NEUBERGER BERMAN

# Market Downturn Historical Comparison

## Investment Strategy Group

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# Current Market Downturn Compared To The Last Two – Market Considerations

## ISG Observations

- Both of the last two major downturns were triggered by imbalances in a particular sector that spread to the rest of the market.
- In both cases, the most affected sector lost over 80% at its nadir while the impact on the rest of the market was more muted
- Of the last two downturns, the near-term market and economic impacts were worse in the Global Financial Crisis, in which the underlying cause was a systemic economic issue (housing and subprime mortgage market collapse, aggressive bank leverage). By comparison, in the Tech Wreck the underlying cause was a structural market issue (a tech sector that at its peak traded at 65x forward earnings and comprised 1/3 of the market), coupled with a geopolitical event (9/11)
- The current downturn has seen the market decline by 29% as of 3/19
- Volatility has been similar to that seen in the GFC

## Comparison – Last Three Downturns

| | Tech Wreck And 9/11 | Global Financial Crisis | Now |
|---|---|---|---|
| What happened | Dot-com crash following a period of excessive speculation on emerging Internet companies. 9/11 terrorist attacks | Collapse of the housing bubble led to the collapse of the subprime mortgage market and grew into the Global Financial Crisis | Spread of novel virus has disrupted supply chains, led to precipitous decline in travel and social activity; conflict between Russia and Saudi Arabia over oil production caused oil price plunge |
| Bear Market Dates | Mar-00 to Oct-02 | Oct-07 to Mar-09 | Feb-20 to ?? |
| Peak-Trough* Decline | -49% | -57% | -29% |
| Years to Recover | 7 | 5.5 | TBD |
| | | | |
| **Broad Market Data** | | | |
| Earnings Peak-Trough | -24.3% | -40.0% | TBD |
| Market Peak Forward P/E | 26.5x | 15.8x | 19.4x |
| Market Trough Forward P/E | 13.4x | 9.5x | 14.3x** |
| Peak Volatility (VIX Level) | 45 | 81 | 83 |
| | | | |
| **Most Affected Sector Impact** | | | |
| Most Affected Sector | Info Tech | Financials | Energy, Banks, Airlines, Leisure |
| Sector % of Market at peak | 33% | 20% | <10% |
| Sector Peak-Trough Decline | -83% | -83% | -40 to -60% |
| Ex-Most Affected Sector Peak-Trough Decline | -36% | -50% | Low-20s to High-30s |

* Past crisis: peak-trough data. Now: data from peak to close on 3/19/2020

** Today's trough P/E is as of 3/19/2020, based on the NTM earnings estimates as reported to Bloomberg. These earnings estimates are down 4.2% from their pre-downturn highs; it is therefore probable that the market is pricing in lower earnings expectations than what's being captured by Bloomberg and therefore a higher multiple.

Source: Neuberger Berman, Bloomberg as of March 19, 2020. Past performance is not indicative of future results.

# Current Market Downturn Compared To The Last Two – Economic Considerations

## ISG Observations

- The Tech Wreck / 9/11 crisis preceded a short, shallow recession
- While valuations in the technology sector had been inflated and 9/11 brought a macroeconomic shock, many economic fundamentals had been sound, and the economy recovered fairly quickly
- The Global Financial Crisis saw a longer, more severe recession, as fundamental structural issues – stretched consumer and bank balance sheets, plunging consumer wealth via property price depreciation – took a while to unwind
- In today's environment, consumer balance sheets are healthy and banks are much better capitalized
- Corporate debt has been growing, but low interest rates have resulted in healthy interest coverage ratios

## Comparison – Last Three Downturns

| | Tech Wreck And 9/11 | Global Financial Crisis | Now |
|---|---|---|---|
| | | | |
| Economic Impact | | | |
| Real GDP Growth | -0.4% | -4.0% | TBD |
| Recession Length, Months | 8 | 18 | TBD |
| Unemployment Peak | 6.1% | 9.9% | TBD |
| | | | |
| Consumer Balance Sheet Strength | | | |
| Household Debt % of GDP | 67% | 98% | 74% |
| Household Debt / Disposable Income | 11.5% | 13.2% | 9.7% |
| | | | |
| Bank Balance Sheet Strength | | | |
| Tier 1 (Core) Capital: % of Assets | 10.0% | 9.8% | 13.3% |
| | | | |
| Corporate Balance Sheet Strength | | | |
| Non-Financial Corporate Debt % of GDP | 45.3% | 44.3% | 47.0% |

Source: Neuberger Berman, Bloomberg as of March 19, 2020. Past performance is not indicative of future results.

