Football Players' Labour Market

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ULMS370 Football Business

Overview and Key Questions

How does the players' labour market work and function?

What's the relationship between from wage to performance?

Is it possible to modelling wage and performance and even predict performance for a give wage?

How can this be used in management decision-making?

Some Further Interesting Questions

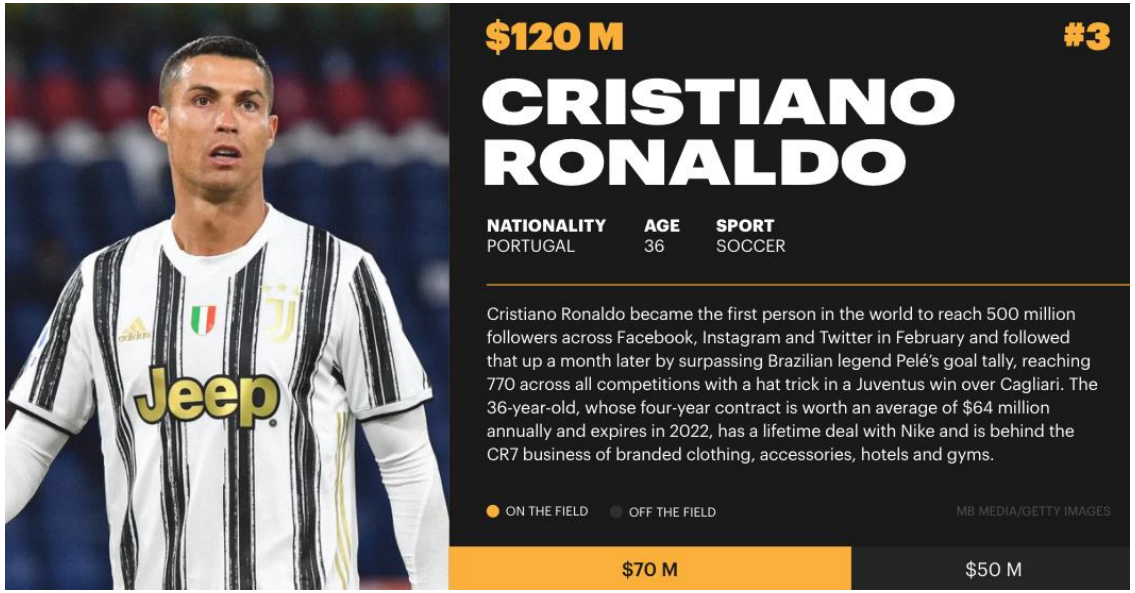
To what extent is the wage and salary markets in football efficient?

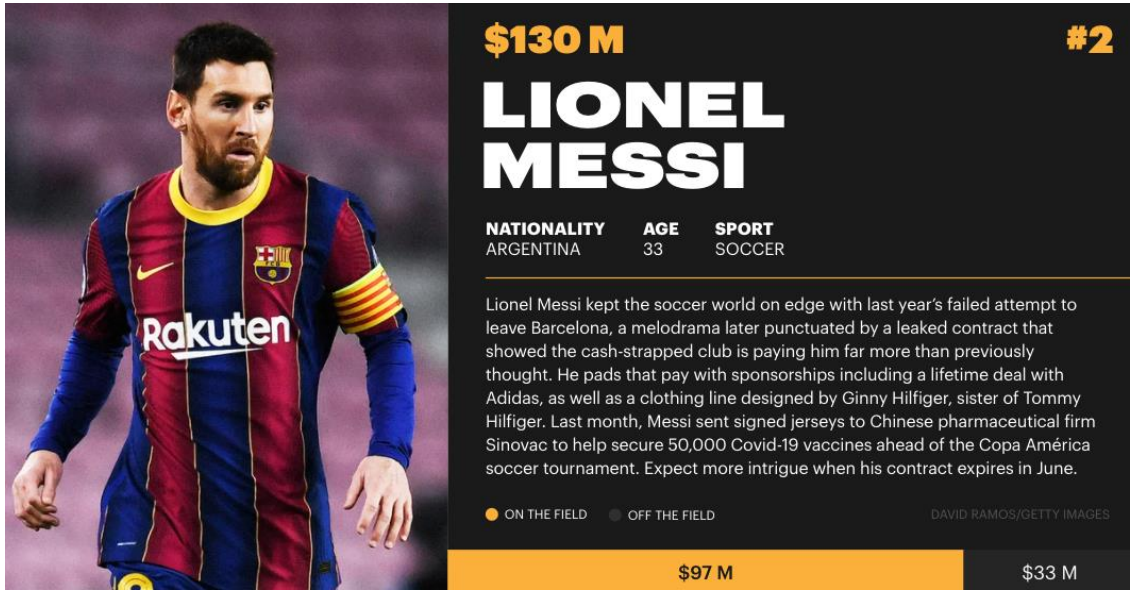
Given the levels of (in)efficiency, what advice would you offer a club looking to improve its league standing?

The correlation coefficient between the adjusted annual club wage and end-of-season performance in the Premier League across the last 4 seasons is 0.8. The same figures for the Championship, League One and League Two are 0.5, 0.3 and 0.3 respectively. What can be inferred from these coefficients?

The Players’ Labour Market

The World's Highest-Paid Footballers (source: Forbes 2021)





More Recently

The Guardian
News website of the year

Cristiano Ronaldo offered £173m a season by Saudi Arabian club Al Nassr

- Forward a free agent and has been offered contract to 2025
- Image rights would need to be agreed if Ronaldo keen on move

