Graduate Student Managed Fund

Fall 2017 Report

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Dear Investment Advisory and UConn Foundation Board Members,

The Graduate Student Managed Fund Team would like to first off thank you all for the opportunity presented to us over the past three months. It is a tremendous privilege to be trusted and able to serve the greater UConn Community in this fashion. Each of us will be able to leverage the knowledge gained from this experience for the rest of our lives, whether it involves the fundamentals of finding and investing in a security, or learning to work together as a team to reach a common goal. Being in school full-time does not often give us the chance to leverage our classroom learning in a real-world experience, however this changes that paradigm.

Of course this entire experience would not be possible for the time and dedication of you! Whether it is attending these semi-annual meetings, or taking time out of your busy schedules to come speak to us, advise us, and guide us, we cannot thank you enough.

While managing a portfolio has its ups and downs, we hope that with this report you are able to gain valuable insight into our thought process and what went into our current selections.

It is a great honor and we look forward to continuing to exceed your expectations in the coming months.

Sincerely,

Avinash Chugani

Cheng (Ted) Jin

Chenguang (Tom) Yang

John Lundeen

Junfeng (Rider) Peng

Myungsung (Ming) Noh

Parin Shah

Sergio Garcia

Tim Garaffa

Xiaoru (Ryan) Cui

Executive Summary

Benchmark and Style:

- The S&P 500 is the fund's benchmark, specifically the SPDR S&P 500 ETF Trust (SPY). Accordingly, the fund is structured as a mid- to large-cap value portfolio. However, given that the market is at an all-time high, we do consider growth, small cap and fixed income securities.

- The fund is welcome to invest in any U.S. based security, including fixed income assets, however we have thus far made the decision not to invest. This is because interest rate hikes are still not growing at the pace at which the S&P 500 is growing. As interest rates continue to move higher, this may be a potential area to find more value.

Philosophy and Strategy:

- Our team seeks undervalued assets with stable, easy to understand business models; strong balance sheets and future cash flows and if applicable, consistent dividends.

- We deployed a strategy that revolved around a bottom-up investment approach. We conducted a fundamental analysis of the individual securities, including calculating the intrinsic value, evaluating risk exposure, and understanding their core business model.

Process:

- As each of our members have previously worked in diversified industries, we relied on our previous knowledge to assign each manager an S&P sector to research and establish an overall view of the market.

- We used absolute as well as relative valuation methodologies such as discounted cash flow, dividend growth and multiples valuation analyses to establish individual security's intrinsic value relative to their current market price.

- Each pitch is done with a thorough analysis presented to the other fund managers, coupled with a detailed one-page report highlighting financials, relative valuations and risk profile of the security.

- To reach the prospectus outlined 80% threshold approval, eight out of ten members must vote YES to invest in the recommended security.

Economic and Market View:

- We believe that the U.S. economy and market is in a mid-expansionary cycle.

- While the United States is reaching near full employment, wage and price inflation remain in check and default rates are still low. Companies are beginning to really invest, and the expected tax overhaul will continue to fuel growth for years to come. While factors such as Geopolitical uncertainty, probable interest rates hikes, and the slowdown of the Chinese economy also factored into our investment decisions.

Philosophy

At the core of our investment philosophy is a belief that we are value investors first; we analyze the financials, assess the company's management, and determine the company's place in its industry. Benjamin Graham, often regarded as the father of value investing, coined the term "margin of safety". This margin represents the difference between what we assert to be the company's intrinsic value and the market price of the stock. To determine each security's intrinsic value, we applied a combination of absolute as well as relative valuation models including discounted cash flow analysis, dividend growth model and multiples valuation.

We select these undervalued securities using a bottoms-up approach by finding well-run companies with outstanding long-term prospects and investing when their stock price is selling at a discount. This approach sometimes requires having the discipline and patience to wait while maintaining our mandated 5-year investment horizon. Of course, we cannot avoid the reality of our nine-month academic calendar, therefore our emphasis on value investing is not to be confused with an approach that avoids investing in growth companies. Companies that can grow their revenues and earnings with an acceptable risk profile still qualify as value investments based on our criteria.

While we will never eliminate our subconscious biases, we work hard to remain forward-looking and sought to eliminate such biases with each individual manager responsible for following trends within each of the S&P sectors and opportunistically buying undervalued companies when we believe our investors will be compensated with better returns in the long-term. Our general strategy is to make meaningful investments in high quality, predictable businesses that can be expected to grow intrinsic value at high rates and that are currently available at cheap prices driving investment returns from not only internal operating results of the business, but also market recognition.

Style

We invest mainly in value companies combines few growth companies. To that point, we are not only looking for companies that are undervalued, but also looking for companies that have strong future growth potentials. Our strategy is to find companies that have strong business models with future growth opportunities, or stocks that are trading below their intrinsic value. We have taken a bottom up approach by choosing individual stocks that have strong future cash flows, fundamentals, or unique opportunities due to macro-economic changes. While we have split up our workload into separate sectors to diversify our portfolio, and reduce risks. We do not invest in a sector just for the sake of being invested across different industries. All of us choose each industry based on the individual interest, and experiences, meaning, we are relatively familiar with our own sectors.

In addition to the foundation mandating a value and growth based strategy, we believe that current political and economic conditions favor such an approach. We bought Starbucks based on the future growth in Asian market, bought Davon Energy based on the expectation of increasing crude oil price, we bought Visa based on global payment towards to digital payment. These companies not only have strong opportunities to grow in the future due to the macro-economic change, but also have strong fundamentals, which are undervalued based on our analysis. Although we have some stocks that probably overvalued today, such as Nvidia, we believe that the whole market itself is overvalued, and Nvidia projected to keep generate strong cash flows in the future.

It is worth mentioning that our economy has seen very stagnant growth over the last few years, and projected to keep growing in the next several years. While some value companies have strong fundamentals, there is not an abundance of generating increasing cash flows in the future, implying a shortage of attractive options for these value stocks.

Procedure

Each team member covers one sector and there is one team member cover all sectors which means he is not dedicated to one particular sector but will monitor overall market and look for best opportunity across sectors.

Each fund manager will use valuation method differently. The methods we use includes comparable company analysis, discounted cashflow analysis and so on. We will analyze business model, potential growth, competitors, market trend etc. We use multiple platforms to gather information for our research. The resources include Bloomberg, Valueline, Morningstar, Yahoo finance, Google Finance etc.

Every fund manager will check the governance disclosure, ESG disclosure, social disclosure and environmental disclosure scores from Bloomberg to make sure it satisfies SMF criteria.

Once a fund manager wants to do a stock pitch, 48 hours before a pitch is made, the supporting materials will be distributed to the group for review. Questions can be submitted beforehand. Then in weekly meeting, the pitch will be made to the group and discussed. If the discussion is not completed within a meeting, followup questions will be sent to the fund manager who recommended the stock and he will address those questions in next meeting.

Stocks are voted after all questions are answered - a 2/3 vote is required to accept a stock. We designed the rule, at least 7 out of 10 fund managers have to vote yes to pass the stock purchase. If a stock is voted down, the stock can be pitched one more time during the quarter.

Once a stock purchase decision is passed, the team will decide the stop loss and fund allocation. It will also be decided by vote. Then the final decision including purchase price, stop loss information will be passed to Prof. Rakotomavo for purchase.

Strategy

As the basis of our strategy, we look forward to the fundamentals and economics that drive our long term investment decisions. While a number of stocks are making new high, combined with the market momentum leaning to the upside, managing exposure to risk forms an integral part of our investment strategy. Based on a particular stock's business model, industry outlook, and the eco system in which it operates, we do valuation in different economic scenarios for long term capital appreciation. In order to match and exceed the return of the specified benchmark, we focus on performing extensive research that can help us in tracking the risk-adjusted return of the portfolio versus the benchmark. This will help us in designing a balanced portfolio and avoiding common pitfalls. We also forecast risk through modeling based on a combination of historical and current information. While doing so we keep in mind the length of the forecast period and the accuracy of the variables involved.

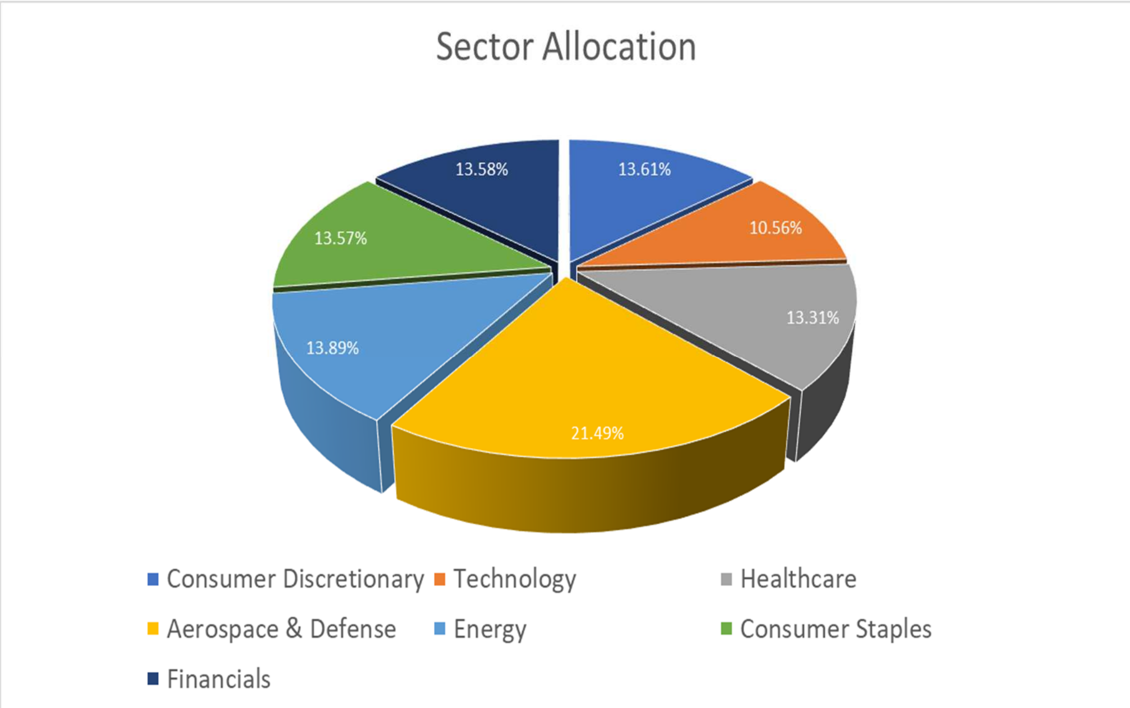
By adopting a long term perspective, we aim to base our decision on future potential as we try to grow and secure the money at hand. In addition to valuation ratios, our strategy is to focus on the quality of earnings and profitability which will help us in finding the best value opportunities. While considering a potential stock, we ask ourselves as to how much we would invest personally in that stock based on the company's dynamics and future potential. Our capital allocation strategy is based on the long term risk-adjusted yield and the opportunity cost that we perceive. While making discussion, the mangers ensure through research that they get familiar and rather have in-depth knowledge of the company and the industry that they are presenting.

