THE FINANCIAL POSITION OF MANCHESTER UNITED AND SHARE PRICE ANALYSIS

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Abstract
Football is not merely a sport anymore but is a global business, dealing in large amounts of finance. The study is based on the Financial Statements of Manchester United, arguably the biggest club in world football. Manchester United is also a public limited company, which has its shares listed on the New York Stock Exchange (NYSE). The stock prices chosen and used in this research paper are those from the period- August to May (since it marks the beginning and end of a football calendar year) for 5 years, from 2012 to 2017. The tools used for analysis include Paired t-test, Ratio analysis, Japanese candlestick and Behavioural finance. The risk and return of the club has also been calculated. The main assumption which forms the base for analysis is that the on-field performances of the football team is the prime factor affecting the stock price. The club also boasts massive revenues but is a high leverage company. However, despite all concerns, they still remain a giant football club both in terms of financial capacity and global reputation.

Index Words: Manchester United, Stock price fluctuations, Paired t-test, Risk analysis, Behavioural finance, Ratio analysis

1. INTRODUCTION

1.1 Manchester United- the football club
Manchester United is a professional football team in Manchester, competing in the Barclays Premier League, the top level football competition in England. The league has 20 teams which are spread across England and Wales. Manchester United has an estimated fan base of around 75 million (adults) across the world. The home ground of Manchester United, Old Trafford is one of the biggest football stadiums in the country with a seating capacity of around 76000. Commonly known as the “Red Devils” they have always been a dominant force in English football. Today it is also a global brand which deals in clothing, lifestyle accessories and household items.

1.2 Manchester United- the global brand
Manchester United was initially owned by Yorkshire Railway but later remained under private ownership for over a century. In 1991, the club went public by entering into the London Stock Exchange. This period was one in which businessmen started to see a potential for good business in sports and heavy investments came in, especially in football. The owners of the club including Mr. Malcolm Glazer, decided to expand the name of Manchester United beyond the world of football. Today Manchester United stands as the richest football club in the world with a brand value of $3.6 billion. The club earns more money from broadcasting rights and commercial brand sponsorship than that from match ticket sales. Match ticket sales account to $663 million whereas commercial income and broadcasting rights amount to around $2.4 billion. The major sponsors of the club include Adidas, Aon, Chevrolet, Columbia Sportswear, DHL and Twentieth Century Fox. The club has grown massively as a brand thanks to their income from three major categories. This includes Commercial income, Broadcasting and Match day sales. The commercial income of the club includes that from sponsorship deals, retail, merchandising and product licensing. Manchester United have entered multiple areas of business like clothing, accessories and other lifestyle products. The strength of the brand has also resulted in partnerships with mobile and telecom companies.
2. REVIEW OF LITERATURE

(Ecer & Boyukaslan, 2014) Measuring Performances of Football Clubs Using Financial Ratios: The Gray Relational Analysis Approach: American Journal of Economics (4(1): 62-71). The journal aims to show how important the financial structure of a football club is to the performance of the club both on the pitch as well as in the market. The researchers have chosen four of the biggest football clubs in Turkey and compared their financial aspects using “The Gray Relational Analysis Approach”. They have compared the liquidity of the four clubs along with their working capital, to the performances of the clubs on the pitch. They have also concluded that the club with the greatest financial position is the club which has performed the best in the league history, Fenerbache.

(Veli, 2015) The Effects of Sporting Success on Stock Returns: An Application in Istanbul Stock Exchange: Journal of Economics Library (JEL, 2(3), A. V. Çam. pp.147-154). The journal mainly focuses on the impact and effects of football match results on the stock returns of the respective clubs. Four football clubs (Fenerbache, Galatasaray, Beskitas and Trabzonspor) in the Turkish Football League have been selected whose stocks are dealt with in the Istanbul Stock Exchange (BIST). The related team’s match results and beta coefficients have been considered as independent variable for analysis and their stock returns have been regarded as the dependent variable. The time period of analysis is 2012-2015. From the study it has been concluded that losing a match has greater or more significant impact on stock returns compared to winning matches.

