



ECONOMIC SITUATION AND STRATEGY

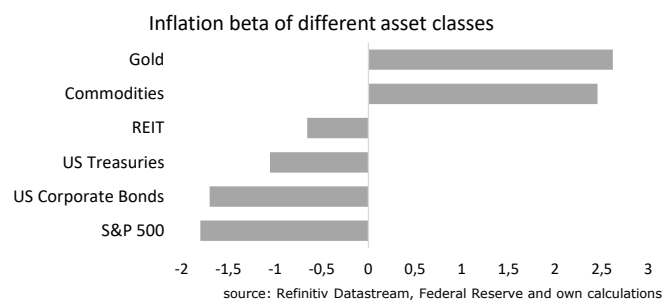
June 11, 2021

What asset classes protect against inflation?

Many investors' greatest worry now is a return of higher inflation rates. The United States and Germany, for example, registered annual inflation rates in May of 5.0% and 2.5%, respectively. In addition to base effects, the economic recovery is one of the main drivers of the higher inflation rates. The scarcity of supply on commodity markets and resulting upward movement of prices for many input products reflect that. At the same time, the 5-year, 5-year forward inflation expectation rate (T5YIFR) for the United States, an estimate of inflation expectations for the five-year period that begins five years from the present, rose to 2.5%. Against this background, investors want to know what influence rising prices will have on the real performance of their portfolios and what asset classes offer inflation protection. Does investing in gold really provide such protection, and how do traditional investment vehicles like stocks and bonds fare in this respect?

Our first approach to answering these questions is to look at the past and analyze in particular the sensitivity of individual asset classes to price increases and their reliability in achieving real value gains in periods of high inflation. An asset class with suitable inflation protection should exhibit a parallel movement of real return and inflation rate. A frequently used sensitivity measure is called the "inflation beta" and is calculated using a regression of inflation rates to real rates of return. A positive inflation beta implies that an inflation rate increase leads on average to higher real returns, and vice versa, a decrease brings about falling real returns. If we evaluate the real returns based on a holding period

of one year for various US asset classes from January 1974 to March 2021, we get a very heterogeneous picture. While traditional asset classes like stocks (S&P 500 index) and bonds (US government and corporate bonds) exhibit a negative inflation beta, gold and commodities distinctively have positive inflation betas. Real estate investment trusts (REITs) are in between with a slightly negative inflation beta.

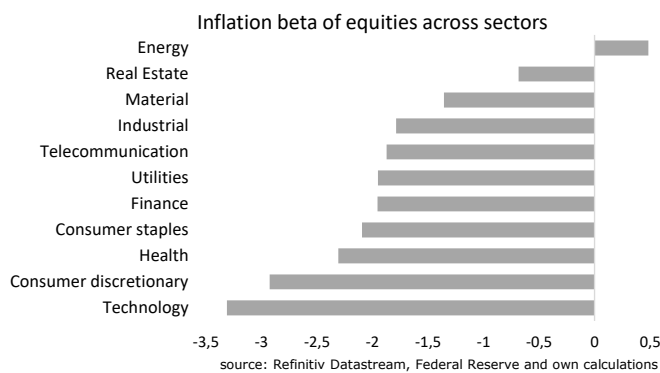


What mechanisms explain the differences in inflation sensitivity? According to economic textbooks, current bond prices reflect market participants' expectations regarding inflation, real interest rates, and risk premiums. If the inflation rate rises unexpectedly, bond prices typically decline and yields advance. From a business perspective, phases of rising inflation entail heightened uncertainty because it is not clear, for example, to what extent increased input costs can be passed on to consumers. Especially in case of high competitive pressure, margins are likely to narrow, and that tends to push stock prices down. However, unexpected inflation also leads to higher risk premiums and discount rates, so that stocks with longer duration lose value, as in the case of bonds. These include, for example, stocks from growth

