Miller CAPITAL

Investment Advisor

CONVERSATIONS ON INVESTMENT MANAGEMENT

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CONTENTS

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"Investment is most intelligent when it is most businesslike."

-- THE INTELLIGENT INVESTOR, PROFESSOR BENJAMIN GRAHAM --

Investment portfolios have a life expectancy. With interest rates at much lower levels compared to the last forty years, portfolios with meaningful fixed income allocations face a far different future.

Several extreme events, beginning in 2008/2009 with the Global Financial Crisis through the current Covid-19 Crisis [and others in between], have made changing out of pro-longed financial deadlock difficult for many investors, hurting their portfolio's financial strength and life expectancy. This issue of *Investment Advisor* provides thoughts on this topic, along with other investment insights.

Personal Reflections - Changing Out Of Financial Deadlock

Sometimes it takes an honest, in-depth review of one's future to take a bold step. Applying that concept to investment portfolios, investors cannot remain in "financial deadlock" too long, unable to make decisions, or they will end up with a portfolio that cannot adequately provide for their future.

Uncertain economic and geopolitical outlooks can make investment decision making difficult; that is understandable. Yet there is always uncertainty and not making a decision is, in fact, making a decision.

- Successful investing requires an open, informed mind, prepared to make key decisions.
- Preparation is the activity that provides the capability and then the confidence to change, even in the face of uncertainty.
- Preparation is often the next best step, when the next decision is unclear as to direction and timing.
- Change must not be irrational, either in direction or timing. Irrational change can be just as harmful as financial deadlock.
- Important, consequential changes must be made carefully, because mistakes can be very costly.

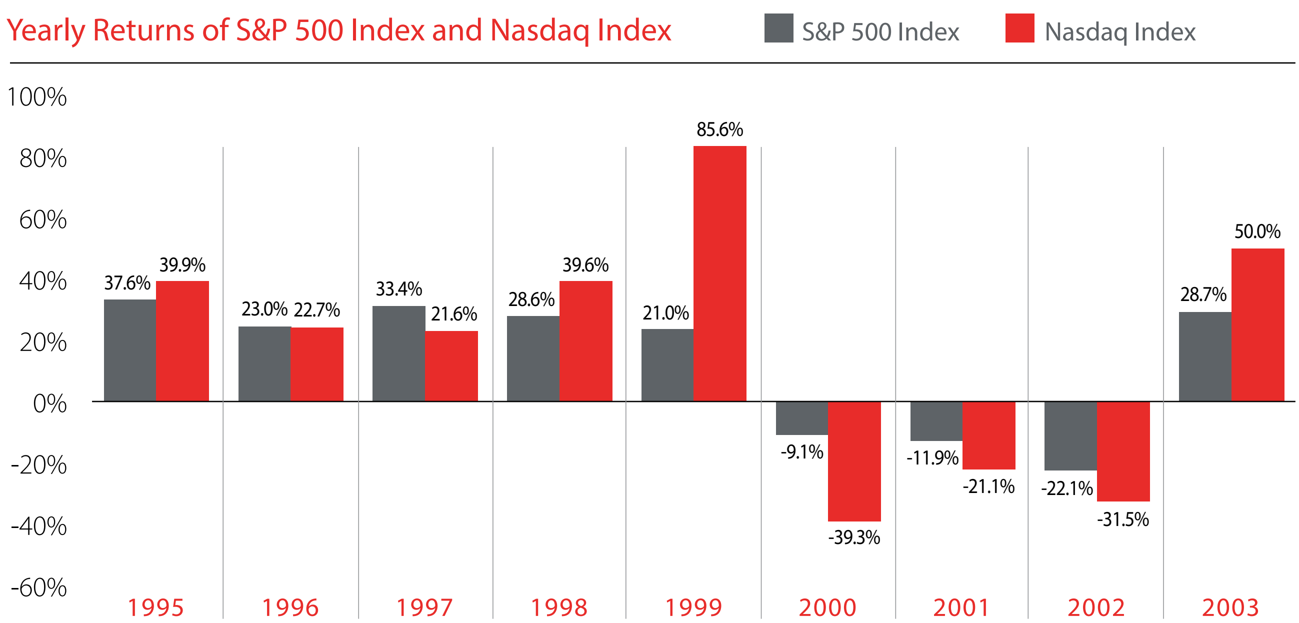
We are always making investment decisions, either by action or inaction. But a lack of preparation is never a good place to be.