Sector Allocation

The process the team undertook in selecting sectors for our portfolio was in accordance with our investment philosophy. In addition to seeking out companies which were presently undervalued by the market, we also tried to identify trends in technology, innovation, and the general macroeconomy and choose those companies with strong fundamentals and growth potential in those markets.

Initially we did not set specific allocations for specific sectors. Each member of the team was given an opportunity to choose a sector of their own volition. These managers then presented their respective industry trends and any unique findings. We believed that only specific industries within sectors presented opportunities of finding undervalued companies, especially considering the long-term view and the economic trends to follow.

We decided allocations on a case by case basis, purely on the company's fundamentals and future growth opportunities. After a stock was approved, we began with a baseline of $75,000 for each investment and then voted for increments of $25,000. A majority vote of 7 "yes" approved the purchase of a stock as well as the monetary allocations of each stock. The principle that we followed was to make all decisions with a majority vote from the team.



Currently, our portfolio covers seven sectors: consumer discretionary, technology, healthcare, Aerospace & Defense, energy, consumer staples, financials. Aerospace & Defense represents our biggest holding as we believe this particular sector presents a positive outlook and biggest opportunity; considering the Trump administration's recent preparations to revamp the military and the ongoing terror threats from extremists and North Korea. In the case of allocation for this sector, instead of choosing one particular stock we decided to diversify and create our own ETF with 5 different companies. We used 3yr historic data to calculate the least variance and highest returns of each chosen stock and invested accordingly. The Technology sector includes our smallest holding, and even though booming, we believe the companies within the sector present higher risks. However, we also believe there are potential opportunities that we can take advantage and will increase our position size in the sector as time progresses.

Even though certain sectors have historically slower growth, for example utilities, the team understands the importance of diversification and minimizing aggregate risk, which is why we plan to cover all sectors including: Basic Materials, Industrials, Telecommunications, Real Estate, and perhaps even Utilities. Below is a chart displaying the sector allocations of our current portfolio. As you can see, Aerospace & Defense, our largest holding, consists of 21.49% of our portfolio and Technology, our smallest, represents 10.56%. Each of the other sectors represent equal weights of approximately 13.5%.

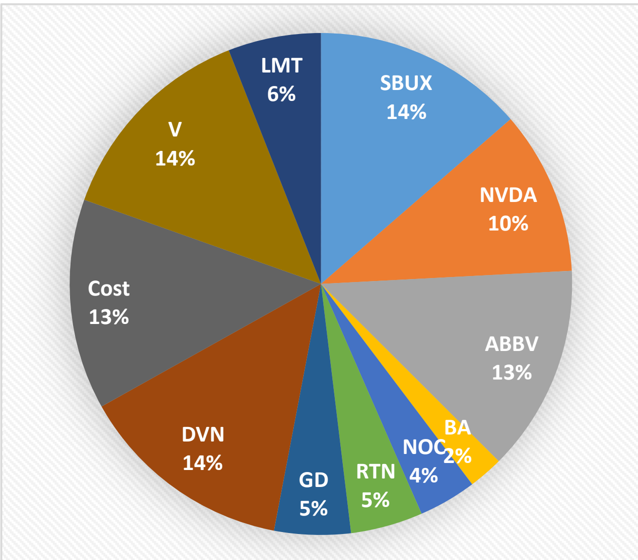
Risk Management

The Risk Management consists of 2 parts. First part is quantitative risk analysis, another part is qualitative analysis. Quantitative analysis part use number to explain how severe the risk we facing. Qualitative analysis part starts from business model of company to analyze the major macroeconomic or specific risks portfolio have. Other than those 2 parts, we also set stop loss for each stock,

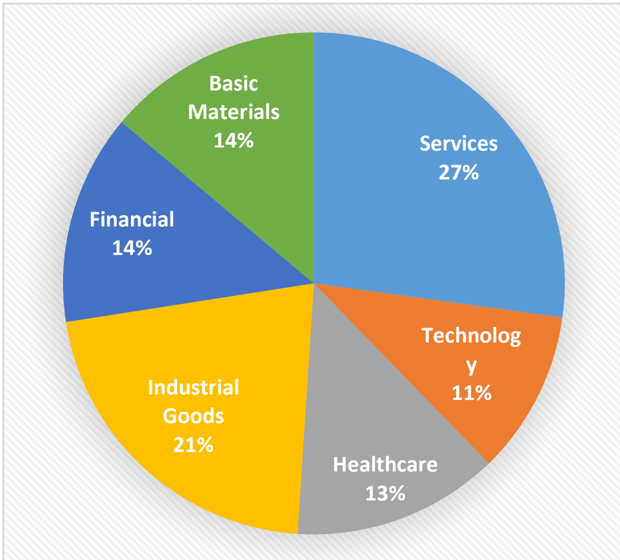
Asset allocation:

According to Portfolio Theory, if we more diversification, more benefit we have. Therefore, diversification is a method of risk management. From the following Charts you can see our portfolio is well diversified.

Portfolio Weights by Stock:

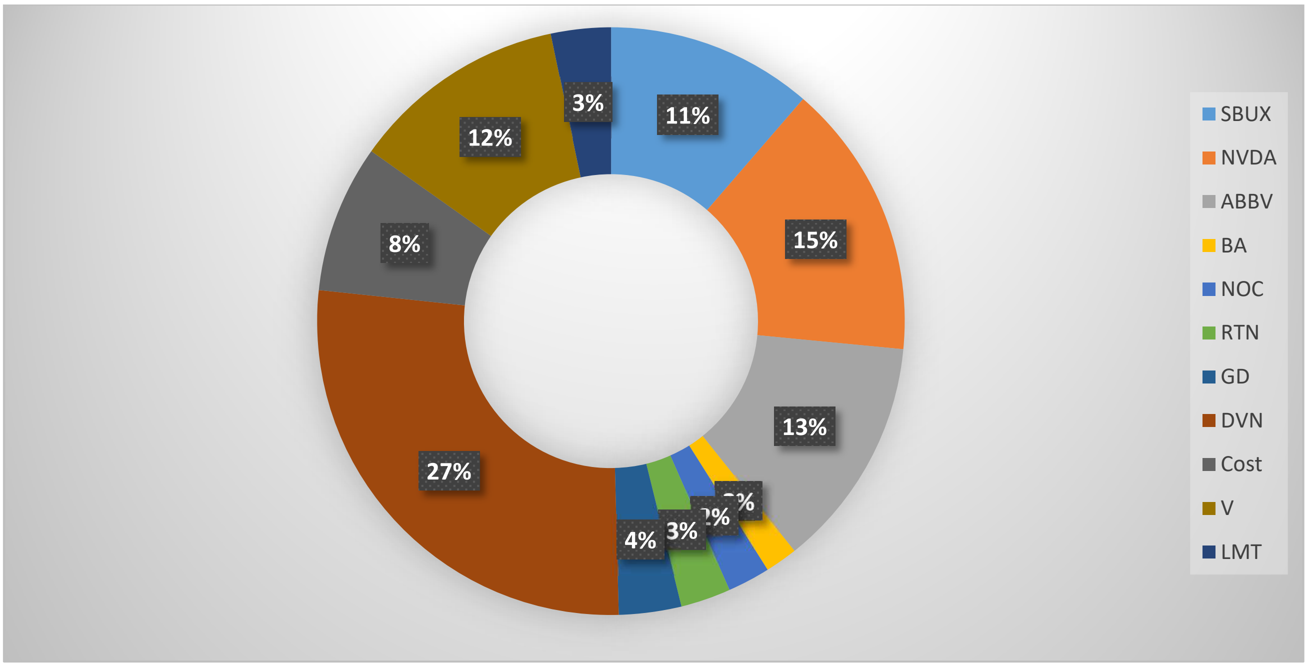


Portfolio Weights by Sector:



Risk Decomposition:

After decomposing the portfolio variance formula, we can get the percentage contribution of each stock to the whole portfolio variance. They are related to weights of the single stock and its own standard deviation. From the following chart, we can show each stock's risk contribution to portfolio.



