MARKET/ECONOMIC RESEARCH

Managing Through Market Drawdowns

In Case of Drawdown, Break Glass

If you are reading this note, we are likely experiencing a market selloff

In light of Russia's horrific and distressing attack on Ukraine, we are experiencing extremely volatile markets as the economic implications for asset classes are being processed against this challenging and rapidly changing backdrop. While the world's attention is rightly focused on responding to Russia's unprovoked invasion and on providing various forms of support for the Ukrainian people as they defend their sovereignty, investors must manage portfolios through the uncertainty caused by this global instability. At times like these it is more important than ever to remain disciplined in our investment decision-making.

Whether it is a technical market correction (i.e., stocks down 10% or more) or an official bear market (down 20% or more), every drawdown is unique, and each is uncomfortable to navigate. Some are triggered by economic slowdowns, some by exogenous events like the health/pandemic crisis experienced in 2020, and others by geopolitical events, which we are currently experiencing.

The catalyst of our current market volatility, the Russian invasion of Ukraine, is a humanitarian crisis that risks knock-on economic implications, which markets are attempting to quickly reprice. There has been a significant rise in commodity prices, most notably in energy markets, which leads to higher inflationary pressure that may weigh on disposable incomes and economic growth. Given the potential economic implications, expectations of monetary policy are already beginning to shift, with fed funds futures now pricing in one less hike at the next Fed meeting. We will continue to evaluate the shift in economic expectations and the associated risks to inform our market outlook and recommended portfolio positioning. We continue to promote investment discipline during volatile times, while remaining in tune with portfolio risks and exposures. As such, our general focus in this memo is to help clients with long-term investment objectives manage portfolios through these stressed markets. The remainder of this note will 1) provide statistical analysis of past market corrections, 2) articulate Wilshire's beliefs regarding investments in growth assets (i.e., stocks), and 3) provide empirical evidence to support the value of adhering to established rebalancing policies during times of market stress. Spoiler alert: in this note we are "pounding the table" to make the case and provide supporting evidence that investors should stay the course and follow prescribed rebalancing policies (see Section 3 on page 3, in particular, for that pitch).

1. Review of Historical Market Corrections

We begin with an empirical review of all U.S. stock market corrections (i.e., selloffs of -10% or more) from 1926 to today; encompassing nearly 100-years of monthly data. The table below shows each episode (19 in total with ten drawdowns, reaching bear market territory, a decline of -20% or more). We focus attention to the red rectangular bar highlighting summary statistics across all 19 selloffs. Long-term investors should take some comfort from the historical resiliency of markets to recover unrealized losses. In the table, we contemplate an investor with worst-case -scenario timing: this woeful investor buys stocks at each monthly market peak (i.e., immediately preceding each sell-off). Despite suffering an average initial loss of -27.5% (with a median of -20.7%) over the long-term, the same investor earns an average annualized return of 4.1% and 8.0% over 5- and 10-year holding periods, respectively (with median annualized returns of 5.7% and 7.6%, respectively). As noted above, while these historical statistics are a comforting reminder of the benefit of long-term horizons, they often seem outdated or somehow irrelevant in the midst of the fear of a current market selloff. "This time" always feels different, because it is. However, unless we expect that stocks will never return to their previous peaks, a bearish sentiment for even the most pessimistic of forecasters, we should look to this historical evidence for intestinal fortitude in weathering today's challenges.

