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What makes a successful stock? Investigating the characteristics of the "winning bets" stocks in the FTSE100

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Authors:

Mazen Diwani
Mustafa Mehmed

Supervisors:

Prof. Hossein Asgharian
Prof. Björn Hansson

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Abstract

Using quarterly data on 55 UK domiciled companies within the FTSE100 collected from DataStream database covering the period 1991-2009, we investigate which factors are distinguished between financially successful and less successful companies. In this study, portfolio analysis and OLS regression were performed upon the theoretical concepts of financial variables. Financial success is measured by application by using two different methods, the Sharpe ratio and Jensen's Alpha. We have accounted a total of six different company specific characteristics as potential indicators of superior financial performance. Particularly of interest was to discern the relationship between performance measurement indicators and company characteristics were studied. The results indicate that large scaled profitable companies, with efficient working capital management and with short cash conversion cycles outperform the sample average on the Jensen's alpha while companies with efficient working capital management outperform the sample average Sharpe ratio.

Keywords: Successful companies, financial performance, financial indicators, FTSE100, UK markets, Sharpe index ratio, Jensen's alpha

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Chapter 1: Introduction and purpose of the study

The preliminary chapter presents the background to the matter of “successful stocks”, modeling this dynamics in the financial markets and what has been done by previous researchers in the financial literature. Furthermore the chapter presents a problem discussion leading to our problem statement and the purpose of this study.

1.1 Background

The thought of determining the successful stocks in any market was always a spot of interest for academics and practitioners. This idea has been the center point of many pieces of research over the past decades. In fact, we have to narrow the meaning of the used term “successful” so readers can understand this term thoroughly throughout this paper.

An observer can look over the financial markets (specifically the stocks markets) and asks him/herself the following question: what reasons or factors have led to the existence of some successful stocks in the markets and what could make a successful stock? This question can lead to some different thoughts but to focus on the purpose of this background we shall identify the meaning of a success as implied previously.

In reality, a great deal of investors would be interested in growing their portfolios in the markets and realize capital gains, and that is applicable only if they invest in certain companies’ stocks that outperform their peers in term of stocks returns. Of course, the complexity of this type of thinking would create tens of questions and thoughts about the certain criteria that the investor should follow in “picking” these stocks but what could be important for researchers is the ability to measure these criteria by decomposing the factors of success into a group of financial indicators.

Constructing a model that would map out the success of a stock (in terms of larger returns yielded) would be a step forward into the world of investments and quantitative analysis, but achieving this would not be an easy task. In fact, this will be a complex task due to the nature of this model which will be expected to meet the objectives of those investors who are willing to

maximize their existing wealth. Such model can be a great step forward into more organized markets and more sufficient dynamics in constructing investment portfolios which will help investors towards achieving their investment strategies, but on the other hand, building such model can be quite difficult and therefore researchers will face many obstacles before determining such model; in this paper, we will work to reach out to such model and potentially use the previously existed research which has a long and a solid track in this field.

The previously existed research has proved to be very helpful in benefiting this paper. In fact, many studies have attempted to establish a connection between some company-specific characteristics and being successful in terms of generating excess returns for their stockholders. One of the studies was conducted by Johnson and Soenen (2003) in which they perform a study of 478 American companies over a time period of 16 years and investigate the reliable indicators of success for those companies. In addition, this paper has benefited from the work of Fama and French (1992) and (1998a,b) which was important with regard to their findings of the book-to-market ratio. Finally, this paper has utilized from the previous work of Sharpe (1994) and Jensen (1969) in order to calculate the different measures used for the financial success.

1.2 Choice of the subject

Building upon the brief background, it is clear that every investor no matter what he/she looks to achieve, the rationality is based on one crucial idea; the maximization of investments' returns. It is therefore an interesting matter to build a model which has the ability to determine those factors driving the success of some stocks in terms of wealth maximization, and by taking a quick glance; it is evidential that some stocks perform better than its peers by creating an excess returns of the average on the stock market.

What prompted us most is the timing of this paper as the global economy is recovering from the worst Financial Crisis since the great depression in 1929, therefore this subject comes when researchers, investors and consultants will be highly motivated to set up a solid ground as to determine and detect the characteristics of the successful stocks; this matter is sought to fulfill this need.

1.3 Purpose of the Study

This paper is aimed to investigate and determine the factors which drive success of the stocks; this study will utilize the Financial Times Stock Exchange “The FTSE100” in the UK markets, and the objective is to detect the key factors in generating the excess returns to the stockholders among the market institutional participants.

Our motivation is based on the idea of defining and framing the variables that will lead to the above-average stocks returns. The word “success” is based on the fact that a company will be able to deliver an excess returns to the existing wealth of its stockholders therefore it is presumed in this research that being a successful company is not caused by the chance but there exists a strong association between some important company-specific factors and the stockholders’ wealth.

As a matter of fact, those factors will not be conclusive and comprehensive in the explanation of stocks’ variation but certainly to a great extent. Therefore, a great deal of research has been put together to choose those variables and later on, we will mention in details these explanatory variables and their functioning power.

In the meantime, we will mention in brief these variables which will be examined in depth as to test their explanatory power in determining the financial success of the companies. Research has been made in this area and many economists¹ have chosen carefully which variables to include and these variables are:

- Size
- Book-to-market ration
- Return on assets
- Capital structure
- Liquidity
- Cash conversion cycle

The above variables will serve this study as to determine the possible indicators of a superior financial performance for our selected companies. This study will utilize a wide range of

¹ For instance, Johnson and Soenen (2003)

industries and businesses across our chosen financial market and thus a high credible study will be produced by taking this course. As a matter of fact, two ratios will be applied here to define and detect the success of these stocks; Sharpe Ratio and Jensen Alpha. Therefore, the success of those stocks will be measured by applying these two methods in our hand.

1.4 Delimitation

It is essential for any study to have a specific geographical scope to cover; this matter has been always a necessity and one of the aspects of leading a scientific research. To be clear about our study, we had many doubts on which country and which market to choose and this was not easy at all considering the size of the work that has been done regarding this subject we investigate. Considering the fact that the global economy is divided into two distinct parts (Developed vs. Developing), it was decided to take our model and apply it in a developed market for many reasons:

- i. The highly advanced structure of the financial markets in the developed world as opposed to the unorganized structure to its likes in the developing world; this could be a critical point to consider when obtaining data and processing it.
- ii. Many previous studies have attempted their empirics in a developed structured economies such as the US, The UK and Western Europe, and by following this lead, we can guarantee initially the best take off for this model unlike its take off in the developing world!
- iii. Finally, it is obvious that the developed markets have the many factors that will help this model to operate better than the developing markets and by attempting to do this, we might initiate the first step on the long road for this model to be an economic reality and to be a step forward towards achieving the goal of many investors.

In this study, it was decided to work within the UK markets and specifically the “FTSE100” market which is –of course- considered to be one of the largest and sophisticated markets across the globe. This choice was based merely on the fact that the FTSE will guarantee every financial

indicator we seek within one company and it is obvious that the sophistication of this market and its long existence history can mark an important step towards achieving the goal of this paper.

1.5 Disposition

The aim of this section is to give the readers a general outline of the main parts of this paper:

- **Chapter one** introduced the general background of the topic, the choice of the subject and the purpose of this study.
- **Chapter two** will be devoted entirely to give the reader an introduction about FTSE market and its position within the Global economy.
- **Chapter three** will deal with the theoretical framework. This Chapter will introduce the model and what factors to be included plus a brief introduction for each financial indicator.
- **Chapter four** will include the methodology used in applying this model, how the data and the sample were collected is also described in this chapter.
- **Chapter five** will present the empirical results which are obtained by applying the methodology used in the previous chapter. Then this chapter will summarize the detailed outcomes of the findings from the empirical analysis, and concludes the results from these findings.
- **Chapter six** will present the conclusions from the previous chapter, thus the readers will be aware of what this paper has come to in its findings.

Chapter 2²: London as International Financial Centre

In this chapter, the readers will be introduced to the term the role that London plays in the international markets“. After this, the readers will be introduced to the London Stock Exchange (LSE) which is the center of this paper.

2.1 London as a global financial centre

Historically, London was one of the world's oldest leading financial institutions and essential force in the world economy (LSE 2009, Cassis and Bussiere 2005, Roberts 2008). During the period of 1980s and 1990s, the world's financial markets have undergone considerable deregulations London had already established its prominent position together with New York and Tokyo, as one of the important contributors of financial services to global economy (Cassis and Bussiere 2005, Roberts 2008). That made London exchange to abolish limitations and restrictions in order to attract potential investors outside the UK and further welcomed insertion of new capital. These developments lead to the beginning of a modern centre for international securities trading and established markets for emerging companies to accommodate to the already prominent main market to access investment capital (LSE 2009).