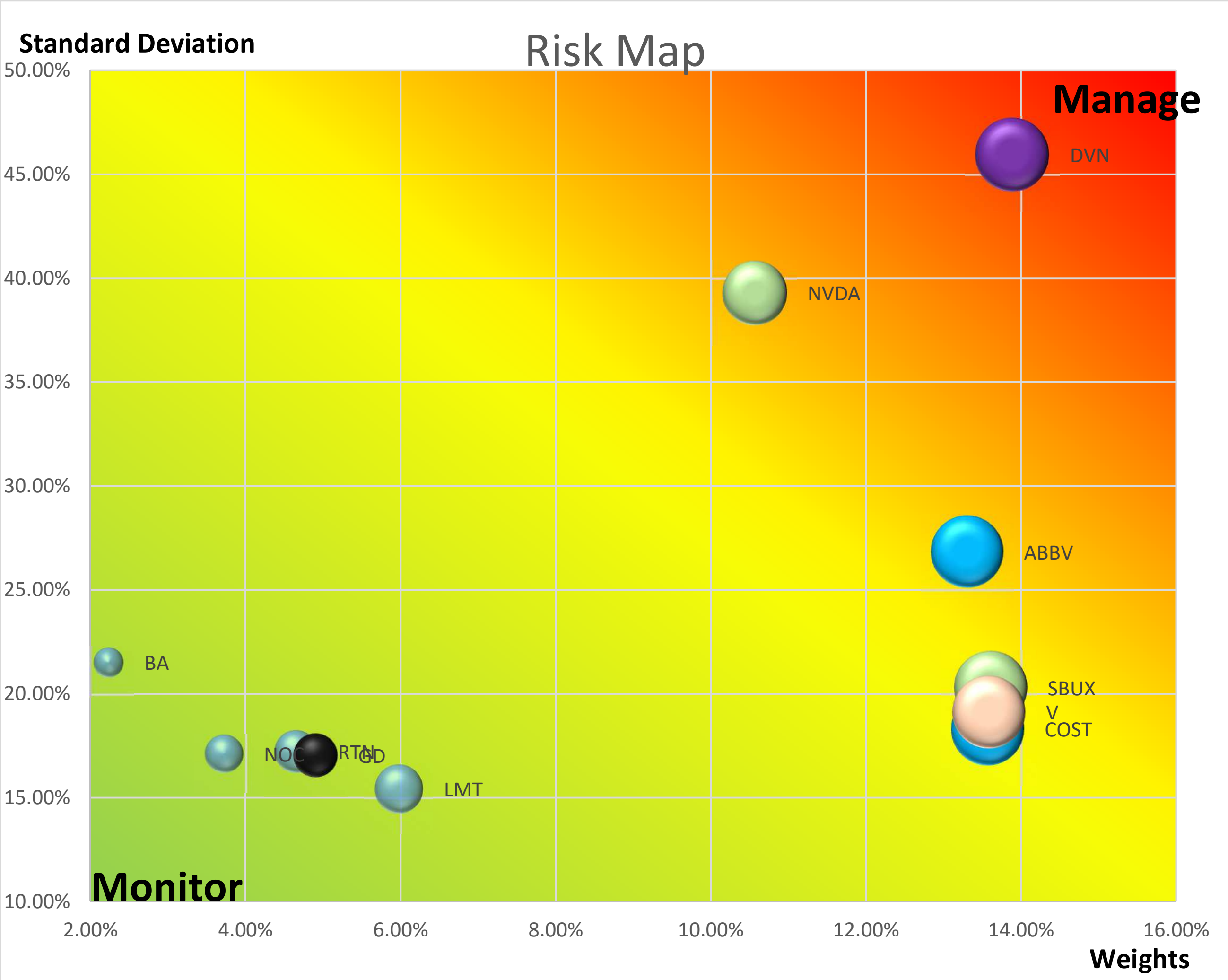
Correlation Coefficient Matrix:

The correlation coefficient is a measure that determines the degree to which two variables' movements are associated. The range of values for the correlation coefficient is -1.0 to 1.0. A correlation of -1.0 indicates a perfect negative correlation, while a correlation of 1.0 indicates a perfect positive correlation. Correlation Coefficient Matrix shows all correlations between stocks. In theory, the lower the correlation coefficient, the more benefit from diversification.

	SBUX	NVDA	ABBV	BA	NOC	RTN	GD	DVN	Cost	V	LMT
SBUX	1.00	0.23	0.26	0.35	0.37	0.30	0.35	0.19	0.36	0.51	0.32
NVDA	0.23	1.00	0.16	0.24	0.24	0.21	0.29	0.12	0.18	0.33	0.22
ABBV	0.26	0.16	1.00	0.25	0.23	0.21	0.26	0.18	0.14	0.28	0.30
BA	0.35	0.24	0.25	1.00	0.53	0.44	0.48	0.29	0.26	0.42	0.49
NOC	0.37	0.24	0.23	0.53	1.00	0.68	0.65	0.13	0.34	0.46	0.70
RTN	0.30	0.21	0.21	0.44	0.68	1.00	0.64	0.13	0.33	0.42	0.69
GD	0.35	0.29	0.26	0.48	0.65	0.64	1.00	0.26	0.30	0.49	0.63
DVN	0.19	0.12	0.18	0.29	0.13	0.13	0.26	1.00	0.12	0.26	0.11
Cost	0.36	0.18	0.14	0.26	0.34	0.33	0.30	0.12	1.00	0.32	0.33
V	0.51	0.33	0.28	0.42	0.46	0.42	0.49	0.26	0.32	1.00	0.39
LMT	0.32	0.22	0.30	0.49	0.70	0.69	0.63	0.11	0.33	0.39	1.00

Risk Map:

The horizontal axis of Risk Map is weights of each stock, the vertical axis is annualized Standard Deviation of single stock. Higher Standard Deviation means more risk, if a stock has high weight in the portfolio and high standard deviation which means it is high risk in our portfolio, we should manage this stock, keep tracking its daily price change and review it very meeting. On the other hand, low weight low standard deviation stock we can have less concentration on it.

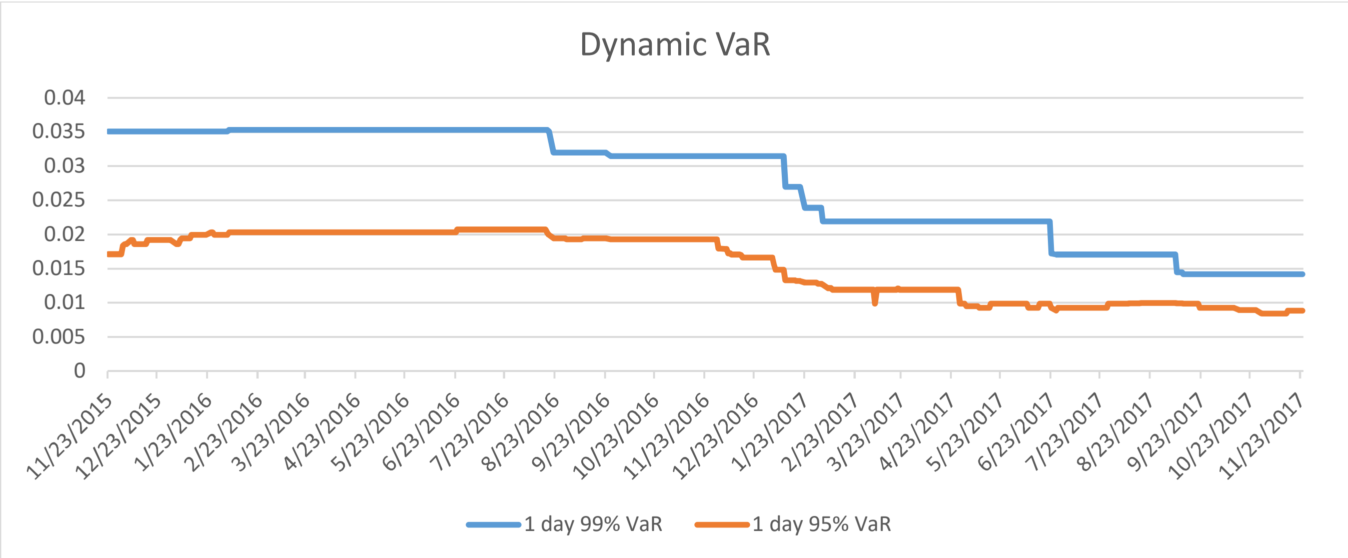


Value at Risk and Expected Shortfall:

Value at Risk is the most popular Risk indicator. 1 year 99% VaR equal to 10% means "We are 99 percent certain that we will NOT lose more than 10% in 1 year." It answers the question "How bad can things get?"

Expected Shortfall is supplementary indicator for Value at Risk. 1 year 99% ES equal to 10% means "If we counter the worst 1% situation, our expected loss is 10%".

