

BEAR MARKET OUTCOMES

EARNINGS, VALUATIONS AND VOLATILITY

March 20, 2020

Depending on the market index, this has been either the fastest or second fastest bear market in U.S. history. While the timing is uncertain, the impending decline in economic growth and corporate earnings will be followed by a rebound – and that is what investors will eventually focus on.

There is a lot that is unknown at this point, including the economic outlook in the wake of a still increasing number of new coronavirus cases. In the U.S. in particular, the number of cases is set to spike over the coming week due to a backlog of testing. This doesn't necessarily indicate a significant acceleration in the risk, but will mostly be a more accurate count of the existing cases. Our framework for analyzing the way forward has focused on the three policy levers — monetary, fiscal and health policy. Monetary policy has been relatively aggressive globally, a “necessary but not sufficient” action. Efforts on the fiscal front are evolving rapidly — policy makers are touting aggressive plans and time will tell how effective they are. The updated fiscal policy outlook will be the subject of an upcoming report. On the health policy front, there has been some deterioration in the outlook in recent days, as the risk of asymptomatic transfer has risen and concerns around testing have increased. In this report, we also want to review the history of bear markets, review earnings scenarios, discuss current valuation, and examine what high market volatility means for future returns. We don't think valuation will be a catalyst for a market rebound — it will be some combination of fiscal and health policy — but it will be an important part of the outlook nonetheless. History shows that a rebound has always followed the decline, and we expect this time to be no different.

Northern Trust
Global Asset Allocation

James D. McDonald
Chief Investment Strategist
jxm8@ntrs.com

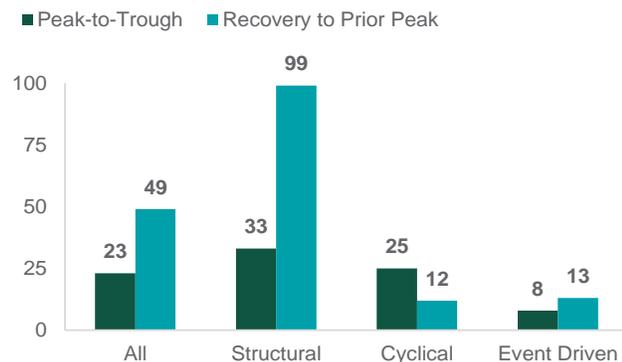
Daniel J. Phillips, CFA
Director, Asset Allocation
Strategy
dp61@ntrs.com

Erick Noensie, PhD
Senior Health Care Equity
Analyst
en35@ntrs.com

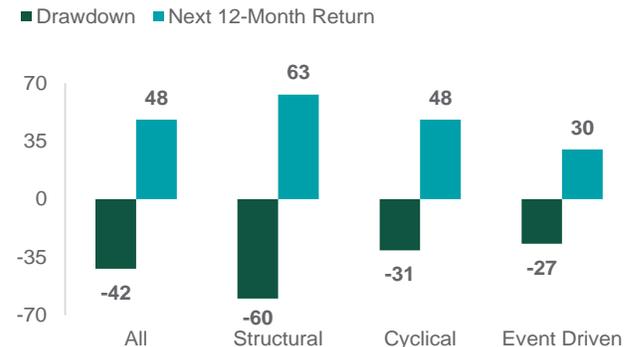
EXHIBIT 1: BEAR MARKET ANALYSIS

The duration and magnitude of bear markets differ between types.

DURATION (MONTHS)



MAGNITUDE (%)



Source: Northern Trust Asset Management, Bloomberg, GS Portfolio Strategy Research. Next 12-month return denotes one-year return from trough. Averages shown for all S&P 500 bear markets from 1/1/1927 – 2/18/2020 using price returns. Bear market defined as 20% or greater decline from recent peak. Months rounded to nearest whole number. Past performance does not guarantee future results.

BEAR MARKET HISTORY

As seen in Exhibit 1 on the previous page, the prior 12 S&P 500 Index bear markets dating back to 1927 have resulted in an average 42% decline over 1.9 years. The drawdown tends to be faster than the recovery — on average, the market returns to its prior peak 4.1 years after bottoming out. In an effort to gain better insight into the magnitude and duration, bear markets can be bucketed into three different categories based on their catalysts: structural, cyclical and event driven. Respectively, structural, cyclical and event driven bear markets are a function of financial bubbles/banking crises (2008 financial crisis), the economic cycle (1980 recession) and one-off shocks that do not lead to a recession (Black Monday 1987). Of the three, structural bear markets have occurred the most and tend to be the most severe in terms of duration and drawdown. Event driven bear markets have drawdowns similar to those of cyclical bear markets, though the period of decline and recovery is the most rapid.

