Update: Navigating Market Volatility

Peter Zuleba, CFA
Director of Investment Management | peter.zuleba@glenmede.com
A member of the firm's Management Committee and Director of Investment Management, Peter oversees the research, trading and portfolio management of equity, fixed income, alternative and risk-management strategies.

Laura LaRosa
Executive Director of Client Development | laura.larosa@glenmede.com
Laura is responsible for broadening relationships with individuals, families, endowments and foundations. With her 30+ year career, Ms. LaRosa is a frequent speaker on portfolio management, fixed income, impact investing and investment strategy.

Michael Reynolds, CFA
Investment Strategy Officer | michael.reynolds@glenmede.com
Michael is a senior research analyst responsible for the development of investment strategies and policies methodologies applied to Private Wealth client portfolios.

This presentation provides a review of issues or topics of possible interest to Glenmede's clients and friends, and does not provide personalized investment advice. It contains Glenmede’s opinions, which may change after the date of publication. Information gathered from third-party sources is assumed reliable but is not guaranteed. This presentation contains projections which, though arrived at in good faith, are not guaranteed. This document is not a recommendation of any particular investment. Actual results may differ materially from projections. Actual investment decisions for clients are made on an individualized basis and may be different from what is expressed here. All investments have risk and are subject to loss. Clients are encouraged to discuss anything they see here of interest with their Glenmede representative.
STOCKS ARE EXPERIENCING ANOTHER CORRECTION AFTER A YEAR OF GAINS

The S&P 500 Price Index is a market capitalization weighted index of large-cap stocks. Data as of 3/16/2020 at 10:00am. One cannot invest directly in an index. Past performance may not be indicative of future results.
MARKET VOLATILITY HAS BEEN EXTREME BY HISTORICAL STANDARDS

Number of Extreme Daily Moves in the S&P 500

- 3-5% Moves
- 5-7% Moves
- 7%+ Moves

Only 3 Months into the Year, 2020 is Already One of the Most Volatile Years in Recent Memory

Source: Glenmede, FactSet

*2020 data is year-to-date, whereas all other years’ figures are for full year periods.
Data shown is the number of daily moves in the S&P 500 Price Index in each year of 3% - 5%, 5% - 7%, and 7% or more. The S&P 500 is a market capitalization weighted index of large-cap stocks in the U.S. One cannot invest directly in an index. Past performance may not be indicative of future results.
BONDS PROVIDE PROTECTION IN A RISK-OFF ENVIRONMENT

Source: Glenmede
Data as of 3/15/2020

10-Year Treasuries returns are calculated using the Bloomberg Barclays U.S. Treasury Bellwethers (10 Y) Index. Past performance is not indicative of future returns. These are unmanaged total return indices with cash flows reinvested. One cannot invest directly in these indices.
1. How bad can this get?
   An updated assessment of the outbreak and implications for economics and earnings

2. What are the investment implications?
   Benchmarks to watch and potential opportunities for investors
AGENDA

1. How bad can this get?  
   An updated assessment of the outbreak and implications for economics and earnings

2. What are the investment implications?  
   Benchmarks to watch and potential opportunities for investors
CASE COUNT IS NOW DECLINING IN CHINA, BUT RISING IN REST OF WORLD

The Number of Reported Active Cases Outside of China Has Well Eclipsed Those Within China.

Source: Glenmede, Johns Hopkins University, World Health Organization

Data through 3/15/2020
OTHER COUNTRIES APPEAR TO BE TRACKING A SIMILAR PATH AS CHINA

Number of Reported Active COVID-19 Coronavirus Cases

- China - ex Hubei
- South Korea
- Iran
- Italy
- Spain
- Germany
- Switzerland
- US

Number of Days Since Hitting 100 Reported Active Cases

Source: Glenmede, Johns Hopkins University, World Health Organization
Data shown is the progression of reported active cases on a log-scale once the number of reported active cases has reached at least 100 in each country.

Data through 3/15/2020
The U.S. economy is likely facing risk heading into Q2 2020.

U.S. GDP - Multiple Scenarios

- Prior
- Baseline
- Delayed Recovery

Q1 Q2 Q3 Q4 2020 2021

U.S. GDP - Multiple Scenarios

Prior
Baseline
Delayed Recovery

Data shown are Glenmede’s proprietary estimates for the economic impact on economic growth from the coronavirus and oil shock in the U.S. in excess of inflation. Prior refers to estimates of the growth in real gross domestic product (GDP) before the outbreak of the virus and the oil price shock. Baseline refers to Glenmede’s base case estimate of the growth in real GDP accounting for the effects of the coronavirus and oil price shock. Delayed Recovery refers to Glenmede’s estimate of the growth in real GDP assuming a longer shutdown of economic activity due to the coronavirus. These figures are projections which, though arrived at in good faith, are not guaranteed.

Source: Glenmede

Estimates as of 3/15/2020
Earnings will likely experience a notable, transitory impact.

