Planning Perspectives 3Q 2021

Integrity in Investing
Setting Expectations for Long-Term Inflation

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PROFESSIONAL FINANCIAL
Purposeful Wealth Management

"Inflation is taxation without legislation."
– **Milton Friedman**, Professor and Nobel laureate economist

This is part of a series exploring integrity in professional wealth planning

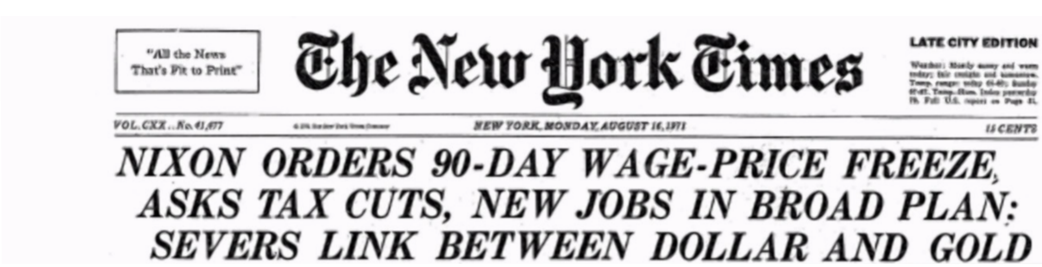
Key takeaways:

- U.S. inflation is rising at a higher rate that government economists did not predict
- Mild inflation is a common monetary condition of most developed countries
- The lifestyles of retirees and their goals are especially vulnerable with higher inflation
- Financial markets offer a reliable way to estimate what expected inflation will be

The past three decades has been a period of moderate inflation in the United States. The annual increase in the consumer price index averaged around 2.3%.[1] Yet the impact of this modest amount of inflation has reduced the purchasing power of an uninvested dollar by around half in 30 years. Therefore, it seriously matters whether the recent increase in the pace of price rises for goods and services you buy is transitory or will persist. Political and media hyperbole has brought inflation to the forefront of investor concerns for their long-term financial and retirement planning.

As we emerge from pandemic lockdowns, some inflation measures are rising at their fastest pace since the 1980s. The big question is whether higher inflation will prove "sticky." Persistent high inflation would inevitably boost long-term interest rates. Moreover, the Federal Reserve could be motivated to implement a tighter monetary policy sooner than later. As the direction of interest rates underpins many business decisions, a take-off in interest rates after years of near-zero levels could have very significant negative wealth impact.

Some erosion of a currency's purchasing power—commonly known as inflation—is considered normal in most countries. The money you spend today buys fewer goods and less service with each passing year. In 2021, that has been especially true with each passing month. Inflation has been with us for most of the last century since the Federal Reserve monetary system was created. A slow phase-out of the old gold standard followed that was completed only fifty years ago under an emergency executive order. Many Baby Boomers still have traumatic



"All the News That's Fit to Print"

The New York Times

LATE CITY EDITION

NEW YORK, MONDAY, AUGUST 16, 1971

NIXON ORDERS 90-DAY WAGE-PRICE FREEZE, ASKS TAX CUTS, NEW JOBS IN BROAD PLAN; SEVERS LINK BETWEEN DOLLAR AND GOLD

memories of the 1970s "stagflation" in which inflation and high unemployment persisted during a period of chaotic political turmoil and unstable monetary policies.[2]

During the transitional 17-year period from 1966 to 1982 of huge deficit spending that began with the Vietnam War and "Great Society" programs (referred to as "guns and butter"), cutting the international dollar to gold exchange link, and then mandatory wage-price controls. Nominal U.S. large stock returns during that period was 6.8% annualized. The official U.S. Consumer Price Index (CPI) was also 6.8% for the same period—that is, the real return of stocks for that 17-year period was 0%.[3] Actually, it was a negative real return after taxes (in 1970 the marginal rate for taxable income above $22,000 was 50%).[4]

Do You Believe Your Lying Eyes?