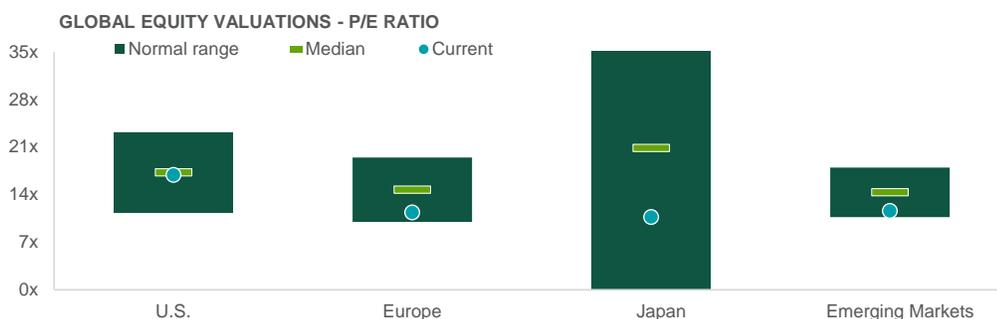
Today’s market currently resembles an event driven bear market, with the risk that inadequate policy response or a worsening of the virus could turn it into either a cyclical or structural bear market. The decline has been one of the fastest in history, hovering around the historical event driven bear market average drawdown at 27%. Notably, no prior event driven bear market in our study was caused by a viral outbreak. This highlights the questions around the efficacy of monetary policy in combating its market impact, compounded by the fact that interest rates were already near historic lows prior to the decline. The risk is that today’s bear market begins to exhibit characteristics of cyclical or structural bear markets, extending its duration and magnitude.

VALUATIONS WILL NOT CREATE THE BOTTOM

The recent drop in global equity markets has certainly made stocks appear less expensive. Current valuations based on price-to-earnings ratios are below long-term historical median levels for the first time since the global financial crisis (see Exhibit 2).

EXHIBIT 2: VALUATIONS CHEAP AGAIN?

The recent fall in stocks has brought many price-to-earnings ratios back below historical levels.



Source: Northern Trust Asset Management, MSCI, Bloomberg. Monthly data through 3/16/2020.

But these valuations are based on trailing 12-month earnings and are less relevant today as earnings growth is likely to roll over and go negative. As such, valuations are less attractive than the above chart suggests – but understanding what true valuations are is complicated by the difficulty of knowing what earnings will look like over the next 12 months in this period of uncertainty. That said, using the S&P 500 as our proxy, we can make some assumptions on next-12-month earnings using the median earnings declines during past recessions (-13%) as a base case and the earnings drop during the global financial crisis (-45%) as a bear case. Based on those earnings declines, the resulting price-to-earnings ratios equal 17.0 and 26.9, respectively. However, investors will eventually look through the earnings downturn and attempt to price in some type of recovery. For instance, in the four quarters

INVESTMENT STRATEGY COMMENTARY

after the global financial crisis, S&P 500 earnings jumped by 57%. If we also apply that type of recovery to our bear case estimate, we get a valuation level of 17.2. And if we apply the median recovery during recessions (15%), we get a valuation level of 14.8. Finally, if we end up with something midway between the typical recession and the global financial crisis, we will get an earnings drawdown of 29% (resulting in a 20.9 valuation) and an earnings recovery of 36% (resulting in a 15.3 valuation). As we update our earnings expectations, the result is more likely to resemble something between the typical recession and midpoint scenario than the global financial crisis – driven by a lower impact from the financial sector this time around. Going into the global financial crisis, financial earnings represented over 20% of S&P 500 earnings, and subsequently went negative, effectively representing a greater than 100% fall, and contributing materially to the overall global financial crisis earnings drawdown. Today, financials represent approximately 18% of the S&P 500 and should have far less of a drawdown as the industry is in far better shape, and is highly unlikely to face significant hits to capital and subsequent equity issuance. The table below displays the analysis detailed above while the bar charts below that show the earnings drawdowns and recoveries over the past 11 recessions.

