UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Football Transfers – an Event Study on the Stock Market Prices of Kit Manufacturers

Joel Bjerking and Alexander Reisig

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Supervisor: Michael Kirchler

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Joel Bjerking

Alexander Reisig

Abstract

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Authors: Joel Bjerking and Alexander Reisig.

Supervisor: Ass.-Prof. PD. Dr. Michael Kirchler, Institut für Banken und Finanzen, Universität Innsbruck.

Background: Football has become more and more commercialized especially during the last two decades. Large corporations as the sport giants' Adidas, Nike or Puma inject enormous sums of sponsoring funds into football. Sponsorvision estimates that EUR 2.5 billion were spent on sport sponsoring in 2007. Football players' salaries and transfer sums are becoming excessively high. Is it appreciated and thus seen as a good investment by the kit manufacturers and their sponsored clubs to spend so much money on football players?

Problem: Does the transfer of a player to a club in the top five European football leagues affect the sponsoring kit manufacturers' stock price?

Purpose: Our principal objective is to investigate whether the transfer of top football players affect stock market prices of the sponsoring kit manufacturers. Another objective is to point out the driving forces of value of football players as endorsers for the kit manufacturer.

Delimitations: The data collected in the thesis is limited to the top 5 European football leagues, namely the German Bundesliga, the British Premier League, the Italian Serie A, the Spanish Primera division, and the French Ligue 1. Additionally, the time period of the player transfers is limited to 1998-2010 and we only focus on the top player transfers, which is EUR 15 million and above, and restrict the transfers to a maximum of 25 per season. Additionally, we focus on the three kit manufacturers' Adidas, Nike and Puma.

Methodology: The study consists of two parts, a literature study and an empirical analysis. In the qualitative part we point out the theoretical foundations of how the stock market value of kit manufacturer companies can be influenced by a player transfer. Whereas in the

quantitative study then is sought to verify or reject those theoretical arguments. We use a panel regression event study with the three kit manufacturers' Adidas, Nike and Puma.

Results:

The aggregate result, which includes all join transfers, lacks any significant effect. Thus we can on an aggregated level conclude that a player transfer does not have any effect on kit manufacturers' stock price. However, if we consider the kit manufacturers' independently we observe a significant effect for almost all of the control variables so the effect is different for the different companies. One argument that strengthens our assumption regarding the mere exposure for same kit manufacturer transfers, the within transfers appear to have a stronger effect than the average transfer. There is a more positive one for Adidas and a more negative one for Nike.

Table of Contents

List of Figures

List of Tables

1 Introduction

Football has become more and more commercialized especially during the last two decades. Large corporations as the sport giants' Adidas, Nike or Puma inject enormous sums of sponsoring funds into football. Sponsorvision estimates that EUR 2.5 billion was spent on sport sponsoring in 2007 (Märzendorfer, 2009). Broadcasting rights are sold for between EUR 430 billion in Germany to EUR 1000 billion in England per year in 2007/2008 (Ernst & Young, 2006). Football players' salaries and transfer sums are becoming excessively high. Football has been analyzed from a financial perspective in a number of studies, but these have mainly focused on match results and their effect on clubs stock prices, sponsors stock prices and so on. Our study marks a departure from this line of work in the sense that we instead analyze how player trades affect the stock market price of the kit manufacturer (KM).

According to the Efficient Market Hypothesis (EMH) the market should incorporate the news of a trade into the stock price the moment the trade is announced. If the market does not immediately reflect this information and it cannot be justified by any explaining factor, it might signal that the market is not semi-strong efficient. On the contrary, if the market would incorporate the trade into the price before it was announced, this would suggest that the market is strong efficient - that only insiders are able to beat the market. We are thus conducting an event study to check whether the market is semi-strong form efficient or not.

1.1 Background

1.1.1 The Relationship between Football and Kit Manufacturers

Football is big business for the companies selling football boots and jerseys. The success of Nike provides an example for this, in 1994 its global soccer sales were USD 45 million and ten years later the sales had risen to USD 1 billion. In 2004, 45 of the European top clubs wore Nike uniforms whereas 41 wore Adidas uniforms. Further, Nike claimed to be the football market share leader in Europe with a 34 percent share, while Adidas had the largest worldwide market sales of USD 1.15 billion (Callimachi, 2004). As of 2009, Adidas is the world's leading KM brand with a market share of more than 34 percent. In some markets, for example Germany, their market share is above 50 percent (Adidas Group, 2009). Puma is the world's number three KM with 12 percent behind Nike and with 30 percent behind Adidas. Over the last decade especially Nike increased its market share, taking some from Puma but mostly from the other smaller manufacturers like Lotto or Kappa. (Märzendorfer, 2009). The

acquisitions of Umbro by Nike in 2007 and Reebok by Adidas in 2005 further consolidated the market (Kuehnen & Kraemer, 2009).

The importance for these brands to appear and be sponsors of major leagues and sport events cannot be overemphasized. For example, the 2006 World Cup in Germany gave Adidas a huge surge in sales, selling over 1 million predator football shoes, 3 million replica shirts and 15 million footballs around the time of the tournament, leading to a record revenue in the football sector of EUR 1.2 billion (Böhme, 2006). The 2010 result even exceeds these figures. According to board member Herbert Hainer, Adidas sold 6 million replica shirts of the national teams and 20 million footballs of which 13 million were the championship model "Jabulani". The football related revenue rose to an all-time record of EUR 1.5 billion beating the 2008 revenue by 15 percent and the 2006 revenue by 25 percent (Bild.de, 2010c).

The KM also invest vast amounts in the European top clubs, there are numerous cases of KMs spending billions of euros on for example sponsorship and image rights. One example is when Adidas paid EUR 762 million to Real Madrid for an image rights deal in 2007 (Wilson, 2009) and beating the until then largest contract ever, worth GBP 303 billion for 13 years from Nike with Manchester United (Reidhaar, 2003). Before the Real Madrid deal was announced, in 2006, Adidas main competitor Nike signed a new sponsor contract with FC Barcelona worth EUR 150 million, which extends their relationship through 2013. According to the Nike Inc. President and CEO Mark Parker the strengthened relationships with top football clubs in Europe are very important *"Our long-term relationships with top football clubs such as Barcelona deepens our global leadership in the world's most popular sport and strengthens our growth opportunities as the number one football brand*" (Nikebiz, 2006).

The following is an example illustrating the importance of the product placement. The big clubs present the shirts of the new season during the season finale when the attention by the supporters is greatest and the sales of the old shirts slow down (Bild.de, 2010a). Furthermore, Bayern München's Adidas equipped their star Arjen Robben with the new "F50 adizero" boot in a special yellow edition during the cup final victory in Germany against Werder Bremen who was wearing Nike (adizero, 2010). These examples clearly show how important the brand "football" is for KMs such as Adidas and Nike and that it is a significant marketing investment for the future.

1.1.2 Transfers and Top Players

The player transfers also usually involve large sums of money; however they can be coupled with vast increases in cash flows. Shirt sales, sponsorship revenue, match ticket sales and the

team's global fan base are likely to increase (Mortimer, 2009). This naturally benefits the club as well as the KM and its investors. The best players in the world are also the world's most marketable players, as David Beckham who was the best spokesperson in the world during his peak. When he left Real Madrid the club experienced a substantial financial setback and was forced to ask for an emergency loan of GBP 23 million just to cover their running expenses (Sky News, 2008).

The fact that the teams fan base and merchandise selling increase has been proven several times when top players have been signed. The purchase of David Beckham back in 2003 by Real Madrid was at the time one of the largest transfer. During his contract period with Real Madrid no titles were won, but merchandise profit increased by 136 percent during the four years (Milligan, 2010). At the same time, Real Madrid's KM Adidas saw the orders for the club shirts double in less than two hours from the signing, in the first six months 1 million shirts were sold. The revenue amounted to EUR 85 million, which is almost EUR 50 million more than what was paid for the David Beckham transfer, merely from the shirt sales. In total 5.65 million shirts with the Beckham signature were sold during his contract period in Spain. Since Real Madrid has a standard contract with its players, in which 50 percent of the player's image rights belong to the club (Milligan, 2010), the club earned between EUR 12 million and EUR 17 million annually through Beckham. This cash flow increase can provide an explanation for the extremely high transfer fees paid by the club (Gansäuer, 2009).

In 2009 the largest transfer in history took place. Real Madrid bought Cristiano Ronaldo from Manchester United for EUR 94 million. Cristiano Ronaldo sold 3000 shirts in the first 2 hours after the unveiling and it remains to be seen if he will outsell David Beckham after 4 years or not (Sky News, 2008). In the first season, however, he at least did so through selling 1.2 million shirts until April (Yahoo! Eurosport, 2010). Florentino Perez, the president of Real Madrid, said that Real Madrid choose to sell the replica shirts in a lower quality than the original player shirts to increase the club's profits from this income source. This should lead to a profit of EUR 57 per shirt compared to EUR 15 before whereas the expression profit is not narrowly defined, it could mean gross profit, and nevertheless it would be higher than the former EUR 15 per shirt (Gansäuer, 2009).

In a study performed by Sport + Markt and PR Marketing, the outcome was that the clubs earn between EUR 12.5 and EUR 20.5 per shirt depending if it is sold through a retailer or the club owned fan shop. The KM makes about EUR 10 per replica shirt sold. However these are average values gathered from the European top clubs and might differ considerably especially for the teams on top of the food chain (FAZ.NET, 2009). Special contracts for certain players

might change the numbers as well. Cristiano Ronaldo for instance receives 50 percent of the revenue generated by the sales of his replica shirt (Wallrodt, 2009).

Naturally the KMs are more interested in the top players, since they are more profitable to the companies. This has resulted in KMs signing personal sponsorships with the top players, as for example the case with Frank Ribéry. The French international signed a personal deal with Nike and is currently playing for Bayern München, which is synonymous with the Adidas brand; Brown (2009) explains that Nike, after signing the contract, may try to push through a transfer to FC Barcelona that was sponsored by Nike. They also claim that Nike has a reason to believe that the Bayern München kit overshadows their branding and that they therefore prefer to see him in a kit made by them (Bild.de, 2010b).

The sponsors see an additional value in having top players in the teams that wear their own brand, which in turn can increase the popularity of that certain club and yield more money from jersey selling and other merchandises. Having top players like Ribéry or Ronaldo playing for Adidas teams costs Nike millions of euro in revenue, especially in replica shirts, but not so much in boots sales since these are separately advertised. The KM prefer to have a top player under private contract, like Wayne Rooney, playing for a team equipped by them like Manchester United, to fully exploit their image rights potential. Nike even made use of its former top player Ronaldo to equip the teams he played for with their uniforms, as it happened for PSV Eindhoven, Inter Milano and FC Barcelona (Milligan, 2010).

Top players can give access to new markets and/or fan bases but also better exploit the existing customer base, like David Beckham, who with his extreme popularity opened the Asian market to Real Madrid and Adidas after his transfer to Real Madrid from Manchester United in 2003. The same is true for his change to L.A. Galaxy in 2007 for the American Market (Milligan, 2010). Tim Leiweke, CEO of the Anshultz Entertainment Group, which owns L.A. Galaxy, said that the club sold 11.000 season tickets and all luxury suites. The club was able to sign a USD 20 million deal with the shirt sponsor Herbalife and the merchandising sales rose by 700 percent for the Galaxy and 300 percent for the league (SportBusiness, 2007). All this leads us to believe that the big players and their transfers to a team with a certain KM have an impact on the companies' cash flow and therefore an influence on the KMs stock market value.

1.2 Research Question

The main question that we examine is:

1. Does the transfer of a player (all of the players in our dataset) to a club in the top 5 European football leagues affect the KMs stock price?

