Tampere University of Applied Sciences

Investors’ portfolio management strategies in times of economic and political change

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ABSTRACT

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The thesis has analyzed some of the contemporary economic and political challenges that investors must currently tackle and how to adjust their portfolio's accordingly. It has also suggested a variety of strategies and alternative investment vehicles that investors may take advantage of to reduce portfolio risk and minimize losses in case there is an economic downturn in the coming future.

A comparative analysis was implemented comparing how gold, bonds, dollar-cost averaging and individual stock picking as the best strategies for tackling economic downturns. The data was gathered from existing academic and scientific sources to ensure reliability and validity.

It was found that gold serves as a hedge against stocks as they have a negative correlation and that the value of gold spikes dramatically on days where there are significant amounts of negativity. Furthermore, gold serves as a safe bet against inflation. Nonetheless, gold is largely unpredictable and should only be a small part of a portfolio. Bonds were found to be only slightly positively correlated to bonds, but during recessions, the correlation is negative. As a result, bonds either gained in value during recessions or did not decrease nearly as much as stocks. Dollar-cost averaging into the recession was found to be of considerable risk, but setting cash aside to invest while the recession is on-going is what has historically benefitted investors most. In addition, a look into how individual investors may independently pick stocks that are financially stable enough to experience a downturn and recover.

The findings indicate that investors do have options available to counteract the vastly negative effects of economic downturns. Allocating a certain amount of gold or bonds to a portfolio shows to significantly reduce losses. However, if your risk tolerance is high and you have a considerable long investing time-horizon ahead of you, allocating a smaller percentage of your portfolio to bonds and investing heavily during the market crash results in larger returns. It is also a simpler way of investing compared to individual stock picking.

Keywords: Asset allocation, investing, market crash, bonds, cash, gold

CONTENTS

GLOSSARY

EMH	Efficient Market Hypothesis
EU	European Union
UK	United Kingdom
MPT	Modern Portfolio Theory
ETF	Exchange Traded Fund
US	United States
ROIC	Return on Invested Capital

1 INTRODUCTION

1.1 Background

Economic downturns and market crashes are a common aspect of the economic cycle. Ever since there has been a free floating market for a good or a commodity, there have been large price fluctuations. The first official record of a market crash happened in the mid-1600s in The Netherlands, known as the Tulip-bulb Craze. An exotic and beautiful flower was brought from Turkey, as demand for the flower increased dramatically over time, its market price surged way beyond its actual value. It reached a point where people were selling their other assets in order to buy tulips. When it eventually reached an absurd price that people were not willing to pay, the whole market crashed resulting in the loss of vast wealth among the Dutch population. In present time, the economic meltdown of 2007, initiated by the collapse of the US housing market, caused international markets to plummet. Millions of individual investors worldwide saw their life savings and assets disappear or diminish in value. (Malkiel 2015, 38.)

For the past 10-11 years since the Great Recession, a majority of financial markets across the globe have not only recovered, but increased exponentially in value. During the Great Recession in 2008, the S&P 500 index suffered a yearly loss of 38.27%, the worst since its inception in 1957 (Valetkevich, 2013), finally reaching a low of 666 in 2009 (Authers, 2014). Nowadays, after an increase of over 300% in the S&P 500, investors are again anxious about an economic downturn being just over the horizon.

Recent political and economic issues are threatening continued global growth. In 2016, the British people through a referendum, voted for the United Kingdom's departure from the European Union. In 2018, Donald Trump begun implementing tariffs on Chinese goods, due to a large trade deficit with China, ultimately causing a trade-war with the Chinese. Furthermore, rising interest rates by central banks across developed nations among other events, are causing shakiness in the world's financial markets and investors are becoming uncertain.

For years professionals have researched how assets should be allocated during economic downturns.

1.2 Objectives

This thesis analyses the various strategies and options available to the average investor that can aid them in building and adapting a portfolio capable of surviving through market crashes and recessions. It is not only about what investment vehicles one should incorporate, but also that the individual is in the right mindset when an inevitable market crash does occur. The thesis is aimed at people who wish to learn the concepts and strategies behind the construction a diversified and healthy portfolio. A theoretical framework regarding theories about our markets and portfolio management is laid out clearly to facilitate comprehension of how financial markets operate. Furthermore, an in-depth look into nowadays' political and economic issues will be explained clearly so the reader can gain an understanding into what is threatening our economies and financial markets.

A comparative analysis of gold, bonds, dollar-cost averaging and individual stock picking has been done against each other to gauge which strategy is best for the individual investors' portfolio.

1.3 Limitations

This thesis is not without its limitations. Despite using for a large majority academic journals, papers and theses, new research has not been conducted. To further improve the outcome of this thesis, Finnish hedge funds and wealth management companies could have been contacted to discover their strategy on how to adapt portfolio's to perceived economic downturns. Also, all the research on this subject is not fully completed as Brexit and the trade war with China has not yet come to a close, so it is difficult to accurately estimate the amount of risk to financial markets and economies. This thesis could have also gone deeper by including how much individuals should allocate in their portfolios by risk tolerance and age.

1.4 Disposition

This sub-chapter is designed to facilitate the comprehension of the thesis as it outlines the contents of each chapter and summarizes all the vital information that can be found.

Chapter 1 – In this chapter, I introduce the topic of my thesis and also the general direction which the thesis takes. The objectives are set out clearly where I discuss what I hope to achieve with the thesis and how I will achieve this. The limitations are also clearly represented. I suggest what aspects of my thesis are lacking and how I could further improve upon them in the future.

Chapter 2 – Here I introduce the required theoretical framework to understand the concepts of the thesis. I mention the business cycle, several investing theories as well as common terminology to ease the reading of the thesis.

Chapter 3 – I analyze contemporary political and economic risks that investors are facing. I thoroughly describe how Brexit, the US-China trade war and the yield curve pose significant risk to financial markets and lay out possible scenarios of how badly affected the economy could be

Chapter 4 – In this chapter, I analyze the alternative investment vehicles investors have at their disposal to reduce the impact of an economic downturn on their portfolios. Furthermore, I mention investing strategies that investors can take advantage of such as dollar-cost averaging and certain stock picking requirements investors should look for in a company for a long-term investment.

Chapter 5 – Here I conclude my thesis and provide my own point of views on the subject backed up by prior research and literature.

2 THEORETICAL FRAMEWORK

As the thesis is aimed at people who are interested in learning the concepts and strategies of building a diversified portfolio, I will outline the most important theories and key terms that appear throughout the paper to ensure full comprehension of the thesis.

2.1 Economic cycles

Economic cycles are also known as business cycles are characterized into four cycles: expansion, peak, recession and trough. A brief and simple explanation taken from an article written by Mark. S Bonham regarding economic cycles is provided below:

- **Expansion:** During the expansion stage of the economic cycle, economic factors such as business profits, wages, production and reduced unemployment are affected positively. Due to this, there is significant business expansion often resulting in higher amounts of debt. Throughout this time, as financial conditions are healthy, and businesses are generally able to cover their debts, money tends to be borrowed at higher interest rates.

- **Peak:** As with large businesses, the economy also experiences a peak where growth from the expansion stage starts to slowdown and in some cases decreases. During this phase, economic factors tend to remain high despite not enjoying continued growth. Demand for certain goods decreases while input costs remain high.

- **Recession**: In the peak phase, economic activity and GDP growth has slowed or decreased. As well as reduced demand for some goods. During the recession stage in the economic cycle, gross domestic product contracts in two consecutive quarters. The recession usually begins in one sector of the economy and then proceeds to all other industries. For example, the Great Recession of 2008 begun by the burst of the United

States' real estate housing bubble resulting in mass unemployment and a decrease in demand for goods and services.

- **Trough**: This is the low point in the economic cycle and the end of the recession. The economic environment is still poor, but not deteriorating further. Businesses and governments have liquidity issues causing them to default on their debts. Central banks reduce interest rates. Following the trough stage, the expansion stage of the business cycle begins. The latest trough we have experienced was in 2009. (Bonham, 2006.)

