BofA SECURITIES

Equity Strategy Focus Point

History lessons for volatile markets

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Equity and Quant Strategy
United States

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Geopolitical shocks don't repeat but often rhyme

Amid the Russia-Ukraine turmoil, the S&P 500 has seen a peak-to-trough decline of 9% so far (through yesterday). This is just slightly more than the average peak-to-trough decline of 7-8% amid prior exogenous geopolitical shocks following the Global Financial Crisis (Exhibit 1). Prior shocks with no fundamental, long-term implications generally offered buying opportunities: stocks more than fully recovered within three months. In short, history tells us that geopolitical dips should be bought, not sold.

Pullbacks are normal; bear markets less so

The current correction in stocks is overdue: we have not had a 10%+ S&P 500 correction since the quick bear market of March 2020. 10%+ corrections have occurred once per year on average since 1930 (Exhibit 9), and have lasted on average 54 trading days before lifting more than 10% from the trough (since Jan 3, the market has dropped 13% as of yesterday's low and today is the 45th trading day). Bear markets of 20%+ or more occur once every 3-4 years, but 9 of the last 12 since the 1950s have occurred around economic recessions (not BofA's base case) and just 42% of our Bear Market signals have been triggered.

The perils of market timing

Market timing is difficult, and panic selling can result in outsized opportunity cost, as the best market days often follow the worst days. Since the 1930s, if you sat out the 10 best days per decade, your returns would be just 45% vs. ~20,000% (Exhibit 5).

The best arbitrage opportunity for stocks is time

The shift toward fast-money and quantitative strategies (see report) has left a market rife with long-term inefficiencies: long-term dispersion, or available alpha, sits at multi-decade highs. And for US stocks, lengthening one's time horizon has been a recipe for loss avoidance: 10yr S&P 500 returns were negative just 6% of the time since 1929. This benefit is unique to stocks: for commodities, the 10-yr loss ratio is 30%.

In a low return world, focus on total return

Valuation may not matter in the short term, but it is almost all that matters in the long term (Exhibit 12). Despite the sell-off, today's level implies price returns of just 1.4% p.a. over the next decade, lower-than-expected cash yields (BofA sees 2%+ by '23). Dividends should represent a big piece of returns. We have already seen big dividend raises, and expect dividend growth to be 2x earnings growth in '22 (note). Even during low return periods (30s, 64-74, 98-08) losses dropped four-fold by shifting from 1 to 10yr horizons.

Volatility can be a boon

Heightened volatility is likely: we began using the yield curve as a forecast tool for volatility in the early 2000s and today it signals elevated volatility for the next 12 to 24 months. The best hedge against volatility? High Quality ("B+ or Better") stocks, which still trade at a surprising discount to Low Quality (Exhibit 17). We would use volatility as an opportunity to add exposure to high quality companies with healthy free cash flow yield, which we find across defensive and cyclical sectors. And in a Late Cycle regime, our FCF/EV factor has generated annualized alpha of 4.2ppt on average (see screens).

Time is money for stocks

Exhibit 1: S&P 500 peak-to-trough declines have been 7-8% on average during major macro shocks/geopolitical events, but more than fully recovered after three months

S&P 500 price changes around historical macro shocks and geopolitical events since 2010