By 2000, it has been estimated that the London financial centre was contributing with a mere 55 percent from its wholesale financial service to the European Union (Cassis and Bussiere, 2005). And by 2005, London succeeded to surpass New York as the global financial capital, together with its markets raising an aggregate of £6.7 billion (LSE 2009 p.25). During the past years which involved a global credit crunch in which severely dwarfed world's financial markets. Although, these prevailing economic conditions upon financial centers, London still remains as the important financial centre in Europe in present-day, together with its main market constitutes a great contributor to world economy (LSE 2009).

² This chapter was taken from the following different sources: London and Paris as international financial centres in the twentieth century, Youssef Cassis and Eric Bussiere, Oxford University Press (2005)

The City: A guide to London's Global Financial Centre, Richard Roberts, Profile Books, The Economist Newspaper Ltd (2008)

London Stock Exchange : Bringing the World to London, Published by Newsdesk (2009)

2.2 The FTSE100

The FTSE100 index is largely considered as the most well-known and largest index tracking the performance of the UK market and frequently used as the basis for investment products and derivatives (Roberts 2008). The index is comprised of the top 100 capitalized stocks listed on the London Stock Exchange, and by today's standards represents approximately 85.18 percent of the entire market by market capitalization (FTSE100 factsheet 2010). The FTSE index also accounts for 7.84 percent of the world's equity market capitalization (FTSE100 index factsheet 2010).

2.3 Market capitalization

The LSE functions as the main exchange of UK equity trading and corporate and governmental bonds, consequently it also is the leading body for international equity trading (Roberts 2008). The LSE today comprises of nearly 3,200 international companies which constitutes as the largest European exchange and the base for a wide diversified company selection (LSE 2009). There are approximately around 1,280 UK companies listed on the LSE, with aggregated market capitalization of £1,930 billion and additional of 1,630 companies with a market capitalization of £91 billion are quoted in 2007 (Roberts 2008). London capital markets have since 1995 generated through new equity issued £132 billion solely from UK listed companies and additional £60 billion from secondary markets during 2008 (Roberts 2008, LSE 2009).

2.4 Size distributions

The size distribution of UK listed companies is regarded highly distorted in terms of market capitalization as constituent factor. Within the LSE, over 138 largest companies with market capitalization greater than £2 billion account for 80 percent of the overall market capitalization (Roberts 2008).

Individual companies, such as Royal Dutch, BP and HSBC jointly constituted around 15 percent of the entire market in early 2010 (LSE, market stat 2010). And around 1,450 companies with a market capitalization below £50 million accounted for 2 percent of entire market capitalization and 52 percent of the quoted companies (Roberts 2008).

The financial services sector constitutes the largest sector within the LSE markets and considered most crucial one in terms of money raised by £5.4 bn (LSE, market statistics 2010). The oil and gas sector is the second greatest sector by £2.4 bn, where among these belong are Royal Dutch Shell and BP. Remaining sectors belong are health care, consumer services, basic industries constitute of half of the entire market capitalization (LSE 2009, FTSE100 market statistics 2010).

Chapter 3: The Theoretical framework

This is the central part of the paper where we aim to provide the readers with the details of the model in construction. In this chapter, readers will be given a full roadmap concerning the theory surrounding the financial indicators (one by one) in use, the relevance of each financial indicator plus in-depth analysis for each one.

3.1 The choice of financial Indicators

Choosing financial indicators which drive the success of stocks has been always the center point of many academic papers which were aiming to “unveil” the cover that contains the prospects for any investor in the market to take long positions in different equities throughout the financial markets, these positions-which vary according to the investors’ needs and objectives- are all based on one notion; to maximize the value invested in these funds.

Investors can be classified according to the financial economics literature into three broad categories:

- 1- Risk-loving investors
- 2- Risk-averse investors
- 3- Risk-neutral investors

Since no investor would like his investment to lose its preserved value and no matter what risks this investor is willing to take, the goal of this categorizing comes at the time when different types of investors seek to invest in the successful stocks, and being successful is a matter of some indicators which could potentially signal a probable future appreciation of the investor’s wealth.

The question that could be raised at this point which can interest any reader is whether there exist some indicators of successful stocks. If we can decompose the success into some measurable factors, then we could acclaim that these factors could be the signs or the pieces of evidence that proves the existence of such indicators and therefore we will be able to establish a real connection between the notion of success as was described earlier in the first chapter and the indicators which will be the axis of this paper. In other words, this paper is aimed to investigate some of the company-specific characteristics which can characterize the success of stocks.

3.1.1 Return on Assets (ROA) or Profitability

This indicator is widely used among practitioners and academics to measure profitability, therefore the ROA can reveal how far the company is profitable relative to its assets. In their paper, Johnsson and Soenen (2003) have pointed out to the fact that this indicator “is an asset utilization ratio that indicates how effectively or efficiently a firm uses its assets”³. Thus the ROA can establish the connection between the efficient management and its ability to create earnings relative to its total assets.

In fact, Johnsson and Soenen have concluded and reported evidence of a strong positive relationship between stock’s return and the ROA. The efficiency in which fixed, working capital and some assets are invested could be tracked as a driver of efficiency, this matter was highlighted by Johnsson and Soenen “effectiveness with which a fixed capital, working capital and other assets are employed obviously is a driver of growth”⁴, and the greater levels of ROA will imply-to some extent- some growth possibilities within the firm.

But how do we construct the ROA? As a matter of fact, ROA is defined as the ratio of the net income achieved by the firm relative to its total assets. The efficiency of management in spotting the “good” investments and its ability to apply the finest disposable techniques in generating earnings can to somehow attached to the achieved ROA, therefore investors can count on the good management to go and hunts each attractive investment opportunity and reflects that on a better ROA.

Financial economics has suggested other indicators of profitability; one of these indicators which are widely used in the finance community is the ROE, but many papers have reported pieces of evidence with the shortcomings of this metric. First, this indicator reveals nothing in respect to the debt hung to the company’s balance sheet and whether the company uses some debt to generate its returns, and this can be important to consider when planning for investments.

To account for the calculation of the total assets, this is done by summing the liabilities and stockholders’ equity. We can see clearly that the debt that the firm carries on its financial

³ Johnson and Soenen (2003), p.365

⁴ Johnson and Soenen (2003), p.365

statements will be incorporated into the ROA measure which settles for the problems associated with ROE.

3.1.2 Book to market Ratio (BTMR)

In a revolutionary way of thinking in their article, the researchers Fama and French (1992) have attempted to trigger the seemingly important aspects of the company's size and Book-To-Market ratio in explaining the returns of individual companies. In their article "The cross-section of expected stock returns" published in June 1992, they have emphasized the role of BTMR as being instrumental when it comes to analyze the drivers of average stock's returns and this was proven based on the evidential cross sectional regressions they have run in their study by stating "a strong cross-sectional relationship between average returns and book-to-market equity"⁵

As a matter of fact, the importance of the BTMR in the prediction and explaining of the company's success was greatly acknowledged by many other studies in which they have established a real link between the stocks returns and the BTMR. One of the studies was performed by Lanstein, Rosenberg and Reid (1985) shows a positive relationship between the average returns on the U.S stocks index and companies BTMR's.

In other study performed by Chan, Hamo and Lakonishok (1991) which was applied on the Japanese firms, they have reported the success of the BTMR in explaining the financial success achieved by the Japanese companies listed on the Nikkei 225. Kothari and Shanken (1997) have investigated the significance of both the BTMR and dividend yield indicators in the prediction of the stocks returns which-as the study shows- have proven to be a success in tracking the financial success of the DJIA in the period that covers 1926-1991.

They have confirmed the relevancy of the BTMR in this tracking although much of the acclaim was attributed to the dividend yield as being "stronger" as an explanatory in some certain sub-periods, but generally the strength of the BTMR was superior in the explanation for the entire

⁵ The cross-section of expected stock returns by Fama and French June 1992

period. In the same matter and fashion, Pontiff and Schall (1998) have reported the “big role” that BTMR plays in forecasting the future returns recorded on the Dow Jones Industrial Average “DJIA”, and this was proven to be true after controlling for some other variables which have assumed to be good determinants in predicting market returns such as dividend yields and default swaps although these variables could not account for the bigger share of the power of forecasting that BTMR has proven relatively to the power of these variables in this context.

Two sets of stocks were sorted based on what Fama and French (1998b) have mentioned in their study, value stocks vs. growth stocks. Value stocks are characterized to have high earnings to price ratio (high E/P) traded at a lower price relative to its fundamentals, therefore investors consider these stocks to be undervalued in the market and record high BTMR’s. On the other hand, growth stocks are distinguished with low earnings to price ratio (low E/P) which leaves investors with the impression that these stocks are highly overvalued and record low BTMR’s.

