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WHAT HAPPENS TO STOCKS WHEN INFLATION RISES?

Despite conventional wisdom to the contrary, historically, stocks have not necessarily performed poorly when inflation was high.

For the first time in a long while, observations of higher inflation are seeping into the economic landscape. Inflation is complex and difficult to unravel and forecast in “normal times”, but has become even more so. The combination of the sharp, but uneven restart to the economy; extremely accommodative measures by the Federal Reserve and the U.S. Government; and shifting consumer working and buying patterns; have all increased the complexity of the inflation calculus.



Brett Slattery, CFA

The recent sharp economic improvement since last year, coupled with the Federal Reserve’s explicit higher tolerance for inflation, has once again rekindled the fear of high inflation and its **perceived negative impact on stocks**. So, we have once again revisited the historical impacts of rising inflation on stock prices and their valuation (which includes the impact of rising interest rates).

DOES RISING INFLATION NECESSARILY CAUSE POOR STOCK RETURNS?

A stock’s *intrinsic value* is generally determined by estimating all of its future cash flows and discounting them back to the present. The math of this calculation works in such a manner that a higher interest rate (the discounting rate) reduces, among other things, a company’s intrinsic value. In theory, it makes sense that rising inflation and interest rates¹ may cause low or negative stock returns. We wanted to see what history can teach us. Historically, has rising inflation **actually caused** low or negative stock returns? If so, has there been a causal relationship? To understand the relationship of high inflation and stock prices, we examined large-cap stock and inflation data since 1926².

¹ Historically the long-term monthly relationship between inflation (CPI) and interest rates (10-Year Treasury Yield) has been very strong, so the movement of interest rates is assumed to be similar to inflation in this example.

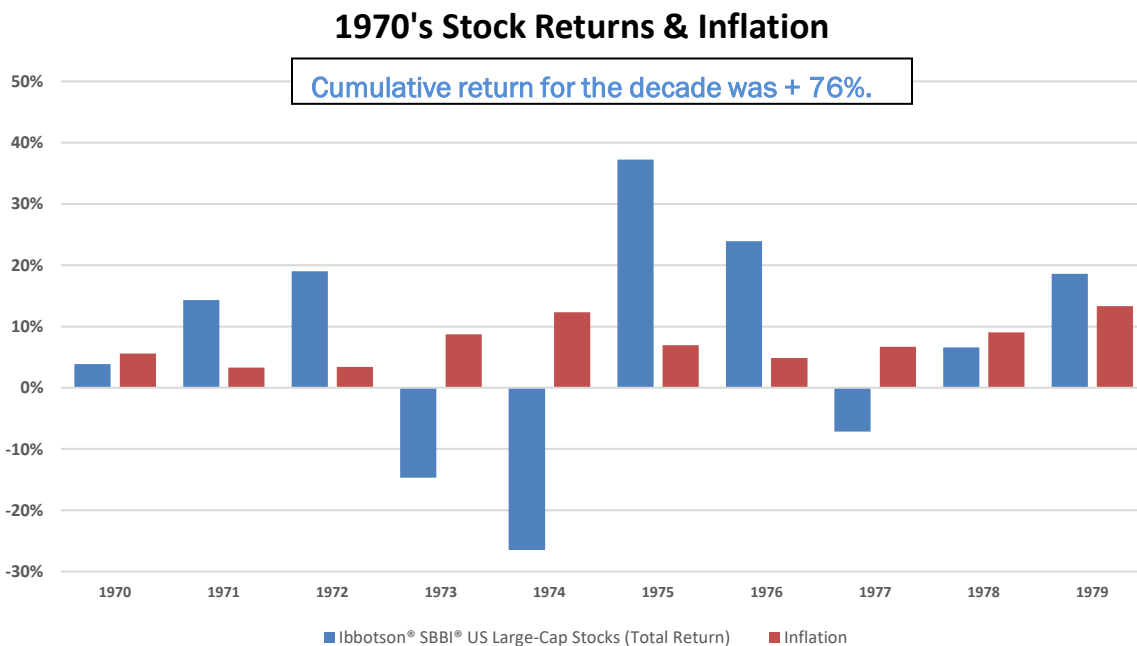
² Source of nearly all of the data is from ‘Stocks, Bonds, Bills, and Inflation (SBBi) Ibbotson’ provided by the CFA Institute

The 1970's

The high inflation of the 1970's is seared in the memories of those who experienced it. Then, fiscal imbalances, energy shortages, and high unemployment wreaked havoc on the economy. The causes of inflation are much too complicated to discuss herein, but the following excerpt from *The Great Inflation* authored by the Federal Reserve³ provides some context about their policy assumptions at the time.