This research question relates to Fizel et al (2008), and if the answer is "yes", we focus on the following:

(a) Are the effects different for the different companies?
(b) Do the results depend on the size of the transfer (transfer sum above or below EUR 30 million)?
(c) Do the results depend on the marketability of the player (hero effect)?
(d) Does it matter whether the player changes to a big (top 10 or top 5) club?
(e) Does the position of the player have any effect

2. Does KM stock price react positively to the mere exposure if transfers take place between clubs with the same KM?

1.3 Purpose

Our principal purpose of this study is to investigate whether the transfer of top football players affect stock market prices of the sponsoring kit manufacturers for the time period 1998-2010. The objective of this thesis is to point out the driving forces of value of football players as endorsers for the KM and then verify these theoretical findings in an event study empirically. Since the sports giants' value is mainly driven by their brands we will focus on the influence and interaction of the players and other actors in the football environment regarding the brand value of the KM.

1.4 Delimitations

The data collected in the thesis is limited to the top 5 European football leagues, namely the German Bundesliga, the British Premier League, the Italian Serie A, the Spanish Primera division, and the French Ligue 1. Additionally, the time period of the player transfers is limited to 1998-2010 and we only focus on the top player transfers, which is EUR 15 million and above, and restrict the transfers to a maximum of 25 per season. If there are more transfers, the top 25 are chosen. Additionally, we focus on the three kit manufacturers' Adidas, Nike and Puma.

1.5 The Disposition of the Thesis

The thesis is structured as follows. The second section sets the foundation of the thesis by presenting the theoretical framework. The third section covers the methodology including the dataset and the collection of the data. The forth section presents the results which is subsequently analyzed in section five. Lastly, the thesis is concluded and further research is suggested in section 6.

2 Theoretical Framework

2.1 Marketing

Brands: A Brand is "a differentiating image, representing a certain quality which is continually transferred to the customers" (Adjouri & Stastny, 2006). It can be also described as "the image in the minds of the consumer, responsible for identification and differentiation

which is influencing the purchasing behavior" (Esch, 2005). Brands have been around since centuries. In the middle-ages for instance, manufacturers delivering goods to the king, labeled their stores as "manufacturer to her majesty". Branding goods has the purpose of differentiation in order to make them more appealing than the competitors' substitutes (Esch, 2005). Brands work on the emotional level. The symbols, colors or even sounds cause associations in the mind of the consumer. Companies can, through a constant exposure, communicate desired characteristics or images to the consumer. This can give the customer several advantages, like price expectations, the guarantee of a certain quality, which reduces the risks of a purchase, or it can serve as a tool for self-expression to provide enhanced social value (Spall, 2007).

Leagues: The 5 major sport leagues included in this study can all be considered as brands. It is a label of quality for all clubs and players to play in one of those top-leagues. For the fan it is important too, since he knows he will most likely be able to experience quality football when attending a game or watching it on TV. The league provides the organizational framework in which the teams and players interact and compete for the championship (Bauer et al., 2004). Its brand value rises with the unexpectedness of the results of the game. Having one or two dominant teams causes a lack of interest by the spectators and thus a lower marketability of the league product. The league brand can be viewed as an interacting pool of the club brands. Attractive clubs make the league more attractive. For the whole to become more appealing to the fans, the clubs have to work together and create the appearance of competitiveness to the audience (Sutton & Parrett, 1992). Since some time the most famous sport leagues expand to other geographic areas to attract more fans and hence more revenue. The main way to do so is to expand broadcasting and licensing (Rushin, 1993). The most important growth markets for professional football are Asia and the USA where two of the last three overseas World cups have taken place (Financial Times, 2010).

Clubs: The biggest and most successful football clubs consider themselves as brands, especially on foreign markets where they spread out more and more in recent years in line with the general globalization trend, especially in Asia in order to profit from their rapidly growing economies (Bodet & Chavanet, 2010). The Brand is often considered the most important asset of a club. It helps to expand the commercial activities of the club and enhances fan loyalty. Particularly interesting is that strong brands protect the economics of a club in case of a competitive slowdown (Schewe & Rohlmann, 2005). However, athletic

success is positively related to the sales of merchandise products (Gladden et al., 2001). Therefore it is not surprising that among the top 10 clubs regarding Brand value, all could celebrate numerous national international and titles in the last decades (Märzendorfer, 2009).

The big clubs try to or already have created trademarks in order to enhance their brand awareness. The color of the kits is usually the most visible sign of recognition. Real Madrid might be the best example for the "White Ballet" (Kicker Online, 2010) as they call themselves, for if they are preferably dressed completely in white. But also do for example Chelsea as "The Blues" (Chelsea FC, 2010) or Manchester United as "The Red Devils" (McDonnell, 2010) give the fan another association with their team color. The clubs travel around the world in order to establish their brand in new markets in pre season or after season appearances. Real Madrid as well as their biggest Spanish competitor visited the USA in 2009 (FIFA, 2009). Another popular way to reach foreign markets is practice camps, as for example Bayern München followed the invitation of the sheiks of Dubai the fifths time in 2009 (Schramm, 2009). The teams compete for the best coaches, players and other staff members (Roberts, 1984).

Players: All of the star players can be considered celebrities due to their status in the clubs and media. The players' act as spokespersons for the clubs, the KM, the league and finally for the sport itself. Furthermore, they are brands themselves with partly a very high brand value. The 15 top players reach brand values of USD 30 to USD 50 million (Reich, 2006). The top-end players even created trademarks to enhance their recognition. Famous examples for this are Michael Ballack's shooting position, Ronaldo's typical wide stand before a free-kick or David Beckham's arms pulled back when celebrating one of his goals (Milligan, 2010).

The KMs recognized the potential of the players and give many promising young talent or grown stars private contracts for image rights. This gives the KMs the opportunity to make use of the popularity of the players in advertisements or entire marketing campaigns as we see around the big tournaments (Märzendorfer, 2009). Players can function as an easy entry to a new market, David Beckham with his huge popularity in the Far East, provided Real Madrid with a readymade channel to the Asian market (Milligan, 2010).

Kit Manufacturers: In order to achieve a high recognition among their target group, KMs build long-term relationships with clubs and players. A top club like Bayern München reaches name recognition of 95 percent in Germany (HypoVereinsbank, 2009). This brand awareness is essential in transferring the desired associations to the consumer (Bruhn, 2005). Teamed up

with such strong partners the KMs can better show their brand symbols. The shirts and shoes of Adidas, also known as "The Brand with the three stripes" all shares the same design pattern. The three stripes are clearly visible on the side of the shorts, shirt and boots. All three KM have their logo positioned on the chest of the players to reach a good visibility on close up views. Puma even puts their "Puma" on the shoulders to increase the visibility. Another way of differentiation is the special design for some Puma shirts. Cameroon for instance got equipped with sleeveless shirts and a dress made of one piece. Despite all of Puma's efforts, in the end the FIFA banned both designs but Puma raised a lot of attention and showed their design capability (Märzendorfer, 2009).

The KMs are not only sponsors paying millions for image rights, but also performance enhancers. Millions of euros are spent every year in R&D to develop lighter shoes, body temperature regulating shirts or more precise footballs. To make their efforts visible to the consumers, especially Adidas and Nike make use of their top players to present and sometimes be involved in the development process of their latest miracle products (Märzendorfer, 2009).

2.1.1 Brand Equity

The term brand equity is defined as "*the effect of brand knowledge on consumer response to the brand. As such, it is the value of the brand name that has the potential of being extended by itself or with other brands as in co-branding"* (Rao & Rueckert, 1994). It can also be thought of as the premium and therefore additional cash flow a customer is willing to pay for a branded product, compared to the same product without a brand label (Keller, 1993). Other studies have confirmed brand equity to be positively related to merchandise revenue (Gladden et al., 2001). The four determinants of brand equity are perceived quality, brand loyalty, brand awareness and brand image. Strong brands reach a highly favorable perception in all of these dimensions in the minds of the consumer (Keller, 1993).

1. **Brand Awareness:** is described as the likelihood and ease that the brand name will come to mind. It is further divided into brand recall, where consumers are asked to name companies in a certain product category and brand recognition, where the consumer is given the brand name and asked about any prior exposure to it (Keller, 1993).

2. **Brand Image:** is a rather emotional measure. It is about the quantity and quality of associations a consumer has regarding the brand where his subjective view draws a picture

of the brand in his mind. Those associations can be even nonverbal, like the "swoosh" of Nike or the Puma symbol. However the number, emotional depth and attitude towards those associations are crucial for the brand image (Esch, 2005).

3. **Perceived Quality:** reflects a mixture of brand satisfaction and trust. A high level of trust reduces the risks and uncertainties attached to buying a product while satisfaction is reached by fulfilling the subjective expectations of the consumer (Esch, 2005).

4. **Brand Loyalty:** stands for the constant and ongoing purchase of a particular brand. This may be caused by conviction a superior product placement or a lack of alternatives. Convinced customers are also more likely to engage in word of mouth (Keller, 1998).

Highly valued brands give a competitive advantage concerning brand equity because customers have greater trust and confidence in them compared to their competitors' (Lassar et al., 1995). This may very well affect the purchasing decisions of one brand over another, since consumers use the brand name to evaluate the product in absence of further information. The brand equity also plays a role in co-branding, where often a highly valued brand is used to boost the value of another one (Swait et al., 1993).

2.1.2 Co-Branding

Co-branding is defined as the "*pairing of two brands with their separate association sets to a combined association set"* and is mostly used for consumer products, especially for the introduction of such (Park et al., 1996). It is suggested that to match up two brands with a high equity value gives both a highly positive image. It also improves the perception of the brand by the target group regardless of the brand equity value of the two paired association sets. In general co-branding seems to be good for all partners, whereas less familiar brands benefit more from the cooperation (Washburn et al., 2000).

The sought positive effect might as well be reversed in case one of the co-branding partners produces bad publicity, however, it was found that those relationships are relatively robust and consumers tend to blame the right brand for its failures (Washburn et al., 2000).

2.1.3 Sport Sponsorship

Sponsorship is an indirect tool of consumer persuasion. The sponsor acquires the association rights with another brand in exchange for a form of payment. It is supposed to improve the

target groups' perception of the sponsor brand by linking it to another one that is highly valued by the audience. Therefore, sponsorship can be seen as a form of co-branding (Bibby, 2009).

Companies sponsor sport teams, leagues, players or events to their own benefit. They want to be recognized and thought of well. Simply donating money is not enough; their sponsorship relationship needs to be recognized by the public in order to attain the desired effect of an enhanced brand image (McDonald, 2000). It is widely recognized that sponsorship enhances the brand awareness of a sponsor. The high ratings of football give the brand more visibility (Damm-Volk, 2002) and thus influence the consumers purchasing intentions meaning that they would prefer the sponsors' brand over the competitors' one. Still, there is little evidence that consumer purchasing behavior is influenced. It is therefore unlikely that non-users are turned into users (Walliser, 2003).

As a marketing instrument sponsorship is therefore rather defensive and more likely to maintain the current status than creating sales (Hoek et al., 1997). Moreover, the image-transfer is more effective from a single player to the brand than from an entire team (Damm-Volk, 2002). To close the deal other tools of the marketing portfolio are required as communication strategy. Advertisement is more and more used as complementary since it approaches the consumer more directly, but nonetheless focuses on the same objectives, brand awareness and brand image (Walliser, 2003).

