



The Price of “Stuff” Screams, FIRE!

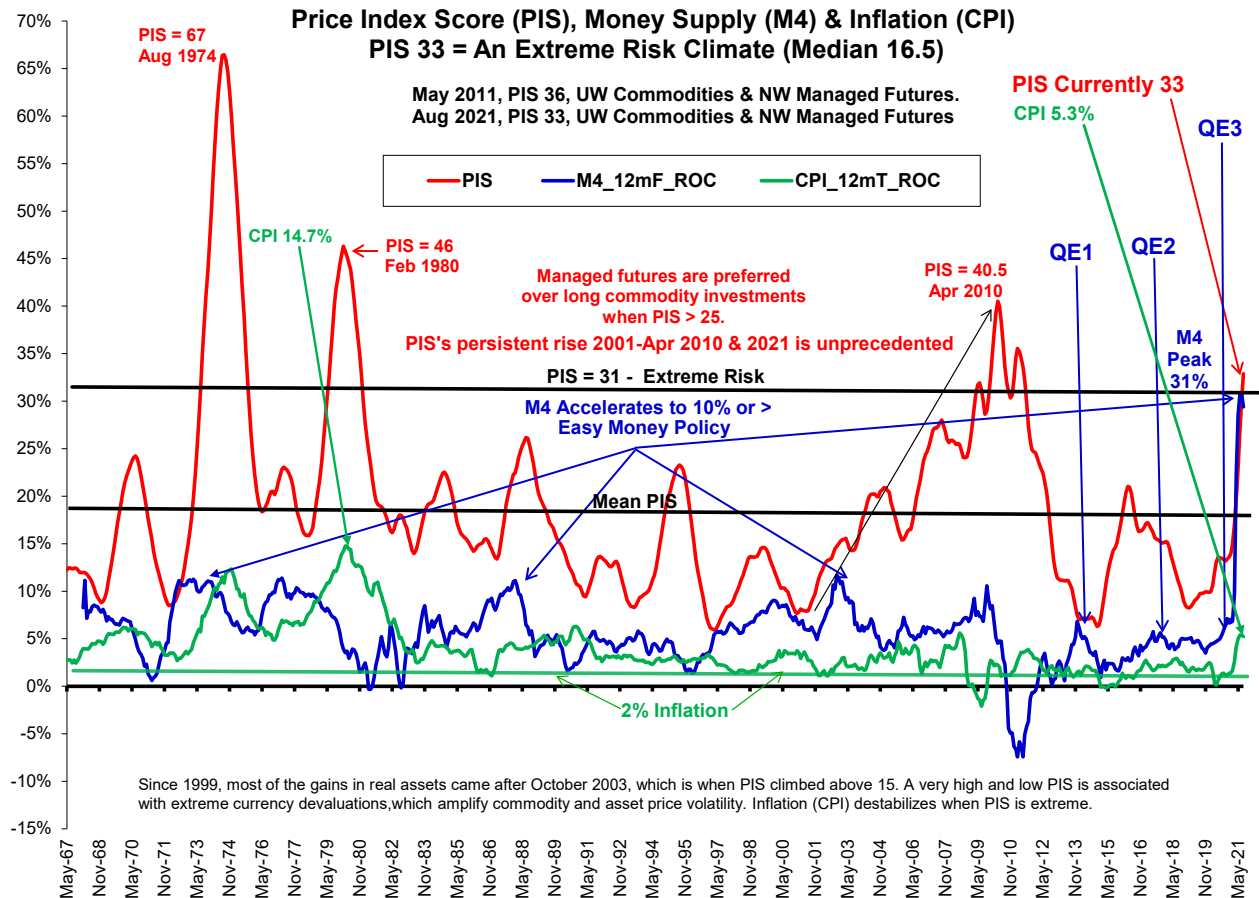
When Euphoria Fragilizes the Financial System – Price Instability Shakes It Down!

In 1982, Hyman Minsky published *Can It Happen Again?* referring to the Great Depression of 1929, bred primarily from an antecedent factor—a mass psychology of financial euphoria. Back then, prior to the market crash, euphoria bred a concomitant explosion of corporate debt accumulation that fueled speculation and rising income inequality, which bred social and geopolitical unrest (populist riots and World War II).

Minsky’s body of work on investor behavior provided the author’s insight into the *crux* of investing. Investing is taking risk to hedge portfolio assets from the *Price Volatility* of things mined, farmed, harvested from the wild, produced, refined, and distributed as products for consumption (Stuff). Financial assets become more volatile when the *Price of Stuff* goes wild! Minsky’s insights led to the author’s creation of **The Price Index Score (PIS, red line Figures 1-2) in Feb 2001**. It measures current and forecasted uncertainty about the economy and financial markets. As of Aug 31, 2021, PIS was screaming *Fire* near 33 even though financial markets are calm. Today’s investors don’t even smell the *smoke*. *PIS is now two times above its 16.5 median since 1967.*

Arrow Insights attempts to limit portfolio losses from asset price volatility stemming from extreme UNCERTAINTY (PSI > 31) by being underweight (UW) low quality credit securities (LQ), overweight (OW) high quality credit securities (HQ), holding a moderate degree of long-short managed futures (neutral weight, NW), and gold bullion. Investors with significant cash (money funds) and savings (CDs, etc.) should be sure that all invested assets can remain invested for at least seven years to harness profitable volatility.

