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Human resources turnover as an asset acquisition and divesture process: Evidence from the European football industry

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Abstract

This paper provides insights into the effect of human resources turnover in the football industry. An event study is employed using daily panel data on player transfer announcements for listed football clubs in Europe. The results show that player sale announcements are associated with positive abnormal returns, whereas no significant returns are associated with acquisition announcements. In a regression model of the CARs, a variable is created that measures the premium included in transfers based on player valuations provided by Transfermarkt. The premium is highly significant in the sales CAR regression that includes year fixed effects, although significance decreases when control variables are added to the regression model. These findings mildly support the claim that the observed abnormal returns are the consequence of a premium/discount included in the transfer, instead of acquisitions or sales in general.

Keywords: Asset acquisition and divestiture, football industry, human resource turnover

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1. Introduction

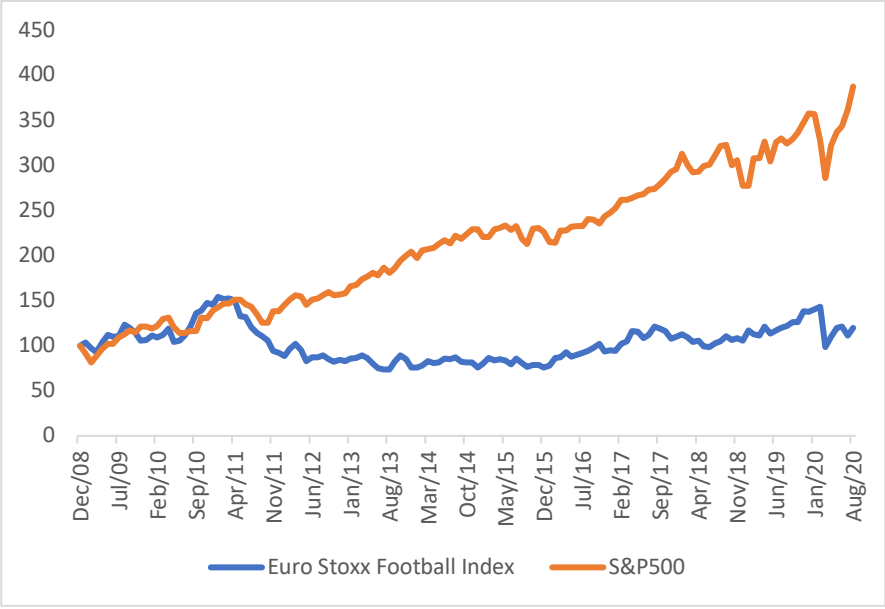
Amsterdam based football club Ajax received fierce criticism from British Author Simon Kuper regarding their transfer policy in 2017. He blamed the club AFC Ajax for having an outdated policy. Some of the players that led the club to international successes in 1995, now comprise the daily management of the club. As Kuper criticises, the club's transfer policy revolves around a comparison to salaries back in the time they were standing on the field. The board carries the opinion of being able to achieve successes without the need for extraordinary salaries. Therefore, so should the current generation. The club disposes of own funds that far exceed funds of any other club in the competition. By leveraging their advantage of extra funds to increase salaries, the club can maintain and attract some star players who may assure a yearly qualification for the Champion league. Participating in the Champions league is associated with substantial extra income, potentially outweighing the extra costs of higher salaries. A player at Ajax could make a maximum of one million euros per year at the time. Nevertheless, shortly after the column was written, Ajax got approval from the board to increase their player salaries budget. It allowed for incoming player transfers in the 2018/2019 season, with some of them receiving wages of up to four times their former budgeted maximum salary. Where Ajax had missed out on the league championship four times in a row since 2014, they ended top of their league in every season following its revised transfer policy.

Ajax is an example of a European football club listed on the stock market and there are many others. The North London based football club Tottenham Hotspur was the first football club to offer their shares to the public. In the wake of Tottenham Hotspur's IPO, many other football clubs followed. The fundraising method gained popularity in the British football industry in particular. Since Tottenham offered their shares to the public, 23 British clubs were identified that have been listed on various stock exchanges over the years. It took time for other European countries to follow as regulatory changes were necessary for clubs that preferred this method of raising funds. Among the so-called elite championships, the top five football competitions in Europe, this was the case for Spain in 2002 and France in 2006. The French had legislation which prohibited IPOs for sport corporations. After a clear indication by the European Commission that any prohibition would be a barrier to the free movement of capital, the Sports Code was amended and the French club Olympique Lyonnais was listed in 2007.

Though for fans looking to buy a share in their favourite club, most football clubs witnessed a delisting of their shares in periods shortly after. This indicates that public markets may not be suited for Football clubs after all. Baur and McKeating (2011) analyzed the effect of an IPO on the success (performance) of 27 European publicly listed football clubs. Their findings show that the majority of football clubs do not perform better in the home league after the IPO than before. Only football clubs active in a lower division tend to benefit from an IPO. No increased performance is found at international level.

From a buyer's perspective, investing in shares of listed football clubs has not been associated with any superior returns. Most shares are still beneath their initial IPO level, in which case investing has been rather expensive than profitable. "The reluctance of many clubs to go public and the numerous delistings are symptomatic of the fact that this funding method does not appear particularly well-suited to this type of company" (Gimed & Montchaud 2016, p. 352). To find out more about the share price performance of football clubs in general, one can look at the Euro STOXX Football Index in figure 1. The index once started with 37 European clubs, but due to numerous delistings comprised 22 football clubs on their last day of trading (28-08-2020). For comparison the S&P500 has been included as well, an index designed to represent 500 of the largest listed companies in the US. The graph indicates a strong underperformance of football clubs compared to the S&P index over the past twelve years.