Fabrizio Romano

Wed 30 Nov 2022 17.09 GMT

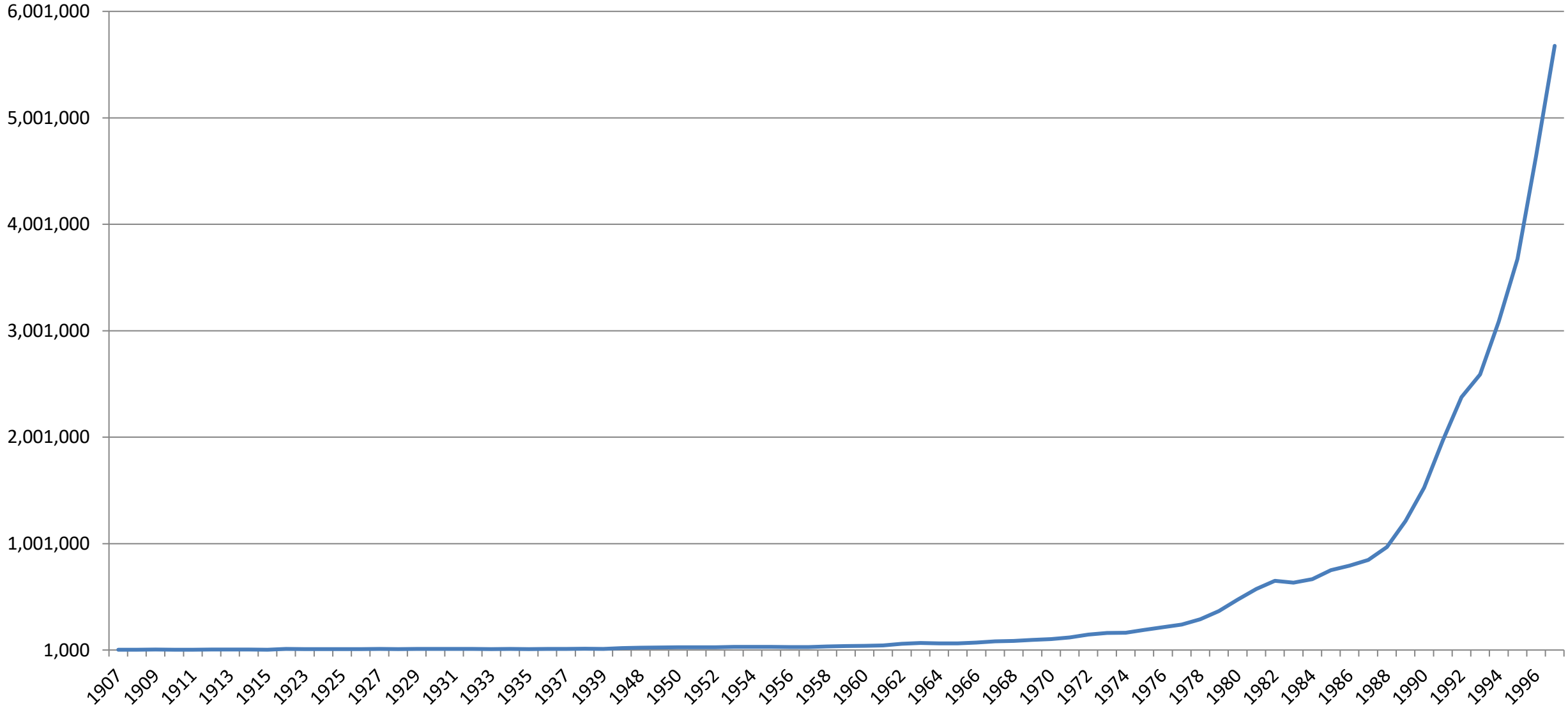
Cristiano Ronaldo is concentrating on playing for Portugal at the World Cup in Qatar. Photograph: Lars Baron/Getty Images

and in the news…

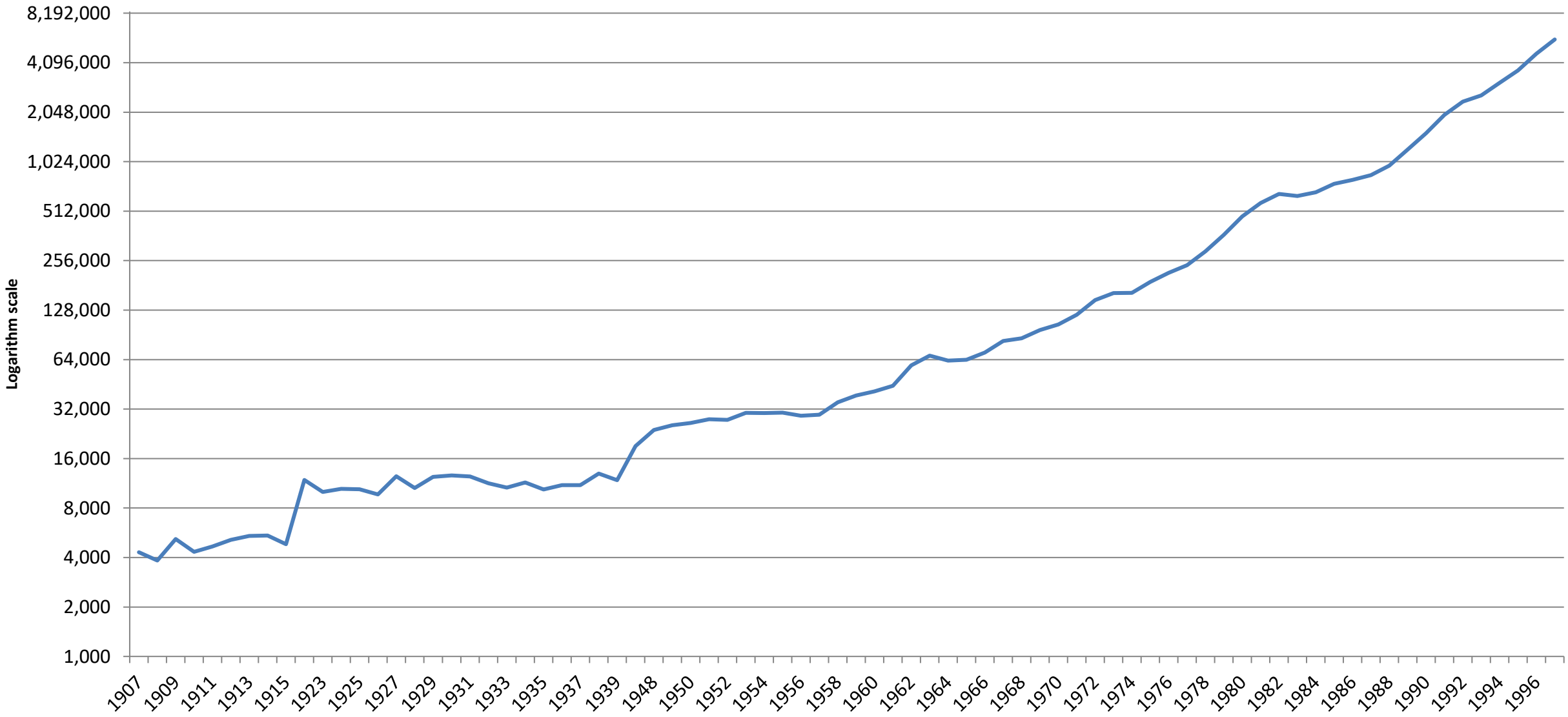
Football: Premier League is ‘financially doped’, says La Liga president

La Liga president Javier Tebas has accused English Premier League teams of financial doping. PHOTO: REUTERS