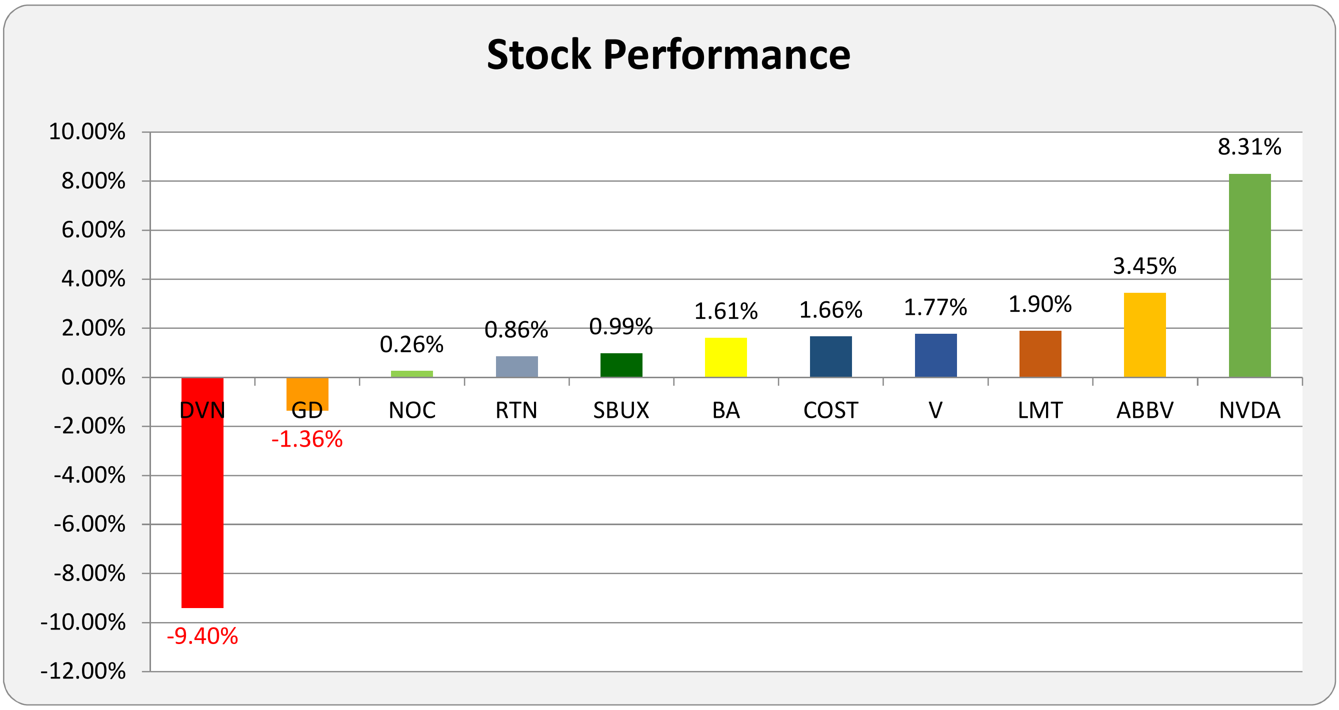
VaR and ES are used to measure tail risk. However, only a few numbers cannot explain the whole picture of tail risk. Therefore, I Use historical simulation approach to find out the dynamic portfolio VaR, the plot is showing as the following graph. The plot shows the portfolio Value at Risk is decreasing from 2015 to 2017 which indicate the tail risk of portfolio is decreasing.



The portfolio 1 day and 1 year 99% and 95% VaR and ES are:

1 day 99% VaR	1 year 99% VaR
-2.86%	-55.39%
1day 95% VaR	1 year 95% VaR
-1.60%	-35.42%
1 day 99% ES	1 year 99% ES
-3.47%	-65.04%
1day 95% ES	1 year 95% ES
-2.31%	-46.62%

Symbol	Cost Basis	Last Price	Shares	Total Chg	Total Chg %	Lot Value
V	110.43	112.38	1,150.00	+2,243.65	+1.77%	129,237.00
SBUX	55.36	55.91	2,300.00	+1,265.00	+0.99%	128,593.00
NVDA	197.71	214.14	500.00	+8,216.00	+8.31%	107,070.00
RTN	185.26	186.85	235.00	+373.42	+0.86%	43,909.75
NOC	302.84	303.63	115.00	+90.53	+0.26%	34,917.45
LMT	310.79	316.70	180.00	+1,062.95	+1.90%	57,006.00
BA	261.37	265.58	80.00	+336.89	+1.61%	21,246.40
ABBV	92.24	95.42	1,350.00	+4,298.81	+3.45%	128,817.00
DVN	40.61	36.79	3,200.00	-12,208.00	-9.40%	117,728.00
COST	169.79	172.61	750.00	+2,114.70	+1.66%	129,457.50
GD	203.85	201.07	225.00	-625.61	-1.36%	45,240.75
				+7,168.33 (+0.77%)		$943,222.85



	DVN	GD	NOC	RTN	SBUX	BA	COST	V	LMT	ABBV	NVDA
Days Invested	22	28	28	28	53	28	21	11	28	28	38

Fundamental Risks:

Devon Energy (DVN):	**Devon is a company highly dependable on oil price therefore one of the main risks is that OPEC and other non OPEC countries couldn't set an agreement regarding oil production cuts. In the past they have always reach an agreement however there are now other emerging players such as Iran who depend on oil revenue for their subsistence, this means that they might be willing to sacrifice price vs market share.**
Defense Sector (GD, NOC, RTN, BA, LMT):	**The defense sector doesn't depend specifically in future conflict between countries however it is highly dependable on the budget that each country assign for equipment purchases and improvements. Specifically the USA since it is the mayor buyer of this industry, spending around USD 837 billion annually.**
Starbucks: (SBUX):	**This is a company that has been affected by the shift of consumer preferences toward local coffee shops, this means that there is a risk that consumers won't go to Starbucks just because it is a franchise or because they might not perceived the coffee as authentic, however the increase number of independent or local coffee shops has created a complicated environment for new local entrepreneurs willing to venture into the coffee business .**
Costco (COST):	**Costco has relied for many years in its business model that has so far proven to be unique and profitable however the online commerce is growing at an incredible pace therefore we believe that Costco needs to be more agile and proactive in its e-commerce business model taking advantage of its unique position and the lack of direct competition in terms of price that others wholesale business could offer. It is also important to understand that in e-commerce price might not be the only advantage for consumers, convenience might be a price substitute therefore is important to increase the presence in this sales channel.**

Visa (V):	**Visa is one of the biggest competitors in the payment industry, however they haven't been as quick as other competitors such as Square, Global Payments and Paypal, in acquiring middle and small business. This is a market that can become huge therefore they need to find better ways of making payments more accessible to this type of business.**
AbbVie (ABBV):	**Abbvie is a company that is highly dependable on new research and developments regarding new drugs. This is a very stable industry once they have a good product however they can lose its position in the industry if they done innovate before their patents expire.**
Nvidia (NVDA):	**The semi-conduct industry is a highly competitive and rapidly changing industry where competitors such as Intel and Google with FDGA and TPUs respectively, could affect the demand for NVIDIA GPUs . Also there are high expectations from investors therefore they need to keep up their pace in terms of revenues.**

Economic Outlook

After the big financial crisis of 2007-2008, we witnessed the longest economic recovery with stock market reaching historic high, unemployment decreasing to historic low, GDP remaining a strong upward trend, and consumer showing strong confidence. It is the best era ever and seems will never end.

GDP

Figure 1 Annual GDP Growth

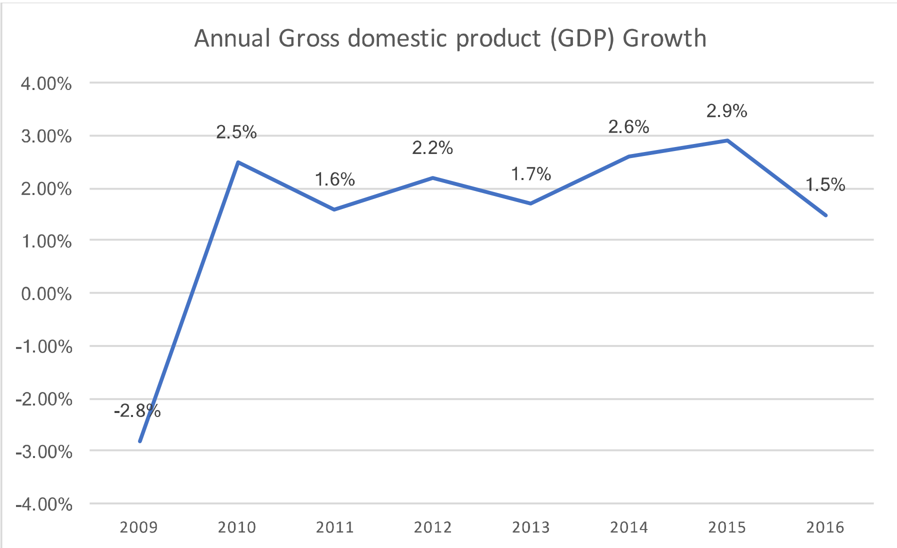
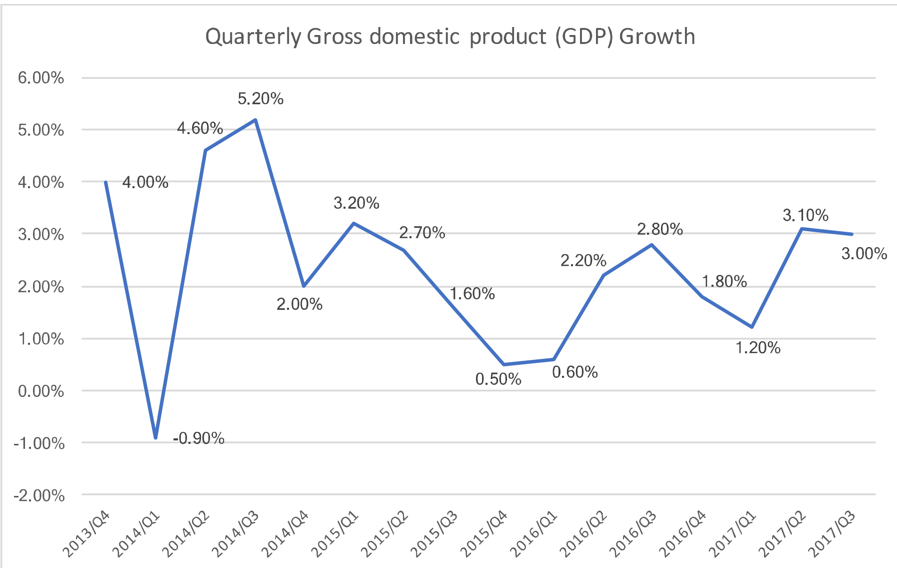


