Portfolio Management

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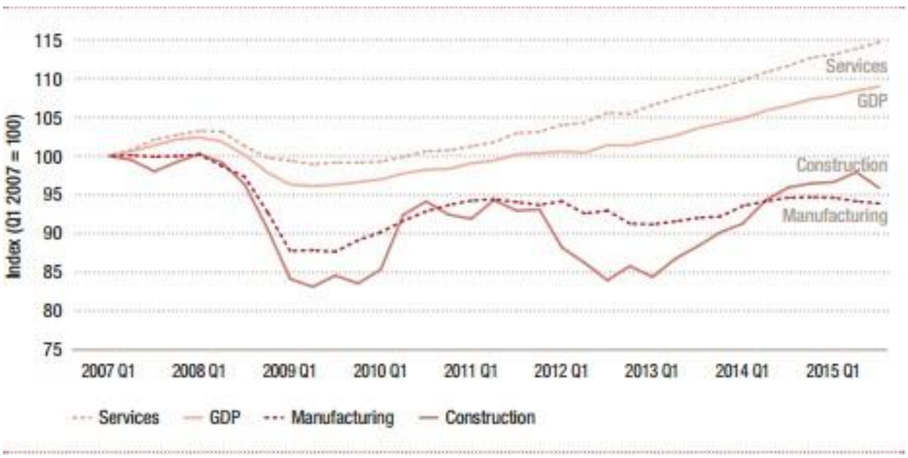
1. Introduction

Capital to be invested: The aim is to invest a sum of £100,000 across a portfolio of 5-10 financial assets ranging from cash to equities and monitoring the performance of this portfolio over the period from 8th March, 2016 to 8th April, 2016.

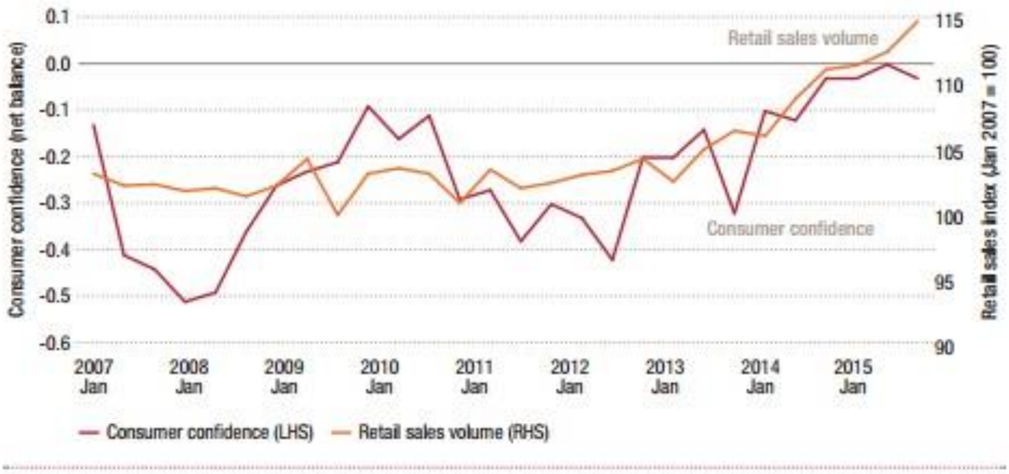
Macro View: Globalization and the increasing amount of trade across borders has made companies susceptible to not just the domestic macroeconomic environment but also to the vagaries of international macroeconomics. Countries, worldwide, have witnessed difficult times

In the past few years, led by the developed nations till last year. With the emerging markets also going through a rough patch, risks to GDP growth for all countries is significant. Global growth is expected to range between 3.0% and 3.5% (IMF, World Bank, 2016) led by a modest recovery in the developed markets. Emerging markets will continue to witness uneven growth with China struggling to maintain its growth momentum and some of the other BRIC nations on the verge of a recession.

UK has been one of the top performing countries in terms of growth over the past two years, but in the past few months, the sluggish growth in the Eurozone combined with geo-political factors such as referendum on EU membership have dampened growth in the UK. However, it is expected to continue to grow at around 2.5% in 2016 and 2017 (PwC, 2016) driven largely by growth in services. Growth in consumer spending has been the primary driver in the UK but it is expected to be bolstered by increased business investment.