3. RESEARCH DESIGN

Focus of Research/Statement of Problem: Manchester United have definitely undergone a lot of difficulties in terms of performance ever since they won their last title in 2012/13. This has in turn affected the price of their stocks in the capital markets. The research intends to analyse and understand the causes and effects of the change in trends in the share prices along with the financial position of the club.

Scope of the study:
Fundamental and Technical analysis of the club using various tools. Paired t-testing has been effectively used to understand the impact of on-field performances on stock prices.
Risk and return calculations from the stock price changes. Creation of suitable charts for better understanding of ratios and revenue using Microsoft Excel.

Objectives of the study:
- To study the trends of share prices of Manchester United limited in the capital market along with its causes
- To understand and analyse the financial position of the club
- To understand the risk and return of Manchester United as a company to arrive at investment decisions

Sources of Data: Secondary data has been taken for the purpose of this research paper. Data on stock prices, charts and financial statements of the company has been collected from the following websites:
www.manutd.com
www.investing.com
www.nyse.com
www.marketwatch.com

Limitations of the study:
- Majority of the data relied upon are from secondary sources
- Chance of distorted financial figures shown on the official website of the company
- Risk and return are subject to many factors and not all have been considered
- Application of behavioural finance has not been analysed using any technical tools
4. METHOD OF ANALYSIS

The following consolidated balance sheet and income statement was used to conduct ratio analysis

Statement 1: Consolidated Balance sheet for the year ended 2017

<table>
<thead>
<tr>
<th>EQUITY AND LIABILITIES</th>
<th>Note</th>
<th>2017 £’000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share capital</td>
<td>21</td>
<td>53</td>
</tr>
<tr>
<td>Share premium</td>
<td></td>
<td>68,822</td>
</tr>
<tr>
<td>Merger reserve</td>
<td></td>
<td>249,830</td>
</tr>
<tr>
<td>Hedging reserve</td>
<td></td>
<td>(31,724)</td>
</tr>
<tr>
<td>Retained earnings</td>
<td></td>
<td>191,436</td>
</tr>
<tr>
<td><strong>Total equity</strong></td>
<td></td>
<td>477,617</td>
</tr>
<tr>
<td><strong>Non-current liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Derivative financial instruments</td>
<td>18</td>
<td>655</td>
</tr>
<tr>
<td>Trade and other payables</td>
<td>23</td>
<td>83,587</td>
</tr>
<tr>
<td>Borrowings</td>
<td>24</td>
<td>497,630</td>
</tr>
<tr>
<td>Deferred revenue</td>
<td></td>
<td>39,648</td>
</tr>
<tr>
<td>Deferred tax liabilities</td>
<td>25</td>
<td>20,828</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>642,348</td>
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<tr>
<td><strong>Current liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Derivative financial instruments</td>
<td>18</td>
<td>1,253</td>
</tr>
<tr>
<td>Tax liabilities</td>
<td></td>
<td>9,772</td>
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<tr>
<td>Trade and other payables</td>
<td>23</td>
<td>190,315</td>
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<tr>
<td>Borrowings</td>
<td>24</td>
<td>5,724</td>
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<tr>
<td>Deferred revenue</td>
<td></td>
<td>207,245</td>
</tr>
<tr>
<td><strong>Total equity and liabilities</strong></td>
<td></td>
<td>414,309</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td></td>
<td>1,534,274</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>ASSETS</th>
<th></th>
<th>2017 £’000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-current assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>13</td>
<td>244,738</td>
</tr>
<tr>
<td>Investment property</td>
<td>14</td>
<td>13,966</td>
</tr>
<tr>
<td>Intangible assets</td>
<td>15</td>
<td>717,544</td>
</tr>
<tr>
<td>Derivative financial instruments</td>
<td>18</td>
<td>1,666</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>19</td>
<td>15,399</td>
</tr>
<tr>
<td>Deferred tax asset</td>
<td>25</td>
<td>142,107</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>1,135,420</td>
</tr>
<tr>
<td><strong>Current assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventories</td>
<td>16</td>
<td>1,637</td>
</tr>
<tr>
<td>Derivative financial instruments</td>
<td>18</td>
<td>3,218</td>
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<tr>
<td>Trade and other receivables</td>
<td>19</td>
<td>103,732</td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>20</td>
<td>290,267</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>398,854</td>
</tr>
</tbody>
</table>

