</td>
<td>10%</td>
</tr>
</tbody>
</table>

As of December 31, 2021.  

*Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.  
*Consensus expectation, not AB forecast.  
†These are the actual figures for 2021, not forecasts. 2021 US Inflation is the 12-month percent change through November 2021, the latest available CPI  
Source: FactSet and AB
How destabilizing could inflation pressures become in 2022?

On average, rate hiking cycles are good for equities (+8%), but clear communication from the Fed will be key for continued market calm.
Goods Prices Skyrocketed: Services Now Catching Up

Pressures are now more broad based than earlier this year

Whereas the initial phases of the inflation acceleration were driven by supply chain issues…and then goods demand…services prices are now beginning to rise, led by measures of housing.

That matters, since services categories tend to be persistent and the increases suggest the ongoing inflation spike is unlikely to fade in the near term.

As of November 30, 2021.

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Source: AB, Bloomberg

Modeled above is Core Inflation—Durable Goods and Services less Energy Services.
Inflation Forecasts Are Highly Uncertain, Even Among Economists

2023 Wall Street expectations range from disinflation to accelerating inflation

Core Inflation: Historic and Estimated (%)

Inflation is always hard to predict, but even more challenging at the moment. The range two years out is unusually wide among Wall Street economists.

As of December 31, 2021.

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*Capital Markets Engine

2021 is 12-month percent change through November 2021, the latest available CPI

All data points are for the US.

Source: AB, Bloomberg.
We’re Tracking the Global Supply Chain for Signs of Easing
An easing of shipping prices may be the first indication of relief

Contributions to AB’s Global Supply-Chain Indicator

Traditional measures of supply chain operations are less relevant and/or stale due to the fluidity of the pandemic’s challenges. We’ve built our own real-time supply chain indicator to better understand when the pressures may ease.

As of December 31, 2021.

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

Aggregate Google Searches Comprise of: Food Shortages, Bottleneck, Supply Disruption, Supply Chain Disruption.

Source: AB, Bloomberg, Google, Baltic Exchange
Central Banks Have Begun to Tighten to Stem Inflation Risks

Recent policy moves from major central banks

As of December 31, 2021.

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

Note: China diverges from world trend, cutting Loan Prime Rate.

Source: AB
The Market Is Baking in Fed “Lift Off” Already

Two-year yields are the best market indicator of Fed action

As of December 31, 2021.

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

Source: AB, Bloomberg
What Could Rate Hikes Mean for Equity Returns?
S&P 500 price return in fed tightening cycles since 1955

As of December 31, 2021.

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


Source: AB, Bloomberg
Inflation Sensitivity Is Critical to the Asset Allocation Decision

Key takeaways from our inflation sensitivity analysis:

- Most should benefit, over time and to some degree, from inflation protection, but it’s more critical for some than for others

- Inflation is episodic so there will likely be a “cost” to the protection during sustained, non-inflationary environments


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Source: AB
What are the other key controversies to watch in 2022?

Profit growth, the consumer, market concentration, and valuations stand out as the other focal points for 2022.
Can Earnings and Margins Hold Up as the Economy Slows?

2022 growth forecast now 9%: margins near 2018 peaks

S&P 500 Earnings, Rolling 12 Months and by Calendar Year

2022 EPS Forecast: $226
2021 EPS*: $207
2020 EPS: $137/share

Trailing Twelve-Month Operating Margins (%)

9% EPS Growth Forecast for ‘22

Earnings and margins are likely to hold up provided purchasers don’t push back on price increases. To date, they have not.

As of December 31, 2021.

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*As of December 31, 2021, Q4 earnings have not been reported
Source: FactSet, Bloomberg, Bernstein Analysis
Will Excess Savings Be Spent or Saved?

$1.3T of excess savings could serve as an additional tailwind for the economy.

The spending of excess savings over the last two years has been a tailwind for the economy. It's likely the pace of spending slows...which should lead to slower 2022 growth, but may also ease some of the demand-driven inflationary pressures.

As of November 30, 2021.

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Source: AB, Factset
Would an S&P Leadership Change Create Volatility…or Opportunity?

35% of the S&P 500’s Return in 2021 came from 5 Stocks

A broadening of the market’s performance leadership would be welcome news for investors and less disruptive than commonly feared.

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"Standout" Underperformers to S&P 500 (Below Line, Outside Circle, Left to Right): Facebook, Amazon.