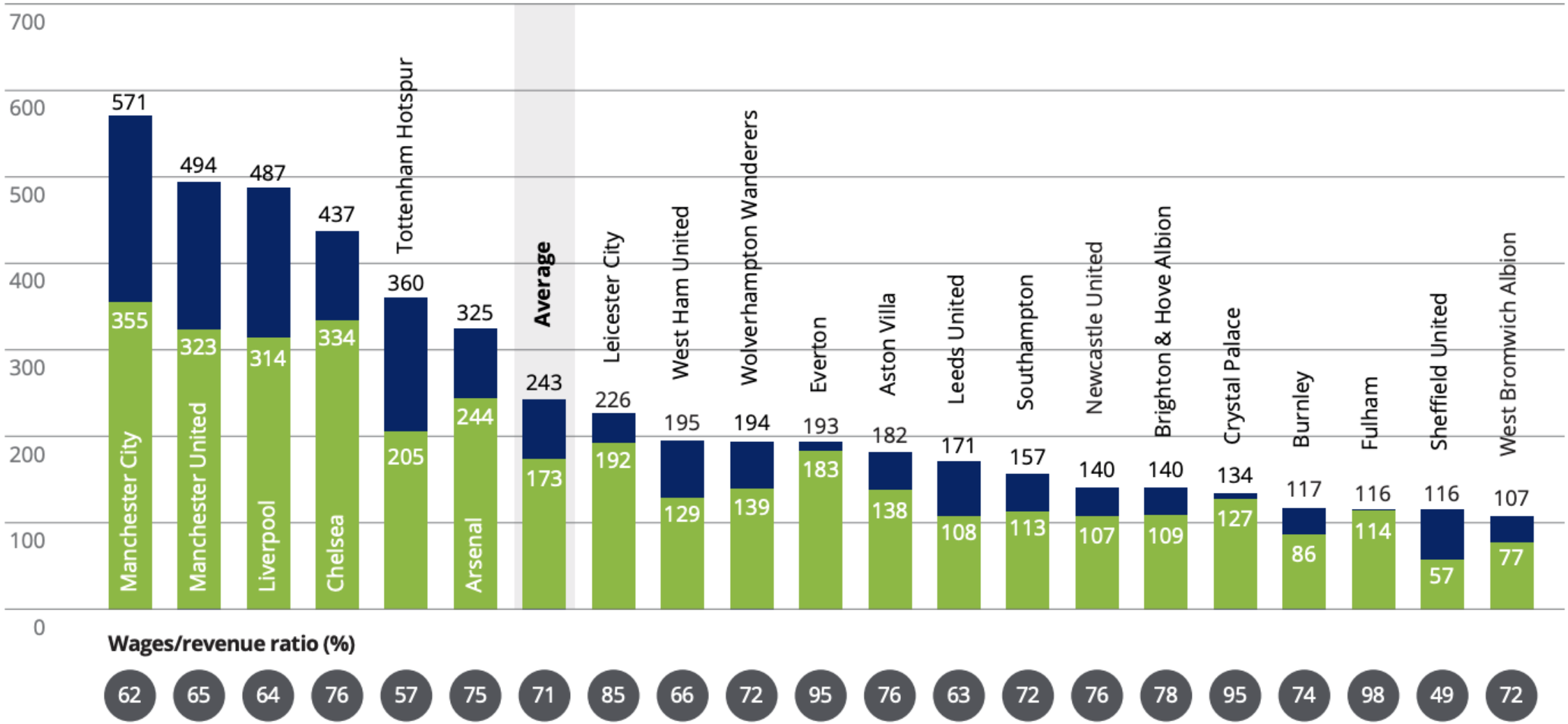
Mean Wage Escalation (in millions)



Mean Wage Escalation in English Football (in millions)



Labour Cost to Football Clubs in 2020-21



Revenue Wage costs

Source: Deloitte analysis.

A bit of history

Restrictions in the Players' Labour Market

Retain and transfer and maximum wage had significant impacts on player numbers and meant that clubs could afford to 'over' recruit players since the cost of labour was low.

In 1939, over 5,000 players

Late 1940s, over 7,000 players

The maximum wage was abolished in 1961 and the retain and transfer was modified in 1963. The effects was an increase in the the wages of players and decrease in the number of players in football.

In 1961, 4,000 players

Escalation in wage

Modifications to Retain and Transfer

George Eastham (England 1966 squad) versus Newcastle United in the High Court in 1963. The retain and transfer was deemed an unreasonable restrain of trade and effectively became the transfer system

On expiration of contracts, clubs had to offer new contract equivalent to old one.

The consequences of this was wage escalation. So, during the 1950s, with the retain and transfer and maximum wage restrictions, the inflation adjusted wages increase was 10%. Between 1961 and 1974, when the retain and transfer system was modified in favour of the players , 90% increase in inflation adjusted wages

End of Transfer System and the Start of Free Agency

Freedom of Contract was introduced in 1978 in which the current club must be compensated if it’s willing to offer a player a contract comparable to his existing one. If no transfer fee could be agreed, an independent tribunal was appointed.

Then came Bosman (1995). Jean-Marc Bosman brought a case against the football establishments (Royal Club Liégois, the Belgian FA and UEFA). He argued a restraint of trade when the club refuse to release him. Should footballers be treated any different from other workers?

The European Court of Justice ruled. Effectively, footballers did not enjoy the freedom of movement that was afforded to other workers under the Article 48 of the Treaty of Rome.

UEFA acknowledge that the system breached the Treaty but argued it necessary so as to prevent rich clubs from dominating football.

So what are the main features of the players' labour market?

Features of the Football Players' Market

Rare ability as we consider players higher up the talent pool. There is a zero (very low) degree of substitution as very specialised talent and skills that are difficult to replicate

There is a high willingness to pay by clubs and fans and viewers are complicit in this.

The presence of global world demand for players is also an important driver in the market. Players can ply their trade across many leagues in different countries, a benefit that isn't bestowed on basketball players and American football players

The cost of dissemination is very low. The marginal cost associated with meeting extra consumer demand is virtually zero. Consequently, football players are comparable with movie actors and recording artist

Features of the Football Players' Market

The role of technological advances in the market should not be overlooked. The shift from football being available only in stadia to now being available across many viewing platforms is at the heart of dissemination.

Football now has the same properties as music and films and the core workers are rewarded for meeting extra demand but without necessarily having to increase output (the number of games played)

The advantage of football, and by implication other sport, is its 'non-durable' properties. Hence, there is always a need to supply more matches. Film and music on the other hand are somewhat more 'durable'.

Who wants to watch a match in which the outcome is known? Hence the value of live matches is high with the residual value very low (live rights value vs. highlights value)

Not quite a free market but close

The Bosman Ruling created a more free market for players. Subject to some lesser restrictions (transfer windows, contract expiry,), players can move as they wish.