Figure 1: Relative underperformance of listed football clubs



Gomez-Martinez et al (2017) found a lack in correlation of the STOXX Football Index with the European stock market index. The findings show that the STOXX Football Index can serve as a risk-diversifying asset. However, low correlation is not sufficient that the addition of football stocks leads to portfolio improvement in terms of risk and return (Prigge & Tegtmeier, 2020). In a different study they try to explore whether football stocks are valued like other capital assets in the market using the capital assets pricing model. Their findings show that the majority of football clubs from their sample are overvalued. "This implies that investments in football stocks are mainly attractive for those investors who expect to derive extra benefits from their investment. That might be likely for strategic, patron and fan investors, but not for purely financial investors" (Pregge & Tegtmeier, 2019, p. 1)

Publicly listed football clubs allow us to study the effect of decisions regarding human resources turnover. Recent successes of Ajax evoke the question of how clubs should allocate their capital. Intangible asset investments in the form of human capital allowed for the formation of a more valuable line-up during the season, increasing their chances of taking home trophies and prizes. Do investments in human capital generally translate into some additional value for football clubs? Or to put it more general, how does human resource turnover relate to shareholder value? These are some of the questions that will be studied in this paper. Previous literature has limited their research to solely British clubs, a competition where the average annual budget is larger than in any other football competition (Transfermarkt). This study will extend the sample to nineteen listed football clubs in Europe, divided over nine countries. In addition, this study will add another variable that captures the premium included in a transfer. This allows one to see whether the observed abnormal returns are the consequence of clubs overpaying, instead of acquisitions/sales in general.

Listed football clubs are well suited for the purpose of studying the effect of human resources turnover: The teams form a human capital pool which is hard to imitate or replace and it has a strong effect on firm performance (Wright, Smart & McMahan, 1995). Second, the football industry is a largely commercialized industry where players are responsible for the successes of a team. Third, the players, who are treated as balance-sheet items, are valued competitively in a liquid market. Finally, player transfers receive wide publicity and relevant data is readily available.

By making use of an event study, this study finds that player sales announcements are associated with positive and significant abnormal returns. No significant abnormal returns are found for acquisitions announcements. The premium variable is highly significant in a sale CARs regression controlling for year fixed effects. The premium is insignificant in the acquisition CARs regression. The remainder of the present paper is organised as follows: the next section provides a review of the existing literature on listed football clubs. Next, the data and methodology used in this paper will be discussed. The fourth section contains the results and the fifth section discusses and concludes.

2. Literature review

Players are considered as corporate intangible assets to study the wealth effects of human resources turnover for European listed football clubs. “Treating human capital as a corporate asset allows us to assume a novel theoretical perspective of the human resources turnover process and treat it as part of the general process of asset acquisition and divestiture that takes place in a firm” (Fotaki et al, 2021, p. 2). In the present paper, laying off (hiring) an employee equals the divestment (acquisition) of an intangible corporate asset.

There is a consensus from the extensive literature on mergers and acquisition (M&A hereafter) that the shareholders of the target firm generally receive significant gains around announcement dates, due to the premium included in the transaction (Asquith & Kim, 1982; Malatesta, 1983). On the other hand, shareholders of the acquiring firm generally experience losses or at best break even around announcement dates (Bradley, Desai, & Kim, 1983), or in the long run (Agrawal, Jaffe & Mandelker, 1992; Loughran & Vijh, 1997). Findings of increased managerial compensation following acquisitions (Coakley & Iliopoulou, 2006) point out some non-value-creating managerial motives behind acquisition decisions (Jensen, 1986; Roll, 1986; Schleifer & Visny, 1989).

At the corporate asset level, one can make a distinction between intangible and tangible assets. In the case of tangible assets, evidence suggests positive wealth effects for acquisitions as well as divestitures (Maksimovic & Philips, 2001; Mulherin & Boone, 2000). The positive abnormal returns could be the consequence of three explanations; divestitures allow for a firm to focus on its core business activities (Berger & Ofek, 1999). Second, the market for tangible assets can result in the allocation of assets to firms that can operate them more efficiently (Hite, Owers & Rogers,1987). Finally, divestments may reduce financial leverage and relieve the firm from credit pressure (Lang, Stulz & Walkling, 1989; Afshar, Taffler & Sudarsanam, 1992). For the acquisition of target firms that mostly consist out of intangible assets, acquirers generally experience negative returns as intangible resources are less likely to be redeployed without a loss in their value (Arikan 2004), or due to some of the uncertainty surrounding their value (Gerbaud & York, 2007).

Literature studying listed football clubs remains limited. Most academics tend to focus on the relationship between stock returns and sports performances, often in the form of match results. Renneboog and Vanbrabant (2000) were one of the first to test what factors impact stock prices.

They took a sample of 17 British clubs listed on the London Stock Exchange and Alternative Investments Market (AIM) and studied their share price for three seasons (1995-1998). Their findings indicate a positive influence on stock prices of wins and promotions on stock prices opposed by a negative influence of draws, losses and relegations. The authors pointed out a substantial underperformance of their sample to the market index. The Portuguese competition also witnessed two clubs going public in the beginning of 2000. These clubs have been studied by Duque and Ferreira (2005), and their findings are in line with previous literature; positive effect for wins, negative for draws and losses. Other outcomes were the positive effect of the Portuguese Stock Index (PSI) on stock returns in their sample, as well as the increased the trading volume after matches. Zuber et al (2005) took a similar sample of that from Renneboog and Vanbrabant but could not find a significant impact of match results.

Allouche and Soulez (2005) were one of the first to look beyond the scope of match results by incorporating human resources variables. The stock returns of fourteen English clubs listed on the LSE or AIM were studied over the period 1998-2001. Other than the positive impact of sports performances as victories, qualifications, and trophies (and vice versa), Allouche and Soulez found that the announcement of player purchases negatively impacted share prices. On the other hand, player sales announcements would lead to positive abnormal returns. Explanations provided are the direct effect that a transfer has on the club's financial resources. Besides treating players as human resource variable, the hiring of a coach would also find itself to have a negative impact on stock returns. Coach dismissals would bring share prices up again. The authors studied the effect of three other explanatory variables: good financial results, investments in sports facilities and sponsorship agreements are all drivers of positive returns. Fotaki, Markellos and Mania (2009) belong to the group of authors who have tried to study the relationship of human resource variables and stock returns. The first part of their research is in line with some previous literature, where wins and losses are found to have a significant impact on stock returns. As for human resource effects, their data comprising 15 British clubs from 1997-2004 showed positive impacts of player sales and loans, opposed to a negative impact of player acquisitions. Evidence suggests that shareholders perceive those managers overpay to acquire human resources, an argument often provided in asset acquisition literature. They also looked at player releases at the end of their contract, players coming back from loans and coach changes. These were all found to be non-significant. Bell, Brooks and Markham (2013) analyse the effect of managerial turnover on stock