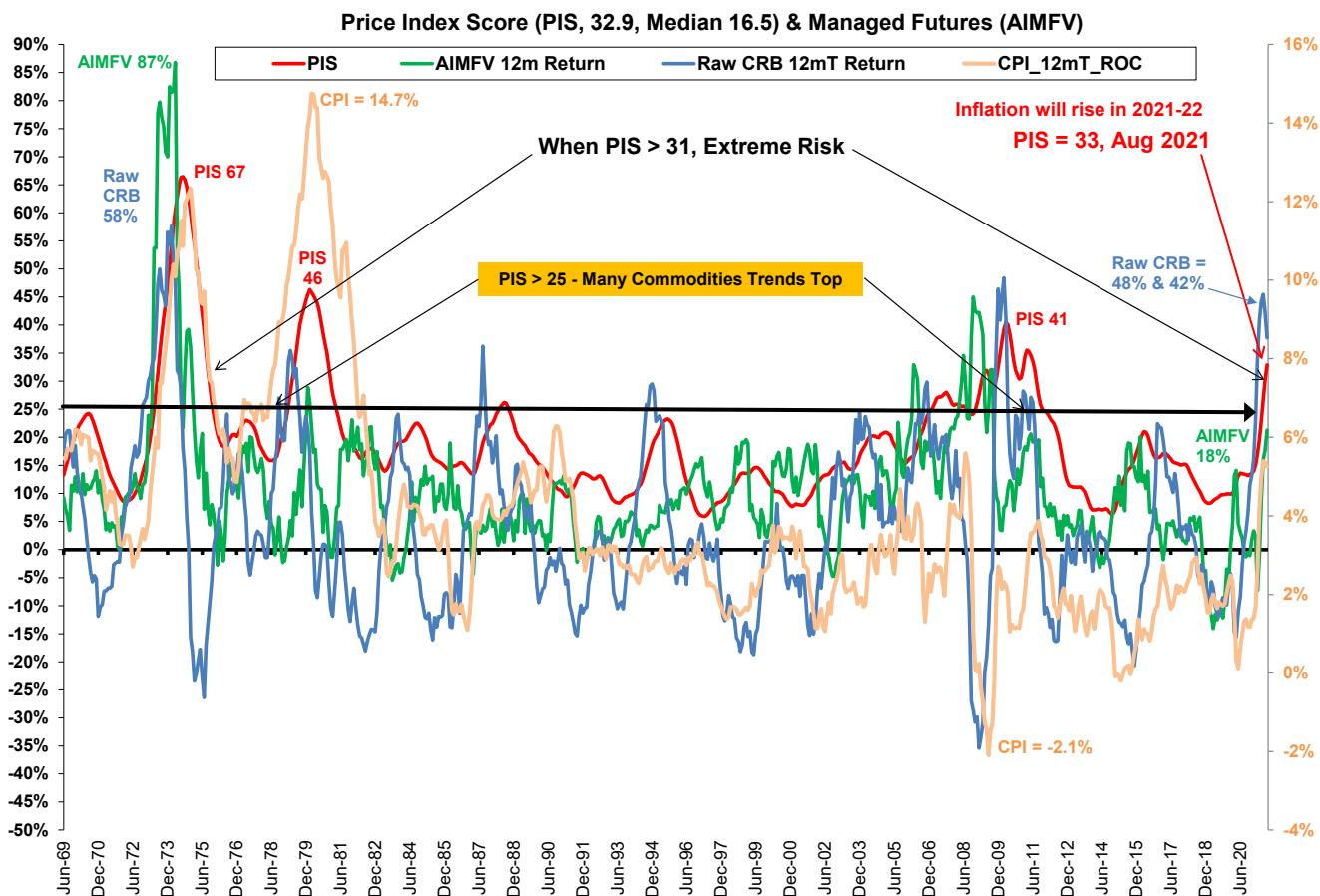
Figure 1 – The Absolute Value of “Things” (PIS) Is High – Overweight to HQ Assets



Before exploring PIS, let's understand its message and how to heed its warnings. Minsky called his thesis the *Wall Street Paradigm*, a byproduct of extended periods of low interest rates and excess liquidity (an explosion in **money supply, M4**, stemming from easy monetary policies—*Cheap Money* (blue line, Figure 1). *Cheap money* feeds complacency, which fosters future price volatility in financial markets, especially in stocks with low or no free cash-flow yield (FCF—for debt service, dividends, and other needs) and in low credit quality bonds.

An extreme PIS results from the misallocation of *Cheap Money*—a distortion of the economic utility function of commodity- and financial-markets—the discovery of equilibrium prices by buyers and sellers (fair prices). Volatility in the *Price of Stuff* has been an antecedent condition for an extremely unstable financial system and *Financial Panics*. Panics typically stem from investors with greedy cravings. Their blind excesses grow stronger from repeated success at quick profits, which leads to an insatiable appetite for *blind risk*. Greed leads to too many leveraged investments: *Hey, the stock market pays 10% a year and I can borrow at 1%.* Let's leverage our profits! Fear creeps in when investors experience losses magnified by leverage. Panic ensues in a *FLASH* when they **MUST sell** stocks to cover their collateral (*the Minsky Moment*).