The players market is now more reflective of an auction. The values of players depends on the amount of supply and demand in a given time period (window).

An important aspect is that buying clubs have different valuations from one another (private values vs common values) and assuming private values are rationally derived, the values of players will reflect their ability and the value of their ability to the buying club. The basis of an efficient market

Some Literature

What Matters? Total Wage or its Distribution

A fascinating study by Depkin (2000) considered the effect of wages on performance in baseball.

In an efficient market, performance will be determined by wages, which the author finds

$$Performance = f(TotalSalary)$$

But the author's model finds a significant role for wage disparity, hence

$$Performance = f(TotalSalary, WageDisparity)$$

Wage disparity is a measure of the variance in wages amongst players. As wage disparity increases, performance falls even in the presence of high total salaries

What Matters? Total Wage or its Distribution

The conundrum:

a. High total salary, low wage disparity
b. High total salary, high wage disparity
c. Low total salary, low wage disparity
d. Low total salary, high wage disparity

A small market club might be tempted to recruit a superstar (option d) with the view of boosting performance. Essentially, there's a negative impact from the high wage disparity and it may or may not be outweighed by the (marginal) contribution of the player.

The club may be better exercising option c.

The results and findings suggest that holding all factors constant, a team would perform better with low wage disparity, hence the team-cohesiveness hypothesis

What is efficiency and how does this apply to the players’ labour market?

Pay and Performance in Football

The Bosman Ruling brought about free agency and the players would in theory be more efficient. Higher wages should not be confused with inefficiency.

In an efficient football market, the relationship between wages and performance would be stronger.

This relationship can be measured using a measure known as the (Pearson's) correlation coefficient. The measure ranges from -1 to +1. Measures at the extreme suggest strong correlation and measures close to 0 suggest weak or no correlation

Testing Causality Between Pay and Performance

Check out Hall, Szymanski and Zimbalist (Journal of Sports Economics 2002)

Found weak relationship in baseball but a strong relationship on English football. The analysis considered all teams, not just the top tier

The suggest that in baseball, causality ran from performance to payroll and from payroll to performance. For football, causality was suggested to run from payroll to performance.

