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Wage Inequality of Women in Professional Tennis of the Leading International Tournaments: Gender Equality vs Market Discrimination?

By Isabel Cepeda¹

Abstract

This essay is framed in the transformative role that sports can play in gender relations. Particularly, this essay addresses the analysis of gender pay inequality in professional tennis. Although the economic analysis offers the instruments to determine the remuneration of equilibrium in the labor market, an analytical economic view may not be sufficient when ethical elements intervene, such as social justice, equity and the fight for gender equality. The methodology consisted of searching for, and collecting data on various aspects of professional tennis, with special emphasis on: a) the prizes money received by male and female professional tennis players who compete in the most important tournaments of the main international tennis organizations; and b) the income generated by professional tennis players for the companies organizing these tournaments. The essay applies economic theory to identify equilibrium wages in this industry. The article contributes to the literature in three ways: first, it provides the collection of data on gender discrimination in professional tennis; second, it shows that the inequality of awards between men and women responds to differences in labor productivity; and third, it puts forward measures for the equalization of awards between men and women without business damage. The results are relevant since sports inspires social changes and can contribute to gender equity in other branches of activity.

Keywords: Wage inequality, Gender pay discrimination, Tennis, Economic rationality, Equilibrium salary, Social equity

Introduction

Professional sports are an industry with multiple economic, political and social aspects. A study of the sports industry from an economic viewpoint, (Gratton & Taylor, 2000), according to its economic impact (Milano and Chelladurai, 2011; Huang, 2011; Humphreys and Ruseski, 2009; Ashton et al, 2003; Pitts, 2001; Meek, 1997), focusing on the collective negotiations within (O'Leary, 2017; Jacobs & Winter, 1971), looking at the relations of the sports industry to politics and power (Lenskyj, 2000; Rich, 2000) or analyzing its impact on human development (Coalter, 2010) are among the many aspects treated in the literature. The important social role of the sports industry is another aspect studied. So, professional sports offer an unprecedented opportunity to study the scope of discrimination (Kahn, 1991), for which it has received

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increasing attention from sociologists and economists. The literature tackles different types of discrimination in sports. The racial and ethnic discrimination (Lopiano, 2001; Kahn, 1991), discrimination on grounds of sexual orientation (Lee & Cunningham, 2016; Cunningham et al., 2010; Sartore and Cunningham, 2010; Scraton & Flintoff, 2002), gender discrimination in the treatment of sports and the under-representation of women's sports in the mass media (Sherry et al, 2016; Hall & Oglesby, 2016; Bruce, 2016; Heywood & Dworkin, 2003; Hall, 2002; Theberge, 2000; Burstyn, 1999). In addition, it should be noted that many sport competitions help to reflect entrenched ideologies of gender (Anderson, 2008), they tend to make women invisible (Bruce, 2016), they strengthen the idea of male superiority (Travers, 2008), they contribute to the normalization and perpetuation of gender inequality through the promotion of masculine exemplars (Connell & Messerschmidt, 2005) and they can promote to the perpetuation of social inequality (Eckstein et al, 2010).

Despite all the ways that in which sports builds, reinforces and perpetuates gender inequality, it can also have a transformative role under certain circumstances, given their large audiences and wide social impact. Sports can favor integration and social change (Wankel & Berger, 1990), it could help fostering social interaction (Chalip, 2006), self-esteem and social networks (Branscombe & Wann, 1991), it can contribute to social equality (Smith, 2009), to reduce inequalities, to oppose prejudices and stereotypes, and to become a model for eradicating discriminatory behavior.

This essay is framed in the transformative role that sports can play in gender relations. The fight against gender discrimination in professional sports emerges as an unusually good opportunity to advance this goal in the whole of society by providing access to the strife for gender equality to much larger audiences. We focus on the case of professional tennis, that is directed and managed by international tennis organizations. We address different variables typical of professional tennis, as female presence in the collective of tennis referees, in the collective of tennis coaches, the sexist treatment of ball boy girls, audience differences, or gender income inequalities of players. The aim is to derive: a) whether there is gender discrimination in any aspect of professional tennis; b) whether there is payment discrimination by gender, that is to say, if the salary gap between men and women in this sports discipline is the result of discriminatory prejudices or if, on the contrary, it responds to economic rationality criteria; and c) if any of the variables studied could be used to fight against female discrimination in the sports field in a way that serves as a mirror and an example for society as a whole. The study of gender wage inequality allows a quantitative analysis of the differences in income between men and women in this discipline over time, its determinants and their meaning. It shows the productivity—and sales revenue—that men and women tennis players bring to tournament organizing companies. It is the variable that best reflects the preferences of the public and companies for women's tennis compared to men's, and significant enough to be isolated above the others, and, in addition, it is one of the few gender issues frequently covered by television cameras and the press and, therefore, capable of reaching a wide audience and propitiate an active debate on women's rights. Proposals are suggested which might reconcile business interests with the social interest in the context of the struggle against gender inequality.