Source: AB, Bloomberg
Where to for Valuations?
Despite S&P total return of nearly 30% in 2021, PEs compressed

For P/Es to contract meaningfully in 2022, we believe interest rates would need to rise well above 2%. We’ve penciled in a 10-Year Treasury yield at 2.0% by year end which should be digestible by investors.

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EPS Growth = YoY Change in EPS + Interaction Effect. (1 + EPS Growth) (1 + Multiple Change) = 1 + Price Return⇒ Interaction Effect = Multiple Change * EPS Growth.

Source: AB, Factset
Opportunity Outweighs Risk, Suggesting Modestly Positive Outlook

Incremental gains should come as risks clear

Current risks are offset by highly accommodative policy, a recovering economy and above-average corporate earnings growth. That said, incremental returns may need to wait for some of the uncertainties to clear.

As of December 31, 2021.

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Source: AB
To what extent will the markets focus on COVID?

Since March 2020, the market has looked through all negative COVID news flow.
COVID’s Declining Impact on Markets and Profits since Outbreak
Equities and profit forecasts largely unaffected by COVID developments

S&P 500 Price Level and Consensus Earnings Estimates

As of December 31, 2021.

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Source: AB, Bloomberg World Health Organization
Economic Activity Remains Resilient Despite Pandemic’s Duration

Nearly back-to-normal activity across most metrics

Change in Seated Diners at US Restaurants vs. the Same Day in 2019, 7-Day Avg

Total TSA Travel Numbers
Millions, 7-Day Avg

Change in Apple Maps Requests
Since January 2020, 7-Day Avg

As of December 31, 2021.

Historical analysis is not necessarily indicative of future results.

Sources: Open Table, Bureau of Economic Analysis, TSA, Apple, and AB
Don’t Discount the American Consumer’s Willingness to Spend

Consumer spending has been buttressed by fiscal support and a reopened economy

Sales for Retail and Food Service (USD Millions)

As of November 30, 2021.

Historical analysis is not necessarily indicative of future results.

Source: Census Bureau
What investment themes are notable for 2022?

Inflation, low yields, responsible investing, uncertainty, and idiosyncratic return.
Actionable Ideas Aligned with Our 2022 Outlook

As of December 31, 2021.

Historical analysis is not necessarily indicative of future results.

Source: AB
How can Bernstein be helpful in reaching my goals?
Our 2022 Checklist: How We’re Taking Action
Our priorities for clients for the balance of the year

- Aligning your financial objectives with your investment implementation
  Ensuring that your allocation is consistent with the goals you’ve set

- Considering whether tax change would affect you and what actions may be appropriate in advance of legislation
  We can help you explore a range of wealth transfer tax and income tax planning strategies

- Analyzing your inflation sensitivity
  Your allocation, spending level or income may be reason to initiate or increase an allocation to inflation sensitive assets

- Right-sizing your cash allocation
  We can explore a range of ideas, based on your return and risk objectives

- Maintaining your allocation to non-US equities
  Non-US stocks are now especially attractive, as the economies improve and valuations revert

- Revisiting your alternatives exposure
  Alternatives are a critical piece of a well-diversified puzzle

- Considering whether purpose-driven portfolios are appropriate
  We have an array of services that can align your investments with your values

 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.
Source: AB
Returns Expected to Be Modest, Drawdowns More Likely Than Normal

Projected median 10-year annualized return*

The most significant influences on our modest 10-year return expectations are:
For Equities: High US valuations and low non-US profit margins
For Bonds: Low current interest rates & rising rates over time

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*Based on Bernstein’s estimates of the range of returns for the applicable capital markets over the next 10 years as of June 30, 2021. Projected pretax 10-year compound growth rate. Conservative is 30% stocks/70% bonds; moderate is 60% stocks/40% bonds; growth is 80% stocks/20% bonds. Stocks are represented by the following allocation for a 100% stock allocation: 16.2% US value, 16.2% US growth, 12.0% US diversified, 6.0% US small-/mid-cap, 21.2% developed foreign markets, 8.1% emerging markets, 9.6% US Low Vol Equity, 10.7% high-risk international. Equity geography weights may shift in proportion to total return-seeking allocation. Bonds are represented by diversified intermediate-term municipal bonds in the proportions noted. Additional details regarding allocation available upon request.

