

Should Investors Sell Equities After a Correction?

We thought that recent stock market volatility might be on your mind of late, so we decided to share some historical perspective about the nature of stock market corrections.

You may have noticed that stock prices in markets around the world fluctuated rather dramatically for the week that ended August 27. On Monday, August 24, the Dow Jones Industrial Average fell 1,089 points—a larger loss than the “Flash Crash” in May 2010—before “rallying” to close down 588. Prices fell further on Tuesday before recovering sharply on Wednesday, Thursday, and Friday. Although the S&P 500 and Dow Jones Industrial Average rose 0.9% and 1.1%, respectively, for the week, many investors found the dramatic day-to-day fluctuations unsettling.

Based on closing prices, the S&P 500 Index declined 12.35% from its record high of 2131 on May 21 through August 24.

Financial professionals generally describe any decline of 10% or more from a previous peak as a “correction,” although it is often unclear what their investors should do with this information.

Should they seek to protect themselves from further declines by selling, or should they consider it an opportunity to purchase stocks at more favorable prices? Rather than speculate, we prefer to examine reams of available data.

Corrections are quite common as, based on S&P 500 data, stock prices have declined 10% or more on 28 occasions between January 1926 and June 2015.

The tables below show that U.S. stocks have typically delivered above-average returns over one, three, and five years following consecutive negative return days resulting in a 10% or more decline. You will note that Results from non-U.S. markets are essentially similar.

Annualized Compound Returns Following Declines in U.S. and Non-U.S. Equity Markets ¹

US LARGE CAP: JANUARY 1926–JUNE 2015				Annualized Compound Return		
Cutoff for Decline	Frequency of Such Declines	Avg. Horizon for Decline (Trading Days)	Avg. Magnitude of Decline	for Next 1 Year	for Next 3 Years	for Next 5 Years
5%	262	4.1	-7.55%	13.24%	9.43%	10.02%
10%	28	4.6	-14.25%	23.56%	8.89%	13.33%

INTERNATIONAL LARGE CAP: JANUARY 2001–JUNE 2015				Annualized Compound Return		
Cutoff for Decline	Frequency of Such Declines	Avg. Horizon for Decline (Trading Days)	Avg. Magnitude of Decline	for Next 1 Year	for Next 3 Years	for Next 5 Years
5%	58	4.8	-7.71%	17.30%	9.03%	9.38%
10%	9	5.6	-13.33%	24.73%	12.69%	12.89%

EMERGING MARKETS: JANUARY 1999–JUNE 2015				Annualized Compound Return		
Cutoff for Decline	Frequency of Such Declines	Avg. Horizon for Decline (Trading Days)	Avg. Magnitude of Decline	for Next 1 Year	for Next 3 Years	for Next 5 Years
5%	74	4.8	-8.12%	24.82%	11.84%	10.33%
10%	15	5.5	-14.04%	42.23%	13.36%	11.20%



¹ Annualized compound returns are averages across all declines. US Large Cap is the S&P 500 Index, provided by Standard & Poor's Index Services Group. International Large Cap is the MSCI World ex-USA Index. Emerging Markets is the MSCI Emerging Markets Index. MSCI data © MSCI 2014, all rights reserved. Past performance is not a guarantee of future results. Indices are not available for direct investment; therefore, their performance does not reflect the expenses associated with the management of an actual portfolio.

Of course, every decline of 20% or 30% or 40% began with a decline of 10%. As a result, occasionally we meet investors who believe that avoiding large losses can be accomplished easily by eliminating equity exposure entirely once the 10% threshold has been breached.

Market timing is certainly a seductive strategy. If we could sell stocks prior to a substantial decline and hold cash instead, our long-run returns could be substantially higher. But successful market timing is a two-step process: determining when to sell stocks and when to buy them back. Avoiding short-term losses runs the risk of avoiding even larger long-term gains. Regardless of whether stock prices have advanced 10% or declined 10% from a previous level, they always reflect (1) the collective assessment of the future by millions of market participants and (2) the expectation that equities in both the U.S. and markets around the world have positive expected returns.

Investors who acknowledge that price fluctuations are an expected characteristic of liquid markets may have a distinct advantage over those who are easily frightened or confused by day-to-day events and are more likely to achieve long-run investing success.

Contrary to the beliefs of some investors, dramatic changes in security prices are not a sign that the financial system is broken but rather what we would expect to see if markets are working properly. The world is an uncertain place and that uncertainty is priced into all of our investments. The role of securities markets is to

reflect new developments—both positive and negative—in security prices as quickly as possible. Investors who acknowledge that price fluctuations are an expected characteristic of liquid markets may have a distinct advantage over those who are easily frightened or confused by day-to-day events and are more likely to achieve long-run investing success.