Consumer spending is expected to slow down slightly, however it is still expected to exceed GDP growth on the back of continued pressure on crude oil prices and lower commodity prices in general. Stronger earnings growth and increase in consumer confidence has helped sustain the growth in consumer spending.



Consumer price inflation in the UK declined significantly in 2015, as was the case globally, owing to lower commodity prices. Inflation is expected to bounce back to the level of 2%, the inflation target for the UK, but the recovery will take time and depend on how soon the commodities prices can bounce back from the lows of 2015. (PwC, 2016).

The Bank of England has maintained the bank rate at record low levels of 0.5% for the past six years but was widely expected to start increasing the rates in 2016 (PwC, 2016). However, the current uncertainty in the global markets and the Fed’s decision to take a more conservative approach on rate increases is likely to push this out by at least a few months. As a result, Gilt yields are expected to remain at lower levels in the short term but may reach historic highs over the next two years (FT, 2016)

Finally, another key macroeconomic aspect that will need to be considered in determining the stock portfolio is the referendum on UK’s European Union membership in June 2016. While the EU member nations have already given in to some of the demands made by the ruling party in the UK, a number of unresolved issues still remain. There is a commonly held belief that EU membership has held UK back because of its strict business rules and this may trigger an exit for Britain (referred to as

"Brexit"). Some of the key issues arising out of UK's exit from the European Union are trade between UK and member nations, impact on the labour market in the UK, immigration and overall effect on the economy in terms of GDP (The Week, 2016).

Investment Objective and Risk Profile: Given the level of volatility that the markets have witnessed in CY2016 and long term investment horizon, the objective is to invest in large cap equities and cash, so as to have better diversification of risk, while ensuring a minimum return. In selecting stocks for the portfolio, the broad criteria that will be used is to diversify across both cyclical and non-cyclical stocks, so as to benefit from any uptick in the economy, while also protecting the downside to some extent. Bonds are not considered for this investment as there is a lot of uncertainty around the direction of movement of bond yields, post the rate increase by the US Federal Reserve and the Bank of England. Given the nature of the assets this portfolio is likely to hold, it will suits investors who have moderate risk-return requirements and are willing to take minimal risk.

Time Horizon: The selection of stocks will be done on the basis of the assumptions that the assets will be held for a period of 5 years. Some of the stocks chosen may have significant near term headwinds, but will have strong fundamentals that can help them tide over these issues.

Benchmark: The benchmark used to measure portfolio performance will be the FTSE 100.

2. Asset Allocation

Given the macroeconomic factors indicated above and the uncertainty regarding the monetary decisions to be made by various central banks, the investment portfolio will be focused on the following sectors: Consumer goods, Media, Technology, Banking & Financial Services and Oil & Gas. While, there is still a great deal of uncertainty around the recovery in commodity and oil prices, in the medium to long term horizon that is envisaged for this investment portfolio, these prices are likely to grow substantially, as the current levels are considered to be unsustainable by most analysts.

In terms of asset allocation, 75% of the portfolio will be invested in equities and the remaining 25% will be invested in a mix of time deposits and demand deposits. The reason for not including fixed income instruments such as bonds is that in a scenario wherein the UK increase interest rates, which is widely expected in 2016, the bond yields are likely to increase substantially, thereby reducing prices. There are countries globally which are expected to reduce the interest rates on the back of declining inflation, however in the interest of mitigating exchange rate risks, this portfolio will include only assets in the UK.

3. Identification of Holdings

A	**Sector: Technology** **Industry: Semiconductor** **Company: ARM Holdings**

Technology as a sector witnessed significant tailwinds in the early part of 2015 led by the global majors such as Google, Facebook, Apple and Microsoft. However, the latter half of 2015 onwards, technology companies including companies in the previously favoured cloud computing space declined significantly. The trend is expected to continue in the short term given the discretionary spending nature of IT expenses, however in the medium to long term, the sector is expected to bounce back riding on the multitude of changes disrupting it today.