Notes	-1 month	-1 day	+1 day	+1 month	+3 month	Peak to trough	Trough to +3m after event	Trough days after (before) event
S&P downgrades Greek Sovereign Debt to junk/1st Greek Bailout	1.5%	-2.3%	0.6%	-6.8%	-5.9%	-16.0%	9.0%	66
Arab Spring: "Beginning", Tunisian Revolution begins	3.9%	0.1%	0.3%	4.1%	2.8%	-1.6%	13.8%	-18
Arab Spring: Syrian/Libyan civil war begins	-3.5%	-1.1%	-1.9%	2.9%	-1.3%	-6.4%	8.5%	1
S&P downgrades US debt	-10.4%	-0.1%	-6.7%	-2.1%	4.5%	-18.8%	16.9%	59
US government shuts down	3.8%	0.8%	-0.1%	3.9%	9.0%	0.0%	13.2%	-32
Scotland passes referendum to vote on independence (voting date was 9/18/14)	3.9%	0.3%	0.4%	2.5%	1.2%	-2.3%	11.7%	-24
Russia annexes Crimea	1.7%	0.7%	-0.6%	-0.4%	4.5%	-4.0%	7.8%	24
Swiss abandons cap on Franc vs. Euro FX rate	0.2%	-0.9%	1.3%	5.2%	5.7%	-0.8%	7.3%	-30
Greece: misses debt payment to IMF	-1.6%	0.7%	0.0%	1.3%	-7.4%	-12.2%	6.8%	55
China: Devalues yuan	0.4%	-1.0%	0.1%	-5.9%	-0.4%	-12.2%	13.0%	14
S&P downgrades Japan credit rating	-4.6%	0.9%	-0.3%	1.9%	3.9%	-11.2%	13.0%	-22
Turkey shoots down Russian plane for violating Turkish airspace	0.7%	0.1%	0.0%	-1.3%	-7.6%	-13.3%	6.4%	79
Fed - 1st rate hike - increase interest rate 25bps	1.0%	1.5%	-1.5%	-9.3%	-2.2%	-13.0%	10.8%	57
Brazil: House votes to begin President impeachment trial	2.2%	0.7%	0.3%	-2.2%	-0.8%	-0.8%	4.1%	-25
Brexit: UK votes to leave the EU	3.2%	1.3%	-3.6%	2.9%	2.4%	-5.6%	9.5%	4
Trump orders 59 Tomahawk cruise missiles to be fired at the Shayrat airbase in Syria	-0.8%	0.2%	-0.1%	1.8%	2.2%	-2.4%	5.3%	7
Trump fires FBI director James Comey	1.8%	-0.1%	0.1%	1.5%	3.2%	-1.2%	6.5%	-26
North Korea detonates a hydrogen bomb -its most powerful nuclear test ever	0.0%	0.0%	0.0%	2.1%	6.7%	-2.2%	9.2%	-15
Catalonia votes for independence from Spain	2.1%	0.4%	0.0%	2.0%	5.7%	-0.8%	9.5%	-26
The US announces imports of steel and aluminum threaten national security Under Section 232	-1.6%	0.0%	0.0%	0.7%	-0.4%	-10.2%	8.0%	-8
Trump administration releases initial list of Chinese products worth $50bn that are under consideration for tariffs	-2.9%	1.3%	1.2%	0.6%	3.8%	-7.3%	7.9%	-1
Italian bond yields spike on budget concerns	0.5%	-0.1%	-0.3%	2.2%	4.8%	-2.9%	8.7%	-14
Collapse in Argentina and Turkey's currency ignites concerns of emergining market currency crisis	2.4%	0.7%	-0.3%	0.6%	4.8%	-1.5%	8.9%	-18
US releases list of $200bn Chinese goods subject to tariffs	0.5%	0.3%	-0.7%	1.4%	-0.3%	-3.1%	7.9%	-13
Powell says we're "a long way" from neutral on interest rates	0.8%	0.1%	-0.8%	-6.9%	-16.3%	-19.8%	6.8%	82
US government shuts down	-11.3%	-2.7%	-2.7%	12.0%	19.1%	-15.7%	21.4%	2
US Treasury designates China as a currency manipulator	-4.9%	-3.0%	1.3%	4.6%	8.1%	-6.1%	8.4%	9
Drones were used to attack the state-owned Saudi Aramco oil processing facilities	3.8%	-0.3%	0.3%	-0.3%	6.5%	-2.6%	12.1%	-24
Top Iranian military official killed by US airstrike	4.6%	0.8%	-0.7%	-1.0%	-22.4%	-1.0%	17.6%	81
China puts Wuhan City, the center of the COVID-19 outbreak, on lockdown	3.1%	0.1%	-0.9%	0.4%	-15.9%	-33.9%	28.5%	60
Average	0.0%	0.0%	-0.5%	0.6%	0.6%	-7.6%	10.6%	10
Median	0.8%	0.1%	0.0%	1.3%	2.6%	-4.8%	9.0%	0
Min	-11.3%	-3.0%	-6.7%	-9.3%	-22.4%	-33.9%	4.1%	
Max	4.6%	1.5%	1.3%	12.0%	19.1%	0.0%	28.5%	
Average non-US	1.2%	0.1%	-0.3%	0.6%	-0.5%	-6.7%	10.5%	
% positive	67%	63%	33%	67%	60%			

