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Capital Market Efficiency –

An event study on the incorporation of football transfers

Authors

Mateusz Malinowski

Supervisor

Emil Numminen

Examiner

Timurs Umans

Högskolan Kristianstad | www.hkr.se

Abstract

We live in an era where internationalization and globalization are two extremely attractive concepts. People aim to create a society where limits and restrictions are erased and a thriving society is a reality. Numerous transformations have occurred in order to realize this and one of the most vital ones is the globalization of the economy. The globalization was made possible through the discovery on the capital market. This market enables people to trade with each other, no matter place or time. Thus, a more efficient solution is offered for rapid and significant transfers such as loans and investment. According to various researchers, the capital market determines, in a way, which company will grow and which will stagnate in development. However, the capital market needs to be efficient in order to offer the services intended.

The aim of this dissertation is to explain how efficient the capital market is when incorporating information regarding football player transfers. By examining the empirical findings, it will also be able to establish if assets of the same market value cause different share price fluctuations depending on if they are acquired or sold.

Keywords: The market efficiency hypothesis, prospect theory, capital market, football finance, sports management, football transfers.

Summary of the research

Purpose: The Purpose of this dissertation is to explain how efficient the capital market is when incorporating information regarding football player transfers. This will be achieved through an event study.

Research question: How efficient is the capital market when incorporating new information regarding football player transfer?

Method: There will be a conduct empirical research project where analyze the share prices of the European enlisted football clubs. For the empirical research, there will be gather share price data regarding the football clubs and this will later be statistically tested in order to understand if player transfers create an abnormal return.

Theoretical framework: The theoretical framework of this dissertation introduces the Market Efficient Hypothesis and the Prospect Theory. The collected secondary data is used together with these theoretical concepts in order to explain how efficient the capital market is and how people value functions for acquisitions and losses.

Limitation: This dissertation is geographically limited into only observing football player transfers from public European clubs. Furthermore, the empirical data consists only of permanent player transfers that include some kind of transfer fee.

Results: The result of this research is that the capital market is efficient, thus, there is no significant in the difference between the capital market and the football stock return created by football player transfers.

Acknowledgement

The best way to describe this dissertation is with one the word; process. It has truly been a process that required not only time, but dedication and perceiving as well. This project aroused many emotions, sometimes we were extremely motivated and enthusiastic, while at times we only felt frustration and even hopelessness. Eventually, we managed to see this process to the end, however, we are well aware that it would not be possible without the guidance and assistance of some very talented individuals.

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Table of Contents

1 Introduction	7
1.1 Background	7
1.2 Problem Formulation & Purpose	9
1.3 Purpose and Research Question	11
1.4 Limitations	11
1.5 Outline	12
2. Research Method	13
2.1 Research Philosophy	13
2.2 Research Approach.....	14
2.3 Choice of Theory.....	14
2.4 Choice of Methodology.....	14
3. Theoretical Framework	16
3.1 Introduction	16
3.2 Historical overview	17
3.3 The Efficient Market Hypothesis	20
3.3.1 <i>The Weak Form</i>	21
3.3.2 <i>The Semi-strong Form</i>	22
3.3.3 <i>The strong Form</i>	22
3.4 Prospect Theory	23
3.5 Hypotheses Testing	24
3.5.1 <i>Hypothesis based on the EMH</i>	24
3.5.2 <i>Hypothesis based on Prospect Theory</i>	25
3.6 Summary of the chapter	25
4. Empirical Method and Findings	26
4.1 Introduction	26
4.2 Research design and strategy	26
4.3 Literature Collection.....	27
4.4 Data collection method.....	27
4.5 Sample selection.....	29
4.6 Operationalization	30
4.6.1 <i>Definition of the event</i>	30
4.6.2 <i>Testing Hypothesis 1</i>	31
4.6.3 <i>Testing Hypothesis 2</i>	32
4.7 Reliability	34
4.8 Validity.....	34
4.9 Empirical findings	36
4.9.1 <i>Hypothesis 1</i>	36
4.9.2 <i>Hypothesis 2</i>	37
4.10 Summary of the chapter	38
5. Dissertation Conclusion	39
5.1 Conclusion.....	39
5.2 Critics of the research.....	40
5.3 Scientific, social and ethical aspects	41
5.4 Further Research	41
References	43

Appendices	47
Appendix 1: Stock data for the football clubs	47
Appendix 2: Football players	48
Appendix 3: Regression analysis for transfers in and transfers out	49

List of Tables

Table 1. Transfers in.....	36
Table 2. Transfers out.....	36
Table 3. T-test for transfers in.....	47
Table 3. T-test for transfers out.....	48

List of Figures

Figure 1: Relationship among three different information sets.	21
Figure 2. The model for the event study	31

1 Introduction

This chapter includes the background for the research, problem formulation, research question, purpose and the limitations. The final part of this chapter presents an outline of the rest of this dissertation.

1.1 Background

Internalization and globalization are two factors that play a major role in the development of our society. People aspire to be more interactive and aware, thus, we have designed many technological inventions that enable us to achieve these desires. Also, we have managed to internationalize the trade between each other to the extent that people can trade with one another, regardless of their location. The possibilities have resulted into the idea and creation of the international capital market, which enables people to instantly finalize large investments. An important part of the capital market is the share market, also referred to as the equity market, which enables the possibility of trading in shares (Hägg , 1988).

Equity trading is the buying and selling of company shares, which, is a unit that represents a fraction of the company's capital. Thus, the shareholder (the buyer of the share) owns a fraction of the company in exchange for money (Williams, 2005). According to Hagerud (2002), equity trading is possible through various stock exchanges such as the New York Stock Exchange, London Stock Exchange or the Stockholm Stock Exchange. Furthermore, Hagerud argues that equity trading is considered the most important element of the share market. (Hagerud, 2002). According to Williams (2005), a requirement for a company to be able to issue and sell shares to the general public, is to enlist on a stock exchange. The exact underlying cause for issuing new shares might differ between companies, however, there is one common denominator, the need of funds. A company can choose to register on a stock exchange if for example the company lacks the necessary funds for further organizational developments.

Equity trading is a phenomenon that has become increasingly common. More companies choose to enlist because of the increased possibility to grow larger, owing to the increased availability of new funds that the numerous shareholders offer. The investor of

shares can be an individual or an entity (governmental or private organization). Shareholders that buy and sell shares tend to strive after the principal; buy low, sell high. The optimal goal is to purchase shares that are undervalued and wait until the price of the undervalued share is correctly adjusted. At this point the investor should sell the shares and earn a profit. In practice, this means that the investors take a much smaller risk when buying an undervalued share. This befalls when an imbalance in the market occurs and all available information regarding the share is not incorporated into the price. Occasionally, undervalued shares are available for purchase on the share market and this incident is referred to as an anomaly. An anomaly should not occur in an efficient market. Fama (1970) describes an efficient market as: "A market in which prices always fully reflect all available information." (Fama, 1970, p. 383).

The empirical research that has been done regarding market efficiency, indicate that the capital market is efficient, however, the possibility of arbitrage still exists. Arbitrage occurs when the market is inefficient. This results in incorrect pricing of shares and subsequently, the opportunity to take advantage of this exists (Ridder, 2002). Malkien (1989) acknowledges that pricing irregularities may exist and they might even persist for a period of time, however, eventually the share price will adjust and the possibility of arbitrage will disappear.

A well-functional and efficient market is of vital importance because it encourages companies to enlist on stock exchanges. Thus, an efficient capital market that offers good turnover possibilities is to strive for because it stimulates investors to purchase company shares. However, if the capital market would be inefficient, then the price irregularities would discourage investors from trading on the market, thus, making a new issue purposeless (Claesson, 1987).

The share market has grown rapidly during the last quarter of the century and it is mainly due to the technological developments. Angel et al. (2011) state that these developments have enabled people to acquire news updates regarding share market information more frequently. Another important aspect of these technological developments is the change in the way shares are bought and sold in present time. The new platforms, made possible due to the computerization in our society, allow people to instantly act on the market. These changes, among others, have encouraged more companies to enlist and more investors

to trade in shares, thus creating more activity on the share market. In the US share market alone, the average trading volume increased from about three billion shares per day in 2003 to nearly 10 billion shares per day in 2009 (Angel, Harris, & Spatt, 2011).