The semiconductor sector has been one of the less favoured technology sectors as companies like Intel have struggled to cope with the transition to smartphones and mobile devices. This has resulted in widespread consolidation ranging from the $37 billion Avago-Broadcom acquisition to the $16.7 billion Intel-Altera deal. The total M&A deal volume as of 2015 stood at close to $100 billion (Clark, 2015). Much of the consolidation is driven by reduction in costs while a major chunk is also related to acquiring missing capabilities.

ARM Holdings Plc. is one of the leading players in the semiconductor space worldwide. The key difference between ARM's business model and that of rivals such as Intel is that ARM does not manufacture the semiconductor chip, but designs and licenses processors, peripherals to other semiconductor manufacturers. This asset light business model has helped the company in maintaining healthy financial ratios, while sustaining growth.

	31-Dec-11	31-Dec-12	31-Dec-13	31-Dec-14	31-Dec-15
Revenue (£ m)	491.8	576.9	714.6	795.2	968.3
Operating Margin	30.3%	36.7%	21.5%	38.9%	41.9%
ROCE	31.0%	32.5%	23.0%	35.6%	38.8%
Dividend Cover	2.68	3.11	1.52	2.97	3.15
Dividend Yield	0.5%	0.5%	0.5%	0.6%	0.7%
EPS	8.40p	11.70p	7.50p	18.20p	24.10p
PE	70.48	65.64	146.53	54.67	43.11
Source: London Stock Exchange					

From the above table, it is clear that the company has managed significant growth and generated strong returns for shareholders. The future of the semiconductor industry hinges on the internet of things and allied fields as PC sales shrink and growth in smartphones and tablet sales slowdown. ARM has already ventured into this field and is also growing other aspects of the business such as embedded systems including car infotainment, smart meters etc. and the enterprise side of the business involving networking equipment and servers. These factors are likely to boost growth in the next few years, thereby covering for any slowdown in their end market.

B	**Sector: Consumer Staples** **Industry: Consumer Products** **Company: Unilever Plc.**

The consumer products industry deals primarily in staples i.e. goods considered a necessity by customers. As a result, companies in this industry are largely non-cyclical, which implies that the performance of these companies is not affected by the economic or business cycle. Given the nature of this industry, the revenues for the companies operating in this industry are expected to be stable and this is likely to help reduce the volatility of the portfolio as a whole. Growth in this sector is driven by growth in per capital income in geographies that the company operates in as well as expansion into newer markets.

From the perspective of the UK market, consumer spending has been fairly strong in 2015 and is expected to continue to outgrow GDP growth in 2016. As explained earlier, this is driven largely by the low inflation rate and strong rebound in output growth in the economy. From a stock selection perspective, the two main companies operating in this segment are Unilever Plc. and Reckitt Benckiser Group Plc. Unilever's well diversified product portfolio, along with its high penetration in high growth markets such as India, present a great opportunity for generating attractive long term returns.

	31-Dec-11	31-Dec-12	31-Dec-13	31-Dec-14	31-Dec-15
Revenue (£ m)	38813.06	41625.3	41699.05	37846.54	39318.32
Operating Margin	14.0%	13.3%	14.7%	16.2%	13.9%
ROCE	53.1%	66.4%	72.9%	75.3%	68.7%
Dividend Cover	1.65	1.61	1.48	1.39	1.54
Dividend Yield	3.5%	3.3%	3.6%	3.5%	3.0%
EPS	126.13p	124.09p	132.31p	125.80p	134.33p
PE	17.15	19.07	18.76	20.89	21.79
Source: London Stock Exchange					

From the above table, it is clear that while Unilever has faced challenges in the past, it has managed to maintain its strong financial profile and also generated value for its shareholders. One of the key aspects of Unilever's growth over the years is that it has managed to fuel this growth using both pricing and volumes. As a result, the company has not had to indulge in a pricing war with any of its competitors, which might have eroded its performance. This is the advantage of having close to 15 brands that generate over $1 billion in revenue (Company). While the P/E ratio and the dividend yield for the stock suggests that it is currently over-valued, the considerable tailwinds that the company has should help sustain the growth, with some short term corrections in between.