Source: BofA US Equity & Quant Strategy, FactSet, S&P

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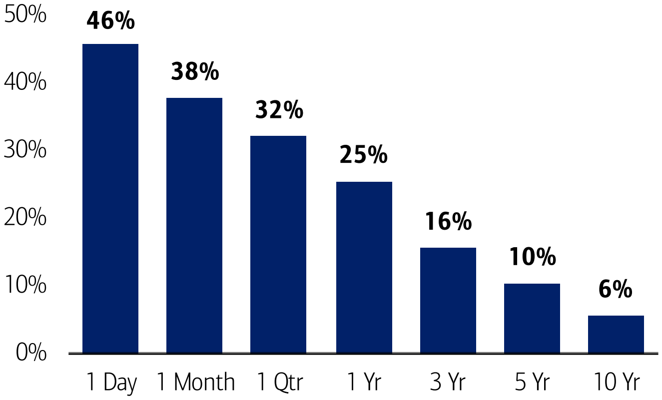
Exhibit 2: As time horizons grow, equity losses fall off
Probability of negative returns, based on S&P 500 total returns from 1929-present



Source: S&P, Bloomberg, BofA US Equity & Quant Strategy

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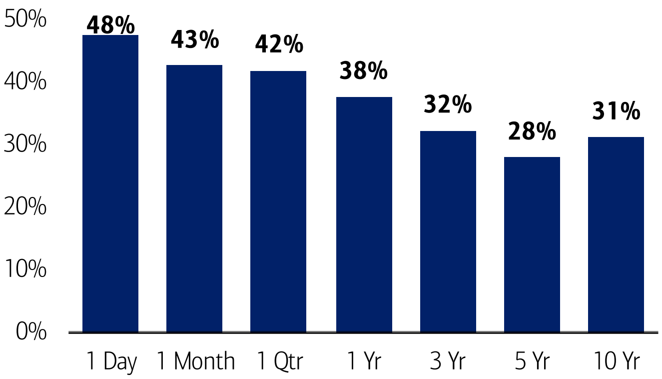
For stocks, the best recipe for loss avoidance is time

The probability of losing money over one day is a little worse than a coin-flip (46%), but the probability declines to just 6% over a 10-year window since 1929.

Exhibit 3: Time is not as important for other asset classes like Oil
Probability of negative returns, based on WTI oil returns from 1929-present for annual/3yr/5yr/10yr, 1974-present for quarterly/monthly and 1986-present for daily



Source: EIA, CME, BofA US Equity & Quant Strategy

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Not so much for oil prices

Other asset classes (e.g., commodities) do not sport such characteristics: since 1929, instances of 10yr negative returns for commodities (based on WTI) have been 30%.

Exhibit 4: Returns by decade have rarely been negative
S&P 500 Returns by Decade (1930s -2000s)

Decade	Total Return	Avg Annual Return
1930s	-1%	-0.1%
1940s	149%	9.5%
1950s	486%	19.3%
1960s	112%	7.8%
1970s	77%	5.9%
1980s	404%	17.5%
1990s	431%	18.2%
2000s	-9%	-0.9%
2010s	256%	13.6%

Source: BofA US Equity & Quant Strategy

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Negative 10-yr returns are rare

Outside of the 1930s, the 2000s was the only decade with negative total returns.

Perils of market timing

Exhibit 5: Market timing can lead to missing out on the best days
S&P 500 returns by decade excluding the 10 best and 10 worst days, as of 3/1/22

Decade	Price return	Excluding best 10d per decade	Excluding worst 10d per decade	Excluding best/worst 10d per decade
1930	-42%	-79%	39%	-50%
1940	35%	-14%	136%	51%
1950	257%	167%	425%	293%
1960	54%	14%	107%	54%
1970	17%	-20%	59%	8%
1980	227%	108%	572%	328%
1990	316%	186%	526%	330%
2000	-24%	-62%	57%	-21%
2010	190%	95%	351%	203%
2020	33%	-24%	153%	44%
Since 1930	**19,975%**	**45%**	**4,275,143%**	**30,678%**