Figure 2

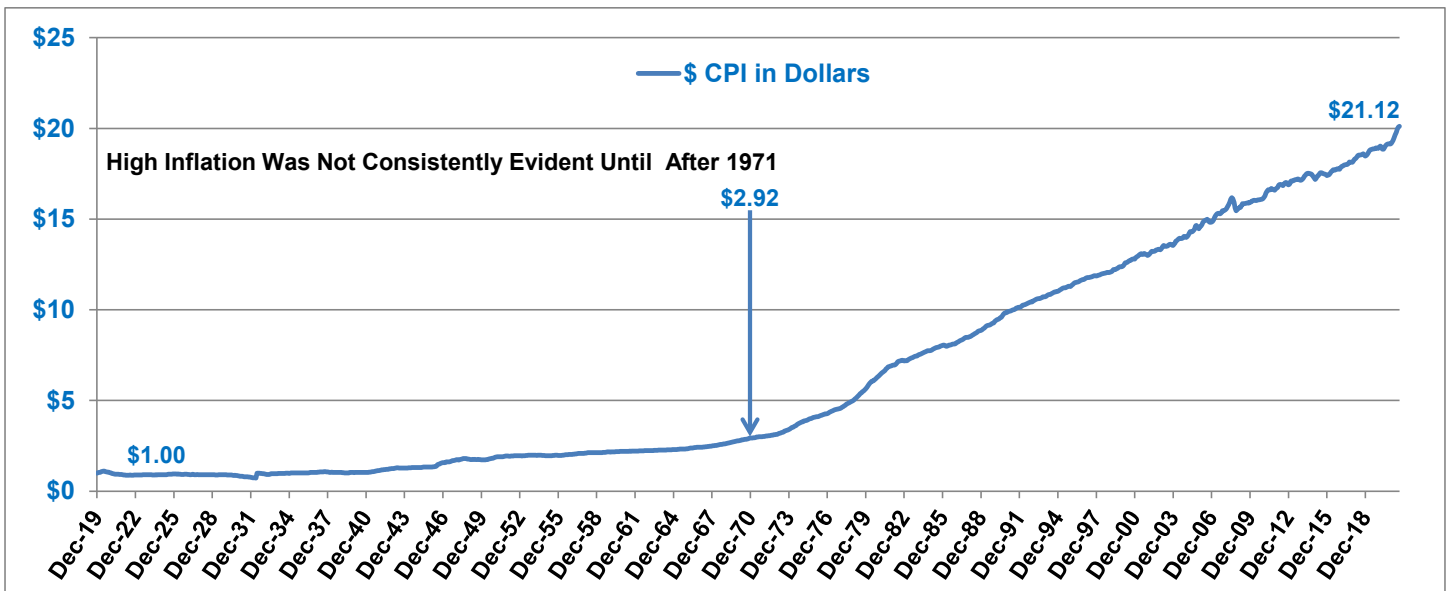


Data Sourced from St. Louis Federal Reserve Bank, Thomson Reuters & Arrow Insights

The economic utility functions of investing are to hedge inflation-risk—the loss of future purchasing power of one's currency and to hedge deflation-risk—the immediate loss of wealth through a collapse in asset values from extreme currency appreciation. At their extremes, annual consumer price index (CPI) readings > 5% and < -2%, entail times of economic busts for individuals, businesses, and governments. Inflation takes years to materialize while deflation is immediate—sudden—*The Minsky Moment in a FLASH!*

Prior to the U.S. dollar going off the gold standard in 1971, bouts of inflation were brief, and deflation was more frequent (Figure 3). Today it takes \$21.12 to equal \$2.92 in 1971 and \$1.00 in Dec 1919.