Statement 2: Consolidated Income for the year ended 2017

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Liquidity Ratios
Liquidity ratios measure a company's ability to pay debt obligations and its margin of safety through the calculation of metrics including the current ratio, quick ratio and operating cash flow ratio.
1) *Current Ratio* = Current Assets/ Current Liabilities
2) *Quick Ratio* = Quick Assets/Current Liabilities
3) *Cash Ratio* = Cash + Cash Equivalents/Current Liabilities

Profitability Ratios
Profitability ratios are a class of financial metrics that are used to assess a business's ability to generate earnings compared to its expenses and other relevant costs incurred during a specific period of time.
1) *Gross Margin* = Gross Profit/ Net sales
2) *Operating Margin* = Operating income/ Net sales
3) *Profit Margin* = Net income/ Net Sales

Leverage Ratios
Companies rely on a mixture of owners' equity and debt to finance their operations. A leverage ratio is any one of several financial measurements that look at how much capital comes in the form of debt (loans), or assesses the ability of a company to meet financial obligations.
1) *Debt Ratio* = Debt/ Total Assets
2) *Equity Ratio* =Total Liabilities/ Shareholders Equity
3) *Debt-equity Ratio* = Debt/ Equity

Japanese Candle Stick
A candle stick is a style of budgetary diagram used to depict value developments of a security, derivative or currency. Every candle stick regularly demonstrates one day, in this way a one month diagram may demonstrate the twenty trading days as twenty candle sticks. Shorter intervals than one day are common on computer charts, longer are possible. It resembles a mix of line graph and a bar graph. Each bar represents all 4 important pieces of information for that day: the open, the closed, the high and the low. Being densely packed with information they tend to represent trading patterns over short periods of time, often a few days of a few trading sessions.

Paired t-test
The paired t test is a test providing a relation of the difference between means of two populations or a pair of random samples whose differences are approximately normally distributed.
It is most commonly used to analyse the impact of a particular event or sample on the stock prices or population. In case of stock, the prices prior to the occurrence of the event is analysed and the prices after the event is analysed. This helps in determining the impact of the event on the prices
The formula for the same is as follows:-
\[ t = \frac{d^-}{SE (d^-)} \]
Where, \( d^- \) is the mean difference; \( SE (d^-) \) is the standard error of the mean difference
SE (d̄) = Standard deviation/ √n

- After finding the t-value with the respective degree of freedom, the p-value on the standard table for the same degree of freedom is analysed and compared.
- If the actual t-value is more than the table value, it is clear evidence that the event has had an impact on the changes in values in population

**Behavioural Finance**

Behavioural Finance is an aspect of finance that propose psychology-based theories. Investors make decisions based on their expectations and beliefs rather than material facts and figures. In behavioural finance, it is assumed that the information structure and the characteristics of market players regularly influence participant’s investment decisions as well as market outcomes. Behavioural Finance helps in the study of the fluctuations of the share prices in relation to the performance of the football team and other psychological processes.

**Market Analysis of Manchester United Under EIC Approach**

1) Fundamental Analysis

Fundamental analysis is the examination of the underlying forces that affect the wellbeing of the economy, industry groups, and companies. As with most analysis, the goal is to derive a forecast and profit from future price movements. At the company level, fundamental analysis may involve examination of financial data, management, business concept and competition. At the industry level, there might be an examination of supply and demand forces for the products offered. To forecast future stock prices, fundamental analysis combines economic, industry, and company analysis to derive a stock's current fair value and forecast future value. If fair value is not equal to the current stock price, fundamental analysts believe that the stock is either over or under valued and the market price will ultimately gravitate towards fair value.