2.1.4 Celebrity Endorsers

The definition of celebrity endorsers is *"any individual who enjoys public recognition and who uses this recognition on behalf of consumer good by appearing with it in an advertisement"* (McCracken, 1989). The celebrities are brands themselves; therefore this type of endorsement is a form of co-branding. The top endorser of each of the three KM had a brand equity value higher than many known companies. In 2006, Ronaldinho (Nike) was rated number one with a value of USD 47 million, followed by David Beckham (Adidas) with USD 44.9 million. Puma's top star, Samuel Eto'o is ranked 4th, and estimated to USD 30.7 million (Reich, 2006). It is common practice to make use of a celebrity's popularity to promote a brand or product, since it is believed to benefit the two (Stone et al., 2003). Companies all over the world spend billions of dollars every year to have their goods being related to the big stars. In 2003, e.g. Nike spent USD 1.44 billion on celebrity endorsers (CNN Money, 2003). In 1997 25 percent of all ads made use of a celebrity (Stephens & Rice, 1998).

The special endorsers help to distinguish a brand from its competitors where it is most important, in the mind of their potential customers. The big sport stars like David Beckham, Ronaldinho or Samuel Eto'o have such an attraction to especially the young consumers, which are easiest to be impressed, that they are considered as role models. Those celebrities have a meaningful influence on the consumer behavior of young people (Dix et al., 2010). Nevertheless, the intended positive effect can be reversed into a negative one. The absence of athletic success of the endorser will have a negative impact of the effectiveness of the advertising campaign (Damm-Volk, 2002). A scandal or other type of negative publicity can harm the brand as well as the cases of Mike Tyson or O.J. Simpson has shown (Till, 1998).

2.1.5 Source Credibility

One important determinant in the effectiveness of an endorser is its expertise and trustworthiness (McCracken, 1989). For the consumer it is important that the endorser advertises the product because he thinks it is superior to the competitors' one and not because he got paid to do so. The use of multiple celebrities in a campaign can create the appearance of a consensus among the endorsers and therefore convince the consumer (Hsu & Mcdonald, 2002). A believable expertise of the endorser regarding the promoted product enhances the credibility even more. Therefore sport athletes are more valuable in promoting sport products (Martin, 1996).

Whereas, both credibility and attractiveness have a positive effect on the brand image (Seno & Lukas, 2007), several studies even suggest that credibility is even more influencing the consumers purchasing behavior than the attractiveness of the endorser. Despite the positive effect of physical attractiveness, which comes mostly from the fact that beautiful people catch more attention than people that are perceived less good-looking (Seno & Lukas, 2007). Real beauty goes beyond the good looks. Principles, habits, character and behavior are at the core of attractiveness (Langmeyer & Schank, 1994).

2.1.6 Associative Learning

Pairing a brand with an image or a celebrity will transfer the associations of the celebrity/image to the brand, it is said they build an associative link and both are part the same set of associations. This effect will be stronger through further repetition and when used over a long time span. Michael Jordan for instance is practically a synonym for Nike (Meyers-Levy, 1989). A very positive stimulus from a sports celebrity can enhance neutral stimuli from a product or a brand, so that the consumer believes the product must be good because it

is from a certain brand or this endorser is using this product too. The associative link will be stronger the more similar the two stimuli are which makes a football celebrity a good spokesperson for football related products (Eichhorn & Hogarth, 1986). However, sport celebrities that already have a strong associative link with another product will not be as valuable in conditioning the consumer to the intended brand (Till, 1998).

2.1.7 Blocking and Overshadowing

Overshadowing and blocking are the expressions frequently used to describe complications in creating associative links between celebrities and brands that already have strong relationships with other stimuli. This happens when the endorser is used for several products whereas all of them compete to create the strongest link with the positive stimulus from the celebrity. This problem comes into action when a player has a private contract with one KM but plays for a club or national team equipped by one of the competitors (Till, 1998). Blocking can be seen as a strong form of overshadowing. Here the celebrity endorser cannot form a strong link with the advertised product, since he is already strongly related with another stimulus (Till, 1998).

2.2 League and Transfer system

2.2.1 The "Big Five"

The "big five" leagues in the international football scene are known for their financial strength. Teams from those leagues are with a few exceptions the designated winner of the European Club Championships like the Euro league or the Champions League and thus preferred targets for the top players of the world. Although the leagues have much in common, they also can be characterized by some considerable differences that affect the competition for the best players significantly as can be seen in *Table 1*.

Table 1: League Overview

Variable	England	Spain	Germany	Italy	France
Country size (in million)	50	47	82	60	65
Top League	Premier League	La Liga	Bundesliga	Serie A	Ligue 1
Pro Leagues	4	2	3	2	2
Clubs in Top League	20	20	18	20	20
Pro Clubs	88	42	56	42	40

Total Revenue (in million)	2500	1500	1500	1500	1000
TV Revenue (in million)	1000	600	430	560	650
Central Marketing	Yes	No	Yes	Yes	Yes
Club owners	Yes	Yes	No	Yes	No
Strict accounting	No	No	Yes	No	Yes

(Hamil & Chadwick, 2010), (Märzendorfer, 2009)

2.2.2 Transfer System

The transfer system is a framework, which regulates the movement of players among clubs. FIFA is the entity in charge of overseeing the transfers and can even intervene to prevent transfers that do not obey the rules. For a player to be able to play for a pro-club he needs to be registered within the national federation the club operates in. This lays the groundwork for all transfers including transfer fees. For a player to be registered at his new club the old one has to agree to dissolve his old contract and unregister him. The agreement from the old club is usually reached by a certain economic compensation or transfer fee (FIFA, 2010).

The clubs have the chance to either buy or sell players during 2 periods each year, one in summer and one in winter. The first one always starts first of July and lasts until the end of August. The winter transfer period is only one month and lasts the entire January. Apart from these defined transfer windows, it is possible to acquire players that are not pro or currently unemployed, i.e. in both cases no transfer fee needs to be paid (FIFA, 2010).

2.2.3 EU Law and the Bosman Treaty

Since beginning of the transfer system in 1885 a player, even when his contract has expired could not change club without an appropriate transfer fee. This however changed dramatically in 1995 when the European Court of Justice (ECJ) ruled in favor of an until then unknown Belgian pro-football player named Jean-Marc Bosman. According to the ECJ the old transfer system was violating articles 48 (free movement of workers) and 85 and 86 (free competition) of the Treaty of Rome (European Commission, 2007).

The ruling now means that “if a football player’s contract with his club expires and if that player is a citizen of one of the Member states of the EZ or EEA, this club cannot prevent the player from signing a new contract with another club in another Member State or asking for a transfer fee”. Moreover, “limitations regarding the nationality of professional players who are citizens of a Member State of the EU not allowed.” (European Commission, 2007).

2.2.4 Financial Fair Play

In order to rebalance the differences in European Club football, which the national federations have allowed, the UEFA in close collaboration with the clubs has introduced the Financial Fair Play regulation. The rules will be implemented gradually from 2010 onwards and be fully into action in 2012. The main changes to the current framework are a break-even constraint, the disallowance of over dues payable to clubs and other stakeholders and the provision of future budget information to ensure future liquidity (UEFA, 2010). The break even-constraint basically means that the clubs can only spend as much as they take in, thus their operative and financial income cannot be higher than their operative and financial costs, whereas contributions from wealthy individuals, like Roman Abramovich do not count as revenue. A break-even deficit in the current year can be evened out by surpluses in the preceding 4 years. Even the maximum deviation of EUR 45 million until 2015 and EURO 30 million until 2018 are within the regulations. Thereafter the deviation is not allowed to exceed EUR 5 million. Further the authorities can ask for more detailed information in case the clubs spends more than 70 percent of its revenue on employees, thus player's salaries or in case the net debt exceeds 100 percent of their revenues (UEFA, 2010).

The restriction on depreciation periods and overdue payables further enhances sound business and fights especially the creative accounting practices used and legalized in Italy (Hamil & Chadwick, 2010). The provision of financial forecasts will lead to more predictability and stability of the clubs finances, especially since large deviations have to be reported to the UEFA and thus corrective actions can be taken on time (UEFA, 2010).

2.3 Financial Theory

2.3.1 Event Study

The basic concept of an event study is to examine market reactions to and abnormal stock returns around specific information events. These events can be worldwide, as for example macroeconomic announcements, or firm-specific such as earnings or dividend announcements (Damodaran, 2002). By using financial market data an event study can be used to measure the impact of a specific event on the value of a firm. Given that there is rationality in the market place, the effects of an event will be instantaneously reflected in security prices (MacKinlay, 1997). We will describe the procedure for an event study following MacKinley (1997).

1. **Event Definition:** the first step in the process of conducting an event study is to define the event and also to identify the time period of interest, in which the security prices of the firms connected to the event will be studied, namely the event window. In order to capture price effects of announcements the event windows is normally set to be larger than the specific period of interest.

2. **Selection Criteria:** the next step is to define the selection criteria to decide which firms that should be included in the study; a factor that can restrict the criteria is availability of data.

3. **Abnormal Return:** the third step is to measure the event's impact through abnormal returns. Which is the actual ex post return of the security over the event window minus the normal return of the firm, within the event window.

$$AR_{i\tau} = R_{i\tau} - E(R_{i\tau}|X_\tau)$$

$AR_{i\tau}$, $R_{i\tau}$, $E(R_{i\tau}|X_\tau)$ are the abnormal, actual and normal returns respectively for time period τ. X_τ is the normal return.

4. **Measuring Normal Performance:** regarding the normal return there are two mainly used models, the constant mean return model in which X_τ is a constant and the market model where X_τ is the market return. Below the latter is explained.

$$R_{it} = \alpha_i + \beta_i R_{mt} - \varepsilon_{it}$$

R_{it} is the return on security i and R_{mt} is the market portfolio, both for period t, and ε_{it} is the zero mean disturbance term. Lastly, α_i and β_i are the parameters of the market model to be estimated.

5. **Estimation Window:** after the normal choice of model for normal return has been decided the next step in the process is to define the estimation window. The most widely used approach is to use the period prior to the event. In general terms the event period per se is excluded in the event window in order to avoid the event to affect the normal return parameter estimates.

6. **Hypothesis Testing:** using the parameter estimates for the normal return it is possible calculating the abnormal returns. The next step is specifying the testing framework for the abnormal returns; it is of importance to take into consideration the definition of the null hypothesis and also the determination of the techniques for aggregating the individual firm abnormal returns.

2.3.2 The Efficient Market Hypothesis

The EMH was developed by Eugene Fama (Fama, 1970). The hypothesis states a market is efficient if all available information is incorporated into the market price at all time. Since future information is unpredictable this means that future stock prices, too, are unpredictable. When news are released investors will start to trade on these and try to find under and overvalued stocks, and due to the modern and sophisticated computer systems this procedure will be very fast. This price-finding behavior leads to investors being unable to make profits larger than what is expected with the associated risk for the specific security, other than by just being lucky. One is thus not supposed to find mispriced securities on an efficient market (Arnold, 2005).

Depending on the definition of "all available information", market efficiency can be divided into three levels: weak-form efficiency, semi strong-form efficiency and strong-form efficiency.

1. **Weak-form Efficiency:** is when all *historical information* in is incorporated into the market price. One can therefore not make a profit that is above the average by using information about past prices, else by luck.

2. **Semi strong-form Efficiency:** is when historical as well as *public information* is incorporated into the market price. So in this form of efficiency one cannot make an above-average profit by using past or public information, other than by luck.

3. **Strong-form Efficiency:** is when both the above types of information, and also *insider information* is incorporated into the price. In the strongest form of efficiency not even inside traders can make an above-average profit other than by luck. This form of efficiency is arguably rather hard to find: for example, many countries have laws prohibiting inside trading.