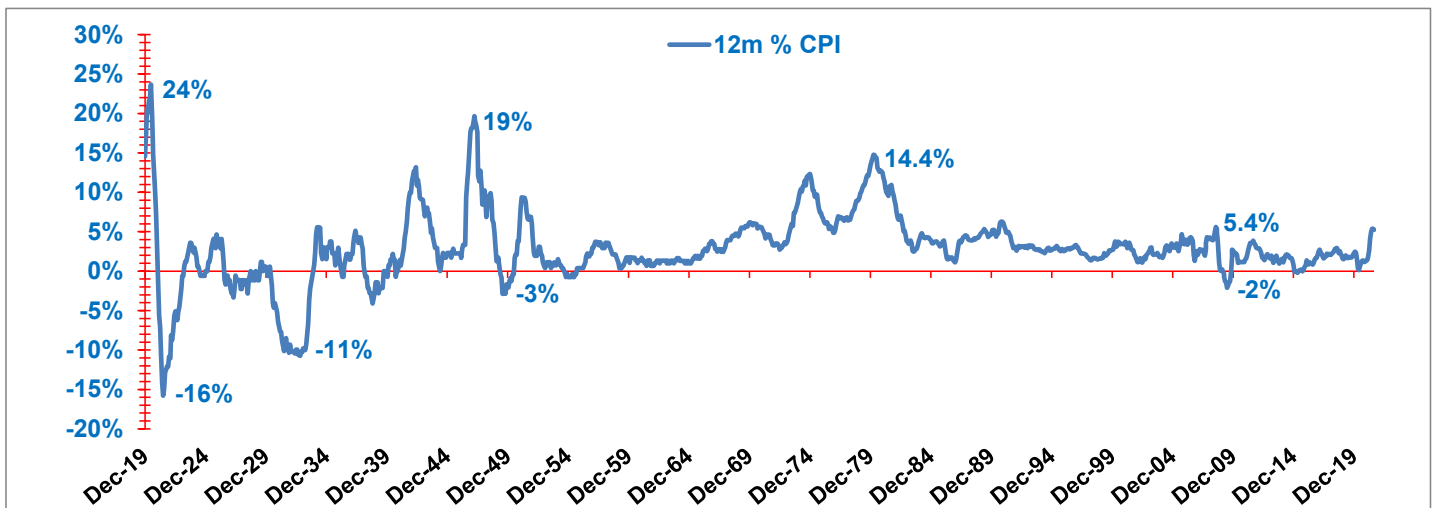
Figure 3 – U.S. Off the Gold Standard in 1971 – Fed Prints Money – Inflation Unhinged



Data Sourced from Standard & Poors Research and Arrow Insights

Extremely high annualized inflation (24% in 1920, 19% in 1947, 14.4% in 1980; Figure 4) were unstable economic periods with volatile markets that bred severe declines in the CPI (-16% in 1921, -3% in 1949 and 1% by 1985). Inflation was 5.6% in July 2008, and -2.1% by July 2009. A leveraged debt crisis turned a boom in commodities and leveraged real estate into the Financial Panic of 2008-2009 after leveraged derivatives on home mortgages and commodities collapsed after underlying assets plunged.

Figure 4 – CPI Volatility Bred from Price Uncertainty in the Price of Stuff



Data Sourced from Standard & Poors Research and Arrow Insights

From Nov 2007 through Feb 2009, U.S. stocks and commodities declined -51% and -35% (Appendix, Figure A). Figure A plots the CPI along with U.S. stocks (S&P), 10-year U.S. Treasury Notes (TSY), commodities (CRB) and gold during 15 episodes of inflationary and deflationary booms and busts and two episodes of U.S. Federal Reserve Bank money printing along with Treasury and bank savings yield repression (from 1944 to 1958 and since Mar 2009).

The Fed's yield repression program (from 1944 – 1958) accelerated economic growth through money printing, keeping a lid on Treasury debt servicing costs while the government engaged in massive infrastructure spending. They manufactured 4% annualized inflation while suppressing interest rates (to reduce annual deficits) so they could pay back the government's WWII debt burden with cheaper dollars. The plan worked. U.S. debt to GDP fell from 107% to 57% by 1958 and 45% by 1960. Since Mar 2009, they have implemented acts of yield repression, money and spending that are many times greater than any other time in

history. The goal is to manufacture nominal economic annual growth > 15% or so, along with high inflation; to enable debts to be paid with cheaper dollars; and thus, reduce debt to GDP to 70% to 80%. Doing so, enables the Fed to normalize interest rates and reduce its \$8.4 trillion balance sheet up from \$890 billion in Dec 2009.

Why High S&P 500 Index P/Es Seldom Bear Fruit—Why Free-Cash-Flow Yield (FCF) Does!

Long time periods of P/E expansion (1926-1929, 1967-1972, 1997-2000, and 2003-2007) have been harbingers of severe equity market declines. Verification of the independence of the real economic factors (net of inflation) and psychological factors shows why. Let's review these factors:

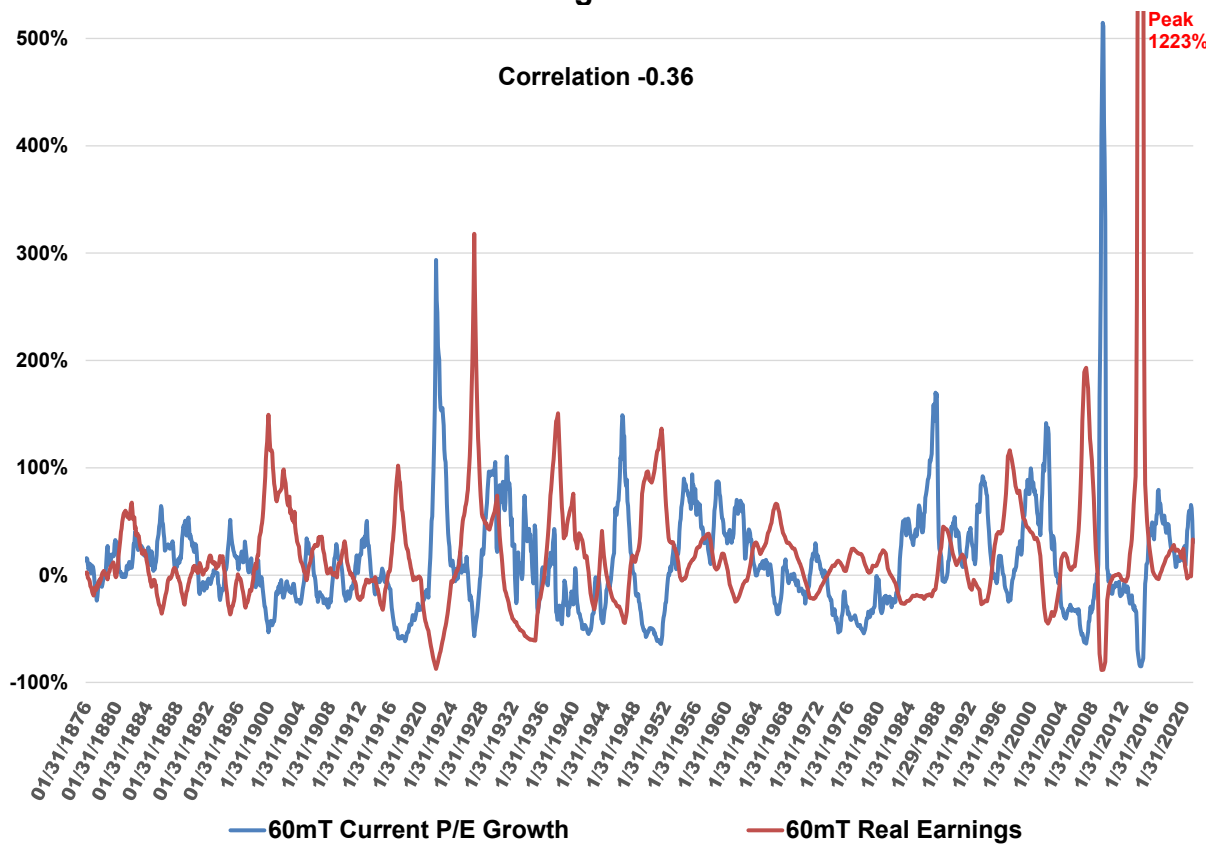
1. **Economic:** The real earnings growth on the stock market (growth net of inflation)
2. **Psychological:** The expectation of continued earnings growth, i.e., decades of future profits

Each day, investors decide what they are willing to pay to acquire a security, for stocks most investors "think" the Price-Earnings Ratio (PE) is a good gauge. Figure 5 shows that for 150 years; the above factors are negatively correlated (a monthly correlation of -36%). Periods of rapid/explosive PE expansions when dividend yields are below 2.5% and corporate FCF yields are below zero or <3% are times of excessive speculation.

Figure 5 should cause investors to ignore Wall Street's claim that the primary driver of stock prices is nominal earnings growth. It's not! **It's real earnings growth.** When the S&P 500 Index's P/E exceeds 20 and inflation is 3% or higher; stock prices rise mostly on *the hope for capital gains*. **Sixty-month trailing (60mT) Current P/Es and 60mT Real Earnings growth factors are anti-correlated because high P/Es usually are not substantiated by real earnings, which invalidates P/Es recognized at the time of many stock purchases (a disconnect from the economic utility function of price discovery).**

A stock's FCF is a reliable measure of a stock's current value. They are selected based upon estimates of FCF in future years discounted back to the present. The S&P 500 Equal Weight Index and the S&P 500 Reverse Cap Weighted Index have historically bested the traditional S&P 500 Cap Weighted Index (SPX) after periods of extreme P/E expansion of the stocks within SPX, because these stocks often fail to live up to expectations of continued growth. HQ stocks are not bid to the sky by speculators. Most speculators hold stocks for brief time periods. HQ stocks best LQ growth stocks in times of higher inflation and higher interest rates. Higher rates burden earnings growth stocks more than value stocks. Quite often, value stocks also display higher FCF than growth stocks, providing them *a cash-cushion for rainy days* (recessions and periods of stagflation).

Figure 5



Data Sourced from Standard & Poors Research and Arrow Insights

Arrow Insights combines three FCF indexes with a 25% allocation to the Dorsey Wright Tactical Balanced Strategy (DWAB to build a Balanced Tactical HQ Portfolio (BTHQ, Figure 7). A large company domestic, a large company foreign, and a small company domestic index are dissected to find the Top 100 stocks within each index with the highest rankings on FCF and related value factors. The portfolio is comprised of a 35% allocation to Russell 1000 FCF-Top 100, 20% to FTSE 1000 Developed Market-Top 100 plus 20% to the S&P 600 Small Cap-Top 100 to arrive at a 75% allocation to high FCF stocks.

PIS equals = Things Mined-Harvested, Produced, and Consumed (Figure 1-2). PIS is screaming future inflation that is likely to be much higher than consensus outlooks for one-, five- and 10-year periods. Higher than current expectations near 2.2%, 2.3%, and 2.4%, respectively; per Moody's Analytics Inflation Expectations Pulse (IEP). PIS is employed to tilt portfolio allocations from 30% to 70% LQ assets to 70% to 30% HQ through five tiers of PIS scores ranging from > 1.45 to < 1.00 (calculated from proprietary measures of the Price of Stuff with 3.15 standard deviation thresholds; Figure 6 and Figure B). That's a mouthful and hard to digest, but it works in that it provides a factor intended to work with other factors that justifies adjusting asset exposures to hedge inflation and deflation risks.