The recent CPI increase was twice what Federal Reserve economic forecasters predicted at 5.4%.[5] That was an embarrassment. "Core" prices were up 4.5% annualized, a figure well above the official 2% Fed's target. The last time core prices rose 4.5% in a 12-month period was 1991 and back then at least the Fed's benchmark short-term interest rate was above 5%. Today that rate is nearly zero.

Federal Reserve Chair Jerome Powell appears to be getting the inflation that he has wanted. The Fed is dominated by New Keynesians relying on "Modern Monetary Theory," or printing press money.[6] Yet, commenting about fears of high inflation persisting, Powell says that he doesn't "expect anything like that to happen."[7] He observes that what Americans are experiencing from government finally unlocking the U.S. economy is "inflation in particular categories of goods and services that are being directly affected by this unique historical event that none of us have lived through before." Like used cars up 30% in one year or housing up 13.2%. Guess where all those trillions of printing press money ended up?

Mr. Powell calls these price increases "transitory" until supply constraints ease and production is fully restored. But economists like Professor Larry Kotlikoff of Boston University, following Milton Friedman, the famous Nobel laurate economist, believes the U.S. is running a fiscally unsustainable policy. The official debt to GDP ratio in 2000 was 33.7%; in 2021 it is 102.3% and rising. The U.S. money supply base during the 2008 Financial Crisis was $830 billion; by May of 2021 it is $6.0 trillion—7.2 times larger!

This year the Fed quietly redefined and enlarged its methodology for calculating the money supply. M1 annual money supply growth is now 350% a year; M2 is growing at nearly 28%. Peacetime monetary growth at these rates is unprecedented. Back in February Mr. Powell assured Congress that M2 "doesn't really have important implication,"[8] but what we see is the truth that Friedman spoke: "Inflation is a monetary phenomenon. It is made or stopped by the central bank." Fed outcomes are following the textbook sequence of Quantity Theory: $M*V = P*Q$, where M is the stock of money, P is he price level, Q is the quantity of sales, V is the velocity of money, so that PQ is the value of transactions. Kotlikoff suggests that all this money creation may lead to a six-fold increase in prices.[9]

Future Expectations of Inflation

The official government Consumer Price Index (CPI) has risen 5.4% from a year earlier.[10] The 2 percent Fed target inflation rate[11] is considered desirable, which is similar to that of the last twenty years. What the "optimal" rate of inflation should be is debatable. Historically, U.S. inflation has worked out to be 2.9% annualized since 1926. Since 1983 in the aftermath of U.S. post-gold standard policy and inflation turnaround, it has been 2.6% annualized.[12]

What we really care about is, of course, not what happened, but what happens next. Relying on the market rather than government bureaucrats with vested interests is likely to give us our best answer for planning. The 5-year TIPS/Treasury breakeven rate allows us to calculate *the market's* expectation of inflation. We see from **Exhibit 1** that it is 2.47% as of June 30th out five years. To know what market participants collectively expect inflation may be is to simply look at the spread between the yields of U.S. TIPS (Treasury Inflation Protected Securities are government bonds whose return adjusts based on a calculation of

Exhibit 1: Market Estimations of Expected U.S. Inflation by Maturities
As of June 30, 2021

Time to Bond Maturity	5 Years	10 Years	20 Years	30 Years
U.S. Treasury Bond Yield	0.87%	1.45%	2.00%	2.06%
U.S. TIPS Yield	-1.60%	-0.87%	-0.40%	-0.20%
Expected Inflation	2.47%	2.32%	2.40%	2.26%

Source: *Data retrieved from US Department of the Treasury website. Past performance is no guarantee of future performance.*

realized inflation) and U.S. Treasury bonds. The difference is how much investors are paying to remove the risk of expected inflation, or in effect, what the market expects inflation to be.

For example, if a Treasury bond maturing in 20 years was yielding 4%, and a 20-year TIPS yielded 2%, the market prediction implied is that inflation would be roughly 2% per year over the next 20 years. That differential is based on what investors collectively are paying as of a certain date to avoid expected inflation risk. In Exhibit 1 as of June 2021, the market is estimating inflation to be between 2.4 percent and about 2.5 percent between a five-year and a twenty-year horizon. While nominal negative TIPS yields may be troubling, that is a function of our low interest rate environment and not a deficiency of the investment.