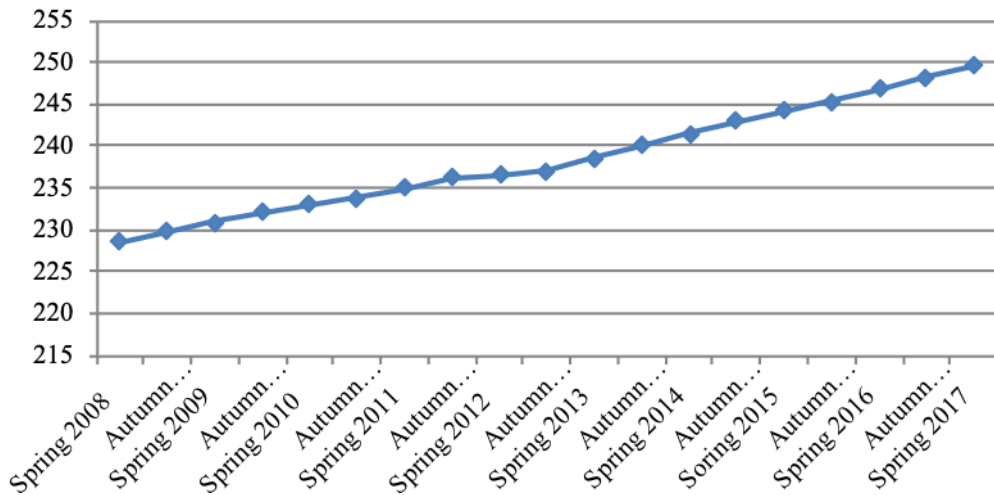
The article is organized as follows. After this introduction, the second section addresses the tennis industry's functioning. The third section discuss gender discrimination in professional tennis. In the fourth section, we turn to economic theory to explain how the salary balance between tennis professionals is decided. The fifth section analyzes whether the differences that exist in pay amounts to pay discrimination. In the sixth section, we make proposals for the

equalization of wages in professional tennis without business damage. Finally, the sixth section summarizes the conclusions reached.

The Tennis Industry

There are three major global organizations in tennis: The International Tennis Federation (ITF), the world governing tennis body; the Association of Tennis Professionals (ATP); and the Women's Tennis Association (WTA). They are for-profit companies and their products are the tournaments they own. The spectacular development of this industry in the last thirty years can be observed in various indicators, such as the growth in the number of people who are 'very interested' in tennis in the US, that grew from 228,480,000 in 2008 to 249,640,000 in 2017, a growth of 9.26% in just nine years (Figure 1).

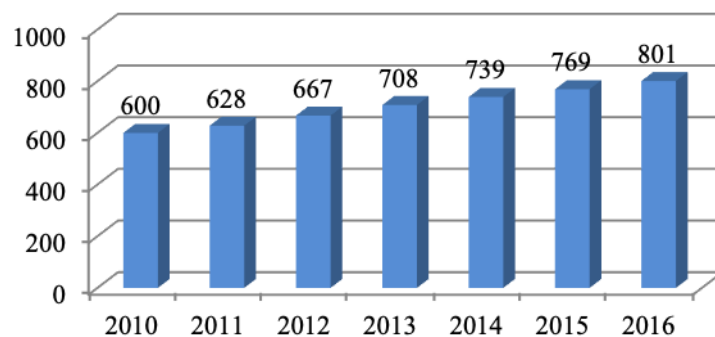
Figure 1. Number of People “Very Interested” in Tennis in USA. 2008-2017.



Source: The Statistics Portal, 2018

The second indicator is the growth of expenditure in tennis sponsorship worldwide. Figure 2 shows a growth rate of 33.5% in only six years, 2010-2016.

Figure 2. Global Expenditure in Tennis Sponsorship, 2010-2016 (in Millions of US\$).



Source: *The Statistics Portal*, 2018.

Another indicator of the growth of the tennis industry is the increase in the prizes awarded to the winners in the four major tournaments (Grand Slam²) from 1987 to the present, as shown in Table 1.

Table 1. Increase in Prize Money for the Grand Slam Champion. 1987-2018.

Increase in prizes money, 1987-2018	French Open	Wimbledon	US Open	Australian Open
Men's category	1,057.06%	1,025.13%	1,280.00%	2,485.71%
Women's category	1,168.61%	1,139.04%	1,280.00%	2,372.73%

Source: Kahn (1991:414) and *La Jugada financiera* 2018a, 2018b, 2017a, 2017b.

An extraordinary increase in prizes can be observed in these tournaments. The Australian Open in particular stands out for an increase in prizes money of nearly 2,500% in both categories from 1988 to the present.

Gender Discrimination in Professional Tennis

Professional tennis does not escape the gender discrimination existing in other sports which are dominated by men. The disproportion of the female referees who referee first category men's finals, the under-representation of female coaches, the sexist treatment of ball girls, the outfits of the females' players and the inequality in salaries are some of the aspects in which women are relegated to second place.

a). Regarding tennis referees/umpires as a group, the presence of women is indisputable. There are women referees in all categories worldwide: lineswomen, chair umpires, referees, and chief umpires. The gold badge category is the most exclusive, and these umpires are the only ones qualified to referee the tournament finals of the first category, such as the Grand Slam or the Olympic Games. Table 2 shows the number of umpires with the gold badge category.

Table 2. Tennis Umpires/Referees with a Gold Badge, According to Sex, 08/08/17.

