Basic Wage for Soccer Players in Japan : Individual Performance and Profit Sharing Components

Shimono Keiko
Nagoya City University

Abstract

This paper focuses on Japanese soccer players' wage, which is determined by individual performance and team performance. The Japan professional soccer league (J. League) restarted in 1999 with two divisions and its success is partly due to the introduction of a general rule for soccer players' wage and transfer fee. The J. League has succeeded in establishing wage control; in contrast, the Japanese professional baseball league has failed to do so and has been in turmoil since October 2004. I confirm that under the J. League wage rules, a seniority factor and team performance is given considerable weight in determining wages for Japanese soccer players, which is some fifty percent of the basic wage for Japanese soccer players in the J 1 division on average.

1. Introduction

Wage control is of importance for professional sports. The Japan professional soccer league (J. League) started in 1993 with great success, however, soon became in trouble because of a sharp decrease in the number of spectators. Then the J. League restarted in 1999 with two divisions, and its recovery is based by introducing the general rules for soccer players' wage as well as transfer fee rules. The J. League has succeeded a wage control since 1999, although the Japan professional baseball league has failed to do so. It has been in turmoil since October 2004, because of excessive wage for baseball players as well as poor management of baseball clubs.

This paper focuses on wage determination for soccer players. Soccer is a team sport, so it is an interest question which is more important in determining wage, individual performance or team performance. Soccer players seem an exception in

the labour market ; however, there are few outstanding players like Zidane or David Beckham. Ordinary players' wage might be determined similarly to ordinary workers', although soccer players are more heterogeneous. In this paper, I will show that a seniority factor and team performance are significant determinants of the wage for soccer players, and what are the suitable measure for the individual performance.

As a pioneer in this field, Lazear has published many papers. Lazear (1989) presents a theoretical model, where an efficient and selfish person might decrease the team performance. The performance of homogeneous team is better than that of heterogeneous one. Taking account of Lazear's idea, Kennedy (1995) concludes that if the workforce is sufficiently heterogeneous, profit sharing component should be introduced in wage for improving overall productivity and profitability.

I would like to test the Kennedy statement using the soccer players' wage in division 1 of the J. League.

This paper consists of five sections. Section 2 presents a brief explanation of player categories and wage determination for soccer players in Japan. Section 3 provides some statistics for players. In Section 4, wage functions are estimated, using basic wage of the J. League players, and then team and individual performance are discussed. Some concluding remarks are given in Section 5.

2. Player Categories and Wage Formulation

The Japan professional soccer league (the J. League) started in 1993 and until 1995 the J. League enjoyed success. The number of spectators, however, soon decreased sharply and one of the clubs was bankrupted in 1998 because of excessive wage payment for players. Before then, players' wage was determined by each club. In 1998, the J. League standardised the player categories, and wage and transfer fee rules for each category. Shimono (2003) gives a detailed description.

There are three categories of professional soccer players in Japan, namely ProA, ProB and ProC. Players' wage is comprised of a basic wage and a fluctuating wage. The fluctuating wage has three parts : a game premium, a win premium and a performance premium. A game premium is paid to players who take part in a game. A win premium is paid to participants and substitutes if a game wins or equals. A performance premium is paid to a player who is a representative or who is selected as a best player and so on.

The category ProC is a starting position for all amateur or semi-professional soccer players. Their wage is 4.8 million yen at maximum, not at minimum. There is not a minimum wage for professional soccer players in Japan, unlike in European countries and Australia. Australian soccer players apply a minimum wage, A$23,326.80 (some 1.9 million yen) at the 2003 collective agreement. 4.8 million yen is almost equivalent to the average wage for an employee in his 20's.

After 3 years as a ProC player, each player needs to become ProB or ProA player. Otherwise, he has to give up a career as a professional soccer player. This three years' limit employment contract is a 'up and out' policy for young players. Outstanding players can be promoted by a time condition rule such as 450 minutes in J1 or 900 minutes in J2 or 1,350 minutes in JFL. J1 and J2 form the professional soccer league, and JFL is a mixture league of professional clubs and amateur teams.