2) Technical analysis

Technical analysis is a trading tool employed to evaluate securities and attempt to forecast their future movement by analysing statistics gathered from trading activity, such as price movement and volume. Unlike fundamental analysts who attempt to evaluate a security's intrinsic value, technical analysts focus on charts of price movement and various analytical tools to evaluate a security's strength or weakness and forecast future price changes.

5. ANALYSIS AND INTERPRETATIONS

Changes in stock prices of the company with respect to the performances of the football team on the field - an application of the concept of Behavioural Finance

To understand how on-field performances of the team and other business deals affect the company’s stock prices, Manchester United’s stock prices at the end of each month for their previous 5 seasons under 4 different managers have been compared. Manchester United’s stock price is primarily dependant on the football team’s on-field performances. The performance of the team on the field can be largely associated to the manager (coach) of the team. So we can say that the expectations on the manager and his performances affect the team’s performance which in turn affects the company’s performance in the stock market. We assume that the expectation on the manager and his performances is the prime reason or factor for change in prices.

Here, stock prices for 5 years are being analysed. The following table shows the footballing years considered for the study and the corresponding managers in charge of Manchester United during those years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012/13</td>
<td>Sir Alex Ferguson</td>
</tr>
<tr>
<td>2013/14</td>
<td>David Moyes</td>
</tr>
<tr>
<td>2014/15</td>
<td>Louis Van Gaal</td>
</tr>
<tr>
<td>2015/16</td>
<td>Louis Van Gaal</td>
</tr>
<tr>
<td>2016/17</td>
<td>Jose Mourinho</td>
</tr>
</tbody>
</table>

Manchester United offered their first shares in New York Stock Exchange on 10 August 2012. This was also the last season at the helm for Sir Alex Ferguson, the club’s manager at that time. Sir Alex Ferguson is regarded as one of the greatest football managers of all time and was the manager of Manchester United from 1986-2013. He also won the title during his last season at the club. For this reason, we have decided to use his last season (2012/13) as a base the standard year to measure all price fluctuations and start our analysis. This is
because it is after the retirement of Sir Alex in 2013 that the stock prices of the company began to fluctuate drastically.

Note: - A football season in England start from middle of August and goes on till the end of May. We have drawn the data based on the football season in England; the stock prices of Manchester United on the last day of every month, for a whole season has been considered for analysis.

The returns are calculated using the formula: 
\[ r = \left( \frac{P_e - P_b}{P_b} \right) \times 100 \]

Where:
- \( r \) – stands for return on a stock
- \( P_e \) – stands for closing price of a stock
- \( P_b \) – stands for opening price of a stock

2012/13 (Sir Alex Ferguson)  
Season begins: 18 August 2012  
Season ends: 20 May 2013

On the day of the 1st fixture, the company’s share price stood at 13.42 $ in the NYSE. On 31st October 2012, the price was at its lowest. This fall had more to do with the hurricane “Sandy” rather than the performance of the team. By January 2013, the stock prices soared up to 16.8$. This was the time when the title race was almost over and United had one hand already on the trophy. The prices continued to rise and reached the highest point in the last 5 years at 17.98$ on 30th April 2013. On the final day of the season when United were handed the Premier League title, the share price stood at a massive 17.85$ in comparison to 13.42$ at the start of the season.

Return (growth) in share price during the season:
\[ r = \frac{P_e - P_b}{P_b} \times 100 = \frac{17.85 - 13.42}{13.42} \times 100 \]
\[ = 33.01\% \]

2013/14 (David Moyes)  
Season begins: 17 August 2013  
Season ends: 11 May 2014
On the day of the start of the season, stock prices stood at 17.41$. There is minimal change with respect to the prices on the last day of the previous season. This is an indication that there was expectation on the new manager to take the club forward or in other words, the investors had accepted the new manager.