Many academic papers including Fama and French (1998), La Porta et al. (1997) have reported the existence of a significant value premium for the U.S stocks and showed that value stocks with high BTMR’s and high E/P ratios create higher returns on average than growth stocks which carry low BTMR’s and low E/P ratios. In this paper, the book-to-market ratio is considered as an indicator of value stocks. This indicator was calculated in a straightforward manner following the methodology followed Fama and French (1992), taking the book value of common equity in the firm divided by their corresponding market value”⁶.

3.1.3 Size (MV)

The story of this indicator was well-established in many publications, as Johnson and Soenen addressed the importance of the size of the company by stating “the second most publicized variable to explain stock returns”⁷. This indicator has been evident as a proxy to portrait the stock returns; this was the case in many well-known publications.

⁶ What Characterizes Successful Stocks? -A case study of Swedish companies between 1995 and 2005- by Gabriel Fors

⁷ Johnson and Soenen (2003), p.365

Fama and French (1992) have reported the importance of the BTMR and the company's size as being the most important indicators in which stock returns can be tracked through. They found that that stock returns are negatively related to the size and –at the same time- positively related to the BTMR. A research conducted by Barber and Lyon (1997) in which they have examined the robustness of the findings of Fama and French (1992) regarding the size and BTMR as being proxies to explain the stock returns of the financial firms. They have stated that both types of firms-financial and nonfinancial- have very similar return patterns and “both financial and nonfinancial firms exhibit a significant size and BTM premium”⁸.

In a study performed by La Porta et al. (1997), the authors have reported similar evidence which asserts the fact that financial and nonfinancial firms have a close similarity in regard to the efficiency (the use) of size and BTMR as indicators of superior stock returns.

Negative relationship between size and stock returns was evidential in many studies including Fama and French (1992), Barber and Lyon (1997) and Rouwenhous (1999) but the interesting thing is what Johnsson and Soenen have proven in their study to be a significant positive relationship that ties size with stock returns. This positive relationship was documented in Shefrin and Statman (1995) as well.

As usual, we will show how such indicator can be measured in terms of a mere accounting, one way to construct this measure is to take the price per share multiplied by the shares outstanding or by simply using the market value of the company (if data is available). In this paper, we have used the market value of the company as a proxy to its size.

3.1.4 Capital Structure (CS)

The composition of capital structure might be one of the wildest yet important fields to deal with while investigating the drivers of the financial success. Many economists have indeed addressed the importance of this indicator each time there exists any trial to decompose the characteristics of the financial success. Jaffe, Ross and Westerfeld (2005) have stated “the theories of capital structure are among the most elegant and sophisticated in the field of finance”⁹.

⁸ Barber and Lyon (1997), p. 876.

⁹ Ross, Westerfeld and Jaffe (2005), p. 461.

But what concerns any researcher in this field is the composition of the components of the capital structure elements of the firm to get an “optimal” structure; this concern has been established in many papers and one particular paper has discussed this matter in some details.

In a paper by Bradley, Jarrell and Kim (1984), the authors have commented on this aspect by stating that “one of the most contentious issues in the theory of finance during the past quarter century”¹⁰. Therefore, one can assert the role that capital structure plays relatively to the financial success of the firm although determining the so-called optimality can be somehow difficult.

To utilize on the concept of capital structure, the employment of the leverage in the firm will be used in this study to refer to the capital structure; this is measured by dividing the long term debt to the firm’s total assets. Employing leverage in the firm’s capital structure can bring in great benefits for the firm (and its stockholders) if profitable investments opportunities are laying in the horizon and the firm has sought that these benefits can exceed the cost of taking on the leverage. Thus, leverage can generate some returns which might increase the return on equity.

Using debt to generate returns lies within the concept of the so-called “Trade-off” theory of the capital structure which is based on the idea that there exists a trade- off between the tax advantages of the debt and leverage related costs. These costs can be attributed to financial distress and other direct and indirect costs. Trade-off theory suggests that each company can have an optimal level of debt which is always preferable by financial managers. On the other hand, trade-off theory has some opponents who object the content in which this theory is based upon, one such theory that opposes is the pecking order theory established by Myers et al. (1984).

The dynamics of the pecking order theory revolves around the fact that a target level of debt does not exist and that profitable firms have a higher propensity to use less debt in their structures implying that a negative relationship between profitability and leverage does exist. Pecking order theory is based on the sorting out of financing resources alternatives which commence from the cheapest alternative as perceived by firms to rise gradually in terms of costs associated.

¹⁰ Bradley, Jarrell, and Kim (1984), p. 857

In this aspect, the theory decides that internally generated funds must come cheaper than any other source according to the findings of Leary and Roberts (2004) who find internal funds to occupy the bottom in the pecking order theory with the equity being at the top of this order with the largest perceived costs. On the contrary, Leary and Roberts (2004) report empirical evidence that the content of the pecking order theory seems to be conflicting due to the existence of many other studies suffering from statistical power problems. Thus, the position of the capital structure and its relevancy with the “winning bets” do require an extensive effort to decide which way to go.

In their extensive research, Fama and French (1998a) has reported a controversial conclusion in which they have opposed the famous relationship that says “firm value and debt has a positive relationship” to show that this relationship turned out to be negative instead. They have mentioned that increased leverage is a bad news for firm value.

3.1.5 Liquidity (LQ)

Liquidity is one of the most important indicators which “indicate” the wisdom of the company and its efficiency in managing the short term obligations in relation to its short run assets. To reach this effective indicator, one can divide the most liquid assets, i.e. cash and other marketable securities over the total assets of the company.

Liquidity can be described as the effective dynamo in initiating new projects and investment opportunities; therefore this highly valued asset has a big role in the readiness of the firm to initiate its future projects which might benefit the firm on the aspect of “good timing”, some costs cuts (due to the availability of internal funds rather than using debt) and the existence of seemingly profitable opportunities.

In this matter, Johnsson and Soenen (2003) have pointed out to the importance of possessing cash at hands which is “most valuable to firms with plenty of positive-NPV growth opportunities”¹¹. On the other side of the story, having too cash on the firm’s balance sheet can be costly which is something that should be considered by the financial managers, this is due to

¹¹ Johnson and Soenen (2003), p.366

the “agency problems” between managers and stockholders which might reflect negatively on the financial performance of the company.

This phenomenon is described -from the financial perspective- as the “financial slack” which might be drained excessively on the managers own needs, empire building and requisites, thus stockholders are better off having back this slack in form of dividends or in forms of newly initiated investment opportunities. Jensen (1984) has raised this issue with an in-depth analysis and addressed the importance for managers to take decisions that maximize the use of this free cash disposable at their hands.

3.1.6 Cash conversion cycle (CCC)

As a matter of fact, many financial and economic terms face companies’ managers while building their tactics and strategies for managing their firms, one of the “most” important terms in this context is the working capital which accounts for the process of handling the day-to-day operations of the company. This indicator is widely used by managers and insiders to track the financial health of the company and to measure its management efficiency in the short run.

Working capital is built upon several elements such as accounts receivables, accounts payable and inventory.

One way of sorting these elements out can lead to a very important indicator which is called the cash conversion cycle (CCC). This term refers to “the continuing flow of cash from suppliers to inventory to accounts receivables and back into cash”¹². Many researchers have developed the notion of the (CCC) but Richards and Laughlin (1980) were among the first generation to develop this concept. They were concerned about the process of handling the liquidity ratios on the balance sheet to determine the liquidity position of the company.

For Richards and Laughlin, (CCC) is better defined as “reflecting the net time interval between actual cash expenditures on a firm's purchase of productive resources and the ultimate recovery of cash receipts from product sales”¹³. (CCC) is measured based on what Johnsson and Soenen have followed in their study, therefore this is computed as {(inventories + accounts receivables -

¹² Id.

¹³ Richards and Laughlin (1980), p.34

accounts payables) *360}/ total sales and this broad method was based on a concept established by Gitman (1974) and Richards and Laughlin (1980).

3.2 Approaching the financial success of companies

In this study, we are attempting to establish a real connection between the financial indicators chosen and the financial success of the company (creating excess wealth for shareholders in relation to other companies), and by mentioning the term “success”, some measures are needed to define this success, namely the Sharpe ratio and the Jensen’s alpha.

As a matter of fact, and before we get into details about these two measure, we should come to what motivated us in this study to pick these two measures. There are several well-known measures in this field which could be mentioned, the Treynor ratio and the method of computing the Economic Value Added (EVA).

As for the Treynor ratio, this ratio resembles the Sharpe ratio but differs in the usage of the portfolio’s beta as a measure of its volatility while Sharpe ratio uses the portfolio’s standard deviation. On the other hand, the EVA measure has received a lot of attention in recent years¹⁴. The EVA concept works on capturing the value created by company for the sake of shareholders. Therefore, EVA can measure the performance of the company by subtracting the WACC (Weighted Average Cost of Capital) from the operating profits of the company.