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Market Corrections Since 1926

Date of Market Correction			Duration (# months)		Depth of	Annualized Returns If Purchased at Peak		Annualized Returns If Purchase at Trough	
Peak	Trough	Recovered	Sell-off	Recovery	Drawdown	5 Years	10 Years	5 Years	10 Years
Aug-1929	Jun-1932	Jan-1945	34	151	-83.4%	-17.4%	-4.9%	34.8%	12.5%
Feb-1937	Mar-1938	Mar-1944	13	72	-50.0%	-8.6%	4.0%	13.0%	11.9%
May-1946	Oct-1946	Oct-1949	5	36	-21.6%	9.1%	15.5%	16.5%	18.6%
Jul-1956	Feb-1957	Jul-1957	7	5	-10.2%	10.0%	9.0%	14.0%	10.9%
Jul-1957	Dec-1957	Jul-1958	5	7	-15.0%	7.6%	10.7%	13.3%	12.9%
Dec-1961	Jun-1962	Apr-1963	6	10	-22.3%	5.7%	7.4%	14.3%	11.0%
Jan-1966	Sep-1966	Mar-1967	8	6	-15.6%	4.3%	4.0%	9.3%	6.5%
Nov-1968	Jun-1970	Mar-1971	19	9	-29.2%	0.4%	3.1%	8.7%	10.3%
Dec-1972	Sep-1974	Dec-1976	21	27	-46.4%	-0.1%	7.6%	20.3%	17.2%
Aug-1978	Oct-1978	Mar-1979	2	5	-11.2%	17.1%	14.8%	19.6%	16.8%
Nov-1980	Jul-1982	Oct-1982	20	3	-18.8%	12.1%	11.8%	28.1%	18.2%
Jun-1983	May-1984	Dec-1984	11	7	-10.8%	12.8%	13.3%	19.8%	15.1%
Aug-1987	Nov-1987	Apr-1989	3	17	-29.8%	7.7%	13.4%	17.1%	18.2%
May-1990	Oct-1990	Feb-1991	5	4	-16.8%	11.5%	16.7%	18.2%	19.2%
Jun-1998	Sep-1998	Nov-1998	3	2	-12.0%	-1.3%	3.6%	2.0%	4.0%
Aug-2000	Sep-2002	Mar-2006	25	42	-44.1%	-1.6%	-1.1%	16.5%	8.7%
Oct-2007	Feb-2009	Mar-2012	16	37	-51.0%	0.6%	7.6%	23.6%	16.8%
Sep-2018	Dec-2018	Apr-2019	3	4	-14.3%	?	?	?	?
Jan-2020	Mar-2020	Jul-2020	2	4	-20.7%	?	?	?	?
Dec-2021	?	?	?	?	?	?	?	?	?
Market Correction Statistics (19)		Minimum	2	2	-83.4%	-17.4%	-4.9%	2.0%	4.0%
		Average	11	24	-27.5%	4.1%	8.0%	17.0%	13.4%
		Median	7	7	-20.7%	5.7%	7.6%	16.5%	12.9%
		Maximum	34	151	-10.2%	17.1%	16.7%	34.8%	19.2%
Bear Market Statistics (10)		Minimum	2	4	-83.4%	-17.4%	-4.9%	8.7%	8.7%
		Average	14	41	-39.8%	-0.4%	5.8%	18.3%	13.9%
		Median	15	32	-37.0%	0.4%	7.4%	16.5%	12.5%
		Maximum	34	151	-20.7%	9.1%	15.5%	34.8%	18.6%

Source: Wilshire Compass (S&P 500 1926-1970, Wilshire 5000 1971-Forward)

2. Why we hold growth assets

Building from the empirical data, we turn to a more qualitative defense for holding risk assets. Barring any major disagreement with the basic investment beliefs presented below, these tenets should bolster conviction and argue for maintaining portfolio positioning through market turbulence:

1. We/many hold significant allocations to stocks and other growth assets because of their attractive long-term return potential (both in absolute and risk-adjusted terms).
2. While the short-term direction and path of returns for growth assets is unpredictable, we know with virtual certainty that there will be periods of significant drawdown.
3. We can only harness the returns expected in point #1 above by accepting the unpredictable and often uncomfortable return pattern noted in point #2 (i.e., we are highly unlikely to capture the upside without exposing ourselves to the downside).