returns and volatility. Their results show managerial sackings lead to positive returns after announcements, while resignations decrease share prices. The findings demonstrate how the sacking of poorly performing managers is appreciated by markets, while the resignation is undesired. Resignations often appear after successful managerial performances, who have been offered a more prominent job elsewhere. Dimitropoulos and Koumanakos (2015) studied a sample of nine European football clubs over the period 2005-2010 and measured whether investments in intellectual capital (players, technical staff etc.) affect the financial performance of a club. They found a positive relationship between intellectual capital investments and profitability, meaning that clubs who invest more in their employees add higher value to the organisation which leads to an increase in financial performance. These findings are somewhat in contrast with previous findings where the announcement of player acquisitions (sales) or newly appointed coaches destroy (increase) shareholder value.

This paper attempts to explain the effect of human resource turnover on the basis of non-synergetic theories. The vast majority of previous empirical research on player acquisitions is associated with negative, or insignificant abnormal returns around announcement dates. Further, mergers and acquisition are often motivated by synergetic theories, e.g., firm size efficiency, transaction costs, costs of technology. These examples of synergies are irrelevant in the case of human resources turnover. Previous literature revolving around human resource turnover has focused solely on the British football industry. As their annual transfer budget is greater than the budget of football clubs in other competitions, they could more often engage in value destructing transfers, resulting in negative abnormal returns around announcement dates. This may cause some bias in their sample. To see whether the results still hold on a larger level, the null hypothesis will be retested with a more extensive analysis of clubs covering nine countries in Europe. Previous human resources turnover literature in the football industry leads to two main testable hypotheses:

H0: Player acquisition/sale announcements are not associated with any abnormal returns

H1: Player acquisition announcements lead to negative abnormal returns for listed football clubs

H2: Player sale announcements lead to positive abnormal returns for listed football clubs

Lacking synergy potential and the perception that managers generally overpay to welcome new players, causes for the hypothesis of a negative relationship between acquisition announcements and stock returns for listed football clubs in Europe. For player sales one can argue the other way around and suspect that acquiring clubs have overpaid for the acquisition of the outgoing player. Therefore, a positive relationship is expected.

In addition, Transfermarkt is known for providing player valuations based on past sporting performances. Instead of an algorithm, it relies on the wisdom of the user community, often referred to as the wisdom of crowds' theory or swarm intelligence theory. "Wisdom of crowds is a theory that assumes that the knowledge of a crowd results in better decision-making, innovation, and problem-solving than that of an individual" (Investopedia). Previous literature already finds some evidence for the accuracy of Transfermarkt valuations. Peeters (2018) finds that player valuations from Transfermarkt are a decent predictor of the outcome of international football games. "A simple model that contains nothing but the average Transfermarkt valuation, the number of players and a home advantage predicts the performance of a national team better than more traditional predictors of soccer results, namely the FIFA ranking and ELO ratings" (Peeters, 2018, p. 27-28). Using this score predictor would have led to monetary gains when applied to betting strategies. Prockl and Frick (2018) find that player valuations from Transfermarkt are excellent proxies for salaries that are undisclosed. Hence, the opinion of registered users from Transfermarkt can be a rich source of information. These player valuations already find some use in football as the numbers from Transfermarkt are cited in fiscal reports from listed football clubs as Lyon and Porto. The website records more than one billion page views every month and may serve as some sort of reference point for investors and clubs as well. These player valuations can be compared to the fees that are paid by acquiring clubs to obtain the player. If the transfer fee exceeds the valuation from Transfermarkt, a premium can be calculated (discount in case valuation exceeds transfer fee). A high premium is an indicator that a club may have overpaid to obtain the desired target player. In this scenario, investors may punish the club led by a drop in share prices at the announcement date of the transfer. Because of the wisdom of crowds' theory, the valuations from Transfermarkt could well explain the variance in abnormal returns around announcement dates.

H3: Player acquisition premiums (discounts) relate negatively (positively) to abnormal returns for acquiring clubs

H4: Player sale premiums (discounts) relate positively (negatively) to abnormal returns for selling clubs

A negative relation between premiums and CARs is expected for player acquisitions. In a simplified transfer model, putting all potential enhanced/decreased team performances aside, more cash leaves the club than the increase in value of the new asset. This loss would decrease the value of the firm. For sales, a positive relation is expected between premiums and CARs. If clubs receive a premium for selling the player, the value of the incoming cash outweighs the loss in assets, therefore increasing the value of the firm.

3. Data

The empirical analysis is performed using nineteen football clubs that have a history of publicly traded stock: Four Portuguese clubs, four Turkish clubs, three Danish clubs, three Italian clubs and one club from the Netherlands, Germany, England, France, and Scotland are included in the sample. Financial data for these football clubs is obtained from Datastream.