For an unbiased source for market inflation expectations updated daily, Federal Reserve Economic Data (FRED) may be accessed for free on the internet. See **Exhibit 2** below for an example.

Exhibit 3 extends the illustration of spreads back to 1958 again looking only at 10-year Treasury yields. This method shows the historical variations in spreads for a much longer time because TIPS were first available in 1997. The high inflation period of 1966 through 1982 mentioned early in this paper is shown. Notice that nominal yields average 5.9% for the exhibit's period, while the nominal yield as of June 30 is only 1.45% as we saw before. Notice how two different methods result in virtually the identical outcome.

The conclusion we draw from all this is that there is no reason for investor alarm. This approach does not give us a gloom and doom forecast. To the extent that we have had higher than average inflation for the past and may have it for a while longer, the damage is already done. For planning purposes, expected inflation should be within historical averages and not likely to get out of control based on all information available to the Market today. From 1990 to 2020 after the high inflation period from 1970 through 1989 (when inflation was 6.2% annualized) the average annual rate of inflation is about 2.4%. It looks like it will continue in that range. Again, this is a market prediction based on a best estimate of its participants collectively—including a possibility of the passage of gargantuan spending programs by Congress (no) and that Republicans will ride a Great Red Wave into 2023 (yes).

Markets Price Inflation Expectations

Financial markets are, in effect, vast information aggregation machines. You have innumerable people, trading trillions of dollars in various securities daily, making educated guesses based on the information available to them about how those securities will price. And with real money as well their jobs at stake, traders deeply care about getting the prices right at which they buy or sell. While a current price may never be "right," it represents the collective "best unbiased" estimate of a securities' value at any time. The collective knowledge of all those market participants is aggregated into prices at which they trade.

Public financial markets in efficient market theory set prices by aggregating information. We assume that in informationally "efficient markets," prices account for all that is known about the past, present and may be known about the future of a security. Therefore, collective expectations about future inflation *are already incorporated into market prices. Unexpected* inflation is a change in inflation that deviates from participants expectations already incorporated in prices. ***Unexpected* inflation is the actual inflation risk that must be hedged for a successful retirement income planning strategy.**

Exhibit 2: TIPS/Treasury 10-Year Breakeven Inflation Rate
March 2004 – June 2021, Daily

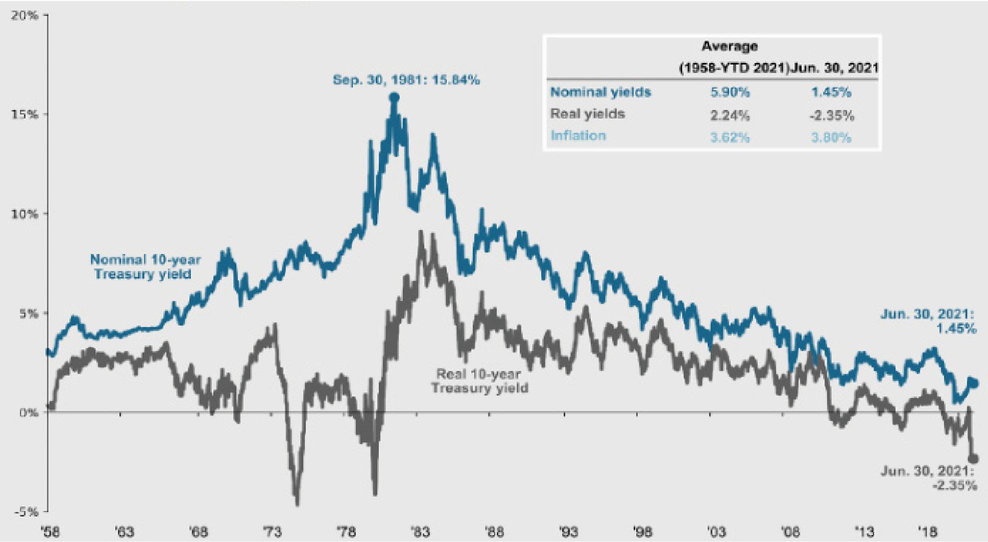
Source: *Federal Reserve Bank of St. Louis, 10-Year Breakeven Inflation Rate [T10YIE], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/T10YIE, June 30, 2021*