†Reflects compound growth rates from July 1, 2011, through June 30, 2021. Stocks represented by 60% Russell 3000 Index and 40% MSCI ACWI ex US. Bonds represented by Lipper Short/Int Blended Muni Fund Avg. From left to right, those figures are 2.4%, 5.1%, 7.7%, 9.4%, 11.0%.

‡Probability of a 20% peak-to-trough decline in pretax, pre-cash-flow cumulative returns within the next 10 years. Because the Wealth Forecasting System uses annual capital-market returns, the probability of peak-to-trough losses measured on a more frequent basis (such as daily or monthly) may be understated. The probabilities depicted above include an upward adjustment intended to account for the incidence of peak-to-trough losses that do not last an exact number of years. §Normal refers to a market condition in which assets are fairly priced as in a long-term central case. The Normal peak-to-trough probability is as follows from left to right: <2%, <2%, 11%, 34%, and 56%.

See Assumptions and Notes on Bernstein Wealth Forecasting System in Appendix for further details.

Source: Lipper, MSCI, Russell, S&P, and AB.
Appendix
Addressing the Most Relevant Investment and Wealth Topics to You

Timely insights

Blogs

The Times They Are a-Changin’: Should Your Inflation Hedge Change, Too?
The transition to a low-carbon, service-based economy has major implications for inflation protection. Is your inflation hedge “next gen”?... or behind the times?

The Fed Taper is Here...Now What About Rate Hikes
The Federal Reserve kicks off its taper of US asset purchases later this month. But here’s a meaningful gap between the market’s inflation anxiety and the Fed’s walk-and-see approach to what it still views as a transitory challenge.

Will Real Estate Stocks Build on Brisk Recovery?
With key market segments improving, property stocks can serve as a diversifying source of returns and a hedge against inflation.

Sustainability and Investing: Lessons Learned in the Pandemic Era
The pandemic has prompted massive changes for countries, societies, people, and businesses, while reinforcing the role of sustainable investment strategies.

Muni Investors: Stay Flexible as Rates Rise
Should muni investors worry about rising rates or welcome them? It depends on how flexible you are.

One-Two Punch of Inflation and Taxes
Inflation and taxes can both hurt investors’ returns, but the combination can be downright disastrous.

Podcasts

Injecting Hope into the Climate Change Discussion
In launching a new tech-focused climate strategy, AB Portfolio Manager Dureka Camasquillo shares what it feels like to bring hope to the problem of climate change.

In Search of Disruptors
What makes a technology truly disruptive and even more importantly, what makes it a good investment? Lei Qiu, the portfolio manager of AllianceBernstein's Global Disruptors strategy shares her secrets.

Building Scale with Sustainable Bonds
Whether it's project-based green bonds, social bonds, or sustainability-linked bonds, fixed income is increasingly becoming the 'go-to' for mature companies looking to fund their transition to a sustainable future. Bernstein Sustainable Credit Portfolio Manager Shaen Keegan discusses the brave new world of sustainability-focused fixed income.
US Energy Intensity: A Lot Lower Than It Was

Energy required to produce one unit of GDP is 37% of what it was in 1970

US Energy Intensity, Indexed to 1970

As of February 25th, 2022.

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

*Energy Intensity = Total Primary Energy Consumption / Real GDP

Source: US EIA, BEA AB
A Handful of Stocks Have Periodically Driven S&P 500 Returns
Share of S&P 500 Return from 5 Largest Contributors

Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.
Beginning in 2017 both share classes of Google are aggregated.
Source: Bloomberg, AB
# Geopolitics: Events Rarely Have a Lasting Market Impact

Select geopolitical events since 1970 and S&P 500 returns (%)