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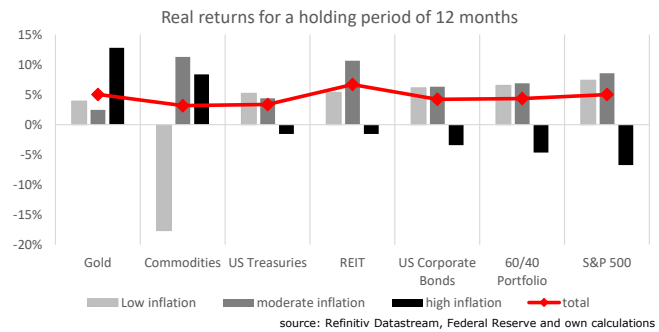
sectors, which achieve their earnings mainly in the future. On the other hand, gold functions as an asset with intrinsic value for many investors, and demand for it increases in periods of rising inflation. Similarly, as an investment in real assets, real estate promises to serve as an inflation hedge, especially since it may have built-in protection from rising inflation if rent is pegged to that. However, as in the case of stocks, real performance of exchange-traded REITs is subject generally to swings in market sentiment, so that sensitivity measurements compared with direct real estate investments may be distorted downward. It is not surprising that commodities exhibit a high inflation beta, since they are themselves often the source of increased inflation as components in the basket of goods – as now, for example, in the case of oil.

Are stocks per se poorly suited as an inflation hedge? A closer look at the various sectors reveals that energy companies exhibit a positive inflation beta. On the other hand, sectors whose price performance tends to be negatively affected by rising inflation rates include those close to consumers, i.e., stocks associated with cyclical or staple consumer goods. However, especially the real returns of technology stocks, which often fall in the category of growth stocks, have historically exhibited a strong contrary movement relative to the inflation rate. Real estate companies, like REITs, are positioned with a comparatively high inflation beta between the two aforementioned groups.

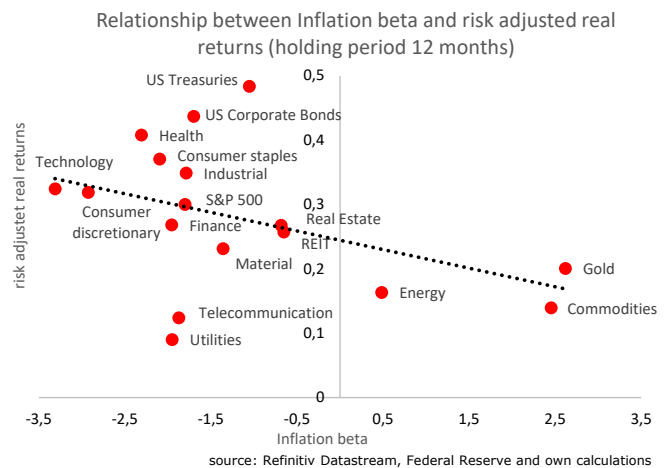


However, generally examining inflation betas to judge inflation protection is not a sufficient basis for a comprehensive conclusion regarding the reliability of inflation protection in periods of high inflation. An analysis of the real returns of various asset classes in case of low inflation (annual rates less than 2%), moderate inflation (between 2% and 5%), and high inflation (above 5%) concludes that performance heavily depends on the underlying inflation regime. According to this analysis, investors have been well advised in the past to hold gold

or commodities in periods of high inflation. Both asset classes have registered strong real value increases historically. On the other hand, investments in stocks, REITs, and bonds promise higher real returns in periods of low or moderate inflation. Periods with high inflation rates were observed in the United States mainly in the 1970s and 1980s. Those inflation regimes were often triggered by cost shocks (push demand), as in the case of the first and second oil price crises of the 1970s, for example. Regimes with moderate inflation rates are attributable to increased demand for goods (pull demand) and often reflect an economic upswing or boom. In these cyclical phases, market participants look optimistically to the future, thus making sentiment on the markets more constructive for higher-risk investments and leading to high real returns for investments in stocks and certain real estate assets.



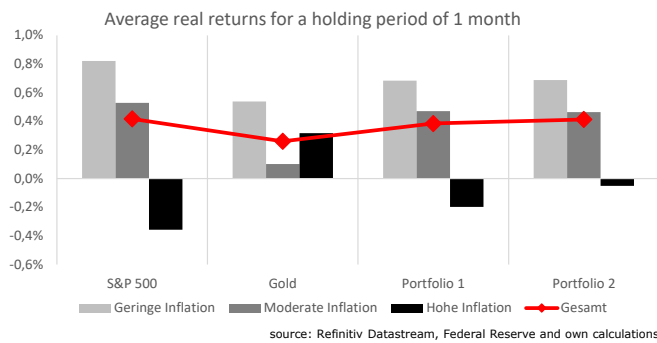
In the long term, lower returns are the "cost" of greater inflation protection, expressed by a positive inflation beta. This trade-off is also reflected in the negative correlation between the average risk-adjusted real return and the inflation beta. We therefore would not recommend that investors with a long-term horizon focus solely on asset classes with high inflation betas or only high risk-adjusted returns.



