The Impact of Management on Team Performance

AN ANALYSIS OF THE BUNDESLIGA SEASONS 08/09 TO 12/13

JULY 2015

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Abstract

Changing managers is often one of the first reactions to unsatisfactory team performance in professional football. But how responsible are managers for team performance? This paper uses data from the Bundesliga seasons 08/09 until 12/13 in order to investigate whether and why managers have an impact on team performance. It was found that while most managers do not affect results much, a small group actually improves team performance significantly. Further, it was found that managers who trained a club abroad before performed worse than their colleagues who spent their entire career in Germany.

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I. Introduction

To what extent and under which circumstances do sports team managers affect the performance of their team and which characteristics set good managers apart from the bad? Existing work in the field of the analysis of managerial performance says that differences in the operational style and performance of firms are to a large extent explained by manager fixed effects and observable managerial characteristics such as education and age (Bertrand & Schoar, 2003). Hambrick and Mason also state that firm choices and performance can be partially predicted by the background of the manager (Hambrick & Mason, 1984). Further research shows that nation-wide managerial discretion is associated with the impact chief executive have on the company they manage (Crossland & Hambrick, 2010).

However, how does performance of managers differ within this nation-wide framework, particularly in the field of sports team management? Kahn claims that research in sports management is unique due to fact that details about managers, players, clubs, and financial data are abundant, thus allowing for much more detailed research than other industries (Kahn, 2000). He also found that high quality managers in professional baseball increase both winning percentage and player performance, which shows that the choice of manager does indeed matter (Kahn, 1993). Further, college education and former performance as player were identified as performance drivers for middle managers (coaches) in professional baseball (Peeters, Salaga, & Juravich, 2014). In US professional basketball, a positive association between a manager's previous achievements as a player and his later impact on team performance as a manager was determined (Goodall, Kahn, & Oswald, 2011). Similarly, in British professional football, managers who played on a high level themselves were found to raise the performance of teams by more than those who did not, ceteris paribus. Furthermore, higher accumulated managerial experience was found to play a bigger role in the improvement of the performance of talented players than that of less-talented players (Bridgewater, Kahn, & Goodall, 2011).

Similar research focused on the effect of managers in German professional football is scarce. Many traditional teams in the Bundesliga chose to remain as registered associations instead of choosing a commercialized structure. This means that access to financial data such as revenues, profits and player wages were not at all or only partially available for most clubs in the past. These circumstances made the evaluation of managerial impact on the team hard, as essential control variables were inaccessible for many teams. In recent years however, more financial data became available as clubs either decided to enter the stock market as companies or released financial data for different reasons. This makes it possible to make some initial observations on the effect of managers on team performance in the German Bundesliga.

This paper evaluates the Bundesliga seasons 08/09 until 12/13. The main research question is as follows:

What makes a good manager in the German Bundesliga?

II. Data

Due to the Bundesliga's novelty as a research area in this particular field, data was not readily available but had to be individually retrieved and combined manually from many different sources. Match data for the seasons 08/09 until 12/13 was collected, complemented with revenues and player wages of teams, and used to create a database that combines match data with financial data and detailed information about the managers responsible for each team. All active managers of that timeframe and a total of eight characteristics were added. Specifically, these characteristics are whether the manager is German, whether the manager used to play for his country's national team, the manager's age, total experience in games with the team, the duration of his current tenure at the club, whether he used to play for the team he is coaching now, whether he has international coaching experience, and the number of his previous employment spells as a manager. Match data was obtained from the website football-data.co.uk (Football-Data, 2015). Financial data was collected from clubs' balance sheets on the digital version of the Bundesanzeiger (Bundesanzeiger, 2015) as well as homepages, press conferences, and news reports. Manager data and characteristics were obtained from the football database on the website weltfussball.com (Weltfussball, 2015). This process resulted in a unique dataset that is the first to cover and unify this amount of Bundesliga-related data.

For some clubs and timeframes, no financial data was available. As a result, full data is available for 1027 out of 1530 matches played in the given timeframe.