Figure 2 Quaterly GDP Growth

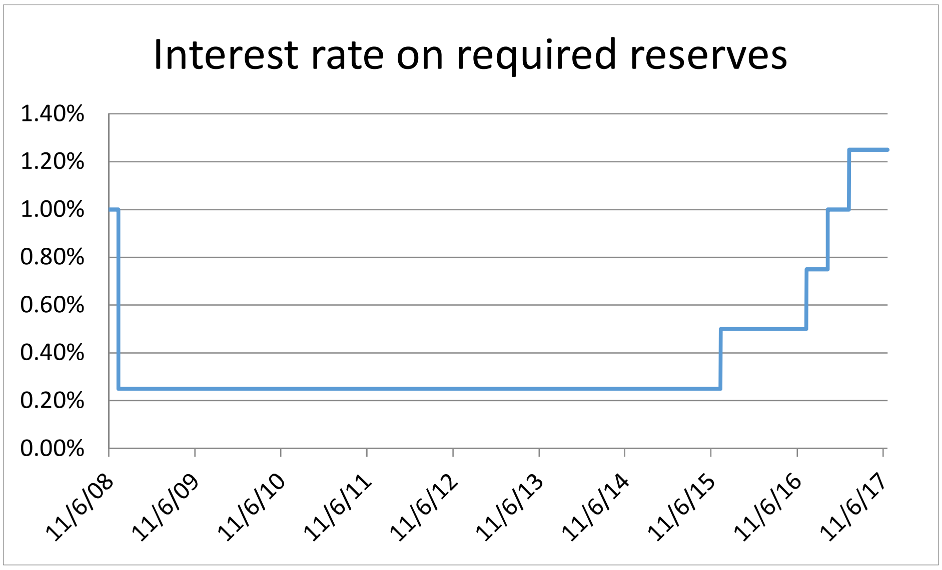


Resource: Bureau of Economic Analysis

As we observe from Figure 1, the unprecedented Quantitative Easing managed to turn the tide, rescuing the whole economy at stake. Consequently, GDP rebounded to its normal range, realizing 2.5% growth in 2009, and never fall out of the 1.5% - 3% range. Although the annual growth of GDP decreased slightly in 2016, from the quarterly GDP in Figure 2, the economy growth remains strong in the third quarter of 2017, realizing 3% in growth, which exceeded preponderance expectations of analysts. Although there are strong expectations that Fed will interest rate and reduce its balance sheet, we do not expect materialize changes that will stop the momentum of the economic growth let alone the turnaround of the trend.

Interest Rate

Figure 3 Fed Policy Rate

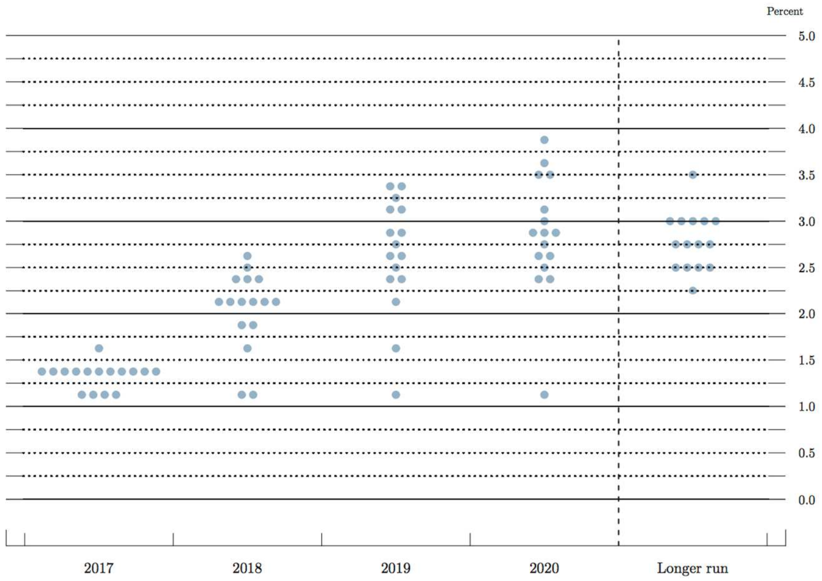


Resource: Federal Reserve

On December 16, 2008, Fed adjusted the interest rate to 0.25% and remained it on this level until December 16, 2015. The historic low interest rate influenced methods of valuating stocks and increased the price of bonds in fixed income markets, thus creating the bullish stock market and fixed income market at the same time. Moving forward, we believe Fed will continue to rise the interest rate to deal with the rising CPI

In addition, based on FOMC participants' assessments of appropriate monetary policy, the preponderance policy rate will be 2% - 2.25%, 2.25% - 3.25%, 2.75% - 3% in 2018, 2019, and 2020 respectively, and remain 3% in long run (as shown in Figure 4).

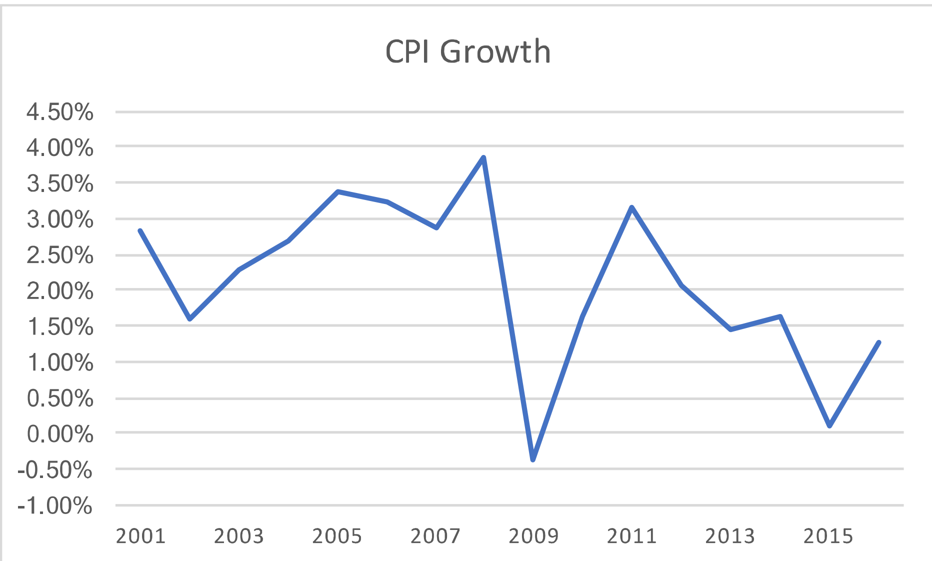
Figure 4 FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



Resource, Federal Reserve (https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20170920.pdf)

Consequently, we believe Fed will continue to rise interest rate in the near future, which will in turn adjust the valuation of stocks since a higher discount rate will be introduced and lower the bond price at the same time. But as we can also observe from Figure t, although the CPI shows an upward trend, it remains in a reasonable level. Therefore, we did not anticipate that Fed will increase the interest rate in a fast pace or in a surprising way. Instead, a steady gradually increase of interest rate is expected.

Figure 5 CPI Annual Growth

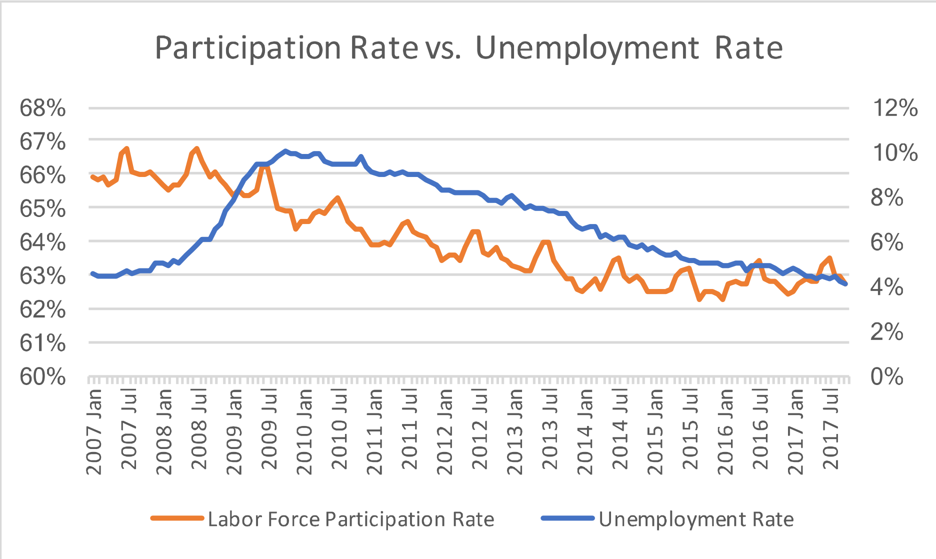


Resource: Bureau of Labor Statistics

Unemployment vs. Labor Participation Rate

The labor force participation rate is the percentage of the population that is either employed or unemployed (that is, either working or actively seeking work). Although we consistently heard from news that unemployment rate continuously beat the historic mark and reach to a lower level, we did observe a concurrent historic low Labor Participation Rate, as shown in Figure 6.

Figure 6 Labor Participation Rate vs. Unemployment Rate



Resource: Bureau of Labor Statistics

It is easily observed that the lower unemployment rate can be ascribed for low labor participation rate on some level. In another word, many people quit seeking jobs and become inactive in the job market. As the advent of artificial intelligence and its increasing appliance in many fields and arenas, we do concern about the future employment rate and labor participation rate. If advanced algorithms and robots can substantially substitute human labor, it will easily frustrate active job seeker and make them quitting job, which will in turn create a lower unemployment rate but low labor participation rate at the same time.