Fama revisited the EMH in 1991 (Fama, 1991), and then chose to rename the categories (in the order described above) as “tests for return predictability”, “event studies” and “tests for private information”. According to Lo (2008) there is much theoretical and empirical evidence that is both supporting and not supporting the EMH. Despite the advances regarding statistical analysis, databases, and theoretical models surrounding the EMH, this merely has resulted in a strengthen standpoint from both sides.

2.3.3 Net Present Value

According to Damadoran (2002) the NPV is one of the fundamentals of investment analysis in traditional corporate finance. The NPV of a project reflects the present value of expected cash flows on a project, netted against any investment needs. Accordingly, it is a measure of dollar surplus value on the project.

2.4 Related research on Football and Finance

Most of the previous studies concerning football and finance have been focused around the matches. Stadtmann (2006) for example, studied how the stock price of the club Borussia Dortmund changed depending on the team’s performance on the field. The author found that a relationship between games and stock price did exist. Zuber et al (2005) on the contrary, did not find this to be true in their study. They examined the stock prices of two English clubs playing each other and did not find that the outcome of the game had an effect on stock prices. Briem et al (2005) examined how participation in Champions League affects the stock prices of the clubs. They found that regardless if qualification was successful or not, participation had influence on the stock prices.

There have been some studies evaluating the effect of athletes signing contracts with big sponsors. Most of them are however focusing on one particular megastar and no study, as far as we are concerned, are checking whether big football transfers has an effect on the KM. For example Hiestand (2003) studied the impact of Nike stock price when signing basketball player LeBron James in 2003. The day the signing was announced the Nike stock price rose by 0.75 percent, which suggested that investors believed Nike created a profitable strategy. Fizel et al. (2008) evaluated 148 signing announcements of athletic stars in various sports. They found that the average signing contract had an insignificant impact on the market value of that particular firm.

The first article examining football in combination with finance that we read, and the one that got us interested in the combination, is written by Hanke & Kirchler (2010). The

authors studies whether sponsorship of major football tournaments has an effect on the sponsor's market value, and finds that that this indeed is the case. Football results are shown to have an impact on the stock prices of jersey sponsors when examining the seven most important football nations in the European and World Championships. The impact proves to be higher if the match is important and the results are unexpected. Our study departs from this as we measure the effect of football superstars joining a club equipped by one of the listed three KM.

3 Methodology

3.1 Dataset

3.1.1 Football Transfers and Data Gathering

We collect the transfer data from clubs of the top 5 European football leagues. Here we focus only on the top transfers from 1998 to 2010. Considered as a top transfers, are the top 25 transfers listed by http://www.transfermarkt.de and every transfer above EUR 15 million in the years 2008 and 2009. The reasoning behind this is that players that changed clubs for a high transferee are most likely among the best players in the world during our time period and thus have most likely a higher impact on merchandising. However, with our limit of EUR 15 million and due to the limitation to the top 25 transfers per year we miss out some players changing for more than EUR 15 million, especially in the year of 2009. We also miss out all the top stars changing for a low transfer fee due to a short remaining contract period or even no transfer fee at all due to the Bosman case (Fordyce, 2005).

This gives us a total of 202 transfers, of which 139 involves joining clubs of the three KM as seen in the *Appendix Table 1-3*. Out of these transfers 6 of them showed misleading transfer dates, exhibited in *Table 2,* meaning that we either found no valid transfer date or that different sources show contradicting announcement dates. Therefore, we excluded them from the regressions. As 18 of the remaining transfers happened on the exact same date involving 8 different transfer dates with the same kit manufacturers, since the structure of our dataset does

not allow us to control for that, therefore we exclude the transfer with the lower transfer sum from our analysis. Therefore, 8 transfers will not be used for the regressions, as displayed in *Table 3*. Additionally, we excluded manufacturers like Umbro and Reebok, which were bought up by Nike and Adidas, leaving only three KM.

Table 2: Players with Misleading Transfer Dates

Player	KM	Club 2	Transfer Sum
Alessandro Nesta	Adidas	AC Mailand	30500000
Cristiano Ronaldo	Nike	Manchester United	17500000
Hernán Crespo	Nike	Inter Mailand	36000000
Javier Saviola	Nike	FC Barcelona	35900000
Klaas-Jan Huntelaar	Adidas	Real Madrid	27000000
Roman Pavlyuchenko	Puma	Tottenham Hotspur	17400000

Table 3: Double Transfers

Transfer date	KM	Number of transfers
2001-07-02	Adidas	2
2001-07-05	Nike	2
2004-08-31	Nike	2
2005-08-01	Adidas	2
2005-08-31	Adidas	2
2008-09-01	Nike	2
2009-06-26	Adidas	2
2009-07-27	Nike	2
Sum		16

Every KM gets three separate dummy variables, *join_* if a player joined a team with this kit manufacturer*; leave_* if a player left this KM or *within_* if a player changed from a team to another team with the same KM. In this study we however focus only on the join_ and within_ variable.

The exact dates, event dates, when the transfers took place are obtained through several channels. We sent e-mails with a template to be filled in to every join club asking for verification on the transfer date. Since however only five clubs answered which gave us ten confirmed transfers we sent out the e-mails a second time to the missing clubs, which did not

result in any more verifications. Thereafter we went over to other sources. Many event dates were gathered from databases like http://www.soccerbase.com and http://www.fussballtransfers.com. All transfers that took place on "suspicious" dates, e.g. 1st of July, were double checked on the clubs homepages or in known newspapers and changed if needed. The list of players and transfer dates is found in the *Appendix Table 4*.

For the KM we used a similar approach. We also asked the clubs in the e-mails which KMs they had as a supplier under our period of investigation. Five clubs stated their respective KM. For the remaining ones we used pictures of the team shirts of the respective year as the source of information. Websites such as http://www.kicker.de and their equivalents in the five countries were used to obtain the team pictures (Kicker Online, 2010).

We include dummies such as the player's name, which is of no further use in our study, but is there to identify the specific transfer. Another variable is the player's position. We suspect that a midfielder or a forward might have a greater effect on the stock prices than a defender or a goalkeeper, this is reasoned by the fact that forwards and midfielders score more goals and are presented in the media in a more glorified way, further do they show a more spectacular play.

The players change from their 40 different old clubs to 24 new clubs. We distinguish between top clubs, i.e. the top 5 (top10, top6_10) clubs according to the Deloitte money league (Igoe & Mannakee, 2010) and other clubs, which are not among the top 10. For this criterion we only consider the join criteria, thus the new club must be among the top 5 (top10). In a similar way as with the top clubs we control for heroes. This is however more subjective although partly based on a list of France football about the top earners in football (Gray, 2010). Here we list players that we personally consider real superstars, especially from the marketing perspective. The best example for one of our heroes might be David Beckham, who is a trademark himself. With regard to existing event studies on sport sponsorship our data set is very comparable. Most other sponsorship event studies focus on comparable or fewer events; to our knowledge, the sponsorship study of Clark et al. (2009) is the largest one with 114 observations and Hanke & Kirchler (2010) with 162 observations. In total, our data set consists of 125 observations in the category join.

Table 4: Quantities of Variables

Variable	Quantity
JOIN_ALL	125
AGE17_20	18

AGE21_23	46
AGE24_26	70
AGE_27_30	46
GOALKEEPER	2
DEFENDER	21
MIDFIELDER	75
FORWARD	81
TOP_5_CLUB	64
TOP_10_CLUB	100
TOP_6_10_CLUB	36
TRANSFER FEE > 30 MILLION EURO	48
TRANSFER FEE > 25 MILLION EURO	70

3.1.2 Stock Market Data

We acquire daily stock market data adjusted for stock splits and dividends from Thomson Datastream from January 1, 1998 until March 9, 2010. We focus merely on Adidas, Nike and Puma, as they are the only quoted KM football teams in the 5 top leagues, besides UMBRO and Reebok as discussed above. As a benchmark index for each stock, we work with the performance variant of the relevant market index, namely the DAX30 for Adidas, the S&P 500 for Nike and the CDAX for Puma. The indices are also obtained from Thomson Datastream. We do not control specifically for the "red-day" effect. Previous studies have shown that the effect of controlling is far less than 0.1 percent.

3.1.3 Stock Prices and Transfer Dates

To measure the impact of international football transfers on the stock price of the relevant KM, we mainly use the companies' continuously compounded return on the day the transfer took place. In most of the observations the transfer was announced during the day, hence before the close of trading at the relevant stock markets – the Deutsche Börse for Adidas and Puma and the NYSE for Nike. Therefore, the new information on join of sponsored teams will be reflected in the KMs stock prices the day the transfer took place. In some cases, the transfer was announced on a Sunday, then we took the following Monday as the transfer date. Since the NYSE closes at 10 pm central European time (NYSE, 2009) all news from European transfers will be incorporated into the Nike stock the same day.

Four observations had to be changed to the following Monday. Therefore, the company's return of the next trading day was used in 5.5 percent of all observations, while the current day was relevant in the remaining 94.5 percent. While Edmans et al. (2007) only focused on the next trading day following a match; we believe that with our method we are able to better account for the effects of transfers which end most of time before the markets close.

3.2 Panel Regression

To answer our research questions, we begin as a first step by isolating the "abnormal" returns of the stocks in our sample by using the index model (standard OLS). We control for heteroscedasticity with a white period command. Heteroscedasticity according to Verbeek (2008) meaning that there are inappropriate standard errors, i.e. error terms. This leads to the assumption of OLS that a constant error term is being violated, and thus heteroscedasticity is present.

Further, we regress the market return with football related independent variables in a panel regression model. The general idea behind this approach is that stock prices generally mirror the fundamental value (NPV) of the company and (significant) changes in stock price are because of new information about the company. A transfer should affect the value of the stake that a KM holds from the particular club.

In a first step we continuously compound the stock and the market prices after adjusting for splits and dividend payments.

These log returns will be used as the dependent variable:

$$R_{i,t} = \ln\left(\frac{P_{i.t}}{P_{i,t-1}}\right) (1)$$

Where $i \in$ {adi, puma, nike} denotes the ticker symbol and $t = 2, \ldots, T$ the trading day. Returns of the relevant stock indices, which are used as explanatory variables, are computed in the same way.

Equation 2 defines the OLS-equation of step one with $R_{mi,t}$ being the relevant market index return. To account for the possible day-of-the-week effects, we additionally include weekday dummies $\sum_{d=2}^{5} \delta_d \; Weekday_t$ for each day except Monday. The residuals $\varepsilon_{i,t}$ of

stock *i* of equation 2 serve as the dependent variable in all panel regression model with *i* cross-sections and *t* observations over time.

In equation 2 we also combine all manufacturers into one dummy (join), to check for the overall effect on transfers.

$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \sum_{d=2}^{5} \delta_d \; Weekday_t + \beta_1 join_{i,t} + \varepsilon_{i,t} \quad (2)$$

Since we did not find a significant overall impact on the stock prices we continue with equation 3, where we add the join dummy separately for each KM, controlling for the impact of the transfer on each KM.

$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \sum_{d=2}^{5} \delta_d \; Weekday_t \; \beta_1 join\_adi_{i,t} + \beta_2 join\_puma_{i,t} + \beta_3 join\_nike_{i,t} + \varepsilon_{i,t} \quad (3)$$

Although Puma shows an insignificant result, Nike and Adidas however can fulfill both the 5 percent significance criteria. This result convinces us to go on with the separate control variables. The weekday effect has no significant effect in any regression performed, thus we exclude it from further mentioning.

In order to take the scale of the transfer into account we control for "hero" in equation 4, transfers not smaller than EUR 30 million in equation 5 and transfers not smaller than EUR 25 million in equation 6. All variables should generate an above average return if more marketable and more expensive players are more valuable to the KM.