# Digging Deeper Into Downturns

## ISG Observations

- Between the Great Depression and February 2020, the market has experienced 14 declines of 20% or more. In each case the market recovered, within anywhere from 7 months to 7.5 years
- Downturns that preceded short recessions have tended to be short as well
- The steepest market declines and slowest recoveries have been associated with longer recessions, systemic economic issues and structural imbalances
- The key uncertainty factor is the depth and length of the economic downturn resulting from COVID-19 and related containment measures
- Low oil prices will hurt the energy sector and banks with higher exposure to energy sector credit, but would likely turn into a tailwind for consumers and some sectors

| Peak | Trough | Months: Peak-Trough | Max. Drawdown | Months: Peak to Recovery | Causes |
|---|---|---|---|---|---|
| Sep-29 | Jun-32 | 33 | -86% | 300 | Great Crash, following excessive stock market speculation and margin lending amid declining economic fundamentals |
| Sep-32 | Feb-33 | 6 | -41% | 9 | Great Depression; very volatile markets with short bull and bear cycles within the secular bear market |
| Jul-33 | Oct-33 | 3 | -29% | 27 | Great Depression; very volatile markets with short bull and bear cycles within the secular bear market |
| Feb-34 | Mar-35 | 13 | -32% | 19 | Great Depression; very volatile markets with short bull and bear cycles within the secular bear market |
| Mar-37 | Mar-38 | 13 | -54% | 107 | Great Depression; very volatile markets with short bull and bear cycles within the secular bear market |
| Nov-38 | Apr-39 | 5 | -24% | 75 | Great Depression; very volatile markets with short bull and bear cycles within the secular bear market |
| Oct-39 | Jun-40 | 8 | -32% | 56 | World War II |
| Nov-40 | Apr-42 | 18 | -34% | 29 | World War II |
| May-46 | Oct-46 | 4 | -27% | 48 | Anticipation of economic downturn due to drop in military spending |
| Jun-48 | Jun-49 | 12 | -21% | 20 | First post-WWII recession |
| Aug-56 | Oct-57 | 15 | -22% | 25 | Recession, sharply rising bond yields |
| Dec-61 | Jun-62 | 6 | -28% | 21 | Cold War tensions escalations |
| Feb-66 | Oct-66 | 8 | -22% | 15 | Fed tightening. Bear market was brief as spending drove earnings upwards. |
| Nov-68 | May-70 | 18 | -36% | 39 | Mild recession with high inflation; Vietnam unrest |
| Jan-73 | Oct-74 | 21 | -48% | 90 | Oil embargo sent energy prices skyrocketing; long recession, high inflation. Watergate scandal. |
| Nov-80 | Aug-82 | 20 | -27% | 23 | Volcker tightening in an effort to tame inflation pushed economy into recession (Fed Funds hit 20%) |
| Aug-87 | Dec-87 | 3 | -34% | 23 | Black Monday, exacerbated by program trading that called for selling stocks into falling markets |
| Jul-90 | Oct-90 | 3 | -20% | 7 | Iraq War, oil price shock after Iraq invaded Kuwait led to a brief recession |
| Mar-00 | Oct-02 | 30 | -49% | 86 | Dot-com crash following a period of excessive speculation on emerging Internet companies |
| Oct-07 | Mar-09 | 17 | -57% | 65 | Collapse of the housing bubble, subprime mortgage market grew into the Global Financial Crisis |
| Mean | | 13 | -36% | 54 | |
| Median | | 13 | -32% | 28 | |

*Sources: Bloomberg, General news sources; St. Louis Fed; NBC news; The Motley Fool. Drawdown and recovery data is based on the S&P 500 price index (excluding dividends).*
*For illustrative purposes only. Nothing herein constitutes a prediction or projection of future events or future market or economic behavior. The duration and characteristics of past market/economic cycles and market behavior, including any bull/bear markets, is no indication of the duration and characteristics of any current or future be market/economic cycles or behavior. Due to a variety of factors, actual events or market behavior may differ significantly from any views expressed or any historical results. See Additional Disclosures at the end of this material. Investing entails risks, including possible loss of principal. Past performance is not indicative of future results.*

# Sensitivity Analysis

## ISG Observations

- The table to the right shows various potential assumptions for the earnings impact of the current situation, as well as potential valuations declines
- The numbers in the body of the table represent how much the S&P 500 would decline from its Feb 19th peak under the given combination of anticipated earnings impact (column) and valuation decline (row)