“But one critical and erroneous assumption to the implementation of stabilization policy of the 1960s and 1970s was that there existed a stable, exploitable relationship between unemployment and inflation. Specifically, it was generally believed that permanently lower rates of unemployment could be “bought” with modestly higher rates of inflation.”

Regardless of the exact causes of inflation in the 1970's, it was very high⁴ and did seem to have a negative impact on stock (and bond) performance, but the relationship varied greatly year-to-year and was not always negative. Despite the significant volatility and very poor performance during 1973-1974, the cumulative decade return, while below average and negative in *real terms*⁵, was still +76% for the entire decade. Not ideal, but not the worst decade of performance either.



³ <https://www.federalreservehistory.org/essays/great-inflation>

⁴ Compound Annual Growth Rate of 7.4% using Ibbotson SBBI data. Ibbotson Data is used throughout the paper.

⁵ *Real returns* simply mean Returns minus Inflation. Used to describe the returns an investor would receive when accounting for inflation.

EXAMINING ALL PERIODS OF HIGH INFLATION

Recent massive fiscal and monetary stimulus have many asking what the long-term consequences might be, not only for the economy, but also the impact on inflation, interest rates, and portfolio performance. The hard to accept reality is that it is not always clear. “Common-sense” relationships often don’t exist or vary considerably from expectations.

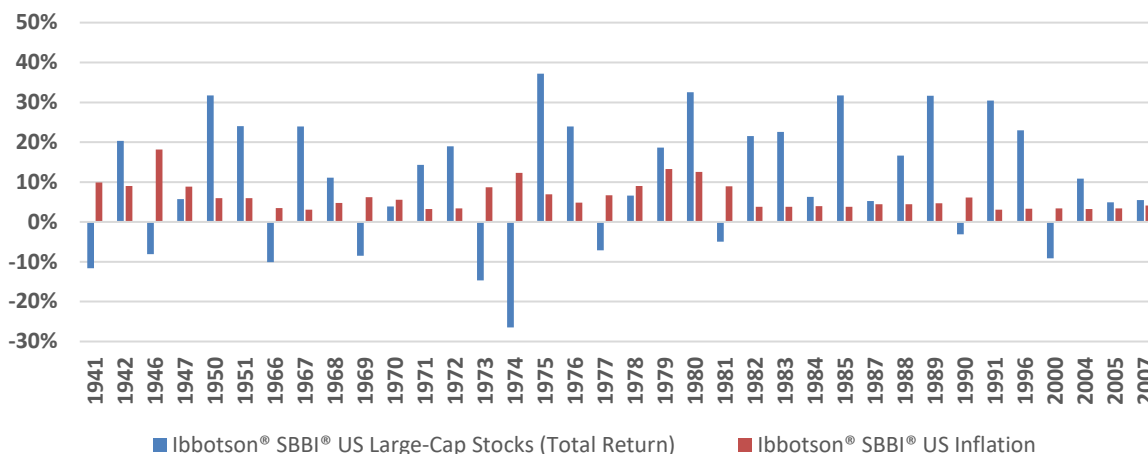
A 2013 study⁶ that examined stock performance since 1920 during periods when interest rates rose the most during 12-month periods revealed the following surprising results:

- Stocks only declined in 3 of the 16 periods of rising rates. The frequency of having a positive year for stocks was 81% versus only 73% for all periods since 1920.
- The average return for the S&P 500 when interest rates increased the most was 12.62%, higher than the 12% return for all periods during the study.

Looking at Ibbotson annual data since 1926 confirms similar findings. Data was sorted to include only years when inflation was at least 3%. While slightly lower than average, the results were attractive:

- The average stock return during those selected periods was 10.5%⁷, while inflation averaged 6.3% - more than double the long-term average⁸.
- Large-Cap Stocks⁹ had positive returns 72% of the time that inflation was at least 3% versus 74% for all periods.