"Opportunity comes to the prepared mind." **CHARLES MUNGER**

Party Like It's 1999?

1999 was quite a year, with speculation and euphoria in nearly all equity markets. Leading up to 1999, the previous four years [1995 to 1998] had outstanding equity returns, with the S&P 500 Index up 37%, 23%, 33% and 29%, respectively. The S&P 500 Index return of 21% in 1999 was more of the same, but it was the 86% return for the technology heavy Nasdaq Index that captured the attention of investors in 1999.

Yearly Returns of S&P 500 Index and Nasdaq Index



THE CRASH THAT FOLLOWED. Then came the crash over the next three years, starting in early 2000:

- It wasn't just the tech heavy Nasdaq Index that crashed, it was also the S&P 500 Index.
- The Nasdaq Index declines were disastrous, but most investors in the Nasdaq Index should have assumed the risks were very high.
- Many non-tech stocks in the S&P 500 Index became quite overvalued.
- However, a major reason for the S&P 500 Index crash was its very heavy allocation to tech stocks.
- The S&P 500 Index declines were devastating for many investors who did not appreciate how "tech heavy" and expensive the S&P 500 Index had become, as evidenced by companies like JDS Uniphase [see below].
- The bear market was not over quickly, but was a deep, prolonged decline.
- Many poorly positioned investors were unwilling to re-invest in equities after being overexposed to technology and internet stocks. As a result, their equity losses became somewhat permanent.

THE CASE OF JDS UNIPHASE. JDS Uniphase was a tech stock darling from 1994 through 2000, and is a perfect example of how the risk level of the S&P 500 Index increased dramatically in 1999 and 2000.

- In 1994, JDS stock traded at just 25 cents per share but hit an all-time high of $1,054 in February 2000.
- The stock price of JDS increased by nearly 10 times from early 1999 to early 2000.
- When JDS was added to the S&P 500 Index in July 2000, it was a Top 30 U.S. public company by value.
- JDS was added to the index for a variety of reasons, but most likely it had become too large to exclude.
- JDS had numerous buy ratings near its peak, and when its addition to the S&P Index was announced.

Just 500 days from its all-time high in February 2000, JDS Uniphase's stock had imploded:

- The stock lost 99.9% of its value.
- Its stock price never recovered.
- In December 2013, JDS was removed from the S&P 500 Index; its market value being too low.

IS HISTORY REPEATING ITSELF TODAY, JUST LIKE 1999? We think there are many differences between today and 1999/2000, but investors should always know what investments they own and why, even if they have an investor advisor. With the S&P 500 Index being such a popular investment, it is more important than ever to understand what is owned by any index fund owned in an investment portfolio. For example:

- Tesla is being added to the S&P 500 Index on December 18, 2020.
- Tesla stock has increased in value by 855% during the last one year [ending 12/8/2020].
- Tesla will be the 6th largest stock in the S&P 500 Index [by market value].
- The five largest stocks in the Index are Apple, Microsoft, Amazon, Alphabet [Google], and Facebook.
- The six largest stocks in the S&P 500 Index, including Tesla, will be nearly 24% of the S&P 500 Index.
- The six largest stocks will have about the same value as the 386 smallest stocks in the S&P 500 Index.
- The Technology and Communications sectors will be nearly 40% of the S&P 500 Index, not including Amazon and Tesla, which are in the Consumer Discretionary sector.

S&P 500 Index [as of 12/4/2020]

COMPANY	% OF INDEX	S&P SECTOR
Apple	6.5%	Technology
Microsoft	5.4%	Technology
Amazon	4.5%	Consumer Discretionary
Alphabet [Google] Class A & C	3.6%	Communications
Facebook	2.2%	Communications
Tesla [estimated upon addition]	1.8%	Consumer Discretionary
Total	**24.0%**	

OUR VIEW: Investors should know what they own and why. They should never invest blindly in any security, product or asset, no matter who promotes it or vouches for it. Investing in an index can be very useful in an investment plan. However, sometimes an index can take on risk characteristics that must be mitigated against, or offset with other portfolio holdings.

Even sophisticated investors can disagree on the proper use of index funds, as is the case with Warren Buffett and his long-term partner, Charlie Munger. We have written on this issue previously in *Investment Advisor* [Second Quarter 2017, Page 5], available on our website [millercapital.com] under Resources.

Asset Allocation And Low Fixed Income Yields

In the last three issues of *Investment Advisor*, we've discussed the impact of lower interest rates on investment portfolios. If fixed income returns are much lower than in the past, portfolios with a significant allocation to fixed income will not achieve the same returns from yield, unless other asset classes make it up for it.