## Price Decline From Peak Under Various Earnings and Valuation Decline Scenarios

| | Earnings Impact | | | | | | |
|---|---|---|---|---|---|---|---|
| Valuation Impact | -60% | -50% | -40% | -30% | -20% | -10% | 0% |
| -10.0x | -81% | -76% | -71% | -66% | -61% | -56% | -51% |
| -9.0x | -79% | -73% | -68% | -62% | -57% | -52% | -46% |
| -8.0x | -76% | -71% | -65% | -59% | -53% | -47% | -41% |
| -7.0x | -74% | -68% | -62% | -55% | -49% | -42% | -36% |
| -6.0x | -72% | -65% | -58% | -52% | -45% | -38% | -31% |
| -5.0x | -70% | -63% | -55% | -48% | -40% | -33% | -26% |
| -4.0x | -68% | -60% | -52% | -44% | -36% | -28% | -20% |
| -3.0x | -66% | -58% | -49% | -41% | -32% | -24% | -15% |
| -2.0x | -64% | -55% | -46% | -37% | -28% | -19% | -10% |
| -1.0x | -62% | -52% | -43% | -33% | -24% | -14% | -5% |
| 0.0x | -60% | -50% | -40% | -30% | -20% | -10% | 0% |

Source: Neuberger Berman, Bloomberg as of March 19, 2020. Past performance is not indicative of future results.

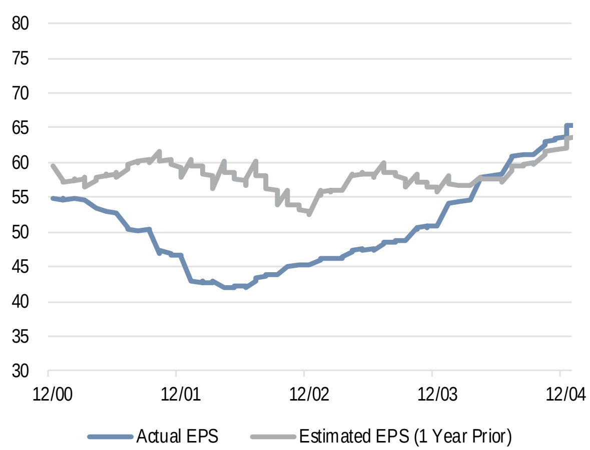
# Appendix

# Historical Context For Earnings Estimates And Valuations

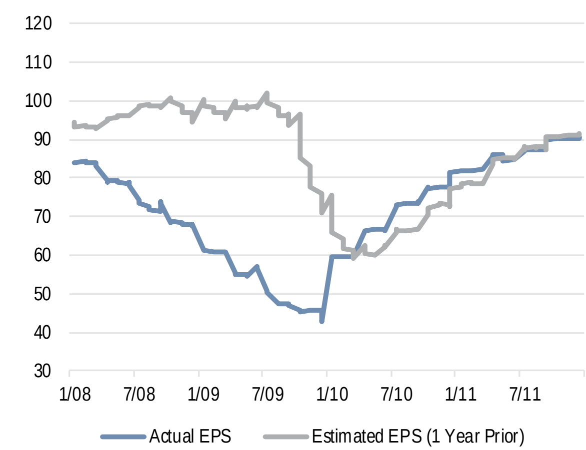
## ISG Observations

- Consensus earnings estimates tend to forecast declines with a lag (i.e., actual downturns happened more quickly than the markets had forecasted)
- Market valuation peaks and troughs do not coincide with earnings estimate peaks and troughs

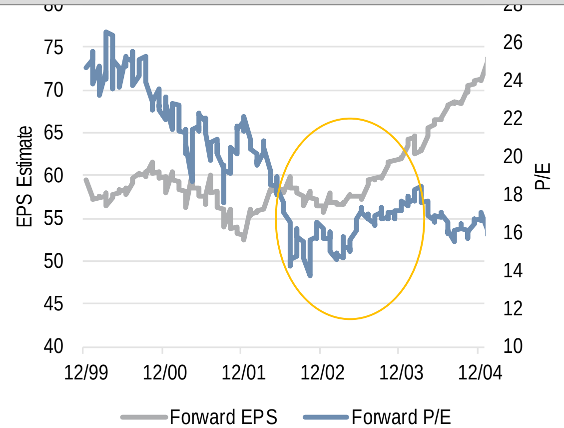
## Tech Wreck / 9/11: Estimated vs. Actual Earnings



