



# Special Study

## Executive Summary

- The goal of this special study is to highlight the possible dangers from market timing by documenting the historical behavior of US stock returns over business and market cycles.
- There is no historical evidence that stocks tend to realize negative returns during recessions.
- Historical returns remain positive on average during recessions. Over the 14 different recessions occurring between 1926 and 2007, compound market returns average about 0.5% per month.
- The relative strength of market rebounds in the early stages of an economic or market recovery highlights why attempts to time the market are unwise.
- Exiting the market after a recession has begun will protect a portfolio from additional market fluctuations, but the opportunity cost from missed returns is a risk that remains.

## ***Stock Returns Over Business and Market Cycles***

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It is obvious that declining employment, consumer confidence, income, and production are all hallmarks of an economy in a recession. We are seeing many Americans revisit their household balance sheets to evaluate whether they have sufficient savings to meet near- and long-term needs. Poor stock market returns that typically precede or accompany the start of a recession only add to investor uneasiness. Many of you wonder what to do with your portfolio in light of a gloomy economy.

Many investors may feel the urge to flee the market as the economy slows. However, moving assets into cash and fixed income until the economy recovers is a gamble. It is essentially a market-timing strategy that may provide relief from the brutality of stock market swings, but can be a costly decision.

The goal of this special study is to highlight the possible dangers from market timing by documenting the historical behavior of US stock returns over business and market cycles.

Stock prices are equal to the sum of expected future cash flows based upon a rate of return (or discounted if you understand finance) the investor desires to compensate them for the risk they are taking. Thus stock prices are a function of two things; future expected cash flows (i.e., dividends) and the rate of return needed by the investor. Since both of these can change at the same time, disentangling these two effects is difficult. However, you can predict the likely price impact of these two channels at different points in economic cycles.

When investors expect a reduction in future dividends due to an economic downturn, prices will fall. However, if everyone knows that a recession is here or coming, this information does not provide any useful investment insight because the market (i.e., every investor who buys and sells stocks) immediately incorporates this information into prices. Predictions about future dividends will only produce useful advice if the information differs from market expectations. Knowing that the economy is in a recession does not imply expected returns are negative.

Even with no news about cash flows and dividends, stock prices could change due to shifts in investors' attitudes toward risk (remember this is the second function of stock prices mentioned above). As business slows and jobs are lost, households that are negatively affected by the economic downturn may decide they can no longer bear stock market risk. Risk aversion (or loss tolerance) might also increase during downturns as investors become more worried about maintaining their standard of living.

For every investor who wants to decrease their exposure to stock risk, there has to be some other investor willing to buy those shares. In aggregate, the market must be held at all times. This adding-up constraint implies that if risk aversion increases during bad times, investors

(Continued on page 2)

## Stock Returns Over Business and Market Cycles (continued)

(Continued from page 1)

will only be willing to hold the same amount of stocks as before if they are compensated for this risk. If expectations about future cash flows were fixed, an increase in risk aversion would depress prices initially, but would be followed by higher expected returns.



	CRSP Value-Weighted Market Index		
	11/1926 - 12/2007 (14 cycles)	11/1926 - 7/1953 (5 cycles)	8/1953 - 12/2007 (9 cycles)
Peak to Trough (a recession)	0.5%	0.1%	0.7%
Peak to Trough, Excluding 3 Months	0.2%	<b>-0.3%</b>	0.5%
Trough to Peak	1.2%	1.5%	1.0%
Trough to Peak, Excluding 3 months	1.2%	1.3%	1.1%
3 Months around Peak	<b>-1.4%</b>	<b>-0.1%</b>	<b>-2.1%</b>
3 Months around Trough	4.3%	4.8%	4.0%



In this data, both cash flow effects and discount rate effects will have an impact on returns and disentangling the two effects is difficult. However, both effects imply that realized returns will tend to be low at the onset of the recession and high at the start of the recovery. Additionally, returns need not be negative during a recession.

These predictions are confirmed empirically in Table 1, which shows the average returns to the CRSP Value-Weighted Market Index over various parts of the business cycle. The sample period covers 14 business cycles (peak to peak) between November 1926 and December 2007, with dates identified by the National Bureau of Economic Research (NBER). To compare returns from

(Continued on page 3)

## ***Stock Returns Over Business and Market Cycles (continued)***

*(Continued from page 2)*

period of varying duration, average monthly compound returns are reported.