How can portfolios be optimized in the long term and protected from higher inflation rates? One possibility

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would be to hedge your portfolio by means of inflation-protected bonds. However, expanding a traditional portfolio consisting of 60% stocks and 40% bonds to include gold and REITs is already sufficient. Even a static weighting of all asset classes leads to an improved return-inflation hedge positioning (portfolio 1) due to the diversification effect. Further improvements may be achieved by orienting and dynamically adjusting portfolio weights to the current inflation regime (portfolio 2). If we consider that the Bureau of Labor Statistics does not publish the inflation rates for the United States in a given month until the middle of the following month and the weights can only be adjusted at a time lag, a further performance increase nevertheless results from a higher weighting of gold and REITs in phases of higher inflation.

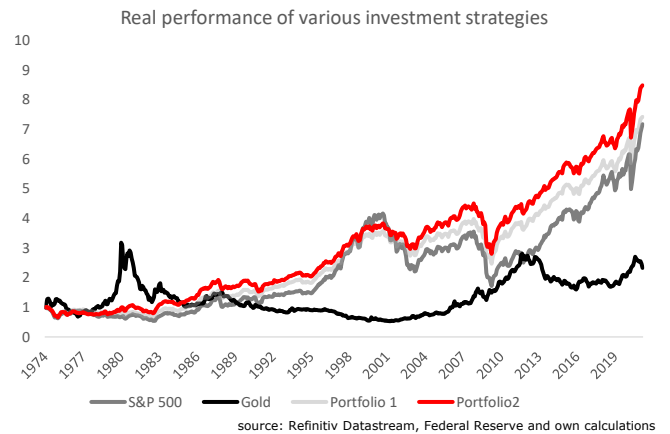


In contrast to a purely passive investment exclusively in gold or a broad stock index like the S&P 500, a simple active investment strategy that takes into account the various inflation regimes already promises more robust performance. Compared with a passive investment in the S&P 500, portfolio 2 only suffers small real value losses in times of high inflation rates with a holding period of one month. At the same time, portfolio 2 achieves across all inflation regimes an average real return of 0.4%, as high as that of the S&P 500, and thus exhibits no long-term performance losses. Compared with the static approach of portfolio 1, the dynamic approach of portfolio 2 sees the average real value loss in high-inflation periods decline from -0.5% to -0.2%.

Besides the inflation hedge, portfolio 2 also benefits from the investment in REITs and particularly from the sharp increase in property values before the financial crisis in 2007.

Table 1: portfolio weights

Weight	60/40	Portfolio 1	Portfolio 2		
			low inflation	moderate inflation	high inflation
Equities (S&P 500)	60%	55%	55%	50%	40%
US corporate bonds	40%	35%	35%	30%	20%
Gold	0%	5%	5%	10%	20%
REITs	0%	5%	5%	10%	20%



The evaluation of historical data for the world's largest economy confirms the value-protecting and even value-enhancing effects of gold and REITs in periods of high inflation rates. From a historical perspective, it would have thus paid off for investors to diversify their portfolios with alternative asset classes and actively adjust portfolio weights depending on inflation development. When evaluating these data, however, it is important to note that the results relate to the United States and analogous inferences in the case of other national economies may not be automatically possible. Moreover, investors should consider that regimes with very high inflation rates exceeding 5% happened primarily in the 1970s and 1980s and have become infrequent in the recent past. However, exogenous cost shocks triggered, for example, by political crises are difficult to forecast, so an active investment strategy is generally advisable.

We are grateful to our colleague Simon Landt for his active contribution to this article.