Source: S&P, BofA US Equity & Quant Strategy

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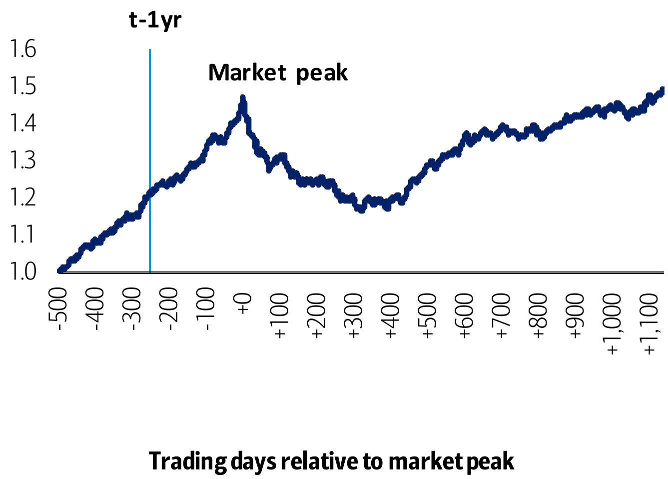
Market timing is difficult

The best days usually follow the worst days for the market. Since the 1930s, if an investor sat out the 10 best return days per decade, his/her returns would be just 45% compared to ~20,000% (19,975%) returns since then.

Exhibit 6: Unless you can pinpoint the peak of the market to within a 12m timeframe, you are typically better off staying invested
Average daily performance index of S&P 500 before and after market peaks, since 1937



Source: BofA US Equity & Quant Strategy, Bloomberg, S&P

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Time heals most wounds

Recovering bear market losses has historically required remaining invested for about 1,100 trading days (over four years), but some market recoveries, like in 2020, have been much swifter.

Is it worse to miss the end of the bull or to catch the start of the bear?

Investors who sold within a year of a peak had an opportunity to enter at a lower price in the downturn 90+% of the time over the last 84 years. But selling a year or more ahead of a peak cost: on a 12-month basis, the end of the bull market yielded higher returns than losses over the next 12-mths 69% of the time (and 80%+ on a 2-yr basis).

Exhibit 7: The gains seen in the last 12m and 24m of a bull market have been enough to offset subsequent losses

S&P 500 total returns before and after market peaks, shading denotes positive cumulative returns

	6 months			12 months			24 months		
	Before peak	After peak	Cumulative returns	Before peak	After peak	Cumulative returns	Before peak	After peak	Cumulative returns
Mar-37	+19%	-22%	-8%	+33%	-39%	-19%	+135%	-22%	+83%
May-46	+15%	-22%	-10%	+33%	-22%	+4%	+72%	-4%	+65%
Aug-56	+15%	-9%	+5%	+20%	-0%	+20%	+74%	+3%	+80%
Dec-61	+11%	-21%	-12%	+32%	-11%	+17%	+31%	+9%	+43%
Feb-66	+11%	-10%	+0%	+11%	-4%	+7%	+30%	+2%	+32%
Nov-68	+12%	-3%	+9%	+18%	-11%	+6%	+44%	-15%	+22%
Jan-73	+14%	-11%	+1%	+19%	-20%	-4%	+39%	-35%	-9%
Nov-80	+29%	-3%	+25%	+39%	-7%	+30%	+65%	+7%	+76%
Aug-87	+20%	-21%	-5%	+40%	-20%	+12%	+93%	+12%	+116%
Jul-90	+10%	-13%	-4%	+15%	+7%	+23%	+45%	+21%	+76%
Mar-00	+20%	-5%	+15%	+22%	-25%	-8%	+42%	-23%	+9%
Oct-07	+9%	-12%	-4%	+18%	-41%	-30%	+36%	-28%	-2%
Feb-20	+17%	+1%	+18%	+24%	+17%	+46%	+29%	+33%	+71%
Median	**+15%**	**-11%**	**+0%**	**+22%**	**-11%**	**+7%**	**+44%**	**-1%**	**+54%**
Positive %			**54%**			**69%**			**83%**

Source: BofA US Equity & Quant Strategy, Bloomberg, S&P

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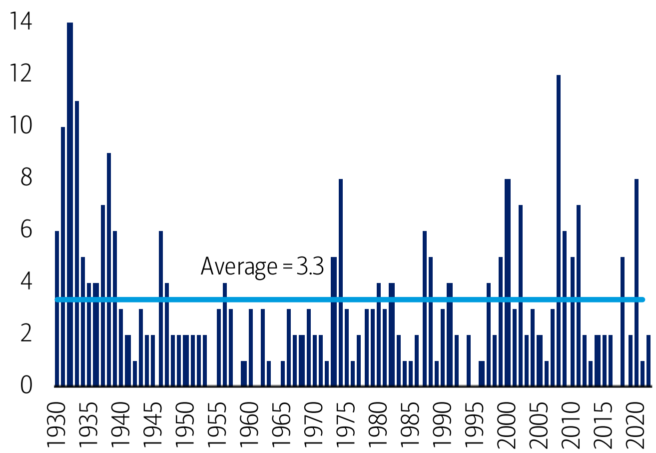
Market pullbacks and corrections are normal