$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \beta_2 join_{i,t} * hero + \varepsilon_{i,t} \quad (4)$$

$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \beta_2 join_{i,t} * 30mio + \varepsilon_{i,t} \quad (5)$$

$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \beta_2 join_{i,t} * 25mio + \varepsilon_{i,t} \quad (6)$$

The importance of the club that buys the player is reflected by equation 7, 8 and 9. We do not suspect an above average result here. From the KMs point of view it should be better to have one star in every team they sponsor. Having five stars at the same team would lead to a

"business stealing" effect. Most supporters would go for only one of the shirts of the stars, so the players divide their shirt sales among one another.

$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \beta_2 join_{i,t} * top5club + \varepsilon_{i,t} \quad (7)$$
$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \beta_2 join_{i,t} * top10club + \varepsilon_{i,t} \quad (8)$$
$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \beta_2 join_{i,t} * top6\_10club + \varepsilon_{i,t} \quad (9)$$

To account for the position effect we use equation 10, here we consider all players that joined and link them to their position on the pitch. As stated in the data part, due to their mere exposure in the media because of the play and amount of scores, midfielders and forwards should have a bigger star (hero) potential and thus a bigger effect on the return than goalkeepers or defenders.

$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \beta_2 join_{i,t} * position_j + \varepsilon_{i,t} \quad (10)$$

j ε {goalkeeper, defender, midfielder, forward}

We suspect that age might have an influence as well. Very young players are not associated as much with other brands, so the KMs have a higher leverage of being exclusively associated with the player. A bit older players however might have reached a higher brand value compared to very young players, thus being more valuable to the KM. We control for the age effect in equation 11.

$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \beta_2 join_{i,t} * age_j + \varepsilon_{i,t} \quad (11)$$

j ε {17-20, 21-23, 24-26, 27-30}

To check if a mere exposure has an extra effect we consider only the transfers that took place between clubs with the same manufacturer in equation 12 and 13. If the mere exposure is given and relevant the return should be above average, since both clubs and the player are related to the particular KM and appear in the media for several days around the transfer and will be mentioned by reporters many times during the season that they changed.

$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \beta_2 join_{i,t} * within + \varepsilon_{i,t} \quad (12)$$

$$R_{i,t} = \alpha + \beta_1 R_{mi,t} + \beta_2 join\_adi_{i,t} * within + \varepsilon_{i,t} \beta_2 join\_nike_{i,t} * within + \varepsilon_{i,t} \quad (13)$$

4 Results

Table 5: Results for Adidas

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	n
JOIN_ADI	0.001703	0.000254	6.709363	0.0000	0.2019	9975
JOIN_ADI_HERO	0.008845	0.000171	51.71986	0.0000	0.2022	9975
JOIN_ADI_30	0.008164	0.000156	52.47928	0.0000	0.2021	9975
JOIN_ADI_25	0.006736	0.000133	50.61896	0.0000	0.2021	9975
JOIN_ADI_TOP5	0.00314	0.000106	29.50658	0.0000	0.2020	9975
JOIN_ADI_TOP10	0.002852	0.000313	9.121249	0.0000	0.2019	9975
JOIN_ADI_TOP6_10	0.00182	0.000937	1.941862	0.0522	0.2019	9975
WITHIN_ADI	0.005276	0.000245	21.52619	0.0000	0.2022	9975

For Adidas we can see the expected result pattern. The total join value is as all others significant at the 5 percent level and with about 0.17 percent daily abnormal return low compared to the other checked parameters for Adidas. The transfer between two Adidas clubs (within_adi) is with 0.53 percent higher as expected from the theory due to a higher exposure of the brand. An even higher return can be observed when “heroes” change to an Adidas club, with an abnormal return of 0.88 percent.

Transfers above EUR 30 million also have a larger impact than all Adidas transfers. The same applies for the transfers larger than EUR 25 million (average transfer sum Adidas, total). Following the same logic, transfers above EUR 30 million show with 0.82 percent a larger value than transfers above EUR 25 million with 0.67 percent.

Transfers to top clubs also show a larger effect than average. Transfers to top 5 clubs show with 0.314 percent a larger impact than changes to top 6-10 clubs with 0.18 percent. A change to a top 10 club results in an abnormal return of 0.285 percent.

Table 6: Results for Puma

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	n
JOIN_PUMA	-0.00131	0.00168	-0.77940	0.43580	0.2019	9975
JOIN_PUMA_HERO	0.02762	0.00070	39.28959	0.00000	0.2022	9975
JOIN_PUMA_30	-0.01124	0.00021	-53.32550	0.00000	0.2021	9975
JOIN_PUMA_25	-0.00844	0.00687	-1.22882	0.21920	0.2021	9975
JOIN_PUMA_TOP10	0.01117	0.00035	31.88103	0.00000	0.2019	9975
JOIN_PUMA_TOP6_10	0.11115	0.00035	32.05264	0.00000	0.2019	9975

Puma shows a negative return of -0.13 percent, which is however not significant. In line with Adidas, the puma hero value is the largest one recorded with a very high 2.76 percent. Both transfers above EUR 30 million and EUR 25 million show a high negative return of -1.12 percent respectively -0.84 percent. This shows the same pattern as for Adidas, just with a negative notation, however the transfers above EUR 30 million show a more severe impact than the ones above EUR 25 million.

The transfers to top 10 clubs show with 1.09 percent a higher effect than the average Puma transfer. Transfers to clubs the lower end of the top ten shows about the same impact as for top 10 clubs, which is expected due to the lack of top 5 transfers.

Table 7: Results for Nike

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	n
JOIN_NIKE	-0.001758	0.000232	-7.57433	0	0.2019	9975
JOIN_NIKE_HERO	-0.005808	8.13E-05	-71.4601	0	0.2022	9975

JOIN_NIKE_30	-0.003108	0.000659	-4.71357	0	0.2021	9975
JOIN_NIKE_25	0.000506	0.000578	0.874067	0.3821	0.2021	9975
JOIN_NIKE_TOP5	-0.000808	0.000263	-3.06892	0.0022	0.2020	9975
JOIN_NIKE_TOP10	-0.002642	0.000276	-9.5748	0	0.2019	9975
JOIN_NIKE_TOP6_10	-0.005003	0.000302	-16.5672	0	0.2019	9975
WITHIN_NIKE	-0.002244	0.000306	-7.32858	0	0.2022	9975

On average the Nike transfers shows a negative abnormal return of -0.176 percent. The hero transfers show again the highest value with -0.58 percent, although with a negative prefix.

The transfers above EUR 30 million and EUR 25 million show again the known pattern, -0.311 percent is lower than the hero value, but shows more impact than the transfers above EUR 25 million with a value close to 0 (0.005 percent) and also is not significant.

Again the top 5 transfers show with -0.081 percent a lower (negative) return than the top 10 transfers with -0.2642 percent. Transfers at the lower end of the top clubs show an effect of -0.5 percent. A change between two Nike clubs results in an above average negative abnormal return of 0.224 percent.

Table 8: Age for Adidas

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	n
JOIN_ADI_17_21	0.002490	0.000151	16.50579	0.0000	0.2019	9975
JOIN_ADI_22_24	0.000446	9.50E-05	4.696063	0.0000	0.2019	9975
JOIN_ADI_25_27	0.003218	6.77E-05	47.56047	0.0000	0.2019	9975
JOIN_ADI_28_30	0.000268	0.000874	0.306999	0.7589	0.2019	9975

For Adidas we see the strongest effect (0.32 percent) for players in the age of 25 to 27, followed by the age group from 17 to 21 with an abnormal return of 0.25 percent. Players from 22 to 24 show a rather weak impact of 0.045 percent. For players above 28 years we do not see a significant result.

Table 9: Age for Puma

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	n
JOIN_PUMA_17_21	-0.004273	0.000717	-5.961922	0.0000	0.2019	9975
JOIN_PUMA_22_24	0.003470	0.000161	21.59850	0.0000	0.2019	9975
JOIN_PUMA_25_27	-0.003157	0.000300	-10.51272	0.0000	0.2019	9975

JOIN_PUMA_28_30	-0.005670	0.011677	-0.485588	0.6273	0.2019	9975

For Puma we see the most positive effect (0.35 percent) for players in the age of 22 to 24. We see a strong negative result for the age group from 17 to 21 with an abnormal return of -0.43 percent followed by players between 25 and 27 with a negative impact of -0.32 percent. For players above 28 years we do not see a significant result.

Table 10: Age for Nike

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	n
JOIN_NIKE_17_21	0.007012	0.000306	22.88617	0.0000	0.2022	9975
JOIN_NIKE_22_24	-0.004352	0.000283	-15.39350	0.0000	0.2022	9975
JOIN_NIKE_25_27	-0.006975	0.000203	-34.31305	0.0000	0.2022	9975
JOIN_NIKE_28_30	0.002143	0.000107	20.05104	0.0000	0.2022	9975

For Nike we see the strongest positive effect (0.7 percent) for players in the age of 17 to 21, followed by players above 28 from with an abnormal return of 0.25 percent. Players from 22 to 24 show a negative impact of -0.44 percent. For players above between 25 and 27 we notice an even more negative impact of 0.7 percent.

Table 11: Position for Adidas

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	n
JOIN_ADI_DEF	0.000706	7.26E-05	9.724798	0.0000	0.2020	9975
JOIN_ADI_MID	0.005050	0.000113	44.56539	0.0000	0.2020	9975
JOIN_ADI_FOR	-0.001043	0.000272	-3.829691	0.0001	0.2020	9975

For Adidas the midfielders contribute the most positive effect with an abnormal return of 0.51 percent, followed by the defenders with 0.07 percent. Forwards however show a negative abnormal return of -0.1 percent.

Table 12: Position for Puma

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	n
JOIN_PUMA_DEF	-0.022488	0.000167	-134.5762	0.0000	0.2022	9975

JOIN_PUMA_MID	-0.018515	0.000360	-51.44125	0.0000	0.2022	9975
JOIN_PUMA_FOR	0.004902	0.001695	2.892253	0.0038	0.2022	9975

For Puma the defenders contribute the most negative effect with an abnormal return of -0.22 percent, followed by the midfielders with -0.19 percent. Forwards however show a positive abnormal return of 0.49 percent.

Table 13: Position Nike

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R^2	n
JOIN_NIKE_DEF	0.006365	0.000127	50.18727	0.0000	0.2021	9975
JOIN_NIKE_MID	-0.000588	0.000166	-3.540645	0.0004	0.2021	9975
JOIN_NIKE_FOR	-0.006059	7.33E-05	-82.71949	0.0000	0.2021	9975

For Nike the forwards contribute the most positive effect with an abnormal return of -0.61 percent, followed by the midfielders with 0.06 percent. Defenders however show a negative abnormal return of -0.1 percent.

5 Analysis

The EMH states that all available information is incorporated in the current stock price at any time. This implies that all news, either good or bad will influence the stock price due to its effects on the companies' value. The aggregate result, i.e. all join transfers together do not show any significant effect at all. After breaking down the results of this thesis to company level the results, however, seem to be in line with the EMH on a semi-strong efficiency level since we see a significant effect for nearly all control variables. It appears as if superstars do have a large enough effect on the brand, shirt sales and other products to actually affect the companies' sales to actually affect their NPV. For Adidas these effects are mainly positive, for Nike they are mainly negative. Puma shows both positive and negative correlations to the transfers. Therefore the EMH does not only seem to work in theory but also in this empirical study.