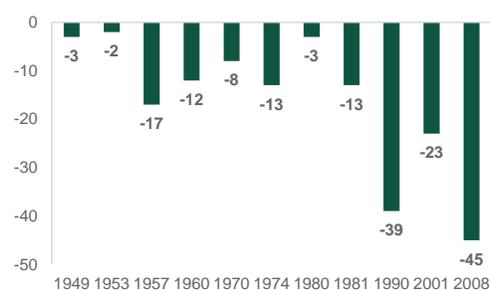
EXHIBIT 3: VALUATION ANALYSIS

Forecasting uncertainty necessitates using different scenarios to assess valuation.

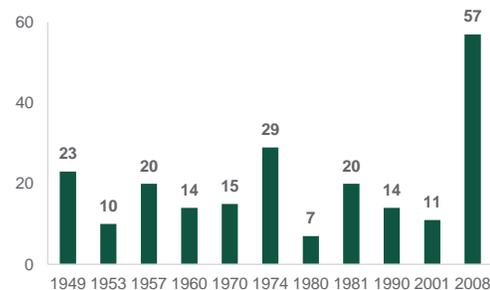
	MEDIAN RECESSION	MIDPOINT	GLOBAL FINANCIAL CRISIS
Earnings Drawdown	-13%	-29%	-45%
2020 Earnings Level	141	115	89
P/E Valuation	17.0	20.9	26.9
Earnings Rebound	15%	36%	57%
2021 Earnings (\$/share)	162	156	140
P/E Valuation	14.8	15.3	17.2

Historical recessions:

EPS Drawdown (%)



Next-4-Quarter EPS Rebound (%)



Source: Northern Trust Asset Management, Bloomberg. Returns represent the S&P 500 Index of the 500 largest U.S. publicly traded companies.

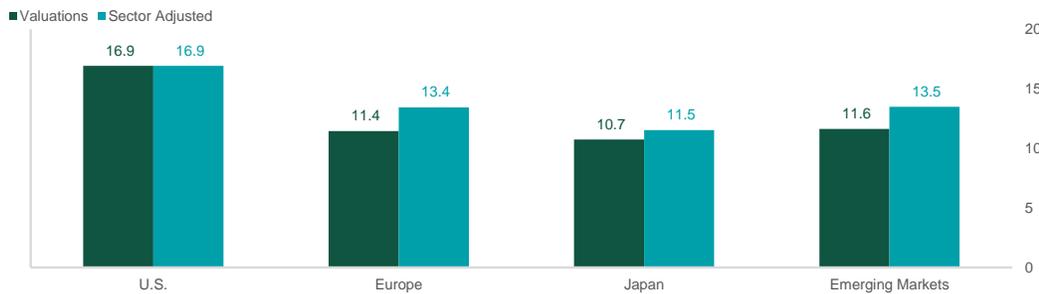
While these valuations are still elevated against the long-term median price-to-forward earnings level (13.7), it is important to keep in mind that we are also in a much lower interest rate environment, which should provide support to equity valuations. Coming into the current situation, the difference between the S&P 500 earnings yield (simply the inverse of the price-to-12-month-trailing earnings) and the 10-year U.S. Treasury is at nearly 5%, converging on record highs (data going back to 1978). Comparing the valuation estimates of 14.8 (recession simulation) and 17.2 (global financial crisis simulation) to the valuations before the downturn (17.3x and 20x next-12-month and trailing-12-month earnings, respectively), valuations have gotten cheaper. And while valuations are reflecting the uncertain environment, we have retained a modest overweight to risk in our global policy model.

While all markets have become cheaper, some appear cheaper than others — at least on the surface. For instance, Europe — at 11.4x trailing-12-month earnings — is 33% cheaper than the U.S. However,

Europe has historically carried a multiple below that of the U.S. Its long-term historical median valuation level of 14.7x is 15% below the 17.2x median level exhibited by U.S. stocks historically. Higher U.S. valuations can be partly attributed to its sector composition — specifically its greater allocation to higher valuation areas of the market such as technology stocks. The U.S. allocation to the technology sector and the somewhat closely related communication services sector represent more than 33% of U.S. stock market cap. This compares to the ~10% weight in Europe. As such, it stands to reason that U.S. aggregate valuation levels would be higher. As seen in Exhibit 4, when adjusting for sector differences (that is, assuming U.S. sector weights for other equity market regions and recalculating the aggregate), the gap between the U.S. and Europe starts to close. That 33% discount Europe currently enjoys on the surface falls to 20% when factoring in sector differences. A reduction in valuation differentials can also be seen across other major regions.