Exhibit 8: 5%+ pullbacks occur more than three times a year on average

# of 5%+ pullbacks on the S&P 500 since 1930



Source: BofA US Equity & Quant Strategy, Bloomberg

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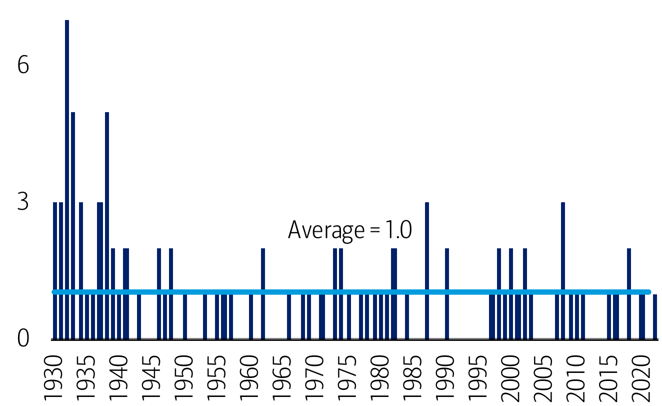
Exhibit 9: 10%+ corrections occur once a year on average

# of 10%+ pullbacks on the S&P 500 since 1930



Source: BofA US Equity & Quant Strategy, Bloomberg

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No signs of a bear market yet

Just 42% of our bear market signposts have been triggered as of February 2022, still far below the ~80% threshold typically seen ahead of prior bear markets.

Exhibit 10: Just 42% of our signposts have been triggered, suggesting no imminent bear market risk
Bear Market Signposts heading into prior market peaks since 2000 and monthly since 12/21

Signpost	Mar-00	Oct-07	Sep-18	Feb-20	Dec-21	Jan-22	Feb-22
Fed raising rates	☑	☑	☑	☑	☐	☐	☐
Tightening credit conditions	☑	☑	☐	☑	☐	☐	☐
Trailing S&P 500 12m returns > 11%	☑	☑	☑	☑	☑	☑	☑
Trailing S&P 500 24m returns > 30%	☑	☑	☑	☐	☑	☑	☑
Low quality outperforms high quality (6m)	☑	☑	☑	☐	☐	☐	☐
Momentum outperforming (6m/12m)	☑	☑	☑	☑	☑	☐	☐
Growth outperforming (6m/12m)	☑	☑	☑	☐	☐	☐	☐
5% pullback over prior 12m	☑	☐	☑	☑	☑	☑	☑
Low PE underperforms (6m/12m)	☑	☑	☑	☑	☐	☐	☐
Conf Board consumer confidence (prior 24m) > 100	☑	☑	☑	☑	☑	☑	☑
Conf Board net % expecting stocks higher (prior 6m) > 20	☐	☑	☑	☑	☐	☐	☐
Lack of reward to EPS & sales beats (prior 3 qrts)	☐	☑	☑	☑	☑	☑	☑
Sell Side Indicator	☐	☑	☐	☐	☐	☐	☐
FMS cash levels	☐	☐	☐	☐	☐	☐	☐
Inverted yield curve (YC)	☑	☑	☐	☑	☐	☐	☐
Chg in long-term growth expectations > +0.6ppt	☑	☑	☑	☐	☑	☑	☑
Rule of 20 (prior 12m)	☑	☑	☑	☑	☑	☑	☑
VIX rises > 20 (prior 3m)	☑	☑	☑	☐	☑	☑	☑
ERR rule	☑	☑	☑	☑	☐	☐	☐
% triggered	79%	89%	79%	63%	47%	42%	42%
S&P 500	1379.2	1547.0	2914.0	3386.2	4766.2	4515.6	4373.9

Source: BofA US Equity & Quant Strategy, BofA Global Investment Strategy, FRB, S&P, Conference Board, BLS

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Valuation matters over the long term

Whereas valuations explain very little of returns over the next one to two years, they have explained 60-90% of subsequent returns over a 10-year time horizon (Exhibit 11). The price to normalized earnings ratio (our preferred valuation metric) explains 80-90% of returns over the subsequent 10 years (Exhibit 12). Most other valuation measures have similarly strong efficacy over long time horizons. We have yet to find any factor with such strong predictive power for the market over the short term.