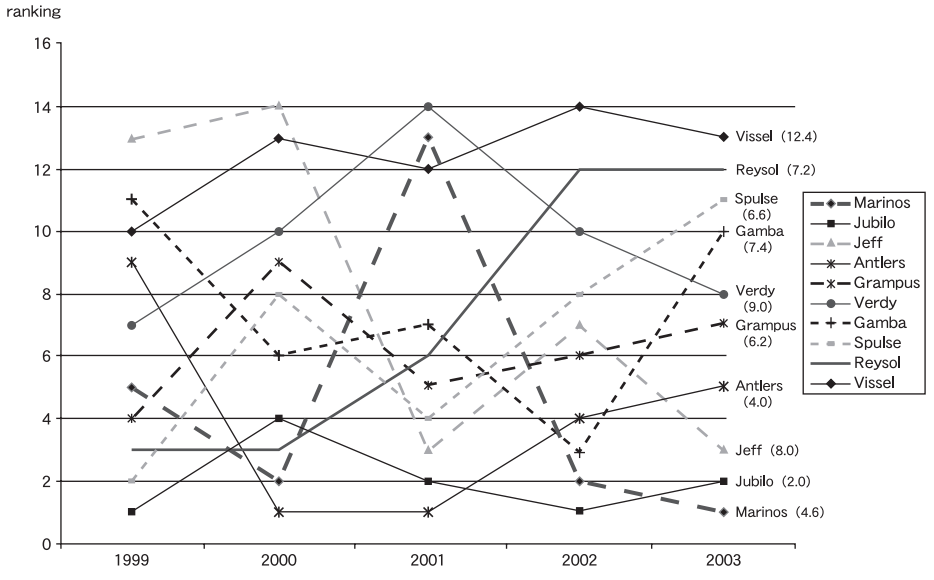
The category of ProB players is not so different from that of a ProC player. His wage is 4.8 million yen at maximum as the same as ProC player. However, the transfer fee applied for him is smaller than a ProC player's. ProB players are easier than other category players to change clubs.

ProA players are those who capture the public's imagination. There is no limitation on their wages, subject to a maximum basic wage of 7 million yen only for their first contract. An annual wage of 7 million yen is almost the same as the average wage for ordinary employees. The number of ProA players is regulated to 25 or less per team by the J. League rules.

3. Players' Wage and Performance

In this section, I will point out first that club performance is strongly related to club finance. Then I show some figures for players' wage and suggest that a seniority factor in wage determinant might be important for Japanese soccer players.

Figure 1 shows a transit of ranking for 1999 to 2003. As explained before, the J. League restarted in 1999. The number of clubs increased and one league divided into J1 and J2 divisions, and since then sixteen teams have composed J1. As a result of a promotion and relegation system being introduced at the same time, only 10 teams have succeeded to stay at J1 from 1999 to 2003. For the 5 years' average, the top five are Jubilo, Antlers, Marinos, Granpus and Spulse. Although Japanese



Note : The figure in a parenthesis is average annual ranking for 1999－2003.

Figure 1 Ranking for 10 Clubs surviving in J 1 for 1999－2003

club performance is relatively unstable and seems more competitive than European soccer league with its long history, there is a top group (see Figure 1).

These top group teams, some of which have won a championship, also tend to be the richer clubs. Table 1 is a summary for all clubs in 2003. The top 5 clubs, Reysol and Gamba spent more than 600 million yen on all players' basic wage excluding coach income. For Japanese soccer clubs, unlike the Japan professional base-

Table 1 Statistics about

	Jubilo	Antlers	Marinos	Grampus	Spulse	Reysol
average ranking for 1999－2003	2	4	4.6	6.2	6.6	7.2
2003 ranking	2	5	1	7	11	12
Total Wage (ten thousand yen)	75,200	89,700	68,200	76,860	68,440	70,100
Total wage excluding Coach	72,200	82,700	63,200	66,860	66,440	65,100
Average Wage for Players	2,777	2,954	1,915	2,157	2,291	2,170
Number of Players	26(3)	28(2)	33(2)	30(4)	29(3)	30(3)
Average Age	25.08	26.11	24.73	24.77	25.07	24.7
Average Years of Experience	5.19	5.82	5.76	4.48	5.59	5.07
WC or Best 11 in 2002	3	5	1	1	3	1

Note : (1) J 1 league has been formed by 16 clubs since 1999.
(2) "WC or Best 11 in 2002" indicates the number of players who were national team members or were selected as Best 11.
(3) FC Tokyo, Reds, Cerezo, Trinita, Vegarta and Sanga were demoted to J 2 League, at least one year from 1999 to 2002.

ball clubs, total wage expenditure is strongly restricted by club finances, monitoring by the J. League. Table 1 shows that club finance and performance is sturdily co-related for J 1 clubs.