The increased activity in the share market has led to the opportunity of purchasing shares from a wide variety of organizations. Even sport organizations have chosen to enlist on various stock exchanges. Among the sport organizations, football clubs are the leading example of this (Buraimo, Simmons, & Szymanski, 2006). According to Buraimo et al. (2006), Tottenham Hotspur F.C. was the first football club to go public, when it registered on the London Stock Exchange in 1983. With the creation of the English Premier League in the year of 1992, which, resulted in an immense financial increase for clubs from TV-rights, more English clubs emulated this act and enlisted. Clubs throughout Europe became aware of this behavior and decided to enlist on various stock exchanges (Buraimo, Simmons, & Szymanski, 2006). Eventually, this development stagnated and in 1997 many clubs decided for various reasons to delist from the stock exchanges, thus, leaving only a fairly small fraction of clubs that still operate on public stock markets (Buraimo, Simmons, & Szymanski, 2006).

1.2 Problem Formulation & Purpose

Market efficiency has inspired many researchers to conduct empirical research projects. An excellent overview was presented by Fama (1970), where the Efficient Market Hypothesis (from now on, referred to as EMH) was introduced for the first time. Jensen (1978) stated that there exists no other proposition in economics which has more solid empirical evidence supporting it than the EMH. While Malkien (1996), has a more negative attitude towards the EMH and states that it is not complete.

The majority of the research done in market efficiency is based on regular organizations and it is only in recent times that empirical research studies have been conducted from the perspective of sport organizations. The increase of sport related research is becoming more relevant due to the globalization of sports. The sports industry entertains people throughout the world and is only growing. This industry has a major impact on people, both socially and financially. Among all the sports, football has the most followers, thus, it is only normal that it is the most common basis for research projects regarding finance and sports (Buraimo, Simmons & Szymanski, 2006).

There is an abundance of research that researched regular organizations for the purpose of explaining how efficient the capital market is when incorporating relevant news for those organizations. However, there is no prior research that explains the capital markets efficiency in incorporating football transfers. This specific research subject is interesting because, even though regular organizations and football clubs have many similarities, there are some substantial differences. Hamil et al. (2004), state that there are three key differences between a regular company and a football club.

The first one is that a football club is more than only a regular business in the sense that it has a cultural and communal value.

Secondly, a football club's relation to its supporters is different from the regular customer-company relationship. Football supporters are the biggest stakeholder and are more than only loyal customers. They also actively support their club during matches and contribute financially to aid the club.

The third key difference is that a football club achieves financial success through the competition and cooperation with other clubs. Also, all sports leagues distribute income accordingly in order to maintain a competitive balance (Hamil, Holt, Michie, Oughton, & Shailer, 2004).

Hägg (1988) and Fama (1970) state that sales or acquisitions of assets ought to be instantly incorporated into the price if the capital market is of semi-strong form. Thus, a transfer of an important asset such as a football player would be efficiently incorporated (Forker, 2005). According to Hawawini (1984) the European capital market is mostly semi-strong efficient. Kristoufek & Vosvrda (2012) also concluded in their research, which included capital markets from different continents, which the European market ought to be considered as semi-strong. While Andrew et al. (2003) argues that weak form efficiency is growing in Europe. However, these research projects that researched the market efficiency from a perspective of the regular organizations might not be fully applied to football clubs, given the large differences between these two types of organizations.

There exists a gap in financial sports management regarding football transfer news being incorporated efficiently by the capital market, as Tanaru (2005) argues for that a football player is the sole important asset of a football club. Therefore, this dissertation is undertaken to explain this theoretical problem and produce an explanation on how efficient the market is when incorporating transfer news. This will be possible through analyzing the football clubs stock data when a transfer occurs and compare it to the stock-index data. The information will lead to deeper knowledge of the capital market through its efficiency when incorporating transfer news, thus, filling in the gap in financial sports management and allowing investors to make a more accurate estimation of a football club's shares.

1.3 Purpose and Research Question

The purpose of this dissertation is to explain how efficient the capital market is when incorporating football transfers news, and this will be done by analyzing the football clubs stock data when a transfer occurs and compare it to the stock-index data explaining. Thus, the research question is:

- *How efficient is the capital market when incorporating new information regarding football player transfers?*

The concept of efficiency, in the research question and throughout this dissertation, refers to how quickly the capital market prices new information.

1.4 Limitations

This dissertation is geographically limited into only researching football player transfers from European clubs, because of it being unique, a high quality base line for further research should be created. Furthermore, only researching male transfers, as the woman's football club stock data does not exist. Additionally the empirical data for this dissertation is represented exclusively by permanent transfers. Thus, no loan transfers are included in the research. This dissertation is also limited by only including transfers that involved some kind of transfer fee.

1.5 Outline

This dissertation consists of five chapters where the first chapter presents the research background and the research problem. The first chapter also addresses the research question and to what extent this research is limited. This is followed by chapter two where it mentions the choice of methodology, followed by the research philosophy, research approach and finally choice of theory. Chapter three presents the theoretical framework and the hypothesis. In chapter four the empirical method is reviewed where the main focus is on how the information is gathered and analyzed. In chapter five the reader is introduced to the empirical findings and the established results of this research. The last chapter, chapter six, presents the conclusion of this dissertation, practical implications and suggestions regarding future research on the topic.

2. Research Method

In this chapter, there is a presentation of the overview for the method used in this dissertation. It includes research philosophy, research approach, choice of theory and finally, choice of methodology.

2.1 Research Philosophy

The research philosophy consists of different assumptions about different reality perspectives and clarifies the researcher's view upon the research problem and the research objectives. According to Saunders et al. (2009) the most frequently used research philosophies are: (1) positivism, (2) realism, (3) interpretivism and (4) pragmatism.

(1) The first philosophy, positivism, is adopted when the researcher prefers to work with an observable social reality which produces results that can be highly generalized. Also, the researchers are likely to use existing theories to develop structured and replicable hypotheses which will be tested (*ibid*).

(2) The central part of the philosophy of realism is that the world as we observe it through our sense is the reality. This philosophy, like the philosophy of positivism, assumes a scientific approach to the development of knowledge (*ibid*).

(3) The third philosophy, interpretivism, asserts that the philosophy of positivism cannot make law-like generalizations about humans, since the actions of individuals are highly differentiated (*ibid*).

(4) The last philosophy, pragmatism, allows the researcher to choose a mixture of the other philosophies because it is unrealistic to choose and follow only one philosophy (*ibid*).

This dissertation will make use of existing literature in order to state structured and replicable hypotheses. Furthermore, the end product of this research will be produced through analyzing a measurable sample group, which in this research consists of share price and player transfer data from all the enlisted European football clubs, and generally represents the whole population.

2.2 Research Approach

According to Bryman (2008), there are two different research approaches: the deductive and the inductive approach. A research with a deductive approach utilizes already existing theories to develop new theories or hypotheses. While the inductive process, motivates the researcher to start at the other end. Firstly, the researcher collects and analyses data about a phenomenon. Afterwards, the researcher formulates a theory based on the collected data (Saunders, Thornhill, & Lewis, 2009).

There already is an abundance of literature regarding the market efficiency, which will serve the researchers of this project to formulate and state the hypotheses. These hypotheses will later be tested in this research and result in a generalized outcome. Thus, this dissertation will have a deductive approach.

2.3 Choice of Theory

The reader ought to be informed about the theories used for this dissertation (in this occasion a theoretical hypothesis and a theory) before presented with the findings from the event study and the final conclusions. The purpose of this dissertation is to explain how efficient the capital market is, thus, the EMH will account for the larger basis of the theoretical framework applied in this dissertation. Also, the choice of this theoretical hypothesis is in line with other studies that research similar subjects, such as Bjerking & Reisig (2011). Prospect Theory, will offer the authors an improved insight on whether companies, in this case represented by football clubs, view gains and losses of assets separately. Interpreted for this specific research as if assets of the same market value cause share price fluctuations in different sizes, depending if they are acquired or sold.

2.4 Choice of Methodology

In order to conduct a proper research, a researcher needs to decide upon an appropriate research method. Majima et al. (2009) states that there are two types of methods used in a dissertation: the quantitative and the qualitative method.

Given the aim of this research project, the positivistic research philosophy is applied in a deductive research approach. This research project, which is conducted with a quantitative method, will start with an overview of existing theories which will lead to hypotheses stated

by the authors of this dissertation. These hypotheses form the model which will be tested on the empirical findings, thus, defining the approach of this dissertation as a deductive approach.