EXHIBIT 4: EUROPE AND EMERGING MARKETS NOT AS CHEAP AS THEY SEEM

When you adjust for sector composition, discounts shrink by two valuation points.

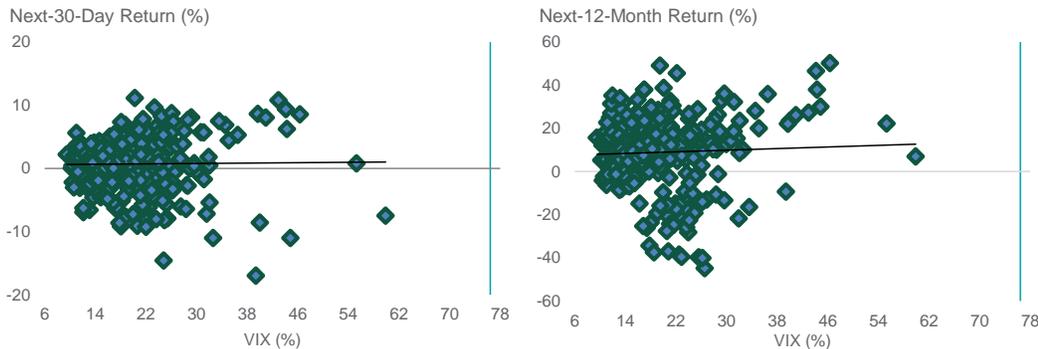


Source: Northern Trust Asset Management, MSCI, Bloomberg. Sector-adjusted P/E ratios are NT estimates.

Beyond valuations, many wonder what the current period of elevated volatility means for future stock returns. In Exhibit 5, we show the correlation between the VIX (a proxy for S&P 500 volatility) and next-30-day and next-12-month returns of the S&P 500. The overall correlation for both data sets is low, suggesting little relationship between risk and return *within* asset classes (in this case the S&P 500). When focusing on elevated VIX levels (those to the right of the horizontal axis), we find the same low correlation for the “next-30-day” data, which means returns are just as likely to be very low as very high. However, for the “next-12-month” data, there does seem to be a tendency for returns to be positive, sometimes dramatically so. As such, and understanding we are dealing with a limited number of data points, the current volatility environment could represent an attractive environment for those with the patience to endure further potential losses in the near-term.

EXHIBIT 5: VOLATILITY ISN’T VERY PREDICTIVE, EXCEPT MAYBE WHEN HIGH

While a limited sample, prior periods of extraordinary volatility have led to better one-year returns.



Source: Northern Trust Asset Management, Bloomberg. Month-end VIX values shown; blue line as of 3/18/2020.

CORONAVIRUS UPDATE: WHY HAS THE U.S. FAILED TO CONTAIN COVID-19?

The news on the coronavirus over the last week or so has been incrementally negative, including the broad spread across Western Europe and the U.S. We believe the interplay of two key factors has driven the spread of COVID-19 to unexpectedly high levels in the U.S.: the lack of diagnostic preparedness and the transmission mechanism of the virus.

The well-documented unpreparedness of the U.S. Centers for Disease Control and Prevention (CDC) and the lack of diagnostic testing have hampered an effective public health response to the outbreak in the U.S. As a stark comparison, South Korea has been performing approximately 15,000 tests per day, while the U.S. has performed a total of ~82,500 tests as of Thursday morning. We estimate that the U.S. would need to do ~95,000 tests per day to reach the same testing levels as South Korea (adjusted for differences in population). The lack of diagnostic availability was caused by a variety of factors including a defective initial version of the test, early CDC guidelines to restrict testing only to a narrow group of individuals, and an ongoing bottleneck in the availability of specific components of the test. Widespread testing is not only important to identify who is infected, but also to inform local governments if they should be enforcing heavier self-isolation measures, which in turn has both a health and economic impact.