<table>
<thead>
<tr>
<th>Event</th>
<th>First Trading Day</th>
<th>1 Week</th>
<th>1 Month</th>
<th>1 Quarter</th>
<th>1 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watergate</td>
<td>6/19/1972</td>
<td>0.1</td>
<td>1.4</td>
<td>0.4</td>
<td>3.0</td>
</tr>
<tr>
<td>Yom Kippur War*</td>
<td>10/8/1973</td>
<td>1.4</td>
<td>3.9</td>
<td>10.0</td>
<td>43.2</td>
</tr>
<tr>
<td>Three Mile Island Accident</td>
<td>3/28/1979</td>
<td>0.1</td>
<td>0.7</td>
<td>0.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Iran Hostage Crisis*</td>
<td>11/5/1979</td>
<td>1.0</td>
<td>3.6</td>
<td>12.3</td>
<td>24.3</td>
</tr>
<tr>
<td>Reagan Assassination Attempt*</td>
<td>3/30/1981</td>
<td>0.6</td>
<td>0.6</td>
<td>(1.6)</td>
<td>(16.9)</td>
</tr>
<tr>
<td>Challenger Space Shuttle</td>
<td>1/28/1986</td>
<td>3.2</td>
<td>9.3</td>
<td>16.8</td>
<td>32.0</td>
</tr>
<tr>
<td>Iran-Contra Affair</td>
<td>11/3/1986</td>
<td>0.7</td>
<td>2.1</td>
<td>12.3</td>
<td>3.2</td>
</tr>
<tr>
<td>Iraq Invades Kuwait*</td>
<td>8/2/1990</td>
<td>(4.7)</td>
<td>(8.9)</td>
<td>(12.8)</td>
<td>12.8</td>
</tr>
<tr>
<td>Desert Storm/First Gulf War*</td>
<td>1/17/1991</td>
<td>4.5</td>
<td>17.2</td>
<td>23.6</td>
<td>36.6</td>
</tr>
<tr>
<td>LA Riots</td>
<td>4/29/1992</td>
<td>2.0</td>
<td>2.3</td>
<td>2.8</td>
<td>10.2</td>
</tr>
<tr>
<td>WTC Bombing (1993)</td>
<td>2/26/1993</td>
<td>1.2</td>
<td>2.1</td>
<td>2.2</td>
<td>8.3</td>
</tr>
<tr>
<td>Oklahoma City Bombing</td>
<td>4/19/1995</td>
<td>1.4</td>
<td>3.1</td>
<td>11.3</td>
<td>30.5</td>
</tr>
<tr>
<td>Centennial Park Olympic Bombing</td>
<td>7/29/1996</td>
<td>4.3</td>
<td>4.6</td>
<td>10.8</td>
<td>50.6</td>
</tr>
<tr>
<td>Kenya/Tanzania Embassy Bombings</td>
<td>8/7/1998</td>
<td>(1.3)</td>
<td>(10.5)</td>
<td>5.1</td>
<td>21.0</td>
</tr>
<tr>
<td>USS Cole Bombing*</td>
<td>10/12/2000</td>
<td>1.6</td>
<td>0.2</td>
<td>(2.5)</td>
<td>(18.5)</td>
</tr>
<tr>
<td>Bush-Gore Hanging Chad*</td>
<td>11/7/2000</td>
<td>(5.6)</td>
<td>(5.5)</td>
<td>(5.3)</td>
<td>(20.9)</td>
</tr>
<tr>
<td>9/11*</td>
<td>9/17/2001</td>
<td>(4.9)</td>
<td>(0.9)</td>
<td>4.7</td>
<td>(15.5)</td>
</tr>
<tr>
<td>War in Afghanistan*</td>
<td>10/8/2001</td>
<td>1.9</td>
<td>3.0</td>
<td>9.8</td>
<td>(24.2)</td>
</tr>
</tbody>
</table>

**Key Takeaway:** Stocks have generally shrugged off geopolitical events, since they rarely have a lasting impact on the business cycle.

As of January 31, 2022. **Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.**

*Denotes the geopolitical event occurred during a recession or six months prior to the start of a recession.

**Date that China officially notified the WHO of the outbreak.

†Tariffs on imports of solar panels and washing machines imposed.


**Summary**

<table>
<thead>
<tr>
<th>Event</th>
<th>1 Week</th>
<th>1 Month</th>
<th>1 Quarter</th>
<th>1 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>0.1</td>
<td>0.2</td>
<td>3.6</td>
<td>9.8</td>
</tr>
<tr>
<td>% of Events Negative</td>
<td>40</td>
<td>37</td>
<td>29</td>
<td>(26)</td>
</tr>
<tr>
<td>Conflict/War Avg.</td>
<td>0.7</td>
<td>1.7</td>
<td>4.7</td>
<td>4.7</td>
</tr>
<tr>
<td>Terrorism Avg.</td>
<td>(0.1)</td>
<td>0.7</td>
<td>4.4</td>
<td>12.4</td>
</tr>
<tr>
<td>Political Avg.</td>
<td>(0.2)</td>
<td>1.1</td>
<td>2.4</td>
<td>5.3</td>
</tr>
<tr>
<td>Environmental Avg.</td>
<td>0.8</td>
<td>(0.1)</td>
<td>3.4</td>
<td>11.9</td>
</tr>
<tr>
<td>Social Avg.</td>
<td>(0.3)</td>
<td>(3.9)</td>
<td>3.7</td>
<td>16.6</td>
</tr>
</tbody>
</table>
2022 Outlook For Key Macro Variables

Fiscal Policy

- Neutral
- Stimulation
- Austerity

Monetary Policy

- Neutral
- Easy
- Tight

Economic Activity

- Trend
- Weak
- Strong

Inflation

- Target
- Deflation
- Overshoot

As of December 31, 2021.