	Umpires with the gold badge category	%
Men	26	72.22
Women	10	27.77
Total	36	100.00

Source: IPDF, 2017

Although 27.77% of this group and category are women, until 2007 no woman had refereed a men's final of a first-class match.³ Eight years later, another Grand Slam final was refereed by a woman.⁴ Of the 45 Grand Slam men's finals played between January 2007 and

² Grand Slam tournaments: Australian Open, Wimbledon, French Open (Roland Garros), and the US Open.

³ Sandra de Jenken was the first woman to do so in 2007 (*Puntodebreak.com*, 2015) on two occasions: Australia Open and French Open.

⁴ Eva Asderaki was the referee for the men's final of the US Open in 2015 (*Sport*, 2015).

January 2018, only these three have been refereed by female judges. Table 3 shows the percentages of men and women referees in the men's finals of the Grand Slam from 2007 to 2018.

Table 3: Referees by Sex in Men's Grand Slam Finals (Jan 2007—Jan 2018).

	Number of referees by sex in the men's finals of the Grand Slam	%
Men's Grand Slam Finals refereed by men	42	93.33
Men's Grand Slam Finals refereed by women	3	6.67
Total Men's Grand Slam Finals	45	100.00

Source: *ITF, 2018 & Mens Forum Tennis, 2018*

Table 3 shows that only 6.67% of the men's finals of the Grand Slam have been refereed by women in the period under study, against the 27.77% of women who have reached the required category to do so (Table 2). Though there is a greater number of men than women among of higher level active and experience referees, the previous percentages are not proportional and demonstrate the under-representation of women as a whole.

b) In relation to professional tennis coaches, the literature has investigated the low representation of women as coaches (Sartore & Cunningham, 2007). In the case of tennis, the disproportion is huge. Table 4 shows the percentage of coaches by sex of the 100 best players in female and male categories.

Table 4: Coaches by Sex of the 100 Best Players Men and Women) 16/01/2017.

Male players with coach	No.	%	Female players with coach	No.	%
Male players with male coach	96	96.97	Female players with male coach	94	94.95
Male players with female coach	3	3.03	Female players with female coach	5	5.05

Source: *ATP, 2017a & WTA, 2017a*

As can be seen in Table 4, only 3% of male players and 5% of female players choose a female coach.⁵

c) A third example of discrimination by gender in tennis is seen in the treatment of ball girls. In tennis jargon “ball boys” or “ball girls” refers to the person that clears the court picking up stranded balls during the game. While boys and girls are dressed identically in most tournaments, this is not always the case. In the case of the Madrid Open, for example, the uniforms used by ball girls has been criticized for employing a sexist and discriminatory image of women (*AS, 2004; 20 Minutos, 2005*).

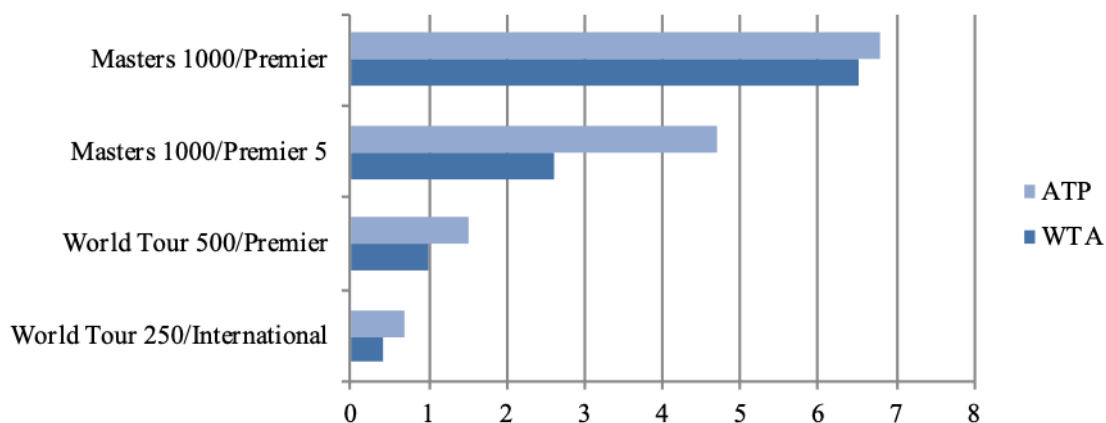
⁵ Table A1, Appendix.

d) The female tennis players outfits. Until 2019, the female players were forbidden to wear compression leggings or pants without a skirt over. The controversy highlighted by the attire that Serena Williams wore in 2018 at Roland Garros in 2018 was the trigger for this change (*Puntodebreak.com*, 12.12.2018).