Annual Stock Returns When Inflation Was At Least 3%



⁶ www.fa-mag.com/news/what-happens-to-stocks-when-interest-rates-rise-15468.html - Article by Rob Brown, CFA

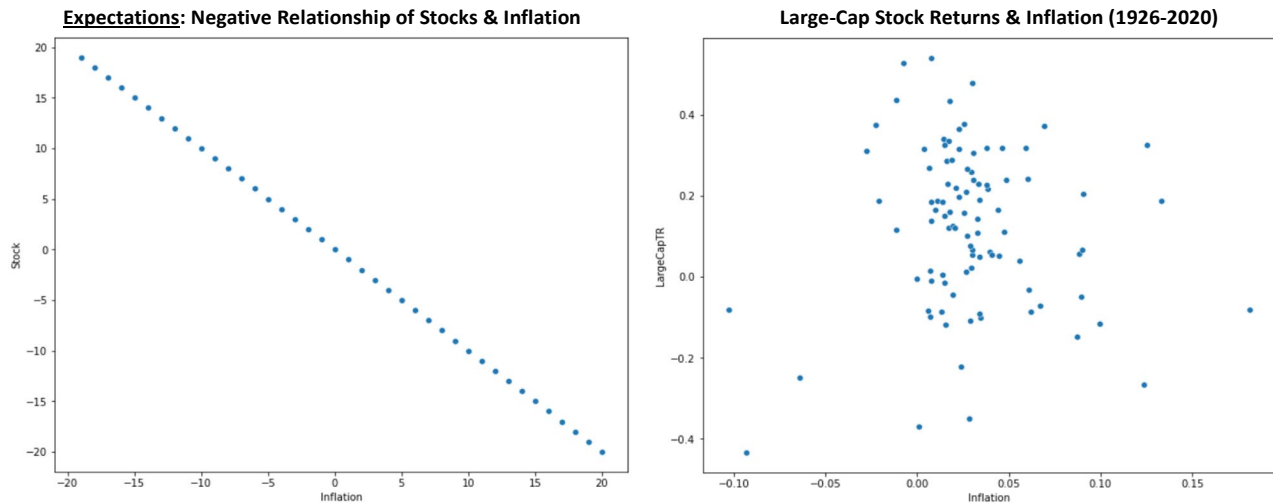
⁷ Simple average used versus compounded as each period is not necessarily consecutive.

⁸ Once again, using simple average to keep comparisons consistent. Simple average was 2.9% from 1926-2020.

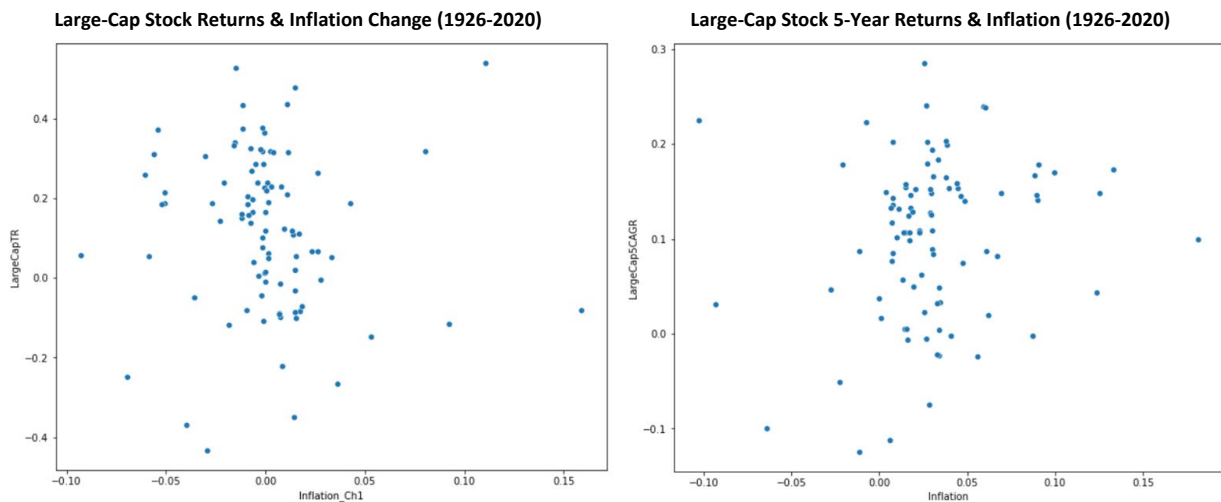
⁹ Going forward all mention of “Stock Returns” refers to Ibbotson US Large Cap Stock Total Return, unless noted.

ARE STOCK RETURNS AND INFLATION CORRELATED?

Before examining stock returns over an entire inflation cycle, it is perhaps even more informative to look at annual stock returns and inflation on a scatterplot. Conventional wisdom would suggest a negative relationship. Said differently, at a point in time, higher inflation should be associated with lower stock returns (i.e., if the perceived cause-and-effect relationship is present). Such a relationship is illustrated in the left graph – which shows a perfect negative relationship (cause-and-effect is present). The *Large-Cap Returns & Inflation* graph on the right should look somewhat similar to the graph on the left if there was a high correlation of stock returns and inflation levels.