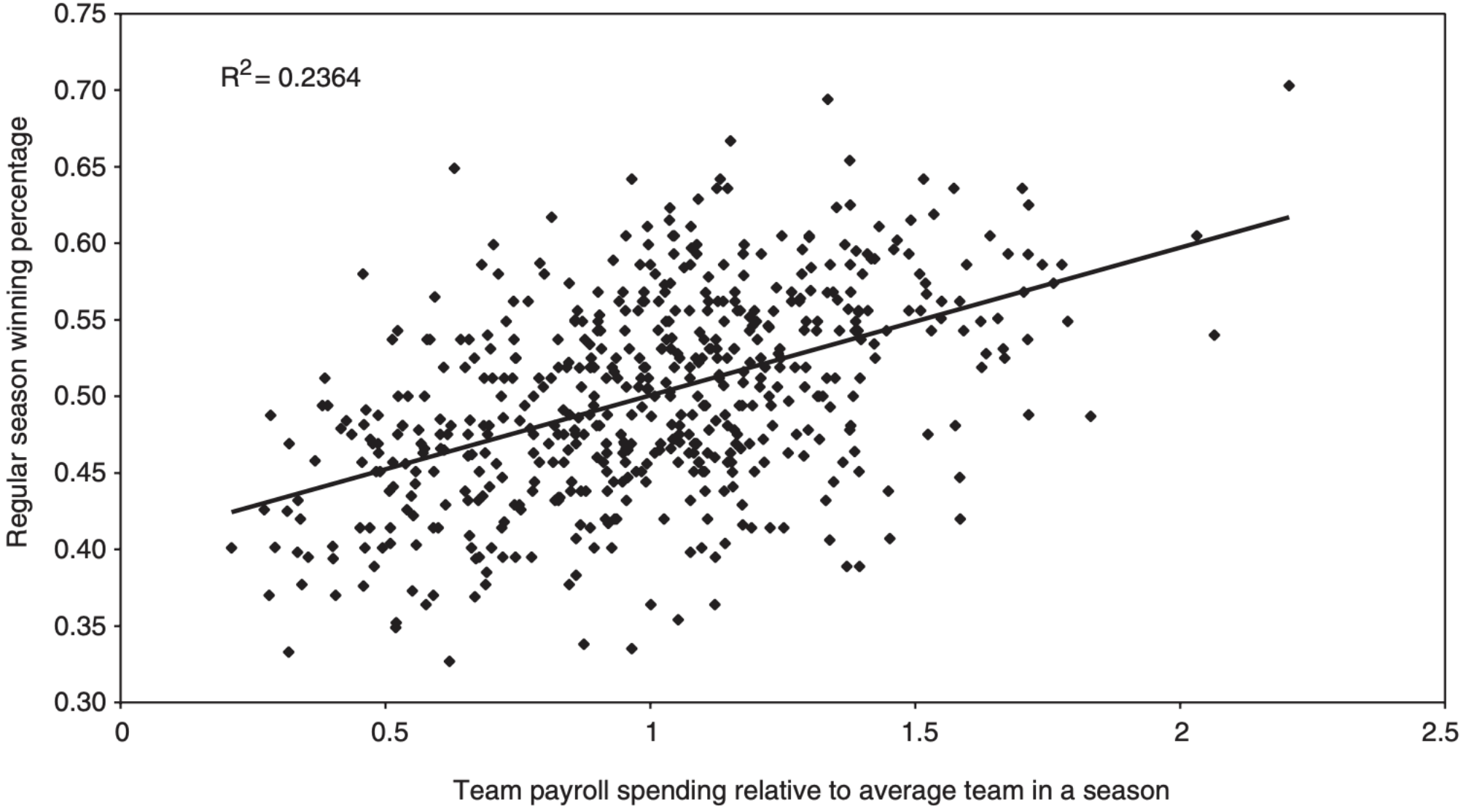


Figure 1: Annual Payroll and Winning in Baseball: 1980-2000

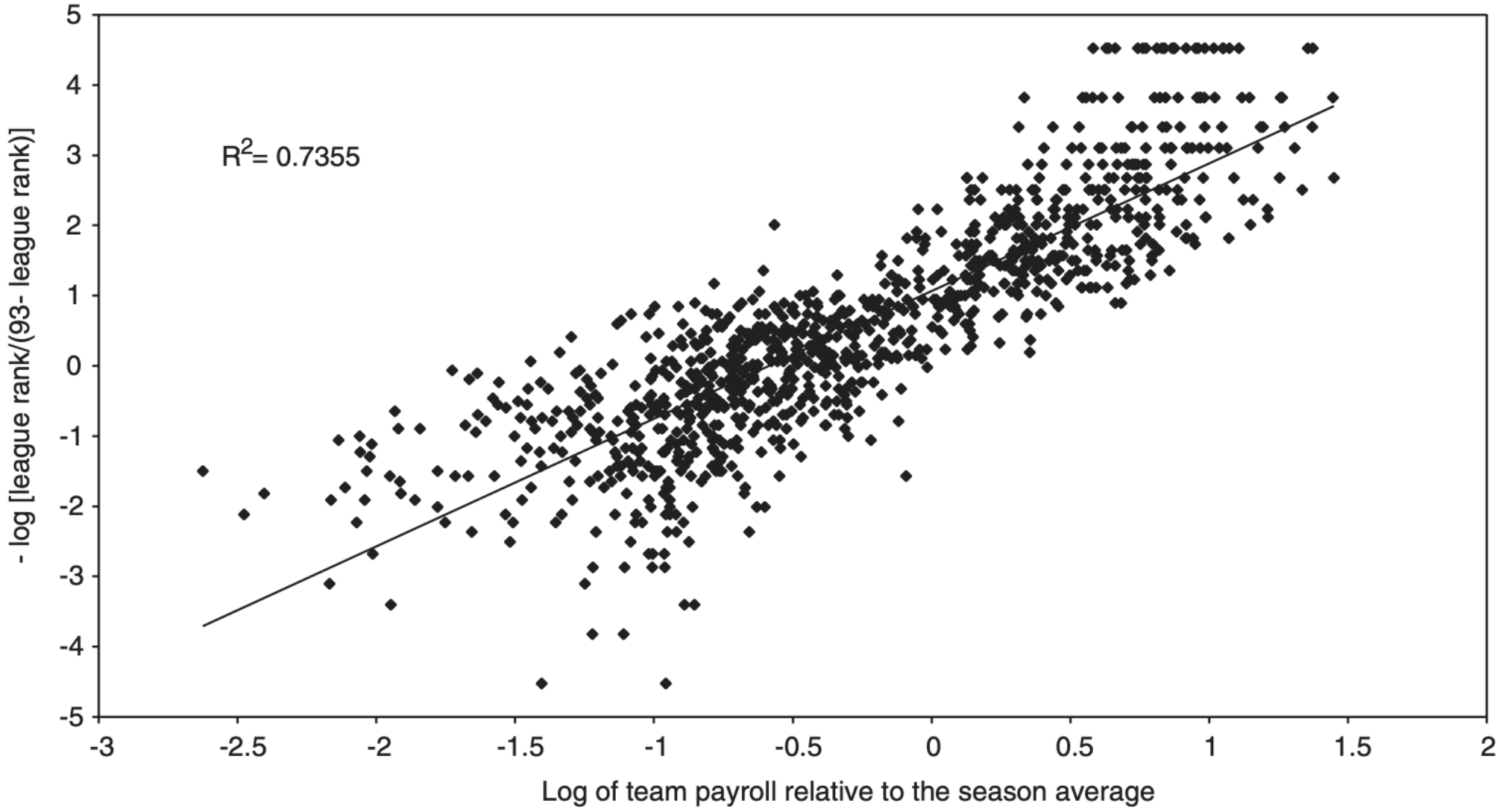


Figure 3: Payroll and Winning in English Soccer: 1974-1999