e) The fifth example of gender discrimination in professional tennis is the gender pay gap. In most sports where women have the opportunity to participate professionally, pay inequality is the norm (Travers, 2008): the salary difference for women in relation to men can be enormous (Hall & Oglesby, 2016). There are numerous examples. In the men's main professional golf circuit, the Professional Golfers Association of America Tour, the total prize money in 2014 was five times greater than that of the equivalent women's circuit in 2015, the Ladies Professional Golf Association. In basketball, the minimum salary for a woman player in the US league was \$38,913 in the 2015-2016 season, the maximum wage was \$109,500, and the team's salary cap in 2012 was \$878,000, while in the men's league the minimum salary for players was \$525,093, the maximum salary was 16 million dollars, and the salary cap of the team reached a historical maximum of 70 million dollars. Wage inequality in football (soccer) is another example. The women's national football team of the USA received \$2million for winning the Women's World Cup in 2015 while the men's team, which finished in 11th place, gained 9 million dollars (*Women's Sports Foundation*, 2018). However, there are exceptions. In some sports, men and women receive the same prize. In the latest World Major Marathon final⁶, the female and male champions each receive \$500,000. Since 2012, the World Surf League has a policy of equalizing the cash prizes of Championship events for both men and women (*Women's Sports Foundation*, 2018).

In the case of professional tennis, the differences in salary between men and women in global terms is noteworthy. During most of the year, the tennis players compete in separate circuits (male and female), which are governed by different organizations (ATP and WTA) and each one manages its prizes. Figure 3 shows the disparity between the prize money obtained by women and men in four types of tournament in which they compete in separate circuits.

Figure 3. Prizes According to Tournament Type (Male or Female) in Millions of \$.



Source: *BBC*, 2016

⁶ That includes the New York, Boston, London, Tokyo, Berlin and Chicago marathons.

This figure shows the obvious inferiority of the prizes received by women in this tournament. While women obtained a little more than 500 million dollars in ten years, men could expect to receive a sum of more than \$1,200 million dollars in the same period (*BBC*, 2016). In the tournament of Rome 2018, the prize money for the women's champion was 42% less than the male champion's prize (*Planeta del deporte*, 2018a, 2018b).

There are also exceptions. In the Shenzhen Women's Tennis Master held in 2019, the prizes money for women have been higher than those of any men's tournament (*El Mundo*, 2019). The Masters of Indian Wells, Miami or Madrid, and the four Grand Slam tournaments, have adopted a policy of equal remuneration in cash prized for women and men. The US Open was the first Grand Slam to equalize the prizes in 1973, far ahead of the rest of the tournaments⁷ which gave the women's game a significant boost. This policy that has been gradually implemented in the rest of the Grand Slam tournaments. Wimbledon was the last tournament to implement this in 2007, 34 years after the US Open. Table 5 shows the evolution of the amount of the prize money for the winner in Grand Slam tennis tournaments.

Table 5. Winner's Prize Money Tennis Grand Slam Tournaments, 1987-1990 and 2018.

Year	Tournament	Male winner's prize money	Female winner's prize money	Difference in male and female winner's prize money (in %)
1987	French Open	198,665	179,700	9,55
	Wimbledon	252,650	227,385	10,00
	US Open	250,000	250,000	0,00
1988	Australian Open	105,000	110,000	-4,76
	French Open	246,750	246,361	0,16
	Wimbledon	272,500	245,025	10,08
	US Open	275,000	275,000	0,00
1989	Australian Open	140,000	135,000	3,57
	French Open	291,752	257,379	11,78
	Wimbledon	330,624	187,000	43,44
	US Open	300,000	300,000	0,00
1990	Australian Open	200,000	190,000	5,00
	French Open	370,000	293,000	20,81
	Wimbledon	411,240	370,116	10,00
	US Open	350,000	350,000	0,00
2018	Australian Open	2,610,000	2,610,000	0,00
	French Open	2,100,000	2,100,000	0,00
	Wimbledon	2,590,000	2,590,000	0,00
	US Open	3,200,000	3,200,000	0,00

Source: Kahn, 1991:414 and *La Jugada financiera* 2018a, 2018b, 2017a, 2017b.

Table 5 shows that in the period 1987-2018, the amount of the male prizes was higher than the equivalent for females, becoming up to 43.44% higher at Wimbledon in 1989. With two exceptions: in 1988, at the French Open the prizes were practically the same in both categories, and at the Australian Open the prize awarded to the female champion was 4.76% higher than in

⁷ Ban deodorant, a subsidiary of Bristol-Myers, donated \$55,000 to make the women's purse equal to the men's, at the US Open in 1973 (*The New York Times*, 2013).

the male category. Since 2017, prizes money has been matched in both categories at all Grand Slam tournaments.

As can be seen, the prizes money for men and women are not the same in most tournaments. Table 6 shows how much the prizes were worth by January 2017 for the 100 best tennis players throughout their careers, in female and male categories.⁸

Table 6: Value of the Male and Female Prizes by the Best 100 Tennis Players During their Careers. 16/01/2017.