Next, I will examine the relationship between basic wage and age. The average professional experience for soccer players in J 1 is some 5 years (see Table 1). Average age is 25 years old. These statistics indicate that soccer players are rather young and their career is limited. It is very hard to survive as a professional soccer

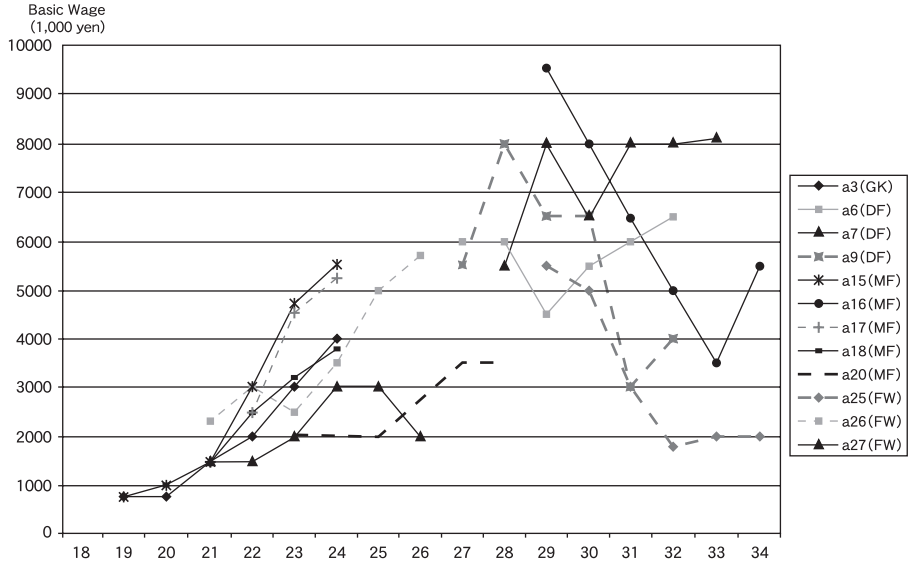


Figure 2 (1) Wage Variation of Players continuously playing in Antlars : 1998－2003

J 1 Clubs in 2003

	Gamba	Jeff	Verdy	Vissel	FC Tokyo	Reds	Cerezo	Trinita	Vegarta	Sanga
	7.4	8	9	12.4						
	10	3	8	13	4	6	9	14	15	16
	66,750	52,810	52,840	47,860	49,500	44,810	52,050	41,260	47,640	38,970
	60,750	47,810	47,840	45,360	44,500	39,810	48,050	38,260	44,640	35,970
	1,898	1,494	1,840	1,680	1,534	1,421	1,502	1,234	1,353	1,240
	32(3)	32(3)	26(3)	28(4)	31(3)	28(3)	32(4)	31(3)	33(5)	29(1)
	24.16	25.47	24.35	25.68	25.29	24.11	24.97	25.29	25.76	23.03
	4.72	4.91	4.23	5.29	4.71	4.11	4.97	5.32	5.94	4.34
	1	0	0	0	0	1	1	0	0	0

*including one amature player.
*including two semi-pro players.

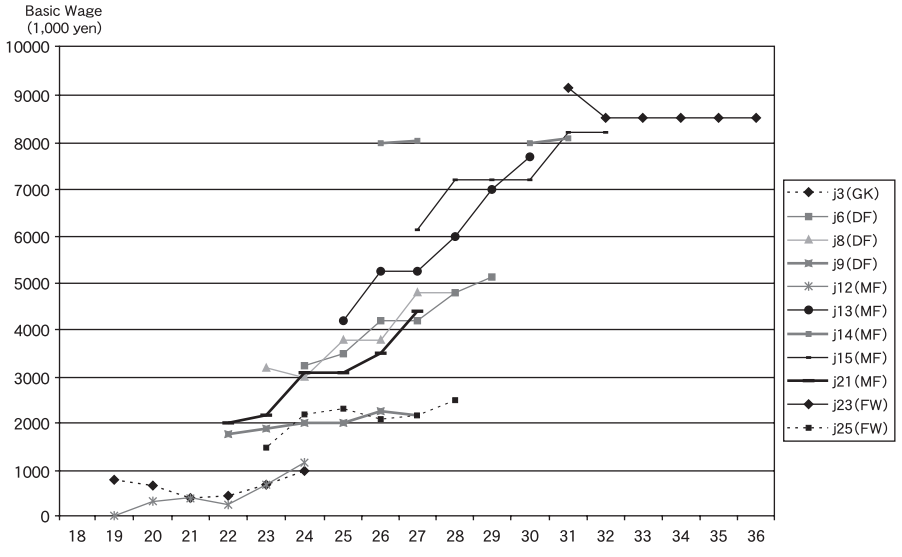


Figure 2 (2) Wage Variation of Players continuously playing in Jubilo : 1998 – 2003