Planning for Unexpected Inflation

Trying to outguess financial market's outlook for inflation is futile. Investors are better off using market gauges of consumer price expectations such as the breakeven inflation rate and focus instead on how to outpace, or hedge against, the harmful

Exhibit 3: Nominal and Real 10-year Treasury Yield Spread

January 1958 – June 2021



Source: *BLS, FactSet, Federal Reserve, J.P. Morgan Asset Management. Real 10-year Treasury yields are calculated as the daily Treasury yield less year-over-year core CPI inflation for that month except for June and May 2021 where real yields are calculated by subtracting out May 2021 year-over-year core inflation. Guide to the Markets - U.S. Data are as of June 30 2021.*

effects on future retirement spending that such measures imply. The collective best guess of investors as they are aggregated by market prices is hard to beat as a guide to what the future may hold. Therefore, you should tune out the pundits and focus on fine-turning methods that either outpace or hedge against the inflation that's already anticipated in market prices.

Federal reserve economists can't predict inflation. FRED with a breakeven inflation rate is a useful guide, but not an oracle. The good news is, even without the need to predict inflation or the future, we can effectively manage monetary policy risk of deficit spending with a flexible approach that can mitigate the impact of unexpected inflation. Research suggests that a broadly diversified and disciplined strategy broadly based on certain asset classes has and can outpace long-term inflation.[13] That is what we provide at Professional Financial through broadly diversified Dimensional portfolios.

Equities are an asset class generally expected to outpace inflation and do so in most countries. Successful companies can adjust what they charge their customers as they work through the vagaries of inflation as that impacts production of their tangible or intangible products. Greater nominal profitability from increasing revenue in various ways eventually works its way back into their stock price. Here in the U.S., including brief periods where inflation was not outpaced, one dollar invested in the S&P 500 Index in 1926 would have grown to more than $700 by 2020 after adjusting for inflation.[14] A dollar invested in the S&P 500 Index in 1991 in real terms would have grown to over $12 by 2021—a 12-fold increase in purchasing power despite a terrible Tech Bust and a terrifying Financial Crisis in between.

Granted, studies have shown that average real returns of global stocks and bonds were positive regardless of whether inflation was higher or lower than average, with no reliable difference between the performance of each asset class. But just because this was the outcome *on average* does not mean that this was the case *every year*. Investors who are particularly sensitive to inflation may want to hedge against the erosive impact of rising consumer prices in a balanced portfolio that consists of substantial fixed income allocations, especially retirees needing reliable income subject to sequence of return risk.

What are ways to mitigate inflation risk? Emphasizing a disproportionately large allocation to growth assets (to emphasize returns) would not be appropriate for most retirement income strategies. For those sensitive to the higher volatility of stock allocations as illustrated in **Exhibit 5**, bonds or other fixed income allocations may reduce portfolio volatility. Short-term bond funds provide indirect protection from inflation risk because such bond contracts mature over one to three years and are then

Exhibit 4: : U.S. Stocks and Bond Relative Returns in Selected High Inflation Years

Periodic Calendar Year Returns

	U.S. CPI	S&P 500 Index	Morningstar Index
	Inflation	**U.S. Large Cap Stocks**	**Long-term Govt Bonds**
1973	8.7%	-14.7%	-1.1%
1974	12.3%	-26.5%	4.4%
1979	13.3%	18.4%	-1.2%
1980	12.5%	32.4%	-3.9%

Past performance is no guarantee of future results. Indicies are not available for direct investment. For educational and illustrative purposes only. ***Source:*** *Dimensional Fund Advisors, Matrix Book 2021 (Historical Returns Data—US Dollars). S&P data from Dow Jones Indicies LILC/S&P Global.*

Exhibit 5: : Negative Returns by Year of Bonds by Duration Compared to Stocks
January 1990 – December 2020