Sections of the Ranking	Male winnings (\$)	Female winnings (\$)	Total	Female winnings from prizes over the total (in %)
1-10	365,114,542	201,291,635	566,406,177	35.54
1-20	537,791,710	352,571,334	890,363,044	39.60
1-30	623,359,459	394,900,162	1,018,259,621	38.78
1-40	703,468,679	428,229,150	1,131,697,829	37.84
1-50	750,910,233	457,717,904	1,208,628,137	37.87
1-60	770,864,880	514,464,260	1,285,329,140	40.03
1-70	815,526,227	543,238,508	1,358,764,735	39.98
1-80	850,244,197	560,827,696	1,411,071,893	39.74
1-90	871,837,489	580,060,782	1,451,898,271	39.95
1-100	887,076,824	606,804,438	1,493,881,262	40.62
TOTAL	7,176,194,240	4,640,105,869	11,816,300,109	39.27

Source: *AIP*, 2017b & *WTA*, 2017b

Table 6 shows that the accumulated value of the prize money received by women throughout their careers is surprisingly lower than that obtained by men in all sections of the ranking. The highest difference is found in the first section of the ranking. If we look at the prize money accumulated by the 10 best male players and the 10 best female players in the world, the quantity amounted by women only is 35.54% of the total. On average, of total prizes distributed between the 100 best men and women players, the quantity amounted by women only is 39.27% of the total. These data demonstrate the existing gender pay gap in professional tennis.

Income and Productivity

Why is there such a large income gap for women and men in professional tennis? Is it just because of sex differences? Are there other reasons? Like all business activity, professional tennis is governed by the principle of profit maximizing. The players' salary - in cash prizes - is one of the costs of production and presumably, is a reflection of the income generated by each tournament through the sale of tickets and television rights.

Table 7 below shows the maximum and minimum prices of tickets for the women's and men's final of the four Grand Slams and the Madrid Open tournament in the year 2018 (Table 7).

⁸ Table A2, Appendix.

Table 7: Maximum and Minimum Ticket Prices in the Female and Male Finals of the Four Grand Slams and the Madrid Open in 2018. Difference Between Male and Female Ticket Prices (in %)

Tournament	Ticket Prices (€)	M	F	Difference between male and female ticket prices (in %)
US Open	Cheapest ticket	269	143	46.84%
2018 Final	Most expensive ticket	6,910	2,458	64.43%
French Open	Cheapest ticket	505	153	69.70%
2018 Final	Most expensive ticket	4,397	1,309	70.23%
Wimbledon	Cheapest ticket	*	*	*
2018 Final	Most expensive ticket	18,842	3,458	81.65%
Australian Open	Cheapest ticket	338	304	10.06%
2019 Final	Most expensive ticket	1,538	853	44.54%
Madrid Open	Cheapest ticket	86	75	12.79%
2018 Final	Most expensive ticket	444	360	18.92%

Source: Compiled from *StubHub*, 2018, *Viagogo*, 2018, *Championship Tennis Tours*, 2018 and *Madrid Mutua Open*, 2018. (Note: 1€=1,1671\$. *Data unavailable)

Table 7 shows the great disparity in admission prices for the women's finals and the men's finals in all tournaments. The most striking case is the Wimbledon tournament, in which the most expensive tickets for the men's final cost almost 82% more than the equivalent tickets for the women's final. The difference in the income obtained through tickets sales is one of the reasons why most tournaments do not match the prizes money for women and men.

Television broadcasting rights make up the second source of income and depend on the audience, which is clearly different in women's and men's tennis matches. As Table 8 below shows, in men's tournaments the audience is 40.60% higher than in women's, this being one of the indications to calculate the market value of the players (Kahn, 1991).

Table 8. Worldwide Audience for the Male and Female Tennis Circuit. 2015.

	Male Tournament Circuit ATP	Female Tournament Circuit WTA	Audience difference in men's and women's tennis matches (in %)
2015 Audience (Millions of persons)	973	395	40,60

Source: *BBC*, 2016

Wage Inequality or Gender Pay Discrimination?

There is, indeed, a clear pay discrimination in tennis, and we could therefore conclude at first sight that it is a discriminatory practice based on gender. But this could be a hasten conclusion that deserves a closer look. The great disparity in admission prices and in television broadcasting rights is explained by consumer preferences and reflects the fact that female tennis

is less attractive to the public. It is observed that the income produced by women's tennis from these two concepts is lower than that generated by men's tennis. Wage discrimination is giving unequal rewards to workers who are equally productive (Stiglitz, 1973). When the pay differences between men and women are not justified in terms of labor productivity, gender wage discrimination occurs (del Río et al., 2005). In other words, wage discrimination consists of unequally remunerating workers who contribute in the same way to business results. In order to have discrimination, it is essential that all workers should bring the same marginal income to the company. And this is not what happens in the case of professional tennis. A simple economic analysis shows that consumer preferences are strongly skewed towards male's games, so consumers are willing to pay lower prices for women's tournaments (see Table 7). This translates into a lower increase in sales revenue to the organizing company for each game played by women. That is the main reason for the male-female wage gap in the tennis industry. There is, certainly, a wage differential but it does not imply discrimination. It simply shows two different payouts to two different types of labor resources. Basic economics would describe this situation as pay inequality, but not gender pay discrimination.