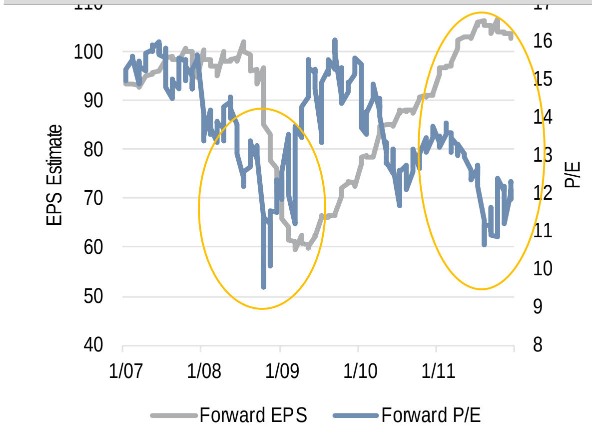

## GFC: Estimated vs. Actual Earnings




## Tech Wreck / 9/11: EPS Estimates vs. Valuations



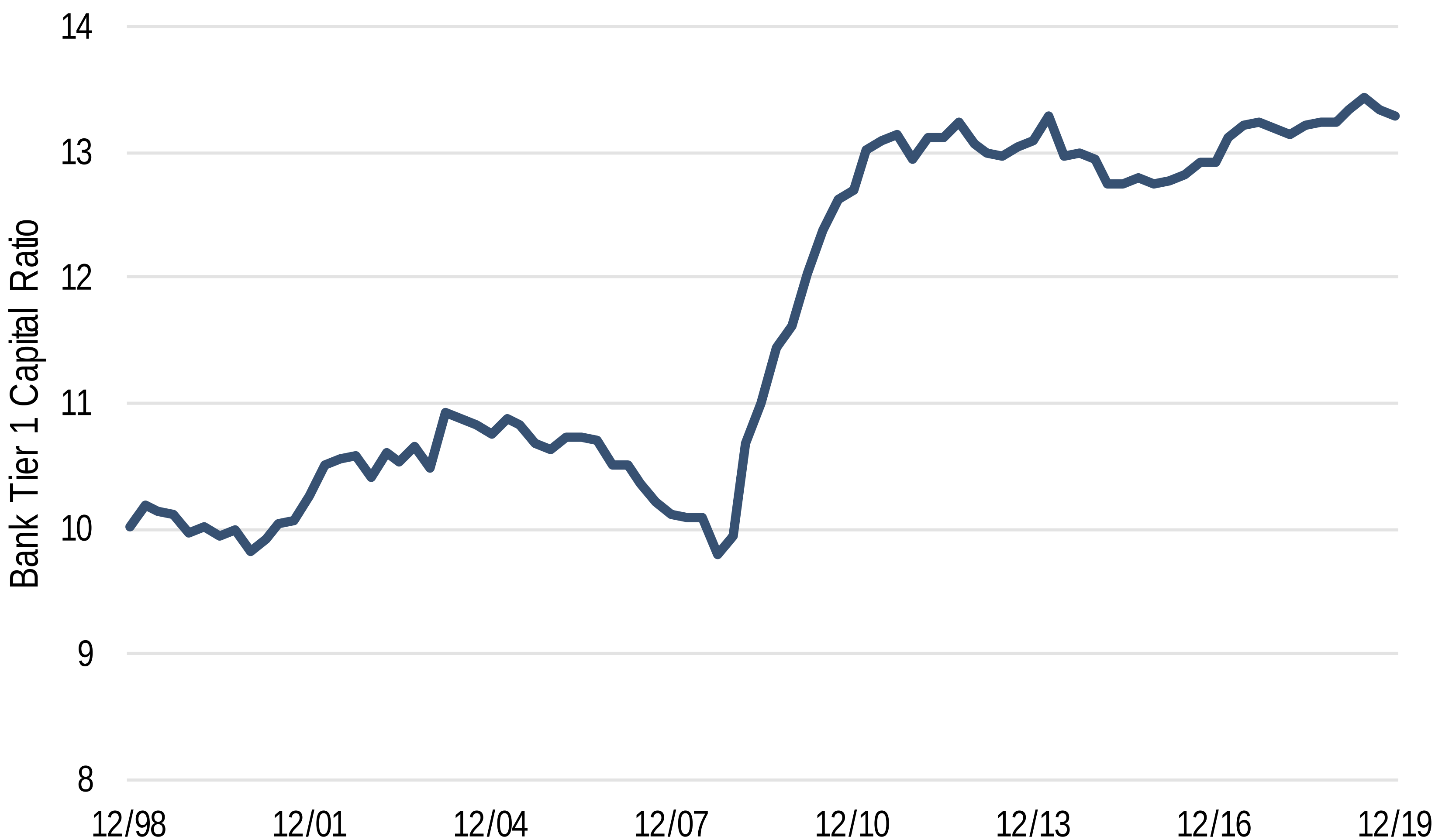

## GFC: EPS Estimates vs. Valuations




Source: Bloomberg. As of March 19 2020. Past performance is not indicative of future results

# Bank Balance Sheets are Healthy

Bank Balance Sheets Are Healthy




Source: Bloomberg, Haver Analytics, Goldman Sachs. As of March 19, 2020. Past performance is not indicative of future results