S&P 500 Earnings Growth (Year-over-Year)

Source: Glenmede, FactSet

Data shown in blue are actual results for year-over-year earnings growth for the S&P 500 Index. Data shown in gray are Glenmede's proprietary estimates for earnings growth in 2020 after accounting for the effects of the coronavirus and the oil price shock in Glenmede's estimation of the base case scenario. Data shown in red are Glenmede's proprietary estimates for earnings growth in 2020 after accounting for the effects of the coronavirus and the oil price shock in a scenario involving a delayed recovery. These figures are projections which, though arrived at in good faith, are not guaranteed.

Estimates as of 3/15/2020
GLOBAL ECONOMIC GROWTH SCENARIOS FROM COVID-19

World GDP Growth

Source: Glenmede, International Monetary Fund (IMF) Estimates as of 3/15/2020

Solid lines represent reported global GDP growth and dashed lines represent projected GDP growth in various scenarios. Previous Est. is the IMF’s latest projection prior to the coronavirus outbreak. Base Case and Downside Case are Glenmede’s estimates.

(1) Base Case represents the scenario where China, S. Korea, Italy, Iran, Japan, Italy and Spain experience a 2.7% reduction in 2020 GDP growth and the U.S., Germany and France experience a more modest 1.1% reduction in 2020 GDP growth.

(2) Downside Case represents the scenario where government efforts to contain the virus precipitate either a steeper decline or a longer shut-down period for all nations, leading to a ~3.0% reduction to GDP growth for all countries.

Projections are inherently uncertain and no guarantee can be given to their accuracy.
THE FED’S ACCOMMODATION IS STACKING UP

The Federal Reserve Has Acted Swiftly and Comprehensively

- Fed Cuts 50bps
  - March 3rd
- $1.5 Trillion in Temporary Liquidity
  - March 12th
- Cut Rates to Zero
- $700 Billion in Quantitative Easing
- Global Currency Swap Facility
- Eliminate Reserve Requirements
  - March 15th
FISCAL STIMULUS IS KICKING IN, MORE IN THE PIPELINE

U.S. Fiscal Stimulus
~0.7% of U.S. GDP

- Proposed Congress Bill (Estimated)
  - $8.5 Bil
  - $40 Bil
  - $100 Bil

Global Fiscal Stimulus
~0.8% of World GDP

Source: Glenmede, Cornerstone Macro, UBS
Data through 03/14/2020
AGENDA

1. **How bad can this get?**
   An updated assessment of the outbreak and implications for economics and earnings

2. **What are the investment implications?**
   Benchmarks to watch and potential opportunities for investors
STOCK MARKET CORRECTION LEAVES VALUATIONS MORE REASONABLE

10-Year Expected Returns
- Beginning of Year
- Now

Cash Looks Less Attractive, Stocks Looking Increasingly Enticing

Data shown are Glenmede’s estimates of 10-year expected returns. Stocks, Bonds and Cash are represented by the MSCI All Country World Index (ACWI), the Bloomberg Barclays U.S. Aggregate Index and the Bloomberg Barclays U.S. Treasury Bellwethers (3 Month), respectively. MSCI ACWI is a representative index of stocks in all developed and emerging countries. Actual returns may vary materially from expectations or estimates. One cannot invest directly in an index.

Source: Glenmede, FactSet
Data through 03/15/2020
A NUMBER OF ATTRACTIVE OPPORTUNITIES WITHIN EQUITIES

Projected 10-Year Returns by Asset Class

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Light Colors = Beginning of Year Estimates</th>
<th>Dark Colors = Estimates Now</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>2.0%</td>
<td>11.3%</td>
</tr>
<tr>
<td>Muni 1-10</td>
<td>1.8%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Core Fixed</td>
<td>2.2%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Muni HY</td>
<td>1.9%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Corp HY</td>
<td>4.2%</td>
<td>4.2%</td>
</tr>
<tr>
<td>U.S. Large</td>
<td>3.4%</td>
<td>7.7%</td>
</tr>
<tr>
<td>U.S. Small</td>
<td>4.2%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Int’l</td>
<td>12.0%</td>
<td>9.0%</td>
</tr>
</tbody>
</table>

Source: Glenmede

Data shown are Glenmede’s proprietary estimates for 10 year expected returns for a number of asset classes. Proxy indexes for each asset class are as follows: Cash (Bloomberg Barclays Treasury Bellwethers 3M), Muni 1-10 (Bloomberg Barclays Municipal Bond 1-10 Index), Core Fixed (Bloomberg Barclays U.S. Aggregate Index), Muni High Yield (Bloomberg Barclays Municipal High Yield 5% Tobacco Cap 2% Issuer Cap Index), Corp High Yield (Bloomberg Barclays U.S. Aggregate Corporate High Yield BB Index), U.S. Large (MSCI USA Index), U.S. Small (Russell 2000 Index), Int’l (MSCI AC World ex-U.S. Index). These figures are projections which, though arrived at in good faith, are not guaranteed. One cannot invest directly in an index.
## WHAT OPPORTUNITIES HAVE BEEN CREATED BY THE CORRECTION?