Table 1: Descriptive data

Variable	Obs	Mean	Std.Dev.	Min	Max
Wage	1258	52.2M	37.6M	12.2M	203M
Revenue	1088	111M	78.8M	29.2M	394M
Manager characteristics					
German	1530	.823	.381	0	1
Played for national team	1530	.349	.477	0	1
Age	1530	47.9	7.27	35	73
Experience	1530	76.8	93.6	1	478
Tenure	1530	66.5	90.8	1	478
Played at club	1530	.177	.382	0	1
International experience	1530	.282	.450	0	1
Previous spells	1530	2.55	2.43	0	10

Table 1 gives an overview over the data collected. It contains information regarding goals scored, player wages, as well as the eight managerial characteristics "German", "played for national team", "age", "experience with team", "current tenure", "played at club", "international experience", and "previous stations" in that order. Over 80% of the managers are German and almost 35% played for their respective national team. The average tenure of a manager lasts around 66 games, or almost two seasons. The average wage bill in the Bundesliga is at around 53 million Euros per season, however variation in wages is quite high: Relegated teams like SC Freiburg with a wage allocation of 12.2 million have to deal with Bayern Munich, who can afford to spend over 200 million on player wages.

Regarding the overall development of wages and revenues, there is no clear trend. The values per season only deviate by a maximum of 10% from the means in Table 1 over the course of the five seasons. In international comparison, the mean wage bill in the Bundesliga is higher than in the other major European leagues (England, France, Spain, and Italy) as observed by Peeters & Szymanski (Peeters & Szymanski, 2014). However, these observations included the second tiers of each league, while this paper does not include data on the 2. Bundesliga. Judging by the wage bills of teams newly promoted to the Bundesliga, Germany's average wage bill would probably be in line with that of the other leagues. On the other hand, the standard deviation of wages in Germany seems to be quite high in international comparison: Even though only the first tier is included, the standard deviation of wages is just below that of the British Premier League and Championship combined. This might indicate that the financial dominance of large clubs is relatively bigger than that of the large clubs in other big European leagues.

III. Methodology

First, the dataset was duplicated and mirrored for analysis to allow for controlling for the home advantage. In order to determine managerial skill, two outcome variables were used: Goal difference between the teams in a given match and the actual result of the game. For the goal difference, a regular linear regression was used, while for the result ordered probit was applied. It was assumed that better individual players improve team performance and that better players earn higher wages than comparably worse players. Szymanski shows that player wage bills are positively correlated with winning percentage, which supports this assumption (Szymanski, 2003). Thus player wages are included in both models as control variables. Lastly, the concept of "home advantage" is well known in all forms of team sports and has been found to be greatest in football (Pollard, 1986). To account for this factor, the dummy variable "athome" has been included as a control variable.

In order to answer the research question, two models for each of the dependent variables (goal difference and result) were used: One that tests whether each individual manager active in the five season timespan has a significant effect on the outcome variable, and one that tests the impact of the nine managerial characteristics. The dependent variables are the control variables as well as the variables that are subject to testing. For the testing of manager fixed effects, dummies for each of the 49 active managers with available relevant financial data were created. All regressions are evaluated based on a 5% significance level.

The coefficients for both control variables (wages and playing at home) were expected to be positive and significant. The previously mentioned study in professional basketball by Goodall et al. found that some few managers, who distinguished themselves as players, raise team performance significantly, while the rest does not (Bridgewater, Kahn, & Goodall, 2011). Consequently, it was expected that a small fraction of managers will have a significant effect in this case as well.

H1: Managers have a significant effect on team performance

The managerial characteristics were all expected to have a small positive effect on the dependent variables, as it was assumed that native knowledge of the language, achievements as a player, and both overall and club-specific experience are positive attributes of a manager. For example, as researched by Goodall et al., previous achievements as a player, like a nomination for the national team, are positively associated with later performance as a manager (Goodall, Kahn, & Oswald, 2011). Likewise, accumulated experience as a manager, was found to improve the ability to improve the ability to increase the performance of talented players (Bridgewater, Kahn, & Goodall, 2011). In this paper the number of managerial spells, international experience, as well as experience with a team and tenure length were included as measures of experience. For the purpose of evaluating these factors, the following hypotheses are tested:

H2: Being German has an effect on managerial performance

H3: Age has an effect on managerial performance

H4: Having played in the national team has an effect on managerial performance

H5: Experience with the team has an effect on managerial performance

H6: The length of the tenure has an effect on managerial performance

H7: Having played at the club has an effect on managerial performance

H8: Having international coaching experience has an effect on managerial performance

H9: The number of previous spells as a manager has an effect on managerial performance

In order to investigate these hypotheses, all characteristics were tested for their effects on both of the dependent variables. Each characteristic was tested in a full model as well as individually, in order to correct for possible autocorrelation.