Instead, the *Large-Cap Returns & Inflation* graph on the right **looks more like a random paint-splashing rather than a negative relationship**. Going a step further, we examined inflation *changes* and forward-looking stock returns¹⁰. The results are nearly identical. Therefore, the perception of a negative relationship and a cause-and-effect relationship between stock returns and inflation rates has not held up¹¹.

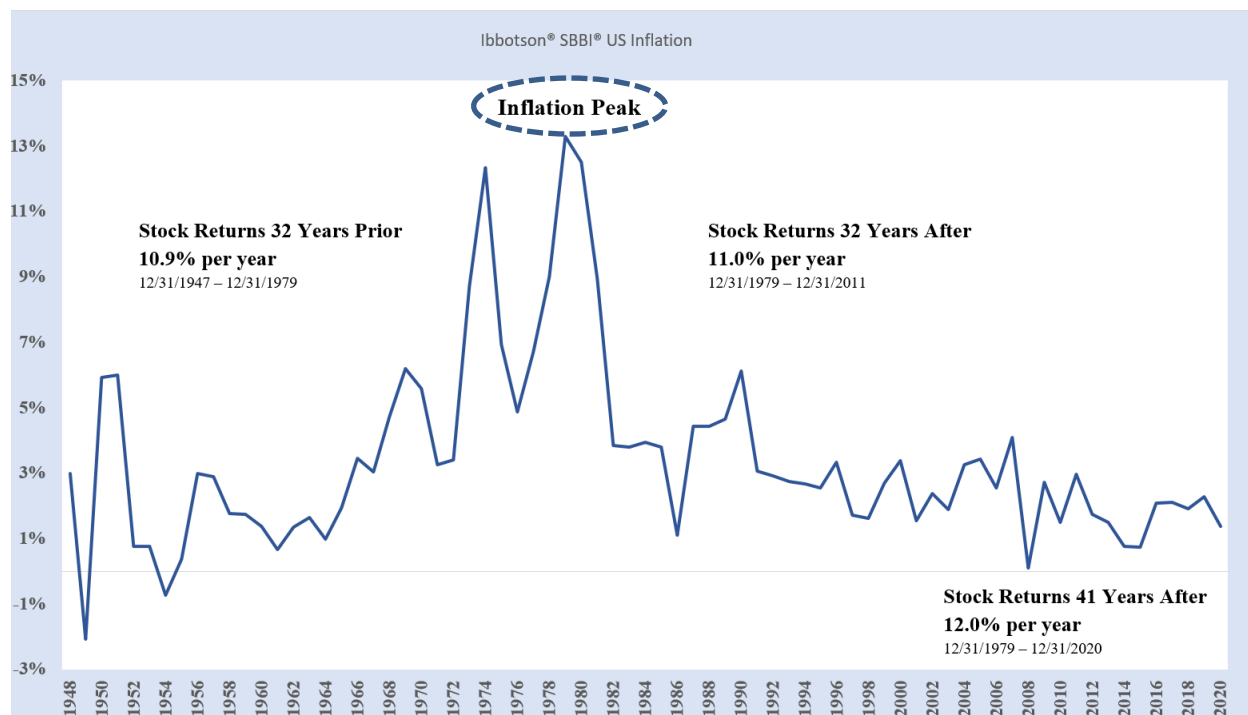


¹⁰ 5-year stock returns included the first year to include negative impacts of sudden inflation changes. Returns from Ibbotson.

¹¹ Assumes using annual data since 1926. Looking at daily or monthly data may show different outcomes.

EXAMINING A LONG INFLATION RATE CYCLE TO EVALUATE HOW RISING INFLATION IMPACTS STOCK RETURNS

It is also helpful to examine the multi-decade periods before and after the last peak in inflation which occurred in 1979. The 32 years¹² leading up to the peak in inflation showed a rise in rates from 3% to 13.3%, while the following 37 years showed a fall to 1.4% (as of 12/31/2020).



Despite these diametrically opposite inflation rate environments, stocks had nearly the same annualized returns for both periods:

- **10.9%**¹³ for 32 years leading up to 1979 (12/31/1947 - 12/31/1979)
- **11.0%** for 32 years after 1979 (12/31/1979 - 12/31/2011)

Again, the historical evidence does **not** support the notion that rising inflation rates **necessarily** cause poor stock returns.

Extending the analysis to include the past nine years surge in stocks, the returns since 1979 have grown nearly 12% per year, making the “rising inflation cycle” only slightly less competitive, but still very attractive nonetheless.