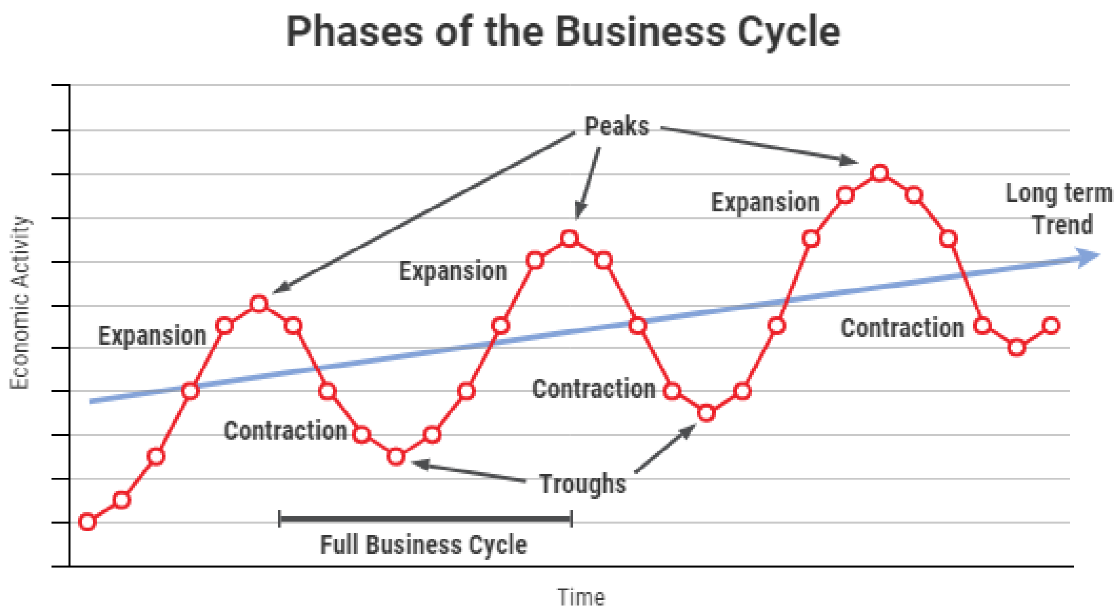


Figure 1. Phases of the Business Cycle (Bonham, 2006).

Figure 1 helps us visualize all the phases of the business cycle. A complete business cycle is from peak to peak. Here the economy has gone through an expanding period where it then reaches a peak. As a result, negative effects start to impact the economy such as overvaluations in the stock market, reduced demand and over supply for cyclical business and other factors. This leads to a contraction/recession in the economy where it finally reaches its low, known as a trough. From the trough, economic activity starts to increase across the board leading to the next expansion phase.

2.2 The Firm Foundation Theory

The Firm Foundation Theory suggests that each investment vehicle, such as stocks, real estate, art, bonds and so on have an intrinsic value that can be calculated by detailed research of the present conditions and the future earnings power of the asset. Therefore, the investor should arrive at this intrinsic value and purchase the asset once markets have unreasonably priced it beneath that value. (Malkiel 2015, 31.)

Burton G. Malkiel in his book, *A Random Walk Down Wall Street,* discusses what we know today as discounting. He argued that if we projected future earnings and discounted it back to present value, we would arrive at the intrinsic value. This is known as a discounted cashflow analysis. The formula for which is:

$$PV = \frac{CF^1}{(1+r)^n} + \frac{CF^2}{(1+r)^n} + \cdots + \frac{CF^n}{(1+r)^n}$$

PV = Present Value
CF= Cash Flow
r = rate
n = number of periods

To apply this formula, you must project the expected future cash flows of a business/project then divide it by 1 + the discount rate to the power of that year. The result is what those *future* cashflows are valued at *today.* To obtain the per share price of a stock from this formula, you divide the result by the number of outstanding shares to arrive at the per share price. To put it simply, if the per share price is higher after discounting the future values than the current price, then it is a worthwhile investment.

This theory is quite popular among economists and investors. It has a proven track record and arguably the most influential book on investing, Benjamin Graham and David Dodd's *Security Analysis* is based on this theory. Furthermore, one of the most successful investors of all time, Warren Buffet, follows the principles outlined in this book. For the active investor who wishes to compose his diversified portfolio of profitable and healthy stocks, understanding this theory and applying is paramount to its long-term success. (Malkiel 2015, 32.)

2.3 Efficient Market Hypothesis

A concept crucial to financial theory is the Efficient Market Hypothesis. This theory states that markets are highly efficient, meaning that markets absorb all available information regarding financial securities and then proceeds to price them accordingly. According to the theory, it is not possible to purchase securities that are undervalued or overvalued as all relevant information has already been priced-in and the current price of the security is at fair value. (Malkiel 2015, 159.) That being said, there are still three versions of the EMH:

1. Weak Form: This version suggests that present stock prices account for the data of past prices and that conducting fundamental analysis will result in the discovery of overvalued or undervalued stocks.
2. Semi-Strong Form: This version states that all public information relevant to a particular stock, has already been priced-in to the current stock price and therefore, it is not possible to conduct further analysis to obtain higher returns in the market.
3. Strong Form: This version indicates that not only is public information already pricing stocks accordingly, but even information that is not publicly known is influencing the price. Resulting in it being impossible for the average investor to gain an edge in the market. (Romero & Balch, 2015.)

Despite this theory not being directly related to portfolio management, it aids the reader in gaining a deeper understanding of the world’s financial markets. If the average investor wishes to build a diversified portfolio that can live through economic downturns, it is pivotal that he also understands the theories behind which our markets operate.

2.4 Markowitz' Modern Portfolio Management

Harry Markowitz is largely known for his contributions to financial theory. He was awarded a shared Nobel Prize for researched conducted in financial economics and corporate finance. He is the author of "*Portfolio Selection: Efficient Diversification"* written in 1959. His theoretical contributions to finance paved the way to what is known as "Modern Portfolio Theory" (MPT). (Mangram, 2013.)

The most highlighted aspect in MPT is the importance of diversification, whereby a portfolio is built by different non-correlated securities (more on diversification below). MPT is essentially an investing framework designed to maximize expected returns while minimizing unsystematic risk. (Fabozzi, Gupta & Markowitz, 2002, as cited in Mangram, 2013.)

This investing framework is built on seven key assumptions about financial markets and investors. (Bofah, n.d, Wecker, n.d, Markowitz, 1952 as cited in as cited in Mangram, 2013.):

1. Investors pursue to maximize risk while minimizing returns.

2. Investors only accept higher risk for higher returns.

3. Investors can access all relevant information regarding their investments.

4. Investors can borrow or lend an unlimited amount of capital at a risk-free rate of interest.

5. Markets are perfectly efficient.

6. Transaction costs and taxes are not included.

7. The possibility of being able to select securities that are not interdependent of each other.

That being said, many of these assumptions have been criticised:

1. MPT assumes that investors are rational and pursue to maximize returns while minimizing risk is contradicted by investors who get caught up in a “herd mentality” and only focus on what is achieving the highest returns while not considering the formation of a bubble. (Morien, n.d, as cited in Mangram, 2013.)

2. MPT assumes that investors only accept higher risk for higher returns is contradicted by certain investment strategies. In some cases, it is required to participate in a risky investment such as derivatives or futures to reduce overall risk without a large increase in returns. (McClure, 2010, as cited in Mangram, 2013.)

3. Another key assumption is that investors have access to all required information regarding the investments. However, higher ranking people in the investing world such as hedge funds and banks are better informed than ordinary people. (Bofah, n.d, as cited in Mangram, 2013.)

4. Investors do not have access to unlimited capital at a risk-free rate of interest in the real world. (Morien, n.d, as cited in Mangram, 2013.)

5. MPT assumes that markets are efficient. MPT’s relies heavily on asset prices which makes it vulnerable to systematic risk (Morien, n.d, as cited in Mangram, 2013). Furthermore, the countless crashes and bubbles that have occurred in financial markets suggest that markets are inefficient (Mangram, 2013).

6. Markowitz assumes that there are no taxes or transaction costs, this is proved wrong as investors are subject to several taxes as well as brokerage fees. (Mangram, 2013.)

7. One of the key assumptions of the theory is that there are securities which are not correlated. It has been demonstrated through several crises that during recessions and crashes, everything seems to go down. (McClure, 2010, as cited in Mangram, 2013.)

Markowitz' theory is quite heavily criticised. However, his theories about diversification are to be taken seriously. In addition, MPT requires quite an active participation on the part of the individual investor. Furthermore, his methods are mathematically quite rigorous and may as a result be challenging to implement by a person not educated in finance. A large majority of investors would rather take a more passive approach to investing by allocating their cash to index funds and bond funds. Nonetheless, I have included how to implement his findings to your portfolio below. Nowadays we luckily have access to Microsoft Excel which performs the complex mathematics behind MPT for us. This way, those who wish to take a more active approach in their investments can do so.

Portfolio return variance

A common way of measuring a portfolio's volatility is by calculating the variance. Variance is a "measure of the squared deviations of a stock's return from its expected return". (Bradford, J. & Miller, T, T., 2009; Ross, Westerfield & Jaffe, 2002 as cited in Mangram, 2013). A larger variance in a portfolio signals greater volatility. Image 2 shows how to calculate variance in excel.

Table 2: Simplified Portfolio Variance Calculations

Step #	Microsoft Excel Procedures and Functions
1	*Calculate Return of Individual Securities* - Calculate each individual periodic return (e.g. daily, monthly, annually) by dividing the adjusted close by the prior period's close, minus 1
2	*Calculate Percentage of Investment* – Calculate the percentage of investment represented by each security in the portfolio
3	*Calculate Portfolio Variance* – Calculate the variance of return for each respective security for the given period using Microsoft Excel formula VARP or DVARP (e.g. VARP(B:1:B10).