IV. Results

The results of the regressions confirmed the aforementioned expectations for the manager fixed effects: 6 out of 53 managers had a significant effect on goal difference (Table 2), while seven had a significant effect on the result (Table 3). While five managers affected both outcome variables, two affected exclusively the result and one only had a significant effect on goal difference. Only significant variables have been included in the tables, please refer to the appendix for the full results.

Furthermore, the control variables turned out to be significant: Both wages and playing at home affect both goal difference and result positively.

It is important to note that all the significant effects found are in fact positive compared to the baseline manager Andreas Bergmann. None of the managers actually decreased team performance significantly.

An F-test for joint significance on the regression of goal difference on the manager fixed effects yields an F-score of 2.26 and a p-value of 0.000, which confirms the aforementioned results' statistical significance. The R-squared of the regression including the manager fixed effects is 0.263 compared to an R-squared of 0.170 in a model without the fixed effects (Appendix, Table 7).

Therefore, H1 can be accepted: Managers can indeed have an effect on team performance.

Table 2: Manager fixed effects on goal difference

VARIABLES	godif
Wage	0.016***
(in millions)	0
At home	0.735***
	0.078
Manager 5: Bruno Labbadia	0.989*
	0.566
Manager 6: Christian Gross	1.504**
	0.693
Manager 7: Christian Streich	1.484**
	0.584
Manager 29: Jürgen Klopp	1.333**
	0.568
Manager 34: Lucien Favre	1.175**
	0.562
Manager 46: Michael Wiesinger	1.175*
	0.677
Manager 57: Sascha Lewandowski	1.438**
	0.61
Manager 61: Thomas Tuchel	1.268**
	0.558
Constant	0.368
	0.757
Observations	2054
R-squared	0.263
Standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 3: Manager fixed effects on results

VARIABLES	result
Wage	0.009***
(in millions)	0
At home	0.435***
	0.054
Manager 3: Armin Veh	0.698*
	0.399
Manager 5: Bruno Labbadia	0.778**
	0.397
Manager 6: Christian Gross	0.896*
	0.491
Manager 7: Christian Streich	1.062***
	0.408
Manager 29: Jürgen Klopp	0.897**
	0.399
Manager 34: Lucien Favre	0.884**
	0.394
Manager 46: Michael Wiesinger	0.967**
	0.467
Manager 48: Mirko Slomka	0.677*
	0.39
Manager 57: Sascha Lewandowski	1.103**
	0.429
Manager 61: Thomas Tuchel	0.791**
	0.39
Constant cut1 (Greene)	-0.159
	0.532
Constant cut2	0.594
	0.532
Observations	2054
Standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Regression results for the manager characteristics proved to be less conclusive however. While the control variables were again highly significant, only one of the actual characteristics actually had a statistically significant effect on goal difference (Table 4): International coaching experience of the manager.

However, contrary to expectations, the sign turns out to be negative: On average, having coached a team outside of Germany changes the goal difference by around 0.37 goals in favor of the other team.

Therefore, out of all the hypotheses related to the effect of managerial characteristics, only H8 can be accepted: Having coached a team abroad does indeed affect managerial performance.

Table 4: Managerial characteristics' effects on goal difference

VARIABLES	(1) godif	(2) godif	(3) godif	(4) godif	(5) godif	(6) godif	(7) godif	(8) godif
Wage (in millions)	0.015*** (0.001)	0.015*** (0.001)	0.015*** (0.001)	0.015*** (0.001)	0.015*** (0.001)	0.015*** (0.001)	0.015*** (0.001)	0.015*** (0.001)
At home	0.738*** (0.079)	0.740*** (0.079)	0.739*** (0.079)	0.738*** (0.079)	0.738*** (0.079)	0.735*** (0.079)	0.739*** (0.079)	0.738*** (0.079)
German	0.069 (0.106)							
National team		-0.054 (0.087)						
Age			-0.007 (0.007)					
Experience				0.000 (0.000)				
Tenure					-0.000 (0.000)			
Played at club						-0.161 (0.106)		
International experience							-0.232** (0.096)	
Previous stations								-0.008 (0.018)
Constant	-0.369** (0.169)	-0.370*** (0.099)	-0.370 (0.408)	-0.369*** (0.102)	-0.369*** (0.106)	-0.368*** (0.101)	-0.369*** (0.096)	-0.369*** (0.100)
Observations	2,054	2,054	2,054	2,054	2,054	2,054	2,054	2,054
R-squared	0.171	0.171	0.171	0.171	0.170	0.172	0.175	0.171
Standard errors in parentheses	*** p<0.01, ** p<0.05, * p<0.1							

As can be observed in Table 4, wages have a small but significant effect on goal difference. On average, the goal difference shifts by 0.015 goals per million paid in wages. Playing at home constitutes a very significant advantage: The home team has an advantage of around 0.73 goals on average.