Comparing to related research other papers, such as Hiestand (2008) have conducted event studies of signed sponsorship deals with superstars and relate them to the stock market returns of the signing company. Their results seem to be in line with our results, at least for Adidas, since additional superstars representation seems to be beneficial for the stock market value.

The paper closest to our thesis is from Hanke & Kirchler (2010) about the effects of football results on world cups and European championships on the KMs. Their result is aligned with ours; certain events can affect the stock market value of these companies. For their part they find that losses, especially unexpected losses of a team can lead to significantly abnormal returns. This can be an interpretation of the negative values for Nike, meaning that the transfers made are not necessarily valuable to the brand and company. The reasons for that however cannot be determined from the data set.

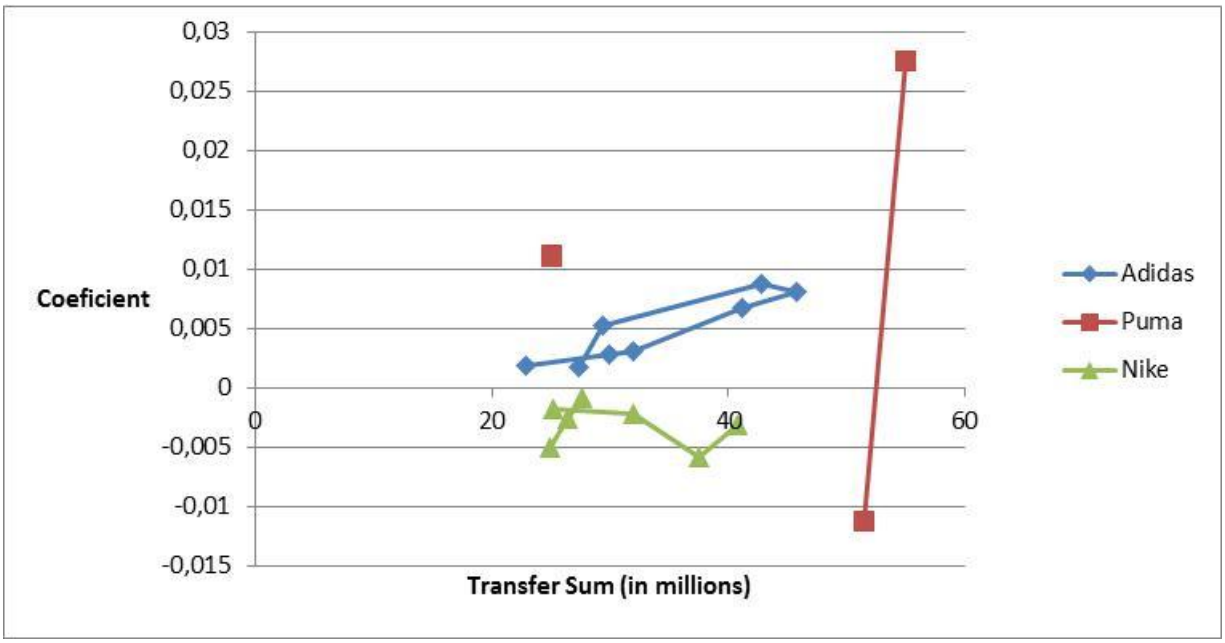
5.1 Discussion of the Results

For Adidas transfers of superstar players look to be beneficial in aggregate, for Nike it seems to be the exact opposite, the stock market seems to punish those kinds of activities on the

transfer market. Puma did not show a significant overall result. Within transfers appear to have a stronger effect than the average transfer, meaning a more positive one for Adidas and a more negative one for Nike. This however strengthens our assumption from the beginning that there is a mere exposure effect for player changing between teams equipped by the same KM.

We observe a similar pattern for the hero transfers. It seems that those transfers show the largest impact on the stock market value. For Adidas and Puma this effect is positive, although Puma's coefficient results from only one transfer, thus lacking reliability. When checking for the effect of the transfer sum, EUR 30 million transfers seem to lead to a higher abnormal return value than average and EUR 25 million transfers, thus indicating a certain importance of the transfer value in relation to the coefficient. Transfers to top 5 teams seem to be generally better for the stock value than changes to other teams, meaning both average and top 10 and top 6 to 10 teams.

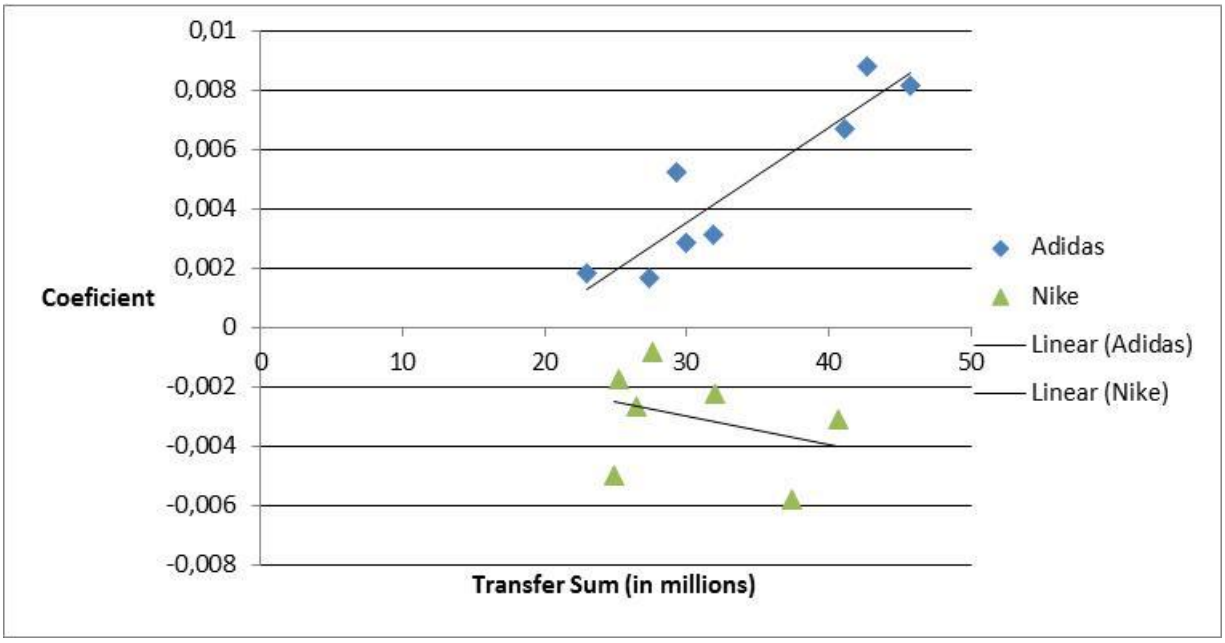
Figure 1: Transfer Sum and Abnormal Return 1



We see from the results of the EUR 30 million plus transfers that the transfer sum seems to have an effect on the abnormal return. Therefore we analyze the results graphically, having the transfer sum on the X-Axis and the significant coefficients on the Y-Axis.

As we can see in *Figure 1*, for Puma the result seems to be very non-telling due to the low number of transfers in the dataset and the therefore low number of significant data points in the graph. We therefore exclude Puma from our further graphical analysis and proceed with *Figure 2*.

Figure 2 Transfer Sum and Abnormal Return 2



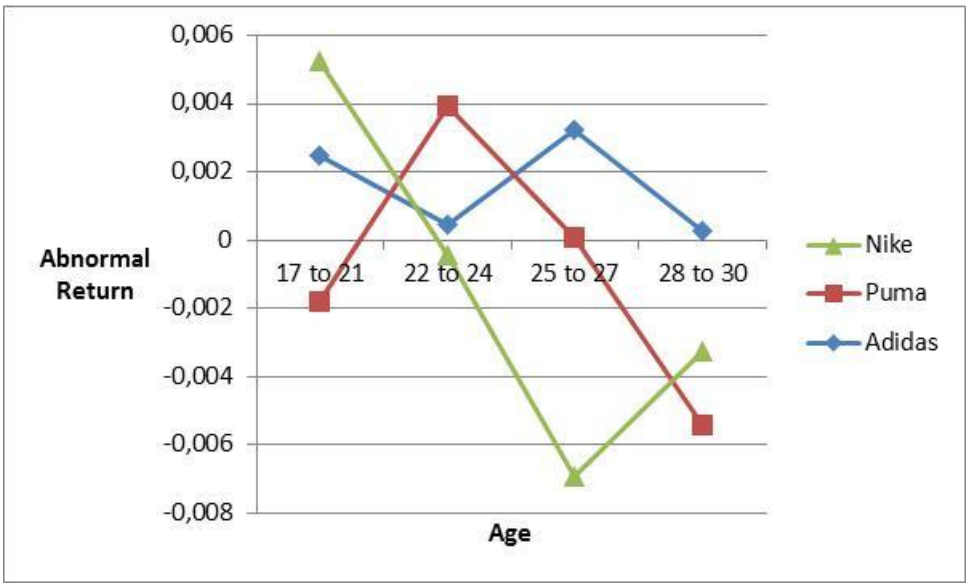
In *Figure 2* we can see a clear correlation of abnormal return with transfer sum for Adidas. Two values however seem to deviate from the trend line, namely the within and the hero transfers. Both shows a higher than expected abnormal return for their average transfer sum. This indicates that transfers of the biggest superstars are more valuable than others and that there exists a mere exposure effect when a player changes from an Adidas team to another.

For Nike we see a near mirror image of what we have observed for Adidas. Here we see a negative correlation with the transfer sum. It looks like as if large transfers harm the company more than they actually help. One explanation might be that Nike only focuses on the top 2 teams of every country. Those teams usually already have a very good team with many expensive players and Stars. Adding another Star will neither increase the popularity of the club nor lead to much higher revenues since the stars in the team "cannibalize" the shirt sales. Another explanation might be that Nike is not as dependent on football as Adidas. Nike as a US brand is more active on the American market where football is not the primary sport. The market might regard more engagement and expenses by Nike on football as negative. As for Adidas some values deviate from the trend line, namely hero transfers, which are more

negative, transfers to top 5 clubs which deviate positively and transfers to top 6-10 clubs, which is more negative than the expected abnormal return from the transfer sum alone.

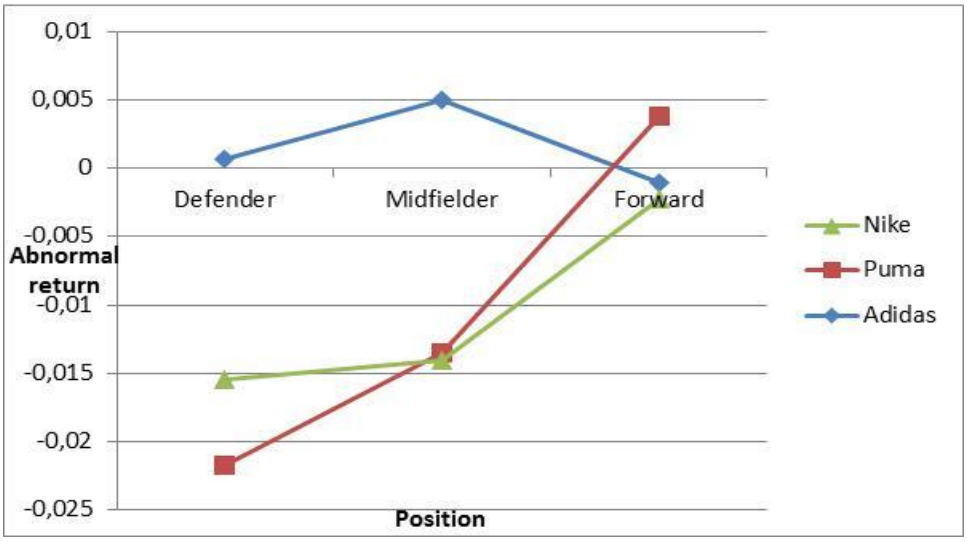
When we are looking at the transfers sorted by the 4 age groups (see *Figure 3*), namely from 17 to 21, 22 to 24, 25 to 27 and 28 to 30 years we cannot see a consistent pattern. Therefore we conclude that age is of no major influence to the abnormal return.