Muijs (2011) reinforces the choice of a quantitative method for this research, with the statement that a quantitative research method is superior to a qualitative, when secondary data constitutes the bigger part of the overall data.

The next chapter will present a historical overview of previous research that is in line with this research project. Thereafter, the reader will be presented with an in depth description of the EMH and the Prospect Theory. Also, the developed hypotheses for this dissertation will be presented.

3. Theoretical Framework

This chapter contains the literature review, thus, ensuring a deeper insight on the subject, it also includes an introduction of: the efficient market hypothesis, prospect theory and two stated hypotheses. This chapter also includes an overview of research projects that are in lined with this dissertation. Finally, a summary of the chapter concludes this part.

3.1 Introduction

The concept of an efficient market has inspired an abundance of empirical studies. Research regarding market efficiency began in the 1950s and has only increased since then. The real breakthrough came in the early 1970's when Fama (1970) published the article; Efficient Capital Markets: A Review of Theory and Empirical Work. Fama laid the foundation for research regarding market efficiency as he was the one to define the concept. Rendleman et al. (1982) continued these researches and examined whether a quarterly report gave rise to abnormal returns or not. Most researches examines the U.S. capital market, however, there are projects that researched other markets as well. Claesson (1987) performed a very extensive research concerning the Swedish market efficiency.

Additionally, many researches were conducted regarding the capital market and the reasons behind them vary. However, one of the underlying reasons is that the capital market accounts for a large part of the society's economy. The capital market contributes financially through the numerous services it offers and the most vital one is arguably creating good return possibilities through equity (Claesson, 1987).

An inefficient capital market would discourage the investors from acting upon the market, which, consequently would result in less capital for the publicly listed organizations. According to Claesson (1987), investors can offer the necessary funds that the companies lack in order to capitalize on investment opportunities, while the companies can offer investment opportunities that the investors lack. These funds will be invested in productive activities resulting in that the whole society will benefit from this. Thus, market efficiency is of vital importance for a society's financial development (Claesson, 1987). According to Hägg

(1988), the capital market affects which companies can undergo a further organizational development and which companies development will stagnate.

As mentioned above, the capital market plays an essential part in a society, however, the market ought to be efficient for it to serve as intended. This has given rise to the undertaking of many researches about market efficiency, including this one. In the next part, a historical overview of relevant research projects is presented. It is important to view what other researchers have explored in order to get a better understanding of the subject of this dissertation.

3.2 Historical overview

This section will provide insight into relevant previous studies. Also, it allows the authors of this dissertation to draw parallels in order to strengthen their empirical findings. Furthermore, it helps the reader develop a better understanding about the direction of this dissertation.

Research regarding market efficiency started in the 1950's and has become more popular with every decade. Usually, this kind of research is done by analyzing the share prices of regular organizations. However, during the last 20 years, researchers have conducted market efficiency research by analyzing sports organizations, football in particular. Although, there still exists a big gap in the market efficiency research that focuses on sport organizations. This dissertation is undertaken in hope of covering a bit of that gap. The following research projects are in line with this dissertation, and represent a fraction of the platform that has guided the authors of this dissertation in their work.

Rendleman et al. (1982) conducted an impressive research with the objective of researching if quarterly earnings reports generate abnormal return. The data for this research was collected from the year 1971 to 1980. The researchers estimated the quarterly earnings reports of the selected companies that were chosen for this project. These estimations were then compared to the actual reports and depending on the size of the deviation, the companies were put in different groups. The findings showed that the abnormal return varied between the groups and that in some cases it took up to 90 days after the news release for the abnormal return to

show. The researchers concluded that the capital market was not efficient when incorporating information from quarterly earnings reports. Hence, Tanaru (2005) argues for that a football player is the sole important asset a football club. As football players being sold is a monetary income for a club and an acquired is an investment. Rendleman's research should in compare with this dissertations research give the result that the market will be inefficient in incorporating the transfer news.

A similar research was performed in 1975 by Lars-Erik Forsgårdh and Krister Herten. However, this research had two objectives; to examine if the share price was affected by the news from earnings reports and if the price adjustment was efficient. They conducted the research by analyzing the share prices once a month between the years 1967 and 1970. Thereafter, they calculated the abnormal return for every month and estimated a few parameters which would be compared to the actual data after new earnings reports information were released. Forsgårdh & Herten concluded that the share price of the company was affected by the new information. Also, that the price adjustments were efficient (Forsgårdh & Herten, 1975).

Claesson (1987) conducted a very comprehensive research regarding market efficiency. Her research focused mainly on the Swedish share market. She examined the efficiency of the Stockholm stock exchange by implementing six sub-researches that examined various forms of information. The research was conducted by researching the 49 most actively traded shares during the year 1983. The data was gathered from the years 1978-1984. Claesson made use of the EMH when examining the efficiency of the Stockholm stock exchange, however, she concluded that further research needs to be performed in order to come a valid conclusion.

Compared with the research done by Forsgårdh & Herten and Claesson, this dissertations goal of explaining the capital markets efficiency of incorporating the news of transfers may differ, on how the market values the transfer news. As the transfer news may be valued as high or low, in compare with other information that might have a higher impact on a football clubs stock.

The EMH has received criticism from some researchers that are of the opinion that it is an incomplete theory. Some even state that it is not accurate and should not be used when market efficiency research is conducted. However, there are also defenders of the EMH that are of

another opinion. Ray Ball is one of them who defends it. Ball (2009) defends the EMH from claims that it contributed to the recent financial crisis. Ball disagrees with Jeremy Graham and Justin Fox, who firmly state that the EMH actually did contribute to the crises. They argue, among other things, that the theory underestimates the risks of share market bubbles. Ball acknowledges that the EMH has some flaws, however, he states that it is no different from the other available theories regarding market efficiency in that regard. Also, he believes that critics that claim the EMH was a contributing factor to the crises are exaggerating because financial crises have occurred long before the EMH existed (Ball, 2009).

Furthermore, Ball (2009) states in his article that it is the wrong price evaluations of investors that are to blame for the financial crisis. Investors seem to believe that shares are undervalued, thus, expecting the prices to rise. Ball argues that if investors changed their mindset and saw current share prices as accurate, then future crises could be prevented. Perhaps even the crises in 2008 would then perhaps have been avoided. Ball argues further that the EMH does not say anything about being able to predict financial crises, but rather that financial crises and other financial bubbles cannot be predicted (Ball, 2009).

Scholtensa & Peenstra (2009) have performed a research project which also is highly relevant for this dissertation. It does not discuss market efficiency nor the EMH, however, it is in line with what the Prospect Theory states. Prospect theory states, among other things, that people tend to value losses more than acquisitions. This theory is a part of the theoretical framework for this dissertation and will be further discussed in chapter 3. The research of Scholtensa & Peenstra examines the correlation between share prices and match results. They argue that there is a connection between the performance on the pitch and the share price of a football club. In their dissertation, they conclude that the negative share price fluctuation produced by a lost game is bigger than the positive fluctuation produced by a game that is won. These results, as mentioned earlier, are in line with the Prospect Theory.

Bell et al. (2012) also performed a research that strengthens the statement of Prospect Theory. In their research, they analyzed 53 managerial dismissals and resignations from 16 stock exchange listed English clubs. The data for this research was collected from nine seasons, between 2001/01 and 2008/09. Bell et al. (2012) conclude that there is a significant turn in the share price of a club when a manager is dismissed or when the manager resigns.

This research made a distinction between the managers that were dismissed and the ones that willingly resigned. Depending on if the manager left the club by own will or was forced out of the club, the impact on the share price differed. When a coach resigned, the share price experienced a downfall by an average of 8%. The reason for this was that the club had lost a valuable asset that was contributing greatly to it. With the process of dismissing a coach, the share price experienced a positive turn by 0, 8% and the reason was that this increased the prospect of future positive results. This research shows that people tend to value losses more than gains. This research also strengthens the statement of Prospect Theory.

As stated previously in this chapter the news value might differ in its worth and impact on a footballs clubs stock price. As a managerial news and game result have shown larger fluctuations on the capital markets efficiency, meanwhile profit reports have not shown any remarks on the markets efficiency. This research will now add the results to explain how efficiently transfer news are incorporated in the capital market.