Computing the EVA measure is a question of the availability of data and the concepts used in the measure. Johnson and Soenen (2003) have constructed the EVA using data from the Compusat data base, and due the difference in concepts used in the Compusat compared to the ones used in DataStream, and having used the DataStream in this study to compute our financial indicators and indicators of financial success, we could not incorporate the use of EVA in this study.

3.2.1 The Sharpe Ratio

William F.Sharpe was the one who developed the concept of this ratio which is a measure of the portfolio’s risk-adjusted return. This measure reveals information about the “extra reward that

¹⁴ see for example Hecking (2002)

investors receive for the added risk taken”¹⁵, therefore this measure stands on the concept of differentiating “good” investments from the “bad” ones since any investor would like to know whether the excess return is not associated with too much extra risk.

To calculate Sharpe ratio, the following formula has been addressed by Sharpe:

$$Sh_p = (R_p - R_f) / \sigma_p \quad (1)$$

Where:

R_p is the expected portfolio's return

R_f is the risk-free rate

σ_p is the portfolio's standard deviation

In our study, the risk-free rate was obtained from the DataStream as the return on the quarterly (3-months) LIBOR in the FTSE100 Market. As the evidence shows, Sharpe ratio is considered to be a powerful measure used to assess the financial performance of the company but does come along with some shortcomings which can be complemented by another performance metric –that is- the Jensen's alpha.

3.2.2 The Jensen's alpha

This measure is incorporated in the well-known capital asset pricing model (CAPM), the alpha here stands as a risk-adjusted performance measure which is used to measure the average returns exceeding the ones predicted by the CAPM given the portfolio's beta and the average return on the market.

Jensen's alpha is measured as the following:

$$\alpha_p = R_p - [R_f + \beta(R_m - R_f)] \quad (2)$$

Where:

R_p is the expected portfolio's return

R_m is the expected market return

R_f is the risk-free rate

β is the portfolio's beta

¹⁵ CFA Programme curriculum-volume 1, page 322

This measure –as compared to the Sharpe ratio- brings the market risk is into consideration. Therefore, the alpha tracks how well the portfolio manager is handling the systematic risk. As a matter of fact, the Jensen’s alpha “gives an indication of the degree to which the portfolios are earning significant returns after accounting for market risk, as measured by beta”¹⁶. Alpha will indicate whether the portfolio is generating a fair return or greater that would be predicted by the CAPM, thus a zero value for alpha would notify the investors that the portfolio has generated a fair value, but if alpha shows a positive value, then the portfolio is generating a greater return that expected by the CAPM. In this study, the market return is calculated by using the quarterly return on the FTSE100 index which was assumed as a proxy to the market return.

¹⁶ What Characterizes Successful Stocks? -A case study of Swedish companies between 1995 and 2005- by Gabriel Forss

Chapter 4: Data approach and testing methodology

In this chapter, the readers will be introduced to the methodology that was applied in constructing our model, building up the portfolios and the sample selection and the data selection. This chapter will be the center point of this thesis as regard the importance of its results.

4.1 Sample selection

The study covers the period from the 1st of January 1991 to the 31st of December 2009 and therefore, 76 quarters were covered in this study. The selection of the data covers the companies listed in the Financial Times Stock Exchange (FTSE100), and 55 companies were selected in this study based on the availability of data needed to construct the financial indicators at our disposal. These stocks represent different sectors of various industries in the UK market (i.e. automobile, financial services, oil and gas, health care, consumer services, basic industries).

The reason why we expanded our data range is to make sure that the results desired in this study stand to be concrete and accurate as much as it could be, this period was even longer than the range Johnsson and Soenen (2003) have set for their study which covers the period 1982–1998.

4.2 Data selection and portfolios building

The study utilizes quarterly returns for the sampled 55 companies listed on the FTSE100 covering the period 1991 to 2009. As regard to the financial indicators, the data used to build up these variables with addition to the quarterly returns were all obtained from the DataStream at Lund University, School of Economics and Management (LUSEM).

This study was designed to be quantitative in order to investigate and assesses how important the company-specific characteristics -which come as a form of financial indicators- in use to create the stockholders' wealth. As a matter of fact, this paper is divided into two parts which conclude the whole study. The first half (or the first part) of the study will be based generally on a well-known method used in the field of stock valuation, this method is explained below. Having 76 quarters in this study will leave us with a spacious room to apply this method, at time t ; companies' stocks will be sorted out into 5 portfolios (of 11 stocks each) based on their score on

the six indicators chosen earlier. Stocks will be placed in their portfolios from the top to the bottom (for instance, from the highest ROA corresponding stock to the lowest) and therefore, sorting these stocks like this will give us 5 portfolios with the first portfolio having the highest values and the fifth portfolio having the lowest values.

At time $t+1$ (the quarter that follows) our objective is to investigate the changes which emerge on our portfolios in regards to generating stockholders returns (measured by the Sharpe Ratio and the Jensen's Alpha). But how are we going to compute our portfolios' financial measures? Sharpe ratio will be computed using equation (1) and it is all portfolios' variables, and regarding the Jensen's alpha, each portfolio's beta must be present. Therefore, a regression will be performed, and this is done by regressing each stock's daily returns (in each quarter) over the market's daily returns (in the corresponding quarter) and thus we will obtain each stock's beta in each quarter.

After that, we average the betas of the stocks included in each quarter so we can get the portfolio's beta and the same process repeated in each quarter so we can make sure that we have each portfolio's beta under each of the six financial indicators. Again, and at time $t+1$ the procedure will be repeated as new portfolio are constructed and the returns will be measured at time $t+2$ and this will go on until the end of our dataset. The above procedures will be applied in each indicator.

To statistically assure the robustness of this method, a further statistical analysis needed for this reason. Therefore, it was decided to study the significance of the relationship between the two financial measures and our financial indicators; this method is simply to perform an OLS regression. To perform such regression, the x-variables will contain the quarterly data which has been computed earlier for the 55 companies regarding the 6 financial indicators, therefore the two measures of the financial success (the y-variables will contain Sharpe ratio and Jensen's alpha) are subsequently (in each quarter during the entire period 1991-2009) regressed on the 6 financial indicators. In fact, it is necessary at this point to compute both financial measures (Alpha and Sharpe) for the 55 stocks at our disposal, and computing Sharpe would be an easy task given the availability of the variables (R_s, R_f and σ_s) for each stock where:

R_s : expected return on stock i : $i=1, 2 \dots 55$

σ_s : the stock's standard deviation.

But on the other hand, Jensen's alpha is generated by using the (CAPM), and doing so would require computing each stock's beta which is done already by computing the stocks' betas in the steps mentioned earlier. Finally, the OLS regression is performed to insure the significance of the relationship between the two measure of financial performance (Sharpe and Jensen's alpha) and to make such regression viable and accurate, we have followed Johnsson and Soenen (2003) methodology in regard to this matter, so "the indicator variables have been lagged by one time period. This means that for instance the ROA value at time t will be coupled with the Sharpe Ratio of time $t+1$. This will produce a model where the predictive functions of the indicator variables will be thoroughly tested"¹⁷.

¹⁷ What Characterizes Successful Stocks? -A case study of Swedish companies between 1995 and 2005- by Gabriel Forss

Chapter 5: The empirical results and analysis

This chapter is devoted to document the results of constructing our model by using the methods mentioned in the last chapter; furthermore, we will analyze our findings and the OLS regressions performed, short interpretations are followed at each section.

5.1 The characteristics of the FTSE100 stocks

Before we attempt to investigate the selected financial variables and performing the OLS regressions in the subsequent sections which follow, it is important to shade some light on the characteristics of the selected companies chosen in this study to give the reader a solid background of this particular market (FTSE100) and the environment in which these stocks trade during the chosen period between 1991-2009, therefore, it was decided that a statistical summary of these stocks are ought to be given here in this section before we start our empirical study regarding the financial success of the companies in the FTSE100. In table 5.1, a statistical summary is given which will be followed by an interpretation of these statistics.

Table 5.1

The Financial variable	Max	Company's name	Min	Company's name
Average Return	0.0010	CAPITA GROUP	-0.0002	RSA INSURANCE GROUP
Standard Deviation	0.0049	INVENSYS	0.0012	ALLIANCE TRUST
Skewness	1.3264	BARCLAYS	-3.1831	LONMIN
Kurtosis	18.4740	RIO TINTO	-0.3312	UUG

In fact, this table has concluded the statistical information that any investor would seek in investigating the characteristics of the market and its institutional participants. As it is obvious,

four main categories were documented in the table above to account for what happened in the period which covers (1991-2009), and these four categories are:

a. Average Return (AvR)

A crucial question might be asked in the terms of making investment decisions, this question is: where the returns of the companies are centered? To answer this question, the quarterly average returns of the companies were studied during the period 1991-2009 in order to spot the stocks with the highest and lowest return; this was conducted to show the best and worst players in this market (FTSE100) when it comes to achieve the “value creativity” or the “value manager” to the existing and potential stockholders.