Equalizing Prizes in Women's Professional Tennis as a Mirror for Society

The difference in revenue earned from tickets and television broadcasting rights for men's and women's tennis tournaments is explained by consumer preferences and reflects that women's tennis is less attractive to the public. But the fact that economic theory provides arguments to justify this inequality does not imply that gender pay inequality in women's tennis is a socially just solution. Many economists, philosophers and political thinkers have reflected on what is socially just and fair beyond the market's logic (Thaler, 2016; Feinberg, 2014; Rawls, 2009; Merry, 2009; Miller, 1999). Although until now, the social dimension of professional sports has tended to be neglected (Smith, 2009), sports can favor social change (Wankel & Berger, 1990) and can contribute to enhancing social equity, to mitigate inequalities, combat prejudices and stereotypes, and they can also become a model for eradicating undesirable social behaviors. A possible practical application would be the equalization of prizes in professional tennis, that could serve as a model and mirror in society, becoming a formula to fight against gender pay discrimination in other labor markets. How to get it? Can the preferences of both fans and employers be influenced to achieve the desired criteria for gender equity?

Conventional economic theory argues that preferences are exogenous (Stigler & Becker, 1977), that is to say, that consumers' tastes are predetermined outside the market. Buyers come to the transaction with pre-acquired preferences and these, in turn, are not altered by the market transactions. This assumption implies that preferences do not change (Samuelson, 1947). However, literature has shown that tastes change, especially in the long term (Gerber & Jackson, 1993). Preferences are susceptible to alteration through education, cultural changes (Norton et al, 1998), publicity (Sen, 1973) social pressure and the opinions of others (Kuran, 1997).

Since preferences can change and be modified, we may want (and need) to influence them to achieve certain long-term social goals, as gender wage equity. Although women's tennis generates less income than men's, matching prizes is viable for the employer without accounting loss—sponsorships, subsidies—as evidenced by the fact that it is already the practice implemented in some tennis tournaments and in other sports. If the employers of the tennis industry embrace a sensitivity to gender equality with matching prizes, this decision would a strong impact in the media, and would have a great influence on the social fabric (Kahn, 1991)

and would trigger consequences in terms of social justice (Eckstein et al, 2010). Due to the impact on public opinion, it could become a benchmark for extending this practice in other sectors of economic activity in which there is gender wage discrimination. Changing preferences towards equalizing female and male salaries in professional tennis could help to reconcile the apparent conflict between doing the right thing and seeking the maximization of profit in a market society. Complementary, improving sports training for young women to improve their performance and skills as athletes could increase their productivity, their salaries and perhaps change consumer preferences towards women's sports, thus generating more income for entrepreneurs.

Conclusions

Gender discrimination in sports is a reflection of the existing ubiquitous gender ideology and helps to reinforce it. Gender discrimination in professional tennis is a proven fact in aspects such as the lack of proportionality of female referees in first-class match finals. Nevertheless, wage inequality is not a prejudiced discriminatory practice in the case of professional tennis, since the female and male categories do not provide the same capacity to generate income for the employer.

However, it would be useful to assess the possible positive impact that the equalization of female and male wages could have. The profound influence that sports have on society and the transformative role that they can play allow us to think that the equalization of prizes would be a model and example for the equalization of wages between men and women in other sectors of activity and a formula to enhance her visibility. The growing love for professional tennis could be a key element for the equalization of prizes in the men's and women's categories to have a great diffusion and social impact. With this objective, it would be desirable that employers of professional tennis embrace a sensitivity for gender equality by equalizing the prizes for male and female tennis players, which can be done without accounting prejudice through sponsors and the collaboration of non-profit foundations and organizations. In other professional sports, such as surfing or marathons, equal prizes money for the women has been a reality for years. By reinforcing the weight of women in the world of tennis, this formula could contribute to giving visibility and importance to women and to favor the eradication of other types of discrimination based on gender. This strategy could positively influence wage discrimination based on gender in other ranges of activity.

The apparent incompatibility between doing the right thing and serving one's own interests may be reconciled in a market society through the modification of preferences. We suggest that consumer preferences regarding professional women tennis can and should actively influence the criteria desired for social justice. To this end, specific groups and entities linked to professional tennis -such as championships, clubs, professional associations, advertisers and the media- could value the following specific recommendations:

First, to look for alternative sources of funding to equal prize money for women, as is done in Grand Slam tournaments and in other sports. Second, trying to modify consumer preferences through, for example, greater coverage of women's sports by the public and private media, including more hours of broadcast in the media and better positioning in time slots. Third, improve the sports training of young women to increase consumer preferences towards women's sports. All of this could modify preferences, demand and the attitude of society towards non-discrimination by gender. Eradicating gender inequalities in the world of sports can promote

integration and social change, can contribute and promote social equality, reduce inequalities, combat prejudices and stereotypes and, ultimately, can become a model for achieving greater gender equity.

Appendix

Table A.1. Coaches According to Sex and Individual Prize Money Accumulated During their Careers of the 100 Best Tennis Players of the ATP. 16/01/2017.