C	**Sector: Communications** **Industry: Media** **Company: WPP**

The advertising industry as a whole is fairly susceptible to macroeconomic performance, as these factors could affect client spending adversely. The sector is also one of the few that is impacted by large, high budget events such as the Olympics and therefore, likely to see considerable boost in income at the time of these events. In the past few years, customers of the advertising industry have been increasingly looking at extending their digital marketing and advertising capabilities, thereby requiring the advertising companies to acquire these skills either organically or through acquisitions. The industry has witnessed significant amount of consolidation in the past three years, with the larger players i.e. WPP, Omnicom and Publicis acquiring most of the smaller players.

In terms of macro trends, while the European market is still going through some difficult times, stability in the US and UK, combined with its presence in multiple geographies globally and strong technology capabilities are likely to help WPP overcome this period relatively unscathed.

	31-Dec-11	31-Dec-12	31-Dec-13	31-Dec-14	31-Dec-15
Revenue (£ m)	9331	10021.8	10373.1	11019.4	11528.9
Operating Margin	10.4%	11.8%	11.7%	12.6%	12.9%
ROCE	167.6%	105.6%	79.7%	70.1%	81.4%
Dividend Cover	3.65	3.68	3	2.78	2.46
Dividend Yield	2.1%	2.9%	2.9%	2.2%	2.6%
EPS	59.30p	71.00p	77.70p	84.10p	86.90p
PE	13.31	9.51	11.43	16.41	15.48
Source: London Stock Exchange					

From the above table, it is clear that WPP's strategy of straddling both the traditional and digital forms of marketing and advertising has worked well for it. The asset light model of business that WPP follows has helped it in generating significant value for its shareholders and this is reflected in the increasing valuation of the company in terms of P/E ratio. The company has been able to grow its revenue in each of the last 5 years and its dividend growth has also been consistent.

The company's inorganic growth strategy has also served it well and it now derives close to 40% of its revenues from the high growth digital space. This has been largely driven by acquisitions – over 200 acquisitions in the last 5 years and the company is expected to continue making these bolt-on acquisitions to plug gaps in its portfolio (Tadena, 2016).

In spite of the growth in its P/E multiple, the company is still trading at a discount to some of its industry peers. This, in spite of being the largest player in the world, is an anomaly that is likely to correct in the months to come, providing a significant upside opportunity to shareholders.

D	Sector: Utilities Industry: Utilities Company: National Grid Plc.

Any economy needs essential infrastructure to service the needs of its citizens. These essential infrastructure are often managed by Utilities companies i.e. gas, water, electricity companies. Since, by their very nature, companies in these industries are treated as necessities in the developed world, the performance of companies belonging to these sectors also remains stable. The demand in this sector is consumer-led and therefore the key drivers for growth include growth in population. Owing to the consumer-led nature of demand, while revenues are likely to be stable, profitability is largely a function of how well the operations of the company are managed.

In terms of strategic moats, the regulated market environment in which these firms operate is in itself an entry barrier to participants trying to enter this sector. In addition to this, the industry is extremely capital intensive and therefore any company hoping to dominate this sector will have to invest considerable amounts of money upfront, in setting up the infrastructure.

The key player in this sector in the UK is National Grid Plc. National Grid is an international electricity and gas transmission and distribution company in the UK and Eastern United States. The company owns and operates the electricity grids that connect people to the energy sources. It also operates regional gas distribution networks in the UK.

	31-Dec-11	31-Dec-12	31-Dec-13	31-Dec-14	31-Dec-15
Revenue (£ m)	14343	13832	14359	14809	15201
Operating Margin	26.0%	34.7%	25.5%	25.0%	23.0%
ROCE	10.8%	13.7%	8.8%	9.3%	8.7%
Dividend Cover	1.35	1.34	1.29	1.31	1.38
Dividend Yield	6.4%	5.9%	5.2%	5.0%	4.9%
EPS	50.90p	50.00p	51.40p	53.50p	58.10p
PE	11.67	12.61	14.88	15.36	14.88
Source: London Stock Exchange					

From the above table, it can be seen that National Grid has managed its operations well on a consistent basis, however there is still scope for improvement and this is likely to be the major driver for valuation growth in the future. The company has also been one of the most active dividend payers in the market and therefore, the stock presents an opportunity to acquire an income generating stock with considerable competitive advantage.