Market Data

Stock marketes	As of	Change versus				
	11.06.2021 12:08	03.06.2021 -1 week	07.05.2021 -1 month	09.03.2021 -3 months	09.06.2020 -1 year	31.12.2020 YTD
Dow Jones	34466	-0,3%	-0,9%	8,3%	26,4%	12,6%
S&P 500	4239	1,1%	0,2%	9,4%	32,2%	12,9%
Nasdaq	14020	3,0%	1,9%	7,2%	40,9%	8,8%
DAX	15601	-0,2%	1,3%	8,1%	23,6%	13,7%
MDAX	33866	1,2%	3,7%	7,1%	27,7%	10,0%
TecDAX	3455	3,0%	0,8%	4,5%	9,3%	7,5%
EuroStoxx 50	4109	0,7%	1,9%	8,5%	23,7%	15,7%
Stoxx 50	3533	1,8%	2,6%	8,7%	15,8%	13,7%
SMI (Swiss Market Index)	11845	2,9%	6,0%	9,1%	16,3%	10,7%
Nikkei 225	28949	-0,4%	-1,4%	-0,3%	25,4%	5,5%
Brasilien BOVESPA	130076	0,4%	6,6%	16,8%	34,5%	9,3%
Russland RTS	1689	3,2%	7,1%	14,0%	31,5%	21,7%
Indien BSE 30	52491	0,5%	6,7%	2,9%	54,6%	9,9%
China CSI 300	5225	-0,6%	4,6%	5,1%	29,1%	0,3%
MSCI Welt (in €)	3007	1,5%	0,2%	6,6%	22,9%	12,9%
MSCI Emerging Markets (in €)	1379	0,0%	1,5%	2,4%	26,9%	7,8%
Bond markets						
Bund-Future	172,53	259	206	130	-93	-511
Bobl-Future	134,45	-35	-43	-46	39	-73
Schatz-Future	112,20	16	12	13	23	-8
3 Monats Euribor	-0,55	2	2	2	-18	4
3M Euribor Future, Dec 2017	-0,53	0	0	-1	-14	0
3 Monats \$ Libor	0,12	-1	-4	-5	-19	-11
Fed Funds Future, Dec 2017	0,08	0	0	-1	5	0
10 year US Treasuries	1,44	-19	-14	-10	61	53
10 year Bunds	-0,28	-10	-6	6	3	30
10 year JGB	0,04	-5	-5	-9	2	2
10 year Swiss Government	-0,24	-12	-3	1	6	25
US Treas 10Y Performance	689,94	1,3%	1,1%	1,4%	-3,6%	-3,6%
Bund 10Y Performance	665,40	0,6%	0,2%	-0,5%	-0,2%	-2,8%
REX Performance Index	493,77	0,3%	0,2%	-0,1%	0,0%	-1,1%
US mortgage rate	0,00	0	0	0	0	0
IBOXX AA, €	0,25	-5	0	5	-7	23
IBOXX BBB, €	0,66	-6	-1	-3	-63	10
ML US High Yield	4,65	-8	-9	-32	-188	-32
Convertible Bonds, Exane 25	7436	-11,3%	-10,5%	-8,8%	-1,7%	-10,7%
Commodities						
MG Base Metal Index	435,76	0,2%	-2,8%	12,4%	60,5%	22,9%
Crude oil Brent	72,71	1,8%	6,3%	7,5%	76,3%	40,1%
Gold	1892,40	1,1%	3,1%	10,2%	10,1%	-0,3%
Silver	27,88	2,0%	1,6%	7,5%	57,5%	5,7%
Aluminium	2470,30	3,6%	-2,3%	14,8%	56,3%	25,2%
Copper	9952,75	1,9%	-4,5%	13,2%	73,0%	28,4%
Iron ore	211,91	1,9%	3,7%	25,8%	105,8%	36,0%
Freight rates Baltic Dry Index	2669	8,0%	-16,1%	40,4%	273,8%	95,4%
Currencies						
EUR/ USD	1,2151	-0,3%	0,8%	2,2%	7,6%	-1,0%
EUR/ GBP	0,8588	-0,1%	-1,1%	0,4%	-3,8%	-4,1%
EUR/ JPY	133,07	-0,6%	1,0%	2,8%	8,9%	5,2%
EUR/ CHF	1,0892	-0,6%	-0,6%	-1,6%	1,1%	0,8%
USD/ CNY	6,3900	-0,2%	-0,7%	-1,8%	-9,7%	-2,1%
USD/ JPY	109,63	-0,6%	0,9%	1,1%	1,8%	6,2%
USD/ GBP	0,71	-0,2%	-1,2%	-1,8%	-10,1%	-3,4%

Source: Refinitiv Datastream

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