Table 5: Manager characteristics' effects on result

VARIABLES	(1) result	(2) result	(3) result	(4) result	(5) result	(6) result	(7) result
Wage	0.008*** (0.001)	0.008*** (0.001)	0.008*** (0.001)	0.008*** (0.001)	0.008*** (0.001)	0.008*** (0.001)	0.008*** (0.001)
At home	0.407*** (0.052)	0.408*** (0.052)	0.407*** (0.052)	0.407*** (0.052)	0.406*** (0.052)	0.409*** (0.052)	0.407*** (0.052)
German	0.031 (0.069)						
Age		-0.004 (0.004)					
Experience			-0.000 (0.000)				
Tenure				-0.000 (0.000)			
Played at club					-0.095 (0.068)		
International experience						-0.121* (0.063)	
Previous stations							-0.003 (0.012)
Constant cut1 (Greene)	-0.145 (0.112)	-0.145 (0.267)	-0.145** (0.068)	-0.145** (0.070)	-0.146** (0.067)	-0.145** (0.065)	-0.145** (0.067)
Constant cut2	0.552*** (0.112)	0.553** (0.267)	0.553*** (0.069)	0.552*** (0.071)	0.552*** (0.068)	0.554*** (0.065)	0.552*** (0.068)
Observations	2,054	2,054	2,054	2,054	2,054	2,054	2,054
Standard errors in parentheses	*** p<0.01, ** p<0.05, * p<0.1						

Table 5 largely confirms the impressions from the regression on goal difference. However, there is one difference: International experience is only significant at the 10% level when the dependent variable is the result instead of the goal difference.

In the full model (Table 6), international experience is significant at the 5% level when testing for its effect on both result and goal difference. Furthermore, having played at the club affects goal difference

significantly at a 10% level. Like international experience, the effect is negative: If a team plays with a manager who used to play for that team, goal difference shifts by 0.235 goals in favor of the other team.

Table 6: Manager characteristics' effects on goal difference and result – complete model

VARIABLES	(1) godif	(2) result
Wage (in millions)	0.015*** (0.001)	0.008*** (0.001)
At home	0.736*** (0.079)	0.409*** (0.052)
German	-0.122 (0.149)	-0.061 (0.097)
National team	-0.028 (0.104)	-0.004 (0.067)
Age	0.000 (0.012)	0.001 (0.008)
Experience	-0.000 (0.001)	-0.001 (0.001)
Tenure	0.000 (0.001)	0.000 (0.001)
Played at club	-0.235* (0.133)	-0.108 (0.086)
International experience	-0.337** (0.135)	-0.179** (0.088)
Previous stations	-0.005 (0.037)	-0.002 (0.024)
Constant (cut1)	-0.368 (0.756)	-0.147 (0.493)
Constant (cut 2)		0.555 (0.493)
Observations	2,054	2,054
R-squared	0.180	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		

V. Discussion

The results show that only a small group of the active managers in the five Bundesliga seasons from 08/09 until 12/13 had a significant effect on the performance of the team they were coaching.

However, it remains unclear why these managers were more successful than the rest. The analysis of the effect of managerial characteristics did not answer this question either: Only one of the eight examined characteristics had a significant effect on team performance: The international experience of the manager. Unexpectedly, this effect turned out to be negative. 22 managers shared this characteristic, which is almost half of the sample. The reason for this negative effect remains unclear. Perhaps the directors of the club overvalued international experience when appointing the manager or maybe too many managers fail to successfully make the transition from a smaller league to the Bundesliga. There is some indication in the full model that a manager who played for the team he is now coaching performs worse than a manager who did not. Because the effect is only significant at a 10% significance level and was not present in the other models, it is hard to draw conclusions from it. However, it can be used as a pointer for further research.