While we specifically discuss the value of rebalancing in the next section, we suspect that some market participants might quibble with us on the third bullet above. In response, we note that empirical evidence debunks the effectiveness of market timing. The notion that investors can have perfect foresight by getting out of markets prior to drawdowns and re-entering in time for the recovery is simply not a credible strategy. Though Wilshire does occasionally attempt to exploit market volatility to express marginal market or structural tilts within our discretionary portfolios, these activities tend to be infrequent in number, modest in size, and directionally consistent with typical rebalancing transactions (i.e., selling recent winners to buy recent laggards when valuations support such trades).

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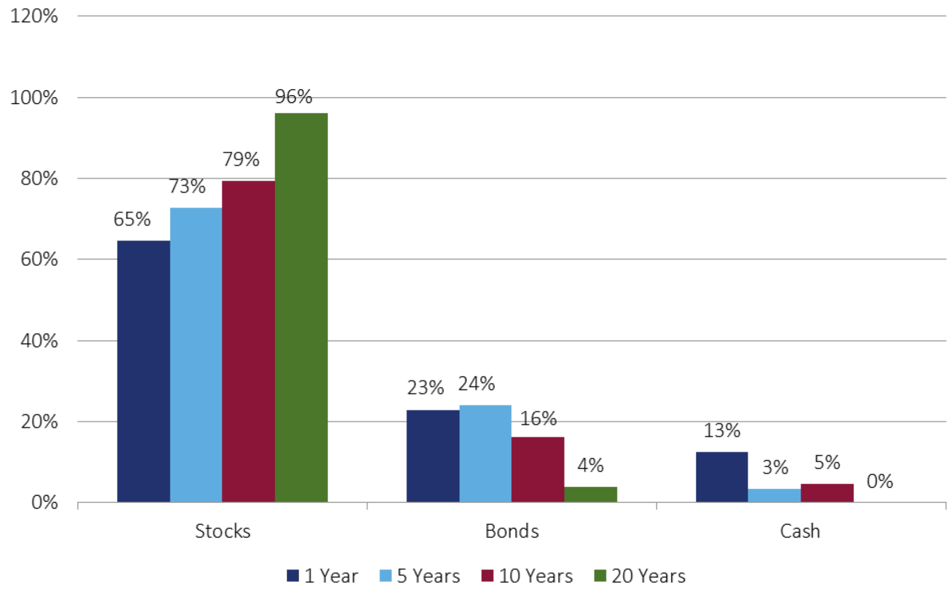
Below, we present the historical winning percentages between stocks, bonds and cash from 1926 to 2021 to underscore the strength of our beliefs in supporting the role of growth assets for long-term investors. Notice how the dependability of the equity risk premium increases with the length of holding periods; outpacing bonds and cash just 65% of the time over one-year holding periods versus a more dependable 79% and 96% of the time over 10- and 20-year rolling periods, respectively. Investors risk lowering those odds by tactically jumping in and out of stocks over time.

Asset Class Winning Percentages (1926-2021)



Source: Wilshire Compass

3. The Value of Disciplined Rebalancing

Establishing prudent rebalancing guidelines is a critical element of a robust portfolio management strategy. Formalizing those procedures with a clear investment policy provides important governance to ensure that portfolios are managed in a manner that is consistent with those researched and articulated plans. A well-constructed investment policy is an institution's best tool for guarding against behavioral risks that might result in emotionally driven, value destroying decisions during periods of market stress. The investment policy pre-experiences and prescribes how an investor is to prudently respond during various market environments.

However, periods of increased uncertainty within an elevated-risk environment can be extremely uncomfortable, even for investors with strong investment policies in place. Stressed markets often pressure investors to second-guess their portfolio risk profiles and even trade assets in ways that conflict with stated long-term allocation policies. While we recognize the natural behavioral tendency to "make the pain stop," Wilshire advises clients to maintain discipline and adhere to prescribed allocation and rebalancing policies, particularly during times of heightened volatility.