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

Source: AB.
Cross-Asset Returns Dashboard—The Rally Continues

Returns in US dollars

As of December 31, 2021.


Source: Bloomberg Barclays, MSCI, S&P and AB.
Despite Sell-Offs, Long-Term Investors Remain Above Plan

Projected* and Actual Returns (Annualized)

Actual Annualized Net-of-Fee Return:**
9.1%

10-Year Forecasted Returns (as of December 2016)

Great Markets
9.5%

Typical Markets
5.5%

Hostile Markets
1.7%

Through December 31, 2021. Past performance does not guarantee future results. There is no guarantee that any estimates or forecasts will be realized.

*Great markets represents 10th percentile, typical markets represents 50th percentile, and hostile markets represents 90th percentile. Based on Bernstein’s estimates of the range of returns for the applicable capital markets as of December 31, 2016, for a 60/40 stock/bond allocation. Stocks modeled as 21% US diversified, 21% US value, 21% US growth, 7% US Small/Mid-Cap, 22.5% developed international, and 7.5% emerging markets. Bonds modeled as intermediate-term diversified municipals. Data do not represent past performance and are not a promise of actual future results or a range of future results. See Notes on Bernstein Wealth Forecasting System in the Appendix for further details.

**The hypothetical performance of the Moderate Portfolio Simulation (MPS) is a simulated portfolio intended to illustrate the investment experience of a Bernstein taxable client who was invested in a moderate growth allocation of Bernstein investment services. Represents monthly returns. Assumes no portfolio additions or withdrawals over the period. Results based on pretax returns and do not reflect the impact of taxes. It is presented for illustrative purposes only, and no representation is made that an investor will, or is likely to, achieve profits or experience losses similar to those shown. See Performance Disclosures at the end of this presentation for additional information regarding the simulation’s composition and calculation methodology.

Source: AB
Markets Are Often Reaching New Heights

Since 1949, the S&P 500 has been at or near all-time highs 44% of the time.

As of December 31, 2021.

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*At or near all time high represents all price levels that are within 5% of the last all time high or are a new all time high.

Source: S&P, Bloomberg and AB.
Stocks Have Mostly Risen Despite Intra-Year Corrections

S&P 500 (%) by Calendar Year

Year’s Total Return

Intra-Year Peak-to-Trough Decline

As of December 31, 2021.

Past performance does not guarantee future results.

Source: Bloomberg, Standard & Poor’s, Morningstar, AB Analysis
Inflation Expectations Remain Anchored Near 2%

Expectations are one of most important determinants of future inflation levels

It's very difficult for inflation to increase over the long term if higher prices aren't expected in the future.

As of December 31, 2021.

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Source: Bloomberg and AB
## Ten-Year Capital Markets Projections: Asset Classes

