ANALYTICS INVESTMENT ADVISORS, LLC

# Massive Changes

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> " …*massive changes* are taking place in the United States… You can look at any number of issues: …energy, open southern border, ballooning national debt… and nobody seems to be doing anything about it…" [1]

**What?**

- The failures of the Biden administration are numerous, nefarious, and well documented[2], all apparently intended to reverse most of former President's accomplishments[3] and instigate policies and laws that will fundamentally change America". [4]

**Why?**

- The rationale for the policies referenced above is a topic for a different time and place, such as the recent tome by David Horowitz referenced in footnote 4.

**How?**

- While "What" & "Why" are important questions, "How" is the linchpin of successful investing.

- Accordingly, the following paragraphs outline a methodology that utilized momentum, "the premier anomaly of the efficient market hypothesis…" [5], during 2022 to create clarity and rational investment decisions to offset misguided administration misallocation of scarce resources that are having a significant long term negative domestic and global economic impact.

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[1] Dr. Benjamin C. Carson, former United States Secretary of Housing and Urban Development, *Newsmax*, Jeremy Frankel, December 22, 2022.

[2] A mandated report from the U.S. Department of Energy late December estimated a loss of 9.6 billion in economic benefits, along with 60,000 jobs, as result of the Biden administration revoking federal permits for the Keystone XL pipeline: Jay Clemons, *Newsmax,* January 2023.

[3] "We are not going to revisit the 2017 tax bill, which was an enormous success for the country, led us to the best economy in 50 years, fueled economic growth, and eventually reduced the national debt", Mitch McConnell, Senate Minority Leader, (R-KY), Washington DC.

[4] "Americans now speak in different and antagonistic political languages, and the parties are so polarized that the American way of life itself is at risk", Inside cover, David Horowitz, *Final Battle, The Next Election Could Be the Last,* Humanix Books*, 2022.*

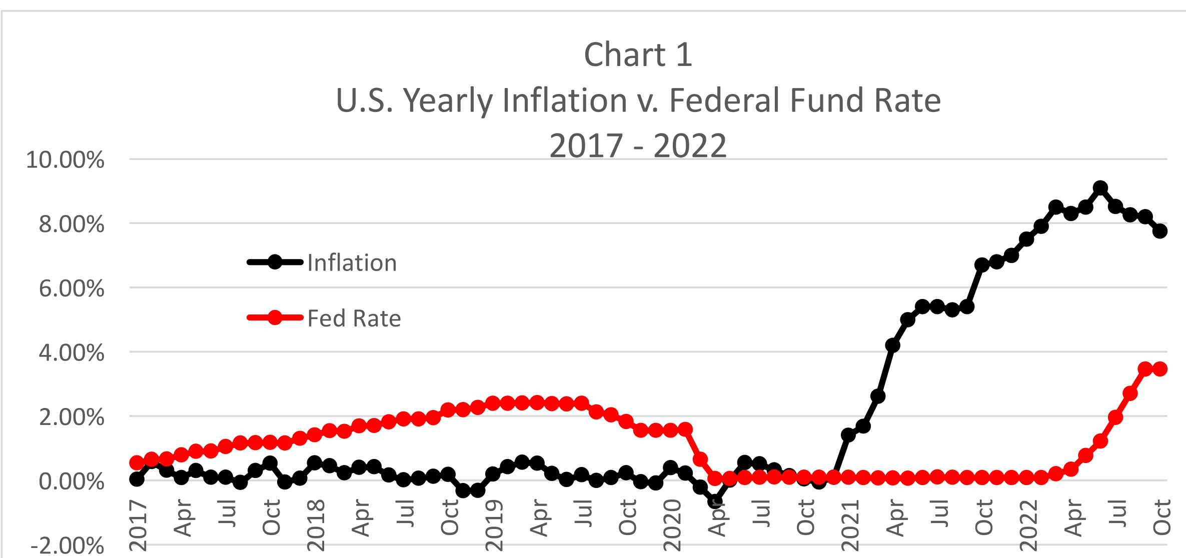
[5] Wesley R. Gray, and Jack R. Vogel, *Quantitative Momentum, A Practitioner's Guide to Building a Momentum-Based Stock Selection System",* John Wiley & Sons, 2016*,* p.62*.*

- Inflation, earnings, and the prospect of a recession will be the main determinants of the performance of equity and bond markets in 2023. The S&P500 (SPX), US Bond Index (BND) and Nasdaq 100 (QQQ) declined - 19.44%, -13.01% and -33.07%, respectively in 2022.