One of the greatest risks to a utility service provider is the change in the demographics of the regions in which they operate as well as technology obsolescence. In National Grid's case, while the demographics in the US and UK are not ideal, they still provide a window of opportunity over the next 10-15 years. The ageing population, notwithstanding, these regions are likely to continue to fuel growth. On technology obsolescence, the emergence of renewable energy sources poses a threat to generators of power, but National Grid being a distributor, that provides the infrastructure to transport this energy, only stands to gain more with the emergence of these technologies.

E	**Sector: Financials** **Industry: Banking** **Company: Lloyds Banking Group Plc.**

The banking and financial services sector, globally, has been witnessed a difficult market environment with the evolving regulatory landscape on one hand and the difficult macroeconomic environment on the other (Moody's, 2015). As a result, globally the banks have lagged behind the benchmark indices. However, the growing economic stability in the developed markets coupled with expected change in the interest rate environment, is likely to have a positive impact on stocks in this sector.

There are a number of players operating in this sector including Lloyds Banking Group Plc, Barclays Plc, and Royal Bank of Scotland etc. Among these, Lloyds bank has put in significant amount of effort in managing its operations more efficiently.

	31-Dec-11	31-Dec-12	31-Dec-13	31-Dec-14	31-Dec-15
Revenue (£ m)	9331	10021.8	10373.1	11019.4	11528.9
Operating Margin	10.4%	11.8%	11.7%	12.6%	12.9%
ROCE	167.6%	105.6%	79.7%	70.1%	81.4%
Dividend Cover	3.65	3.68	3	2.78	2.46
Dividend Yield	2.1%	2.9%	2.9%	2.2%	2.6%
EPS	59.30p	71.00p	77.70p	84.10p	86.90p
PE	13.31	9.51	11.43	16.41	15.48
Source: London Stock Exchange					

By the end of the financial crises, the banking industry globally and specifically in the UK, was in turmoil. Most of the large banks required some government assistance to survive the crises and Lloyds was no different. At one point, the government owned close to 43% of the company and the shares were trading at a fraction of the peak values (Jones, 2016). However, the company has rebounded in a strong way since then and is currently all peer banks in terms of both the capital ratios and the operating metrics. It was one of the first banks in the UK to be allowed to pay dividends, after successfully completing the stress tests recommended by the central banks worldwide, in line with the Basel III guidelines (Oscroft, 2016).

There has been some re-rating in the stock and is currently trading at a premium to industry peers in terms of price to book ratio but in terms of P/E ratio and the historical highs, the company's stock still seems attractive.

F	**Sector: Oil & Gas** **Industry: Oil & Gas** **Company: Royal Dutch Shell Plc "A"**

Crude oil prices have fallen over 70% from the highs of 2014 to trade in the range of $30-$60 a barrel. This precipitous fall in prices have been driven by a fall in demand due to the weak macro environment and a supply glut caused by the shale oil revolution and the resistance on the part of the Opec nations in reducing their daily output (Alix Partners, 2015). The removal of sanctions on Iran is expected to further increase the daily output, thereby putting further pressure on the oil companies. As a result of this fall in prices, upstream oil players as well as integrated oil companies have seen their top line and bottom line shrink. Many of the oil majors have reduced their capex budget for the coming financial year as oil prices continue to remain low.

However, most analysts believe the oil prices are likely to rebound in the medium term as Opec nations reduce output and the breakeven point for shale oil production is reached causing the oil producing companies in the US to rationalise production (Alix Partners, 2015). In the UK oil & gas sector, the key players are British Petroleum and Shell. Both companies are strong in terms of their balance sheet and ability to survive this difficult phase. However, considering that the sector, as a whole, is a risky bet at present, Shell presents more upside for this risk than BP. Thus, from the perspective of risk-return dynamics, Shell is a more attractive buy. Also, given the high contribution made by Shell's LNG unit compared to BP's, the company may be in a better position financially at the end of this downturn.