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Median 10-Year Growth Rate</th>
<th>Mean Annual Return</th>
<th>Mean Annual Income</th>
<th>One-Year Volatility</th>
<th>10-Year Annual Equivalent Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Equivalents</td>
<td>1.3%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>0.0%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Short-Term Treasuries</td>
<td>2.0%</td>
<td>2.1%</td>
<td>2.1%</td>
<td>0.3%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Short-Term Taxables</td>
<td>2.3%</td>
<td>2.5%</td>
<td>2.7%</td>
<td>0.8%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Short-Term Diversified Municipals</td>
<td>1.5%</td>
<td>1.6%</td>
<td>1.5%</td>
<td>0.5%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Int.-Term Treasuries</td>
<td>1.2%</td>
<td>1.3%</td>
<td>2.5%</td>
<td>3.2%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Int.-Term Taxables</td>
<td>1.4%</td>
<td>1.6%</td>
<td>3.3%</td>
<td>3.8%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Int.-Term Corporates</td>
<td>1.5%</td>
<td>1.7%</td>
<td>3.8%</td>
<td>4.9%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Int.-Term Diversified Municipals</td>
<td>0.9%</td>
<td>1.0%</td>
<td>1.9%</td>
<td>3.2%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Global Int.-Term Taxables (Hedged)</td>
<td>1.0%</td>
<td>1.1%</td>
<td>1.9%</td>
<td>3.3%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Int.-Term TIPS</td>
<td>1.9%</td>
<td>2.4%</td>
<td>3.5%</td>
<td>2.8%</td>
<td>7.5%</td>
</tr>
<tr>
<td>High Yield</td>
<td>3.5%</td>
<td>4.2%</td>
<td>6.8%</td>
<td>11.7%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Global Large-Cap (Unhedged)</td>
<td>5.6%</td>
<td>6.8%</td>
<td>2.0%</td>
<td>15.8%</td>
<td>15.0%</td>
</tr>
<tr>
<td>US Diversified</td>
<td>4.6%</td>
<td>6.1%</td>
<td>1.7%</td>
<td>16.5%</td>
<td>15.6%</td>
</tr>
<tr>
<td>US Value</td>
<td>5.0%</td>
<td>6.5%</td>
<td>2.0%</td>
<td>16.2%</td>
<td>15.4%</td>
</tr>
<tr>
<td>US Growth</td>
<td>4.1%</td>
<td>5.9%</td>
<td>1.5%</td>
<td>18.3%</td>
<td>17.1%</td>
</tr>
<tr>
<td>US Mid-Cap</td>
<td>5.0%</td>
<td>6.8%</td>
<td>1.4%</td>
<td>17.9%</td>
<td>17.2%</td>
</tr>
<tr>
<td>US Small/Mid-Cap</td>
<td>5.1%</td>
<td>7.0%</td>
<td>1.3%</td>
<td>18.7%</td>
<td>18.0%</td>
</tr>
<tr>
<td>US Small-Cap</td>
<td>5.2%</td>
<td>7.5%</td>
<td>1.2%</td>
<td>20.4%</td>
<td>19.9%</td>
</tr>
<tr>
<td>Developed International</td>
<td>6.8%</td>
<td>8.7%</td>
<td>2.6%</td>
<td>18.2%</td>
<td>17.1%</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>6.1%</td>
<td>9.2%</td>
<td>3.0%</td>
<td>23.1%</td>
<td>20.1%</td>
</tr>
<tr>
<td>Global REITs</td>
<td>5.3%</td>
<td>7.1%</td>
<td>3.5%</td>
<td>18.4%</td>
<td>17.1%</td>
</tr>
<tr>
<td>Real Assets</td>
<td>5.8%</td>
<td>6.9%</td>
<td>2.4%</td>
<td>13.3%</td>
<td>14.4%</td>
</tr>
<tr>
<td>Diversified Hedge Fund</td>
<td>4.0%</td>
<td>4.3%</td>
<td>1.5%</td>
<td>11.1%</td>
<td>15.3%</td>
</tr>
<tr>
<td>Inflation</td>
<td>2.8%</td>
<td>3.2%</td>
<td>n/a</td>
<td>1.5%</td>
<td>6.6%</td>
</tr>
</tbody>
</table>

Based on 10,000 simulated trials each consisting of 10-year periods. Reflects AllianceBernstein’s estimates and the capital-market conditions of June 30, 2021. For hedge fund asset classes, “Mean Annual Income” represents income and short-term capital gains. **Data do not represent past performance and are not a promise or a range of future results.**
Projected Returns and Volatility—over 10 Years (Taxable)

Range of Annual Pretax Returns* (%)

<table>
<thead>
<tr>
<th>Allocation</th>
<th>Range of Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>0/100</td>
<td>6.9 (4.6)</td>
</tr>
<tr>
<td>20/80</td>
<td>9.0 (4.0)</td>
</tr>
<tr>
<td>40/60</td>
<td>13.5 (5.6)</td>
</tr>
<tr>
<td>60/40</td>
<td>18.9 (8.1)</td>
</tr>
<tr>
<td>80/20</td>
<td>24.6 (10.9)</td>
</tr>
<tr>
<td>100/0</td>
<td>30.5 (13.8)</td>
</tr>
</tbody>
</table>

Data do not represent past performance and are not a promise of actual or range of future results. See Assumptions and Notes on Bernstein Wealth Forecasting System in Appendix for further details. Globally diversified stocks are represented by the following allocation for a 100% return-seeking allocation: 16.2% US value, 16.2% US growth, 12.0% US diversified, 6.0% US small-/mid-cap, 21.2% developed foreign markets, 8.1% emerging markets, 9.6% US Low Vol Equity, 10.7% high-risk international. Equity geography weights may shift in proportion to total return-seeking allocation.