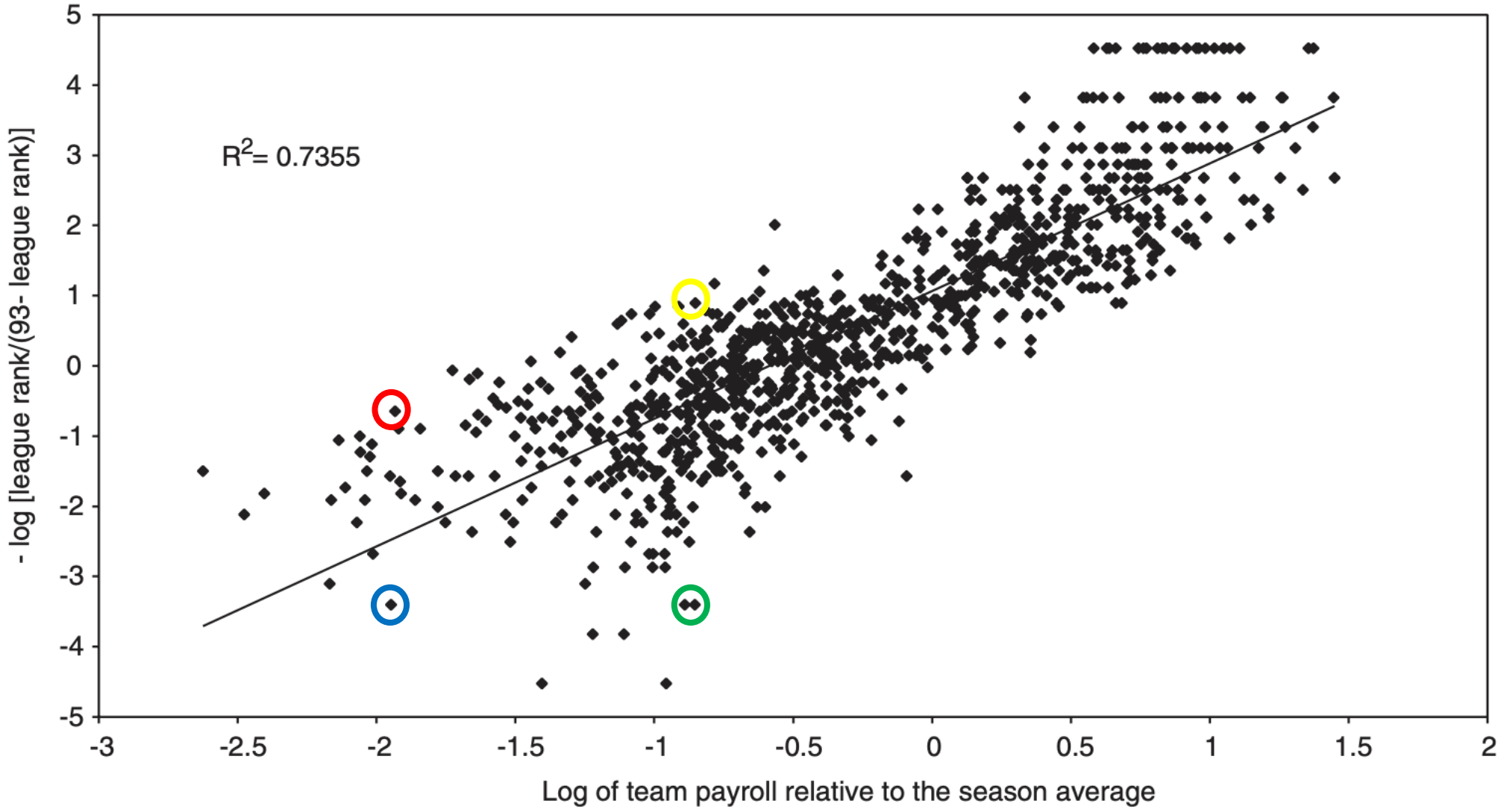


Figure 3: Payroll and Winning in English Soccer: 1974-1999

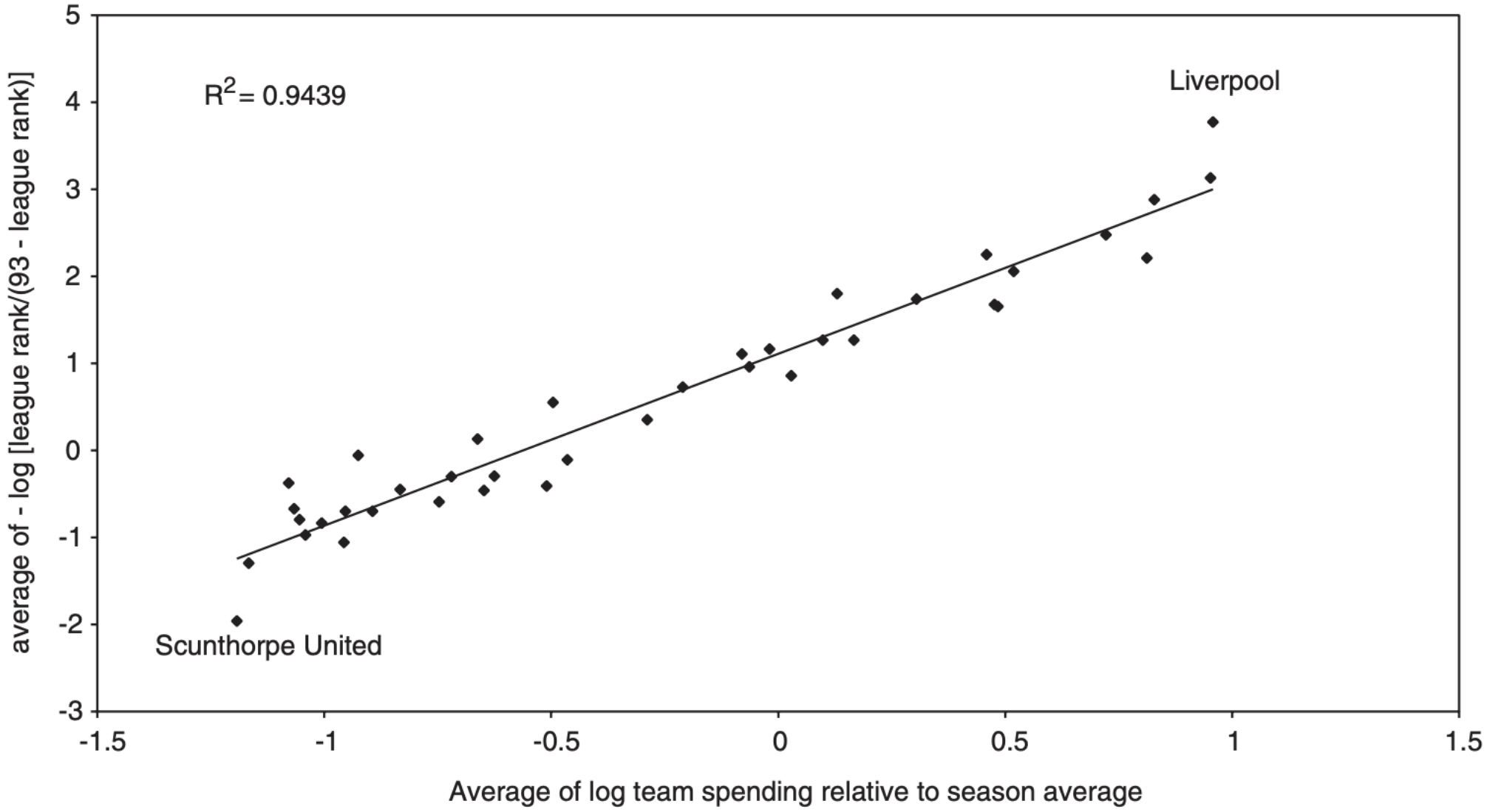
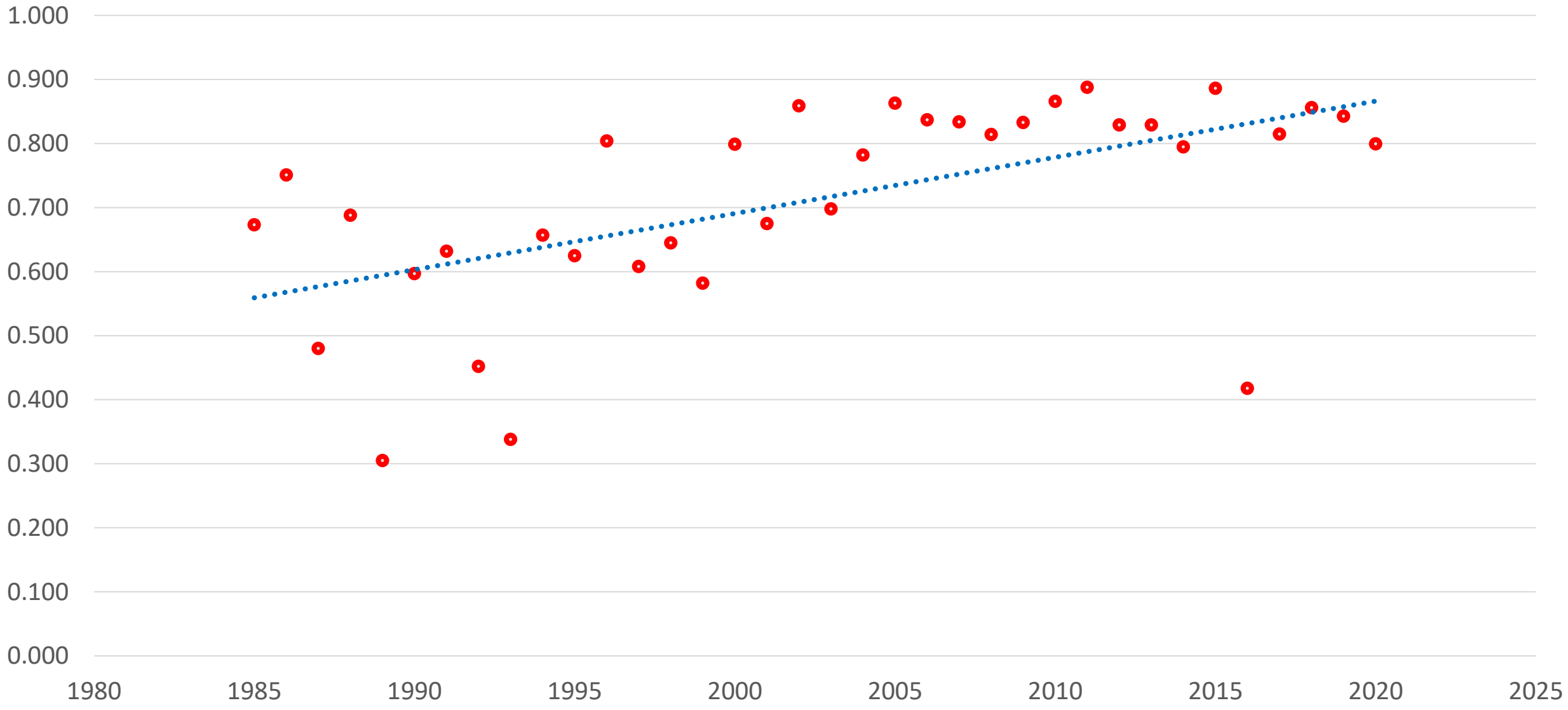