Ranking	Player	Coach	Sex of coach (M/F)	Prize Money Career (\$)
1	Murray	Lendl	M	58,828,644
2	Djokovic	Becker	M	107,898,543
3	Raonic	Piatti	M	14,416,912
4	Wawrinka	Norman	M	27,828,006
5	Nishikori	Chang	M	16,175,374
6	Monfils	Tillström	M	12,701,019
7	Čilić	Bjorkman	M	16,863,177
8	Thiem	Bresnik	M	5,189,149
9	Nadal	Nadal	M	78,737,302
10	Berdych	Ivanisevic	M	26,476,416
11	Goffin	Johansson	M	5,110,599
12	Tsonga	Ascione	M	18,985,934
13	Kyrgios	Jones	M	3,589,419
14	Bautista-Agut	Carbonell	M	5,723,460
15	Dimitrov	Vallverdu	M	7,554,576
16	Pouille	Planque	M	2,481,623
17	Federer	Luthi	M	98,830,825
18	Gasquet	Champion	M	14,810,563
19	Isner	Moller	M	10,744,714
20	Sock	Hahn	M	4,845,455
21	Karlović	Popovic	M	8,154,383
22	Cuevas	Savio	M	5,195,552
23	Ferrer	Fogues	M	29,745,503
24	Zverev	Zverev Sr.	M	1,932,630
25	Simon	De Witt	M	11,774,736
26	Ramos-Viñolas	Díaz-Noé	M	3,662,641
27	Tomic	Tomic	M	4,780,593
28	Müller	Lisiecki	M	4,150,450
29	López	Clavet	M	12,915,943
30	Johnson	Boynton	M	3,255,318
31	Carreño-Busta	López	M	2,751,538
32	Querrey	Nehles	M	7,585,329
33	Kohlschreiber	Fehske	M	9,562,314
34	Kližan	Damm	M	3,906,682
35	Troicki	Reader	M	7,103,676
36	Baghdatis	Spina	M	7,672,478
37	Sousa	Marques	M	3,563,711
38	Granollers	Vicente	M	8,514,216
39	del Potro	Without coach	M	16,292,702
40	Verdasco	Sánchez-Vicario	M	13,156,574
41	Mahut	Urpi	M	7,440,422
42	Almagro	Monachesi	M	10,404,905
43	Lorenzi	Galoppini.	M	2,910,212
44	Delbonis	Tavernini	M	2,393,364
45	Kuznetsov	Kuznetsov	M	2,257,951
46	Edmund	Jones	M	1,169,696
47	Paire	Luigi	M	4,090,582
48	Fognini	Davin	M	7,914,401
49	Mayer	Summerer	M	6,208,085
50	Zverev	Morel	M	2,651,936

Ranking	Player	Coach	Sex of coach (M/F)	Prize Money Career (\$)
51	Evans	Hilton	M	951,736
52	Khachanov	Blanco	M	6,179
53	Veselý	Machovsky	M	2,175,231
54	Schwartzman	Chela	M	1,411,850
55	Robert	Meyers	M	2,000,028
56	Jaziri	Petkovic	M	1.780.513
57	Haase	Boogert	FEMALE	4.132.962
58	Struff	Reichert	M	1.556.485
59	Ćorić	Maclagan	M	1.610.084
60	Lu	Antonini	M	4.329.579
61	Mannarino	Tortuyaux	M	3.440.346
62	Bellucci	Zwetsch	M	4.690.882
63	Medvedev	Lisnard	M	231.397
64	Mónaco	Zabaleta	M	8.057.057
65	Bagnis	Argüello	M	882.942
66	Brown	Puttkammer	M	2.162.277
67	Sela	Benzvi	M	3.089.988
68	Zeballos	Yunis	M	2.755.349
69	Dolgopolov	Mantilla	M	5.962.441
70	Youzhny	Sobkin	M	13.388.668
71	Darcis	Hoferlin	M	2.434.395
72	Chardy	Escude	M	6.497.531
73	Herbert	Vallejo	M	2.838.061
74	García-López	Aparisi	M	6.966.929
75	Mathieu	Devilder	M	6.109.176
76	Thompson	Thompson	M	502.444
77	Elias	Oncins	M	792.721
78	Džumhur	Dzumhur-Neno	M	1.146.781
79	Olivo	Yunis	M	46.257
80	Anderson	Godwin	M	7.383.675
81	Pella	Marcaccio	M	1.412.887
82	Harrison	Stafford	M	2.297.888
83	Monteiro	Matos	M	220.219
84	Millman	Stickler	M	1.056.882
85	Young	Donald Sr. & Ilona Young	MALE & FEM	3.291.454
86	Pavlásek	Navratil	M	288.499
87	Melzer	Hipfl	M	495.863
88	Kravchuk	Kretz	M	796.016
89	Seppi	Sartori	M	8.160.172
90	Berlocq	Yunis	M	3.573.412
91	Giraldo	Checa	M	4.038.571
92	Basilashvili	Christen	M	657.665
93	Fritz	Nainkin	M	570.616
94	Lajović	Nensel	M	1.737.066
95	Marchenko	Toth	M	1.781.867
96	Albot	Smith	M	785.425
97	Berankis	Schüttler	M	1.871.791
98	Kukushkin	Kukushkin	FEMALE	3.133.178
99	Nishioka	Takada	M	567.074
100	Dutra Silva	Schneiter	M	96.082

Table A.2. Coaches According to Sex and Individual Prize Money Accumulated During their Careers of the 100 Best Tennis Players of the WTA. 16/01/2017.

