

KARL SCHMEDDERS

5-113-002

## Germany's Bundesliga: Does Money Score Goals?

*Some people believe football is a matter of life and death; I am very disappointed with that attitude. I can assure you it is much, much more important than that.*

—William “Bill” Shankly (1913–1981),  
Scottish footballer and legendary Liverpool manager

“Tor! [Goal!]” yelled the jubilant announcer as 22-year-old midfielder Toni Kroos of FC Bayern München fired a blistering shot past Borussia Dortmund’s goalkeeper. After sixty-six minutes of scoreless football (“soccer” in the United States) on December 1, 2012, Bayern had pulled ahead of the reigning German champion and Cup winner.

A sigh escaped Franz Dully, a financial analyst who covered football clubs belonging to the Union of European Football Associations (UEFA). He was disappointed for two reasons: Not only had a bout with the flu kept him home, but as a staunch Dortmund fan he had a decidedly nonprofessional interest in the outcome. The day’s showdown between Germany’s top professional teams and archrivals would possibly be the deciding match for the remainder of the season; with only three more matches before the mid-season break, FC Bayern had already obtained the coveted title of Herbstmeister (winter champion).

History had shown that the league leader at the break often went on to win the coveted German Bundesliga Championship title. It was no guarantee, however, as Dortmund had demonstrated last season when the club had overcome Bayern’s mid-season lead to take the title in May. This year Bayern, the league’s traditional frontrunner, was determined to reclaim its glory (and trophy).

As the station cut to the delighted Bayern fans in the stands, the phone rang. Dully knew exactly who would be on the other end of the line.

“Tough break, comrade! Wish you were here!” yelled his friend Max Vogel. Dully could barely hear him over the Bayern fans celebrating at Allianz Arena.

“Let’s skip the *schadenfreude*, shall we? It’s most unbecoming.”

“Who, me?” Vogel asked. “Surely you jest. I would never take pleasure in my childhood friend’s suffering. But disappointment is inevitable when you root for the underdog.”

"That underdog, as you call it, has taken the title for the last two years and we're going for three in a row."

Vogel was undeterred. "Fortunately, I had the foresight to move to Munich, city of champions. Remember the old saying: Money scores goals. And Bayern has the most."

"Money is no guarantee of success," Dully countered.

"Really?" his friend shot back. "Haven't billionaires from Russia, America, and Abu Dhabi bought the last three English Premier League titles for Chelsea, Manchester United, and Manchester City?"

"Well, money certainly helps," Dully conceded. "But you're using British examples, and German football is altogether different. To quote our mutual patron saint Sepp Herberger: 'The ball is round' and football is anything but predictable. This match isn't over until the whistle blows, and that's true for the season, too."

"Well, you're the numbers wizard. If anyone can calculate whether money offers an advantage, it's you. Your readers might find it interesting if you managed to prove what football fans think they already know."

"I'll see," said Dully, without enthusiasm.

"I'll drink a beer for you in the meantime! Feel better! *Tschüss!*"

Dully grunted and put the phone down, but his friend's offhand remark stuck with him. With one eye on the game, he leaned over the side of his chair and felt around for his laptop. He dreaded Vogel's gloating if Bayern held onto its lead to win the match; perhaps he could quiet him down if he met his friend's challenge to show that money correlated with winning football matches as surely as a talented striker.

## The Bundesliga

Football was widely recognized as one of Germany's top pastimes. Since the German Football Association (DFB) was founded in 1900, it had grown to encompass nearly 27,000 clubs and 6.3 million people around the country.<sup>1</sup> Initially the game was played only at an amateur level, although semi-professional teams emerged after World War II.

Professional football in Germany appeared later than in many of its international counterparts. The country's top professional league, known as the Bundesliga, was formed on July 28, 1962, after Yugoslavia stunned the German national team with a quarter-final World Cup defeat. Sixteen clubs initially were granted admission to the new league based on athletic

---

<sup>1</sup> Deutscher Fussball-Bund, "History," <http://www.dfb.de/index.php?id=311002> (accessed January 4, 2013).

performance, economics, and infrastructural criteria. Enthusiasm developed quickly, and 327,000 people watched Germany's first professional football matches on August 24, 1963.<sup>2</sup>

The Bundesliga was organized in two divisions, the 1 and 2 Bundesliga, with the former drawing far more fan attention than the latter. In 2001 the German Football League was formed to oversee all regular-season and playoff matches, licensing, and operations for both divisions. As of 2012, eighteen teams competed in each division.