In this dissertation there will be tests of two stated hypotheses that are presented later in this chapter. These hypotheses are stated based on the theoretical concepts of this dissertation: The EMH and Prospect theory. In the next part, a presentation of the EMH and Prospect theory follows.

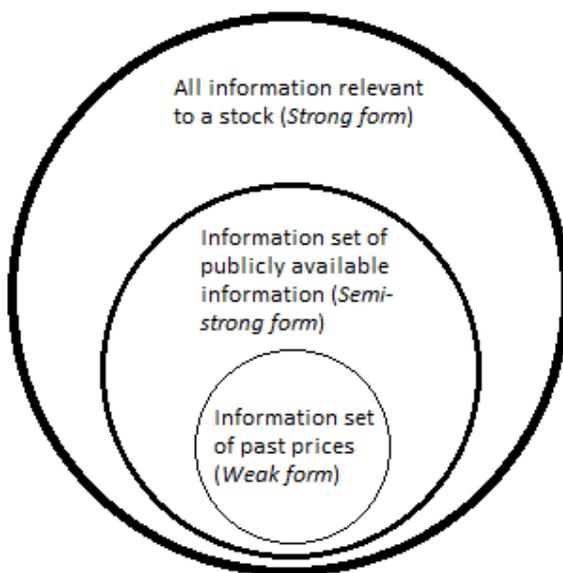
3.3 The Efficient Market Hypothesis

Research regarding market efficiency started in the beginning of the 1950s when Kendall & Hill (1953) discovered that share prices tended to fluctuate randomly. There have been many definitions of an efficient market, In the 1960s Samuelson and Mandelbrot discovered three cornerstones for an efficient market: (1) investors act in a rational manner, which, result into a rational valuation of shares. (2) An irrational investor will randomly act upon the market and hence these transactions will not have an effect on the market prices. (3) The potential impact of an irrational investor will be eliminated by the rational investors (Lawrence, McCabe, & Prakash, 2007). However, Fama came with an own definition of an efficient market: "A market in which prices always fully reflect all available information is called efficient" (Fama, 1970, p. 383). This definition was intended to be more appropriate for empirical research. Also, this is the definition chosen for this dissertation

(Claesson, 1987).

Fama (1970) further developed the EMH and created a classification system to help with the categorization of markets: The Weak Form, The Semi-strong Form and The strong Form, depicted in figure 1.

Figure 1: Relationship among three different information sets.



(Ross, Westerfield, Jaffe, & Jordan, 2007, p. 375)

3.3.1 The Weak Form

The first form of efficiency is the weakest of the three. The share prices in a capital market that satisfies weak form of efficiency, reflect all information in past share price. Also, share prices change irrespective of historical price fluctuations (Haugen, 2001). According to Burton Malkiel (2003), the Random walk hypothesis is valid in the weak form of market efficiency, meaning that the information that affects the share price is entirely random and unpredictable; thus, it is impossible to predict future changes by researching past events. However, arbitrage occurs more often in the weak form than in the other two forms (Hamberg, 2004). Meaning if the result of the dissertation shows arbitrage return, then the capital market is weak. Even though the weak form enables the possibility of arbitrage more frequently, this will eventually disappear. The reason for this is that equity investors will attention this and seize the opportunity, thus, eliminating the possibility. However, if inefficiency in the market remains over a longer period, then there has been a deviation from the EMH. This results in the occurrence of an anomaly (Haugen, 2001).

3.3.2 The Semi-strong Form

Share prices in a semi-strong capital market fully reflect, like in the weak form, the information in past share prices. However, the difference is that in a semi-strong market, the share prices also include all other public information, such as information on journals, annual reports and press conferences. Thus, it is not possible for investors, even though they make use of fundamental analysis, to find incorrectly priced shares and gain an advantage over other investors (Haugen, 2001). For a semi-strong market to remain efficient, investors who hold on information that is unknown to the general public, also called inside information, must not act upon this information for personal gain (Vinell, 1990). Brealey et al. (2006) state that in order to test the semi-strong form of efficiency, a study needs to be conducted, which, explains how quickly relevant information is incorporated into share prices. Also, that this is the form of efficiency that has inspired most projects that research market efficiency.

3.3.3 The strong Form

The strong form of EMH states that there are no investors with superior ability to buy and sell at just the right times (Elton, Gruber, Brown, & Goetzmann, 2009). The reason for this is that an efficient market in this form incorporates all types of relevant information into the share prices, public and private. Furthermore, Due to the well-adjusted share prices, not even an insider that possesses inside information can utilize this and gain an advantage (Bernhardsson, 2002). Claesson (1987) argues that an efficient market in the strong form does not equal a perfect market. The risk of stock market crashes continues to exist in this form as well.

The EMH is fundamental for the categorization of how efficient the capital market is. The empirical data will be analyzed and presented in accordance with the EMH and its three categories of market efficiency. This theoretical concept is the basis for the research question of this dissertation and for Hypothesis 1, which is the first stated hypothesis. This stated hypothesis will later be tested and accepted or rejected, depending on the findings of this dissertation. The stated hypothesis will be further discussed in section 3.6. The next part will present the “Prospect Theory” that is the basis for Hypothesis 2.

3.4 Prospect Theory

Daniel Kahneman and Amos Tversky are the authors of the paper titled “Prospect Theory: An Analysis of Decision under Risk.” In their research they presented a new theory and it was first published in the Journal *Econometrica*, in 1979 (Barberis, 2013). The Prospect Theory was appreciated worldwide and was soon considered as one of the best theories regarding decision with risk involved.

Prospect theory describes the phenomenon, decision under risk. The theory suggests that people, in an irrational fashion, make decisions based on gains and losses rather than on final outcome. Also, that gains and losses are viewed separately. This theory focuses on how people actually tend to make decision rather than how they ought to. The Prospect Theory can be divided into four parts, (1) the editing process, (2) the value function, (3) probability weighing and (4) risk attitude assessment (Kahneman & Tversky, 1979)

(1) The editing process is used in order to simplify complex problems when decision making is required. It is believed that our cognitive processes automatically involve techniques (also referred to as heuristics) for problem solving, learning and discovery that gives solution which is not guaranteed to be optimal. There are two types of heuristics: representative heuristic and availability heuristic. A representative heuristic is used when someone sees something and presumes that it is representative of the bigger picture. While availability heuristic is used when someone estimates the probability of a certain event by how easy it is to think of examples (Kahneman & Tversky, 1979).

Furthermore, to successfully use heuristics as an aiding tool for the decision making process, and needs to have point of references to relate to the problem and the result of the probable outcomes. Kahneman and Tversky (1979) argue that the most powerful reference point is the status quo, however, there are other strong reference points as well such as reference price or reference quality. For example, if you go into a car salon and want to buy a new car, your perception of an acceptable price is based on how much you paid for your previous car (price as a reference point).

(2) The second part is called the value function and it explains that people value functions for gains and losses differently, meaning that the dissatisfaction related with losses is greater than the joy related with the same amount of gains. Additionally, it is important to highlight that

people respond differently depending on if the question is framed in terms of losses or in terms of gains (Barberis, 2013).

(3) The third part is probability weighing and it states that small probabilities tend to be over weighted. Barberis (2013) explain this with an example that is based on the fact that people like both lotteries and insurance: “They prefer a 0.001 chance of \$5,000 to a certain gain of \$5, but also prefer a certain loss of \$5 to a 0.001 chance of losing \$5,000” (Barberis, 2013, p. 177).

Prospect theory states that when people are presented with a problem that includes certain circumstances, such as very high or very low probability events, the framing of the choices is increasingly important. There are two different ways of framing, a positive (there is a 95% chance of recovery) and a negative way (there is a 5% chance of death). Buda & Zhang (2000) demonstrated the importance of framing in a research that studied the results of positive versus negative framed advertising.

(4) The fourth and final part is risk assessment that discusses how gains or losses influence people in future risk assessments. Thaler et al. (1997) state that frequent gains affect people into becoming bigger risk takers while frequent losses cause the opposite effect.

The Prospect Theory is part of the theoretical framework, however, only part (2) of this theory is of interest for this dissertation. This part of Prospect Theory is the basis of Hypothesis 2, which is the second stated hypothesis. This stated hypothesis will be tested and, like with Hypothesis 1, accepted or rejected depending on the empirical findings. The hypothesis will further be discussed in section 3.6.