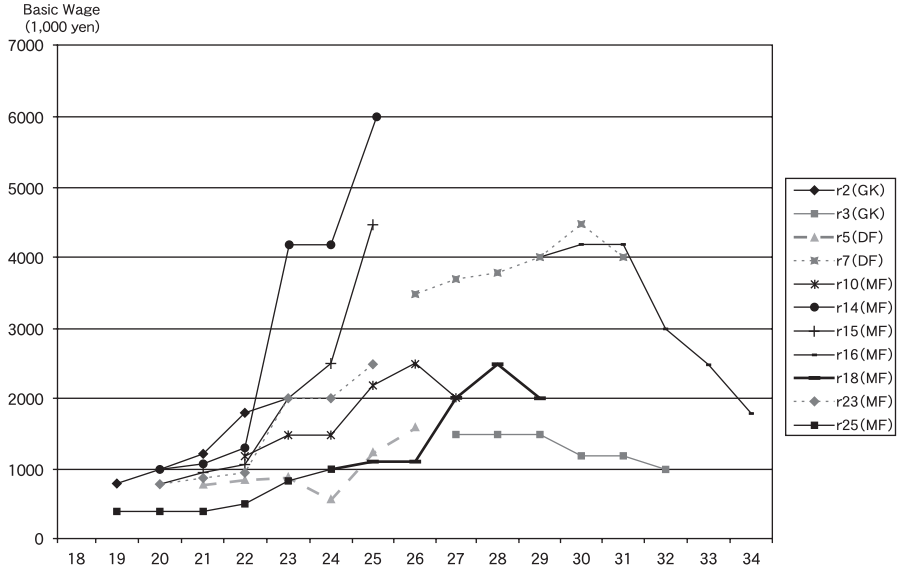


Figure 2 (3) Wage Variation of Players continuously playing in Reysol : 1998 – 2003

player.

Figure 2 shows basic wage variation for players belonging to the same club from 1998 to 2003 for the selected clubs, Antlers, Jubilo and Reysol. These three clubs have rather more players contracted with the same club for 6 years. Antlers and Jubilo have been competing to win a championship from 1995 to 2002. These

two teams have supplied many representatives for the Japanese national team.

For Antlers players, the peak age of earning is between 28 and 30 years old. If a player can survive in Antlers, his earning increases rapidly. In Jubilo, there are two types of long-term contract players: with large salaries and with modest salaries. Wage transition for Reysol players is similar to Antlers', although their wage base is lower than Antlers and Jubilo.

According to the wage rule of the J. League, which demands that all soccer players start as a ProC player with 4.8 million yen at maximum, players' wage might increase with age, which is similar to ordinary workers in Japan, although the peak age of the wage curve has to be changed from 50 year to 30 years old. Figure 2 suggests that soccer players' wage would be partly determined by some kind of seniority factor.

In next section, I will estimate the wage functions, using the data for all players in J1. I will focus on a seniority factor and a team performance factor in the wage determination for Japanese soccer players.

4. Estimation Results: Performance or Seniority

For estimating the wage functions of soccer players, I employ the J1 players' data at the beginning of the 2003 season. Basic Wage is the main earning of a player, which is estimated by a sport newspaper publishing company named Sport Nippon. Players can be paid other income as several premiums, such as a playing premium, a game premium and a performance premium (see Section 2).

Most variables are taken from the 2003 J. League All Players Guide published by Sport Nippon. Accumulated appearances and the number of goals prior to 2001 can be obtained from the the J. League Official Guide in 2002.

Table 2 is a summary of data used for estimating the wage function. Foreign players occupied 10 percent of J1 players in 2003. Some 18 percent of players are forwards, 40 percent are mid-filders and 29 percent are defenders. In the 2003 season, newcomers from other clubs including J1 and J2 are 14 percent of players.