The season ran from August to May, with most games played on weekends. Each team played every other team twice, once at home and once away. The winner of each match earned three points, the loser received no points, and a draw earned one point for each team. At the end of the season, the top team from the 1 Bundesliga was awarded the "Deutsche Meisterschaft" (German Championship, the Bundesliga title). (The fans jokingly referred to the cup given to the champion as the "Salad Bowl.") In 2012 the top three teams of the 1 Bundesliga qualified for the prestigious European club championship known as the Champions League, and the fourth-place team was given the opportunity to compete in a playoff round for a Champions League spot. Within the league, the bottom two teams from the 1 Bundesliga were relegated to the 2 Bundesliga and the top two teams from the 2 Bundesliga were promoted. The team that came in third from the bottom in the 1 Bundesliga played the third-place team of the 2 Bundesliga for the final spot in the top league for the following season.

Based on the number of spectators, German football was the most popular sport in the world after the U.S. National Football League—it had higher attendance per game than Major League Baseball, the National Basketball Association, and the National Hockey League in the United States. More people attended football games in Germany than in any other country (see **Exhibit 1**). From a performance perspective, the UEFA ranked the Bundesliga as the third best league in Europe after Spain and England.<sup>3</sup> Germany had also distinguished itself as one of the two most successful participants in World Cup history.<sup>4</sup>

\* \* \*

Dully roared with glee a few minutes later as Dortmund midfielder Mario Götze evened the score with a shot that sliced through a pack of players before finding the bottom corner of the Bayern goal.

*This is the magic of German football*, he reflected. The neck-and-neck races between the top few teams, the surprises, the upsets, the legends like Franz Beckenbauer and Lothar Matthäus. And of course, there were the magical moments, perhaps none more so than that rainy 1954 day when Germany's David defeated the Hungarian Goliath and stunned the world by winning the World Cup in what came to be called the Miracle of Berne.

"Call me mad, call me crazy!"<sup>5</sup> the announcer had shrieked over the airwaves when Helmut Rahn nudged the ball past Hungarian goalkeeper Gyuli Grosics and gave Germany the lead over

<sup>2</sup> Silvio Vella, "The Birth of Professional Football in Germany," *Malta Independent*, July 28, 2012.

<sup>3</sup> UEFA Rankings, <http://www.uefa.com/memberassociations/uefarankings/country/index.html> (accessed January 4, 2013).

<sup>4</sup> FIFA, "All-Time FIFA World Cup Ranking 1930–2010," <http://www.fifa.com/aboutfifa/officialdocuments/doclists/matches.html> (accessed January 4, 2013).

<sup>5</sup> Ulrich Hesse-Lichtenberger, *Tor! The Story of German Football* (London: WSC Ltd, 2003), 126.

the Hungarians, a team that had gone unbeaten for thirty-one straight games in the preceding four years and was considered the undisputed superpower of world football.<sup>6</sup> Minutes later, the Germans raised the Jules Rimet World Cup trophy high for the first time.

## Bundesliga Finances: The Envy of International Football

Most European football clubs wrestled with finances: In the 2010–2011 season, the twenty clubs in the English Premier League showed £2.4 billion in debt,<sup>7</sup> a figure surpassed by the twenty Spanish La Liga clubs, which hit €3.53 billion (£2.9 billion).<sup>8</sup> In contrast, the thirty-six Bundesliga clubs showed a net profit of €52.5 million in 2010–2011. The Bundesliga had the distinction of being the most profitable football league in the world.

In 2010–2011 the Bundesliga had revenues of €2.29 billion, more than half of which came from advertising and media management (see **Exhibit 2**).<sup>9</sup> Television was one of the largest sources of income. This money was split between the football clubs according to their performance during the season.

Secrets of the Bundesliga's success included club ownership policies, strict licensing rules, and low ticket costs. With a few notable exceptions, German football clubs were large membership associations with the same majority owner: their members. League regulations dictated a 50+1 rule, which meant that club members had to maintain control of 51 percent of shares. This left room for private investment without risking instability as a result of individual entrepreneurs with deep pockets taking over teams and jeopardizing long-term financial stability for short-term success on the field.