In the exhibit below, "Rebalancing Impact During Market Corrections Since 1926," we revisit our historical data on market corrections to empirically analyze how rebalancing decisions impacted results during those historical market selloffs. The columns to the right in the exhibit attempt to quantify how a process of monthly rebalancing around a 60% stock/40% bond portfolio might compare to approaches that react to market stress by delaying rebalancing activities (i.e., not trading). In each case, we assume that the investor chooses to deviate from their monthly rebalancing process when cumulative returns are off 5% or more from the market peak and only resumes rebalancing after stocks had fully sold off and then recovered. While we believe this is a reasonable way to quantify what we are interested in measuring, we also examined the results had the investor immediately abandoned their rebalancing plan after the first negative month within each market correction (we provide that output, which is similar to the results below, in the appendix on page 5). Returning to the following analysis, we chose 5% as our selloff trigger since one would expect a move of at least that magnitude would be required to have an investor shaken enough to second-guess their rebalancing policy.

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As can be seen from the empirical results in the table, deviating from the prescribed monthly rebalancing policy in the manner described above would have cost the investor approximately 0.30% in annualized returns across 19 market corrections (0.34% average, 0.25% median). The results across the subset of nine bear markets is even more compelling with the suspension of rebalancing costing the investor an annualized average of 0.47% and median of 0.41%. There was only one market correction, out of the 19 since 1926, where the investor would have been better off by suspending rebalancing activities. That sole exception occurred during the November 1980–October 1982 correction and recovery and benefited the investor by an annualized 0.17%. Interestingly, a key driver of the portfolio's return edge in the 1980–1982 period resulted from a remarkable 40% return from bonds, which benefited from a rapidly declining rate environment. So, while rebalancing cannot be guaranteed to yield better results across all market selloffs, the odds strongly favor its advantages. The one notable historical exception was driven by outsized returns from bonds rather than from disappointing returns to stocks. We recognize that rebalancing into a drawdown and during elevated market uncertainty can be extremely uncomfortable and can sometimes feel counter to a risk averse process. We therefore present these data to demonstrate the historical advantages of maintaining such discipline. The call to rebalance in no way suggests certainty around the market's next move (i.e., that it will go up, let alone by how much), but rather underscores the importance of exploiting volatility and unpredictability by systematically shifting from recent winners to recent laggards.

Rebalancing Impact during Market Corrections Since 1926

Date of Market Correction			Total #	Annualized Returns (Peak to Recovery)		
Peak	Trough	Recovered	Months	Rebal (60/40)	React to Stocks <-5%	Net
Aug-1929	Jun-1932	Jan-1945	185	3.5%	2.8%	-0.68%
Feb-1937	Mar-1938	Mar-1944	85	6.1%	5.0%	-1.15%
May-1946	Oct-1946	Oct-1949	41	1.3%	1.0%	-0.24%
Jul-1956	Feb-1957	Jul-1957	12	-2.4%	-2.4%	-0.08%
Jul-1957	Dec-1957	Jul-1958	12	6.5%	6.3%	-0.26%
Dec-1961	Jun-1962	Apr-1963	16	3.8%	3.4%	-0.40%
Jan-1966	Sep-1966	Mar-1967	14	1.9%	1.8%	-0.09%
Nov-1968	Jun-1970	Mar-1971	28	2.6%	2.4%	-0.20%
Dec-1972	Sep-1974	Dec-1976	48	3.6%	3.4%	-0.21%
Aug-1978	Oct-1978	Mar-1979	7	1.9%	1.7%	-0.19%
Nov-1980	Jul-1982	Oct-1982	23	8.7%	8.9%	0.17%
Jun-1983	May-1984	Dec-1984	18	5.3%	5.2%	-0.10%
Aug-1987	Nov-1987	Apr-1989	20	4.3%	3.7%	-0.64%
May-1990	Oct-1990	Feb-1991	9	6.4%	6.2%	-0.25%
Jun-1998	Sep-1998	Nov-1998	5	2.5%	2.0%	-0.55%
Aug-2000	Sep-2002	Mar-2006	67	2.7%	2.5%	-0.19%
Oct-2007	Feb-2009	Mar-2012	53	3.3%	2.9%	-0.42%
Sep-2018	Dec-2018	Apr-2019	7	3.2%	2.9%	-0.31%
Jan-2020	Mar-2020	Jul-2020	6	4.1%	3.6%	-0.56%
Dec-2021	?	?	?	?	?	?
Market Correction Statistics (19)		Minimum	5			-1.15%
		Average	35			-0.34%
		Median	18			-0.25%
		Maximum	185			0.17%
Bear Market Statistics (10)		Minimum	6			-1.15%
		Average	55			-0.47%
		Median	45			-0.41%
		Maximum	185			-0.19%