Table 2 demonstrates the simplified steps necessary to calculate the Variance of securities within a portfolio of stocks, utilizing Microsoft Excel. Calculation formula basis information was provided by S. Benniga (2006).

Picture 1: A Simplified Perspective of the Markowitz Portfolio Theory (Grangnam, 2013).

It has been observed that the variance of a portfolio decreases as the number of assets increases (Frantz & Payne, 2009 as cited in Mangram, 2013). This explains why indices such as the S&P 500 do not fluctuate largely, but instead have gradual small loses or gains.

Standard deviation

Another popular way of measuring volatility is standard deviation. This statistic indicates how far or how close an asset deviates from the expected return. The higher the deviation, the more volatile the asset is (Mangram, 2013). A growing company such as Facebook, will have a larger standard deviation than an already established company such as Coca-Cola. You can calculate the standard deviation by finding the square root of the variance (Bradford, J. & Miller, T., 2009 as cited in Mangram, 2013). See Picture 2 to know how to calculate standard deviation in excel.

Table 3: Simplified Standard Deviation Return Calculations

Step #	**Microsoft Excel Procedures and Functions**
1	*Calculate Portfolio Return* – Calculate the percentage of investment represented by each security in the portfolio
2	*Calculate Portfolio Return* – Calculate the sum of securities from step 1 using Excel SUM formula (e.g., SUM(A1:A10)
3	*Calculate Standard Deviation* – Use Excel formula STDEVP or DSTDEVP to calculate the standard deviation of portfolio return (e.g. STDEVP (C1:C10).

Table 3 demonstrates the simplified steps necessary to calculate the Standard Deviation of Return for securities within a portfolio of stocks, utilizing Microsoft Excel. The Standard Deviation (equal to the square root of the variance), reduces the squared percentages of the variances back to a percent. Calculation formula basis information was provided by S. Benniga (2006).

Picture 2: A Simplified Perspective of the Markowitz Portfolio Theory (Grangnam, 2013).

Covariance

To measure how closely two assets are correlated we need to find the covariance. If assets are positively related to each other, covariance will be positive, in the case of them being negatively related, covariance will be negative and if they are completely unrelated, covariance should be 0 (Ross, Westerfield & Jaffe, 2002 as cited in Mangram, 2013). Markowitz states that to achieve true diversification, it is necessary to invest in securities with negative covariance. See Image 4.

Table 4: Simplified Covariance of Return Calculations

Step #	Microsoft Excel Procedures and Functions
1	*Calculate Individual Returns* - Calculate each individual periodic return (e.g. daily, monthly, annually) by dividing the adjusted close by the prior period's close, minus 1
2	*Calculate Covariance of Returns* – Calculate the covariance of returns between selected pairs of security returns for the respective period(s) using Excel formula COVARP or COVARIANCE.P (e.g. COVAR(D:1:D10, E1:E10).

Table 4 demonstrates the simplified steps necessary to calculate the Covariance of Return for securities within a portfolio of stocks, utilizing Microsoft Excel. Covariance relates the returns of two stocks to each other. Calculation formula basis information was provided by S. Benniga (2006).

Picture 3: A Simplified Perspective of the Markowitz Portfolio Theory (Grangnam, 2013).

Diversification

Diversification, Markowitz' most important theory, is the concept of creating a portfolio consisting of various investment vehicles (gold, bonds, stocks), companies of varying sizes and industries which are not for the most part positively correlated with the end goal of minimizing risk while maximizing returns (Importance of diversification, 2009 as cited in Mangram, 2013). It is often compared to the old saying "don't put all your eggs in the same basket".

For example, negative news regarding the European debt crisis, usually has a negative effect on a companies' stock price. On the other hand, this same news has historically had a positive impact on the value of gold (Importance of diversification, 2009 as cited in Mangram, 2013). Diversification is a compelling risk reduction tactic has you can minimize potential losses to your investment portfolio (High, 2010 as cited in Mangram, 2013).

However, Markowitz acknowledges that it is impossible for diversification to eliminate all risks. Regarding finance and financial markets, there are two types of risk: Unsystematic risk and systematic risk.

Unsystematic risk – The type of risk that can be diversified away. It generally concerns itself with risk that belongs to certain securities. For example, when Netflix decided to restructure its pricing, Netflix was confronted with negativity from consumers, which resulted in less than ideal earnings and the stock price decreasing in value. (Mangram, 2013.)

Systematic risk – It is a larger level type of risk that affects securities across many or all sectors. Systematic risk may include, recessions, interest rates, inflation, natural disasters, unemployment or war. This risk tends not to be diversifiable. (Mangram, 2013.)

Even though diversification is a tried and proven strategy to reduce portfolio risk, investors must realize that there will always be certain factors threatening the continued returns of our investments.

2.5 Dollar-cost averaging

Dollar cost averaging (DCA) is a simple investing strategy utilized by almost everybody. It essentially means investing the same amount of money in index funds, stocks or bonds at certain time periods. It could be weekly, monthly, quarterly or yearly, over a long period of time. This strategy allows you to build your portfolio slowly, but methodically. It is a popular strategy for those who fear investing large amounts of money at one point in time. Dollar-cost averaging can minimize, but not avoid the risks during a recession (Malkiel 2015, 255.)

2.6 Investment vehicles

Common stocks – Individuals who wish to own a share of a company can buy a company's stock through a bank or brokerage firm. This results in having a right on a small portion of the corporation's earnings. Companies issue stocks as a mean of raising capital. (Mishkin 2016, 48.)

Bonds – They are a debt security that promises to pay out a certain amount of cash depending on the interest rate attached to it. There is usually a time horizon belonging to the bond and throughout that lifetime, periodic payments will be made and once it reaches maturity, you will receive the principal investment.

Bonds can be issued either by governments or by companies. Generally, they offer a smaller return than stocks, but are a safer vehicle. (Mishkin 2016, 48.)

Exchange Traded Funds (ETF) – ETF's are essentially a basket of stocks/bonds trading on a particular stock exchange as one stock. As stocks are, their value is constantly changing throughout trading hours and are liquid investments that can be bought/sold almost instantly. ETF's tend to track either indexes such as the OMX Helsinki 35 or sectors such as financial services or technology. (Malkiel & Ellis, 2009.)

Mutual Funds – Mutual funds are similar to ETFs in the sense that they are a basket of stocks/bonds. The difference being is that the mutual fund is for the most part actively managed by a portfolio manager resulting in higher maintenance fees.

Real Estate Investment Trusts (REITs) – This investment vehicle allows investors to invest in the real estate market without owning actual real estate. As with ETFs you can invest in a wide range of real estate. There are REITs available that invest in hospital buildings, others in shopping centres, in residential housing and more. (Lazard Asset Management, 2017.)

Commodities – Commodities are what we know as resources such as gold, corn, coffee, silver and so on. The prices fluctuate on a free market as if they were stocks or bonds.

2.7 Stock Exchange, indexes and crashes

Stock exchange – It is an organized and regulated institution where financial securities such as stocks and bonds are bought and sold. These financial securities are priced accordingly to the laws of supply and demand. Stock exchanges are used by corporations, governments and other bodies as a mean to raise capital (Kennon, 2019). For example, it is possible to buy Facebook, Inc. on the New York Stock Exchange. If you buy a share at 175$, you are then giving Facebook your capital in exchange for a share in the business.

Indexes – A stock market index is a basket of stocks trading as one on a stock exchange. The movements of the index are calculated by the weighted average of each stock that belongs to the index. For example, Finland has the OMX Helsinki 25, which is traded on the Helsinki Stock Exchange. The OMX Helsinki 25 is composed of the 25 most traded stocks in Finland. In the United States, the S&P 500 is one of the leading indexes, which is composed of the 500 biggest publicly traded companies in the country. Indexes are typically a benchmark for comparison to see how portfolios have performed against a certain country's stock market.

Stock market crash – A stock market crash tends to signify the end of a bull market. It is when stock indexes suffer devastating losses in just a couple days, often losing more than 30% of their entire value. They may occur due to external economic factors but can also happen due to crowd behavior and securities being overvalued compared to their intrinsic value. For example, the dot-com crash of the early 2000s, was caused by investors driving up the prices of companies far above their intrinsic value, in turn creating a bubble. Countless of internet-based companies that could not even turn a profit were surging over 200% in a matter of weeks. The value at which investors had priced these stocks factored in tremendous growth from these companies. When these unrealistic growth expectations were not met, it caused the market to crash, resulting in hundreds of companies going bankrupt or losing over 80% of their market capitalization. (Malkiel 2015, 79.)