Bundesliga licensing procedures mandated that clubs had to open their books to league accountants and not spend more than they made in order to avoid fines and be granted a license to play the following year. Among a host of other stipulations, precise rules established liquidity and debt requirements; Teutonic efficiency had little patience for inflated transfer fees and spiraling wages that could send clubs into financial ruin.

Football player salaries were the highest of any sport in the world. A 2012 ESPN survey revealed that seven of the top ten highest-paying sports teams were football clubs, with U.S. major league baseball and basketball clubs rounding out the set. FC Barcelona's players led the world's professional athletes with an average salary of \$8.68 million—a weekly salary of \$166,934. Real Madrid players followed close behind with an average salary of \$7.80 million per year.<sup>10</sup>

While the salaries were impressive, the cost of transferring players between countries and leagues could be even more so. A transfer fee was paid to a club for relinquishing a player (either still under contract or with an expired contract) to an international counterpart, and such transfers

<sup>6</sup> FIFA, "1954 World Cup Switzerland," <http://www.fifa.com/worldcup/archive/edition=9/overview.html>.

<sup>7</sup> Deloitte Annual Review of Football Finance, May 31, 2012.

<sup>8</sup> "La Liga Debt Crisis Casts a Shadow Over On-Pitch Domination," *Daily Mail*, April 19, 2012.

<sup>9</sup> Bundesliga Annual Report 2012, p. 50.

<sup>10</sup> Jeff Gold, "Highest-Paying Teams in the World," *ESPN*, May 2, 2012.

were regulated by football's world governing body, the Fédération Internationale de Football Association (FIFA). Historically, transfers were permitted twice a year—for a longer period during the summer between seasons, and for a shorter period during the winter partway through the season. FIFA reported that \$3 billion was spent transferring players between teams in 2011 and that a transfer was conducted every 45 minutes.<sup>11</sup> Although the average transfer fee was \$1.5 million in 2011, clubs often paid top dollar to secure star power. In 2011 thirty-five players transferred at fees exceeding €15 million,<sup>12</sup> including Javier Pastore, who transferred from Palermo to Paris Saint-Germain for €42 million.<sup>13</sup> The highest transfer fee ever paid was €94 million by Real Madrid to Manchester United for Cristiano Ronaldo in 2009.

After financial crises in the business world demonstrated that no company was “too big to fail” and evidence to this effect began mounting in the football world, the UEFA approved fair play legislation in 2010 requiring teams to live within their means or face elimination from competition. The policies were designed to prevent football teams from crumbling under oppressive debt and to ensure a more stable economic future for the game.<sup>14</sup> The legislation was to be phased in over several years, with some key components taking effect in the 2011–2012 season.

Because the Bundesliga already operated under a system that linked expenditure with revenue, wealth was relatively evenly distributed among the clubs, and teams could not vastly outspend one another as was frequently the case in the Spanish La Liga and the British Premier League. As a result, a greater degree of competitive parity made for exciting matches and competition for the Deutsche Meisterschaft.

The league's reasonable ticket prices made Germany arguably one of the greatest places in the world to be a football fan. A BBC survey revealed that the average price of the cheapest match ticket in the Premier League was £28.30 (\$46), but season tickets to Dortmund matches, for example, cost only €225 (\$14 per game including three Champions League games) and included free rail travel. In comparison, season tickets to Arsenal matches (the most expensive in the Premier League) cost £1,955 (\$3,154) for 2012–2013.<sup>15</sup>

Germany had some of the biggest and most modern stadiums in the world as the result of €1.4 billion spent by the government expanding and refurbishing them in preparation for hosting the 2006 World Cup.<sup>16</sup> According to the *London Times*, two German stadiums made the list of the world's ten best football venues—the Signal Iduna Park (formerly known as Westfalenstadion) in Dortmund (ranked number one) and the Allianz Arena in Munich (number five).

During the 2010–2011 season, more than 17 million people watched Bundesliga football matches live in stadiums, and the 1 Bundesliga attendance averaged a record-breaking 42,101 per game.<sup>17</sup> The average attendance at Dortmund's Signal Iduna Park in the first half of the 2012–

<sup>11</sup> Tom McGowan, “A FIFA First: Football's Transfer Figures Released,” *CNN*, March 6, 2012.