	Bonds			Stocks
	US Government/Credit Bond Index			S&P 500 Index
	1-5 years	**Intermediate**	**Long**	
Years with Negative Returns	1994: -0.7%	1994: -1.9%	1994 -7.1%	1990 -3.1%
		2013: -0.9%	1999 -7.7%	2000 -9.1%
			2013 -8.8%	2001 -11.9%
			2015 -3.3%	2002 -22.1%
			2018 -4.7%	2008 -37.0%
				2018 -4.4%

Past performance is no guarantee of future results. Indicies are not available for direct investment. For educational and illustrative purposes only. Source: Bond indexes from Bloomsberg Barclays. S&P data for U. S. large cap stocks from Dow Jones Indicies LLC/S&P Global.

replaced with contracts paying a new higher interest rate incorporating the currently expected inflation.

Retirees and those needing an income from their portfolios may prefer greater exposure to inflation-indexed securities that are specifically designed to provide inflation protection. One option are Treasury Inflation-Protected Securities, whose returns are linked to changes in the consumer price index. If inflation spikes up more than expected, owners of TIPS are compensated through an adjustment based on increased CPI to protect from purchasing power erosion. TIPS with longer maturity dates are the most direct way to hedge against *unexpected* inflation not incorporated into current bond prices. However, the number of Treasury bond issues and maturity dates are limited. Additionally, current real returns are negative as we saw above, so the price of protection is high.

Corporate bonds may be a better fit for investors that seek higher expected returns with less volatility, while tax-sensitive investors may be better suited for municipal bonds. An alternative to TIPS where inflation is a concern is to buy shorter-duration corporate bonds while using derivatives called inflation swaps to protect against price rises. Such swaps involve paying a counterparty a sum that's linked to current expectations for inflation in return for receiving an amount of money that depends on what inflation actually is at a given maturity. While this strategy involves increased credit risk, it offers higher expected returns than TIPS-only strategies and permits greater government and currency diversification.[15]

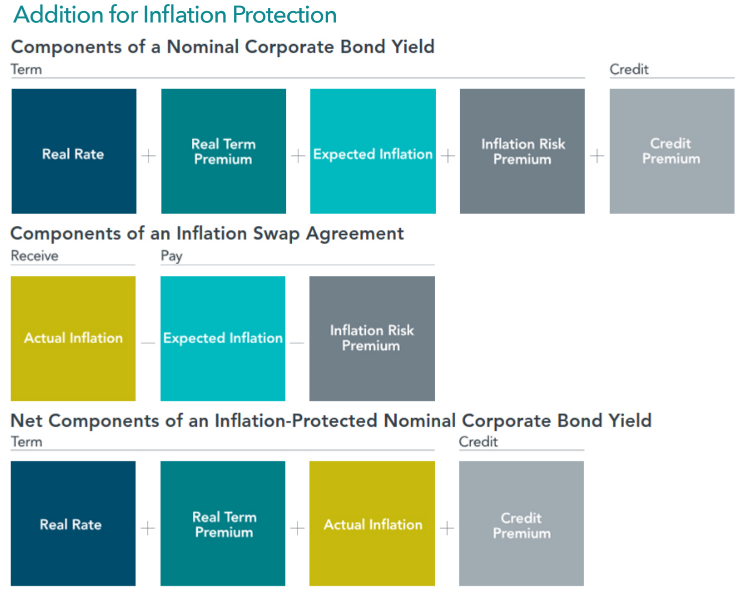
Dimensional Fund Advisors offers a broad suite of inflation-protected portfolios, at varying durations, for structuring an appropriate income strategy. These portfolios reflect Dimensional's long history of managing transparent, value-added fixed income solutions that integrate research, portfolio structure, and implementation in pursuit of a better investment experience—avoiding the opacity and hidden risks inherent in so-called "alternative" hybrid products popularly promoted as inflation "solutions." For example, gold has historically extremely high levels of volatility, but gold's relative inflation-adjusted performance has varied greatly depending on the time horizon and has not been closely related to inflation.

Special Inflation Concerns for Retirees

What you must spend once you stop working and stop saving—not only in retirement, but also due to disability or divorce—will increase over your lifetime due to inflation. Maintaining purchasing power with a full risk-adjusted return on your investments, in addition to managing health and long-term care costs, is essential to a retirement that must maintain your lifestyle for thirty or more years.