3 POLITICAL AND ECONOMIC THREATS TO GLOBAL GROWTH

3.1 Brexit

On June 23rd, 2016, the population of the United Kingdom voted through a referendum to no longer be part of the European Union. At the time of writing, the UK is set to exit the EU in October 2019 (previously March 2019). This decision threatens the current status-quo as it may act as a trigger for other countries to join the movement. The EU and the UK have entered a gray area of negotiations where there has been no precedent. As a non-EU member, the United Kingdom will most likely have to forfeit their right of access to the Single Market, that entails a free movement of goods, services, capital and people, also known as the Four Freedoms. (Berthold & Jürgen, 2016.)

There are several scenarios that Brexit could evolve into, all resulting in different economic outcomes. Britain may adopt the Norway option, where they are part of the European Economic Area, they could follow Switzerland’s footsteps and negotiate many bilateral and a free trade agreement, they could have a customs union as Turkey does, or simply behave under the World Trade Organizations rules and regulations. (Berthold & Jürgen, 2016.) All options deserve an in-depth look which will not be provided in this thesis, but a link to existing studies may be found in the references section.

The European Union is the United Kingdoms largest trading partner. As of 2015, the EU imported 45% of the UK’s exports, that being said, it has been on a steady decline since 1999 where the EU was home to 60% of Britain’s exports. Signifying the EU as a loss of importance as a market for British goods. On the other hand, trade relations with the US have also declined while it has increased substantially with emerging market economies such as China. (Matthes, 2010 as cited in-Berthold & Jürgen, 2016.)

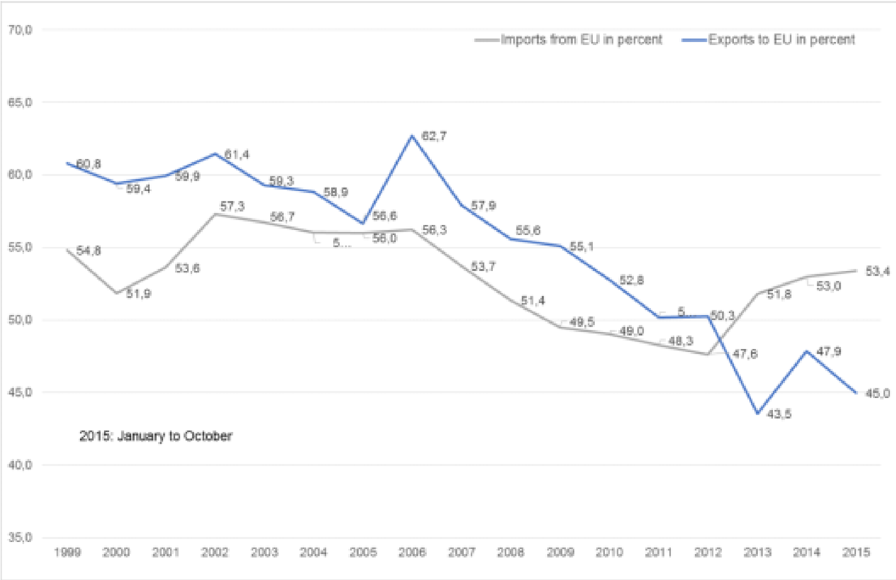


Figure 2. Trade relations between the UK and EU (Berthold & Jürgen, 2016)

As far as imports are concerned, the UK’s trade deficit with the European Union has experienced a steady increase since 1999 (Berthold & Jürgen, 2016). As of 2017, the deficit stands at -£67 billion (Ward, 2017).

A rupture in this relationship and the failure of a successful deal, could result in higher tariffs on imports and exports and higher trade barriers for both parties causing consumer prices to increase, negatively affecting investments and Foreign Direct Investment (FDI). General access to markets would be restricted and as a worst-case scenario, a trade war could occur. (Berthold & Jürgen, 2016.)

On the other hand, the UK would now have the freedom to establish new Free Trade Agreements with other nations across the globe, without the EU dictating the terms. However, Britain’s government would face new challenges along this road as to make up for the size of the EU market, it would require around 30 new trade agreements and there are doubts the UK would be able to effectively manage all of them. (Global Counsel, 2015, 22 as cited in Berthold & Jürgen, 2016.) Furthermore, the UK now has a lack of experience in managing bilateral and FTAs independently of the EU as they have been a member of the union for decades. In addition, as the UK would now be initiating trade discussions with other countries, this puts them at a disadvantage and at the mercy of the contacted nations. Moreover, it is believed that it would not be possible to obtain the same quality agreements as the EU with other countries as the UK is a much smaller market compared to that of the EU and other trade partners such as China, Japan and the United States. (Berthold & Jürgen, 2016.)

As the UK experiences the loss of the Four Freedoms, FDI will most likely decline resulting in a decrease of production, higher unemployment and less technical progress because of decreased competition in the markets. As a knock-on effect, this will negatively impact the economy, including the stock market (Berthold & Jürgen, 2016). In the tables below, you may see the levels of FDI in the UK and UK investments in other countries.

Table 1. FDI – international investment positions in the UK by area and main country (Berthold & Jürgen, 2016)

	2005		2014	
	GBP million	Percent	GBP million	Percent
Europe	**277,027**	56.7	**608,736**	58.9
EU	244,392	50.1	495,798	47.9
Netherlands	95,579	19.6	175,997	17.0
Luxembourg	7,880	1.6	78,852	7.6
France	56,309	11.5	76,048	7.4
Germany	51,469	10.5	50,089	4.8
Spain	8,782	1.8	45,690	4.4
UK Offshore Islands	7,059	1.4	61,810	6.0
The Americas	**174,037**	35.6	**336,772**	32.6
USA	149,759	30.7	252,975	24.5
Asia	**24,101**	4.9	**73,628**	7.1
Australia & Oceania	**12,537**	2.6	**12,190**	1.2
Africa	**510**	0.1	**3,008**	0.3
World, total	**488,212**	100.0	**1,034,335**	100.0

Table 2. FDI – international investment positions of the UK abroad by area and main country (Berthold & Jürgen, 2016).

	2005		2014	
	GBP million	Percent	GBP million	Percent
Europe	**387,324**	55.6	**474,523**	46.7
EU	339,691	48.8	404,168	39.8
Netherlands	64,511	9.3	118,779	11.7
Luxembourg	97,260	14.0	108,090	10.6
France	47,348	6.8	38,236	3.8
Ireland	26,824	3.9	33,774	3.3
UK Offshore Islands	29,954	4.3	32,138	3.2
The Americas	**216,343**	31.1	**355,968**	35.1
USA	164,405	23.6	239,805	23.6
Asia	**54,919**	7.9	**121,007**	11.9
Hong Kong	20,432	2.9	52,328	5.2
Australia & Oceania	**16,694**	2.4	**21,357**	2.1
Africa	**20,834**	3.0	**42,495**	4.2
World, total	**696,113**	100.0	**1,015,351**	100.0

To highlight the economic risk of reduced FDI in the UK, EU companies could potentially cut out the UK out of their future strategies and relocate existing offices and headquarters back to the European Union. In addition, MNC's from outside of Europe, typically the US, utilise the United Kingdom as a passageway to continental Europe. For example, US financial corporations establish offices in the UK to take advantage of the free movement of capital. (Lannoo, 2016 as cited in Berthold & Jürgen, 2016.) Furthermore, empirical evidence demonstrates that EU membership is a crucial factor for FDI in Britain. Out of the 28 EU countries, there is a 12.7% possibility that FDI will land in Britain. If Britain were to lose 25% market access to the EU, that statistic drops to 7% possibility and if they lose 50%, the chance of FDI drops to 2.9%. (Barret et al., 2015, 72.)

According to research by Maria C. Latorre, Zoyana Olekseyuk, Hidemichi Yonezawa, and Sherman Robinson at the Peterson Institute for International Economics (2019), the general consensus of economic studies shows that Brexit will negatively impact the UK and the EU, but the UK will experience far more damage to its economy. Brexit entails a smaller EU market, which results as a challenge for the other members as they attempt to find new ways to reach customers. As per the studies, the UK will suffer greater losses in foreign trade, private consumption, production, wages and so on.

A “no deal” scenario may result in the UK suffering a GDP loss of -1.2 to -4.5% depending on what trade deals they are able to negotiate. FDI is critical as it accounts for one-third of the overall shrinkage of GDP in the UK and the EU. As for financial markets, the political uncertainty around Brexit has caused large amounts of volatility causing investors to be cautious and nervous. The pound has been affected negatively, losing value against other currencies such as the Euro and US dollar. Investors have been moving their investments from stocks to bonds as uncertainty and risk has increased. However, the FTSE 100 is an international index where 78% of revenues come from abroad, meaning that the economic atmosphere in the EU and UK may not impact it as severely as some expect. (Barclays, 2018.)