Lofty valuations today suggest low single digit L/T returns

Based on an historical regression, today's price to normalized earnings ratio yields an expected annual price return of 1.4%/year for the S&P 500 over the next 10 years. However, a higher probability of loss over periods during which we saw ~2% annualized returns (1931-41, 1964-74, 1998-2008, similar to what our valuation model suggests today) supports staying invested given the difficulty of market timing.

Exhibit 11: Predictive power of various S&P 500 valuation metrics on 10yr returns ranges from 60-90% with avg. projected annual 10yr returns of 1.4%
Predictive power of various S&P 500 valuation metrics on total returns (as of 2/28/22)

Metric	Current	Avg	% above (below) avg	10 yr RSQ	Implied 10yr Annlzd Total Return	90% Confidence Interval	Dates
Trailing PE	22.1	16.5	34%	63%	4.9%	0% - 10%	1960-present
Forward PE	19.0	15.7	22%	86%	4.7%	1% - 8%	1986-present
Normalized PE	26.2	19.4	35%	80%	3.2%	-1% - 7%	7/1987-present
Shiller PE	37.8	17.3	119%	64%	0.0%	-5% - 5%	1936-present
P/BV	4.5	2.6	72%	86%	0.5%	-3% - 4%	1978-present
EV/EBITDA	13.7	10.4	32%	74%	2.3%	-2% - 7%	1986-present
P/OCF	17.4	11.1	57%	88%	-1.5%	-5% - 2%	1986-present
P/FCF	27.0	27.9	-3%	41%	10.7%	4% - 18%	1986-present
EV/Sales	3.0	1.9	56%	80%	-1.3%	-5% - 3%	1986-present
Market Cap/GDP	1.5	0.64	141%	59%	-10.2%	-15% - -5%	1952-present
				Median:	1.4%	-3% - 6%	
				Average:	1.3%	-3% - 6%	

Source: FactSet, First Call, Compustat, Shiller, BofA US Equity & US Quant Strategy

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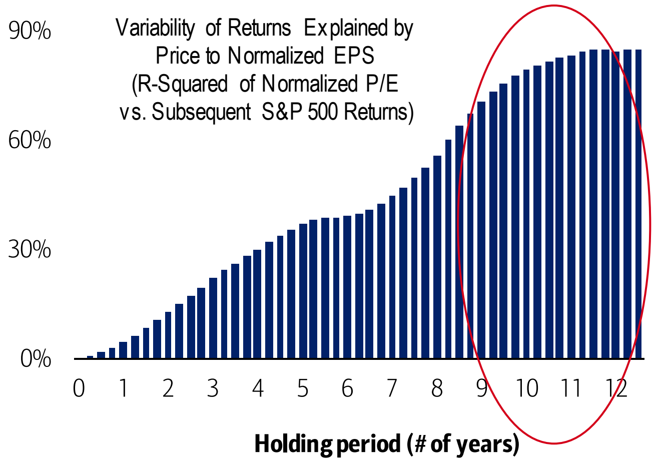
Exhibit 12: Price to normalized earnings ratio (our preferred valuation metric) explains 80-90% of returns over the subsequent 10 years…
Price to normalized earnings predictive power on subsequent holding period returns (since 1987)



Source: BofA US Equity & US Quant Strategy

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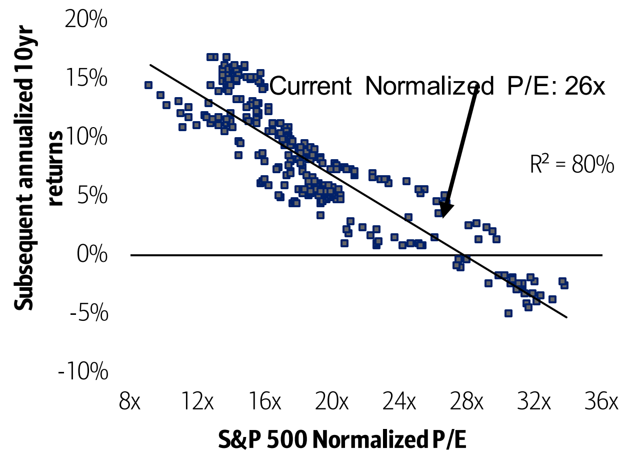
Exhibit 13: …And is indicating returns of just 1.4%/yr over the next decade
S&P 500 normalized P/E vs. subsequent annualized returns (since 1987)