As shown in table 5.1, the best institutional player in generating quarterly return was Capita Group with (0.0010). On the contrary, the worst player in terms of generating revenues was RSA Insurance Group with (-0.002) which has signaled a potential destructive value for their stockholders during the period 1991-2009.

b. Standard Deviation (StD)

How far are the data dispersed from the center? This question is meant to focus on the standard deviation of our selected stocks to investigate the uncertainty when it comes to the quarterly returns achieved by these companies in our time frame 1991-2009.

In this context, stocks have shown a variety in their reported standard deviation during the period 1991-2009; the highest standard deviation was reported by Invensys with a value of (0.0049), this means that this stock has shown a great deal of uncertainty in regard to its generated returns for its stockholders. On the other hand, Alliance Trust has reported the lowest standard deviation with a value of (0.0012) showing a small uncertainty for investors to long this stock in the period 1991-2009.

c. Skewness (Sk)

This measure qualifies as to investigate the distribution of the returns for each stock; the objective to include such measure was stated in the CFA as “whether the distribution of returns is symmetrically shaped or lopsided”¹⁸. In this context, an investor would be interested in investigating the distribution of returns of his/her portfolio of stocks to understand the characteristics and both rewards/risks of his portfolio. Of course, this measure has an interpretation which is dependent upon the sign of the skewness; if the distribution of the returns of the stock (or portfolio) is positively skewed then the investor would expect “frequent small gains and a few extreme losses”¹⁹.

On the other hand, the distribution of the returns might be negatively skewed meaning that the investor would expect frequent small losses and few extreme gains. In regard to this matter, a skewness study was performed on the stocks sample at our disposal to understand the nature of the distribution of the returns of each stock all over the study period 1991-2009, nevertheless, it was decided that it would not be feasible to account for the skewness of every single stock, therefore, the max and min values of the skewness will be stated instead.

From table 5.1, we can see clearly that the most extreme positive skewness was reported for Barclays at a value of (1.3264) which was the highest among the selected stocks for the period 1991-2009. This result shows that an investor who would be interested in Barclays’s stock will encounter few extreme losses as a result of the positively skewed distribution of the returns.

On the other hand, the most extreme negative skewness was reported for Lonmin at a value of (-3.1831), and it would be clear to understand that in this case, the investor will suffer from frequent small losses but it is probable that he will be rewarded with some few extreme gains. We can see the importance of including this measure when analysing the parameters of the stocks over the selected period of time.

¹⁸ Level 1 Volume 1 - Ethical and Professional Standards and Quantitative Methods, 5th Edition. Pearson Custom Publishing, page 268.

¹⁹ Level 1 Volume 1 - Ethical and Professional Standards and Quantitative Methods, 5th Edition. Pearson Custom Publishing, page 325.

d. Kurtosis (Ku)

In dealing with the deviations from a normal distribution, another term that describes this deviation in addition to the previously discussed skewness is the kurtosis. To shade some light on this parameter, it was stated that this deviation from normal distribution means “having more returns clustered closely around the mean (being more peaked) and more returns with large deviations from the mean (having fatter tails)”²⁰. In fact, investors would perceive the large deviations from the mean as increasing risk.

A kurtosis tells us whether the distribution of the returns is more (leptokurtic) or less (platykurtic) peaked than a normal distribution which indicates that a higher percentage of small deviations from the mean return does exist and a higher percentage of large deviations from the mean return does exist as well, therefore, this parameter shows the possibility of an investor having extreme values over a period of time (whether extreme outcomes are likely).

Looking at table 5.1, we can see clearly that the max value reported for kurtosis was (18.4740) for RIO TINTO which means that investors would expect extreme outcomes due to the leptokurtic shape of the distribution. On the other hand, the lowest value for kurtosis was reported at (-0.3312) for United Utility Group (UUG) which shows a platykurtic distribution for investors.

5.2 The OLS Regression

In order to enhance the portfolio analysis which are performed and documented later in the third section of this chapter, it was decided to perform an OLS regression to boost this analysis and investigate the significance of what factors to include later on. This regression was explained by Johnson and Soenen (2003) by explaining that “an OLS regression model to examine which variables is most important in explaining the level of the three measures of financial performance”²¹. The results regarding this regression are presented in the following tables which conclude the entire period 1991-2009 for the 55 companies in the FTSE100. The indicator variables for the companies’ stocks are regressed on the corresponding Jensen’s alpha values in table 5.2.a:

²⁰ Level 1 Volume 1 - Ethical and Professional Standards and Quantitative Methods, 5th Edition. Pearson Custom Publishing, page 330.

²¹ Johnson and Soenen (2003), p.366

Table 5.2.a

Dependent Variable: ALPHA
Method: Least Squares
Date: 08/14/10 Time: 15:34
Sample: 1 4125
Included observations: 4125

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.011067	0.003019	3.665253	0.0003
ROA	0.038409	0.016879	2.275609	0.0229
CS	0.026976	0.008898	3.031635	0.0024
LQ	0.001531	0.001203	1.272583	0.2032
BTMV	-0.022683	0.003179	-7.135201	0.0000
MV	-1.82E-07	8.45E-08	-2.152180	0.0314
CCC	-5.80E-06	2.85E-06	-2.033098	0.0421
R-squared	0.020409	Mean dependent var		0.004414
Adjusted R-squared	0.018981	S.D. dependent var		0.089783
S.E. of regression	0.088927	Akaike info criterion		-2.000306
Sum squared resid	32.56519	Schwarz criterion		-1.989573
Log likelihood	4132.632	F-statistic		14.29892
Durbin-Watson stat	2.021305	Prob(F-statistic)		0.000000

Observing the probability values in table, i.e. “the probability that you would be wrong if you reject the null hypothesis that the regression coefficient is zero”²², the table shows that four indicators are very significant (at the 5 percent level) in explaining successful performance. In this regression, a strong relationship is observed between the ROA and the Jensen’s alpha with a p-value of (0.0229) which is the same case in regard to the p-values of the following indicator variables: the CS (0.0024), BTMV (0.0000), MV (0.0314), and CCC (0.0421).

In fact, some of these results come in line with what Johnson and Soenen (2003) have reported, these consistencies include ROA, CCC and MV (Size). It is not surprising to find consistent evidence in regard to the ROA in which the high profitable portfolios have outperformed the least profitable portfolios.

²² Johnson and Soenen (2003), p.366

Also, the Capital structure had a share of the significant indicators, and this is found to be absolutely consistent with our portfolio analysis in which the more companies include debts in their capital structure the extra returns they get when adding some additional risk in their businesses. According to the OLS performed, the BTMV is significant in explaining the financial performance relatively to the Jensen's alpha with a p-value of (0.0314).

As in regard to the CCC, the analysis shows that this indicator does not provide strong evidence of significance with regard to financial performance measures measured by Jensen's alpha with a Poor p-value close to 0.05 at a (%5) significance level, this is in line to the findings of Johnsson and Soenen (2003). On the other hand, the OLS regression performed here in this section of the study has included the results of the regression of the financial performance measures (Sharpe ratio) on the financial indicators. The table below presents these results as in regard to the OLS regressions:

Table 5.2.b

Dependent Variable: SHARPE
Method: Least Squares
Date: 08/14/10 Time: 15:43
Sample: 1 4125
Included observations: 4125

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.082786	0.264505	4.093637	0.0000
ROA	1.491552	1.478640	1.008732	0.3132
CS	-0.090962	0.779527	-0.116689	0.9071
LQ	-0.174501	0.105401	-1.655591	0.0979
BTMV	1.540613	0.278491	5.532000	0.0000
MV	-6.21E-06	7.40E-06	-0.838398	0.4019
CCC	0.000591	0.000250	2.365874	0.0180

R-squared	0.008153	Mean dependent var	1.868090
Adjusted R-squared	0.006708	S.D. dependent var	7.816651
S.E. of regression	7.790391	Akaike info criterion	6.945355
Sum squared resid	249922.2	Schwarz criterion	6.956088
Log likelihood	-14317.79	F-statistic	5.641624
Durbin-Watson stat	0.368947	Prob(F-statistic)	0.000008

The table shows that two indicator variables are found to be significant (relative to Sharpe ratio) in explaining the financial success; they are BTMV and CCC with p-values of (0.0000) and (0.0180) respectively. It will be shown later on (in the portfolio analysis) that the CCC (seemingly) has not provided that strong evidence in supporting the financial success, with the least CCC scoring portfolio generating the highest Sharpe ratio, but according to the OLS regression, it seems that the CCC is significant at (%5) level in explaining the financial performance. Again and based on what will be demonstrated later on based on the portfolio analysis, it seems that there exists a negative relationship between the score on the BTMV the corresponding Sharpe ratio, but the OLS conducted here seems to contradict this fact by showing that the BTMV is significant at (%5) in explaining the financial success with a p-value of (0.0000).