Lastly, diversification remains paramount as Henk Potts, Director of Investment Strategy at Barclays Bank quotes: “Diversification continues to be an important blanket of protection against the market volatility we are seeing, and this is likely to continue into 2019. Investors need to make sure they’re diversified across asset classes and across geographical regions.”

3.2 US-China trade war

Since early 2018, the US government, led by recently elected president, Donald Trump has implemented protectionist trade policies on various products, namely aluminum and steel against China. This strategy is part of his “Make America Great Again” campaign, as he states that China has been taking advantage of the United State in trade matters pointing out the huge trade deficit the US has against China. (Berthou, Jardet, Siena and Szczerbowicz, 2018.) Since the first tariffs were implemented, the US has applied tariffs worth US$250 billion exclusively to China and the Chinese retaliated with US$110 billion on tariffs (Wong & Koty, 2019).

Research by economists demonstrates that a 30% to 60% increase in tariffs, leads to a loss of 2% to 3% in GDP over the long term. Other research conducted by the French Council of Economic Analysis states that it would be a 3% to 4%

decrease in GDP. The chart below demonstrates results of an economic model that consists of a trade war scenario where tariffs have been increased by 10% across the globe. The results show reduced demand due to increased consumer prices because of higher tariffs. Higher import tariffs signify a reduction in demand for domestic products abroad ending in a reduction of output. Supply is also affected negatively as the cost of production also increases. Utilizing the same model, a 30& to 60% increase in tariffs would result in a global GDP loss of 3% to 6%. (Berthou, Jardet, Siena and Szczerbowicz, 2018.)

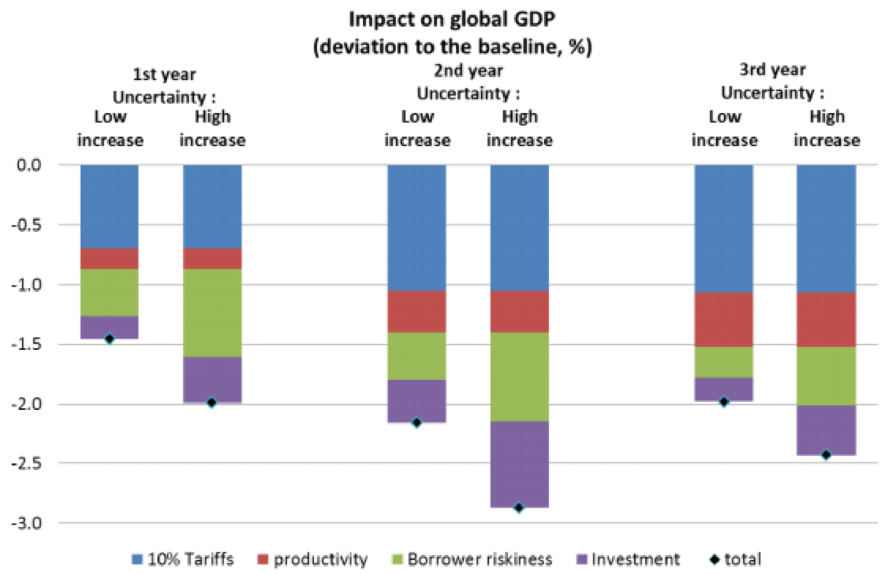


Figure 3. Impact of a 10 percent increase in tariffs on global real GDP (Berthou, Jardet, Siena and Szczerbowicz, 2018).

These global events affected financial markets as soon as Trump declared he would impose protectionist trade measures across the globe, but most importantly on China. Between February-March of 2018, world indexes fell roughly 10% as negative news around the trade war started to emerge. After a recovery during the following months, another more severe shock to the financial markets occurred due to the trade war and rising interest rates. This time, US indexes fell as much as 20% across September-December, resulting in the first bear market since the Great Recession. (Reeves, 2018.) Individual stocks relying heavily on the products upon which tariffs were imposed, experienced tremendous falls in value. For example, Thor Industries, Inc. a company in the automobile industry, with growing revenues and profits for the past 10 years, low debt, large amounts of cash reserves and good management has since February experienced a loss of 60% in the stock price as they rely on steel and aluminum to produce their vehicles.

As the trade war and Brexit continue to unfold, investors are growing cautious and seeking alternative investment vehicles to equities, as many indicators are signaling that the financial markets may experience a severe downturn soon.

3.3 Yield curve

The US Treasury yield curve is a plot of the yields on all Treasury bond yields. This includes from 1-month long bonds to 30-year bonds. Typically, the curve is an arching upward slope because the longer the bond has to mature, there is more risk of default, therefore investors expect a higher return. (Long & Burns, 2019.)

When the yields of long-term bonds are much higher than short-term ones, the curve is referred to as “steep”. For example, a 30-year bond yielding a much higher yield than a 2-year bond. On the other hand, when the yield curve is flat, it indicates that a long-term bond is yielding only a little bit more than a short-term bond. (Long & Burns, 2019.)

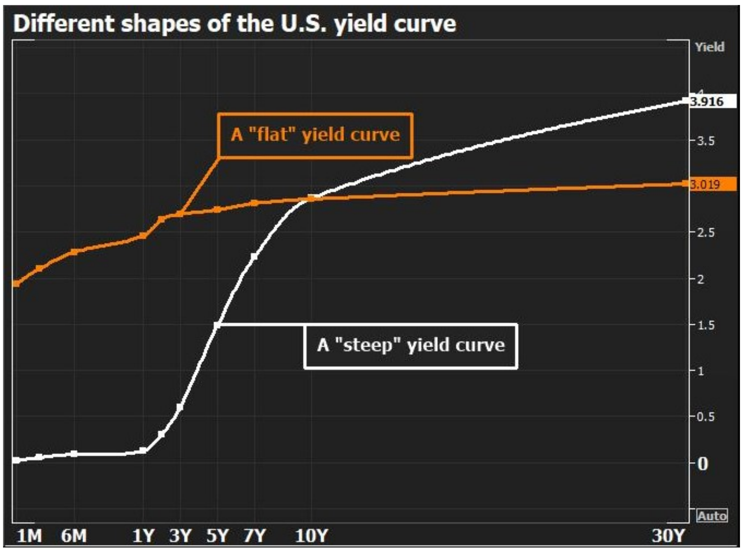


Figure 4. The US Treasury yield curve (Long & Burns, 2019).

In extreme cases it is possible for the yield curve to invert. As a result, shorter term bonds are now yielding more than longer term bonds. For some time now the yield curve has been flat, but on the 22nd of March 2019, the yield curve inverted as the 3 month bond was yielding higher than the 10 year bond. (Long & Burns, 2019.)

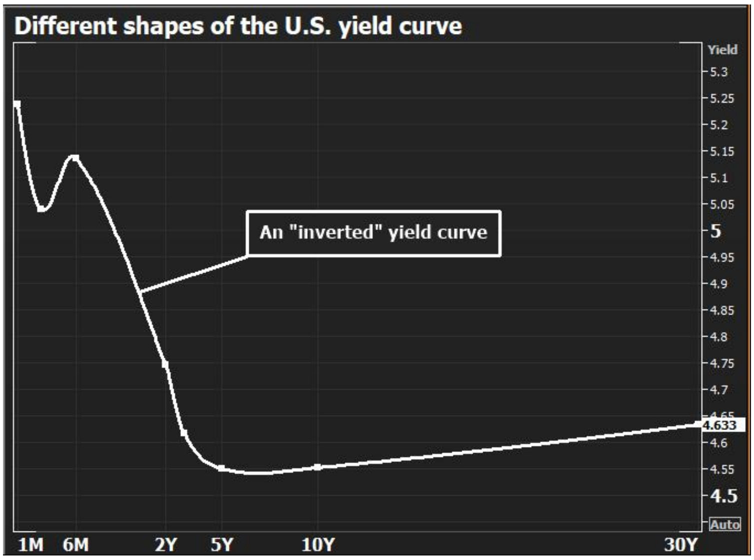


Figure 5. An inverted yield curve (Long & Burns, 2019).

The last time the yield curve inverted was in 2007 and in 2008 we experienced the Great Recession. An inverted yield curve has historically been a leading indicator that a recession may be over the horizon (Wright, 2007). An inversion of the yield curve has served as a predictor of the last eight recessions, only failing in the mid-sixties. However, the second quarter of 1967 suffered a negative growth rate of 0.06%. This does not signify a recession, but it does confirm a correlation. Furthermore, this relationship goes back further than that. The yield curve inverted between 1920-1921 and between 1928-1929. There is not enough concrete information for dates further back, nonetheless this relationship has been traced back as far as the mid-1800s. (Cwik, 2005.)

As the yield curve has recently inverted, it will be interesting to see whether we are in for a recession. Apart from the inversion, there are other indicators signaling that a recession may be underway. We have covered Brexit and the trade war, but other issues that we must keep in mind are the huge amounts of debt being taken on by households and by governments, stock market valuations are quite high and also the fact that we haven’t had a major pullback for 10 years.