We recently completed a study for all clients, with the following components:

- Reviewing estimated returns in their original Investment Strategy, compared to estimated returns using lower fixed income returns.
- Calculating the additional return that must be earned by equities and other asset classes [holding allocations steady], or the additional allocation that must be allocated to those asset classes [holding estimated returns steady].
- Evaluating the portfolio's required and desired returns compared to changes that might be considered in the Investment Strategy, or the lower estimated returns if no changes are made.

The impact of lower fixed income returns on portfolio returns affects the lives of clients and trust beneficiaries.

- Everyone should be reviewing their investment strategy faced with these realities.
- This is an important issue investors should deal with this sooner rather than later.
- It is a required step [in our opinion] for any person or institution serving as a fiduciary trustee.

Investment Insights

On Public Debt and Money Supply

The U.S. money supply [known as M1] has increased by 55% since February 2020. As a result, nearly 35% of all U.S. dollars in existence have been created in the last ten months. **Federal Reserve: M1 Money Stock.**

The U.S. has increased its debt by 170% since 2008 and expanded the money supply four-fold in the same time frame. During this time, the 10 Year U.S. Treasury Bond has declined from 4.10% to .90%. **Federal Reserve: Total Public Federal Debt and M1 Money Stock.**

"It was just a decade ago that the yield on Portugal's 10 Year Bond rose above 15%, on fears the country would crash out of the European monetary union. The European Central Bank's massive presence in the euro sovereign bond market and the promise of pan-European fiscal transfers have done marvels for Portugal's public finances. The yield on Portugal's 10 Year Bonds dipped below 0% for the first time [last week]". **Gavekal Research, 12/7/2020.**

OUR VIEW: Lower interest rates are a natural result of demographic changes and lower economic growth [see below], but clearly central banks and governments are artificially suppressing interest rates for low quality borrowers, both at the government and corporate level. However, we believe the forty-year decline in interest rates is not caused primarily by central banks, but larger demographic and economic trends.

On Changing Demographics and Investment Implications

"The number of children younger than 5 years was forecasted to decline from 681 million in 2017 to 401 million in 2100, a drop of 41%. At the same time, the number of individuals older than 80 years was forecasted to increase from 141 million in 2017 to 866 million in 2100. In 1950, 25 births occurred for every person turning 80 years old; in 2017, that number was seven and in 2100, we forecasted one birth for every person turning 80 years old.

Population decline and associated shifts in age structure in many nations might have other profound and often negative consequences. In 23 countries, including Japan, Thailand, Spain, and Ukraine, populations are expected to decline by 50% or more. Another 34 countries will probably decline by 25% to 50%, including China, with a forecasted 48% decline. These population shifts [by 2021] have economic and fiscal consequences that will be extremely challenging. With all other things being equal, the decline in the numbers of working-aged adults alone will reduce GDP growth rates." **Institute for Health Metrics and Evaluation, 7/14/2020.**

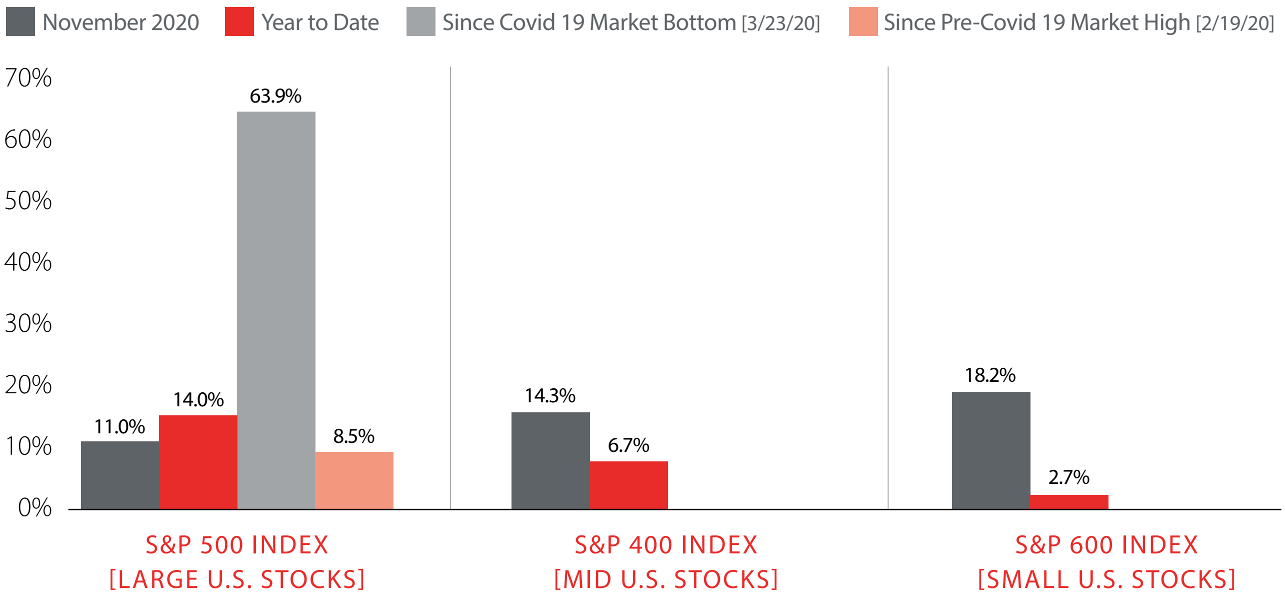
OUR VIEW: We whole-heartedly agree with the last sentence above, which comes from one of many studies forecasting dramatically slower population growth. In our opinion:

- The causation of lower interest rates is heavily tied to the decline in the numbers of working-age adults [labor force], which is tied to population trends [demographics].
- Many countries are already experiencing declining population today [de-population] while most others are experiencing dramatically slower population growth, especially in the size of the labor force.
- The United States is a very powerful exception in that we have a much higher birth rate and a forecast for strong population growth over the next several decades, although an aging population.
- An aging and slower growing global population has significant investment implications.

On S&P Index Returns

November 2020 was one of the best months for U.S. equity returns, with returns of 11% to 18% depending on the type of stock index. International and emerging market stocks posted similar returns. For the year to date, U.S. equity index returns are all positive.

2020 Market Returns [%] - U.S. Equities



** Year to date returns for 2020 [ending 11/30/2020]*

As shown above, since the Covid-19 market bottom on March 23, 2020, the S&P 500 Index return is 63.9% through November 30, 2020. Even since the market high just before Covid-19, the S&P 500 Index return is 8.5%. It has been a positive year despite the health and economic realities in 2020.

Here are some statistics of market returns this year [as of 11/30/2020], and our comments on their relevance:

- There is tremendous focus on the S&P 500 Index, but it is worth considering the much higher mid cap and small cap index returns over the last 20 and 25 years. Over the last twenty years, the cumulative return of the S&P 600 Index [small cap] is 569% compared to 309% for the S&P 500 Index [large cap].

Cumulative Returns [11/30/2020]

	S&P 500	S&P MidCap 400	S&P SmallCap 600
12 Months	17.46%	9.70%	5.81%
3 Years	44.94%	19.99%	14.84%
5 Years	92.44%	61.04%	57.52%
10 Years	277.03%	197.33%	206.60%
15 Years	295.92%	271.33%	254.05%
20 Years	**308.66%**	499.80%	**569.13%**
25 Years	861.56%	1306.90%	1044.31%

- Since 1990, dividends comprised nearly 30% of these returns while the other 70% of returns were from price appreciation. Even among technology stocks, the best performing sector, dividends comprised nearly 10% of the total annual return.
- In 2020, dividend paying stocks were poor performers. Of the 500 stocks in the S&P 500 Stock Index, the 385 companies that pay dividends returned just 3.64% year to date. The 115 companies that do not pay dividends returned a whopping 20.28% year to date. This difference in performance is attributable to growth stocks that tend to pay lower or no dividends.
- The stocks driving the strong performance of the S&P 500 Index year to date [through 11/30/2020] continue to be the larger growth stocks [see company stock returns in table below]. This has been the case for several years, but poses greater risk as the index becomes more dominated by fewer companies.

Apple	63.6%	Alphabet Class A	31.0%
Amazon	71.5%	Alphabet Class C	31.7%
Microsoft	37.2%	Netflix	51.7%
NVIDIA	128.1%	Adobe	45.1%
Facebook Class A	34.9%	Tesla [Index entry 12/18/2020]	578.4%
PayPal	99.0%	**S&P 500 Index**	**14.0%**

On Artificial Intelligence and Semiconductors

"To improve the quality of artificial intelligence [AI], you have to increase the amount of data you use to train the model. In essence, if you train an algorithm with 10x the data, the quality of the algorithm doubles. So, you get these feedback loops: If you have a great product like a search engine, more people use it, you get more data, the product gets better, even more people use it and so forth. The primacy of data for AI quality means that some of these companies are truly unique because their competitive advantage is not just growing every year, it's literally growing every second.