The average Basic Wage is 18 million yen and the standard deviation (20 million yen) is rather larger than the average. Avarage player age is some 25 years old and years of experience is some 5.1 years on average. Seniority factors are age and years of experience. These explanation variables are often significant in the wage

Table 2 Descriptive Statistics

	mean	s. d.	min	max
Basic Wage in 2003	1,826.66	1,953.17	100	15,000
log (Basic Wage)	7.063	0.930	4.61	9.62
age	24.917	4.435	18	38
years of experience	5.038	3.209	1	11
FW : forward	0.180			
MF : midfielder	0.403			
DF : defender	0.292			
club size (total basic wage : hundred million yen)	5.880	1.413	3.90	8.97
foreign players	0.102			
transfer (newcommers)	0.144			
J 1 games in 2002	10.484	11.247	0	30
J 2 games in 2002	2.893	9.368	0	44
J 1 games to 2001 (accumulated appearances)	58.960	76.942	0	318
J 2 games to 2001 (accumulated appearances)	9.811	22.834	0	153
WC (World Cup final members) or Best 11 in 2002	0.048			
Best 11 to 2001	0.073			
FW : J 1 average goals per game in 2002 (FW only)	0.209	0.234	0	0.85
FW : J 2 average goals per game in 2002	0.099	0.215	0	0.96
FW : J 1 average goals per game to 2001	0.155	0.214	0	0.76
FW : J 2 average goals per game to 2001	0.035	0.111	0	0.62
MF : J 1 average goals per game in 2002 (MF only)	0.060	0.079	0	0.38
MF : J 2 average goals per game in 2002	0.027	0.068	0	0.41
MF : J 1 average goals per game to 2001	0.010	0.040	0	0.32
MF : J 2 average goals per game to 2001	0.044	0.086	0	0.50

note : total sample = 480
effective samples for all variables = 469

function for ordinary workers.

The variable named “Club Size” is the total basic wage expenditure for players and coach in the top team. As all J 1 clubs have to hold a top team, the second team (called ‘a satellite team’) and several teams for amateur younger players, the total wage of a top team is some a half of total labour costs. As Shimono (2003) explains, the J. League has carefully been monitoring club finances and can force a club to keep sound finances since the 1999 reform. So the expenditure on players’ wage is a good proxy for club size. There is no salary cap for clubs of the J. League unlike for most Australian sports (see Dabschek (2004)).

The number of spectators might be another indicator of club size ; however, it does not reflect club finances, because the entrance fee occupies only 20 percent of club revenue. Some 45 percent is sponsorship. The revenue of the richest club is 3.8 billion yen and that of the poorest club 1.2 billion yen in 2002. Some 45 percent of

revenue is spent on employees, including players, coaches, administration staff and so on.

For estimating the wage functions, I will employ the following individual performance factors: the number of games played, goals per game, selection as a national team member or Best 11, and the number of goals per game. The last one indicates joy of soccer supporters and Lucifora and Simmons (2003) use it in their wage estimation.

J 1 players in 2003 had played on average some 60 games in J 1 and 10 games in J 2 prior to 2001. In the 2002 season, they played 10.5 games in J 1 and 3 games in J 2. The number of playing games is a good measure of individual performance.

Some 5 percent of players were selected as final members for the 2002 world cup and/or for the Best 11 in 2002 and some 7 percent were honoured as Best 11 players prior to 2001. An other individual performance measure is the number of goals per game used by Lucifora and Simmons (2003). The average number of goals per game for forwards is much higher than that for midfielders: 0.21 in 2002 and 0.16 prior to 2001 for the former and 0.06 in 2002 and 0.010 prior to 2001 for the latter.

Table 3 contains estimation results for wage determination for the J 1 players. It presents three cases: an estimation result for total samples, that for Japanese players, and that for Japanese players excluding those who have played in J2. In the first equation, foreign players' basic wage seems higher than Japanese players'. Their years of experience, however, are calculated only after playing in Japan, so the variable leads inevitably to an invalid number. So I will concentrate on the second equation.

Firstly, three cases provide evidence that a seniority factor is essential for soccer players' wage. Namely, variables such as age, age*age, and experience are statistically significant and sign conditions are valid: their signs of age and experience are positive and a sign of age*age is negative. The variable of experience is evidently more significant in the second and the third equations. The fact that age and experience are meaningful in wage determination for Japanese soccer players is the same for ordinary workers.