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Viewpoint on Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Large-Cap</td>
<td>Valuations are now more reasonable, but still above fair value.</td>
</tr>
<tr>
<td>U.S. Small-Cap</td>
<td><strong>Best U.S. opportunity.</strong> Below fair value after correction.</td>
</tr>
<tr>
<td>Int’l Developed</td>
<td>Below fair value. Japan remains the cheapest market.</td>
</tr>
<tr>
<td>Int’l Emerging</td>
<td><strong>Best Int’l opportunity.</strong> Emerging Asia likely to recover first.</td>
</tr>
</tbody>
</table>

These statements are Glenmede’s opinions, which may change after the date of publication. Actual investment decisions for clients are made on an individualized basis and may be different from what is expressed here. All investments have risk and are subject to loss.
The CBOE Volatility Index (VIX) is a measure of the market’s expectation of volatility based on derivatives pricing on the S&P 500 Index. Past performance may not be indicative of future results. One cannot invest directly in an index.
ALL 4 SENTIMENT INDICATORS ARE AT OR NEAR EXTREME FEAR LEVELS

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Current value</th>
<th>Percentile</th>
<th>12mo. Forward S&amp;P 500 Performance at Current Levels or Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Positive Return Freq.</td>
</tr>
<tr>
<td>VIX</td>
<td>75.5</td>
<td>99.9%</td>
<td>100%</td>
</tr>
<tr>
<td>AAII - % Bullish</td>
<td>29.7%</td>
<td>78.8%</td>
<td>84%</td>
</tr>
<tr>
<td>Russell 3000 % Above 200MVA</td>
<td>5.1%</td>
<td>99.8%</td>
<td>100%</td>
</tr>
<tr>
<td>Stock/Bond Ratio</td>
<td>-24.8%</td>
<td>97.4%</td>
<td>99%</td>
</tr>
</tbody>
</table>

Source: Glenmede, FactSet

Data through 03/12/2020

The indicators shown include the Chicago Board Options Exchange (CBOE) Volatility Index, or VIX for short, the percentage of people who responded "bullish" to the American Association of Individual Investors (AAII) sentiment survey, the percentage of stocks in the Russell 3000 index that are trading above their respective 200-day moving averages and the stock/bond ratio, which compares the relative total return of the S&P 500 index vs. 10-year Treasuries relative to the 220-day moving average. Data shown includes the current value of each indicator, the percentile rank of those values based on the indicators' individual histories and a historical analysis of how the S&P 500 has performed after reaching current levels or worse in the past, including the percentage of times the S&P 500 posted a positive return and the average return in those scenarios. The S&P 500 is a market capitalization weighted index of large-cap stocks in the U.S. and the Russell 3000 is a market capitalization weighted index of large-, mid- and small-cap stocks in the U.S. Past performance may not be indicative of future results. One cannot invest directly in an index.
MARKETS SEEM TO BE TRADING ON PEAK CASE COUNT SO FAR

Data shown in charts on the left are the daily changes in confirmed cases of COVID-19 by region. Charts on the right show each country’s stock market performance relative to the global equity market (MSCI ACWI) since the beginning of 2020, indexed to 100 at 12/31/2019. MSCI indexes are market capitalization indexes of large-cap stocks in each respective region. One cannot invest directly in an index. Past performance may not be indicative of future results.

Source: Glenmede, Johns Hopkins University

Data through 3/12/2020
### S&P 500 Total Return After Hitting a Bear Market
(Down 20% from All-Time Highs)

<table>
<thead>
<tr>
<th></th>
<th>6mo</th>
<th>1yr</th>
<th>3yr</th>
<th>5yr</th>
<th>10yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Return</strong></td>
<td>2.0%</td>
<td>14.0%</td>
<td>43.9%</td>
<td>71.1%</td>
<td>212.1%</td>
</tr>
<tr>
<td><strong>Positive Frequency</strong></td>
<td>56%</td>
<td>78%</td>
<td>89%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Glenmede, FactSet

Data shown is the cumulative total return for the S&P 500 index after a transition from a bull market to a bear market. A bear market is defined as a 20%+ decline from all-time highs. Data in the table shows the percentage of times the S&P 500 posted a positive return and the average return from the day in which the S&P 500 enters a bear market. Data begins after World War II (1946). The S&P 500 is a market capitalization weighted index of large-cap stocks in the U.S. Past performance may not be indicative of future results. One cannot invest directly in an index.
How bad can this get?
- Expect a material economic and earnings impact, primarily in Q2
- Monetary policy has stepped up to the plate, look to fiscal spend as the more potent stimulus ahead

What are the investment implications?
- Risk assets now sit at more attractive valuations
- There have been signs of investor capitulation
- Markets appear to be sensitive to turning points in new cases
- Market volatility creates opportunity for long-term investors