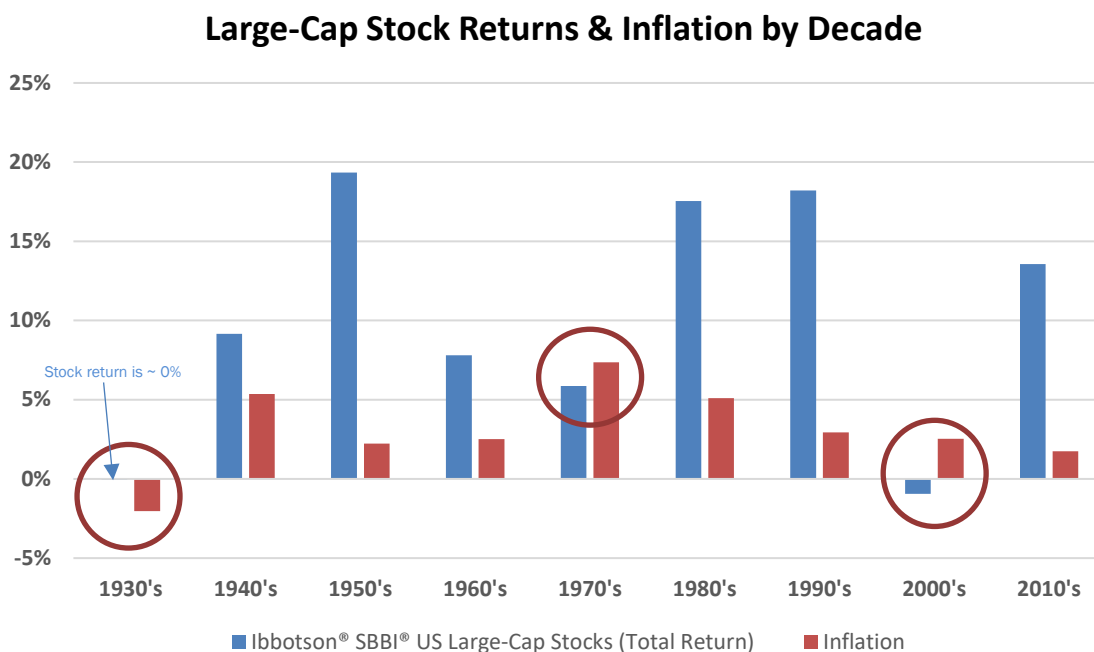
¹² 1948 was selected as the first year of the rising inflation rate cycle to allow for the post-war inflation to normalize.

¹³ All return data use Ibbotson Large-Cap Total Return data

THE REAL RETURN OF STOCKS

Analyzing stock returns during different inflation cycles reveals some misconceptions about their historical relationship, but is still incomplete. Investors should ultimately care about how much return they achieve *after* inflation ('real return'). From a real return perspective, the 1970's were not attractive because inflation was higher than the returns. However, **the two worst decades for real-return occurred when inflation was extremely low¹⁴.**

As seen below, stocks had attractive real returns in most decades, despite the vast differences in inflation.



CONCLUSION – THE PERCEIVED “CAUSE-AND-EFFECT” IMPACT IS MISSING

There are clearly other determinants of stock returns besides inflation levels and changes to inflation; however, investors can become wary when they believe inflation is *too high* or about to increase *too much*. Theoretically, there is reason to be cautious and there are certain periods¹⁵, such as the early 1970's, that can be painful; but it is important to widen the lens to allow a more complete view to be examined.

Factors such as money supply, government policy, and investor psychology are also important. Additionally, these factors, and others, change over time so it is even more challenging to assume certainty for nearly all such economic and market relationships. While all this ambiguity may be disconcerting for some, understanding historical relationships may prevent over-reacting, particularly if decisions are based on faulty, unknown, unknowable, or unclear relationships.

¹⁴ Inflation averaged (CAGR) 2.5% in the 2000's and -2% in the 1930's

¹⁵ Periods (15) with inflation +6% had lower average returns, but correlations showed a very weak relationship.

While it is **very difficult to pinpoint rising or falling inflation as a reliable determinant of stock market performance, we are not ignoring it either.** Within our portfolios, we are spending considerable effort understanding how inflationary forces may impact a company. Are input costs rising? Can the company pass along costs to their consumers? Can the company cut costs if necessary?

WIC's ultimate goal is to understand how inflation might impact free cash flow. For the reasons developed herein, we are not basing portfolio decisions on conventional wisdom that has inadequate statistical support. Instead, we are relying more on our fundamental analysis of companies and the risk-reward profile of the overall portfolio, especially reflecting our intrinsic value analysis.

Brett Slattery, CFA
Partner, Director of Research and Portfolio Manager

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