Inflation hits retirees the hardest. They have more exposure to inflation and get hit by it on both sides. On the cost side, not only do retirees face the "normal" cost of inflation that working people face, but what retirees buy is tilted towards medical care and health services that

Exhibit 6: Components of Corporate Bond Yields Allowing Swap Addition for Inflation Protection



Source: *Dimensional Fund Advisors*

historically had notoriously higher levels of inflation. It's harder for retirees to absorb those higher costs because they must keep spending and can no longer save. The income of those people still working generally keeps pace with inflation.

Outpacing and hedging against inflation are important objectives for healthy retirees. A proportion of assets allocated for each goal in retirement can be linked to an investment horizon. For example, a large allocation to assets that are expected to substantially outpace inflation may be appropriate for wealthier retirees who don't expect to spend their investment assets for many years to come. Assets intended to outpace consumer price rises while also seeking to increase the purchasing power of those assets, enables more future consumption, say for higher quality health care. On the other hand, those close to their retirement target, when they stop saving and start spending their accumulated savings, may want more certainty around how much their wealth's value is stable after price rise adjustments. Greater allocation to income-oriented inflation-hedging assets can help provide them more certainty in planning.

Conclusion

While no one has a crystal ball about inflation, clients of Professional Financial should not over-react to reports of consumer price inflation. You should be concerned about inflation risks, but you don't need to outguess the markets or take unnecessary risk with your planning. Fortunately, no crystal ball is needed to manage potential impact of expected or unexpected inflation.

Wealth planning with Professional Financial is about providing you a successful financial experience. That means peace of mind from the confidence you've gained from your preparation in learning an investment approach grounded in economic theory and backed by decades of empirical research—employing dimensions of securities that are sensible, persistent over time, pervasive across markets, and cost-effective to capture.

Ignore the latest media news or internet promotion. Stick with your investment strategy and keep your portfolio rebalanced and repositioned in volatile times like we've just been through, in coordination with tax and legal arrangements that we recommend. If you continue to save and then spend with the legal and insurance arrangements that we planned over the years, you should reasonably expect to maintain a quality lifestyle for a lifetime without troubling inflation concerns.

Endnotes

1 Dimensional Fund Advisors, Matrix Book 2021: Historical Returns Data.

2 *Wall Street Journal*, What the Inflation of the 1970s Can Teach Us Today (June 24, 2021)

3 Dimensional Fund Advisors, Matrix Book 2021: Historical Returns Data. S&P data from S&P Dow Jones Indices, LLC.

4 What survives of the Greatest Generation likely suffers from Alzheimer's. Gen X matured after it was all over.

5 Based on the US Consumer Price Index for All Urban Consumers (CPI-U, not seasonally adjusted) from the Bureau of Labor Statistics.

6 Some deride MMT as "Magic Money Thinking."

7 Agency theory suggests that fear of job cancellation may compromise the Chairman's thinking.

8 John Greenwood and Steve Hanke, "Too Much Money Portends High Inflation," *Wall Street Journal* (July 21, 2021), A 13.

9 Larry Kotlifoff, "Is Inflation Transitory?" Financial Experts Network presentation (July 22, 2021).

10 See Editorial, *Wall Street Journal* (July 14, 2021), A16.

11 https://www.federalreserve.gov/faqs/economy_14400.htm

12 Dimensional Fund Advisors, Matrix Book 2021: Historical Returns Data. S&P data from S&P Dow Jones Indices, LLC.

13 Dai, Wei and Medhat, Mamdouh, U.S. Inflation and Global Asset Returns (July 13, 2021). Available at SSRN: https://ssrn.com/abstract=3882899

14 Dimensional Returns Web. From 1926 – 2020 the US CPI adjusted S&P 500 Index had a cumulative return of 75057.63.

15 Nominal asset prices and interest rates *already embed* the market's current inflation expectations. We are concerned with the negative impact of *unexpected* inflation on wealth. An inflation "hedge" adjusts with unexpected inflation.