Other indicator variables were insignificant in explaining the financial success measured by Sharpe ratio; these include ROA, MV, LQ and CS with high p-values. In the next section, we will perform the portfolio analysis which concludes the results of each portfolio's score on each of the six indicator variables over the period 1991-2009. This analysis will present the Jensen's alpha and Sharpe ratio for each portfolio in correspondence to its scoring on the indicator variable, and some other measures will be reported to stand for the parameters of each portfolio because we believe that these parameters will help the investors in understanding the nature of each scoring portfolio based on each indicator variable.

5.3 Portfolio Analysis

After conducting the OLS regression in the previous section, our intention is to focus on the results of the conducted portfolio analysis for the financial indicators of the success, the results will cover the 55 companies chosen in the FTSE100 during the period 1991-2009.

The methodology of portfolio analysis (was explained in chapter 4) will be pursued here in this section, then we will report the outcomes of our investigations based on each indicator variable.

5.3.1 ROA

In this subsection, our analysis will concern the profitability of the companies. Not surprisingly; the portfolios which were ranked according to their score under this indicator and exhibited the higher ratios of the ROA at quarter t have generated superior returns in quarter t+1 and below the results are put together in table 5.3.1:

Table 5.3.1

This table presents the average returns (provided by the **Jensen's alpha and Sharpe Ratio**) of five different portfolios which are ranked according to their score on the **ROA** measure.

Portfolios range from 1991-2009 and are reformed every quarter

The score on the indicator	Jensen's alpha	Mean diff	StD	AvR	Sharpe	Sk	Ku
Portfolio 1 (high ROA)	0.0096	0.108	0.0019	0.0006	0.2021	-0.92	1.88
Portfolio 2	0.0113		0.0018	0.0003	0.1755	-1.93	7.05
Portfolio 3	0.0163		0.0016	0.0004	0.1779	-0.41	-0.07
Portfolio 4	-0.0032		0.0020	0.0004	0.1447	-0.17	3.25
Portfolio 5 (Low ROA)	-0.0122		0.0023	0.0000	0.0836	-1.58	6.22

We can see clearly that when the analysis was performed in relation to the Jensen's alpha, the first three portfolios have generated positive values of the Jensen's alpha whereas the last two portfolios have exhibited negative values, and this is a sign of a poor performance as regards the fourth and fifth portfolio. In fact, it is obvious that the first two portfolios with a high degree of profitability do outperform the low-profitability. This conclusion comes in line with the findings of Johnsson and Soenen (2003) who have reported that the ROA is an indicator with a quite strong impact on the performance measure represented by the Jensen's alpha.

As in regard to the financial performance of the 5 portfolios measured by Sharpe ratio, the results have spanned over a wider spectrum, the first portfolio scored at the ROA under this indicator has generated the highest Sharpe ratio value of %20.21, and this ratio was gradually decreasing with the transition from the first portfolio to the fifth portfolio which has generated the least Sharpe ratio value of % 8.36. The significance of these results will be discussed later when the OLS regression is conducted. Finally, Johnsson and Soenen (2003) have reported a statistically significant relationship between ROA and the Sharpe and Jensen's alpha at %99 level.

Turning into other aspects of this performed analysis, four descriptive parameters were presented to explain the nature of each constructed portfolio and to convey some of the information which is required by investors. To start with, the average return was computed for each portfolio to cover the entire period 1991-2009, this parameter was reported to be the highest in correspondence to the highest scoring portfolio (Portfolio 1) with an average return of (0.0006), and then it was noticed that this return has decreased slightly in correspondence with the least scoring portfolios to arrive at a minimum of around (0.0000) for portfolio 5.

Standard deviation was the second parameter to be presented with this analysis to understand the uncertainty and dispersion in each portfolio's return over the study period, this parameter was reported to be the highest with the least scoring portfolio (portfolio 5) with a value of (0.0023) meaning that with the least return, the investor would not be interested in holding this portfolio. The least standard deviation was reported with the third portfolio with a value of (0.0016) and a moderate standard deviation was reported for the highest scoring portfolio with a value of (0.0019).

Whether the distribution of the returns was symmetrically shaped or not, this question is a matter of computing the skewness of each portfolio, with portfolio 1 having a negative skewness which surprisingly means frequent small losses but few extreme gains for investors, and finally, the kurtosis was included as well, with the first portfolio being leptokurtic with a value of (1.88) meaning that this portfolio will incur a higher percentage of large deviations from the mean return.

5.3.2 Capital Structure

This financial indicator was a bit of a surprise for the results of this study, in fact, the portfolios which had the highest score on the Capital Structure (the portfolios with the highest long-term debt to the total assets) proved to score the highest financial performance measured by the Jensen's alpha. The first two portfolios have exhibited the highest values in regard to alpha and these values for the first then the second portfolio are (0.01) and (0.01) respectively. Below are the results for this indicator covering the entire period given by table 5.3.2:

Table 5.3.2

This table presents the average returns (provided by the **Jensen's alpha and Sharpe Ratio**) of five different portfolios which are ranked according to their score on **the Capital structure** measure. Portfolios range from 1991-2009 and are reformed every quarter

The score on the indicator	Jensen's alpha	StD	AvR	Sharpe	Sk	Ku
Portfolio 1	0.010	0.0020	0.0003	0.1332	-1.03	1.93
Portfolio 2	0.010	0.0020	0.0003	0.1505	-1.11	2.62
Portfolio 3	0.003	0.0019	0.0003	0.1141	-0.80	2.17
Portfolio 4	-0.003	0.0020	0.0004	0.1329	-0.33	6.24
Portfolio 5	0.001	0.0018	0.0003	0.1452	-1.10	1.64

We should notice that the fourth portfolio (based on its scoring relative to the CS) has suffered seriously from its long term debt inclusion; this portfolio has had a negative financial performance recording a value of (-0.003). Johnsson and Soenen (2003) do not find any significant relationship in regard to this indicator, in fact, they have found a statistically insignificant relationship between Capital structure and both the Sharpe ratio and the Jensen's alpha at %99.

Moving on to the Sharpe ratio, our portfolios have varied in regard to its score on the Sharpe ratio, the first portfolio has scored a value of (% 13.32) which comes in the second place after the second portfolio which scored a value (% 15.05), a result that might be seemingly violated by the results of the OLS regression analysis regarding this indicator.

Finally, the descriptive parameters have shown some consistency across the five portfolios based on the capital structure indicator, and to begin with, the average returns were consistent within each portfolio throughout the entire period 1991-2009 with a reported value of (0.0003), and these portfolios have proven to show almost an identical reported values for the standard deviation which was around (0.0019). Each of the portfolios was negatively skewed which meant frequent small losses for investors and few large gains. Each portfolio has shown an excess kurtosis (leptokurtic) which means that surprises are expected to occur, and investors will

certainly know that these portfolios have a greater percentage of large deviations from the mean return.

5.3.3 Liquidity

It is quite difficult to follow the pattern which the scoring portfolios on liquidity have followed; therefore, it was somehow tricky to measure their financial performances by the Jensen's alpha.

In fact, it is clear that the portfolio which scored the highest in regard to the possession of the common assets relative to the total assets had an alpha value of (0.004), but surprisingly, the second and third portfolio that came after the first one in terms of the score on the liquidity have recorded better in terms of their corresponding alpha values which came at (0.010) and (0.012) for the second and third portfolios respectively. Below are the results of the analysis conducted regarding this financial indicator in table 5.3.3:

Table 5.3.3

This table presents the average returns (provided by the **Jensen's alpha and Sharpe Ratio**) of five different portfolios which are ranked according to their score on **the Liquidity** measure. Portfolios range from 1991-2009 and are reformed every quarter

The score on the indicator	Jensen's alpha	StD	AvR	Sharpe	Sk	Ku
Portfolio 1	0.004	0.0020	0.0005	0.1494	-1.30	3.58
Portfolio 2	0.010	0.0017	0.0003	0.1541	-0.81	2.68
Portfolio 3	0.012	0.0017	0.0003	0.1625	-1.36	3.31
Portfolio 4	0.003	0.0020	0.0003	0.1629	0.45	4.04
Portfolio 5	-0.009	0.0021	0.0002	0.1657	-1.40	3.26

In fact, we cannot think of a conclusive and fatal evidence of this indicator as in regard to its relevance in driving the financial success for the companies. Again, the pattern shown by the portfolios in regard to the Sharpe ratio came as a surprise for not being conclusive. In fact, the last three portfolios had relatively large Sharpe ratios compared to the first two ones; therefore, the portfolios with high degrees of liquidity could not outperform low-liquidity companies when performance is measured by the Sharpe ratio. As a matter of fact, Johnsson and Soenen (2003) do not find any significant relationship between the liquidity at the disposal of companies and their financial performance measured by the both measures (Sharpe and Alpha).