	31-Dec-11	31-Dec-12	31-Dec-13	31-Dec-14	31-Dec-15
Revenue (£ m)	302535.9	287390.3	273641.6	270553.1	178845.8
Operating Margin	9.1%	8.9%	5.9%	5.4%	-0.3%
ROCE	25.8%	20.3%	12.9%	11.0%	1.2%
Dividend Cover	3.07	2.5	1.38	1.33	0.17
Dividend Yield	4.4%	4.9%	5.3%	5.3%	8.1%
EPS	320.44p	262.69p	157.67p	151.63p	20.93p
PE	7.4	8.08	13.72	14.2	72.91
Source: London Stock Exchange					

The above table highlights the difficulty that Shell has faced in the past year, with its operating margin turning negative for the first time in many years. However, the BG Group acquisition is expected to reap significant benefits for the company in terms of revenue and cost synergies and the same will be reflected in the company's financials starting 2017. While, analysts believe that the synergies in their entirety will be difficult to realize for the companies, but any realization is positive synergies will bode well for the company in the long term (The Motley Fool, 2016).

G	Sector: N/A Industry: N/A Company: N/A (Cash)

Given the uncertainty in the global macroeconomic environment and the expected interest rate hikes in the US and the UK, around 25% of the portfolio will be maintained in highly liquid assets i.e. savings accounts. Therefore, £25,000 will be invested in individual savings account. The HSBC Individual Savings Account (ISA) currently yields an interest of 2% p.a. on a variable basis. While, the fixed interest rate option yields an interest of 3%, considering the impending interest rate hikes and the long term nature of the investments, the variable interest option has been chosen.

4. Conclusion

The below table highlights the performance of the portfolio in the time period ranging from 08th March, 2016 to 08th April, 2016.

Company	Symbol	Start Price GBP)	End Price (GBP)	No of Shares	Start Price	End Price	Gain	Stamp Duty	Return
ARM	ARM	986.0	1,046.0	1,826	18,004.36	19,099.96	1,095.60	90.02	19,009.94
Unilever	ULVR	3,110.0	3,238.5	482	14,990.20	15,609.57	619.37	74.95	15,534.62
National Grid	NG	948.8	1,000.5	1,686	15,996.77	16,868.43	871.66	79.98	16,788.45
WPP	WPP	1,547.0	1,639.0	517	7,997.99	8,473.63	475.64	39.99	8,433.64
Lloyd	LLOY	70.6	65.9	12,743	9,000.38	8,397.64	-602.74	45.00	8,352.64
Shell	RDSB	1,659.0	1,733.0	543	9,008.37	9,410.19	401.82	45.04	9,365.15
Savings Account					25,001.93	25,043.60	41.67		25,043.60
Total					**100,000.0**	**102,903.0**	**2,903.0**	**375.0**	**102,528.0**

From the above table, it is clear that the portfolio as a whole has performed well during the period under review, generating annualized returns of close to 35%. In terms of key contributors to this return, ARM Holdings Plc and WPP Plc. were the major contributors accounting for around 70% of the returns. During the same time period, the FTSE 100 grew by around 1.3% (annualized return: 17%). The portfolio was suitably diversified, keeping in mind the risk appetite of the investors. While, fixed income securities are largely a part of any balanced portfolio, keeping in mind the risks that exist to bond prices, these were excluded from the portfolio. The portfolio beta can be calculated using the individual betas for the stocks in the portfolio.

	ARM	Unilever	National Grid	WPP	Lloyd	Shell	Savings Account	Portfolio Beta
Holding	0.18	0.15	0.16	0.08	0.09	0.09	0.25	
Beta	1.16	0.58	0.29	1.14	1.35	0.83	-	0.63