<sup>12</sup> Mark Chaplin, “Financial Fair Play's Positive Effects,” *UEFA News*, August 31, 2012.

<sup>13</sup> “PSG Complete Record-Breaking Pastore Transfer,” *UEFA News*, August 6, 2011.

<sup>14</sup> “Financial Fair Play Regulations Are Approved,” *UEFA News*, May 27, 2010.

<sup>15</sup> “Ticket Prices: Arsenal Costliest,” *ESPN News*, October 18, 2012.

<sup>16</sup> “German Football Success: A League Apart,” *The Economist*, May 16, 2012.

<sup>17</sup> Bundesliga Annual Report 2012, p. 56.

2013 Bundesliga season was 80,577.<sup>18</sup> In addition, around 18 million people—nearly a quarter of the country—tuned in to the Bundesliga matches on television each weekend.<sup>19</sup> No other leisure time activity consistently generated that level of interest in Germany.

## FC Bayern München

In the Bundesliga's fifty-year history, FC Bayern München had been a perennial powerhouse; the club boasted twenty-one title victories and an aggregate advantage of nearly 500 points in the "eternal league table."

Conventional wisdom held that clubs with a higher market value were more likely to win championships because they could afford to pay the highest wages and transfer fees to attract the best talent. FC Bayern was the eighth highest-paying sports team in the world, with an average salary of \$5.9 million per player according to ESPN in 2012.<sup>20</sup> The highest transfer fee ever paid in the Bundesliga occurred in the summer of 2012 when Bayern bought midfielder Javier Martinez from the Spanish team Athletic Bilbao for €40 million.<sup>21</sup> Bayern's appearance in the Champions League in eleven of the previous twelve years (including one first-place and two second-place finishes) raised the team to new heights on the international stage and increased its brand value; in 2012 it was the second most valuable football club brand in the world according to Brand Finance, a leading independent brand valuation consultancy (see **Table 1**).

**Table 1:** Bundesliga Club Brand Value and Average Player Salary

Club	Number of Titles	2012 Rank	2012 Market Value (\$ in millions)	Average Annual Salary per Player for the 2011–2012 Season (\$ in millions)
FC Bayern München	21	2	786	5,907,652
FC Schalke 04	0	10	266	4,187,722
Borussia Dortmund	5	11	227	3,122,824
Hamburger SV	3	17	153	2,579,904
VfB Stuttgart	3	28	71	2,721,154
SV Werder Bremen	4	30	68	2,734,924

Source: Brand Finance Football Brands 2012 and Jeff Gold, "Highest-Paying Teams in the World," *ESPN*, May 2, 2012.

Bayern was also the only Bundesliga club to appear on the *Forbes* magazine list of the fifty most valuable sports franchises worldwide. It was one of five football teams that consistently appeared alongside the National Football League teams that dominated the list—from 2010 to 2012, the club's ranking climbed from 27 to 14. In 2012 the magazine estimated that Bayern had the fourth highest revenue of any football team in the world and valued the club at \$1.23 billion.<sup>22</sup>

<sup>18</sup> "Europe's Getting to Know Dortmund," *Bundesliga News*, December 26, 2012.

<sup>19</sup> "Sky Strikes Bundesliga Deal with Deutsche Telekom," *Reuters*, January 4, 2013.

<sup>20</sup> Gold, "Highest-Paying Teams in the World."

<sup>21</sup> "Javi Martinez Joins Bayern Munich," *ESPN News*, August 29, 2012.

<sup>22</sup> Kurt Badenhausen, "Manchester United Tops the World's 50 Most Valuable Sports Teams," *Forbes*, July 16, 2012.

Despite Bayern's privileged position, competition in the league remained strong. All eighteen of the 1 Bundesliga teams ranked among the top 200 highest-paying sports teams in the world, with average salaries above \$1.3 million per year for the 2011–2012 season.<sup>23</sup> The Bundesliga's depth kept seasons interesting: since 2000, five different teams had won the title and two more had been Herbstmeister (see **Exhibit 3**).

## Seeking Correlation

Dully flipped off the television and went to the kitchen to get some food. The match had ended in a 1–1 draw, leaving the country in suspense over whether Bayern would run away from the pack in the league table or if Dortmund could catch up. The phone rang again.