The prices were consistent till December but United were underperforming on a more regular basis and there were speculations regarding Moyes’ future at the club. Manchester United were in 7\textsuperscript{th} position on the league table by the end of December. People were under the impression that the club would take a long time to match the success under Sir Alex Ferguson. Stock prices dropped down to a stooping 15.53$ from 17.08$ in the span of one month. It can also be seen that there is a sudden rise in the price from 15.42$ to 17.24$ by the end of March. This can be related to the sacking of David Moyes and the appointment of Ryan Giggs (United fan favourite) as interim manager until the end of the season. There was also speculation that Louis Van Gaal, one of the most experienced managers in the world was coming to take charge of the club next year. This could also be the reason for stability in the stock prices in the last 2 months of the season despite underwhelming on field performances. Manchester United did not qualify for the UEFA Champions league which was a big blow to the club’s revenue aspects. Funds from qualification for the Champions League was key to any big club in football.

Return (growth) in share price during the season:
\[
r = \frac{P_e - P_b}{P_b} \times 100 = \frac{16.71 - 1.741}{17.41} \times 100 = -4.02\%
\]


Louis Van Gaal was accepted with high expectations and the share price on 16 August soared to 17.35$, crossing the $17.20 mark for the first time in over a year. The signings of world class footballers like Radamel Falcao and Angel Di Maria also added to the stocks of the club. However as time progressed, the type of football played under Louis Van Gaal was not encouraged by the football fans and supporters of the club. United were always known for their attacking and entertainment-filled football but Van Gaal’s style was more possession based and not pleasing to the eyes. Attendance in the stadium started declining affecting revenues from ticket sales. This trend continued throughout the season and the club lost further revenue possibilities when they were knocked out of the Champions league quarter final stages on 9\textsuperscript{th} April 2015. This added to the fall of prices and the investors showed pessimistic attitude towards the stocks of the club. The share price fell to 15.52$ by the end of April and there was a possibility of further fall because United were struggling to compete in the Premier League for Champions League qualification, which also meant a possible loss of revenue in the coming year too. However, the club’s performances in May were more than satisfactory and they secured a place in the Champions League. This brought much relief and was welcomed by both the fans and the investors. The stock prices also ended on a relatively better note on the last day of the season at 16.64$ on 24 May.

Return (growth) in share price during the season:
\[
r = \frac{P_e - P_b}{P_b} \times 100 = \frac{16.64 - 17.35}{17.35} \times 100 = -4.09\%
\]
The second season under Louis Van Gaal promised to be much better than his first and with the signing of World Cup winner Bastian Schweinsgenter and two wunderkinds in Antony Martial and Memphis Depay, the investors and fans were excited. This was also the year where the club’s record sponsorship deal with Adidas Co. came into effectiveness. The deal was worth £750million and was the biggest kit sponsorship deal in the history of football. The revenues and finances of the club soared high and this resulted in the highest stock price in the company’s history at 18.37$. The club’s performances seemed more consistent and there was stability in the prices of the shares till December. However after the mid-season break, the performance of the team deteriorated and Van Gaal came under scrutiny again for the football philosophy he deployed on the field. United were knocked out of the Champions League and their chances of winning the title was realistically over by the middle of January. The share prices underwent a sudden fall from 17.81$ in December to 15.75$ by the end of January. The stocks kept declining and stooped down to 14.23$ by the end of February, the lowest point after the retirement of Sir Alex Ferguson. This was also a period of speculation where there were rumours of a new manager taking charge of the club next season. Rumours spread that Jose Mourinho, arguably the best manager in the world today was going to take charge at Old Trafford next season. This increased expectations among the investors and it can be seen that the share prices soared up to 17.09$ from 14.44$ in the span of one month. Such is the impact a strong rumour can make in the stocks of a company and it also shows the reputation Jose Mourinho possessed. The share prices stood at $16.99 at the end of the season.