3.5 Hypotheses Testing

In this section, the two stated hypotheses will be presented. These hypotheses will later be statistically tested based on the empirical findings gathered from this research. The first hypothesis is based on the EMH and the second one is based on Prospect Theory.

3.5.1 Hypothesis based on the EMH

The aim of this dissertation is to explain how efficient the capital market is when

incorporating transfer news. The EMH is the main theoretical concept of this dissertation and it defines the categories of how efficient the capital market might be. In compare with the previous research, this first hypothesis will be stating that the market will be inefficient when incorporating the transfer news, as of most of the transfers take place during a short window of time. Considering the hectic business that occurs during the transfer window, it is assumed that the share prices will not be able to keep up and adjust. Thus, the hypothesis:

Hypothesis 1: *The capital market will inefficiently incorporate new information regarding football player transfers.*

3.5.2 Hypothesis based on Prospect Theory

The minor objective of this dissertation is to explain if assets cause different share price fluctuations depending on if they are acquired or sold. The Prospect Theory is important in order to achieve this objective. More specifically, the second part of the theory “the value function”. This part explains that people experience the dissatisfaction related with losses as greater than the joy related with the same amount of acquisitions. This gives rise to the second stated hypothesis for this dissertation:

Hypothesis 2: In the capital market, transfers out generate higher abnormal return than transfers in.

3.6 Summary of the chapter

The theoretical framework consists of the EMH, with its three degrees of market efficiency: the weak form, the semi-strong form and the strong form. The second theory as part of the theoretical framework is Prospect Theory, which, says that investors value losses and gains differently. Based on these two theoretical concepts, two hypotheses are stated. The first hypothesis regard market efficiency and the second hypothesis regard the statement that people tend to value losses higher than gains.

In the coming chapter, the research method is presented. This will offer the reader a detailed explanation of how this research project has been conducted. The method chapter also plays an important role because it enables the authors to present and implementing the research accordingly.

4. Empirical Method and Findings

The chapter consists of a short introduction, choice of design and strategy, literature collection, choice of data collection method, sample selection, method for the event study, operationalization, reliability and validity, the empirical findings, analysis of the hypotheses and an analysis of the research question. The chapter concludes with a summary of the chapter.

4.1 Introduction

As mentioned in chapter 2, this dissertation will follow a quantitative research method which enables this research, unlike in a qualitative research, to generalize results from a larger sample population. Measurable data is used in this research in hope of uncovering patterns in the capital market regarding the efficiency of share price adjustments. The data used for this research is of secondary fashion, which, according to Stewart and Kamins (1993) virtually ensures a very high data quality. Different quantitative analysis techniques such as charts and statistics will allow transforming this mere data into valuable information.

This chapter will more thoroughly present how the collected data has been handled, starting with the choices of research design and research strategy, and then reliability and validity. This chapter concludes with the empirical findings presented and with the hypotheses analyzed.

4.2 Research design and strategy

To produce a good research project, one has to have a clear idea of which specific research design should be applied to the research. According to Saunders et al. (2009) the research design can be exploratory, descriptive or explanatory. The research design offers a greater connection between the data collected and the research question. Also, it helps, in an evidential manner, to answer the research question.

The main focus of this research is to explain how efficient the capital market is when incorporating transfer news. Therefore, it is intended to use an explanatory research design because it is the design that suits this research purpose the best. Saunders et al. (2009) explains an explanatory research design as followed: “The emphasis here is on studying a situation or a problem in order to explain the relationships between variables” (Saunders, Thornhill, & Lewis, 2009, p. 140).

As stated earlier, a good choice of research design is important for the outcome of the research, however, the choice of a research strategy is of equal importance. Saunders et al. (2009) argue that there are seven different categories of research strategies such as experiment, survey, case study, action research, grounded theory, ethnography and archival research.

The data that have been gathered for this dissertation is of secondary nature. To obtain the data, it was necessary to search the Internet for archives containing share price information from enlisted European football clubs and information regarding player transfers. This research leans towards archival research because administrative records and documents represent the principal data source, as the secondary data in terms of share price information is the main source. According to Saunders et al. (2009), this type of data gives rise to the choice of archival research.

4.3 Literature Collection

In order to improve the understanding about this research subject, it was necessary to go through previously written scientific articles. These articles made it possible to extract the appropriate literature and produce a suitable theoretical framework for this research. Not only did these articles offer much needed literature, they also offered guidelines on how a proper research project should be conducted. The scientific articles were acquired through Högskolan Kristiansand's own database, *Summon* and through *Google Scholar*. For the search of articles keywords were used, such as: the market efficiency hypothesis, prospect theory, capital market, football finance, sports management and football transfers. The keywords were used more frequently in the beginning of this dissertation because the articles that were acquired aided to find more relevant scientific articles through its reference list.

4.4 Data collection method

According to (Saunders, Thornhill, & Lewis, 2009) there are two different types of data collection. The first one is primary data collection, when new data is collected for specifically that purpose. The second type is secondary data and the original drive for collecting this data is of another kind than when it is re-gathered.

As stated in 4.2 *Research design and strategy*, this research will be an explanatory, therefore, using secondary data is more in line with the research question and the research objectives.

According to Saunders et al. (2009) secondary data is to prefer when a descriptive or an explanatory research is practiced. This will allow reanalyzing data that has already been collected and interpreted. The data used for this dissertation has already been collected, thus, it is classified as secondary data.

Since this research has chosen secondary data as the underlying platform of information for this dissertation, it was vital for the outcome of this research that in advance, make sure that enough relevant secondary data was available. It was achieved through reading other research projects that are in line with this one. It was never managed to find a research project that has the same subject as this, however, there exist research that is similar to this one and through them that was managed to find the data that was required, such as Bell et al. (2012) research of managers' effect on the share market and Fitzel et al. (2008) athlete endorsement contracts.

The data that was analyzed is collected from between 1999 and 2013, and it was collected via the Internet and consists of share price data off enlisted European football clubs and of data regarding player transfers. The share price information was located at *www.finance.yahoo.com* and the information concerning the players being transferred was found at *www.soccerbase.com*

When dealing with secondary data, there are some advantages and some disadvantages. One of the most distinctive advantages is that the Internet enables researchers to utilize this great information source, thus creating a big advantage, save enormously in recourses (Ghauri & Grønhaug, 2005). This dissertation has profited greatly by this, as the data is already collected, giving more time to think about the theoretical aims and allowing to analyze and interpret the data more intensively. Also, the convenience of being able to find the required data from a computer should not be underestimated.

Stewart and Kamins (1993) claim that secondary data is likely to be of higher quality than if the data would be collected by the researchers themselves. Like in this case, the possibility of re-analyzing secondary data, even though it already has been collected and interpreted for another purpose, can help discover new results.

One of the disadvantages with secondary data is that it most likely is collected for a different research objective than when it was primary and produced for the first time (Denscombe,

2007). Considering the simple nature of collected data it was never feared that this data has been presented in such an objective manner that would lead to lack of credibility. However, it has to be admitted that the data might have received some form of selection or summarizing, thus, being categorized as compiled data (Kervin, 1990).

Saving on resources and easy information access are two advantages that are often associated with secondary data, however, in some occasions it is the direct opposite and access may be very difficult or costly. It has been encountered these kind of problems in the search for data. There have been troubles finding enough share price data of the European clubs that in a previous stage has been listed on exchange markets. Admittedly, the information exists and is accessible however, it is far too costly for us to obtain. The solution was to only include football clubs and player transfers that there was enough data on, thus, discarding any data regarding previously enlisted clubs because the data was not sufficient for a proper analysis.

4.5 Sample selection

With the help of the different sampling techniques, this research was able to merely select a sample that represents the whole population, without necessarily weakening the result of the project (Saunders, Thornhill, & Lewis, 2009). The various sampling techniques are divided into two main categories: probability or representative sampling and the non-probability or judgmental sampling. The first, probability sampling, refers to when each individual case from the population has an equal chance of being selected and when this is known. Probability sampling is often used in combination with survey and experimental research strategies (Saunders, Thornhill, & Lewis, 2009). For non-probability sampling, the probability of a specific case being selected from the entire population is not known. A generalization from non-probability samples is still possible, however, not on a statistical ground. This is another difference between the two sampling categories.