Source: BofA US Equity & US Quant Strategy

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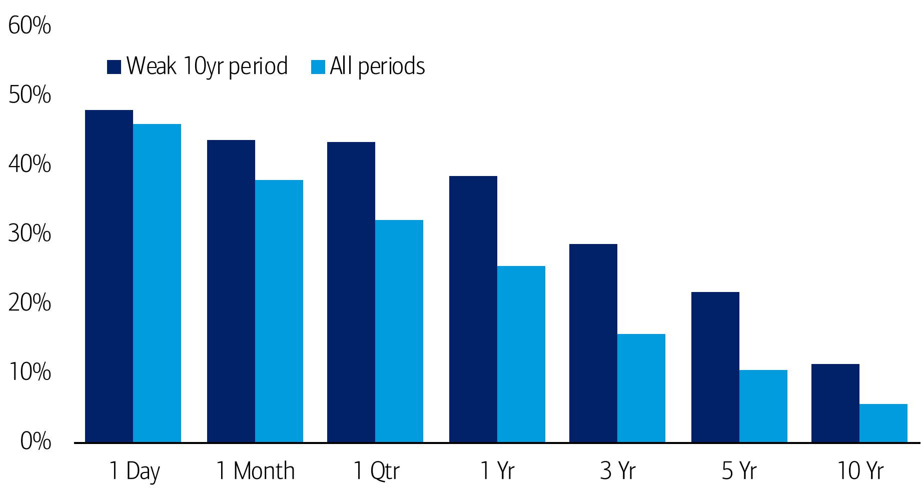
Exhibit 14: A weaker outlook further supports staying invested vs market timing
Probability of negative returns, based on S&P 500 total returns from 1929-present



Note: weak 10yr periods are 7/31-7/41, 9/64-9/74, 10/98-10/08 **Source:** S&P, Bloomberg, BofA US Equity & Quant Strategy

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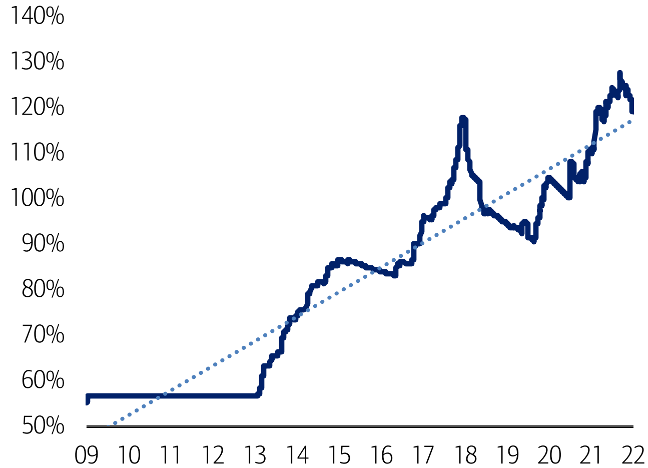
Exhibit 15: Opportunities for long-term investing
S&P 500 10-year price range ((Max-Min)/Avg), March 2009-March 2022



Source: Bloomberg, BofA US Equity & US Quant Strategy

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Inefficiencies over the long-term have increased

The range of long-term (10yr) market opportunities has been rising since the Global Financial Crisis and is currently near record levels.