Figure 6 – Portfolio Weights – LQ: 40%-30% & HQ: 60%-70%

PIS Score		
Score = 1.45 3.15 SDs		
Allocation %: Low to High Quality Assets		
70/30	< 1.00	Lower Risk
60/40	1.00 to 1.15	Moderate Risk
50/50	1.15 to 1.30	Mod-High Risk
40/60	1.30 to 1.45	High Risk
30/70	> 1.45	Extreme Risk

Data Sourced from St. Louis Federal Reserve Bank, Thomson Reuters & Arrow Insights

For the Rest of 2021 and Beyond, Markets are Going to be Very Volatile

The Fed is going to make money worth less. How do we hedge? When stocks are at a reasonable value, they are a hedge against high inflation. Stocks on average increase 7% or 8% a year, but today they are overvalued, especially the S&P 500 Cap Weight Index, which is expected to return about 4% to 5%. So, forget it and buy the equally and reverse cap weight versions of the S&P 500, which are expected to hold higher potential returns as well as global FCF stocks. A core long-term horizon portfolio should combine a balanced global multi-asset class strategy (like DWAB) with a diversified global stock allocation (Figure 7).

Summary

The primary goal is to keep up with or “beat” inflation as the nominal economy expands much faster than the real economy (net of inflation). **The Balanced Tactical HQ Portfolio (BTHQ) offers diversified risk exposures, that primarily hedges inflation risk while secondarily hedging deflation risk.**

Figure 7 – Arrow Insights – Balanced Tactical HQ Portfolio (BTHQ)

Portfolio Performance (Jul 2017 - Aug 2021)

Metric	BTHQ	SPXTR
Start Balance	\$10,000	\$10,000
End Balance	\$16,227	\$20,092
End Balance (inflation a	\$14,530	\$17,990
CAGR	12.3%	18.2%
CAGR (inflation adjuste	9.4%	15.1%
Stdev	16.6%	16.1%
Best Year	24.4%	31.2%
Worst Year	-9.4%	-4.6%
Max. Drawdown	-22.7%	-19.4%
Sharpe Ratio	0.71	1.05
Sortino Ratio	1.09	1.64
US Stock Market Correl:	0.94	1.00

Results based on historical returns. Expected return is the annualized monthly arithmetic mean return.

Balanced Tactical HQ Portfolio (BTHQ)

Acronym	Name	Category	Weight	Yield	Fees	P/E	Duration	Return%	Risk %
LCFCF	Russell 1000 FCF Top 100	Large Value	35%	1.5%	0.5%	13.9		\$2,939	44%
DWAB	Dorsey Wright Tactical Balanced Strategy	Tactical Allocation	25%	0.4%	1.8%	22.4	3.5	\$991	8%
GFCF	FTSE 1000 Devepl Mkt FCF Top 100	World Large-Stock Value	20%	3.9%	0.6%	15.2		\$564	19%
SCFCF	S&P 600 Small FCF Top 100	Small Value	20%	0.5%	0.6%	9.8		\$1,733	29%
Summary			100%	1.5%	0.8%	15.5*	NA	\$6,227	100%
				* SPXTR YLD = 1.3%		* SPXTR P/E = 30.9			

Data Sourced from Portfolio Visualizer & Arrow Insights

Appendix

Figure A – Arrow Insights – Relevant Macro-Economic Factor Periods

Begin & End Periods	S&P	TSY	CRB	Gold*	CPI	\$1 End	CPI	CPI Ann	Climate
Mar 1920 - Sep 1922	17%	21%	-27%	0%	-16%	\$0.88	Deflation	-6.1%	Deflation Boom
Aug 1929 - Jun 1932	-84%	-35%	-69%	0%	9%	\$1.00	Moderate	3.2%	Default Bust
Jun 1932 - Nov 1934	140%	14%	108%	69%	-1%	\$0.99	Deflation	-0.3%	Deflation Boom
Mar 1940 - Dec 1942	-3%	7%	57%	4%	21%	\$1.24	Very High	7.1%	Inflation Bust
Dec 1942 - Mar 1944	31%	3%	2%	1%	3%	\$1.28	Low	2.1%	Inflation Boom
Mar 1944 - May 1958	1%	7%	-13%	0%	56%	\$2.13	High	4.0%	Fed Yld Repression
May 1958 - Dec 1963	104%	14%	7%	0%	7%	\$2.27	Low	1.2%	Deflation Boom
Dec 1963 - Dec 1972	109%	40%	39%	84%	38%	\$3.13	High	4.2%	Inflation Boom
Dec 1972 - Sep 1974	-43%	1%	55%	128%	19%	\$3.72	Very High	10.4%	Inflation Bust
Sep 1975 - Feb 1980	58%	6%	81%	346%	45%	\$5.80	Very High	10.1%	Inflation Boom
Mar 1980 - Jul 1982	19%	28%	-24%	-32%	22%	\$7.17	Very High	9.3%	Inflation Boom
Aug 1982 - Aug 2000	2350%	451%	8%	-20%	77%	\$12.59	High	4.3%	Inflation Boom
Aug 2000 - Feb 2003	-43%	29%	2%	26%	6%	\$13.46	Moderate	2.4%	Default Bust
Mar 2003 - Oct 2007	100%	12%	97%	125%	15%	\$15.36	Moderate	3.1%	Inflation Boom
Nov 2007 - Feb 2009	-51%	11%	-35%	21%	2%	\$15.60	Low	1.1%	Default Bust
Mar 2009 - Mar 2020	342%	14%	7%	70%	22%	\$18.98	Moderate	2.0%	Fed Yld Repression
Jan 2005 - Jul 2008	15%	11%	51%	114%	-9%	\$16.17	Deflation	-1.2%	Deflation Boom