Table 1: Financial Data

Club	Competition	Exchange	First observation	Market cap.
Trabzonspor	Süper Lig (TUR)	Borsa Istanbul	04/05/2005	152
Sporting CP	Liga NOS (POR)	Euronext Lisbon	02/06/1998	55
Olympique Lyon	Ligue 1 (FRA)	Euronext Paris	08/02/2007	141
Man Utd	Premier League (ENG)	New York Stock Exchange	10/08/2012	698
Lazio	Serie A (ITA)	Borsa Italiana	06/05/1998	70
Juventus	Serie A (ITA)	Borsa Italiana	19/12/2001	774
Galatasaray	Süper Lig (TUR)	Borsa Istanbul	19/02/2002	111
Fenerbahce	Süper Lig (TUR)	Borsa Istanbul	17/09/2004	212
FC Porto	Liga NOS (POR)	Euronext Lisbon	01/06/1998	22
FC Copenhagen	Superligaen (DEN)	Nasdaq OMX Nordic	13/11/1997	118
Celtic	Premiership (SCO)	London Stock Exchange	28/09/1995	152
Bröndby IF	Superligaen (DEN)	Nasdaq OMX Nordic	02/05/1995	35
Braga	Liga NOS (POR)	Euronext Lisbon	10/10/2006	9
Bor. Dortmund	Bundesliga (GER)	Börse Frankfurt	30/10/2000	411
Besiktas	Süper Lig (TUR)	Borsa Istanbul	19/02/2002	61
Benfica	Liga NOS (POR)	Euronext Lisbon	21/05/2007	72
AS Roma	Serie A (ITA)	Borsa Italiana	22/05/2000	223
AFC Ajax	Eredivisie (NED)	Euronext Amsterdam	11/05/1998	233
Aalborg	Superligaen (DEN)	Nasdaq OMX Nordic	14/09/1998	8

Note: Market capitalization of each club in EUR millions per 02/05/2022.

As shown in Table 1, the clubs are listed on different exchanges. The period considered for each club starts with their initial public offering date. All clubs included in the corresponding sample are currently still listed which enables all transfers from recent transfer window to be incorporated into this study. The clubs in the sample have at least 9 seasons of continuous trading. For each club, daily stock closing prices are collected which are adjusted for dividends and stock splits. Descriptive statistics for the corresponding returns are presented in Table 2. One can observe that 1 out 19 stocks has a negative average daily return. Standard deviation is relatively large, a phenomenon more often seen in small cap stocks.

Table 2: Return statistics

Club	Mean	Standard Dev.	Club	Mean	Standard Dev.
Trabzonspor	0,0026	0,0214	Celtic	0,0003	0,0168
Sporting CP	0,0008	0,0487	Bröndby IF	0,0006	0,0389
Olympique Lyon	-0,0002	0,0208	Braga	0,0025	0,0602
Man Utd	0,0002	0,0187	Bor. Dortmund	0,0001	0,0234
Lazio	0,0002	0,0392	Besiktas	0,0011	0,0485
Juventus	0,0001	0,0255	Benfica	0,0007	0,0431
Galatasaray	0,0006	0,0324	AS Roma	0,0002	0,0342
Fenerbahce	0,0008	0,0292	AFC Ajax	0,0002	0,0214
FC Porto	0,0005	0,0413	Aalborg	0,0000	0,0476
FC Copenhagen	0,0003	0,0233			

Note: The descriptive statistics for all nineteen clubs under study. The mean and standard deviation have been calculated using daily returns.

Data on player transfers has been obtained from Transfermarkt, a German website containing extensive football data on scores, statistics, transfers, and programmes. In line with previous literature, ingoing and outgoing transfers are collected for each sample club and their corresponding transfer fee, that is the price paid by the acquiring club to the selling club for obtaining the player. Then, the exact announcement dates were gathered from Transfermarkt, which contains dates of recent transfers. Dates of elderly transfers had to be gathered from the internet. Following previous M&A literature, the ten largest (player) acquisitions and sales are selected in terms of transfer fee. These transfers are most likely to send a signal to the market and consequently affect share prices. Each club contains therefore ten player sales and ten player acquisitions, which totals an amount of twenty observations per club. The same number of transfers per club is chosen to prevent the analysis from being biased towards the richest clubs. In addition, it allows to capture the behaviour of a larger number of investors. The total sample contains 380 events divided equally between player purchases and player sales. Table 3 summarizes the average transfer price for each club. In line with expectations, there is a positive relation between market capitalization and transfer prices. For example, the average acquisition transfer price for Manchester United is €71.843.000, far above the sample average of €17.980.000. Aalborg comes out at the bottom of the list with an average acquisition fee of €620.000. The first observation in the sample is the average acquisition fee being greater than the average sale fee, which could indicate some shareholder value destruction caused by transfers. Manchester United pay the highest premiums, where Benfica manages to receive the highest premiums.

Table 3: Player Acquisitions

Club	Average	Min	Max	Median	Average Premium
Trabzonspor	5,07	3,75	6,90	5,00	-0,80
Sporting CP	9,85	6,50	16,00	9,64	1,55
Olympique Lyon	20,80	16,20	25,00	21,00	4,60
Man Utd	71,84	44,73	105,00	69,00	22,54
Lazio	25,71	13,50	56,81	19,92	6,60
Juventus	64,25	32,00	117,00	58,20	9,35
Galatasaray	9,89	7,50	17,05	8,55	0,48
Fenerbahce	9,94	7,65	14,00	9,50	-0,29
FC Porto	14,32	11,00	20,00	12,50	3,52
FC Copenhagen	3,70	3,00	5,00	3,50	0,97
Celtic	7,61	5,40	10,30	7,75	3,40
Bröndby IF	1,64	1,00	4,00	1,49	-1,10
Braga	4,08	1,50	9,50	3,20	1,93
Bor. Dortmund	27,20	25,00	30,50	26,50	4,70
Besiktas	5,78	4,50	8,00	5,50	-1,02
Benfica	18,80	14,00	24,00	19,00	4,30
AS Roma	25,77	17,50	40,00	24,60	3,62
AFC Ajax	14,81	11,00	22,50	15,35	0,11
Aalborg	0,62	0,30	1,25	0,60	-0,43
Total	17,98	11,90	28,04	16,88	3,37

Note: This table represents the minimum, maximum, average and median acquisition fee for all clubs studied in this paper. Number are in millions of EUR.