Bonds are represented by diversified intermediate-term municipal bonds in the proportions noted. Additional details regarding allocation available upon request.

*Based on Bernstein’s estimates of the range of returns for the applicable capital markets over the next 10 years as of June 30, 2021. First-year volatility of the portfolios: 0/100 = 3.2%, 20/80 = 4.3%, 40/60 = 7.0%, 60/40 = 10.0%, 80/20 = 13.0%, 100/0 = 16.0%. The annual equivalent volatility of the portfolios over the entire 10-year analysis: 0/100 = 2.7%, 20/80 = 3.8%, 40/60 = 6.3%, 60/40 = 9.1%, 80/20 = 12.0%, 100/0 = 14.9%. Annual equivalent volatility differs from the first-year volatility because the expectation and distribution of asset-class returns change over time.

**Data indicate the probability of a peak-to-trough decline in pretax, pre-cash-flow cumulative returns of 10%, 20%, or 30% over the next 10 years. Because the Wealth Forecasting System uses annual capital-market returns, the probability of peak-to-trough losses measured on a more frequent basis (such as daily or monthly) may be understated. The probabilities depicted above include an upward adjustment intended to account for the incidence of peak-to-trough losses that do not last an exact number of years.
Estimated Spending Rate and Core Capital Amounts: Based on Age

Sustainable Spending Rate*

<table>
<thead>
<tr>
<th>Allocation</th>
<th>0/100</th>
<th>20/80</th>
<th>40/60</th>
<th>60/40</th>
<th>80/20</th>
<th>100/0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 55</td>
<td>1.1%</td>
<td>1.5%</td>
<td>1.8%</td>
<td>2.0%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Age 65</td>
<td>1.7</td>
<td>2.0</td>
<td>2.3</td>
<td>2.5</td>
<td>2.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Age 75</td>
<td>2.5</td>
<td>2.9</td>
<td>3.2</td>
<td>3.4</td>
<td>3.4</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Estimated Core Capital—Spending $100,000 USD Millions

<table>
<thead>
<tr>
<th>Allocation</th>
<th>0/100</th>
<th>20/80</th>
<th>40/60</th>
<th>60/40</th>
<th>80/20</th>
<th>100/0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 55</td>
<td>$8.8</td>
<td>$6.5</td>
<td>$5.5</td>
<td>$5.0</td>
<td>$4.9</td>
<td>$5.1</td>
</tr>
<tr>
<td>Age 65</td>
<td>6.0</td>
<td>4.9</td>
<td>4.3</td>
<td>4.0</td>
<td>3.9</td>
<td>3.9</td>
</tr>
<tr>
<td>Age 75</td>
<td>4.0</td>
<td>3.4</td>
<td>3.1</td>
<td>2.9</td>
<td>2.9</td>
<td>2.8</td>
</tr>
</tbody>
</table>

*These spending rates are for couples and assume an allocation of globally diversified stocks. Asset allocations assume globally diversified stocks. Globally diversified stocks are represented by the following allocation for a 100% return-seeking allocation: 16.2% US value, 16.2% US growth, 12.0% US diversified, 6.0% US small-mid cap, 21.2% developed foreign markets, 8.1% emerging markets, 9.6% US Low Vol Equity, 10.7% high-risk international. Equity geography weights may shift in proportion to total return-seeking allocation. Bonds are represented by diversified intermediate-term municipal bonds in the proportions noted. Additional detail regarding allocation available upon request.

Spending is a percentage of initial value of portfolio and is grown with inflation; spending rates assume maintaining spending with a 90% level of confidence. Based on Bernstein estimates of the range of returns for the applicable capital markets over the periods analyzed as of June 30, 2021. Data do not represent past performance and are not a promise of actual future results. See Notes on Wealth Forecasting at the end of this presentation for further details. All information on longevity and mortality-adjusted investment analyses in this study are based on mortality tables compiled in 2000. To reflect that high-net-worth individuals live longer than average, we subtract three years from each individual's age (e.g., a 55-year-old would be modeled as a 52-year-old). In our mortality adjusted analyses, the lifespan of an individual varies in each of our 10,000 trials in accordance with mortality tables.