* The U.S. government controlled the price of gold bouillon until 1971.

Data Sourced from St. Louis Federal Reserve Bank, Thomson Reuters & Arrow Insights

Figure B

Currently	32.9%		
Volatility Levels	Low	High	Weights
> 3.15 sdev		-13.9%	0.00
2.1 - 3.15 sdev	-13.9%	-3.0%	0.25
1.2 - 2.1 sdev	-3.0%	6.4%	0.50
0.3 - 1.2 sdev	6.4%	15.7%	0.75
-0.3 - 0.3 sdev	15.7%	21.9%	1.00
0.3 - 1.2 sdev	21.9%	31.3%	1.25
1.2 - 2.1 sdev	31.3%	40.6%	1.50
2.1- 3.0 sdev	40.6%	51.5%	1.75
< -3.15 sdev	51.5%		2.00

Data Sourced from Arrow Insights

Various Figures in Support of The AI Balanced Tactical HQ Portfolio

Annual Returns		BTHQ		SPXTR		Components			
Year	Inflation	Return	Balance	Return	Balance	LCFCF	DWAB	GFCF	SCFCF
2017	0.6%	8.8%	\$10,883	11.5%	\$11,147	12.6%	8.2%	9.1%	2.7%
2018	1.9%	-9.4%	\$9,862	-4.6%	\$10,639	-10.0%	-9.8%	-8.0%	-10.1%
2019	2.3%	17.7%	\$11,610	31.2%	\$13,961	22.8%	11.1%	16.1%	18.2%
2020	1.4%	12.3%	\$13,040	18.4%	\$16,526	11.7%	21.4%	-4.3%	16.6%
2021	5.0%	24.4%	\$16,227	21.6%	\$20,092	35.0%	6.8%	11.7%	40.8%
Correlations		1.00		0.90		0.98	0.67	0.77	0.94

Annual return for 2017 is from 07/01/2017 to 12/31/2017 and annual return for 2021 is from 01/01/2021 to 08/31/2021

Data Sourced from Portfolio Visualizer & Arrow Insights

Style analysis is based on monthly returns from July 2017 to August 2021 and uses total portfolio return with monthly rebalancing. Returns based style analysis aims to explain the portfolio returns based on asset class Exposures. It does not identify the actual portfolio holdings.

Portfolio Style Analysis

Style Category	BTHQ	SPXTR
Large-cap Value	30.2%	45.5%
Large-cap Growth	14.1%	54.5%
Small-cap Value	28.9%	0.0%
Global ex-US Developed Markets	16.4%	0.0%
Emerging Markets	1.1%	0.0%
Short-Term Treasuries	9.4%	0.0%
Total	100%	100%

Data Sourced from Portfolio Visualizer & Arrow Insights

Balanced Tactical HQ Portfolio (BTHQ)

Category	Weight	Category	Weight
US Stocks	70.0%	Large Cap	41.7%
Intl Stocks	17.8%	Mid Cap	27.9%
US Bonds	6.2%	Small Cap	30.3%
Intl Bonds	0.1%		
Alternative Assets	4.1%		
Cash	1.9%		

Category	Weight	Category	Weight	Category	Weight
Basic Materials	5.7%	AAA	82.6%	Under 1 Year	10.47%
Consumer Cyclical	25.4%	BBB	0.1%	1 - 3 Years	55.75%
Financial Services	1.5%	Non-Investment Grade	17.0%	3 - 5 Years	13.87%
Real Estate	0.9%	Not Rated	0.2%	5 - 7 Years	8.50%
Consumer Defensive	11.3%	Totals	100%	7 - 10 Years	7.68%
Healthcare	17.8%			10 - 15 Years	0.39%
Utilities	1.1%			15 - 20 Years	0.30%
Communication Services	10.2%			20 - 30 Years	2.98%
Energy	3.0%			Over 30 Years	0.06%
Industrials	10.8%				
Technology	12.3%				

Data Sourced from Portfolio Visualizer & Arrow Insights

Drawdowns for Balanced Tactical HQ Portfolio (BTHQ)