Table 4: Player Sales

Club	Average	Min	Max	Median	Average Premium
Trabzonspor	7,23	4,00	17,50	6,20	-0,39
Sporting CP	28,68	20,00	63,00	23,25	3,28
Olympique Lyon	36,56	16,00	60,00	38,25	10,56
Man Utd	31,28	12,00	74,00	24,33	1,10
Lazio	30,47	18,00	42,60	30,25	2,29
Juventus	44,63	24,80	105,00	33,75	4,13
Galatasaray	9,62	5,50	16,00	8,58	0,57
Fenerbahce	11,41	4,50	19,92	11,00	1,26
FC Porto	40,81	31,50	50,00	40,00	11,41
FC Copenhagen	8,83	6,00	12,00	8,60	3,98
Celtic	15,67	10,00	27,00	15,10	7,94
Bröndby IF	3,86	1,80	8,76	2,75	1,42
Braga	13,01	8,00	31,00	9,75	3,41
Bor. Dortmund	47,98	20,00	115,00	36,00	4,48
Besiktas	8,46	3,50	22,50	7,00	2,31
Benfica	47,68	30,00	127,20	36,50	24,93
AS Roma	35,53	28,00	62,50	31,70	3,29
AFC Ajax	43,00	26,50	86,00	35,50	8,30
Aalborg	2,25	1,15	6,00	1,71	1,26
Total	24,58	14,28	49,79	21,06	5,03

Note: This table represents the minimum, maximum, average and median sales fee for all clubs studied in this paper. Numbers are in millions of EUR.

4. Methodolgy

Motivated by the M&A literature, a standard event study methodology will be used to assess the impact of announcement of player transfers on the short-term behaviour of club stock prices. Following the hypotheses, the two type of events under consideration will be studied separately. The first day of trading after the transfer announcement date is considered to be the event date. To study whether transfer announcements affect market prices, abnormal returns around the announcement date are examined. The abnormal return for club j at time t is defined as:

$$AR_{j,t} = R_{j,t} - E(R_{j,t}|X_t) \quad (1)$$

Where $R_{j,t}$ and $E(R_{j,t}|X_t)$ are the real return and the normal return, respectively, and X_t stands for the conditioning information at time *t*. In line with event-study literature, the standard choices are adopted for modelling the normal return, namely, the constant-mean model and the market model. Prices for the S&P500 were collected to serve as a proxy for the market portfolio. The market model can be expressed as:

$$R_{j,n_t} = a_j n_t + \beta_j R_{m,n_t} + \sum_{s=0}^{n_t-1} \varepsilon_{j,t-s} \quad (2)$$

where R_{m,n_t} is the return on the market portfolio computed in the same period to R_{j,n_t} . Then, the normal return for the market model is estimated as:

$$\overline{R}_{j,n_t} = \hat{a}_j n_j + \hat{\beta}_j R_{m,n_t} \quad (3)$$

Alternatively, the constant-mean model results from imposing the restriction β_j=0 in (3). In this case, the estimated normal return is $R_{j,n_t} = a_j n_t$. Overall, the abnormal return can be computed by:

$$AR_{j,t} = R_{j,n_t} - \overline{R}_{j,n_t} \quad (4)$$

Normal returns are estimated using a window of 70 trading days that starts 91 days before the event date and ends 22 days before the event date. In this way, any leakages/rumours about the event are unlikely to affect the estimates of normal returns.

Symmetric event windows are considered that include up to nine trading days before and after the event has occurred. This way one can control for any press leakages before transfers are

formally announced. Another argument in favor of using the symmetric windows is that investors might need some time to react to transfer due to thin trading. Given the uncertainty, the effect of a transfer will be quantified using cumulative abnormal returns (CARs) around the event day (t = 0) defined as:

$$CAR_{L,K} = \sum_{t=-L}^{L} AR_{k,t} \quad (5)$$

For an event window (-L,L) that includes the 2 L + 1 trading days that are closest to the event day. If $CAAR_{al}$ and $CAAR_{dl}$ are the population means of $CAR_{l,k}$ across player sales and acquisitions, then the null hypotheses in the testing procedures can be formulated as:

$$H_0: CAAR_{sales} = 0$$
$$H_0: CAAR_{acq.} = 0$$

5. Results

Table 5 presents the results from this event study using both the market and mean model. The average abnormal returns (AAR) and associated t-statistics are displayed for both player sales and acquisitions. The longest chosen event window has a duration of 19 days symmetrically around the event date (t=0). The cumulative average abnormal returns (CAAR) for several event windows are shown in table 6.

Table 5: Observed abnormal returns around announcement dates

	Acquisitions				Sales			
Day	AR(Market)	T-stat	AR(Mean)	T-stat	AR(Market)	T-stat	AR(Mean)	T-stat
AR -9	-0,0021	-0,82	-0,0022	-0,87	-0,0017	-0,77	-0,0018	-0,78
AR -8	-0,0013	-0,53	-0,0012	-0,47	0,0091***	4,05	0,0092***	4,08
AR -7	-0,0026	-1,02	-0,0026	-1,03	0,0013	0,59	0,0013	0,57
AR -6	0,0001	0,02	0,0001	0,03	0,0049**	2,18	0,0050**	2,21
AR -5	-0,0008	-0,30	-0,0007	-0,29	0,0033	1,47	0,0033	1,44
AR -4	-0,0030	-1,16	-0,0029	-1,14	0,0000	-0,02	0,0000	0,00
AR -3	-0,0010	-0,40	-0,0009	-0,37	-0,0021	-0,91	-0,0021	-0,91
AR -2	0,0028	1,09	0,0028	1,08	0,0008	0,37	0,0008	0,37
AR -1	-0,0008	-0,32	-0,0008	-0,31	0,0040	1,78	0,0040	1,76
AR 0	0,0000	0,00	0,0000	0,00	0,0000	-0,02	-0,0001	-0,03
AR 1	-0,0023	-0,91	-0,0022	-0,86	-0,0038	-1,67	-0,0038	-1,68
AR 2	0,0016	0,65	0,0016	0,64	0,0041	1,80	0,0041	1,81
AR 3	-0,0019	-0,73	-0,0019	-0,74	0,0023	1,03	0,0023	1,02
AR 4	-0,0047*	-1,86	-0,0047*	-1,86	-0,0008	-0,35	-0,0008	-0,35
AR 5	-0,0014	-0,54	-0,0014	-0,55	0,0019	0,82	0,0018	0,81
AR 6	0,0016	0,63	0,0015	0,60	-0,0028	-1,26	-0,0029	-1,30
AR 7	-0,0002	-0,06	-0,0001	-0,04	-0,0025	-1,11	-0,0025	-1,11
AR 8	0,0016	0,61	0,0016	0,62	0,0026	1,17	0,0026	1,17
AR 9	0,0005	0,20	0,0005	0,20	0,0065***	2,89	0,0066***	2,90

Note: Abnormal returns for every day in the event window (-9,9). Abnormal returns measured using both the market model & mean model. These models are estimated using a window of 90 consecutive trading days. The S&P500 served as the index in the market model.