- The Federal Reserve began raising the Fed Funds rate at a rapid pace in April 2022 from .34%, when inflation had already risen to 8.3%. Unfortunately, prices peaked at 9.1% the same month and ended the year at 7,0%, while the Fed Fund rate remained at 4.71% (Chart 1).

- While this is the most rapid acceleration of rate hikes In decades, the magnitude is not likely to achieve the Federal Reserve goal of 2% by the end of 2024 for the following reasons: 1) "long and variable" lags which can last 2 to 4 years, and create the risk that central banks will have a tendency to ease off the monetary brake too soon, given that workers start losing jobs months and years before inflation returns to target levels; 2) for monetary policy to succeed as the only tool to curb aggregated demand, the Fed Fund Rate must be greater than inflation, which risks a deeper recession, and thus not a desirable option; 3) there are presently no aggregate supply side remedies such as reducing taxes, making corporate tax laws permanent, and/or increasing energy production being proposed, which would expand output while lowering prices and inflation; 4) the worst labor productivity decline since the 1970's in the second quarter of 2022 when output per hour in the nonfarm sector fell at an annual rate of 2.5% in the 3Q2022 (Chart 4) ; and, 5) continued irresponsible government spending supported by both parties[6] which will be a countervailing phenomenon vis a vis interest rate increases by the Federal Reserve.

- Given historically poor policy anticipation by the Federal Reserve between April 2017 to July 2019, when the Federal Reserve was raising rates when inflation was declining, and not raising rates until April 2020 when inflation was rampant and over 8% (Chart 1), does not engender confidence that the Federal Reserve policies will be effective against longer-term efforts to combat inflation. Hence, inflation levels currently being experienced by urban consumers depicted in Table 1 are likely to continue in 2023, and beyond.




[6] For example, the 1.7 trillion Omnibus bill with 7,300 earmarks passed prior to the end of 2022 by the U.S. Senate with Republican support.

## Table 1

Percentage Change Uban Consumers 2022

Bureau of Labor Statistics

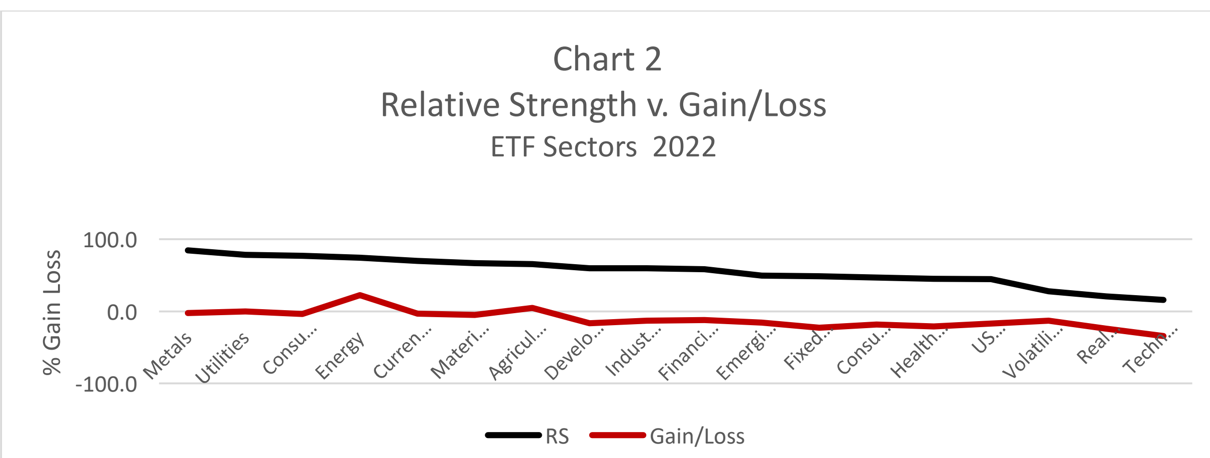
| | |
|---|---|
| All Items | **7.1%** |
| Food | **10.6%** |
| Food at home | 12.0% |
| Food away from home | 8.5% |
| Energy | **13.1%** |
| Energy Fuel Oil | 65.7% |
| Energy Motor Fuel | 59.9% |
| Energy Utility (piped | 38.4% |
| Energy Electricity | 13.7% |
| Transportation Services | **14.2%** |
| Airline Fares | 36.0% |
| Motor Vehicle Maintenance | 11.7% |
| Shelter | **7.1%** |
| Medical Services | **4.4%** |
| | |
| Average Annual CPI | **8.4%** |