They report a negative relationship between the liquidity and our performance metrics (and poor p-values as well with 0.87 for the Jensen's Alpha and 0.32 for the Sharpe ratio). Moving on to the descriptive parameters, the five portfolios reported similar results in regard to each of the four descriptive parameters included in the study with the average return varying from (0.0005) for the highest scoring portfolio (portfolio 1) and decreasing gradually over the remaining portfolios with the lowest scoring portfolio (portfolio 5) reporting an average return of (0.0002).

Again, the standard deviation which was included as to measure the dispersion from the average (mean) return (to account for the uncertainty) has a similar values across the five portfolios. the first portfolio has reported a standard deviation of (0.0020) and this parameter was decreasing slightly across the remaining portfolios except for the fifth portfolio which reported the highest value at (0.0021) meaning that this portfolio seems the riskiest portfolio for investors in the market.

Finally, the five portfolios proved to be leptokurtic which means some surprises for investors (the portfolios had an excess kurtosis varying from 4.04 to 2.68), and again as expected, portfolios were negatively skewed as in the previous indicator, this tendency for being negative shows that investors are to expect few extreme large gains, and as noticed in table 5.3.3, portfolio 4 was the only positively skewed portfolio with a skewness value of (0.45).

5.3.4. Book-to-market value (BTMV)

In this following section, the book-to-market value is analyzed relative to the financial indicators. The portfolios categorized below consist of companies whose returns values are ranked according to their scores in correspondence to their BTMV values. Examining the values relative to the Sharpe ratio, the portfolio which has the highest BTMV generated lower returns relative to values exhibited by their counterparts with descending BTMV values.

Looking at the less performing portfolios relative to their BTMV values, they have reported a higher Sharpe ratio. In general, the book-to-market values show a significant positive relation with Sharpe ratio which supports the findings by that of Fama and French (1992). Thus, the

results provide strong evidence that portfolios award satisfactory returns. In their article, Johnson and Soenen (2003) record findings that suggest an existence of a negative relationship between the BTMV and financial performance. Looking at the values presented below, our findings reveal a weak positive relationship between the book-to-market ratio and Jensen's alpha. The portfolio which produces high BTMV generates negative returns and portfolio number three also demonstrates negative characteristics. As a matter of fact, we can noticeably discern that the lower performing portfolios are to some extent superior in generating higher returns. The results indicate that selected UK companies provide evidence the existence of a weak positive relationship between book-to-market value and financial performance.

Table 5.3.4

This table presents the average returns (provided by the **Jensen's alpha and Sharpe Ratio**) of five different portfolios which are ranked according to their score on the **BTMV** (book-to-market-value) measure. Portfolios range from 1991-2009 and are reformed every quarter.

The score on the indicator	Jensen's alpha	StD	AvR	Sharpe	Sk	Ku
Portfolio 1 (high BTMV)	-0.006	0.0020	0.0001	0.0929	-1.01	6.29
Portfolio 2	0.011	0.0019	0.0056	0.1501	8.71	75.85
Portfolio 3	-0.001	0.0018	0.0004	0.1816	-0.69	1.45
Portfolio 4	0.011	0.0018	0.0004	0.1930	-1.48	4.15
Portfolio 5 (Low BTMV)	0.012	0.0020	0.0005	0.2146	-0.64	0.59

As in regard to the descriptive parameters, the highest average return was reported for the second scoring portfolio with a return value of (0.0056) but the surprise was revolves around the first scoring portfolio which reported the least average return of (0.0001). With regard to the standard deviation, the first and least scoring portfolios have reported the highest value of (0.0020) and we can see clearly from table 5.3.4 that the portfolios have shown different shapes as in regard to the skewness, some of them were positively skewed and the other reported to be negatively skewed. Finally, the portfolios are found to be leptokurtic; they have reported excess kurtosis for the entire period 1991-2009.

5.3.5 Size (MV)

In many studies, mainly those conducted by Johnson et al (2003) and Shefrin et al (1995), they all report the existence of positive relationship between size (market value) and superior financial performance while companies smaller in size do not possess the matching possibilities of those proved by large sized companies in generating excess returns. However, researchers Fama and French (1992) have found support that stock returns are negatively correlated to size. Consequently, our findings confirm the existence of a weak positive relationship between size and financial performance. Looking at the table, it was found evidently that smaller firms are better in generating excess returns, a notion to which violates the support of large size companies' ability to generate excess returns. It seems small sized companies manages to perform better than many of its rivals, in their corresponding industries

The results in the table below provide negative support that large companies have on average a superior financial performance. However, it is difficult to establish an evidence of company size being either positively or negatively correlated to financial performance. The values reflect that large- and mid-range companies are negatively related to stock returns. The negative values indicate large firms' ability to generate negative stock returns in relation to mid-sized companies' capability to generate improved excess returns. Similar results are found with regard to those presented in table (table 5.3.5) with regard to small-size companies' ability to better generate stock returns.

Table 5.3.5

This table presents the average returns (provided by the **Jensen's alpha and Sharpe Ratio**) of five different portfolios which are ranked according to their score on **Market Value** measure. Portfolios range from 1991-2009 and are reformed every quarter

The score on the indicator	Jensen's alpha	StD	AvR	Sharpe	Sk	Ku
Portfolio 1(high MV)	-0.004	0.0017	0.0003	0.1610	0.15	5.05
Portfolio 2	-0.002	0.0018	0.0002	0.0974	-1.11	3.03
Portfolio 3	0.011	0.0017	0.0002	0.1451	-0.56	0.49
Portfolio 4	0.008	0.0019	0.0003	0.1486	-0.72	1.21
Portfolio 5(low MV)	0.008	0.0024	0.0005	0.1891	-1.59	4.26

As in regard to the average return, we can see that the five portfolios have reported similar results ranging from 0.0002 to 0.0005 with the fifth portfolios reporting the highest average return (0.0005), and the standard deviation values were close across the five portfolios in which the first portfolio reported the least standard deviation (0.0017) while the fifth portfolio have shown the greatest risk with a value of (0.0024). The 5 portfolios were negatively skewed and they all show a sign of excess kurtosis.

5.3.6. Cash Conversion Cycle (CCC)

What is apparent from the table which presents the Sharpe ratio values, we can notice that all portfolios exhibit positive relationship in explaining financial performance. The portfolio based on its high CCC score does not present satisfactory values to support the financial performance measure. Consequently, portfolio number five exhibits the highest and the best value with regard to Sharpe ratio. These results obtained might be violated by the results of the OLS regression with regard to this indicator.

The first portfolio which had the highest value in terms of cash conversion cycle, exhibited a negative result (-0.0030) with regard to the alpha indicator. Based upon its poor performance provided by the alpha measure, the portfolio is an indication of inefficient working capital management relative to its industry. Portfolios extending to numbers four and five have exhibited the highest values with regard to alpha and these are (0.0073) and (0.0106) respectively. Authors Johnsson and Soenen (2003) have found significant relationship in explaining financial performance with regard to Sharpe and Jensen’s alpha. Therefore, we can conclude that this variable does not provide strong evidence of significance with regard to financial performance measures.

Table 5.3.6

This table presents the average returns (provided by the **Jensen’s alpha and Sharpe Ratio**) of five different portfolios which are ranked according to their score on **CCC** (cash conversion cycle) measure. Portfolios range from 1991-2009 and are reformed every quarter

The score on the indicator	Jensen’s alpha	StD	AvR	Sharpe	Sk	Ku
Portfolio 1 (high CCC)	-0.0030	0.0019	0.0003	0.1267	-0.54	3.27

Portfolio 2	0.0024	0.0024	0.0003	0.0835	-1.51	5.19
Portfolio 3	0.0048	0.0018	0.0003	0.1229	-1.29	2.28
Portfolio 4	0.0073	0.0017	0.0003	0.1823	-0.22	0.91
Portfolio 5(low CCC)	0.0106	0.0019	0.0003	0.2265	-0.71	1.64

As in regard to the average return, we can see that the five portfolios have reported similar results (0.0003), and the standard deviation values were close across the five portfolios in which the fourth portfolio reported the least standard deviation (0.0017) while the second portfolio have shown the greatest risk with a value of (0.0024). The 5 portfolios were negatively skewed and they all show a sign of excess kurtosis.