The results indicate no significant abnormal returns on the announcement date for both player sale announcements and acquisition announcements. Player transfers receive great media attention and newspapers regularly publish the latest news and rumors in the football industry. To control for possible information leakage, one is better off studying the cumulative abnormal returns to capture the full effect transfers may have on stock prices. Five symmetrical event windows are included, namely L=9, L=5, L=3, L=1 and for the event day (t=0). The CARs have been computed for the sample of events: the first sample contains all 380 transfers of the nineteen football clubs divided equally between acquisitions and sales. The second sample has been limited to the top five

acquisitions and sales per club in terms of transfer fee. This allows one to study the effect of the amount of the transfer fee in relationship to stock prices. The results are shown in table 6a and 6b.

Table 6a: Cumulative abnormal returns (CARs) bases on the market model

Panel A: Acquisitions										
	10 Transfers					**5 Transfers**				
Event Window	(-9,9)	(-5,5)	(-3,3)	(-1,1)	(0)	(-9,9)	(-5,5)	(-3,3)	(-1,1)	(0)
Mean CAR	-0,014	-0,011	-0,002	-0,003	0,000	0,004	0,003	0,007	0,007	0,005
T-stat	(-1,25)	(-1,35)	(-0,24)	(-0,71)	(-0,00)	(0,30)	(0,28)	(0,83)	(1,18)	(1,39)
Panel B: Sales										
	10 Transfers					**5 Transfers**				
Event Window	(-9,9)	(-5,5)	(-3,3)	(-1,1)	(0)	(-9,9)	(-5,5)	(-3,3)	(-1,1)	(0)
Mean CAR	0,027***	0,010	0,005	0,000	0,000	0,046***	0,015**	0,000	-0,005	-0,003
T-stat	(2,76)	(1,30)	(0,90)	(0,05)	(-0,02)	(3,98)	(1,99)	(0,03)	(-1,34)	(-1,32)

Table 6b: Cumulative abnormal returns (CARs) based on the mean model

Panel A: Acquisitions										
	10 Transfers					**5 Transfers**				
Event Window	(-9,9)	(-5,5)	(-3,3)	(-1,1)	(0)	(-9,9)	(-5,5)	(-3,3)	(-1,1)	(0)
Mean CAR	-0,014	-0,011	-0,001	-0,003	0,000	0,005	0,003	0,008	0,007	0,005
T-stat	(-1,22)	(-1,31)	(-0,21)	(-0,67)	(0,00)	(0,30)	(0,31)	(0,85)	(1,11)	(1,39)
Panel B: Sales										
	10 Transfers					**5 Transfers**				
Event Window	(-9,9)	(-5,5)	(-3,3)	(-1,1)	(0)	(-9,9)	(-5,5)	(-3,3)	(-1,1)	(0)
Mean CAR	0,027***	0,010	0,005	0,000	0,000	0,047***	0,015**	0,000	-0,005	-0,003
T-stat	(2,75)	(1,28)	(0,88)	(0,03)	(-0,03)	(4,01)	(2,05)	(0,06)	(-1,36)	(-1,34)

Note: This table shows the average CARs calculated by the market model (6a) and the mean model (6b) for five event windows. The event day (t=0) is the first trading day after the transfer announcement. The two samples under consideration consist of the top 10 and top 5 acquisitions and sales in terms of transfer fee.

Panels A in table 6 show the effect of acquisitions announcements for both samples. In line with Hypothesis 1, the observed average abnormal returns are negative for all event windows related to the largest sample, although no coefficient is significant at the 10% level. For the subsample of the 5 largest transfers, the coefficients turn positive where the abnormal return around the event day remains insignificant at the 10% level. When looking at the sales announcements for the larger sample, positive values are found for most studied event windows. The highest effect is measured for the event window of L=9 days. The cumulative average

abnormal return obtains a value of 2.7% which is significant at the 1% level and therefore confirming the second hypothesis. CAARs and associated t-values decrease when the length of the event window decreases. When looking at the subsample, the effect of the sale announcement increases. The cumulative average abnormal return increases to 4.7%, significant at the 1% level. The event window of five days before and after the announcement has a CAAR of 1.5%, significant at the 5% level. As observed before, CAARs and t-values decline together with the event window. To see whether the CAARs of the subsample are different then the CAARs from the main sample, a means test is deployed. The test provides us with a Z-value of 36, meaning the CAARs of the samples differ significantly.

The amount of the transfer fee appears to influence the abnormal returns as they vary between the samples of the ten and five most expensive players in terms of transfer fee. This drives the motivation to further study the relationship between the fee of the transfer and the observed CARs. Therefore, the following regression models are adopted:

$$CAR_{L,K} = a + \beta_1 Sales_k + \beta_2 Fee_k + \beta_3 Att_k + \beta_4 Bal_k + \varepsilon \quad (7)$$

$$CAR_{L,K} = a + \beta_1 Prem_k + \varepsilon \quad (8)$$

$$CAR_{L,K} = a + \beta_1 Fee_k + \beta_2 Att_k + \beta_3 Bal_k + \beta_4 Prem_k + \varepsilon \quad (9)$$

The first model studies the difference in effect of sale and acquisition announcements. Whereas the second model tries to explain the variance in the cumulative abnormal returns with the premium variable. The third regression adds several control variables to the premium. $CAR_{L,K}$ is the cumulative abnormal return for event window L and transfer K. The dummy variable $Sales_k$ takes a value of 1 for player sale announcements and a value of 0 for player acquisition announcements. The variable Fee_k is the transfer fee divided by the market capitalization of the firm on the day of the k event. By standardizing the transfer fee, one allows himself to pool the returns and transfers for different clubs in a single regression model as the sample contains clubs which vary strongly in size. The regression model contains a further control for the player's position (Att_k). The control variable is motivated by literature from Whitlam and Preston (1998) that transfers from forwards receive more media attention compared to players playing on a different position, therefore causing

greater impact on the share prices of a club. The control variable takes a value of 1 if the player's position is a forward, and a value of zero for any other position. The control variable Balance (Bal_k) has been added to the regression to control for the clubs that have managed to maintain a positive transfer balance over the past ten years. The dummy variable will take a value of 1 if the club has received more money from player sales then the club has spent on player acquisitions, and a value of 0 otherwise. The final explanatory variable is the premium ($Prem_k$) included in the corresponding transfer fee, measured as a percentage of the transfer fee.