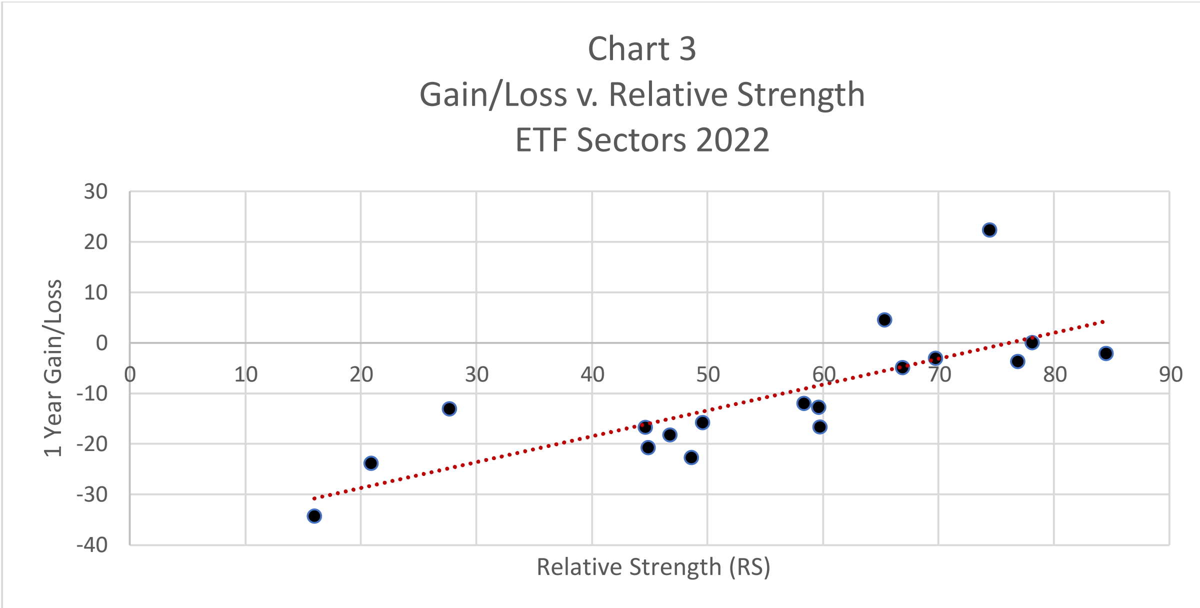
## Table 2

Return v. Relative Strength

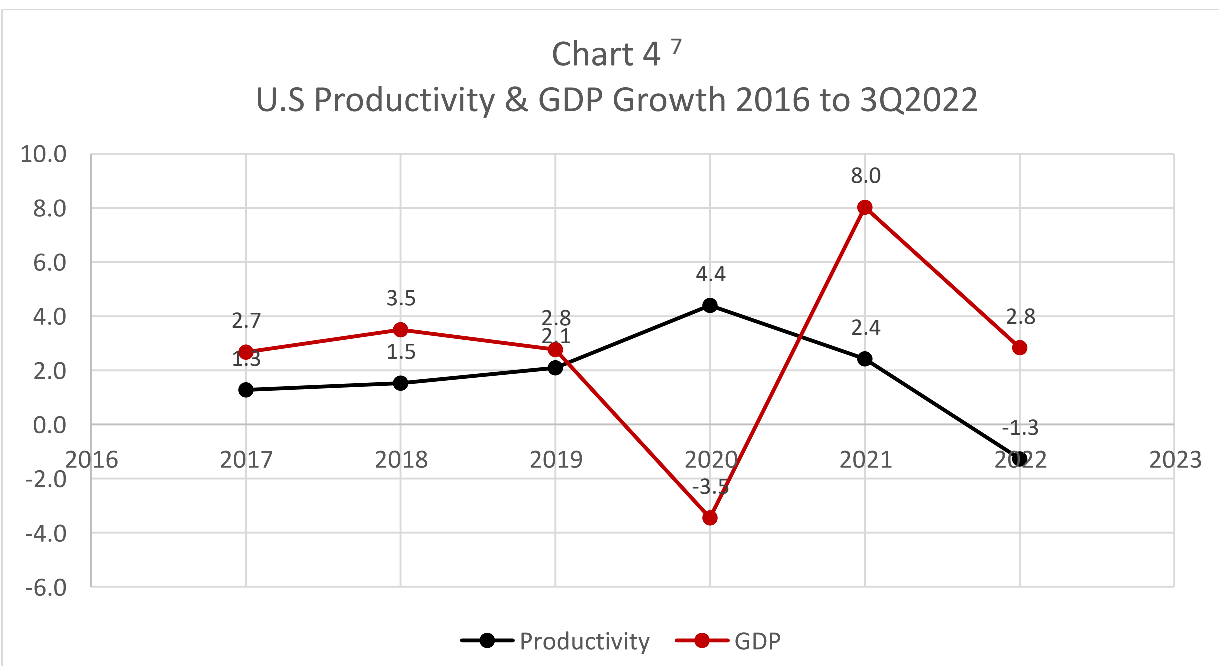
ETF Screen Sector Matrix 1 5 2023

| Sector | RS | Gain | Funds |
|---|---|---|---|
| 1.Metals | 84.5 | -2.07 | 41 |
| 2.Utilities | 78.1 | 0.09 | 15 |
| 3.Consumer S | 76.9 | -3.69 | 46 |
| 4.Energy | 74.4 | 22.35 | 69 |
| 5.Currency | 69.8 | -3.06 | 15 |
| 6.Materials | 66.9 | -4.89 | 39 |
| 7.Agriculture | 65.3 | 4.58 | 12 |
| 8.Developed | 59.7 | -16.66 | 365 |
| 9.Industrial | 59.6 | -12.72 | 84 |
| 10.Financial | 58.4 | -11.96 | 37 |
| 11.Emerging | 49.6 | -15.73 | 170 |
| 12.Fixed Inc | 48.6 | -22.7 | 424 |
| 13.Consum D | 46.8 | -18.23 | 133 |
| 14.Health Care | 44.9 | -20.72 | 51 |
| 15.US Bond | 44.6 | -16.68 | 379 |
| 16.Volatility | 27.7 | -13.01 | 6 |
| 17.Real Estate | 20.9 | -23.85 | 42 |
| 18.Technology | 16.0 | -34.26 | 129 |
| | | | ------ |
| Total | | | **2,057** |






Return = -38.45 + .5071 * RS ; $R^2$ =.624; Correlation =.788
t-Value (6.69) (5.16)




[7] A linear regression model containing 50 yearly observations of GDP & Productivity between 1967 and 2016, was statistically significant, and that for every 1% increase in productivity there was on average a 1.2% increase in GDP (t=9.810, $R^2$ =.662). See AIA, LLC Commentary, "Labor Productivity and GDP Growth", April 5, 2017.

- Productivity is the arbiter of price levels. The inflationary impact of the Federal Reserve adding $6 trillion to its balance sheet will discourages reinvestment in plant, equipment, infrastructure, and worker training, reducing productivity, lead to declining secular demand, and lower universal standard of living (Chart 4).

- Taking the above changing economic and structural changes in the U.S. economy into consideration from an investment perspective, it was determined at the beginning of 2022 that a more defensive ETF investment approach was needed to accommodate slower growth and elevated price levels. Relying on proven statistically significant relationship between Return v. Relative Strength, the energy sector was an obvious choice (Table 2).

- The slope of the Return v. Relative Strength (RS, momentum) equation is .5071 indicating that for every 1% increase in RS there was on average a corresponding .5% increase in Returns; somewhat higher than previous equation estimates (.20% to .30%) due to the highly structured nature of the sectors (only Energy 22.35% and Utilities .09% earned positive earnings of 18 sectors in 2022 (Table 2).

- Accordingly, the risk return profiles, and strategic allocations were modified to approximate the outcome of the S&P 500 (SPX), using energy (IXC) [8] as a defensive and income ETF for significant portions of all strategic allocations, the results of which conform to the desired outcomes depicted in the YTD and Historical Performance Summary on the following page.

