ANALYTICS INVESTMENT ADVISORS, LLC

Year 2020 in Retrospect and Future Implications

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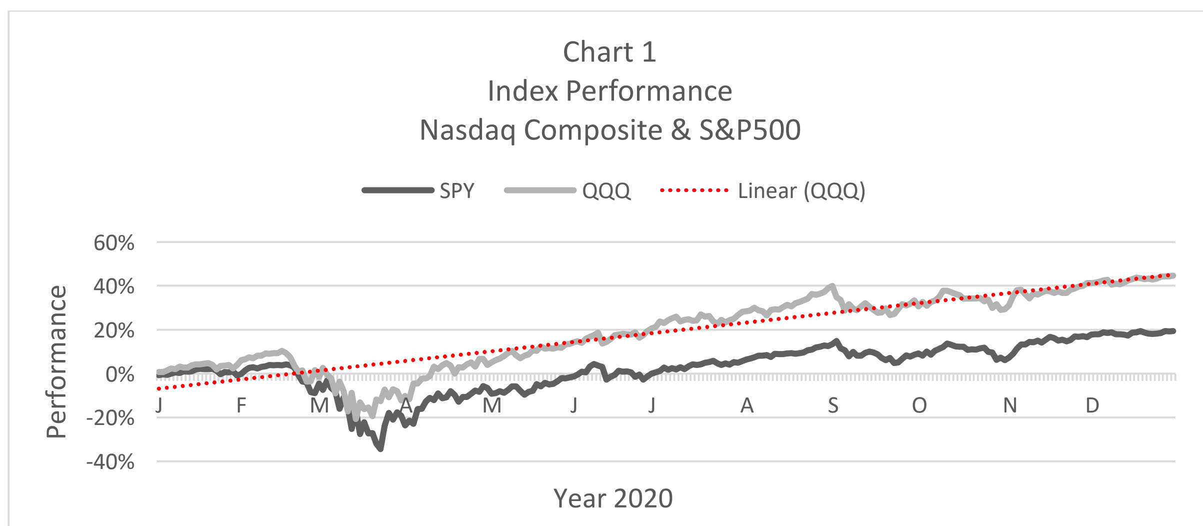
January 8, 2021

What?

Year 2020 began as 2019 ended; good prospects for growth, low unemployment, miniscule inflation, all of which was jeopardized in the first quarter due to a catastrophic Covid-19 pandemic which has killed more than a million people world-wide, halted businesses and travel and wreaked havoc on the U.S. economy. However, to the amazement of most, the U.S. equity market turned out to be a stellar new bull market where the Nasdaq Composite grew 44%, its best year since 2009, and the S&P 500 boasted a new year end high of 16.3% (Chart 1).



Why?

- The Federal Reserve massive stimulus injections, and later news of a vaccine, stoked simultaneous rallies in multiple markets.
- A pandemic is a supply side phenomenon (natural disaster) , which typically induce V-shaped recoveries, rather than longer recessions that impact demand with rising interest rates, and/or stressed financial markets when the disaster ends.
- Leveraged options rose to the highest level on record (since 1973) with 30 million daily contracts compared to 19 million per day in 2019, according to the Options Clearing Corp.
- Equity markets tend to look beyond present market behavior and anticipate conditions that are likely to transpire in six months to a year. So, when the prospect of Covid-19

vaccines by December became evident, investors imagined an economic recovery within a relatively short and predictable time frame.

- Defying expectations, investors aggressively pursued initial public offerings (IPOs) at a record rate, the momentum for which is still palpable. According to Dealogic, companies raised $167 billion through 454 offerings on the U. S. exchanges through December 24th 2020, compared to the previous full-year record of $108 billion at the height of the dot-com boom in 1999.
- Investors are more comfortable taking additional risk given the continuing decline in bond yields.
- Many retail and institutional investors engaged in momentum trading, buying companies that have risen sharply[1]. According to FactSet data, exchange traded funds employing momentum strategies was the highest in a decade.

What?

With the Covid-19 pandemic and resulting financial crisis, investors that sold on the bad news and waited for the economy to recover, probably missed the market rebound.

Why?

- History demonstrates that investors are typically not better off trying to time the market. According to a recent Fidelity Investments, Inc analysis, the returns of a hypothetical investor who put $10,000 into a fund between 1980 and 2020 would have grown to $700,000 if fully invested, $420,000 having missed the 5 best days, and $300,000 lacking the 10 best days.
- Many trading errors are the result of investors acting on emotion rather than logic; "recency bias" being an example where one allows recent trading decisions to inordinately influence ongoing investment decisions.

What?

Despite slowing job growth, wilting consumer spending, and continued spreading of Covid-19 raising the prospect of crippling new lockdowns, there is growing potential for another favorable U.S. economy in 2021.

Why?

- The widespread and long lasting Covid-19 tragedy is not over. While there was a V-shaped recovery beginning late March and early April, the pandemic is still not under control, and various restrictions and social distancing are continuing to stifle consumer

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[1] Not surprising given that "momentum" or "relative strength" is acknowledged to be the king of anomalies to the efficient market hypothesis (EMH). Also, independent studies have demonstrated statistically significant return elasticities relative to momentum (see AIA, LLC Commentary, "Momentum Investing with Exchange Traded Funds-Recap & Update", Richard C. Hoyt, October 8, 2018 in which four published research papers which includes independent regression analyzes using data between 1930 and 2018 which concludes that for every 10% increase in relative strength (RS) there has been "on average" a corresponding to an approximately 3% increase in yearly returns.

freedom and spending. Assuming, therefore, that most of the U.S. population will be vaccinated by the end of the year, it is not unreasonable to expect renewed social mobility, improved consumer spending and 5% GDP growth.