4 ASSET ALLOCATION DURING ECONOMIC DOWNTURNS

During an economic downturn, it is normal for market indexes to lose over 40% of their value, with individual companies often losing far more than that and even filing for bankruptcy. To the uneducated eye, the financial markets seem like a huge risk where one can potentially lose everything and unfortunately that is true. However, there are alternative options to stocks during downturns that may experience some capital gain or not be affected so negatively. Popular examples of these assets are commodities such as gold, bonds and cash. Even so, if you as an investor, have researched your chosen stocks appropriately, a recession where your investments have lost tremendous amounts of value could simply mean an opportunity to buy more of the same equities at a discounted price.

Furthermore, a popular way for ordinary people to invest is through index funds and If you are in the right mindset, investing gradually during the time of the recession as often proved to be quite profitable. What I hope to achieve through this analysis is gauge how effective other asset classes such as gold, bonds and cash are in times of economic uncertainty and turmoil. For them to be an efficient investment vehicle they must move inversely to equities.

4.1 Gold

Gold has historically been a “safe haven” from stocks during times of recession, bear markets and chaos. Gold is a hedge against stocks and inflation, including gold in your investment portfolio reduces the variance, while minutely improving returns (Jaffe, 1989 as cited in Taurasi, 2012). On the other hand, it is argued that gold is an efficient investment only during certain periods as consistently including it in your portfolio could result in lower returns, for example gold yielded negative returns during 1984-1995 (Baur and Lucey, 2010 as cited in Taurasi 2012). Furthermore, Baur and Lucey state that gold is a safe haven, but only in the short run. On the day of extreme negative stock returns, the value of gold tends to increase dramatically, but throughout the following weeks it slowly decreases. However, they acknowledge the strong results gold obtained during the financial crisis of 2008. Some further analysis into gold and precious metals found that portfolios including gold, silver and platinum obtained significantly better returns. (Hillier et al, 2006 as cited in Taurasi 2012.)

Research conducted by Taurasi (2012), finds that gold's returns do not correlate to market returns in time of economic uncertainty and political instability. Precisely these findings are what makes gold a safe haven asset. The value of gold is protected during losses in financial markets and political uncertainty.

The value of gold increased 33% during the 9/11 terrorist attacks meanwhile markets plummeted, and billions of dollars were lost (Taurasi, 2012). Gold during the 2008 financial crisis also experienced significant gains.

Table 3. Gold and other metals performance during the Great Recession (Zielinski, 2009).

	Gold	**Silver**	**Platinum**
Dec 31, 2007 Close	833.75	14.76	1530.00
Dec 31, 2008 Close	869.75	10.79	898.00
Annual Change	+36.00	-3.97	-632.00
Percentage Change	**+4.32%**	**-26.90%**	**-41.31%**
2008 Low	712.50	8.88	763.00
Change from start to low	-121.25	-5.88	-767.00
Percentage Change	**-14.54%**	**-39.84%**	**-50.13%**
2008 High	1011.25	20.92	2273.00
Change from start to high	+177.50	+6.16	+743.00
Percentage Change	**+21.29%**	**+41.73%**	**+48.56%**

Table 4. US Top 3 indexes prices throughout the Great Recession (Wikipedia).

Date	Nasdaq	% Chng.§	S&P 500	% Chng.§	Dow Jones	% Chng.§
January 3, 2007	2,423.16	—	1,416.60	—	12,474.52	—
October 9, 2007	2,803.91	+15.71%	1,565.15	+10.49%	14,164.53	+13.55%
October 10, 2007	2,811.61	+0.27%	1,562.47	−0.17%	14,078.69	−0.61%
January 2, 2008	2,609.63	−7.18%	1,447.16	−7.38%	13,043.96	−7.35%
June 27, 2008	2,315.63	−11.27%	1,278.38	−11.66%	11,346.51	−13.01%
November 4, 2008	1,780.12	−23.13%	1,005.75	−21.33%	9,625.28	−15.17%
January 2, 2009	1,632.21	−8.31%	899.35	−10.58%	9,034.69	−6.14%
January 20, 2009	1,440.86	−11.72%	804.47	−10.55%	7,949.09	−12.02%
March 9, 2009	1,268.64	−11.95%	676.53	−15.90%	6,547.05	−17.64%
October 9/10, 2007 to March 9, 2009	−1,542.97	−54.9%	−888.62	−56.8%	−7,657.49	−54.1%

As per the tables, investors including gold in their investment portfolio's during the Great Recession would have been able to offset considerable amounts of losses due to the negative correlation of gold towards stocks.

When Brexit was confirmed, the FTSE 100, London's main index experienced an instant loss of 9%, the Euro Stoxx 600, an index containing 600 European equities closed at a loss of 7%, the Japanese Topix index lost 7.3% in value and the US S&P 500 fell 3.6%. Individual stocks in the UK primarily in the banking, retail and building sectors lost over 20% of value in one day. Comparably, gold did extremely well by rising 8% on the day. (Mackenzie & Platt, 2016.)

Figure 6. The performance of gold when Brexit was decided (Mackenzie & Platt, 2016).

As shown by the data and research gold is an effective asset to diversify into to offset losses by economic and political uncertainty. Furthermore, Burton G. Malkiel, author of *A Random Walk Down Wall Street,* also backs gold as being part of a good diversified portfolio, highlighting that apart from it not being correlated to equities, if inflation were ever to surge again, gold would provide decent returns.

4.2 Bonds

As an investor, it is impossible to not suffer losses during market uncertainty and recessions. However, as we have learned that diversification is the "only free lunch" in investing, including bonds in investment portfolios may significantly reduce volatility during recessions the like we experienced in the early 2000s and 2008/09 (Malkiel 2015, 201). The past 10 years have been exceptional for stocks and it is easy for investors to continue purchasing stocks at elevated prices due to the huge returns. Nowadays investors seem to forget what a market crash could do to their assets.

Bonds have always been a classic example of what a diversified portfolio should contain due to their extremely low or negative correlation to stocks. Even though stocks have outperformed bonds by a large amount throughout history, bonds tend to outperform stocks during times of financial duress (Ilmanen, 2003). High rated quality bonds are the closest thing to a risk-free investment and should be part of an investor's portfolio. Nonetheless, bonds despite their relation to stocks, do not guarantee large returns, they simply are less volatile to market sentiment and more likely to preserve capital in the face of a recession.

Table 5. Bonds vs Stocks performance 1947-2009 (Malkiel, 2015)

AN ERA VIEW OF U.S. STOCK AND BOND RETURNS (AVERAGE ANNUAL RETURNS)

Asset Class	*Era I* *Jan. 1947– Dec. 1968* *The Age of Comfort*	*Era II* *Jan. 1969– Dec. 1981* *The Age of Angst*	*Era III* *Jan. 1982– March 2000* *The Age of Exuberance*	*Era IV* *April 2000- March 2009* *The Age of Disenchantment*
Common stocks (S&P 500)	14.0%	5.6%	18.3%	−6.5%
Bonds (high-quality, long-term corporates)	1.8%	3.8%	13.6%	6.4%
Average annual inflation rate	2.3%	7.8%	3.3%	2.4%

The table demonstrates bond and stock returns over a large period of time. As previously stated, stocks outperform bonds for a large majority of history, but during recessions, bonds fare much better. April 2000 to 2009 is known as the "lost decade" for U.S stocks due to the two market crashes. Despite two devastating crashes, bonds were able to pull forward and demonstrate a respectable return of 6.4%. (Malkiel 2015, 329)

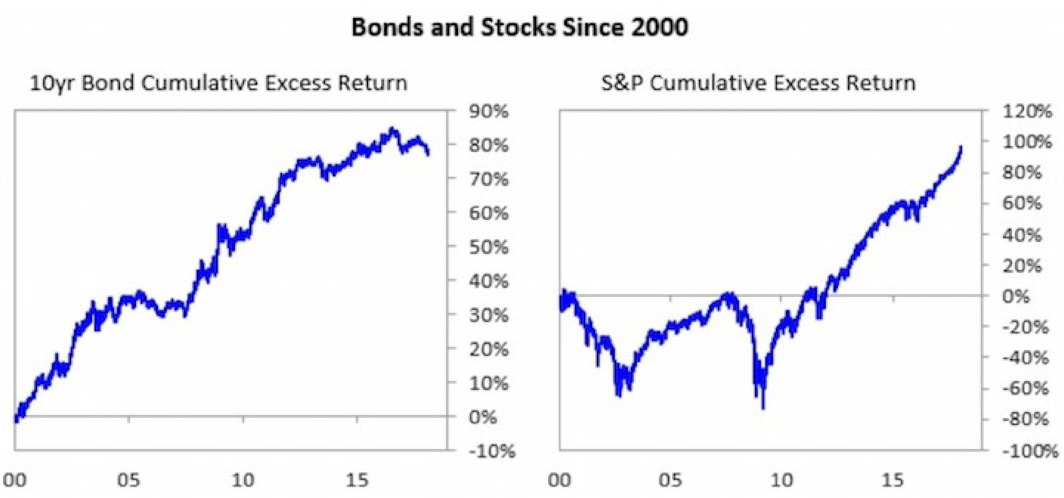
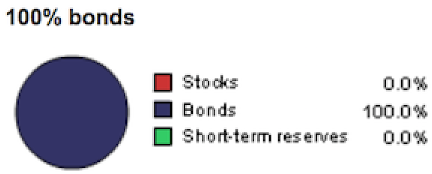