Table 7: Transfer announcements regression model

	(1) CAR (-9,9) Mean Model				(2) CAR (-9,9) Market Model			
Sales	.109	.113	.109*	.210	.109	.113	.109*	.211
	(.066)	(.067)	(.062)	(.161)	(.066)	(.067)	(.061)	(.160)
Fee			.008	.659			.008	.070
			(.013)	(.041)			(.013)	(.041)
Attacker			-.090	-.048**			-.090	-.049**
			(.057)	(.019)			(.057)	(.019)
Balance			-.093	-.035			-.093	-.034
			(.079)	(.031)			(.080)	(.313)
Sales*Fee				-.056				-.061*
				(.033)				(.033)
Sales*Attacker				-.077				-.075
				(.096)				(.097)
Sales*Balance				-.118				-.119
				(.129)				(.129)
Constant	-.0068	-.009	.072**	.012	-.0071	-.009	.072**	.011
	(.047)	(.034)	(.031)	(.038)	(.047)	(.034)	(.031)	(.038)
Year FE	NO	YES	YES	YES	NO	YES	YES	YES
N	360	360	360	360	360	360	360	360
R^2 Overall	.0047	.0074	.0144	.0176	.0075	.0075	.0145	.0176

Note: This table represent the estimates of the intercept and coefficients of the variables included in a linear regression model of the CARs of event window (-9,9). The sales dummy is the explanatory variable and takes a value of 1 for player sales and a value of 0 for player acquisitions. Variables that control for position and a club's transfer balance have been added to regression model as well as three variables that capture the combined effect of the controls in combination with the sales dummy variable. Robust standard errors are in parentheses *** p<.01, ** p<.05, * p<.1.

Table 7 reports the OLS coefficients and R^2 estimate for the first regression model. The CARs are from the sample including ten sales and acquisitions per club. The normal returns are measured using both the market model and mean model. Results show that the sale (acquisitions) announcements increase (decrease) abnormal returns significantly compared to acquisitions (sales). The market cap adjusted transfer fee has no significant effect on the returns around both acquisitions and sales. Forward players appear to decrease the abnormal returns for acquisitions, significant at the 5% level in the market model. A club's transfer balance appears to be irrelevant for investors. The coefficient for the fee and sales combined variable turns negative, significant at the 10% level.

Table 8a: Premium regression model using the mean model

	(3) Acquisitions			(4) Sales		
Premium	-.011	-.010	-.007	.003	.004**	.013
	(.008)	(.013)	(.013)	(.003)	(.002)	(.008)
Fee			.004			.018
			(.014)			(.024)
Attacker			-.040*			-.104
			(.020)			(.091)
Balance			-.003			-.198
			(.022)			(.161)
Constant	-.002	-.003	.017	.099	.099***	.216**
	(.013)	(.006)	(.018)	(.067)	(.001)	(.093)
Year FE	NO	YES	YES	NO	YES	YES
N	180	180	180	180	180	180
R2 overall	.0045	.0045	.0179	.0001	.0001	.0112

Note: This table represents the estimates of the intercept and the coefficients of the variables included in a linear regression model of the CARs of event window (-9,9). The premium is the explanatory variable. Control variables are added to the model. The transfer fee has been divided by the market cap of the corresponding club at the time of the transfer. The model contains further controls for position and the transfer balance of a club. Robust standard errors are in parentheses *** p<.01, ** p<.05, * p<.1. CARs are calculated using both the mean and market model.

Table 8b: Premium regression model using the market model

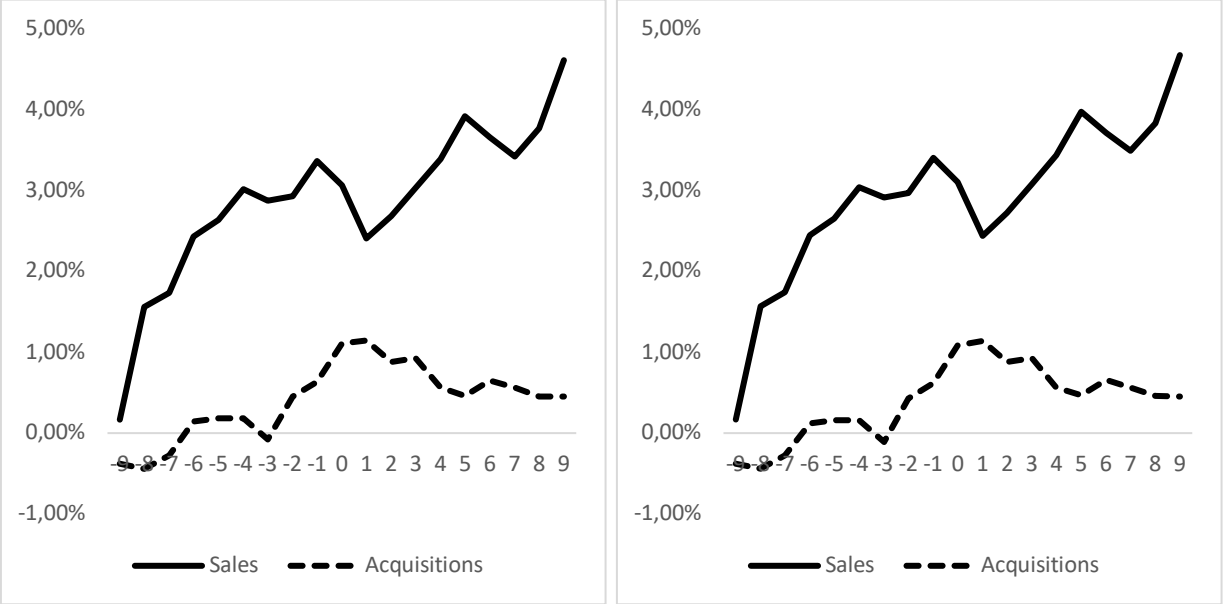
	(5) Acquisitions			(6) Sales		
Premium	-.011	-.010	-.008	.003	.004***	.013
	(.008)	(.449)	(.013)	(.003)	(.001)	(.008)
Fee			.000			.017
			(.015)			(.023)
Attacker			-.041*			-.103
			(.020)			(.091)
Balance			-.002			-.197
			(.022)			(.162)
Constant	-.002	-.003	.016	.099	.099***	.215**
	(.013)	(.625)	(.018)	(.066)	(.001)	(.093)
Year FE	NO	YES	YES	NO	YES	YES
N	180	180	180	180	180	180
R2 overall	.0044	.0001	.0196	.0001	.0001	.0111