Ranking	Player	Coach	Sex of coach	Prize Money Career (\$)
1	Kerber	Beltz	M	19,355,561
2	Williams	Mouratoglou	M	81,761,761
3	Radwanska	Wiktorowski	M	26,023,897
4	Halep	Cahill	M	15,469,042
5	Pliskova	Kotyza	M	7,124,144
6	Cibulkova	Liptak	M	10,908,701
7	Muguruza	Sumyk	M	10,137,958
8	Keys	Davenport	FEMALE	5,236,545
9	Konta	Carril	M	3,383,248
10	Kuznetsova	Martínez	M	21,890,778
11	Kvitova	Vanek	M	22,891,696
12	Suarez-Navarro	Budó	M	8,241,050
13	Svitolina	Urpí	M	4,168,872
14	Azarenka	Fisette	M	28,244,443
15	Bacsinszky	Zavialoff	M	5,066,036
16	Strycova	Krupa	M	5,738,892
17	Williams	Williams	M	34,435,058
18	Vesnina	Vesnina	M	8,972,755
19	Vinci	Cina	M	11,408,506
20	Wozniacki	Wozniacki	M	22,112,391
21	Stosur	Eagle.	M	16,416,715
22	Bertens	Sluiter	M	2,315,682
23	Shuai	Shuo	M	2,744,814
24	Garcia	Garcia	M	3,954,071
25	Kasatkina	Platenik	M	1,176,579
26	Gavrilova	Pratt	M	1,699,341
27	Pavlyuchenkova	Kindlmann	M	6,602,936
28	Babos	Andjelic	M	3,024,263
29	Begu	Apostu	M	3,180,342
30	Siegemund	de Vos	M	1,214,085
31	Putintseva	Putintseva	M	1,566,441
32	Niculescu	Calin	M	4,408,777
33	Sevastova	Schmidt	M	1,606,272
34	Makarova	Manyukova	FEMALE	9,983,877
35	Vandeweghe	Synowka	M	3,193,783
36	Konjuh	Hrvoj	M	1,298,741
37	Siniakova	Volejnik	M	1,328,673
38	Ostapenko	Jakovleva	FEMALE	946,908
39	Shvedova	Ionita	M	6,142,237
40	McHale	Altschuler	M	2,853,279
41	Doi	Harada	M	1,854,006
42	Riske	Hibino	M	2,124,487
43	Cornet	Goven	M	5,146,106
44	Mladenovic	Petkovic	M	4,860,690
45	Davis	Todero	M	1,641,064
46	Puig	Todero	M	1,819,328
47	Bouchard	Hogstedt	M	5,198,709
48	Osaka	Taylor	M	646,896
49	Stephens	Murray	M	4,209,163
50	Beck	Zahlava	M	1,988,305

Ranking	Player	Coach	Sex of coach	Prize Money Career (\$)
51	Tsurenko	Brichek	M	2,005,185
52	Rogers	Lucero	M	1,346,033
53	Errani	Lozano	M	12,745,452
54	Jankovic	Canas	M	18,709,684
55	Larsson	Arvidsson	M	2,405,338
56	Petkovic	Nensel	M	6.186.145
57	Goerges	Geserer,	M	4.991.409
58	Pliskova	Kotyza	M	1.166.925
59	Bencic	Bencic	M	2.942.560
60	Wickmayer	Bouhoulle	M	4.247.625
61	Safarova	Cermak	M	10.436.284
62	Golubic	Orlik	M	433.698
63	Arzuabarrena-Vecino	Torrás	M	1.574.831
64	Pironkova	Taylor	M	4.255.656
65	Chirico	Gooding	M	778.819
66	Bondarenko	Volodko	M	3.083.817
67	Parmentier	Sabas	M	2.294.229
68	Kovinic	Radojicic	M	980.486
69	Brengle	Jensen	M	1.631.239
70	Flipkens	Braeckma	M	3.305.189
71	Wang	Shimizu	M	865.554
72	Dodin	Dodin	M	415.557
73	Bellis	Rothenberg	M	382.522
74	Giorgi	Giorgi	M	2.094.301
75	King	Benhabiles	M	3.994.934
76	Friedsam	Mueller	M	1.076.753
77	Nara	Harada	FEMALE	1.710.535
78	Cirstea	Comanescu	M	3.400.097
79	Lucic-Baroni	Synowka	M	3.010.984
80	Kucova	Without coach	M	637.951
81	Watson	de Jager	M	2.267.446
82	Mertens	Vleeshouwers	M	294.839
83	Shuai	Peyre	M	7.484.423
84	Zheng	Ma	M	1.608.164
85	Rodina	Shteyngart	M	1.326.147
86	Buyukakcay	Uner	M	733.675
87	Duan	Yuesen	M	706.113
88	Lepchenko	Lepchenko	M	3.703.190
89	Witthoef	Lang	M	1.026.561
90	Allertova	Prihoda	M	82.528
91	Hsieh	Tzu-lung	M	4.310.464
92	Gibbs	Smith	M	1.103.278
93	Ozaki	Kawahara	M	294.121
94	Sakkari	Puentes	M	376.554
95	Khromacheva	Savchenko	FEMALE	262.806
96	Linette	Zunić	M	808.782
97	Broady	Adamec	M	798.195
98	Lisicki	Lisicki	M	6.839.555
99	Vekic	Felgate	M	1.120.047
100	Schiavone	Francis	M	10.829.854

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