It Absolutely Pains Us to Write About the Federal Reserve Bank

While Fed watching is a favorite pastime for many market participants, they would probably be better served watching paint dry, watching the grass grow, or engaging in some other relentlessly pointless pastime. The truth is that even if we could predict what the Fed will do (we cannot), it is even harder to predict what market reaction will follow.

Some investors read statements from the Federal Reserve as if they were tea leaves, parsing new information and seeking to forecast future Fed activity. The presumption is that Fed actions lead to specific market outcomes.

Recently, market prognosticators believed that the Fed was going to begin raising the federal funds target rate. Well, that certainly did not happen, and it reinforces just how difficult it is to accurately forecast when a Fed tightening cycle (finance-geek slang for increasing interest rates) will occur or what its effects may be.

The presumption of many is that longer-term interest rates will rise when a tightening policy does begin. However, history shows that short- and long-term rates do not move in lockstep. There have been periods when the Fed aggressively lifted the fed funds target rate—the

short-term rate controlled by the central bank—while longer-term rates did not change or “stubbornly” declined.

You may not remember, but we think a good example is the Fed’s last campaign of policy tightening through the use of the fed funds target rate. From 2004 to 2006, the Fed increased the rate by 4.25%, yet longer-term rates experienced a period of decline. Alan Greenspan, Fed chairman at the time, referred to this phenomenon as a “conundrum.” In other words, the Fed was not only unable to control the magnitude of interest rate changes, but they couldn’t even properly influence the *direction* in which rates moved!

Other periods of shorter- and longer-term rates moving independently include the 1980s, when the fed funds target rate was increased by more than 3% while longer-term rates remained largely unchanged. In fact, the late 1980s was a period marked by an inverted yield curve; long-term rates yielded less than short-term rates. There have been a number of instances of inverted yield curves throughout history in the U.S. (and other developed markets).



Another notable period when market participants attempted to forecast specific outcomes based on Fed actions occurred in 2013. In a statement to Congress on May 22, 2013, Ben Bernanke, then chairman of the Fed, asserted that the Federal Open Market

Committee (FOMC) was prepared to scale back its bond purchasing program.

At the time, the FOMC was purchasing approximately \$85 billion a month in mortgage-backed and U.S. Treasury securities. The news of

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the FOMC’s scaling back of purchases in the open market resulted in what became known as the “taper tantrum.”

Market forecasters speculated that the scaling back of bond purchases by the FOMC would inevitably result in higher interest rates. But interest rates actually declined when the FOMC eliminated its purchases from January 2014 to October 2014.

As mentioned earlier, history shows that investors who attempt to forecast interest rates have not demonstrated any ability to consistently and reliably predict the future path of those rates. Changes in the fed funds target rate, as well as short- and long-term rates, are not perfectly correlated—and are often driven by market forces.

When analyzing the Fed’s impact on short-term rates, we must also consider the unprecedented action taken by the Fed since 2008—its massive issuance of reserves paying rates of interest.

As Eugene Fama has noted in his research, the Fed paid no interest to banks on excess reserves prior to 2008; thus, there was an opportunity cost for banks depositing excess reserves at the Fed. This opportunity cost naturally encouraged banks to make loans and purchase securities; the

availability of loans and the increase in the money supply created by banks purchasing securities put downward pressure on interest rates.

The Fed's recent policy of paying interest on excess reserves removed the previous opportunity cost, assuming available rates in the market are not higher than what the Fed is paying. Due to a lack of attractive spreads on loans in the current market, holding excess reserves at the Fed is now the more attractive option. Conventional wisdom has been turned on its head.

By paying interest on excess reserves, the Fed has, in essence, created new "short-term securities." The issuance of these reserves, or "short-term securities," pulls monetary supply out of the economy, which by definition should raise interest rates. Oops—except it did not work out that way. The question then becomes: Has the Fed really been trying to keep interest rates low? It does not seem that way. Perhaps, in an effort to fight deflation, the Fed has actually been trying to push interest rates higher, yet the lack of attractive lending opportunities in the market has flooded banks with deposits, pushing interest rates lower and limiting the power of the Fed. If you're interested in an even wonkier take

on the matter, note that, in his academic blog, Professor John Cochrane also analyzes the effect of the Fed on interest rates.

He poses an interesting rhetorical question: "Is the Fed in fact 'holding down' interest rates?"



To answer this question, he points out that the Fed, to keep interest rates low, will lend money to banks at low interest rates so banks can then lend that money to the rest of the economy, making a spread. But, instead of going out to the market to find "higher" interest rate opportunities, banks have deposited \$3 trillion worth of reserves at the central bank despite the "low" rates being paid.

If the banks find the rates that the Fed will pay them so attractive, is the Fed really keeping interest rates low—or actually propping them up?

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