5.4 Conclusions

The OLS regression which was performed in the second section of this chapter has come as a surprise regarding the relevancy of the financial indicators chosen to explain the financial success. These conclusions have varied across the two measures of the financial success; Sharpe ratio and the Jensen's alpha. The table below (table 5.4) concludes the results of the parametric analysis conducted earlier:

Table 5.4

Financial Indicator of success	financial indicator	conclusion
<i>Jensen's alpha</i>	ROA	Significant (positively related)
	MV	Significant (negatively related)
	CS	Significant (positively related)
	CCC	Significant (negatively related)
	BTMV	Significant (negatively related)
<i>Sharpe ratio</i>	BTMV	Significant
	CCC	Significant

It seems that our conclusion were split over with Johnsson and Soenen (2003) findings and therefore we can see that the financial indicators chosen can vary based on the measure of the financial success, these results might have been affected by two main reasons:

- 1) The financial crisis which hit the global financial markets in 2008-2010, this crisis has raised the volatility of the returns generated by companies in this period which-in return- has affected the notion of the financial success for companies.
- 2) The selection of the companies listed on the FTSE100 starting in 1991 had to do with the availability of data extracted from the DataStream at (LUSEM), this selection of 55 companies has created a pure survivorship bias which was doomed to be present in this study due to the desire of enlarging our dataset as much as possible for reaching reliable results.

We can say that this test has reached some important facts about the performance of the sampled companies listed on the FTSE100; we have examined 55 companies over a 19-year period and investigated six possible indicators of successful performing companies. The financial success in this study was defined as the ability of a company to deliver an excess returns to the existing wealth of its stockholders therefore it is presumed doing better than the average Sharpe ratio and Jensen's alpha relative to total assets for all sample firms. Our results show that large-scaled, profitable companies, with efficient working capital management (i.e. relative short cash conversion cycles) and value stocks outperform the sample average on the Jensen's alpha while companies with efficient working capital management and value stocks outperform the sample average on Sharpe ratio.

References

- Barber, B., & Lyon, J. (1997). Firm size, book-to-market ratio and security returns: a holdout sample of financial firms. *Journal of Finance* 52(2), 875-883.
- Bradley, Jarell, & Kim. (1984). On the existence of an Optimal Capital Structure: Theory and Evidence. *The Journal of Finance*, 857-78.
- Cassis, Y., & Bussiere, E. (2005). *London and Paris as international financial centres in the twentieth century*. Oxford University press.
- CFA Institute. (2010). *Ethical and Professional Standards and Quantitative Methods*. Pearson Custom Publishing.
- Chan, L., Hamao, Y., & Lakonishok, J. (1991). Fundamentals and Stock Returns in Japan. *Journal of Finance No.5*.
- Chan, L., Lakonishok, J., & Sougiannis, T. (2001). The stock market valuation of research and development expenditures. *Journal of Finance* 56(6), 2431-2456.
- Fama, E., & French, K. (1992). The Cross-Section of Expected Stock Returns . *The Journal of Finance Vol.47, No.2*, 427-465.
- Fama, E., & French, K. (1998b). Value versus Growth: The International Evidence. *Journal of Finance vol 53(6)*, 1975-1999.
- Fama, F., & French, K. (1998a). Taxes, Financing Decisions and Firm Value. *Journal of Finance* 53(6), 819-841.
- Fors, G. (2005). *What characterizes successful stocks? A case study of Swedish companies between 1995-2005*.
- FTSE. (n.d.). *FTSE 100 Index factsheet 2010*. Retrieved August 25, 2010, from FTSE: http://www.ftse.com/Indices/UK_Indices/Downloads/FTSE_100_Index_Factsheet.pdf
- Gitman, L. (1974). Estimating corporate liquidity requirements: a simplified approach. *The Financial Review* 9(1), 79-88.
- Hecking, S. (2002). The relation between shareholder value orientation and shareholder value creation. *Doctoral Thesis at University of Barcelona*.
- Higgins, R. (1977). How much growth can a firm afford? *Financial Management*, 7-16.
- Jensen, M. (1969). Risk, and the pricing of capital assets, and the evaluation of investment portfolios. *Journal of Business* 42(2), 167-247.

- Jensen, M. (1984). Capital Structure Change and Decrease in Stockholders' Wealth . *University of Chicago Press*.
- Jensen, M. (1986). Agency costs of free cash flow, corporate finance and takeovers. *American Economic Review* 26(2), 323-339.
- John, T. (1993). Accounting measures of corporate liquidity, leverage and costs of financial distress. *Financial Management*, 91-100.
- Johnson, R., & Soenen, L. (2003). Indicators of Successful Companies. *European Management Journal* Vol.21, No 3, 364-369.
- Kothari, S., & Shanken, J. (1997). Book-to-market, dividend yield, and expected market returns: a time-series analysis. *Journal of Financial Economics* 44, 169-203.
- La Porta, R., Lopez de Siles, L., Shleifer, A., & Vishny, R. (1997). Good News for Value Stocks: Further Evidence on Market Efficiency . *Journal of Finance* vol.52(2), 859-74.
- Leary, M. T., & Roberts, M. (2004). Financial Slack and Tests of the Pecking Order's Financing Hierarchy. *Working Paper*, 1-64.
- London Stock Exchange. (n.d.). *Market Statistics July 2010*. Retrieved August 25, 2010, from <http://www.londonstockexchange.com/statistics/home/statistics.htm>
- LSE. (2009). *London Stock Exchange: Bringing the world to London*. London: Newsdesk Communications Ltd.
- Myers, S., & Majluf, N. (1984). Corporate Financing and Investment Decisions when Firms have Information that Investors do not have. *Journal of Financial Economics*, 13, 187-221.
- Pontiff, J., & Schall, L. D. (1998). Book-to-market ratios as predictors of market returns. *Journal of Financial Economics* vol 49(2), 141-160.
- Richards, V., & Laughlin, E. (1980). A Cash conversion cycle approach to liquidity analysis. *Financial Management* 9, 32-38.
- Roberts, R. (2008). *The City: A guide to London's global financial centre*. Profile Books, The Economist Newspaper Ltd.
- Rosenberg, Reid, & Lanstein. (1985). Persuasive evidence of market inefficiency. *Journal of Portfolio Management* 11, 9-17.
- Ross, Westerfield, & Jaffe. (2005). *Corporate Finance, seventh edition*. New York: McGraw Hill .

- Rouwenhorst, K. (1999). Local return factors and turnover in emerging stock markets. *Journal of Finance* 54(4), 1439-64.
- Sharpe, W. (1994). The Sharpe Ratio. *Journal of Portfolio Management* 21(1), 49-58.
- Shefrin, H., & Statman, M. (1995). Making sense of beta, size and book-to-market. *The Journal of Portfolio Management*, 26-34.
- Steven, L., Rouwenhorst, K., & Wessels, R. E. (1999). The Role of Beta and Size in the Cross-Section of European Stock Returns. *European Financial Management* vol 5(1), 9-27.
- Titman, S. (1984). The effect of capital structure on a firm's liquidation decision. *Journal of Financial Economics*, 137-151.

Appendix 1:

Companies used in the selection sample:

<u>Company's name</u>	<u>Symbol</u>
ALLIANCE TRUST	ATST.L
AMEC	AMEC.L
ANGLO AMERICAN	AAL.L
ANTOFAGASTA	ANTO.L
ASSOCIATED BRITISH FOODS	
AVIVA	AV..L
BAE SYS.	BA..L
BARCLAYS	BARC.L
BG GRP.	BG..L
BP	BP.L
BR.AIRWAYS	BAY.L
BR.AMER.TOB.	BATS.L
BR.LAND	BLND.L
BT GROUP	BT.A.L
BUNZL	BNZL.L
CAIRN ENERGY	CNE.L
CAPITA GROUP	CPI.L
COBHAM	COB.L
DIAGEO	DGE.L
HAMMERSON	HMSO.L
INVENSYS	ISYS.L
JOHNSON,MATTH.	JMAT.L
KINGFISHER	KGFL
LAND SECS.	LAND.L
LEGAL&GEN.	LGEN.L
LONMIN	LMIL
MARKS & SP.	MKS.L
MORRISON (WM)	MRW.L

NEXT	NXT.L
PEARSON	PSON.L
PRUDENTIAL	PRU.L
RECKITT BEN. GP	RB..L
REED ELSEVIER	REL.L
REXAM	REX.L
RIO TINTO	RIO.L
ROLLS-ROYCE	RR
ROYAL BANK SCOT	RBS.L
RSA INS.	RSA.L
SAGE GRP.	SGE.L
SAINSBURY(J)	SBRY.L
SCHRODERS	SDR.L
SCHRODERS NV	SDRC.L
SERCO GRP.	SRP.L
SEVERN TRENT	SVT.L
SMITH&NEPHEW	SN..L
SMITHS GROUP	SMIN.L
STAND.CHART.	STAN.L
TESCO	TSCO.L
TULLOW OIL	TLW.L
UNILEVER	ULVR.L
UTD. UTILITIES	UU..L
VODAFONE GRP.	VOD.L
WHITEBREAD	
WOLSELEY	WOS.L