The sample selection of this dissertation consists of 61 individual cases of male player transfers. Before the sampling process begun, there had been decisions already made that a sample selection of between 50-60 individual cases of player transfers would be sufficient for this research. The research aim restricts itself to only choose cases where one of the football clubs involved in the transfer is enlisted on a stock exchange. Because of the different conditions that needed to be fulfilled, there was not a clear view of how many possible cases existed. Therefore, the sample process started without a clear idea of the set requirements, regarding the player transfer. With time, there will be gained a deeper insight about the transfer

cases and could in retrospect thin out all the cases available until there was reached an acceptable sample selection consisting of 61 individual cases of player transfers. Thus, consider the use of the sample technique for this dissertation to be of a non-probability fashion. This combined with a convenience sampling and a purpose sampling.

Robson (2002) explains that the thinning of the original sample size is normal because the final sample selection is dependent on factors such as the research question, the available resources, the credibility and the usefulness of the cases. Originally, there were more than 200 individual cases, however, with restrictions set by the research question and further restrictions set by the limitations in *1.4 Limitations*, then end result was 61 cases.

4.6 Operationalization

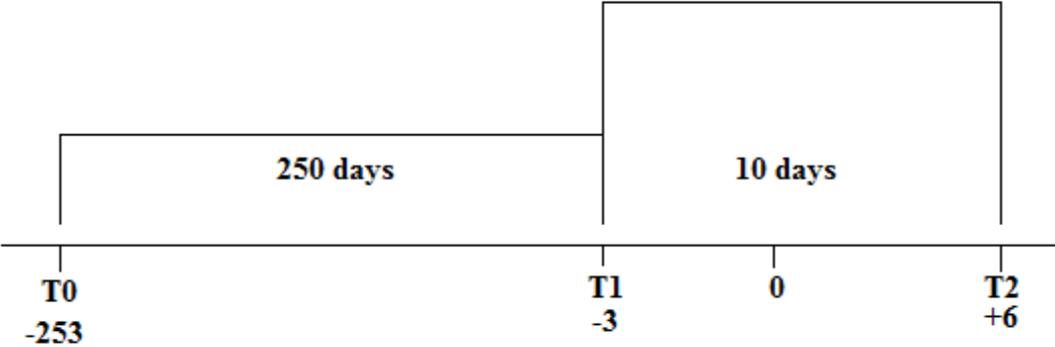
The research that is conducted is based on existing and measurable data that was collected through the online databases yahoo.finance and www.soccerbase.com. So that this research will reflect a qualified result, it needs for the clubs in the research to be on an equal level of stature and registered on the European share market. In the following part will be presented an in depth description of the event study that was conducted for the purpose of this dissertation. How the two hypotheses are going to be tested and the description includes the approach and the formulas applied in order to extract valuable information from the event study.

4.6.1 Definition of the event

According Mackinlay (1997) is the first step in an embodiment of an event study to identify a period of events that had an influenced on the price, a so-called event window. Sorokina et al. (2013) writes that, there is no uniformed rule for estimating a period. Thus, this dissertations event window will examine the effects before and after the event it self. This event window will consist of 10 day period. This 10 day period begins with 3 days before the actual event's stage to view is rumors spreading's of an transfer could cause an abnormal return before, and 6 days after to valuate the progression of the capital markets efficiency in pricing in information, this included the first day of the event itself, a total of 10 days. Furthermore, MacKinley (1997) recommend using 250 days before the event window to thus not overlap the event window and are able to determine how far the abnormal yield has occurred.

In comparison of Bell et al. (2012) similar study's event window, it was chosen to only have an event window of 10 days as opposed to their event window of 20 days.

Figure 2. The model for the event study



McKinlay *Event Studies in Economics and Finance*, p.20, 1997

The period extends from 250 trading days prior to the event window, which gets the start date T0 -253 to start. The first day of the event window is T1 and the last day, day +6 after the transfer becomes T2.

4.6.2 Testing Hypothesis 1

By performing two regression analysis of the average actual return on each day of the event windows for the football clubs and the S & P 500 Index, for both transfers in and out. Will generate a regression analysis that will explain how efficiently the capital market can explain the football clubs return, in other words the capitals markets efficiency in incorporating football player transfers news.

In order to calculate the actual return, the following formula will be used:

$$R_{i,t} = P_i / P_{i-t}$$

Formula 1: Calculations of the actual return

In this formula the $R_{i,t}$ stands for the actual return and its calculates by dividing the closing price P_i for a specific day, and P_{i-t} for the closing price from the day before. This will be done for the days within the established event window.

Next step will be to calculate the average value for the actual return in each of the days in the event window for both transfers in and transfers out, the same for the S & P 500 Index.

In the regression test the dependent variable will be the average actual return from the football clubs stock and the independent variable will be the average actual return from the S & P 500 Index.

This analysis will be performed on a significance level of 95% level and explain how efficiently the capital market incorporates transfers news.

4.6.3. Testing Hypothesis 2

In order to test the second hypothesis regarding abnormal returns for transfers in and transfer out, there has to be a calculation on the expected return. The expected return will be calculated based on a linear regression from T0 to T1 in the event window. This linear regression is calculated on the 250 trading days between T0 and T1 where the dependent variable (α) is the actual return from the football clubs stock and the independent (β) is the actual return from the S & P 500 Index. The linear regression formula will then be: $y = \alpha + \beta x$.

For calculating the expected return the following formula will be used:

$$ER_{i,t} = \alpha + \beta * Ri,t$$

Formula 2: Calculations for the expected return

Where the $ER_{i,t}$ stands for the expected return and Ri,t stands for the actual return from the S & P 500 Index.

In order to calculate the abnormal returns ARI,t , the actual return Ri,t , from the clubs stock has to be subtracted with the expected return ERi,t , from that day.

$$ARI,t = Ri,t - ERi,t$$

Formula 3: Calculating abnormal return

This allows continues calculation for each day will result in obtaining the abnormal return for each day in the event study for both transfers in and out. There after an average will be calculated on each day fro the two test in order to compare the significance and the result.

For the statistical significance test, the t-test will be performed based on the relationship between the abnormal return and the expected return against the actual return of the football

clubs stock. In order to get the t-value for each days $AR_{i,t}$, the $AR_{i,t}$, will be divided by an average standard deviation, this standard deviation is calculated as following:

$$Sp = \sqrt{((Styx1)^2/n1)+...+ ((Styx i)^2/n i)}$$

Formula 4: Calculating a general standard deviation

The **Styx**-value is calculated for each football player and then summed up in the formula above in order to gain an average standard deviation that is acceptable to use as a nominator in the t-value equation.

$$t\text{-value} = AR_{i,t} / Sp$$

Formula 5: Calculating the t-value

The value that derives from dividing the abnormal return by the standard deviation is the t-value and will be tested with a statistical significance level will be at 95%. If any t-value is higher than 1,96 that days abnormal return is not equal to zero, meaning that there is proof of an abnormal return.

From these results it will be possible to answer the two hypotheses and construct a conclusion for the whole research on how efficient the capital market is when incorporating football transfers.

4.7 Reliability

Research that contains comprehensive and reliable research methods and analysis procedures, will produce consistent findings, no matter when or where the research takes place, as long as the same tests are run (Bryman & Bell, 2007).

The data collected for this quantitative research originates from European clubs' annual reports and the capital market. All this data is free and accessible, thus, enabling others to replicate these tests and perform them in exactly the same manner. It is presumed that the data that is gathered is correct for the reason that there exist laws and rules that oblige the public clubs and the web pages that show the share prices, to present accurate data. Considering that the data is numeric and that it will be analyzed in a statistically and controlled fashion, it is believed that the risk of interpreting the data and the findings subjectively, is very slight. There exist earlier projects that have been performed with similar measures which strengthens belief that the measurements are adequate.

4.8 Validity

According to Saunders et al. (2009) validity is an important part of the research because it proves that the research variables measure the correct concept. Thus, this part of the project should under no circumstances be undervalued by the researchers. Bryman & Bell (2007) further enhance the importance of validity by stating that a research with a low validity will most likely lack the required relevance to the area it is investigating. There will be an explanation regarding the validity of this dissertation at the end of this sub-chapter. However, a short brief of the different types of validity and the factors of which validity is determined will be presented for the readers.

Bryman and Bell (2007) state that there are four different types of validity and they are Measurement validity, Internal validity, External validity and finally, Ecological validity.

The different types of validity strengthen the research and its findings, however, one also needs to discuss the different factors that determine if a research is valid or not. These factors are presented by Bryman and Bell (2007) and they state that there are five different. These factors are "Face validity", "Concurrent validity", "Predictive validity", "Construct validity" and the last one being "Convergent validity".