Historical returns remain positive on average during recessions. Over the 14 different recessions occurring between 1926 and 2007, compound market returns average about 0.5% per month.

The largest changes in stock prices tend to occur around the beginning and end of a contraction. Excluding the month identified as a peak or trough, as well as the month immediately before and after the peak or trough, monthly compound returns average 0.2% during recessions. In the later subperiod starting in August 1953, the market average 0.5% in recession months, excluding the three months around the business cycle peaks and troughs.

Because stock prices incorporate new information immediately, negative returns tend to occur mostly near the onset of a recession. In the three months around business cycle peaks, the market had an average return (loss) of -1.4%. The price reaction in the later (1953-2007) period is even sharper, averaging about -2.1% per month. Similarly, the largest monthly gains tend to occur at the start of economic recoveries. In the three months around business cycle troughs, the average monthly return was about 4.3%. This is nearly quadruple the monthly return of 1.2% earned during other expansion months and is nearly six times the overall monthly compound return of 0.74%.

For investors unwilling to bear stock market risk during recessions, the best time to get out of the market is before the recession actually begins. Unfortunately, business cycle peaks and troughs are very hard to predict. The NBER Business Cycle Dating Committee announces recession with a several-month lag. By the time most investors start questioning their investments, the news of the recession will have been priced in and portfolios will have already suffered losses that occur at the onset of the recession. To exit the market at this point locks in these losses. Investors who want to ride out the recession in safe assets also risk missing out of the high returns that historically accompany the early months of a recovery. With recessions historically lasting anywhere from 6 to 43 months, timing the recovery is a difficult, if not impossible, task.

Table 2 displays average monthly compound returns over various parts of the market cycle. I define local market peaks as points from which subsequent returns are less than -20%. Similarly, local market troughs are defined as points from which subsequent market returns are more than 20%. The sample includes full market cycles, defined as peak to peak, occurring between 1926 and 2008. Because I examine returns from 6 months after the market trough to the next peak, market cycles with less than 6 months from trough to peak are excluded.



*(Continued on page 4)*

## Stock Returns Over Business and Market Cycles (continued)

(Continued from page 3)



	CRSP Value-Weighted Market Index		
	9/4/1929 - 10/9/2007 (16 cycles)	9/4/1929 - 7/15/1957 (6 cycles)	7/16/1957 - 10/9/2007 (10 cycles)
Market Peak to Market Trough	<b>-5.7%</b>	<b>-6.0%</b>	<b>-5.6%</b>
Market Trough to 3 Months after Market Trough	5.7%	5.3%	6.0%
Market Trough to 6 Months after Market Trough	4.0%	3.7%	4.2%
Market Trough to Market Peak	2.3%	2.9%	2.0%
3 Months after Market Trough to Market Peak	1.8%	2.2%	1.6%
6 Months after Market Trough	2.0%	2.8%	1.5%

The pattern of realized returns over market cycles is similar to the results obtained using business cycles—returns tend to be the highest early in the recovery. In the first three months after the market trough, monthly compound returns average 5.7%, compared to 1.8% during the remainder of the recovery. Similar conclusions are reached if one examines returns in the first 6 months after the trough.

The relative strength of market rebounds in the early stages of an economic or market recovery highlights why attempts to time the market are unwise. It is easy for researchers to identify peaks and trough in past data, but recognizing one in real time is much more difficult. Once investors realize a recession or bear market has begun, it is likely that significant losses have already been incurred. Exiting the market after a recession has begun will protect a portfolio from additional market fluctuations, but the opportunity cost from missed returns is a risk that remains. There is no historical evidence that stocks tend to realize negative returns during recessions. Additionally, investors waiting for signs of recovery are likely to miss the high returns that tend to occur at the onset of the recovery.

Fleeing the market can be tempting. In uncertain economic times when stock return volatility can top 20% per month, switching investments to safe assets can spare investors from the pain of fluctuating portfolio values. However, the lure of fleeing must be tempered by the risk of being left behind when markets rebound. Of course, nobody can predict where the bottom is, but this part of the risk one must accept in order to reap the ultimate rewards.