A second factor in the spread of the outbreak is the obscure nature of the viral transmission mechanism, of which new details are just beginning to be understood. Transmission may be occurring prior to the onset of symptoms more commonly than previously thought. In a recent scientific study of Chinese patients (medRxiv, He, et al., March 2020), it was found that maximal viral shedding occurs just before or simultaneously with the onset of symptoms. The researchers estimated that 44% of viral transmission could be occurring in asymptomatic patients. In comparison, SARS has no reports of transmissions occurring prior to the onset of symptoms (CDC). Another evolving factor is the stability of the virus on surfaces, with one recent report indicating that COVID-19 can remain stable on some surfaces for up to two to three days (New England Journal of Medicine, N van Doremalen, et al., March 2020). If accurate, viral transmission could occur even if individuals are not in close quarters.

As exemplified by countries such as South Korea, we believe the eventual availability of widespread testing could diminish the challenges caused by the obscure COVID-19 transmission mechanisms. When diagnostics become widespread, individuals who are infected, but asymptomatic, can be identified and quarantined, and contact tracing can be used to reduce community spread. Critically, healthcare workers and nursing home staff can be continually tested so that they can remain at work safely. We believe the U.S. should achieve a much higher level of diagnostic testing over the next several weeks, which could eventually allow the country to move back from widespread mitigation efforts to containment efforts focused on infected individuals and their chain of contacts.

CONCLUSION: THE POTENTIAL FOR A REBOUND

The way forward for the economy and financial markets is highly variable, but the significant sell-off in risk assets and the high levels of volatility improve the outlook for longer-term investors. Volatility is likely to remain high due to uncertainty about the policy outlook, but a meaningful amount of the portfolio repositioning that has led to the heightened volatility may have already taken place. We will be carefully assessing the outlook for fiscal policy, where there is a great need for income substitution for workers sidelined by the containment efforts. Relatedly, there will be considerable need for credit backing for those businesses significantly hurt by the economic impact of the coronavirus. The near-term economic outlook appears dire — economic recession in Europe and Japan is all but certain, and the U.S. will also struggle to escape a technical recession. The U.S. may escape negative growth in the first quarter, but the second quarter could see a historic drop in activity. The potential rebound in the third quarter could allow us to escape a technical recession, but the impact on corporate earnings will

INVESTMENT STRATEGY COMMENTARY

be significant. Still, as our analysis earlier in the report shows, the drawdown has always been followed by a rebound – and we expect the same this time around.

Special thanks to Tom O'Shea and Colin Cheesman, Investment Analysts, for data research.

© 2020 Northern Trust Corporation. Head Office: 50 South La Salle Street, Chicago, Illinois 60603 U.S.A.

The VIX Index represents the market's expectation of future volatility, based on options of the S&P 500 Index.

IMPORTANT INFORMATION. The information is not intended for distribution or use by any person in any jurisdiction where such distribution would be contrary to local law or regulation. Northern Trust and its affiliates may have positions in and may effect transactions in the markets, contracts and related investments different than described in this information. This information is obtained from sources believed to be reliable, and its accuracy and completeness are not guaranteed. Information does not constitute a recommendation of any investment strategy, is not intended as investment advice and does not take into account all the circumstances of each investor. Opinions and forecasts discussed are those of the author, do not necessarily reflect the views of Northern Trust and are subject to change without notice.

This report is provided for informational purposes only and is not intended to be, and should not be construed as, an offer, solicitation or recommendation with respect to any transaction and should not be treated as legal advice, investment advice or tax advice. Recipients should not rely upon this information as a substitute for obtaining specific legal or tax advice from their own professional legal or tax advisors. Information is subject to change based on market or other conditions.

Past performance is no guarantee of future results. Performance returns and the principal value of an investment will fluctuate. Performance returns contained herein are subject to revision by Northern Trust. Comparative indices shown are provided as an indication of the performance of a particular segment of the capital markets and/or alternative strategies in general. Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index. Gross performance returns contained herein include reinvestment of dividends and other earnings, transaction costs, and all fees and expenses other than investment management fees, unless indicated otherwise.

Northern Trust Asset Management is composed of Northern Trust Investments, Inc. Northern Trust Global Investments Limited, Northern Trust Fund Managers (Ireland) Limited, Northern Trust Global Investments Japan, K.K., NT Global Advisors Inc., 50 South Capital Advisors, LLC and investment personnel of The Northern Trust Company of Hong Kong Limited, and The Northern Trust Company.