Economy Outlook

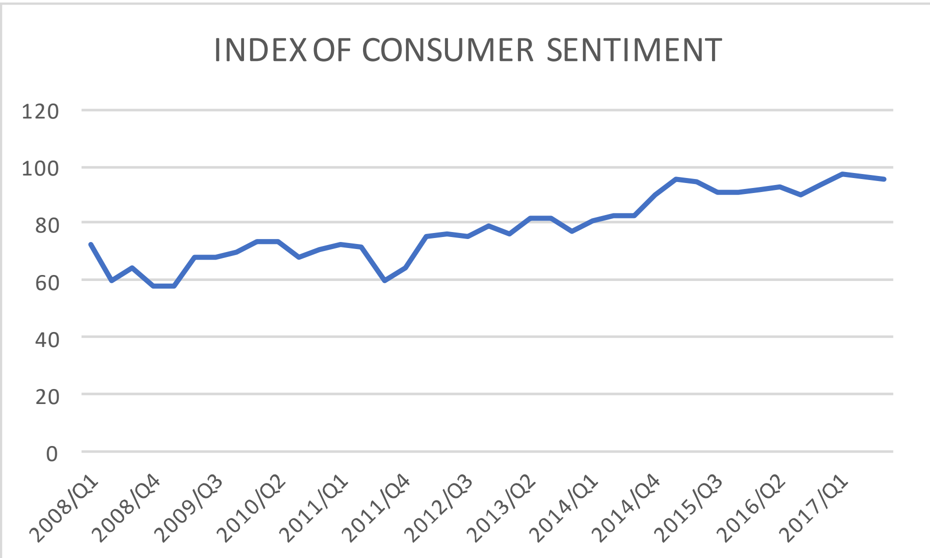
Figure 7 Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents

Variable	Median[1]					Central tendency[2]					Range[3]				
	2017	2018	2019	2020	Longer run	2017	2018	2019	2020	Longer run	2017	2018	2019	2020	Longer run
Change in real GDP	2.4	2.1	2.0	1.8	1.8	2.2 – 2.5	2.0 – 2.3	1.7 – 2.1	1.6 – 2.0	1.8 – 2.0	2.2 – 2.7	1.7 – 2.6	1.4 – 2.3	1.4 – 2.0	1.5 – 2.2
June projection	2.2	2.1	1.9	n.a.	1.8	2.1 – 2.2	1.8 – 2.2	1.8 – 2.0	n.a.	1.8 – 2.0	2.0 – 2.5	1.7 – 2.3	1.4 – 2.3	n.a.	1.5 – 2.2
Unemployment rate	4.3	4.1	4.1	4.2	4.6	4.2 – 4.3	4.0 – 4.2	3.9 – 4.4	4.0 – 4.5	4.5 – 4.8	4.2 – 4.5	3.9 – 4.5	3.8 – 4.5	3.8 – 4.8	4.4 – 5.0
June projection	4.3	4.2	4.2	n.a.	4.6	4.2 – 4.3	4.0 – 4.3	4.1 – 4.4	n.a.	4.5 – 4.8	4.1 – 4.5	3.9 – 4.5	3.8 – 4.5	n.a.	4.5 – 5.0
PCE inflation	1.6	1.9	2.0	2.0	2.0	1.5 – 1.6	1.8 – 2.0	2.0	2.0 – 2.1	2.0	1.5 – 1.7	1.7 – 2.0	1.8 – 2.2	1.9 – 2.2	2.0
June projection	1.6	2.0	2.0	n.a.	2.0	1.6 – 1.7	1.8 – 2.0	2.0 – 2.1	n.a.	2.0	1.5 – 1.8	1.7 – 2.1	1.8 – 2.2	n.a.	2.0
Core PCE inflation[4]	1.5	1.9	2.0	2.0		1.5 – 1.6	1.8 – 2.0	2.0	2.0 – 2.1		1.4 – 1.7	1.7 – 2.0	1.8 – 2.2	1.9 – 2.2	
June projection	1.7	2.0	2.0	n.a.		1.6 – 1.7	1.8 – 2.0	2.0 – 2.1	n.a.		1.6 – 1.8	1.7 – 2.1	1.8 – 2.2	n.a.	
Memo: Projected appropriate policy path															
Federal funds rate	1.4	2.1	2.7	2.9	2.8	1.1 – 1.4	1.9 – 2.4	2.4 – 3.1	2.5 – 3.5	2.5 – 3.0	1.1 – 1.6	1.1 – 2.6	1.1 – 3.4	1.1 – 3.9	2.3 – 3.5
June projection	1.4	2.1	2.9	n.a.	3.0	1.1 – 1.6	1.9 – 2.6	2.6 – 3.1	n.a.	2.8 – 3.0	1.1 – 1.6	1.1 – 3.1	1.1 – 4.1	n.a.	2.5 – 3.5

Resource, Federal Reserve (https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20170920.pdf)

In terms of the economy outlook, the question will always be in which term are we stand in the economic cycle. Refer to the economic projections from of Federal Reserve Board members and Federal Reserve Bank presidents, we are standing in the end of the economic prosperity and the growth may slow down in 2019.

Figure 8 University of Michigan Consumer Sentiment Index (MCSI)



In a shorter period of time, from the Consumer Sentiment Index, an economic indicator of the overall economy as determined by consumer opinion, we do see strong confidence in the economy. Therefore, we are optimistic about the current condition in economy, but will be cautious for the turning point in a longer term.

Healthcare/Biotechnology/Pharmaceutical

Around mid-2015, the Healthcare sector peaked and began a downward spiral that would last almost two years. However, this year has been a turnaround where the sector has become especially popular and exciting for investors. The sector is the S&P's second largest (13.89% as of 05/31/17) and for years it's growth has outpaced overall GDP growth. The sector usually offers low volatility (beta of 0.82 – Health Care Select SPDR ETF) and in general, health care companies' balance sheets are solid, their stocks have offered attractive dividend yields and phenomenal returns, and the sector's overall cost structure appears to have improved. With an aging population, technological advancements in the delivery of healthcare, and innovation under way by drug makers and medical device companies, demand continues to rise for health care products and services.

Although, political uncertainty over the Affordable Care Act and drug prices have caused some volatility in certain health industries, the pharmaceutical and biotechnology industries have been proactive with respect to pricing policy, and have extended recommendations to the Trump Administration on how to proceed with regulations and policies. With a repeal of the ACA, hospitals are said to lose most due to cuts in Medicaid. Analysts agree that growth will be driven in the pharmaceutical and biotechnology industries, given the cash flow and drug pipelines. This presents potential opportunities. However, it is essential investors remain cognizant of the risks in the biotech and pharma industries as valuations get inflated due to optimism in the market about new therapies, drugs, or devices.

We believe an outperform rating for the entire sector is appropriate, although at times it may be worrying as the sector may experience short term dips on speculation as to what changes may or may not occur, but we as value, long-term investors remain patient and willing to ride out those short-term potential challenges.

Financial Services

Overview

The financial industry has put most problems from the financial crisis behind it, although public policy reshaped the industry into a highly regulated environment. Most businesses in the financial industry were hurt by post-crisis consequences; increased regulation was implemented to limit investment bank risks and to raise the capital required to participate in the capital markets. In our opinion, President Donald Trump's election could turn many of these headwinds for the industry into tailwinds with regulatory reform expected in 2018.

Financial industry in the United States are the largest and the most liquid in the world. In 2016, finance sector represented 7.3 percent ($1.4 trillion) of U.S. GDP. Companies in this large and high-growth sector translates into substantial economic activity and direct and indirect job creation in the United States. The financial sectors employed 6.2 million people in 2016, and shows great potential for employment growth, with a 12 percent increase expected by 2018.

Mergers & Acquisitions

From 2009 M&As happens frequently in the financial industry. For example, in 2009, BB&T Corp purchased Colonial Bancorp, and in November 2015, M&T Bank finalized its acquisition of Hudson City Bancorp. The trend toward further consolidation has increased since 2009. Ten bank deals were announced in just the first half of 2017. Since 2015, 23 bank mergers have been announced, involving approximately $300 billion of assets. In the future, larger banks pursuing M&A will likely extend their focus past the purchase of small cap banks, and into the areas of online or electronic banking. The advent of online-only banks, as well as the rise of specialty payment companies, have created several strategic options for traditional banks to consider. We expect the larger U.S. small regional banks to grow deposits at a faster pace than the several largest banks. This is because the large banks, in terms of deposits, are now approaching the limit on national market share of deposits. As for the smaller banks, they could lack the size and scale needed to face current financial challenges and regulatory costs.

Technology

2018 will be full of challenge and uncertainty for financial institutions, with external threats affecting their ability of remaining competitive and internal stagnation impacting profits. Next year will undoubtedly bring more digital development, for example, block-chain technology, Bitcoin, digital payment systems, if financial institutions won't do enough to truly differentiate their brand, and remain relative to customers, they maybe fail to compete with other competitors. The Fed announced to shrink balance sheet and increase interest rate. It will be the first time for the Fed to shrink huge amount of balance that never done before, as same as the QEs that the Fed did. Although the impact is uncertain, we expect that it brings some negative impact to the financial industry.

Energy

The oil market got a boost in 2016 especially when OPEC decided to cut the oil production until March,2018. However, since the inventory is huge, it will take a long time to reduce the inventory to 5-year average level. Investors lost patience in 2017 when they didn't see the immediate improve of the reduction of the inventory and it caused oil price fluctuate around $50/barrel based on the inventory level. OPEC's policy maintained the oil price but since inventory is still higher than average and price is not increased to the expected level, OPEC is going to issue new policy in Nov,2017. The market expects that the current production cut period will be extended to the end of 2018. The production cut will be welcome by the market because it will bring down the inventory and promote the price.

Saudi Arabia, as one of the most powerful countries in OPEC, is on the edge of war with IRAN, another big country in OPEC. The domestic unstable political environment of Saudi Arabia (arrest of 11 princes) also strengthens the turbulence of the oil market. Uncertainties will boost the oil price for a short term. OPEC countries are solely depending on oil price so from a long term, they will do everything they can to maintain and push the price upward. Any policy from them will impact the whole market.