Figure 7. Bonds and Stocks since 2000 (Dogen, 2019)

The reason behind less volatility attached to bonds is that they provide a lower return which results in less risk. As mentioned, when you own a bond, you have literally lent your money to a business or government that has agreed to pay you a fixed amount of interest over a certain period of time and when the bond reaches maturity (end of the contract/life cycle) you will get your money back. Furthermore, bonds have ratings such as AAA, AA, A, BBB, BB… and so on. AAA bonds are the highest and safest bonds and it simply decreases from there on. They are ranked most importantly on how likely the borrower is to repay their debt. Countries such as the United States have never defaulted on their debts, resulting in their bonds being the safest asset class. Corporations can also issue bonds; however, they are riskier as they can go bankrupt. Nonetheless, if a company declares bankruptcy, they are to liquidate all assets and repay back loans, in this case bank loans as well as bonds. On the other hand, if you were a stockholder in the company, your share of that company would be reduced to nothing. All resulting in bonds being a less volatile investment than stocks.

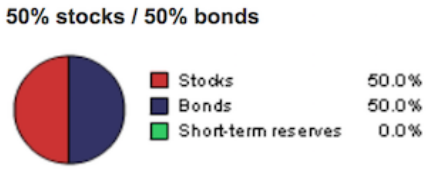
A study conducted by Vanguard (2016) analyzed portfolio returns from 1926-2016. There were 9 different portfolios with different weightings of stocks and bonds. One extreme had 100% bonds while the other had 100% stocks. The rest of them had varying levels of stocks and bonds.



Historical Risk/Return (1926–2016)	
Average annual return	5.4%
Best year (1982)	32.6%
Worst year (1969)	–8.1%
Years with a loss	14 of 91

Picture 4. Historical returns of a 100% bond portfolio (Vanguard, 2016)

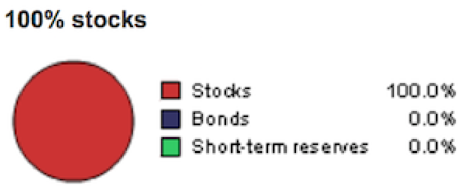
A portfolio consisting of 100% bonds only returned 5.4% on average meanwhile only suffering a maximum loss of -8.1%.



Historical Risk/Return (1926–2016)	
Average annual return	8.3%
Best year (1933)	32.3%
Worst year (1931)	–22.5%
Years with a loss	17 of 91

Picture 5. Historical returns of a 50-50 stock/bond portfolio (Vanguard 2016)

As a comparison, picture 5 demonstrates a 50-50% share between stocks and bonds. Here we can see how the average annual return has increased to 8.3% and that is a significant amount as it is compounded yearly. The worst year this portfolio experienced was 1931, during the Great Depression, where it suffered a loss of -22.5%. Here we see that adding 50% stocks has greatly increased reward while also increasing risk.



Historical Risk/Return (1926–2016)	
Average annual return	10.2%
Best year (1933)	54.2%
Worst year (1931)	–43.1%
Years with a loss	25 of 91

Picture 6. Historical returns of a 100% stock portfolio (Vanguard, 2016)

Picture 6 indicates that a portfolio of 100% stocks returned 10.2% per annum, an increase of 1.9% over a portfolio weighed 50-50. Hindsight indicates that a 100% stock portfolio is the best investment strategy, but these are gains only if you did not sell. As we can see, a drop of -43.1% was experienced, that's double the amount of a 50-50 portfolio. As Daniel Kahneman states, losses are felt twice as much as victories. As a result, many investors would be deeply frightened and full of anxiety. With their emotions making their decisions for them, it is likely that an ordinary investor would sell and lose all if not a vast amount of his/her assets.

As the past 10 years have been constant explosive growth, it is easy to forget what a market crash will look like and what it means for our assets. That is why it remains pivotal to keep a diversified portfolio even if it means sacrificing short term gains. Chris Pariseault, Fidelity's Head of Fixed Income and Global Asset Allocation Institutional Portfolio Managers said this about our present situation: "The volatility in the fourth quarter of 2018 rewarded fixed income investors who invested in higher-quality bonds and risk-free assets such as US Treasury bonds. It also provided a reminder of how important it is to keep portfolios diversified in uncertain times."

4.3 Dollar cost averaging throughout the recession

Market crashes and recessions despite being a natural part of the economic cycle, are cause for tremendous amount of anxiety, stress and sleepless nights. Nonetheless, if you are an investor with a long-time horizon over you until retirement, you should not so much fear a recession, but see it as an opportunity.

As many economists and financial experts indicate that we are nearing a peak in the economic cycle and many companies are overvalued, it is reasonable to expect a downturn in the coming years and having cash set aside for when the market drops a considerable amount is wise.

Warren Buffet states that only individuals who wish to sell equities in the near future should hope that the stock market rises. On the other hand, if you are a prospective buyer of equities, you hope that the stock market crashes and stumbles leaving you with cheap undervalued equities, so you get the best value for your money (Malkiel 2015, 357).

Dollar cost averaging is not the strategy that will save your portfolio because during a crash no plan can fully protect you. However, it is possible that it will off-set some risk. Taking into account that you have the mental strength and money set aside, you must invest periodically during the recession. Despite all the negativity heard on the news and all the negative numbers you are witnessing on your portfolio, you must not interrupt automatically investing a certain amount of money every so often. In the case that you do quit investing during the recession, you lose your advantage, which is acquiring shares of companies or index funds at lower prices. As a result, when the economic cycle enters expansion once again, you will be situated perfectly to reap tremendous benefits due to investing during a recession and purchasing equities at extremely low prices. Be that as it may, some investment advisors are not fans of dollar cost averaging as it only is beneficial during volatile and declining markets. During a market that is going straight up, you are losing out on capital appreciation if you had the chance to invest a lump sum of money. (Malkiel 2015, 357.)

The following table demonstrates a real example of dollar cost averaging. It assumes you made an initial investment of $500 on January 1, 1978, and then invested $100 a month in the Vanguard 500 Index fund. In total, less than $44,000 was invested, but the final value was $480,000.

Table 6. An example of Dollar Cost Averaging During Long-Time Periods (Malkiel, 2015)

ILLUSTRATION OF DOLLAR-COST AVERAGING WITH VANGUARD'S 500 INDEX FUND

Year Ended December 31	*Total Cost of Cumulative Investments*	*Total Value of Shares Acquired*
1978	$1,600	$1,669
1979	2,800	3,274
1980	4,000	5,755
1981	5,200	6,630
1982	6,400	9,487
1983	7,600	12,783
1984	8,800	14,864
1985	10,000	20,905
1986	11,200	25,935
1987	12,400	28,222
1988	13,600	34,080
1989	14,800	46,127
1990	16,000	45,804
1991	17,200	61,010
1992	18,400	66,818
1993	19,600	74,688
1994	20,800	76,780
1995	22,000	106,945
1996	23,200	132,769
1997	24,400	178,219
1998	25,600	230,621
1999	26,800	280,567
2000	28,000	256,274
2001	29,200	226,624
2002	30,400	177,505
2003	31,600	229,526
2004	32,800	255,481
2005	34,000	268,935
2006	35,200	312,320
2007	36,400	330,353
2008	37,600	208,942
2009	38,800	265,758
2010	40,000	306,758
2011	41,200	313,984
2012	42,400	364,935
2013	43,600	483,747

To illustrate how dollar cost averaging works during a volatile market, see table 7.

Table 7. Dollar Cost Averaging (Malkiel, 2015)

DOLLAR-COST AVERAGING

	Volatile Flat Market			Rising Market		
Year	Amount Invested	Price of Index Fund	Number of Shares Purchased	Amount Invested	Price of Index Fund	Number of Shares Purchased
1	$1,000	$100	10	$1,000	$100	10
2	1,000	60	16.67	1,000	$110	9.09
3	1,000	60	16.67	1,000	$120	8.33
4	1,000	$140	7.14	1,000	$130	7.69
5	1,000	$100	10	1,000	$140	7.14
Amount invested	$5,000			$5,000		
Total shares purchased			60.48			42.25
Average cost of shares purchased	$82.67 ($5,000 ÷ 60.48)			$118.34 ($5,000 ÷ 42.25)		
Value at end	$6,048 (60.48 × $100)			$5,915 (42.25 × $140)		

In table 7, we can see how dollar cost averaging operates in a hypothetical situation; volatile flat market and a rising market. It assumes that $1,000 is invested each year. In scenario one, the market decreases in value after the first investment, then rising and falling until year five where it goes back to the same price. In scenario two, the market rises constantly with a 40% increase from the original price. The investor in the volatile market gains a larger return than the one in the rising market.