This research is not in line with social science, therefore, the Ecological validity should not be

considered as a relevant type of validity. However, this dissertation ought to live up to the standards of the other three types of validity. This research contains two hypotheses and with the help of these, has been created measurements that are clear. Afterwards, these measurements have been applied to the population that consists of the listed European football clubs shown in appendix 2.

With five different types of validity strengths only four are applicable in this research. The new measurements in a previously not researched area of the capital markets efficiency when incorporating transfer news, validates the “Face validity”. The “Concurrent validity” is strengthened by the dissertation investigates a phenomenon between the capital market and transfers, as these phenomena are the markets efficiency to incorporate the transfer news. Two hypotheses have been created based on the existing theories of efficient market hypothesis and the prospect theory, meaning this dissertation is fulfilling the “Construct validity”. The forth one is the “Convergent validity” and it applies to this research through the comparison of related previous researches, and in this case it will be the comparison of the research of managerial sackings done by Bell et al, (2012) and others alike.

4.9 Empirical findings

4.9.1 Hypothesis 1

The first hypothesis was:

H 1: *The capital market will inefficiently incorporate new information regarding football player transfers.*

It was founded, given what Tanaru (2005) described in his research that the football players are the most important asset of a football club, and that the market will be inefficient when incorporating the transfer news, as of most of the transfers take place during a short window of time. The results from the first hypothesis presented in Table 1 and 2 below, full regression analysis in Appendix 3.

Table 1. Transfers in

	<i>Coefficients</i>	R Square	<i>p-value</i>
S & P 500 Index	-0,41119	0,024575	0,665379

Table 1 presents that the capital market explains 2,46% of the actual return within the event window. The coefficient tells that there is a negative relation between a football clubs return and the market return during a transfer in. It states that for every unite of football stock return the capital market will fall by -0,41 units. The table also shows that there is no statistical significance difference in the relation between the footballs clubs return and the capital markets return:

$$P\text{-value} = 0,665379 > P_{\text{crit}} = 0,05$$

Table 2. Transfers out

	<i>Coefficients</i>	R Square	<i>p-value</i>
S & P 500 Index	-0,25909	0,01688	0,72054

Table 2 presents that the capital market explains 1,69% of the actual return within the event window. The coefficient tells that there is a negative relation between a football clubs return and the market return during a transfer out. It states that for every unite of football stock return the capital market will fall by -0,26 units. The table also shows that there is no statistical significance difference in the relation between the footballs clubs return and the capital markets

return:

$$P\text{-value} = 0,72054 > P_{\text{crit}} = 0,05$$

This result was not entirely unexpected since Forker (2005) describes that an important asset in this case a football player transfer would be priced efficiently into the capital market, as it did. Hawawini (1984) also reported that the European market is efficient in its ability to price in the information in the capital market. Meanwhile this result disproves what Andrew et al. (2003) argued against, that the European capital market was changing in its efficiency form, from semi-strong to weak form of EMH.

4.9.2 Hypothesis 2

The second hypothesis was:

H2: *In the capital market, transfers out generate higher abnormal return than transfers in.*

The second hypothesis, which is based in prospect theory and on Scholtensa & Peenstra (2009) survey of league matches and the impact on stock prices, where they proved a match that a team lost, was valued higher than a match won by the same team. Results are presented in table 2 and table 3 below.

Table 3. T-test for transfers in

Day	Transfers In		
	Abnormal Return	t-value	Significant 5%
-3	0,44%	0,294	No
-2	-0,54%	- 0,360	No
-1	0,42%	0,280	No
0	0,32%	0,210	No
1	-0,07%	- 0,048	No
2	-0,13%	- 0,086	No
3	-0,03%	- 0,019	No
4	0,95%	0,631	No
5	-1,02%	- 0,678	No
6	0,18%	0,123	No

Table 4. T-test for transfers out

Day	Transfers Out		Significant 5%
	Abnormal Return	t-value	
-3	0,43%	0,290	No
-2	-0,29%	- 0,193	No
-1	0,03%	0,020	No
0	0,30%	0,200	No
1	0,00%	- 0,001	No
2	-0,40%	- 0,269	No
3	0,28%	0,185	No
4	-0,27%	- 0,183	No
5	0,32%	0,214	No
6	-0,37%	- 0,246	No

The empirical results that came out when Table 1 was separated into 2 tables, that takes up transfers in and transfers out, and then tested its significance at a 5% level, which failed to show any difference how to evaluate transfers. This result was a surprising because the hypothesis was that transfers out would be valued higher, and the empirical data shows that they are not valued differently. When compared with the research Scholtensa & Peenstra (2009) conducted, this data could not comply with theirs. The same is true if you compare to Bell et al. (2012) study of managerial sackings, which resulted in a higher impact of a sacked manager than a manager who signed a new contract with the club. This does not seem to confirm to this empirical result, because, Tanaru (2005) argued that the football players are the biggest asset of a football club, and the results demonstrated here shows that there isn't any difference in valuating.

4.10 Summary of the chapter

The purpose of this chapter was to present the research methodology of this research, to explain the sample selection and to describe how the hypotheses were tested.

Furthermore it was presented the empirical findings from the research as well as the analysis of the two hypothesis. Both of the hypotheses were rejected due to each significance test could not show any significance difference, thus the result of the hypothesis gives a base line for the answer towards that the capital market efficiency when incorporating football player transfer information.

In the next chapter a conclusion of the whole research will be presented. Also further research will be suggested.

5. Dissertation Conclusion

This chapter begins with the conclusions, thereafter are the limitations of the research presented, followed by the Scientific, social and ethical aspects. Finally, a discussion on how this research can be developed by future researchers.

5.1 Conclusion

This dissertation aimed to explain how efficient the capital market is when incorporating football player transfer news. The background for this research was to fill the gap that existed in the research of football and capital market efficiency. To aid in this research, the EMH and prospect theory were used, which in turn gave rise to the creation of the two following hypotheses:

H 1: *The capital market will inefficiently incorporate new information regarding football player transfers.*

H 2: *In the capital market, transfers out generate higher abnormal return than transfers in.*

In aid to answer the hypotheses, there were a collection of share data from a total of 10 football clubs over a 14 year time period, and then the research was conducted through an event study to extract the abnormal returns and the actual returns, which in turn were significance tested through at a 5% significance level.

The empirical data resulted in that the two hypotheses generated were rejected, the first one by not being able to show any statistical difference between the capital market and the football clubs return. For transfers in the p-value was well above the 0,05 Pcrit value at a 0,665379 and for transfers out 0,72054. This meaning that there was no significance difference as the market was efficient when incorporating transfer news. There for the rejection of the first hypothesis.

The second hypothesis test failed to show any difference in the abnormal return from zero, which could not lead to the comparison of the abnormal returns for transfer in and out. Stating that there is no difference thus resulting in that the second hypothesis was rejected as well.

Based on this result, one can now answer the purpose of the research to explain the efficiency of the capital market, and the empirical data that came out of both the hypothesis that were created showed that the capital market was actually very efficient when incorporating information regarding football player transfers. The efficiency had, according to Fama (1970) and Hägg (1988) the characteristics of semi - strong form, from the three forms presented in 3.3 *The Efficient Market Hypothesis*. This statement is supported also out what Hawawini (1984) argued in his research, that the European capital market is semi- strong in its efficiency.

This result is also inline with what Fitzer et al. (2008) concluded in their research, that new sponsorship deals for athlete stars had no impact on their shares as the capital market incorporated this information efficiently. However, Hamil et al. (2004) argued that a sports club has three key differences from an ordinary organization, add where to Tanaru (2005) concluded that a football club's most important asset is the football player, so the first hypothesis had the aims to explain that the market was not efficient when incorporating information regarding football player transfers. Yet, this result proves only what Forker (2005) concluded in his research, that an important asset such of a football player will be by the capital market incorporated efficiently, while it refutes what Andrew et al. (2003) argued, namely that the European capital market efficiency is shifting to the weak form .

Because this research is the first of its kind, it can now explain how efficient capital market is when incorporating information regarding football player transfers, which is that it is so efficient that there never occurs any abnormal return or indifferences on football clubs' share prices from the capital markets.

This research has through its empirical findings now filled the gap that was previously present in the field of market efficiency with orientation towards football player transfers, allowing now a deeper understanding of this phenomenon.