Return (growth) in share price during the season
Pe-Pb/Pb*100= 16.99-18.37/18.37*100
= -7.51%

Expectations on the 2016/17 season was higher than ever since the retirement of Sir Alex. Manchester United earned record revenues in the previous seasons by selling broadcasting rights. There was consistency in the prices in the market. The share price on the first day of the season, 13 August, stood at 16.62$ Manchester United also broke the transfer market record to sign Paul Pogba, one of the best midfielders in the world. United paid a then world record £89million to sign the player. Also joining the club was one of the best players to ever play the game, Zlatan Ibrahimovic. Zlatan was a brand of his own and the reputation and experience
he carried coming into the club was massive. The signing of other world class players like Henrikh Mkhitaryan and Eric Bailly also added to the expectations of the investors. The share prices rose to 16.88$ by the end of September. However injuries and competition resulted in lack of wins, adding to the frustration of the supporters. Manchester United were 6th on the points table, similar to the fate David Moyes had during his first season. This resulted in a decline in share prices of the club and went down to 14.25$ by the end of December. Though the Premier League title seemed lost, United were progressing well in the other competitions. They were still up in the Carabao (EFL) Cup, UEFA Europa League and FA Cup. On 26th February Manchester United won the Carabao Cup by beating Southampton and this resulted in a huge rise in stock. The stock prices stood at 16.85$ on 28th February. The performances continued at a good level and on 24th May, Manchester United also won the UEFA Europa League by defeating Ajax in Stockholm. This pushed the stock prices back up beyond the 17$ mark and stood at 17.35$ on the day the season ended. 

Return (growth) in stock price during the season:

\[
P_{e}-P_{b}/P_{b}*100 = 17.35-16.62/16.62*100 = 4.39^%\]

Calculation of Average Expected return and Risk of the last 5 years

<table>
<thead>
<tr>
<th>Year/ Particulars</th>
<th>Returns (%)</th>
<th>Return- Avg. return</th>
<th>Return- Return Sq.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012/13</td>
<td>33.01</td>
<td>28.66</td>
<td>821.3956</td>
</tr>
<tr>
<td>2013/14</td>
<td>-4.02</td>
<td>-8.37</td>
<td>70.0569</td>
</tr>
<tr>
<td>2014/15</td>
<td>-4.09</td>
<td>-8.44</td>
<td>71.2336</td>
</tr>
<tr>
<td>2015/16</td>
<td>-7.52</td>
<td>-11.87</td>
<td>140.8969</td>
</tr>
<tr>
<td>2016/17</td>
<td>4.39</td>
<td>0.04</td>
<td>0.0016</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>1103.5846</td>
</tr>
</tbody>
</table>

Average Return= Sums of returns/No. of returns

= 33.01+(-4.02)+(-4.09)+(-7.52)+4.39/5

= 4.35

Variance= Σ(x-x̄)²

= 1103.5846

Standard Deviation/Risk = √Variance

=√1103.5846 = 33.22

Analysing the average risk and return of Manchester United, it is seen that the average return expected compared to the standard deviation is minimal. The company seems to be a high leverage company as the company is in debts and the return is low. But still the amount of investment and shareholders are high. By calculating the risk and return of the company we conclude that it is not recommendable to invest in Manchester United’s shares at the moment as the company’s share prices are highly volatile. Volatility of the share prices makes it risky for the investors as there is no guaranteed return.

Understanding the impact of a key match result on stock performance using Pair t-test

The key match chosen for analysis is the EFL (Carabao) Cup final between Manchester United and Southampton on 26th February 2017

The match ended Manchester United 3-2 Southampton

<table>
<thead>
<tr>
<th>Day before/After the match</th>
<th>Pre-match price (24 Feb, 23 Feb…. in $)</th>
<th>Post-match price (27 Feb, 28 Feb….. in $)</th>
<th>Difference (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16.95</td>
<td>17.15</td>
<td>+0.2</td>
</tr>
<tr>
<td>2</td>
<td>16.95</td>
<td>16.85</td>
<td>-0.1</td>
</tr>
<tr>
<td>3</td>
<td>17.05</td>
<td>16.95</td>
<td>-0.1</td>
</tr>
<tr>
<td>4</td>
<td>16.95</td>
<td>16.9</td>
<td>-0.5</td>
</tr>
</tbody>
</table>
\[ d^- (\text{mean difference}) = 0.739 \]
\[ \text{sd (standard deviation)} = 0.693 \]

\[ \text{SE (}d^-\text{)} = \frac{\text{sd}}{\sqrt{n}} \]
\[ = \frac{0.693}{\sqrt{5.2915}} = 0.1309 \]