- Fiscal stimulus will continue to enhance market liquidity and corporate profitability. While state and local government did not receive the financial assistance they were expecting from the federal government, $122 billion of the recent fiscal package is earmarked for schools, higher education, vaccine distribution, transit systems and virus tracing.
- The Federal Reserve commitment to keeping interest rate near zero until unemployment drops to pre-pandemic levels. The degree to which increasing supply continues to create its own demand will help obviate a rapid return of inflation.
- The technology sector will continue to dominate IPO activity and enhance productivity. The appetite for newly listed technology stocks has been so striking that some companies have delayed plans to go public to gain a better understanding how to price their shares.
- Chapter 11 filings by business are up, but well below levels reached in previous recessions. While certain jobs and businesses destroyed during the pandemic are gone forever, a rapid recovery this year offers hope that those currently unemployed will avoid long-term joblessness, and new businesses will emerge.
- The price relationship between QQQ and SPY in Chart 1 is revealing for several reasons. One, the trend line for QQQ explains 84% of variability in 2020 and continues to confirm an upward trend. Second, the disparity between QQQ, as representative of the technology sector, and SPY, the overall market, is 16.6% and diverging[2], providing independent support for continued appreciation and superior QQQ performance.

How?

- It is hard to imagine how the U.S. economy will continue to engender: robust GDP growth, solid labor productivity, low unemployment in every gender and racial cohort, competitive trade agreements, border security, military deterrence, and energy independence, given the campaign promises and rhetoric of the new administration.
- Regardless of how the above long-term outcome and adjustment might regrettably be, the inevitable nature and degree of adjustment and reallocation of scarce resources will provide new sector investment opportunities.
- Use the benefits of exchanged traded funds (ETFs) to design optimal and efficient investment allocations that best suit one's long-term goals in conjunction with Relative Strength, Beta, Standard Deviation, and Sharpe Ratios to design, implement and monitor investment portfolios consistent with specific monetary and temporal objectives.[3]

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[2] Regression Equations: QQQ=-10.62 +.0014*Day (T-Value 36.24 R^2=.84); SPY =-5.87 + .0008*day (T-Value 17.76, R^2=54), N=248. Two Sample T-Test: Mean Difference 16.6 (T-Value 13.16), N=248.

[3] See, *Quantitative Momentum – A Practitioner's Guide to Building a Momentum-Based Stock Selection System,* Wesley R. Gray and Jack R Vogel, John Wiley and Sons, 2016; and, *Dual Momentum Investing – An Innovative Strategy for Higher Returns with Lower Risk*, Gary Antonacci, McGraw Hill, 2015.

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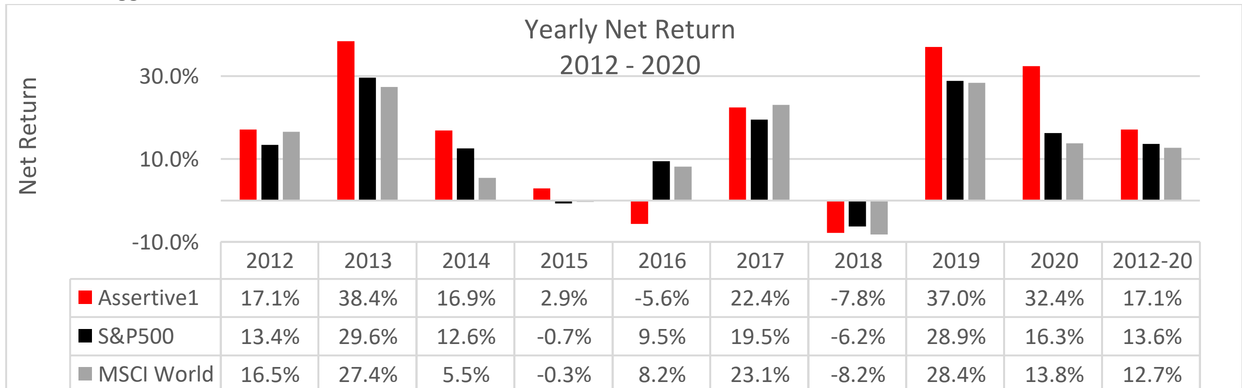
Performance Summary[4]

	2012-20 Avg.	YTD[5] 12/31/2020	AUM	Beta	R^2	SD	Sharpe Ratio
S&P500 ($SPX)	**13.60%**	**16.26%**					
Barclay US TR[6]	**3.43%**	**7.36%**					
Moderate	14.87%	27.77%	20%	1.10	96	21.12	1.06
Assertive 1	17.07%	32.35%	37%	1.26	97	24.04	1.05
Assertive 2	22.81%	40.04%	18%	1.52	99	28.81	.95
Aggressive	27.06%	46.04%	25%	2.20	92	43.13	1.33



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2012-20
Assertive1	17.1%	38.4%	16.9%	2.9%	-5.6%	22.4%	-7.8%	37.0%	32.4%	17.1%
S&P500	13.4%	29.6%	12.6%	-0.7%	9.5%	19.5%	-6.2%	28.9%	16.3%	13.6%
MSCI World	16.5%	27.4%	5.5%	-0.3%	8.2%	23.1%	-8.2%	28.4%	13.8%	12.7%

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

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[4] **Cautious:** Investors seeking better than nominal returns, but with low risk and emphasis on wealth preservation. **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.

[5] 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 (RVAR).

[6] XIUSA000MC.