5.2 Critics of the research

A common criticism towards event studies is that the studied occurrence is seldom the only factor that affects the share price, therefore, if other important events would occur during the same interval, and then the results could be misleading. This dissertation has tried to eliminate this problem by excluding transfers that occur too close to each other. The choice of an interval of 10 days for each individual transfer event, meaning there falls no other transfers in these

clubs during this range of time. However, there might have occurred something else of importance, such as the resignation of a great coach or the rebuilding of the stadium, which in turn has affected the share price within the club.

Another criticism that may have affected the results is the exclusion of several transfers. It was necessary to exclude these events because of numerous reasons. The research question restricted this research to only include publicly listed clubs, due to the necessity of obtaining their share price information. Additional criticisms are the excluded transfers due to insufficient information regarding the transfer fee. Also, the uncertainty concerning the reason of the transfer may hinder this research from presenting an entirely accurate generalization of the whole population.

5.3 Scientific, social and ethical aspects

The scientific aspects of this research are that it investigates an area that there has not been any previous work done within, so this has now brought a deeper understanding of correlation between the capital market and the football player transfers. What this research categorizes as a deeper understanding of the subject is the empirical data that was developed and proven that the market is efficient when it comes to pricing the football player transfers.

The ethical- and social aspects out of this research are the use out of secondary data that is available to everyone and that this data is not sensitive to any of the football clubs in this research. Another ethical aspect of this research is that the result of the markets efficiency was proven to be semi-strong formed, giving rise to that there does not occur any unfairness from an investor perspective as long as no insider trading occur.

Meanwhile the social aspects are the empirical findings prove that efficiency of the market can be trusted as well be invested in with a confidence that no one other will gain on any information not being public.

5.4 Further Research

In conclusion, this research shows that the capital market is efficient in its ability to price the information of football plays transfers, of the European football clubs that were used in this research. This result raises a number of interesting suggestions for further researches that may come after this one. One can use this research to compare measure against researches of other football clubs outside the European capital market and see if this result is only unique to

Europe. Besides the comparison studies with other non-European football club's capital market efficiency, this research provide the basis to investigate whether the results can be mirrored by the other sports where one transfer players as well. Such studies are considered as being very relevant, as they were not available during this research literature collection and gave not much to compare from previous studies.

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Appendices

Appendix 1: Stock data for the football clubs

Football Club	Stock symbol	Begining of stock data	End of stock data
Aalborg Boldspilklub A/S	CPH:AAB	2000-01-03	2013-05-01
AFC Ajax NV	AMS:AJAX	2000-01-03	2013-05-01
Sport Lisboa e Benfica Futebol SAD	ELI:SLBEN	2007-06-04	2013-05-01
Borussia Dortmund GmbH & Co.KGaA	ETR:BVB	2000-11-01	2013-05-01
Juventus Football Club SpA	BIT:JUVE	2001-12-28	2013-05-01
SS Lazio SpA	BIT:SSL	2004-02-09	2013-05-01
Olympique Lyonnais Groupe SA	EPA:OLG	2007-02-16	2013-05-01
Futebol Clube do Porto Futebol SAD	ELI:FCP	2000-01-03	2013-05-01
AS Roma SpA	BIT:ASR	2000-05-23	2013-05-01
Sporting Clube de Portugal Futebol SAD	ELI:SCP	2000-01-03	2013-05-01
S & P 500 Index	^GSPC	1999-08-02	2013-05-01

Appendix 2: Football players

Team	Football player	Date of transfer	In/Out	Team	Football player	Date of transfer	In/Out
Aalborg	David Nielsen	2003-08-21	In	Juventus	Nicola Legrottaglie	2011-01-31	Out
Aalborg	Andreas Johansson	2007-07-01	In	Juventus	Eljero Elia	2012-07-11	Out
Aalborg	Jimmy Nielsen	2007-06-04	Out	Lazio	Ousmane Dabo	2006-06-20	Out
Aalborg	Rade Pri-Ba	2008-01-29	Out	Lazio	David Rozehnal	2008-01-11	In
Ajax	Jesper Gronkjaer	2000-12-29	Out	Lazio	Valon Behrami	2008-07-23	Out
Ajax	Peter Hoekstra	2001-07-20	Out	Lazio	Thomas Hitzlsperger	2010-06-05	Out
Ajax	Shota Arveladze	2001-09-01	Out	Lyon	Jimmy Briand	2010-06-14	In
Ajax	Sergio Hellings	2002-03-13	Out	Lyon	Frederic Piquionne	2010-07-16	Out
Ajax	Jari Litmanen	2002-08-30	In	Lyon	Jean Makoun	2011-01-15	Out
Ajax	Edgar Davids	2007-01-30	In	Porto	Filipe Oliveira	2002-08-01	Out
Ajax	Hatem Trabelsi	2006-08-10	Out	Porto	Capucho	2003-06-17	Out
Ajax	Alberto Luque	2007-08-25	In	Porto	Benni McCarthy	2003-07-16	In
Ajax	Ryan Babel	2007-07-13	Out	Porto	Akos Buzsaky	2005-01-21	Out
Ajax	Johnny Heitinga	2008-08-01	Out	Porto	Jose Bosingwa	2008-05-12	Out
Ajax	Klaas-Jan Huntelaar	2009-01-01	Out	Porto	Marek Cech	2008-07-15	Out
Ajax	Jan Vertonghen	2012-07-12	Out	Porto	Lisandro Lopez	2009-07-12	Out
Benfica	Javi Garcia	2009-07-21	In	Porto	Bruno Alves	2010-08-04	Out
Benfica	Ramires	2010-08-13	Out	Porto	Raul Meireles	2010-08-28	Out
Benfica	David Luiz	2011-01-31	Out	Roma	Cafu	2003-06-09	Out
Benfica	Fabio Coentrao	2011-07-14	Out	Roma	Vincent Candela	2005-06-19	Out
Dortmund	Niclas Jensen	2003-07-08	In	Roma	Ahmed Mido	2006-08-29	Out
Dortmund	Niclas Jensen	2005-07-17	Out	Roma	John Arne Riise	2008-08-01	In
Dortmund	Tomas Rosicky	2006-05-23	Out	Roma	Julio Baptista	2008-08-14	In
Dortmund	Steven Pienaar	2007-07-24	Out	Roma	Alberto Aquilani	2009-08-07	Out
Dortmund	Philipp Degen	2008-07-03	Out	Roma	Fabio Borini	2012-07-09	Out
Dortmund	Florian Krinke	2012-05-31	Out	Sporting Lisbon	Peter Schmeichel	2001-07-12	Out
Juventus	Andrian Mutu	2005-01-13	In	Sporting Lisbon	Hugo Viana	2002-07-22	Out
Juventus	Patrick Vieira	2005-07-15	In	Sporting Lisbon	Phil Babb	2002-07-01	Out
Juventus	Christian Poulsen	2008-07-01	In	Sporting Lisbon	Fabio Rochemback	2008-06-10	In
Juventus	Felipe Melo	2009-07-15	In	Sporting Lisbon	Vladimir Stojkovic	2010-01-07	Out
Juventus	Christian Poulsen	2010-08-11	Out				

Appendix 3: Regression analysis for transfers in and transfers out

Transfers in	
<i>Regression Statistics</i>	
Multiple R	0,15676569
R Square	0,02457548
Adjusted R Square	-0,0973526
Standard Error	0,00594578
Observations	10

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	7,12551E-06	7,1255E-06	0,201557221	0,665379
Residual	8	0,000282818	3,5352E-05		
Total	9	0,000289944			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>p-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Konstant	0,00067425	0,001936545	0,34817178	0,736695586	-0,00379	0,00514
S & P 500	-0,4111934	0,915897645	-0,4489512	0,665379057	-2,52326	1,70087

Transfers out	
<i>Regression Statistics</i>	
Multiple R	0,12992436
R Square	0,01688034
Adjusted R Square	-0,1060096
Standard Error	0,00329018
Observations	10

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	1,48698E-06	1,487E-06	0,137361423	0,72054
Residual	8	8,66025E-05	1,0825E-05		
Total	9	8,80895E-05			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>p-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Konstant	-0,0004338	0,001046767	0,4143888	0,689477623	-0,00285	0,00198
S & P 500	-0,2590938	0,699076352	-0,370623	0,72053962	-1,87117	1,352979