Source: Society of Actuaries RP-2000 mortality tables and AllianceBernstein
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 72. 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 72, 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>
Notes on Bernstein Wealth Forecasting System

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 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 indices.
Glossary

**Active Management:** Managing a portfolio through security selection designed to outperform the portfolio’s benchmark.

**Active Share:** The degree of difference between a portfolio and its benchmark index, calculated using the weight of individual securities in the portfolio relative to the benchmark. Active share varies between 0% (a portfolio that mirrors its benchmark) and 100% (a portfolio totally different from its benchmark).

**Central Bank Policy:** The monetary stance taken by a country’s central bank, which can vary from extremely accommodative (keeping short-term interest rates very low, typical when economic growth is slow or negative) to extremely tight (raising rates to high levels, typical when inflation is very high).

**Correlation:** The degree to which two or more securities, asset classes, and/or benchmarks perform in the same direction and magnitude; a lower correlation is generally favorable for active management, and a higher correlation for passive management.

**Dispersion (of returns):** The difference in return, often between the best- and worst-performing security in a given asset class or investment category. Generally, the higher the dispersion, the more favorable for active management.

**Distressed-Credit Hedge Fund:** A hedge fund that invests in the debt of companies in financial trouble, including companies that may file for bankruptcy in the near future. If the company emerges from its distress, its debt will sell far above the price paid by the fund.

**Duration:** For bonds, a measure of interest-rate risk akin to, but more sensitive than, maturity. For every year of a bond’s duration, its price can be expected to fall 1% with every one-percentage-point increase in interest rates, or rise 1% with every one-percentage-point decrease in rates.

**Dynamic Asset Allocation:** Bernstein’s research-based tactical-risk-management service (see below), designed to reduce the volatility of a balanced-asset portfolio without sacrificing return.

**Event-Driven Hedge Fund:** Event-driven strategies take advantage of transaction announcements and other one-time events; one example are merger-arbitrage funds which buy the stock of a target company and hedge the purchase by selling short the stock of the acquiring company.

**Global Macro Hedge Fund:** A hedge fund that bases its holdings primarily on overall economic and political views of various countries.

**Hedging (currency):** Using futures and other contracts to exchange one currency for another; for US investors, hedging is generally exchanging a non-US currency for dollars.
Inflation-Protected Bonds: Bonds whose values are indexed to inflation, normally adjusted on a semiannual basis. The most well known are Treasury Inflation-Protected Securities, or TIPS. Inflation-protected bonds are designed to shield investors from the negative impact of inflation.

Liquidity: The ease with which assets can be traded; the degree of liquidity for any given asset class or security depends on the prevailing market conditions, dealer inventories, and other factors.

Long/Short Hedge Fund: A hedge fund that takes “long” positions—positions of securities bought in the expectation that they will appreciate in value—as well as short-selling other positions, anticipating that they will decline in value. In short selling, the investor generally sells a borrowed security in the expectation that its price will decline and hence can be bought back at a lower price.

Passive Management: Managing a portfolio to essentially duplicate its benchmark index.

Price-to-Book Ratio: A stock’s current price divided by its book value: its total tangible assets minus its liabilities. A lower price-to-book ratio indicates a low price for a stock relative to the value of its underlying assets.

Price-to-Earnings Ratio: A stock’s current price divided by the company’s historical or projected earnings per share. A lower price-to-earnings ratio indicates a low price for a stock relative to its earnings history or potential. The cyclically adjusted or Shiller P/E, usually applied to the broad S&P 500 market, generally uses the average of the past 10 years of earnings, adjusted for inflation.

Real Assets: Assets that have tangible value, or are based on assets with tangible value, such as real estate, commodities, and commodity futures.

Roll (bonds): The tendency of a bond to sell for premium returns before maturity as long as the yield curve (see below) is upward-sloping, since its coupon rate is normally competing with lower rates as it “rolls down the yield curve.” Roll is a component of bond returns that active managers can exploit.

Tactical Risk Management: Varying the allocation of asset classes in a portfolio in line with generally short-term forecasts of risk and return.

Yield: The income return from an investment, typically based on the interest paid by a bond or the dividends paid by a stock; usually expressed as a percentage based on the security’s cost, market value, or face value.

Yield Curve: The relationship between the yields being offered by bonds at any given time and their maturity; normally, the curve is upward-sloping, but flat or inverted yield curves are not uncommon. Different yield-curve shapes suggest different optimal maturity configurations for a portfolio.
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