Figure 3: Abnormal Returns by Age



When we look at the transfers by position in *Figure 4* we can see that Puma and Nike show a very similar pattern for the returns of defenders, midfielders and forwards. Adidas only has in common with the other two KM that midfielders show a higher absolute return than defenders do. Forwards however seem to show a lower effect than defenders, this is the exact opposite for Puma and Nike.

Figure 4: Abnormal Return by Position



5.2 A Comment on the t-values

In some of the regressions that we have conducted we can observe noticeably high t-values (approximately 50), which as a consequence makes it problematical to discuss the results in a causality manner. We will in this section briefly discuss possible reasons for this.

Our primary belief is that there may exist endogeniety, and a second explanation may be that there are trends in the data e.g. that both the return and the transfer sums are increasing over time and influences our coefficients to a large degree. If endogeniety is the problem we believe this could be solved by, for instance, relating the transfer sum to another variable. However, if trends in the data are the problem a possible solution could be to reformulate the variables in order to avoid upward trends. One way of doing this could be by looking at the relative transfer sum of the total transfer sums of each year instead of looking at merely the transfer sum.

Additionally, we do not believe we have any problem with heteroscedasticity as we have controlled for this using the white period command and the Durbin-Watson test is close to 2 for each regression which gives no indication of autocorrelation. Potential problems with heteroscedasticity are therefore most likely insignificant.

6 Conclusion

In this thesis we have examined if a player transfer in the top 5 European football leagues affect the stock price of KMs, focusing on three KMs and the top 25 transfers for each year over the period of 1998-2010. The limitations resulted in a total of 202 observations, where 125 observations are included in the category join, and thus being included in our dataset. We also appear to be aligned with Hanke & Kirchler (2010) when it comes to certain events that can affect the stock market value of the KMs. In their case unexpected looses of a match can lead significantly abnormal returns while we can interpret the negative values for Nike meaning that transfers made are not necessarily valuable to the brand and the company.

Returning to the research questions as stated in the first section:

1. Does the transfer of a player (all of the players in our dataset) to a club in the top 5 European football leagues affect the KMs stock price?

The aggregate result, which includes all join transfers, lacks any significant effect. Thus we can on an aggregated level conclude that a player transfer does not have any effect on KMs stock price. This is not in line with the semi-strong form of EMH. However, if we consider the KMs independently we observe a significant effect, although not economically significant, for almost all of the control variables so the effect is different for the different companies. Moreover, this implies that on a company level the results are corresponding to EMH on a semi-strong efficiency level. When we tested for the effect of the transfer sum we found that EUR 30 million transfers seem to lead to a higher abnormal return than what the EUR 25

million transfers did. This gives an indication of the transfer value being of importance for the results. This effect also applied to EUR 30 million plus transfers. For Adidas there is a noticeable correlation between abnormal return with transfer sum, except for two transfers, one within and one transfer that deviates by showing a higher abnormal return. The correlation is an indication of that transfers of the biggest superstars are more valuable than others and thus affect the brand value more. This supports the findings of Hiestand (2003) who found a significant increase in the stock price of Nike after LeBron James has signed his Nike endorsement. Furthermore, we notice a "mere exposure effect" when a player changes from one Adidas team to another (WITHIN_ADIDAS), which supports the findings of Hanke and Kirchler (2010). For Nike the opposite applies, the correlation is negative with the transfer sum. Nike focuses on the top 2 teams of every country, which usually have several superstars, might explain this and adding more stars will only cannibalize shirt sales. Another reason could be due to that Nike, which is a US brand, is not as dependent on football as Adidas.

Regarding the hero effect we observe a mostly positive effect for Adidas, a mainly negative effect for Nike and both a positive and negative correlation to the transfers for Puma, The latter however can be misleading due to their small sample size. Hence, it appears as if football superstars actually do possess a hero effect i.e. have an affect large enough to affect the KMs stock price through increasing sales by increasing jersey sales and publicity. The hero transfers show the largest impact on the stock market value of all the transfers.

Furthermore, a transfer from a top 5 team appears to be better for the stock value, in general, than transfers to other teams. This applies to average, top 10 and top 6-10 teams. Finally, we found no effect when it comes to different ages of the players.

2. Does KM stock price react positively to the mere exposure if transfers take place between clubs with the same KM?

One argument that strengthens our assumption regarding the second research question is that the within transfers appear to have a stronger effect than the average transfer. There is a more positive one for Adidas and a more negative one for Nike.

6.1 Further Research

In our study we included Adidas, Nike and Puma as KMs. Adidas and Nike have different customer targets as Nike is a U.S. brand, thus being more active on the American market, where football is not the largest sport. Adidas on the other hand is more dependent on football

as it is their primary sport and therefore the differences in response to transfer sums we observed might be due to this. We propose further research, conducting the same study, on a market where the differences are less observable, for an example American football. Another suggestion is repeating the same study again and also look at the effect of leaving a team in the player transfer; this may reveal interesting results as we focused solely on joining a team.

As a final remark we encourage to look at section *5.2 A Comment on the t-values* if a similar type of study is attempted.

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Appendix

Table 1: Quantity and Transfer Sum for Adidas

Variable	Quantity	Average Transfer Sum
JOIN_ADI	60	27.351.666
WITHIN_ADI	13	29.342.307
JOIN_ADI_HERO	12	42.750.000
JOIN_ADI_30	17	45.752.941
JOIN_ADI_25	22	41.172.727
JOIN_ADI_TOP5	30	31.947.222
JOIN_ADI_TOP10	46	29.991.304
JOIN_ADI_TOP6_10	10	22.950.000

Table 2: Quantity and Transfer Sum for Puma

Variable	Quantity	Average Transfer Sum
JOIN_PUMA	11	27.054.545
JOIN_PUMA_HERO	1	55.000.000
JOIN_PUMA_30	2	51.500.000
JOIN_PUMA_25	4	38.437.500
JOIN_PUMA_TOP10	1	25.000.000
JOIN_PUMA_TOP6_10	1	25.000.000

Table 3: Quantity and Transfer Sum for Nike

Variable	Quantity	Average Transfer Sum
JOIN_NIKE	54	25.218.519
WITHIN_NIKE	10	32.005.000
JOIN_NIKE_HERO	6	37.441.666
JOIN_NIKE_30	12	40.729.166

JOIN_NIKE_25	22	34.043.181
JOIN_NIKE_TOP5	18	27.630.555
JOIN_NIKE_TOP10	32	26.437.500
JOIN_NIKE_TOP6_10	14	24.903.571

Table 4: List of Players and Transfer Dates

Name	KM	Club2	Transfer Sum	Transfer Date
Adriano	Nike	Inter Mailand	30000000	2004-01-20
Afonso Alves	Adidas	FC Middlesbrough	17000000	2008-01-31
Albert Luque	Adidas	Newcastle United	20000000	2005-08-26
Alberto Aquilani	Adidas	FC Liverpool	20000000	2009-08-07
Alberto Gilardino	Adidas	AC Mailand	24000000	2005-07-18
Alessandro Nesta	Adidas	AC Mailand	30500000	2002-08-31
Alexander Hleb	Nike	FC Arsenal	15000000	2005-06-27
Amauri	Nike	Juventus Turin	22800000	2008-05-30
Amoroso	Nike	Borussia Dortmund	25000000	2001-07-04
Anderson	Nike	Manchester United	31500000	2007-05-31
André Gignac	Adidas	Olypique Marseille	16000000	2010-08-20
Andrea Pirlo	Adidas	AC Mailand	17500000	2001-07-02
Andrey Arshavin	Nike	FC Arsenal	16500000	2009-02-02
Andriy Shevchenko	Adidas	FC Chelsea	46000000	2006-05-31
Angel di Maria	Adidas	Real Madrid	25000000	2010-06-28
Arjen Robben	Adidas	FC Bayern München	24000000	2009-08-28
Arjen Robben	Adidas	Real Madrid	36000000	2007-08-23
Christian Vieri	Nike	Inter Mailand	45000000	1999-06-08
Clarence Seedorf	Nike	Inter Mailand	24500000	2000-01-04
Cristiano Ronaldo	Adidas	Real Madrid	94000000	2009-06-26
Cristiano Ronaldo	Nike	Manchester United	17500000	2003-08-12
Damien Duff	Adidas	Newcastle United	15500000	2006-07-22
Dani Alves	Nike	FC Barcelona	41500000	2008-06-09
Darren Bent	Puma	Tottenham Hotspur	24750000	2007-06-29
David Beckham	Adidas	Real Madrid	37500000	2003-07-02
David Bentley	Puma	Tottenham Hotspur	22000000	2008-07-30
David Villa	Nike	FC Barcelona	40000000	2010-05-19

Deco	Nike	FC Barcelona	21000000	2004-07-06
Diego	Adidas	VFL Wolfsburg	15500000	2010-08-26
Diego	Nike	Juventus Turin	24500000	2009-05-26
Diego Forlán	Nike	Atletico Madrid	21000000	2007-06-30
Diego Milito	Nike	Inter Mailand	25000000	2009-06-29
Dimitar Berbatov	Puma	Tottenham Hotspur	15700000	2006-05-17
Dimitar Berbatov	Nike	Manchester United	38000000	2008-09-01
Dirk Kuyt	Adidas	FC Liverpool	18000000	2006-08-18
Dmytro Chygrynskiy	Nike	FC Barcelona	25000000	2009-08-26
Eduardo	Nike	FC Arsenal	15000000	2007-07-03
Émerson	Nike	Juventus Turin	28000000	2004-07-31
Éver Banega	Nike	FC Valencia	18000000	2008-01-03
Fabio Cannavaro	Nike	Inter Mailand	23000000	2002-08-07
Felipe Melo	Nike	Juventus Turin	25000000	2009-07-15
Fernando Gago	Adidas	Real Madrid	20500000	2006-12-22
Fernando Torres	Adidas	FC Liverpool	38000000	2007-07-04
Filippo Inzaghi	Adidas	AC Mailand	40900000	2001-07-02
Florent Malouda	Adidas	FC Chelsea	19000000	2007-07-10
Francesco Toldo	Nike	Inter Mailand	26500000	2001-07-05
Franck Ribéry	Adidas	FC Bayern München	25000000	2007-06-07
Gabriel Milito	Nike	FC Barcelona	20000000	2007-06-19
Gaizka Mendieta	Puma	Lazio Rom	48000000	2001-07-19
Glen Johnson	Adidas	FC Liverpool	20500000	2009-06-26
Hernán Crespo	Puma	Lazio Rom	55000000	2000-07-11
Hernán Crespo	Nike	Inter Mailand	36000000	2002-09-01
Iván Córdoba	Nike	Inter Mailand	16000000	2000-01-01
Jaap Stam	Puma	Lazio Rom	25750000	2001-08-27
Javier Mascherano	Adidas	FC Liverpool	22500000	2007-01-31
Javier Mascherano	Nike	FC Barcelona	20000000	2010-08-27
Javier Saviola	Nike	FC Barcelona	35900000	2001-07-18
Jermain Defoe	Puma	Tottenham Hotspur	16400000	2009-01-06
Joaquín	Nike	FC Valencia	25000000	2006-08-28
Johann Gourcuff	Adidas	Olypique Lyon	22500000	2010-08-24
John Obi Mikel	Adidas	FC Chelsea	23600000	2006-06-03