"Have you proven me right yet?" Vogel asked above the din.

"No," said Dully. "I'm averse to promoting 'financial doping.'"

"You always were an idealist," Vogel observed. "Or a purist or something."

"I'm the complement to your cynicism."

"Ah yes, that must be why we get along so well. I'd like to see your analysis, though, when you actually come up with some."

"Funny you should ask for that," Dully said. "I'll get back to you. Maybe."

After a few more minutes of banter followed by well-intentioned plans for catching up someday soon, the friends hung up. Dully returned to the living room and flopped on the couch.

The analyst wondered about the future of a Bundesliga with one team that was much wealthier than the rest—would it remain competitive and exciting or, as Vogel said, would "money shoot goals" and give those rich Bayern the German Cup year after year?

Dully returned to the spreadsheet he had started during the match, looking for a statistical correlation between money and Bundesliga success.

---

<sup>23</sup> Gold, "Highest-Paying Teams in the World."

### Exhibit 1: Comparison of Sporting League Attendance Worldwide, 2010–2011 Season

League	Average Attendance per Game
U.S. National Football League	66,960
German Bundesliga	42,690
Australian A-League	38,243
British Premier League	35,283
U.S. Major League Baseball	30,066
Spanish La Liga	29,128
Mexican Liga MX	27,178
Italian Serie A	24,031
French Ligue 1	19,912
Dutch Eredivisie	19,116

Source: ESPN Soccer Zone, WorldFootball.net, and Bundesliga Annual Report 2012, p. 56.

### Exhibit 2: Bundesliga Revenue

#### 1 BUNDESLIGA REVENUE

Sector	Revenue (€ in thousands)	% Revenue
Match earnings	411,164	21.17
Advertisement	522,699	26.92
Media management	519,629	26.76
Transfers	195,498	10.07
Merchandising	79,326	4.08
Other	213,665	11.00
<b>Total</b>	<b>1,941,980</b>	<b>100</b>

Source: "Bundesliga Report 2012: The Economic State of German Professional Football," January 23, 2012.

#### TOTAL REVENUE FOR 1 AND 2 BUNDESLIGA

Sector	Revenue (€ in thousands)	% Revenue
Match earnings	469,510	20.41
Advertisement	634,010	27.57
Media management	629,079	27.35
Transfers	215,110	9.35
Merchandising	89,493	3.89
Other	262,779	11.43
<b>Total</b>	<b>2,299,980</b>	<b>100</b>

Source: "Bundesliga Report 2012: The Economic State of German Professional Football," January 23, 2012.



**Exhibit 3: Bundesliga Mid-Season Leaders and Champions**

Season	Mid-Season Leader	Champion
2012–2013	FC Bayern München	
2011–2012	FC Bayern München	Borussia Dortmund
2010–2011	Borussia Dortmund	Borussia Dortmund
2009–2010	Bayer 04 Leverkusen	FC Bayern München
2008–2009	1899 Hoffenheim	VfL Wolfsburg
2007–2008	FC Bayern München	FC Bayern München
2006–2007	SV Werder Bremen	VfB Stuttgart
2005–2006	FC Bayern München	FC Bayern München
2004–2005	FC Bayern München	FC Bayern München
2003–2004	SV Werder Bremen	SV Werder Bremen
2002–2003	FC Bayern München	FC Bayern München
2001–2002	Bayer 04 Leverkusen	Borussia Dortmund
2000–2001	FC Schalke 04	FC Bayern München
1999–2000	FC Bayern München	FC Bayern München
1998–1999	FC Bayern München	FC Bayern München
1997–1998	1.FC Kaiserslautern	1.FC Kaiserslautern
1996–1997	FC Bayern München	FC Bayern München
1995–1996	Borussia Dortmund	Borussia Dortmund
1994–1995	Borussia Dortmund	Borussia Dortmund
1993–1994	Eintracht Frankfurt	FC Bayern München
1992–1993	FC Bayern München	SV Werder Bremen
1991–1992	Eintracht Frankfurt	VfB Stuttgart
1990–1991	SV Werder Bremen	1.FC Kaiserslautern
1989–1990	FC Bayern München	FC Bayern München
1988–1989	FC Bayern München	FC Bayern München
1987–1988	SV Werder Bremen	SV Werder Bremen
1986–1987	Hamburger SV	FC Bayern München
1985–1986	SV Werder Bremen	FC Bayern München
1984–1985	FC Bayern München	FC Bayern München
1983–1984	VfB Stuttgart	VfB Stuttgart
1982–1983	Hamburger SV	Hamburger SV
1981–1982	1.FC Köln	Hamburger SV
1980–1981	Hamburger SV	FC Bayern München
1979–1980	FC Bayern München	FC Bayern München
1978–1979	1.FC Kaiserslautern	Hamburger SV
1977–1978	1.FC Köln	1.FC Köln
1976–1977	Borussia Mönchengladbach	Borussia Mönchengladbach
1975–1976	Borussia Mönchengladbach	Borussia Mönchengladbach
1974–1975	Borussia Mönchengladbach	Borussia Mönchengladbach
1973–1974	FC Bayern München	FC Bayern München
1972–1973	FC Bayern München	FC Bayern München
1971–1972	FC Schalke 04	FC Bayern München
1970–1971	FC Bayern München	Borussia Mönchengladbach
1969–1970	Borussia Mönchengladbach	Borussia Mönchengladbach
1968–1969	FC Bayern München	FC Bayern München
1967–1968	1.FC Nürnberg	1.FC Nürnberg
1966–1967	Eintracht Braunschweig	Eintracht Braunschweig
1965–1966	TSV 1860 München	TSV 1860 München
1964–1965	SV Werder Bremen	SV Werder Bremen
1963–1964	1.FC Köln	1.FC Köln