Secondly, the club size is significant too. A part of wage affected by the club size, which is a profit sharing component pointed out by Kennedy (1995). Club size for soccer players corresponds to company size for ordinary Japanese workers. Organization performance is essential for players as well as ordinary workers, which re-

Table 3 Eatimation Results

	(1) Total Samples		(2) Japanese Players		(3) Japanese Players only in J 1	
	coefficient	t-value	coefficient	t-value	coefficient	t-value
const.	1.3440	1.82	2.6460	3.94	2.9810	4.02
age	**0.3190**	**5.46**	**0.2330**	4.35	**0.2080**	**3.52**
age*age	**− 0.0052**	**− 4.82**	**− 0.0042**	− 4.19	**− 0.0040**	**− 3.52**
years of experience	**0.0244**	**1.69**	**0.0596**	4.70	**0.0811**	**5.34**
club size	**0.0673**	**4.90**	**0.0592**	4.92	**0.0580**	**4.29**
foreigner	**1.0590**	**11.77**				
transfer	− 0.0678	− 1.16	**− 0.0958**	− 1.72	− 0.0685	− 0.92
J 1 games in 2002	**0.0238**	**9.19**	**0.0266**	11.36	**0.0285**	**10.68**
J 2 games in 2002	**0.0112**	**3.34**	**0.0126**	4.30		
J 1 games to 2001	**0.0022**	**3.78**	**0.0024**	4.55	**0.0020**	**3.26**
J 2 games to 2001	− 0.0008	− 0.59	0.0001	0.08		
WC or Best 11 in 2002	**0.4530**	**4.10**	**0.3720**	3.76	**0.3160**	**3.04**
Best 11 to 2001	**0.2690**	**2.80**	**0.3620**	4.15	**0.4020**	**4.33**
FW : J 1 average goals per game in 2002	− 0.2450	− 0.58	− 0.0274	− 0.05	− 0.4760	− 0.71
FW : J 2 average goals per game in 2002	0.2660	0.52	− 0.2590	− 0.45		
FW : J 1 average goals per game to 2001	**0.8010**	**2.35**	0.5180	1.17	**0.9250**	**1.74**
FW : J 2 average goals per game to 2001	− 0.1160	− 0.44	**0.6990**	**1.92**		
MF : J 1 average goals per game in 2002	0.3360	0.72	0.6340	1.55	0.5390	0.88
MF : J 2 average goals per game in 2002	− 1.4180	− 1.48	− 1.3500	− 1.66		
MF : J 1 average goals per game to 2001	0.6830	1.30	0.2250	0.47	0.2190	0.32
MF : J 2 average goals per game to 2001	0.4530	1.45	0.7370	1.62		
DF	0.0576	1.30	0.0600	1.54	**0.0764**	**1.71**
adjusted R square	0.824		0.856		0.88	
samples	469		422		320	

note : (1) dependent variable=log (Basic Wage)
(2) Bold figures indicates 'statistically significant'.

quires a group work or a team play, not an individual performance (see Lazear (1989) and Kennedy (1995)).

Thirdly, for soccer players, an individual performance is important too. According to the estimation results, its measures might be the number of playing games and selection in the best 11 or national team for all players, and goals per game for forward players.

Fourth, comparing the second and the third equations, a transfer from J 2 to J 1 leads to a decrease in basic wage for Japanese soccer players, although changing clubs within J 1 does not affect their basic wage.

Finally, using equation (2), seniority factors and a profit sharing component is

some fifty percent of Japanese soccer players' wage on average. This ratio is higher for younger players, some 90 percent of their basic wage for players aged 19 years with the first year, in contrast, some 30 percent for those aged 30 years and over.

5. Conclusion

This paper confirms that seniority factors and profit sharing components are decisive in wage determination for Japanese soccer players. Seniority factors represent age and experience, and profit sharing component is connected with club size. The variables of age, experience and club size are essential in wage determination for Japanese soccer players as well as for ordinary Japanese workers. This ratio is some 50 percent of Japanese J 1 players' basic wage on average.

Personal performance is also important for players, which can be indicated as the following variables: the number of games played, and selection in the Japanese national team or best 11 for all players, and the number of goals per game for forward players.

References

Kennedy, P. W. (1995) "Performance Pay, Productivity and Morale", *Economic Record*, vol. 71, 240 – 247.

Lazear, E. P. (1989) "Pay Equality and Industrial Politics", *Journal of Political Economy*, vol. 97, 561 – 580.

Lazear, E. P. (2000) "Performance Pay and Productivity", *American Economic Review*, vol. 90, 1346 – 1361.

Lucifora, C. and Simmons, R. (2003) "Superstar Effects in Sport: Evidence from Italian Soccer", *Journal of Sports Economics*, vol. 4, 35 – 55.

Shimono, K. (2003) "Labour market for Professional Soccer Players in Japan: Comparison with that in Australia", *Otemon Journal of Australian Studies*, vol. 29, 33 – 43.