The five managers who had a significant effect on both result and goal difference are Christian Streich, Jürgen Klopp, Lucien Favre, Sascha Lewandowski, and Thomas Tuchel. All four of those coaches are held in high regard due to their achievements: Streich managed to take the financially weak Freiburg side to Europe, Klopp turned Borussia Dortmund from a mid-table team to German champions and European contenders, Favre took Borussia Mönchengladbach from struggling against relegation to the Champions League, and Tuchel continued Jürgen Klopp's legacy at Mainz 05 by getting them promoted to the Bundesliga and subsequently qualifying for the Europa League. Sascha Lewandowski is a somewhat special case however: After his spell at Leverkusen, which lasted a little longer than one season, but was widely regarded as successful, he withdrew as a coach because he did not see his future as a professional football coach.

Klopp and Tuchel both have constantly been managing the same team in this timeframe (Borussia Dortmund and Mainz 05, respectively). This means that their fixed effects are in fact indistinguishable from the respective fixed effects of the clubs they have been working for. While this means that their statistical effect on team performance may be uncertain, the fact that their clubs have employed them for such a long time shows the positive impact they had on their teams in a more qualitative way. Assessing their performance through regression analysis is not possible, because moving managers are needed for a team in order to be able to distinguish team and managerial fixed effects.

As previously mentioned, managerial discretion is associated with the impact managers can have. As opposed to the British model, where the position of the coach and manager in football are combined, in Germany the two are usually separate entities. This could explain why having distinguished accomplishments as a player seems to be relatively unimportant in German football as compared to British football or US professional basketball: Perhaps coaches who distinguished themselves as players need a high level of discretion in order to take advantage of that factor. This assumption can be supported by the fact that Crossland and Hambrick found a correlation between managerial discretion and impact on performance in their previously mentioned paper (Crossland & Hambrick, 2010).

While this paper contributes to the field by showing that managers in German professional football can have a significant impact on team performance, it does not explain why. In order to improve on the research design, current characteristics should be revised (like the German nationality) and, more importantly, others should be added. Perhaps finding similarities among the identified managers could act as a guidance for this process.

VI. Conclusion

The results allows the research question to be answered partially: While managers are indeed able to impact team performance significantly, it remains largely unclear what causes some to be better than others. Out of the eight characteristics that were examined, only one was actually significant: International managing experience. Because this characteristic affected performance negatively, it remains unclear which characteristics actually contribute positively to managerial performance.

One important insight this paper provides is that it identified managers in German professional football that raised team performance above expectations. Thus it can be used as a starting point for further investigations in the field.

The main point of improvement is finding more data that distinguishes managers from each other. Adding more characteristics, such as education level or coaching licenses may yield more insight on what makes an excellent managers. Due to the split of the manager and coaching positions, a control variable for the manager in charge may improve the model as well. Lastly, the club's other staff such as physiotherapists, medical care, or fitness trainers may also have significant effects on team performance and should be controlled for.

As changing managers is one of the most commonly used methods of trying to change team performance for the better, it is important for clubs to gain more insight on what makes a good manager. Overall better choice of managers will improve team performance, and thus the quality of the Bundesliga in the long term

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VIII. Appendix

Tables 2 and 3 complete:

VARIABLES	godif	result	Manager names
home_wage	0.000***	0.000***	
	(0.000)	(0.000)	
away_wage	-0.000***	0.435***	
	(0.000)		
athome	0.735***		
	(0.078)	(0.054)	
Baseline (man_id 1)		0.475	Andreas Bergmann
		(0.861)	
2.home_man_id	0.413	0.698*	Andries Jonker
	(1.235)	(0.399)	
3.home_man_id	0.829	0.778**	Armin Veh
	(0.569)	(0.397)	
5.home_man_id	0.989*	0.896*	Bruno Labbadia
	(0.566)	(0.491)	
6.home_man_id	1.504**	1.062***	Christian Gross
	(0.693)	(0.408)	
7.home_man_id	1.484**	0.097	Christian Streich
	(0.584)	(0.434)	
9.home_man_id	0.203	0.565	Christoph Daum
	(0.617)	(0.391)	
11.home_man_id	0.734	0.481	Dieter Hecking
	(0.558)	(0.400)	
13.home_man_id	0.615	5.393	Felix Magath
	(0.570)	(267.120)	
14.home_man_id	0.886	0.240	Frank Arnesen
	(1.869)	(0.586)	
16.home_man_id	0.466	0.424	Frank Krämer
	(0.813)	(0.460)	
17.home_man_id	0.123	0.390	Frank Schaefer
	(0.656)	(0.480)	
18.home_man_id	0.427	-0.004	Fred Rutten
	(0.694)	(0.415)	
19.home_man_id	0.206	0.197	Friedhelm Funkel
	(0.592)	(0.472)	
20.home_man_id	0.493	0.414	Hans Meyer
	(0.675)	(0.456)	
22.home_man_id	0.656	0.472	Holger Stanislawski
	(0.660)	(0.455)	
23.home_man_id	0.589	0.360	Huub Stevens