Although new clean energy, energy efficiency and electrical vehicle are future trend, it will take decades to change the world. Oil is supporting lives in lots of countries especially OPEC countries. Without solving their dependency on oil, they will stand against any party that tried to reduce oil price because it means cutting their lifeline.

Current oil price is not good enough to support OPEC countries' needs plus he demand of oil is increasing next year. We expect the oil price will increase in a long term with endorsement of OPEC policy and OPEC countries, although the oil price increase might not be a straight-line increase.

Materials

Overview

The materials sector is composed of five industries and twelve sub-industries (see chart below). All of these businesses are capital intensive, have high fixed costs and high barriers to entry. The industries within the materials sector are typically dominated by a few large players. These dominant players are disrupted only by occasional innovative companies introducing new technology.

Supply and Demand

The discovery, development and processing of raw materials are all heavily dependent on the growth of the economy. The demand from the economy has the greatest impact on industry prices, as the supply is rather consistent. There are two reasons for this. First, it's difficult to increase short term production because developing new projects is slow. For example, expanding a mining operation takes years, not months. Second, the high fixed costs within the industry entice facilities to maintain production, even during times of low prices. These two factors contribute to the booms and busts of the sector.

Key Drivers of Company Earnings

1. Economic growth - Economic growth and GDP are highly correlated with the demand for materials products and therefore the financial performance.
2. Commodity prices - Commodity prices influence short term revenues, since fixed costs are high and investment horizons are long.
3. Commodity production growth - Commodity production growth is not applicable to all industries within, however upstream companies, such as mines, often experience short term demand increases and higher depletion rates. Since production expansion is slow additional capacity is often added during booms leading to long term industry overcapacity during the busts.
4. Exploration and development costs - Exploration and development costs are important to valuing the long-term prospects of a company since to understand it's long term viability.
5. Production costs - Production costs for firms farther downstream can have a drastic impact on the bottom line, since they often have higher inputs.
6. Share buybacks and M&A - Acquisition premiums can have a ripple effect across the industry as M&A occurs, contributing to exceptionally high valuations.
7. Investor Sentiment - Investor sentiment can also contribute to over and under valuation of a company's stock during the booms and busts.

8. Taxes, politics, and regulation - As markets are becoming more and more globalized taxes, politics are international regulation are playing a greater role in the exports and therefor the demand for domestic materials products.

Information Technology

We can observe from the chart the year-on-year growth from November 2016 to November. IT sector performed worse than the S&P until the beginning of 2017, and far surpassed the S&P 500 since then. As of November 2017, IT sector beat S&P 500 20%.

There are 7 industries in the sector, Technology Hardware, Storage & Peripherals, Semiconductors & Semiconductor Equipment, Internet Software & Services, Software, Electronic Equipment, Instruments & Components, IT Services, and Communications Equipment, among which the first two industries contributed the most growth.

The major reason can be ascribed to the rising of artificial Intelligence. 2016 is the first year of an era for AI. Although data scientists and computer experts have been researching on AI for a long time, the technology erupted as it accumulated to certain limit, and soon spread to real business fields. In the future, we anticipate that machine learning will continue to evolve and be applied into a wide array of areas such as data classification, predictive modeling and natural language processing, which in turn demand high speed parallel computation and hardware that can cater to such demand. Semiconductor producers such as NVIDIA benefited from the rising trend and kept exceeding analysts' expectations, constantly achieving historical high in its price.

Moreover, blockchain, the foundation for digital currency such as bitcoin, is another hot topic in 2016. Blockchain is a distributed database of transaction blocks, which allows participants in a network to share a digital ledger, yet prevents them from tampering with any of the transaction records. The unprecedented form of digital currency has becoming popular and arousing concern from regulatory bodies in different countries. But it also stimulates the demand for high quality data servers consisted of GPUs, in which NVIDIA is specialized in.

Moreover, the anticipated trend of digitization in the business also built in the stock prices and propped up the consistent rising in the whole sector. New technology such as autonomous vehicles, fin tech, and cognitive technologies required and developed new data analytics methods, and will continue to excite and astonish us in the foreseeable future.

It also worth mentioning that service based on cloud adoption and computation, cybersecurity, and business analytics will continue to rise and prosper in the future.

All in all, we believe the IT sector in general will continue to prosper since the U.S. will continue to lead the evolution of technology globally. As AI continues to develop, there will be more demand for the hardware with high speed computation abilities. Last but not least, service based on new technology such as visual reality, cloud computation, driverless cars will bring more value in the future and continue to prop up the growth in this sector.

Telecommunications

It is composed by companies that provide communication services either through fixed-line networks or through wireless. The sector also includes companies that provide internet access, such as AT&T, Verizon and Comcast.

The sector represents 3.57% of the SP 500 and the holdings that compose the 3.57% of the SP500 have a market capitalization of USD 817 billion.

The sector has underperformed vs SP500 in the last year.

The primary companies that provide all the communication services are AT&T, Verizon, Comcast, Charter Communications, American Tower Corporation, Crown Castle International Corp, SBA Communications Corp, Century Link Ink and Dish Network Corp.

Last year these companies respectively achieved the following figures, in billions, regarding their revenues USD 163, USD 126, USD 80, USD 29, USD 6, USD 4, USD 2, USD 18, USD 15. The total of their revenue in 2016 was USD 443 billion which shows a increase of 8.62% vs the year 2015 USD 406 billion. The growth from 2014 to 2015 was 6.84% which shows the tendency of the sector over the past 5 years which has been slow the revenue growth of the sector.

Part of this decrease is that the communications markets is becoming more competitive which means market saturation and price reductions within the categories, the days when the more people communicate the more they pay, are gone, now the industry needs to stick to the consumer preferences which is to have flat fees and to have access to limitless of communication possibilities provided by the internet.

The internet access and technology have disrupted this industry and its companies have started offering packages of internet services and some companies like COMCAST have tried to keep their cable subscriptions while offering internet access at the same time, this has proven to be ineffective since millennials which will compose 75% of the workforce by 2020, have expressed their disinterest in cable subscriptions.

Many of these companies use to depend on fixed telephone lines but since the market conditions and needs have been changing these companies have been looking for opportunities outside of their core business. For instance, the number of telephone fixed lines subscription fell from 192 million in 2000 to 121 million in 2016, this is a dramatically decrease of a metric that 20 years ago many people just expected to increase because of the expectation of people having a landline and a mobile phone.

Internet has become the new focus for this industry, this is why companies that were never before competitors, are starting to compete with each other, for instance AT&T vs Comcast, both are fighting to provide customers with their internet service.

Overall the industry is merging companies that use to have different business model, into one new business model that will revolve around technology and internet. Therefore, the companies need to act quickly and do what is necessary to survive in this battle that every day gets closer to what the utility industry looked many years ago.

Consumer Discretionary

"The Consumer Discretionary Sector encompasses those industries that tend to be the most sensitive to economic cycles. Its manufacturing segment includes automotive, household durable goods, textiles & apparel and leisure equipment. The services segment includes hotels, restaurants and other leisure facilities, media production and services, and consumer retailing and services." (Fidelity) The purchase of consumer discretionary goods and services is influenced by the state of the economy, which can affect consumer confidence.

As the economy begins to strengthen, and consumer confidence increase, the demand for consumer discretionary goods rises, driving the sales and stock performance of consumer discretionary companies. Consumer discretionary stocks usually lead a stock market recovery. Consumer discretionary stocks tend to outperform the stock market during strong economies, but underperform during weak economies. As the economy begins to weaken, consumer confidence typically declines, causing consumers to spend less. When the economic conditions are less desirable, the stocks of consumer discretionary companies tend to lead an overall stock market decline at the beginning of a downturn.

In 2017, U.S. Consumer Confidence Index has continuously improved, and hit its highest level in October since December 2000 at 125.9. As a result, YTD the consumer discretionary shares increased 15.07%, which is close to S&P's 15.33%. We believe that confidence remains high among consumers, and that the U.S economy will continue to expand in 2018. Also, labor market has remained robust. October unemployment rate fell to 4.1% as labor conditions returned to normal following the weaker September due to storms. Consumer confidence will likely remain expanding at a stable pace, which will benefit consumer discretionary companies.

Consumer Staples

Companies in the consumer staples sector generally deal with tight profit margins, but they have done better to cover costs in recent years. The Consumer Staples Sector, sometimes called the consumer defensive sector, comprises companies whose businesses are less sensitive to economic cycles. It includes manufacturers and distributors of food, beverages and tobacco and producers of non-durable household goods and personal products. It also includes food & drug retailing companies as well as hypermarkets and consumer super centers. Consumer staples are considered non-cyclical, something essential or necessary for basic living. While the sector offers considerable benefits in terms of visibility and predictability of earnings growth, the landscape for Staples has become more complex in recent years. E-commerce offers great opportunities as a new and highly focused, customer-centric route to market for consumer staples companies.

Once value stocks fall back into favor and volatility picks up, coupled with investors' hunt for dividend yield, these defensive stocks can rebound and outperform. With continued uncertainty over the pace at which the Federal Reserve will raise short-term interest rates, having weighted positions in this sector can provide some stability to our investment portfolio.

Consumer staples are the third-worst performing sector this year behind energy and telecom. As seen below, Consumer Staples returns were low at 8.99% compared to 18.34% in S&P 500 index.

Nonetheless, the consumer staples sector has outperformed the S&P 500 during the last three recessionary periods as consumer staples companies can generate consistent revenues, even in recessionary periods. So, in a bear market, consumer staples stocks decline far less than stocks in other sectors.

In addition to improved cost efficiency and increased volatility in markets, an increase in merger and acquisition activity and increase in geopolitical/domestic political anxiety can act as positive catalysts to invest in this sector.