Having cash set aside to dollar cost average your investments during a recession is a strategy to off-set some risk. However, it does take a lot of mental fortitude to carry out this strategy due to the losses you will most likely experience. Nonetheless, when the stock market starts to recover, you will reap the benefits of buying equities at such low prices.

4.4 Stock picking for the active investor

What is mostly advised for individual investors is to simply invest into an index fund throughout one's life, including during downturns and leave the stock picking to the professionals in hedge funds and investment banks, which oddly enough do not outperform the market most of the time. Honestly, it makes sense as investing into an index fund, you are guaranteed to achieve the same returns as the market, which compounded annually are quite generous. Notwithstanding, learning to choose your individual and see them succeed is more satisfying than brainlessly investing passively into the S&P 500.

So, what criteria should the individual investor look for in individual companies that ensure a good return on investment while also making sure that the chosen company is able to survive an economic downturn? Benjamin Graham (1949) in his book, *The Intelligent Investor,* kindly lays it out.

Adequate size – A company must have a certain market capitalization for it to be considered by an individual investor. As a rule of thumb, it should be worth $2 billion dollars or more. (Graham 1949, 348.)

Strong financial structure – A company has a strong financial structure when its current ratio is 2:1. This implies that the company's current assets are twice the size of current liabilities. This is probably the most vital requirement to survive hard times and it ensures they have sufficient working capital to "weather the storm". (Graham 1949, 348.)

Stable earnings and growth – A company worthy of investment has been able to grow their profits year over year over a long period of time, preferably 10 years, but 5 years is also acceptable, as long as the company has not incurred a loss. However, modern accounting may distort earnings per share (EPS) and another reliable alternative is looking at return on invested capital (ROIC). ROIC indicates how well a company is using its invested capital to generate returns. (Graham 1949, 348.)

Dividends – As for dividends, Graham suggests looking at the company's dividend record. If it has been able to continually grow its dividend payment for over a long period of time, it indicates a healthy and stable cash flow for investors. Even though that may change as past performance is not indicative of future results, it is at least somewhat comforting to know. (Graham 1949, 348.)

Price-to-earnings ratio (P/E ratio) – The price to earnings of a stock (how much a stock trades above its earnings) should not exceed 15. (Graham 1949, 349.)

Moderate price-to-book ratio (P/B ratio) – A company should not have an exceeding P/B ratio of 1.5. However, a large amount of value comes from intangible assets. Such as, franchises, brand names, patents and trademarks. These factors influence P/B ratio. As a result, P/B ratio may be higher nowadays. (Graham 1949, 349.)

These rules should not be taken religiously, but as a guideline. Benjamin Graham was writing in 1949, so the situation has undoubtedly changed. Following these principles will ensure that you do not fall into bubbles. In addition, he wrote a full book on investing and stock picking, this is simply a little bit of information from it.

A modern example of a bubble forming is the Canadian cannabis industry. There are companies trading at ridiculously high P/E ratios, stock prices have increased thousands of percentage points in a just a couple years, a majority if not all are unprofitable and there are often huge daily price swings of 20%. Last time this happened, it was in the early 2000s which resulted in the burst of the dot-com bubble. Despite attractive returns, investors should steer away from this industry for now.

Case example:

I will apply the above guidelines to a real company that I have analyzed and believe that it will survive an economic downturn. However, it does not follow Grahams guidelines 100% and the individual investor should assess the risks himself.

I purchased Facebook at $155 dollars last year when it was at a P/E of only 23. On an **8-year compounded annual growth rate**, Facebook since its IPO has been able to increase its revenues by 45%, earnings per share by 44.2%, free cash flow by 49.8% and equity by 58.04%.

It is a company with literally no existing debt and has a current ratio of 12.92, far exceeding the requirement of 2. Facebooks return on invested capital is on a 5-year average basis at 14.60%. In addition, they have $50 billion dollars in cash.

I have only listed the hard facts regarding financials. Individual stock picking requires much more than that as you need to assess how effective company management is, what is their economic advantage and assess their future prospects.

The aim of this thesis is not to go further into individual stock picking, but to analyze the options available to the average investor to ensure the construction of a portfolio capable of experiencing an economic downturn. If the reader wishes to learn more about the subject, he should seek further education on the matter.

5 DISCUSSION AND CONCLUSION

This thesis has analyzed some of the contemporary economic and political challenges that investors must currently tackle and adjust their portfolio's accordingly.

Brexit is a lose-lose scenario for the UK and the EU as they will both suffer economically. The UK has a long and arduous road ahead in the case of a no-deal Brexit as it attempts to negotiate numerous trade deals with nations across the world. The challenges lay in reduced negotiating power, a smaller market than the EU and loss of experience due to being a long-standing member of the European Union. As per several studies, GDP may be may suffer anywhere from -2 to – 6 percentage points with the European Union suffering similarly, but not as severe.

The US – China trade war has already attributed more risk to the financial markets and tariffs implemented are diminishing companies' profit margins, resulting in companies missing revenue and profit expectations by analysts causing stock prices to drop. Furthermore, as backed up by countless economists, protectionist measures in trade do not end well for healthy trade relationships over the long term and alternatives must be implemented. The yield curve inverted briefly and even if history is not always a guarantee of future occurrences, it has an extraordinary record as the leading predictor.

Research has shown that gold has served as a good hedge against market drops as seen in 9/11, the day of the Brexit vote and during the Great Recession in 2008. Even if it is an efficient hedge backed by scientific research, it is quite unpredictable across the long term. However, it is a good investment also in times of high inflation. It is recommended to include a small amount of gold in a portfolio to hedge in such events. Nonetheless, I am not convinced that gold is the best option for individual investors. Despite its positive effects during economic turmoil, the value of gold is largely unpredictable, and it is quite volatile. The gold market is largely based on speculation that it will sell at a higher price later in the future. It is near impossible to study gold, as a business can be studied, therefore when purchasing gold, you are blindly buying it with the hope that it will appreciate in value while you hold it. Therefore, as backed up by research, gold does not have a large role in an individual’s portfolio and I would limit it to 5% if an investor so wishes to have it as part of his portfolio. Furthermore, gold spikes in value on the day of an unfortunate event. This requires investors to time the market accurately, which goes against the advice of great investors such as Warren Buffet. Timing the market is practically impossible and most investors would be better off dollar cost averaging into an index fund.

Bonds, too, performed exceptionally well during recessions and uncertainties. The amount of allocation of bonds in a portfolio should be according to the investors risk profile and investment horizon. There are many combinations of what a stock and bond portfolio may look like. For example, what has been a common recommendation for investors is to have a 80-20% stock/bond allocation to your portfolio if you are in your 20s. The allocation to bonds should also increase each decade (or however each individual sees fit), because as you age and come closer to retirement, you can’t afford to be exposed to stocks which are inherently riskier. Notwithstanding, bond returns in time of increased inflation are at huge risk because inflation may exceed bond returns.

Dollar cost averaging (DCA) during a recession is risky and requires mental discipline, however it has been shown to generate impressive returns for individual investors once the economic cycle turns into expansion. For the passive investor who invests primarily in index funds, a systematic and disciplined DCA program combined with an adequate allocation to bonds according to individual risk levels, is what would generate the highest returns while minimizing risk which should be the goal of any portfolio.

Lastly, we have the investor who actively wishes to build his portfolio of individual stocks and bonds. Researching individual companies for investment requires great commitment as well as in depth analysis of financials, management, industry, future prospects and economic advantage. To minimize the risk of your investment in a particular company, it is important to assess its financial structure and see if they have enough working capital and cash available to meet any financial obligations. It is also crucial that the company is not priced too highly as this indicates that there are huge expectations for future performance. If the company fails to deliver on these expectations, it is not uncommon to see vast drops in share price, as seen in internet stocks in the early 2000s. Continuous paid dividends and earnings growth are a further indication of financial stability within the company as should be an important factor in analyzing an enterprise for investment.

Overall, the thesis has analyzed contemporary political and economic issues and looked at what individual investors have available to them to help their portfolios succeed in the long-term. Passively investing into an index fund, with a set percentage of cash allocated to bonds depending on time horizon is possibly the most effective way of tackling economic downturns. Gold is vastly unpredictable aside and individual stock picking requires a deep knowledge of finance, a considerable time commitment and even then, it is not guaranteed that you will earn higher returns than if you had simply invested in an index fund.

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