AI, because data quantity is so important for quality, is much more semiconductor intensive. AI is all about semiconductor brute forces. The semiconductor intensity of global GDP will rise significantly as AI rises, and it's happening against the backdrop of a very consolidated industry." **Atreides Management, 11/3/2020.**

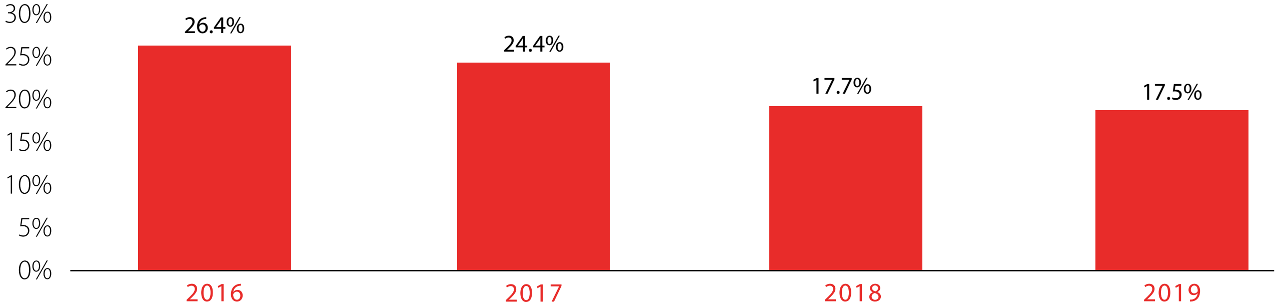
OUR VIEW: The tremendous strategic importance of the semiconductor industry has been masked by disruptions over the last three years, starting with the China tariff disputes and the Covid-19 crisis.

- Of late, this strategic importance has been recognized by the increase in market value of most companies in these sectors.
- There will be winners and losers in the industry, despite its growing strategic importance to the global economy.

On the Substantial Decline in Corporate Income Tax Rates

Several factors impact the value of an asset, whether it be a private company, publicly traded stock, real estate or other alternatives; interest rates, free cash flows, marketability, liquidity, and income tax rates, to name a few. Since corporate tax rates were decreased beginning in 2017, the effective income tax rate has dropped dramatically. This tax decrease then increases the after-tax income and cash flow available for dividends, buybacks, debt reduction and expansion.

Effective Income Tax Rates: S&P 500 Companies



OUR VIEW: There is no doubt that lower corporate income taxes have increased after-tax earnings and free cash flow. This has created substantial benefits for shareholders and debt owners of companies that have responsibly used this additional cash.

On Wireless Data and Fiber Trends

"The impact on wireless networks from the persistent 30% plus annual growth in mobile data demand is staggering. The amount of wireless data used in 2019 was 96 times greater than the data demand is in 2010. The world is continuing to move toward wireless. The amount of data traffic is growing at an unbelievable pace.

It also highlights the necessity of everything in the network being connected by fiber, both small cells, macro sites, edge compute. And I think it's another indication of the necessity and the importance of fiber in the next-generation of wireless networks." **CEO of a Public Company in the Wireless Services Industry, 10/22/2020.**

OUR VIEW: As with many industries experiencing strong growth in volumes and/or revenues, the investment case depends on valuations paid for the investment opportunity. We see large discrepancies in the valuation of certain investment opportunities in this area of wireless data and fiber optic networks.

On Hydrogen Becoming A Major Focus in Meeting Green Energy Goals

Large amounts of capital will be directed to hydrogen projects globally, as countries and companies strive to reduce their carbon emissions. From brown, to gray, to blue, to green hydrogen, more will be written and discussed in this growing sector. The investment is already starting, but projects will not be completed for a few years.

OUR VIEW: If the opportunity is as large as projected, there will be some key winners in this sector. However, it will be a lengthy process.

ABOUT MILLER CAPITAL

- Miller Capital was established in 1999 and is independently owned and operated.
- We are a Registered Investment Advisor.
- We offer both investment management and investment consulting services.
- We represent individuals, corporations, investment partnerships/companies, and private trusts [serving individual and corporate trustees].

CAUTIONARY DISCLOSURE