Note: This table represents the estimates of the intercept and the coefficients of the variables included in a linear regression model of the CARs of event window (-9,9). The premium is the explanatory variable. Control variables are added to the model. The transfer fee has been divided by the market cap of the corresponding club at the time of the transfer. The model contains further controls for position and the transfer balance of a club. Robust standard errors are in parentheses *** p<.01, ** p<.05, * p<.1. CARs are calculated using both the mean and market model.

Table 8 contains the results of the model where the premium is included. The variable takes the hypothesized coefficients for both acquisitions and sales. Namely, negative for premiums paid in player acquisitions and positive for premium received after player sales. While controlling for year fixed effects, the premium is significant at the 1% level for sales, whereas the variable is insignificant at the 10% for acquisitions. When control variables are added the regression model, the premium variable loses significance for both sales and acquisitions. The height of the fee is insignificant, which supports the hypothesis that abnormal returns are a mere consequence of clubs overpaying to obtain human capital, whereas the latter is captured by the premium variable.

Figure 2: CARs Market Model (Left) & CARs Mean Model (Right) – 10 Players

Figure 3: CAR Market Model (Left) & CAR Mean Model (Right) – 5 Players



Note: These figures display the course of the cumulative abnormal returns over the entire event window (-9,9). Abnormal returns are measured using both the mean model (Figure 2) and the market model (Figure 3) for the normal returns.

Since one can observe abnormal returns up to 10 trading days before the announcement, this study finds evidence of information leakage accessible to investors either from the media or via rumours. One can observe that CARs around sales start increasing eight days before the actual transfer announcement takes place. The CARs slowly keep on rising and peak at nine days after the event for both the market model and the mean model. When computing the CARs using the five most expensive transfers, they tend to follow a similar pattern, albeit with more extreme values. In the case of player acquisitions, the abnormal returns move from slightly above zero to slightly below zero for the whole sample and vice versa for the subsample of events. These findings are not sensitive to the underlying models that yield the normal return, as the graphs on the left and right in Figures 2 and 3 are similar.

6. Discussion & Limitations

The first findings from this study are in line with the stated hypotheses. Player sales announcements are associated with positive abnormal returns. For player acquisitions, this study finds insignificant abnormal returns for both samples in every event window. Previous literature shows acquisitions are associated with negative abnormal announcement returns. This can be explained by differences in the studied sample. This sample contains clubs with fewer resources, who may be less likely to engage in value destructing transfers. In addition, this study incorporates a premium variable to study its effect on abnormal returns. The effect of a premium in sales is positive and significant, opposed by a negative and insignificant effect in acquisition announcements. Overall, this study finds evidence that supports the accuracy of the player valuations provided by users from Transfermarkt.

Potential increases in sports performance may not outweigh the price paid in player acquisitions. Shareholders could assess that clubs overpay to welcome human capital. Potential explanations for these findings include the "winner's curse", where other bidding football clubs have driven up prices for players so far that the fee exceeds the value of the player. Another possible explanation why clubs overpay to acquire talent is managerial hubris. Both explanations are phenomena well known in M&A literature. Finally, the value a player may add to the club is hard to assess. Investors may therefore fail to assess the value of acquired football players. The contribution a player may bring is difficult to predict and therefore often uncertain. Uncertainty around the value of intangible assets are more often associated with negative abnormal returns and could therefore put downward pressure on the stock prices around player acquisition announcements (Arikan, 2004; Gerbaud & York, 2007).

Not all listed football clubs have been included in this study due to limited transfer data. Previously listed football clubs are ignored in this study. As the data sample is limited to twenty transfers per club, observations per club are limited as well.

7. Conclusion

This paper attempts to explain the effect of human resource turnover on the basis of non-synergetic theories. In order to do this, the turnover in human capital is considered as a part of corporate asset divestiture and acquisition. In an empirical analysis, the stock prices of listed football clubs are investigated to assess the impact of player acquisition and sales announcements. In line with previous literature, player sales announcements are associated with positive abnormal returns. No significant positive or negative abnormal returns were observed for player acquisition announcements. This paper further tries to explain the variance in abnormal returns with a CAR regression that incorporates a variable which measures the premium included in a transfer. The premium variable has a positive and significant effect on abnormal returns for player sale announcements although significance decrease once control variables are added to the regression. The premium is negative but insignificant for acquisition announcements.

This work could be extended in several directions for future research. Transfer data is limited to twenty transfers per club. The studied dataset has provided some insight into the effect of human resource turnover announcements. More data could be gathered to study the effect of the premium. Second, due to data limitations not all publicly listed football clubs have been incorporated into this study. One could extend this study by incorporating the remainder of listed clubs, as well as considering clubs that have been delisted in the past. Finally, one could extend the study to see whether the results still hold in other sports industries.

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