On the other hand, the negative drivers of investment in this sector include increased competition and threat from low-cost emerging market competition. Fierce competition will lead to thin margins and squeezed earnings. Disruption from consumers is another factor. Many consumers now prefer to buy whole, raw ingredients and prepare important meals at home. Additionally, new companies with unique business models have emerged in the wake of this healthier food trend. Also, accommodative monetary policy, with a stimulative effect on the economy, could hurt more-defensive sectors, like consumer staples.

Industrials

Industrials Sector is 5th biggest sector of S&P500 Index represents 9.86% of S&P 500 as November 30 2017. From year to date, industrial sector has 13.82% return which is lower than S&P 500 index return 15.33%.

Whole industrial sector can be divided into 17 sub-industries. Aerospace & defense (576.7billion), Industrial Conglomerates (432.37billion) and industrial Machinery (202.66billion) are three biggest proportion.
With the P/E ratio, sales, and profit margin for all industrial sector are growing steadily since 2015. The outlook of industrial is positive.

For Aerospace sub-industry, rising production rates for the 737 and A320, after engine challenges in 2017, will drive higher revenue and profit for Airbus and Boeing in 2018. Related suppliers should see a similar boost, though margins will be determined by the mix between new and aftermarket equipment. Airline capacity growth above the long-term trend should benefit the spare-parts business at engine makers and suppliers, contributing to profit and margins. Yet negative new-engine margins will offset some of the aftermarket gains.

Foe Defense part, President Donald Trump's proposal for fiscal 2018 military outlays sets up a fight between social and military spending, while still leaving defense hawks wanting more. The defense budget rises to $639 billion, $52 billion above sequester levels, while the broader government budget proposes a wind-down of social spending. Adjusting the sequester law will require bipartisan cooperation, which is not likely given proposals to eliminate the Affordable Care Act and scale back Medicaid. Major defense contractors such as Boeing, Lockheed Martin, Northrop, General Dynamics, Raytheon, Huntington Ingalls and BAE Systems, will boost revenue and profit under Trump's proposal, though the gains aren't as large as envisioned by defense hawks on the Senate Armed Services Committee.

For diversified industrial company, U.S. industrials had a median effective tax rate (ETR) of 31% in 2016, the fourth-highest out of 11 sectors in the S&P 500 index and should benefit from tax reform. Over 75%

of U.S industrials covered by BI have an ETR above the proposed new federal rate of 20%. Immediate write-off of depreciable assets may be another boon, given the sector is capital-intensive. Industrials may also benefit from a tax holiday and exemption for dividends from subsidiaries as they have over $250 billion in cash and earnings overseas.

If the reform is enacted, industrials such as Honeywell, Caterpillar and Emerson would be major beneficiaries. Johnson Controls, Eaton and Ingersoll Rand, with their tax jurisdiction outside the U.S., may not gain from a lower rate, but accelerated depreciation and other components may be advantageous.

Machinery producers should see a return to growth in some end-markets in 2nd half, yet a significant upturn is unlikely. Low commodity prices will pressure equipment sales as aftermarket demand benefits from the end of capital spending cuts. Global construction-market growth should persist. Better-than-expected margins, owing to sizable cost cuts, will continue, yet rising material costs may be headwinds. U.S. machinery stocks were up 18% through August vs. the S&P 500's 10%, after a 68% gain in 2016.

Utilities

Throughout 2017 and into 2018 the Utilities sector will remain a safe and reliable segment for those seeking long-term investments. The very nature of the businesses that comprise this sector mean they are heavily regulated and thus revenues are typically in line with expectations, making the task of finding undervalued assets hard to come by.

With the removal of Janet Yellen as Chairwoman of the Federal Reserve, we expect to see Jerome Powell swiftly moved through the nomination process to become the next Chair. While he is expected to tow the same line set forth by Yellen, meaning we should expect to continue seeing gradual interest rate increases in the coming year. This will of course raise the cost of capital for the utility sector and could potentially negatively impact their dividend payments or stock re-purchase plans.

Weather also continues to impact companies in the utilities sector. The end of summer 2017 saw some of the most powerful hurricanes ever recorded make landfall on the United States disrupted power generation and transmission. With global oceanic temperatures continuing to rise, it should be no surprise if 2018 continues to be another powerful year for hurricanes.

The sweet spot in the entire sector has been the 'Independent Power and Renewable Electricity Producers'. They have seen one-year returns of more than 45%, compared to 20% from Electric Utilities, and 18% from the S&P as a whole. While much has been talked about President Trump rescinding on the Paris Accord treaty, many individual states have stated they will continue their investment to ween off fossil fuels. This of course will have a negative impact for the sector in the very long-term as eventually coals and natural gas generation stations are phased out in favor of renewables such as solar, wind, geothermal, and tidal.

While we recognize that utility valuations are at an almost all-time high when evaluating on a price-to-earnings (P/E) and Enterprise Value-to-earnings before interest, tax, depreciation, and amortization (EV/EBITDA) ratios. They have benefited from several years of consistent earnings and historically low interest-rates, and

as the economic conditions evolve in 2018 and beyond, this sector will have more volatility.

Additional Considerations

The graduate SMF team is mindful of the record setting performance of the S&P 500 in the past five years and factors that could influence the current bull market. Topics we are watchful of include;

1. Historically high valuations
2. The Federal Reserve's change of leadership and balance sheet reduction
3. Government policy changes – tax reform

The S&P 500 on November 10th set a new record for its longest streak ever without a 3% pullback. This bull run has earned investors 16.91% in the past twelve months. The P/E ratio of the S&P 500 has reached 24.49 (11/26/2017), which, depending on the chosen headline source, is the highest its been since the recession of 2008. The record setting bull run with very little volatility makes the team, similar to other investor's sentiment, weary of a market correction or consolidation. A similar discussion could have been had a year ago, while 2017 ended up setting records. This trend will inevitably be broken but it's impossible to identify when. Therefore, it's a matter of identifying the changes in the broader picture that could affect equity investments. Our team continues to seek stocks that are undervalued and think independently through our own research and insight.

The leadership change in the Federal Reserve and the unproven method of unwinding the federal reserves balance sheet are key topics that could cause change in the bull market. New leadership from Jerome Powell will replace Yellen most likely during February of 2018. The markets have responded well since Powell's appointment in November, so far. This change in leadership is coming at a sensitive time when the Fed is experimenting with shrinking its balance sheet. There are unknown consequences. For example, this year short term interest rate increases have not been as impactful on tightening monetary policy because of the weaker dollar and lower 10-year yields. Even with two rate increases this year the US is experiencing is loosest financial condition since 1993 according to the Chicago Fed (WSJ, 11/21/17).

The progress of the proposed tax reform is another topic that deserves attention. There is analyst debate regarding how much of the tax reform is already priced into the market. Calculating an exact number is rather arbitrary, however we can conclude that headlines related to the tax reform, and its overall progress has the potential to create volatility. The overall goal of the tax reform is to reduce rates, allow for exceptionally favorable capital expensing, and encourage companies to return operations and trapped profits from overseas.

Appendix

Starbucks (SBUX)

According to International Coffee Organization (ICO) as more of the world turns to coffee, demand for coffee will increase by nearly 25% over the coming five years. In 2015, consumer intake of coffee stands at 141.6 million bags of beans; but by 2020, coffee demand is slated to rise to 175.8 million bags (each weigh approximately 132 lb.). Asia is the fastest growing coffee consumption region. According to caffeineinformer.com, today China coffee annul per capital consumption is only about 0.025 kg, which is much lower than other countries in the region. For instance, Philippines 1.2 kg, Japan 1.5 Kg, Thailand 1.6 kg, Singapore 2.1 kg and South Korea 2.6 Kg. In the progress of urbanization in Asia, we expect coffee consumption will continue to grow.

Thanks to the growing coffee demand, we believe Starbucks will continue to expand globally, especially in its second biggest market China. We believe China will be the biggest growth engine for Starbucks for next 5-10 years. In the end of 2016, Starbucks launched a app with WeChat (800 million active users) called Say It With Starbucks. 1.5 million gifts consumed in first of week of launch. People can purchase or send a Starbucks gift within 25 seconds by using this app. Starbucks is not only well operating its core business, but also connecting with today's technology. Today, in China Starbucks is operating over 2,600 stores, in 127 cities, and severs 5 million customer visits per week. From 2017 it opens a store in China every 15 hours. Starbucks plans to double the number of stores in China next 5 years.

Starbucks' share price has not performed well since 2016 due to less successful in non-core tea business. Starbucks' Q4 2017 reports announced that Unilever and Starbucks entry into a definitive agreement for Unilever to acquire the assets of the TAZO brand including TAZO's signature recipes, intellectual property and inventory for $384 million. As a result, Starbucks will drive a single tea brand strategy and focus with its super premium tea brand, Teavana. We believe this decision will benefit the company in the future, since it will focus more on its coffee business.

Starbucks has stronger brand power among peers. The company brands itself primarily as a beverage provider that offers a more typical coffee house dining experience. Starbucks locations are designed with the comfort of their customers in mind. Free Internet access and inviting decoration to offer a more attractive option for those looking for a place to read, relax or speak with friends. This also makes going to Starbucks a potential social activity, turning the stores into a destination rather than a simple distribution location. This appeals to customers seeking a premium experience.

When we are looking at the company we also have considered its potential risks. Those are economic conditions in the U.S. and international markets could adversely affect its business and financial results; Starbucks' success depends substantially on the value of its brands and failure to preserve their value, either through its actions or those of business partners, could have a negative impact on its financial results; Incidents involving food or beverage-borne illnesses, tampering, contamination or mislabeling, whether accurate, as well as adverse public or medical opinions about the health effects of consuming our products, could harm its business.

Finally, for the recommendation we give a buy rating with a target price of $64 (17% upside), which implies PE 26.14x of 2018 EPS (15% discount on PE 31.14x, 2012-2016 average). A 15% discount on 5 years average PE ratio is based on slower forecasted earnings growth (12.8%->10.0%).