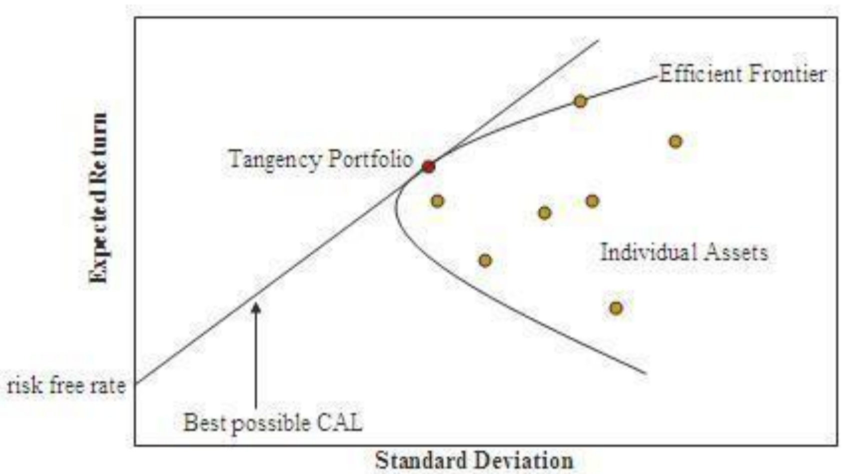
Portfolio beta of 0.63 suggests that the portfolio is well balanced and in line with the investment objective.

5. Investment Theory

Modern Portfolio Theory

Modern portfolio theory is based on papers published by Markowitz in 1952 and 1957, which have served as the foundation for treating portfolio selection as a mathematical problem. The premise of the theory is that returns can be maximized by building a diversified portfolio, with stocks having different levels of risk (Brown & Reilly, 2012). The statistical measures used to ensure this selection are correlation between the stocks as well as their sensitivity to the market conditions.

The theory formulated the portfolio selection problem as a function of the mean return and variance of the portfolio i.e. the portfolio should be selected either by holding constant variance and maximizing expected return or by holding return constant and minimizing the variance (Elton & Gruber, 1997). These above approaches result in the creation of an efficient frontier and the investor can then choose their portfolio basis the risk-return requirements.



Thus, the efficient frontier as is observed from the above chart, is not a linear function. All assets that are above the efficient frontier are unattainable because of the assumption of market efficiency while all assets below the frontier do not provide the best risk-return characteristics (Elton, Gruber, Brown & Goetzmann, 2014).

Efficient Market Hypothesis

The efficient market hypothesis, developed by Eugene Fama in 1970 (Malkiel, 2003), hypothesizes that the stock prices accurately reflect the information available to the market participants i.e. the markets are efficient. The strength of the market efficiency is, however, determined by the degree to which the information is reflected in the prices. In essence, the theory debunks the notion of an investor being able to consistently beat the market i.e. outperformance of an investor is driven largely by luck than by their proficiency.

Based on Fama's work, researchers have identified three degrees of market efficiency i.e. strong, semi-strong and weak. In the weak form of the efficient market hypothesis, it is postulated that the stock prices reflect all historical information but does not include non-public information and current information. In the semi-strong form of EMH, both historical information as well as publicly available information are quickly reflected in the market price of the stock, which then assumes an equilibrium state. Finally, in the strong form of EMH, all historical, publicly available current and non-public information is reflected in the stock price. Therefore, in a market that is strong form efficient, it is impossible to achieve excess returns on a consistent basis.

While EMH has been one of the most debated topics in behavioural finance, the true nature of the stock markets lies somewhere in between the two extremes of acceptance of the model and its rejection.

Capital Asset Pricing Model (CAPM)

The capital asset pricing model was developed by Sharpe in 1960 as a means to determine the required rate of return on a particular stock, taking into account its systematic risk (Burton, 1998). The model is basically an extension of the modern portfolio theory discussed earlier and is hinged on the notion that systematic risk is the factor essential for making portfolio risk as all other forms of risk can be eliminated by diversifying the portfolio.

In the model, the required rate of return from the asset is dependent on the risk free rate, the systematic risk as defined by beta and the market risk premium. The risk free rate is typically taken as the yield on the treasury securities while the market risk premium is the premium over the risk free rate that investors seek to invest in the equity market.

The key criticism of the model stems from its assumptions of no transaction costs, frictionless markets and uniform investor beliefs and expectations. While, these assumptions may not hold true in the real world, CAPM is still one of the most widely used models in the field of corporate finance and finds application in calculating the cost of equity capital, evaluating portfolio performance etc. The model has been extended further to make it applicable to markets, wherein the treasury securities cannot be considered to be truly risk free.

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