Source: Bundesliga, "History Stats," <http://www.bundesliga.com/en/stats/history> (accessed January 4, 2013).

## Questions

### PART I

1. What were the smallest, average, and largest market values of football teams in the Bundesliga in the 2011–2012 season?
2. Develop a regression model that predicts the number of points a team earns in a season based on its market value. Write down the estimated regression equation.
3. Are the regression coefficients statistically significant? Explain.
4. Carefully interpret the slope coefficient in your regression in the context of the case.
5. Conventional wisdom among football traditionalists states that the aggregate number of points at the end of a Bundesliga season closely correlates with the market value of a club. Simply put, “money scores goals,” which in turn lead to wins and points. Comment on this wisdom in light of your regression equation.
6. Some of the (estimated) market values at the beginning of the 2012–2013 season were as follows:

SC Freiburg	€46,650,000
1.FSV Mainz 05	€46,000,000
Eintracht Frankfurt	€49,400,000

Provide a point estimate for the difference between the number of points Eintracht Frankfurt and 1.FSV Mainz 05 will earn in the 2012–2013 season.

7. Provide a point estimate and a 95% interval for the number of points SC Freiburg will earn in the 2012–2013 season.

### PART II

The first half of a Bundesliga season ends in mid-December. After a break for the holiday season and potentially bad winter weather (which could lead to the cancellation of games) the league resumes play in late January.

8. Develop a regression model that predicts the number of points a team earns at the end of a season based on its market value and the number of points it earned during the first half of the season. Write down the estimated regression equation.
9. Carefully interpret the two slope coefficients in your regression in the context of the case.
10. Compare your regression equation to the simple linear regression you obtained in Part I. How did the coefficient of the variable `Marketvalue_2011_Mio` (€ in millions) change? Provide an explanation for the difference.

11. Drop all insignificant variables (use  $\alpha = 0.05$ ). Write down the final regression equation.
12. At the beginning of the 2012–2013 season, the market value of Borussia Mönchengladbach was estimated to be €88,350,000; the market value of 1.FC Nürnberg was estimated at €41,500,000. During the first half of the 2012–2013 season, Borussia Mönchengladbach earned 25 points and 1.FC Nürnberg, 20 points.

Provide a point estimate and an 80% interval for the number of points Borussia Mönchengladbach will earn in the 2012–2013 season.

13. Provide a point estimate for the difference between the number of points Borussia Mönchengladbach and 1.FC Nürnberg will earn in the 2012–2013 season.
14. An intuitive claim may be that, on average, a team earns twice as many points in an entire season as it earns in the first half of the season. Put differently, on average, the total number of a team's points should just be two times the number of points at mid-season. Can you reject this claim based on your regression model (at a significance level of  $\alpha = 0.05$ )?