Jonathan Woodgate	Adidas	Real Madrid	18300000	2004-08-20
José Antonio Reyes	Nike	FC Arsenal	35000000	2004-01-28
José Bosingwa	Adidas	FC Chelsea	20500000	2008-05-12
José Marí	Adidas	AC Mailand	19000000	2000-12-18
Julio Baptista	Adidas	Real Madrid	20000000	2005-08-01
Kaká	Adidas	Real Madrid	65000000	2009-06-09
Karim Benzema	Adidas	Real Madrid	35000000	2009-07-10
Klaas-Jan Huntelaar	Adidas	Real Madrid	27000000	2008-12-02
Lassana Diarra	Adidas	Real Madrid	20000000	2008-12-22
Leonardo Bonucci	Nike	Juventus Turin	15500000	2010-07-01
Loic Rémy	Adidas	Olypique Marseille	15500000	2010-08-19
Louis Saha	Nike	Manchester United	17500000	2004-01-23
Lucho González	Adidas	Olympique Marseille	18000000	2009-07-30
Luís Figo	Adidas	Real Madrid	60000000	2000-07-24
Luis Valencia	Nike	Manchester United	18900000	2009-06-30
Luka Modric	Puma	Tottenham Hotspur	21000000	2008-04-29
Mahamadou Diarra	Adidas	Real Madrid	26000000	2006-08-22
Manuel Fernandes	Nike	FC Valencia	15000000	2007-08-27
Marc Overmars	Nike	FC Barcelona	40000000	2000-07-28
Mario Gomez	Adidas	FC Bayern München	30000000	2009-05-26
Martín Cáceres	Nike	FC Barcelona	16500000	2008-06-04
Mauro Zárate	Puma	Lazio Rom	20000000	2008-12-18
Mesut Özil	Adidas	Real Madrid	18000000	2010-08-17
Michael Carrick	Nike	Manchester United	27200000	2006-07-31
Michael Owen	Adidas	Newcastle United	25000000	2005-08-31
Milos Krasic	Nike	Juventus Turin	15000000	2010-08-21
Miroslav Klose	Adidas	FC Bayern München	15000000	2007-06-26
Nani	Nike	Manchester United	25500000	2007-06-06
Nicolás Anelka	Adidas	FC Chelsea	19900000	2008-01-11
Nicolás Anelka	Adidas	Real Madrid	35000000	1999-08-02
Nicolás Anelka	Nike	FC Paris St. Germain	34500000	2000-06-22
Obafemi Martins	Adidas	Newcastle United	15000000	2006-08-24
Owen Hargreaves	Nike	Manchester United	25000000	2007-05-31
Pablo Aimar	Nike	FC Valencia	21250000	2001-01-31

Pato	Adidas	AC Mailand	20000000	2007-06-01
Patrick Vieira	Nike	Juventus Turin	20000000	2005-07-15
Pepe	Adidas	Real Madrid	30000000	2007-11-06
Philippe Christanval	Nike	FC Barcelona	17000000	2001-06-27
Ramires	Adidas	FC Chelsea	22000000	2010-08-05
Ricardo Oliveira	Adidas	AC Mailand	15000000	2006-08-31
Ricardo Quaresma	Nike	Inter Mailand	24600000	2008-09-01
Rio Ferdinand	Nike	Leeds United	26000000	2000-11-25
Rio Ferdinand	Nike	Manchester United	46000000	2002-07-22
Robbie Fowler	Nike	Leeds United	16800000	2001-11-29
Robbie Keane	Adidas	FC Liverpool	24000000	2008-07-28
Robbie Keane	Puma	Tottenham Hotspur	16700000	2008-07-28
Robinho	Adidas	AC Mailand	18000000	2010-08-31
Robinho	Adidas	Real Madrid	24000000	2005-08-01
Roman Pavlyuchenko	Puma	Tottenham Hotspur	17400000	2008-08-30
Ronaldinho	Adidas	AC Mailand	21000000	2008-07-16
Ronaldinho	Nike	FC Barcelona	32250000	2003-07-19
Ronaldo	Adidas	Real Madrid	45000000	2002-09-02
Roy Makaay	Adidas	FC Bayern München	19750000	2003-08-05
Rui Costa	Adidas	AC Mailand	42000000	2001-07-04
Ruud van Nistelrooy	Adidas	Real Madrid	15000000	2006-07-28
Ryan Babel	Adidas	FC Liverpool	17250000	2007-07-13
Samir Nasri	Nike	FC Arsenal	16000000	2008-07-11
Samuel Eto'o	Nike	FC Barcelona	27000000	2004-08-12
Samuel Eto'o	Nike	Inter Mailand	20000000	2009-07-27
Sergio Agüero	Nike	Atletico Madrid	21700000	2006-06-05
Sérgio Conceição	Nike	Inter Mailand	22500000	2001-07-05
Sergio Ramos	Adidas	Real Madrid	27500000	2005-08-31
Sergiy Rebrov	Adidas	Tottenham Hotspur	18000000	2000-06-01
Simão	Nike	Atletico Madrid	20000000	2007-07-26
Sylvain Wiltord	Nike	FC Arsenal	17500000	2000-08-26
Thierry Henry	Nike	FC Arsenal	16100000	1999-08-03
Thierry Henry	Nike	FC Barcelona	24000000	2007-06-25
Tore André Flo	Nike	Glasgow Rangers	18000000	2000-11-23

Wálter Samuel	Adidas	Real Madrid	23000000	2004-05-24
Wálter Samuel	Nike	Inter Mailand	18000000	2005-08-01
Wayne Rooney	Nike	Manchester United	37000000	2004-08-31
Wesley Sneijder	Adidas	Real Madrid	27000000	2007-08-13
Xabi Alonso	Adidas	Real Madrid	35400000	2009-08-05
Yuri Zhirkov	Adidas	FC Chelsea	21000000	2009-07-06
Zinedine Zidane	Adidas	Real Madrid	73500000	2001-07-09
Zlatan Ibrahimovic	Nike	FC Barcelona	69500000	2009-07-27
Zlatan Ibrahimovic	Nike	Inter Mailand	24800000	2006-08-10
Zlatan Ibrahimovic	Nike	Juventus Turin	16000000	2004-08-31

Table 5: Control Variables Explained

Control variable	Explanation
JOIN_ADI	a player is transferred to a team equipped by Adidas
JOIN_PUMA	a player is transferred to a team equipped by Puma
JOIN_NIKE	a player is transferred to a team equipped by Nike
WITHIN_ADI	a player is transferred from a team equipped by Adidas to another Adidas team
WITHIN_NIKE	a player is transferred from a team equipped by Nike to another Nike team
JOIN_ADI_HERO	a player with hero status is transferred to a team equipped by Adidas
JOIN_PUMA_HERO	a player with hero status is transferred to a team equipped by Puma
JOIN_NIKE_HERO	a player with hero status is transferred to a team equipped by Nike
JOIN_ADI_30	a player with is transferred for more than 30 million euro to a team equipped by Adidas
JOIN_PUMA_30	a player with is transferred for more than 30 million euro to a team equipped by Puma
JOIN_NIKE_30	a player with is transferred for more than 30 million euro to a team equipped by Nike
JOIN_ADI_25	a player with is transferred for more than 25 million euro to a team equipped by Adidas
JOIN_PUMA_25	a player with is transferred for more than 25 million euro to a team equipped by Puma

JOIN_NIKE_25	a player with is transferred for more than 25 million euro to a team equipped by Nike
JOIN_ADI_TOP5	a player with is transferred to a top 5 club equipped by Adidas
JOIN_NIKE_TOP5	a player with is transferred to a top 5 club equipped by Nike
JOIN_ADI_TOP10	a player with is transferred to a top 10 club equipped by Adidas
JOIN_PUMA_TOP10	a player with is transferred to a top 10 club equipped by Puma
JOIN_NIKE_TOP10	a player with is transferred to a top 10 club equipped by Nike
JOIN_ADI_TOP6_10	a player with is transferred to a top 6_10 club equipped by Adidas
JOIN_PUMA_TOP6_10	a player with is transferred to a top 6_10 club equipped by Puma
JOIN_NIKE_TOP6_10	a player with is transferred to a top 6_10 club equipped by Nike
JOIN_ADI_AGE17_20	a player in the age between 17 and 20 is transferred to a team equipped by Adidas
JOIN_ADI_AGE21_23	a player in the age between 21 and 23 is transferred to a team equipped by Adidas
JOIN_ADI_AGE24_26	a player in the age between 24 and 26 is transferred to a team equipped by Adidas
JOIN_ADI_AGE_27_30	a player in the age between 27 and 30 is transferred to a team equipped by Adidas
JOIN_PUMA_AGE17_20	a player in the age between 17 and 20 is transferred to a team equipped by Puma
JOIN_PUMA_AGE21_23	a player in the age between 21 and 23 is transferred to a team equipped by Puma
JOIN_PUMA_AGE24_26	a player in the age between 24 and 26 is transferred to a team equipped by Puma
JOIN_PUMA_AGE_27_30	a player in the age between 27 and 30 is transferred to a team equipped by Puma
JOIN_NIKE_AGE17_20	a player in the age between 17 and 20 is transferred to a team equipped by Nike
JOIN_NIKE_AGE21_23	a player in the age between 21 and 23 is transferred to a team equipped by Nike
JOIN_NIKE_AGE24_26	a player in the age between 24 and 26 is transferred to a team equipped by Nike
JOIN_NIKE_AGE_27_30	a player in the age between 27 and 30 is transferred to a team equipped by Nike

JOIN_ADI_GK	a goalkeeper is transferred to a team equipped by Adidas
JOIN_ADI_DEF	a defender is transferred to a team equipped by Adidas
JOIN_ADI_MID	a midfielder is transferred to a team equipped by Adidas
JOIN_ADI_FOR	a forward is transferred to a team equipped by Adidas
JOIN_NIKE_GK	a goalkeeper is transferred to a team equipped by Nike
JOIN_NIKE_DEF	a defender is transferred to a team equipped by Nike
JOIN_NIKE_MID	a midfielder is transferred to a team equipped by Nike
JOIN_NIKE_FOR	a forward is transferred to a team equipped by Nike

Table 6: Change From Old Club to New Club

Old club	New Club
Atletico Madrid	AC Mailand
AC Mailand	Atletico Madrid
Atletico Madrid	Borussia Dortmund
Ajax Amsterdam	FC Arsenal
AS Bari	FC Barcelona
Bayer 04 Leverkusen	FC Bayern München
Benfica Lissabon	FC Chelsea
Bordeaux	FC Liverpool
Club Atlético Boca Juniors	FC Middlesbrough
Club Atlético River Plate	FC Paris St. Germain
FC Arsenal	FC Valencia
FC Barcelona	Inter Mailand
FC Chelsea	Juventus Turin
FC Fulham	Lazio Rom
FC Liverpool	Leeds United
FC Middlesbrough	Manchester City
FC Paris St. Germain	Manchester United
FC Porto	Newcastle United
FC Tolouse	Olypique Lyon
FC Valencia	Olypique Marseille
HSV	Real Madrid
Inter Mailand	Rubin Kazan
Juventus Turin	Tottenham Hotspur

Lazio Rom	VFL Wolfsburg
Leeds United	
Manchester City	
Manchester United	
marseille	
Newcastle United	
OGC Nice	
Olympique Marseille	
PSV Eindhoven	
RC Lens	
Real Madrid	
Tottenham Hotspur	
TSG Hoffenheim	
Werder Bremen	
VfB Stuttgart	
ZSKA Moskau	