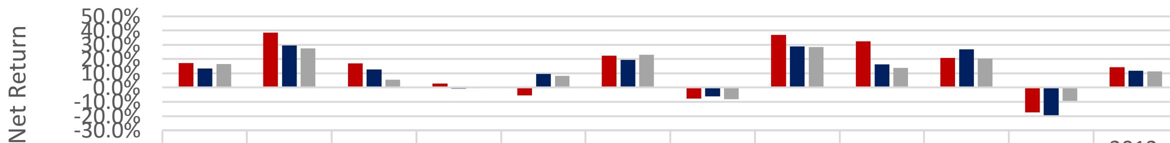
- A summary workflow of the attendant investment model follows:
    - Start with a good benchmark to complement investment objectives.
    - Use ETFScreen Relative Strength tables for initial sector and ETF selection.
    - Keep portfolios simple with no more that 5 exchange traded funds.
    - Begin with the end in mind by replicating optimal allocation simulations consistent with desired performance, acceptable risk, and attention to sound economic fundamental and technical principles.
    - Buy, don't hold.
    - Monitor and repeat.

[8] IXC is a global energy exchange traded fund with a Relative Strength of 98, 42% market return, 9.6% dividend, P/E Ratio 8.06, Beta 1.3 during calendar year 2022.

# Performance Summary[9]

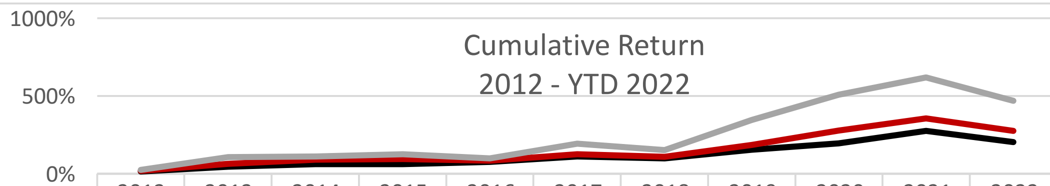
| | 2012-22 Avg. | YTD[10] 12/30/2022 | Beta | $R^2$ | SD | Sharpe Ratio |
|---|---|---|---|---|---|---|
| S&P500 ($SPX) | 14.97% | -19.44% | | | | |
| US Bond Index[11] | *2.05%* | *-13.01%* | | | | |
| | | | **Risk Statistics** | | | |
| Moderate | 12.55% | -10.90% | 1.09 | 77 | 25.32 | .54 |
| Assertive 1 | 14.27% | -17.45% | 1.37 | 81 | 31.75 | .68 |
| Assertive 2 | 21.51% | -22.02% | 1.21 | 76 | 29.00 | 1.05 |
| Aggressive | *23.93%* | *-20.80%* | *1.40* | *64* | *36.77* | *.54* |

Yearly Net Return
2012 -2022




| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2012-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Assertive1 | 17.1% | 38.4% | 16.9% | 2.9% | -5.6% | 22.4% | -7.8% | 37.0% | 32.4% | 20.8% | -17.4% | 14.3% |
| SPX | 13.4% | 29.6% | 12.6% | -0.7% | 9.5% | 19.5% | -6.2% | 28.9% | 16.3% | 26.9% | -19.4% | 11.8% |
| MSCI World | 16.5% | 27.4% | 5.5% | -0.3% | 8.2% | 23.1% | -8.2% | 28.4% | 13.8% | 20.3% | -9.4% | 11.4% |

Cumulative Return
2012 - YTD 2022




| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S&P500 | 13% | 44% | 62% | 61% | 76% | 110% | 97% | 154% | 196% | 275% | 202% |
| Assertive 1 | 17% | 62% | 89% | 95% | 84% | 125% | 108% | 184% | 276% | 355% | 275% |
| Aggressive | 23% | 107% | 111% | 124% | 98% | 193% | 152% | 345% | 507% | 618% | 469% |

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[9] Moderate: Prudent investors desiring portfolios designed to accomplish medium long-term return. Calculated risk is acceptable to achieve good returns. Assertive 1 & 2: Investors with sufficient income to invest mostly in capital growth. Higher volatility and more aggressive investments are acceptable to accumulate wealth in the long run. Aggressive: Investors intending to compromise portfolio balance in pursuit of higher long-term returns. Security of capital is secondary to potential wealth accumulation.

[10] Net Average Return, Portfolio Center, Schwab Portfolio Technologies. Fees are negotiable and range between .5% to 1.0% per year for assets under management. Risk Statistics, Morningstar Advisor Workstation; most recent 3 years, computed quarterly.

| | |
|---|---|
| Beta | Expected change in portfolio return per 1% change in market index return. |
| $R^2$ | Percent of variation in regression equation explained by the independent variable (S&P500). |
| SD | Standard deviation of the dependent variable (Net Return). |
| Sharpe | Reward-to-Variability Ratio, i.e., portfolio return above risk free rate of return divided by standard deviation. |

[11] Vanguard Total Bond BND.