Source: Wilshire Compass (S&P 500 1926-1970, Wilshire 5000 1971-Forward)

Investors who either find the results presented above to be unconvincing or who routinely feel the pressure to cut-losses whenever markets sell-off 10% or more (or when exogenous risks emerge) might be well-served by reassessing their

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portfolios' general risk profiles, as these sentiments may signal an inconsistency between portfolio risk allocations and investor risk appetites.

Wilshire will continue to monitor market conditions and will keep you apprised of any changes in asset allocation views and/or market outlook. In the meantime, we encourage you to reach out to us with any additional questions.

Appendix

Rebalancing Impact during Market Corrections Since 1926

Date of Market Correction			Total #	Annualized Returns (Peak to Recovery)		
Peak	Trough	Recovered	Months	Rebal (60/40)	React to Stocks <0%	Net
Aug-1929	Jun-1932	Jan-1945	185	3.5%	2.9%	-0.61%
Feb-1937	Mar-1938	Mar-1944	85	6.1%	5.2%	-0.98%
May-1946	Oct-1946	Oct-1949	41	1.3%	1.0%	-0.24%
Jul-1956	Feb-1957	Jul-1957	12	-2.4%	-2.5%	-0.11%
Jul-1957	Dec-1957	Jul-1958	12	6.5%	6.3%	-0.26%
Dec-1961	Jun-1962	Apr-1963	16	3.8%	3.4%	-0.39%
Jan-1966	Sep-1966	Mar-1967	14	1.9%	1.8%	-0.09%
Nov-1968	Jun-1970	Mar-1971	28	2.6%	2.4%	-0.18%
Dec-1972	Sep-1974	Dec-1976	48	3.6%	3.5%	-0.18%
Aug-1978	Oct-1978	Mar-1979	7	1.9%	1.7%	-0.19%
Nov-1980	Jul-1982	Oct-1982	23	8.7%	9.1%	0.40%
Jun-1983	May-1984	Dec-1984	18	5.3%	5.4%	0.05%
Aug-1987	Nov-1987	Apr-1989	20	4.3%	3.7%	-0.64%
May-1990	Oct-1990	Feb-1991	9	6.4%	6.2%	-0.23%
Jun-1998	Sep-1998	Nov-1998	5	2.5%	2.0%	-0.55%
Aug-2000	Sep-2002	Mar-2006	67	2.7%	2.6%	-0.13%
Oct-2007	Feb-2009	Mar-2012	53	3.3%	2.9%	-0.35%
Sep-2018	Dec-2018	Apr-2019	7	3.2%	2.9%	-0.31%
Jan-2020	Mar-2020	Jul-2020	6	4.1%	3.6%	-0.56%
Dec-2021	?	?	?	?	?	?
Market Correction Statistics (19)		Minimum	5			-0.98%
		Average	35			-0.29%
		Median	18			-0.24%
		Maximum	185			0.40%
Bear Market Statistics (10)		Minimum	6			-0.98%
		Average	55			-0.43%
		Median	45			-0.37%
		Maximum	185			-0.13%

Source: Wilshire Compass (S&P 500 1926-1970, Wilshire 5000 1971-Forward)

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