Figure 4: Team Average Spending and Average League Position: 1974-1999

Some Empirical Analysis and Insights

Correlation Coefficients: Simple but Powerful
Wages and Performance (Tier 1)



Correlation Coefficients: Wages and Performance (Tier 2)

Season end	ρ	Season end	ρ
1985	0.40	1998	0.66
1986	0.66	1999	0.72
1987	0.68	2000	0.45
1988	0.33	2001	0.58
1989	0.41	2002	0.56
1990	0.42	2003	0.36
1991	0.56	2004	0.55
1992	0.31	2005	0.30
1993	0.70	2006	0.56
1994	0.49	2007	0.59
1995	0.46	2008	0.50
1996	0.25	2009	0.46
1997	0.48	2010	0.70

Wage-Performance Correlations: Some Explanations

In the player's labour market, the following are likely to affect the relationship between wages and performance

- Free agency allowing players to freely move between clubs
- World supply of players (elasticity of supply)
- Competition between clubs
- Better (but not quite perfect) valuation of players' ability
- Efforts and ability can be observed in the industry unlike other industries/sectors

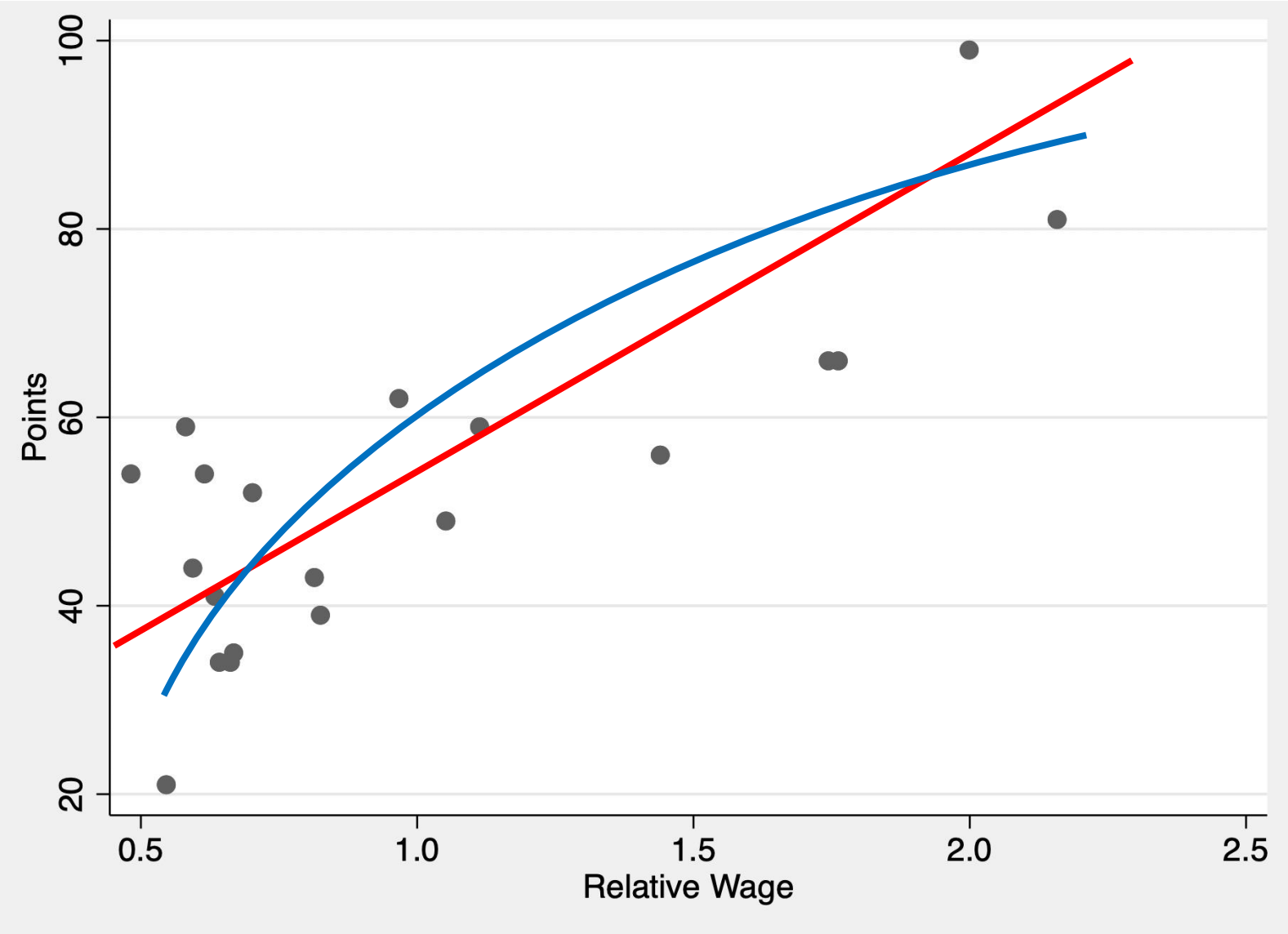
In the managers' labour market, the relationship between wages and performance is likely to be influenced also

- Sorting of managers across leagues and clubs
- Better management of clubs
- Incentives of managers (short term)