Rank	Start	End	Length	Recovery By	Recovery Time	Underwater Period	Drawdown
1	Jan 2020	Mar 2020	3 months	Nov 2020	8 months	11 months	-22.7%
2	Sep 2018	Dec 2018	4 months	Dec 2019	1 year	1 year 4 months	-14.6%
3	Feb 2018	Mar 2018	2 months	Jul 2018	4 months	6 months	-4.4%
4	Aug 2017	Aug 2017	1 month	Sep 2017	1 month	2 months	-1.4%
5	Jun 2021	Jun 2021	1 month	Jul 2021	1 month	2 months	0.0%

Drawdowns for SPXTR

Rank	Start	End	Length	Recovery By	Recovery Time	Underwater Period	Drawdown
1	Jan 2020	Mar 2020	3 months	Jul 2020	4 months	7 months	-19.4%
2	Oct 2018	Dec 2018	3 months	Apr 2019	4 months	7 months	-13.5%
3	May 2019	May 2019	1 month	Jun 2019	1 month	2 months	-6.4%
4	Feb 2018	Mar 2018	2 months	Jul 2018	4 months	6 months	-6.3%
5	Sep 2020	Oct 2020	2 months	Nov 2020	1 month	3 months	-6.1%
6	Aug 2019	Aug 2019	1 month	Sep 2019	1 month	2 months	-1.7%
7	Jan 2021	Jan 2021	1 month	Feb 2021	1 month	2 months	-1.0%

Data Sourced from Portfolio Visualizer & Arrow Insights

Portfolio Components (Jul 2017 - Aug 2021)

Acronym	Balanced Tactical HQ Portfolio (BTHQ)	CAGR	Stdev	Best Year	Worst Year	Max. Drawdown	Sharpe Ratio	Sortino Ratio	US Mkt Correlation
LCFCF	Russell 1000 FCF Top 100	16.3%	21.3%	35.0%	-10.0%	-27.8%	0.76	1.19	0.92
DWAB	Dorsey Wright Tactical Balanced Strategy	8.5%	8.5%	21.4%	-9.8%	-14.6%	0.87	1.39	0.73
GFCF	FTSE 1000 Devepl Mkt FCF Top 100	5.4%	16.9%	16.1%	-8.0%	-27.6%	0.32	0.47	0.91
SCFCF	S&P 600 Small FCF Top 100	15.0%	25.7%	40.8%	-10.1%	-40.1%	0.63	0.95	0.85

Monthly Correlations (Jul 2017 - Aug 2021)

Acronym	Name	LCFCF	DWAB	GFCF	SCFCF	BTHQ	SPXTR
LCFCF	Russell 1000 FCF Top 100	1.00	0.61	0.93	0.91	0.99	0.92
DWAB	Dorsey Wright Tactical Balanced Strategy	0.61	1.00	0.60	0.51	0.67	0.74
GFCF	FTSE 1000 Devepl Mkt FCF Top 100	0.93	0.60	1.00	0.85	0.95	0.90
SCFCF	S&P 600 Small FCF Top 100	0.91	0.51	0.85	1.00	0.94	0.83

Portfolio Return Decomposition (Jul 2017 - Aug 2021)

Acronym	Name	BTHQ
LCFCF	Russell 1000 FCF Top 100	\$2,939
DWAB	Dorsey Wright Tactical Balanced Strategy	\$991
GFCF	FTSE 1000 Devepl Mkt FCF Top 100	\$564
SCFCF	S&P 600 Small FCF Top 100	\$1,733

Portfolio Risk Decomposition (Jul 2017 - Aug 2021)

Acronym	Name	BTHQ
LCFCF	Russell 1000 FCF Top 100	43.6%
DWAB	Dorsey Wright Tactical Balanced Strategy	8.5%
GFCF	FTSE 1000 Devepl Mkt FCF Top 100	19.1%
SCFCF	S&P 600 Small FCF Top 100	28.8%

Data Sourced from Portfolio Visualizer & Arrow Insights

Notes:

Past performance is no guarantee of future results, which may vary. All use is subject to terms of service.

Investing involves risk, including possible loss of principal. The value of the investments and the income derived from them may fluctuate over time.

All portfolio returns presented are hypothetical and backtested. Hypothetical returns do not reflect trading costs, transaction fees, or taxes.

The results are based on information from a variety of sources we consider reliable, but we do not represent that the information is accurate or complete.

The results do not constitute investment advice or recommendation, are provided solely for informational purposes, and are not an offer to buy or sell any securities.

The results are based on the total return of assets and assume that all received dividends and distributions are reinvested.

The annual results for 2017 are based on monthly returns from July to December

The annual results for 2021 are based on monthly returns from January to August

CAGR = Compound Annual Growth Rate

Stdev = Annualized standard deviation of monthly returns

Sharpe and Sortino ratios are calculated and annualized from monthly excess returns over risk free rate (3-month treasury bill)

Stock market correlation is based on the correlation of monthly returns

Drawdown analysis is calculated based on monthly returns excluding cashflows

The results assume semi-annual rebalancing of portfolio assets to match the specified allocation

Portfolio cashflows and rebalancing for quarterly and annual periods are aligned with calendar periods.

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