	(0.649)	(0.468)	
24.home_man_id	0.555	0.478	Jens Keller
	(0.674)	(0.415)	
25.home_man_id	0.579	4.597	Jos Luhukay
	(0.596)	(267.120)	
26.home_man_id	0.493	0.486	Josef Eichkorn
	(1.887)	(0.565)	
27.home_man_id	0.511	-0.105	Jupp Heynckes
	(0.805)	(0.539)	
28.home_man_id	-0.347	0.897**	Jürgen Klinsmann
	(0.775)	(0.399)	
29.home_man_id	1.333**	-0.551	Jürgen Klopp
	(0.568)	(0.677)	
30.home_man_id	-0.174	0.631	Krassimir Balakov
	(0.814)	(0.471)	
31.home_man_id	0.835	0.003	Lorenz-Günther Köstner
	(0.680)	(0.531)	
32.home_man_id	-0.059	0.884**	Louis van Gaal
	(0.762)	(0.394)	
34.home_man_id	1.175**	0.639	Lucien Favre
	(0.562)	(0.648)	
35.home_man_id	0.517	0.384	Ludwig Preis
	(1.019)	(0.437)	
37.home_man_id	0.561	0.043	Marco Kurz
	(0.631)	(0.517)	
38.home_man_id	-0.044	0.323	Marco Pezzaiouli
	(0.732)	(0.483)	
39.home_man_id	0.231	0.360	Marcus Sorg
	(0.695)	(0.395)	
40.home_man_id	0.463	0.571	Markus Babbel
	(0.564)	(0.427)	
41.home_man_id	0.933	0.126	Markus Weinzierl
	(0.609)	(0.407)	
43.home_man_id	0.077	-0.154	Michael Frontzeck
	(0.581)	(0.517)	
44.home_man_id	-0.267	0.197	Michael Oenning
	(0.740)	(0.412)	
45.home_man_id	0.324	0.967**	Michael Skibbe
	(0.587)	(0.467)	
46.home_man_id	1.175*	0.177	Michael Wiesinger
	(0.677)	(0.440)	
47.home_man_id	0.538	0.677*	Mike Büskens
	(0.624)	(0.390)	

48.home_man_id	0.776	0.689	Mirko Slomka
	(0.555)	(0.468)	
49.home_man_id	0.902	0.187	Norbert Meier
	(0.679)	(0.511)	
50.home_man_id	-0.185	0.258	Otto Rehhagel
	(0.732)	(0.934)	
51.home_man_id	0.060	0.584	Pierre Littbarski
	(1.356)	(0.399)	
52.home_man_id	0.938	-4.201	Ralf Rangnick
	(0.571)	(267.120)	
53.home_man_id	0.627	0.640	Rene Tretschok
	(1.815)	(0.437)	
55.home_man_id	0.803	0.750	Robin Dutt
	(0.629)	(0.916)	
56.home_man_id	1.017	1.103**	Rodolfo Cardoso
	(1.348)	(0.429)	
57.home_man_id	1.438**	0.110	Sascha Lewandowski
	(0.610)	(0.436)	
58.home_man_id	-0.119	0.060	Stale Solbakken
	(0.619)	(0.491)	
59.home_man_id	0.021	0.362	Steve McClaren
	(0.716)	(0.391)	
60.home_man_id	0.491	0.791**	Thomas Schaaf
	(0.558)	(0.390)	
61.home_man_id	1.268**	0.454	Thomas Tuchel
	(0.558)	(0.411)	
62.home_man_id	0.247	0.235	Thorsten Fink
	(0.588)	(0.430)	
64.home_man_id	0.430	-0.159	Zvonimir Soldo
	(0.619)	(0.532)	
Constant	-0.368	0.594	
	(0.757)	(0.532)	
Observations	2,054	2,054	
R-squared	0.263		
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

Table 7: Control variables' effect on goal difference:

VARIABLES	(1)
	godif
Wage	0.013***
(in millions)	(0.000)

At home	0.738***
	(0.079)
Constant	-0.369***
	(0.096)
Observations	2,054
R-squared	0.170
Standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	