Analysing Performance

Performance and Wage Data: 2019-20

Performance and Wages 2019-20
Red or Blue? This can be empirically tested



Club	Points	Wages in m	Relative Wage	Relative Wage Squared
Liverpool	99	325.6	2	4
Manchester City	81	351.4	2.2	4.7
Chelsea	66	287.1	1.8	3.1
Manchester United	66	284	1.7	3
Leicester City	62	157.5	1	0.9
Tottenham	59	181.3	1.1	1.2
Wolves	59	94.7	0.6	0.3
Arsenal	56	234.5	1.4	2.1
Sheffield Utd	54	78.5	0.5	0.2
Burnley	54	100.1	0.6	0.4
Southampton	52	114.4	0.7	0.5
Everton	49	171.3	1.1	1.1
Newcastle Utd	44	96.8	0.6	0.4
Crystal Palace	43	132.6	0.8	0.7
Brighton	41	103.2	0.6	0.4
West Ham	39	134.3	0.8	0.7
Aston Villa	35	108.8	0.7	0.4
Bournemouth	34	107.9	0.7	0.4
Watford	34	104.5	0.6	0.4
Norwich City	21	88.9	0.5	0.3

Simple Regression Analysis using Data from 2009 to 2020

Source	SS	df	MS
Model	41232.3337	1	41232.3337
Residual	23949.1501	215	111.391396
Total	65181.4839	216	301.766129

Number of obs	=	217
F(1, 215)	=	370.16
Prob > F	=	0.0000
R-squared	=	0.6326
Adj R-squared	=	0.6309
Root MSE	=	10.554

points	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
relativewage	23.60972	1.22715	19.24	0.000	21.19093	26.0285
_cons	28.13616	1.460088	19.27	0.000	25.25824	31.01407

Or presented another way

$$points = 23.6RW + 28.1$$

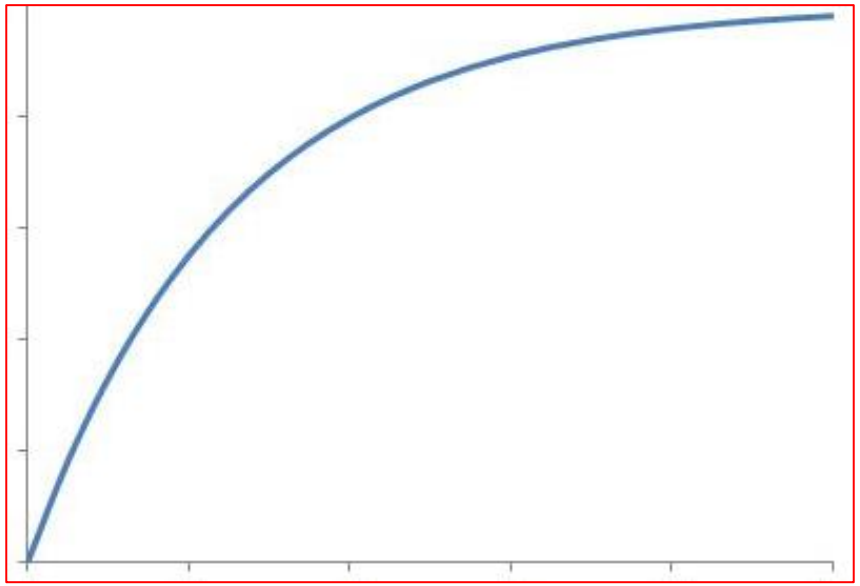
Consider the r-squared value

Simple Regression Analysis using Data from 2009 to 2020

Source	SS	df	MS
Model	42448.0012	2	21224.0006
Residual	22733.4826	214	106.231227
Total	65181.4839	216	301.766129

Number of obs	=	217
F(2, 214)	=	199.79
Prob > F	=	0.0000
R-squared	=	0.6512
Adj R-squared	=	0.6480
Root MSE	=	10.307

points	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval
relativewage	47.17279	7.067812	6.67	0.000	33.24135	61.1042
relativewageSq	-8.680108	2.565924	-3.38	0.001	-13.73783	-3.62238
_cons	15.99595	3.861648	4.14	0.000	8.38421	23.6076



$$points = 47.2RW - 8.7RW^2 + 16.0$$

Consider the r-squared value

The assumption being that wages does not affect performance linearly.

The model suggest that: as relative wage increases, points increase, but at a decreasing rate, as per the graph.

This make sense, since infinite spending on wages should have diminishing returns

Club	Points	Wages in M	RelativeWage	RelativeWageSq	Linear	L-OverUnder	Quadratic	Q-OverUnder
Liverpool	99	325.6	2	4	75.3	23.7	75.6	23.4
Manchester City	81	351.4	2.2	4.7	79.1	1.9	77.4	3.6
Chelsea	66	287.1	1.8	3.1	69.7	-3.7	72.2	-6.2
Manchester United	66	284	1.7	3	69.3	-3.3	71.9	-5.9
Leicester City	62	157.5	1	0.9	51	11	53.5	8.5
Tottenham	59	181.3	1.1	1.2	54.4	4.6	57.7	1.3
Wolves	59	94.7	0.6	0.3	41.9	17.1	40.5	18.5
Arsenal	56	234.5	1.4	2.1	62.1	-6.1	65.9	-9.9
Sheffield Utd	54	78.5	0.5	0.2	39.5	14.5	36.7	17.3
Burnley	54	100.1	0.6	0.4	42.7	11.3	41.7	12.3
Southampton	52	114.4	0.7	0.5	44.7	7.3	44.8	7.2
Everton	49	171.3	1.1	1.1	53	-4	56	-7
Newcastle Utd	44	96.8	0.6	0.4	42.2	1.8	41	3
Crystal Palace	43	132.6	0.8	0.7	47.4	-4.4	48.6	-5.6
Brighton	41	103.2	0.6	0.4	43.1	-2.1	42.4	-1.4
West Ham	39	134.3	0.8	0.7	47.6	-8.6	49	-10
Aston Villa	35	108.8	0.7	0.4	43.9	-8.9	43.6	-8.6
Bournemouth	34	107.9	0.7	0.4	43.8	-9.8	43.4	-9.4
Watford	34	104.5	0.6	0.4	43.3	-9.3	42.7	-8.7
Norwich City	21	88.9	0.5	0.3	41	-20	39.2	-18.2

Concluding Remarks

Developments in players' labour market

- How the players' market functions and why
- Various market mechanisms
- Trends in players' wages

Features of the players' labour market

- Why are salaries so high? (positive)
- Are salaries too high? (normative)

Pay and performance: empirical analyses

- Salaries are strong determinant of performance
- Can this inform decision-making?