Therefore \( t = \frac{0.739}{0.1309} \)
\[ = 5.645 \text{ on } 27 \text{ degrees of freedom (df= n-1)} \]

*p value for df =27 at 0.05 alpha level is 1.703
Hence, for this problem ideal t-value at df = 27 is 1.703

Comparing the t-value calculated (5.645) and the t-value from the table (1.703), it is quite evident that on an average the match result has led to improvements

We can conclude saying that the result of the EFL cup final has definitely had a significant impact on the stock prices of the company. Similarly all other key matches also have an impact on the rise or fall in prices of the company

**Ratio analysis of Manchester United for the year 2017**

**Liquidity Ratios**

1) *Current Ratio* = Current Assets/Current Liabilities
\[ = \frac{398,854}{414,309} = .9627 \]

2) *Quick Ratio* = Quick Assets/ Current Liabilities
\[ = \frac{293,485}{414,309} = .7084 \]

3) *Cash Ratio* = Cash Equivalents and cash/ Current Liabilities
\[ = \frac{290,267}{414,309} = .7006 \]

•From the given years, we can see that liquidity of the company has increased. Liquidity has increased drastically compared to Alex Ferguson final year in charge the club. This tells that the club has the ability to pay its debts and obligations. Due to its high liquidity it can be seen that the club can avoid bankruptcy and may be able to pay off all the debts from its creditors.
Profitability Ratios
1) Gross Margin = Gross Profit/ Net Sales
   = 10,926/ 58,204 = .1877
2) Operating margin = Operating Profit/ Net Sales
   = 10,926/ 58,204 = .1877
3) Profit Margin = Net income/ Net Sales
   = 39,177/ 58,204 = .6730

• The clubs profitability ratio has increased in 2017 as compared to previous years. In previous year 2015, the club had a loss and but in 2017 it has earned more profit. The club shows that it has the capacity to maintain its profit levels despite the large amount of debts, due to its record breaking revenues from sectors other than football.

Leverage Ratios
1) Debt Ratio = Debt/ Asset
   = 1,056,657/ 1,534,247 = .6887
2) Equity Ratio = Total Liabilities/ Shareholders Equity
   = 1,564,274/ 1,375,102 = 1.1376
3) Debt-Equity Ratio = Debt/ Equity
   = 1,056,657/ 477,617 = 2.2124

• From the above class of metrics we can see that the debt of the club is higher, which shows the risk at the club is increasing in terms of the financial freedom the club has with respect to their investing decisions. Even The debt of the club has increased in the above years and the clubs’ debt can only be paid off if there is a further increase in revenues.

6. CONCLUSION
We see that the club’s share prices have not been stable during the last 5 years primarily due to inconsistency of the team on the field. The paired t-test helped us understand the impact a particular match result has on the company’s share prices. Behavioural finance explains the significance of psychology and expectations of investors and is another major factor which impacts the stock prices in the market (as shown by NYSE). It is undoubtedly evident that the investors who have invested in Manchester United make all their decisions based on this phenomena. Ratio analysis of the club has drawn results that are not so favourable for the financial position of the club. It remains a high-leverage company. The club has a chance of bankruptcy if the liquidity goes beyond the current limit because the current ratio is not healthy for the club. However this is highly unlikely in the near future as revenues are increasing at a higher rate as compared to debts. The management may choose to add more equity based funds to reduce the risk of debts and bankruptcy. The club may sign more established players to ensure that they secure trophies in the coming seasons which will lead to income from prize moneys and better sponsorship deals. Despite all concerns, Manchester United still have sufficient revenues to deal with any adverse financial situations and remains one of the biggest names in football and global business.

7. REFERENCES
2. Hall, J. (2017, February 11). Have Manchester United reached peak noodle partner? Why the club’s status as football commercial kings may be under threat. Retrieved from CITY.A.M.