High Quality for the short- and long-term

Exhibit 16: Quality has won over all time horizons
High quality stocks (B+ or Better S&P Quality rank) 10-yr rolling price returns, 1996-2/28/2022

Source: BofA US Equity & Quant Strategy, S&P

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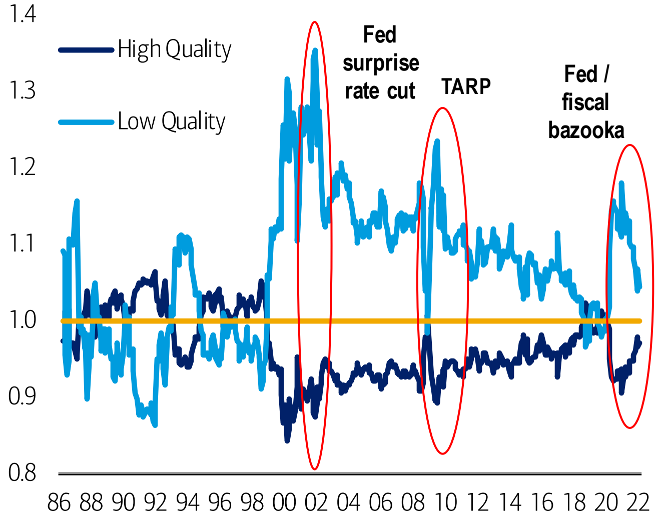
Long-term winner

High quality stocks have never had a negative 10-yr return in our data history (back to 1986), even excluding dividends.

Exhibit 17: Low Quality has been fueled by stimulus, but we see a policy peak reversing the trend
B+ or Better vs. B or Worse Fwd. P/E relative to BofA Universe (1986 – 2/28/22)



Source: FactSet, BofA US Equity & US Quantitative Strategy

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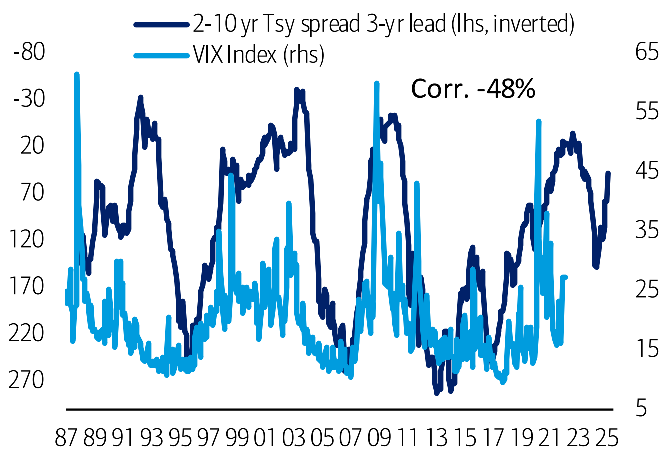
Peak policy = peak low Quality

Amid a tightening policy environment, we recommend High Quality ("B+ or Better") stocks, which still trade at a 7% discount to Low Quality stocks, which benefitted from easy monetary policy for the past decade+.

Exhibit 8: The yield curve suggests volatility is likely to remain elevated for the foreseeable future
CBOE VIX and Inverted Slope of Yield Curve (1986 to 2/22)



Source: CBOE, BEA, BofA US Equity & Quant Strategy

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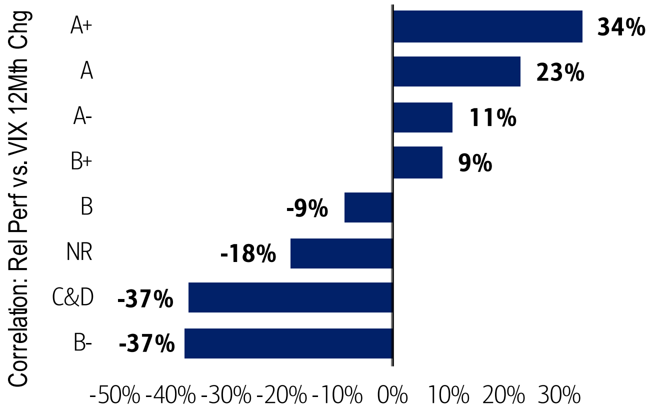
The slope of the yield curve has been a good long-lead (3-year) predictor for changes in the VIX. Currently, it suggests that volatility is likely to stay elevated for the foreseeable future.

Exhibit 18: Quality = best hedge against volatility
BofA Quality Indices (covered US stocks by S&P Quality Rank): 12-Mth Performance Correlation to 12-Mth Chg in CBOE VIX (1986-2/28/22)



Source: Bloomberg FactSet, BofA US Equity & US Quant Strategy

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High quality stocks are a good hedge against volatility
Stocks with the most stable earnings have historically outperformed when the VIX rises, while low quality has underperformed, and the relationship across quality ranks is consistent and monotonic.

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