

## **Prize Money and media value in tennis: who leads the spectacle?**

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### **Abstract**

Given the economic and commercial implications of sports, the media value of players is considered the main asset in the area of professional sports businesses. This paper aims to establish procedures to measure intangible assets within the tennis industry, an exciting market within the business of spectacle. In addition to evaluate the media value of tennis players, this study examines the extent to which policies on prize money could be more efficiently designed to account for the economic contribution of the different agents involved in the spectacle.

In order to rank the media value of professional tennis players, we have followed the innovative ESI-rg methodology, whose basic guidelines develop upon the notion of media value by combining information on popularity and notoriety. The paper has been carried out using weekly data on notoriety and popularity for the main 1,400 professional tennis players (700 women competing on the WTA and another 700 men on the ATP).

**Key Words:** Career opportunities. Evaluating intangible assets.  
Media value. Sports' industry. Professional tennis. Discrimination.

**JEL-Code:** J24, J33 y J71.

## **1. Motivation and main results of the paper**

This paper aims to assess the economic value of intangible assets within the tennis industry. In addition to evaluate the media value of tennis players (both males and females), we examine the extent to which policies on prize money could be more efficiently designed to account for the economic contribution of the different agents providing the spectacle.

In our days, the number of economic activities in which intangible assets play an important role are growing bigger. In this context, there is a need to devise tools to evaluate and manage intangible assets. Establishing measures of intangible assets is a major issue, especially for certain businesses, since these type of assets are the most crucial and valuable source of revenue (Hall, 1992). The complexity of such an objective is remarkable, as stressed in the literature (Lev, 2006), given the nature of assets to be evaluated. To accomplish this task, some authors have adopted sophisticated techniques, like trying to measure consumers' propensity to pay for goods or services. The same objective has been alternatively approached by means of contingent evaluation models (see Owen 2006), even if such a procedure is not always feasible. One attractive point of this paper is precisely the novel methodology it adopts to deal with the issue.

We are going to focus on the tennis industry, a peculiar market within the business of spectacle. When approaching the industry of professional sports, one should be aware that it belongs to the services sector. Note as well that sports are among the most significant providers of entertainment and leisure, as the large size of these markets clearly indicates. Tennis as a business builds upon the talent of players, whose sport performance brings forth success and sport awards. Thus, skill and talent is the most valuable asset and one of intangible nature. Besides, the market of professional tennis has been drastically transformed by the technological progress. Thanks to the development of mass media, international "consumers" of tennis have gained easy access to the game, which has tremendously enlarged the size of the market and the sources of revenues.

The attempt of approximating the value of players' economic contribution has usually be restricted to their sport contribution, as can be seen in previous studies: Scully (1974) or Berri (1999), for instance. Yet, those approaches neglect essential aspects of the business, given that the economic contribution of players (derived from their media value) goes far beyond their corresponding sporting achievements. In brief, up to now economists had not fully succeed at evaluating accurately the overall contribution of players.

On one hand, media value of the relevant agents is a key intangible asset, in the modern age of professional sport. Furthermore, due to the economic and commercial implications of sports, media value of players ought to be considered as the key factor in order to organize professional sport as a businesses. Besides, this industry is characterized by its typical competition system, which draws attention from the supporters through the uncertainty attached to the outcome of the contest (see Szymanski, 2001 y 2003). From this type of studies, as well as from some others previously mentioned, one can learn important lessons of good entrepreneurial practise.

On the other hand, the industry of professional tennis is a paradigmatic winner-take-all market, a concept proposed by Frank and Cook (1995). This hypothesis states that the workers who are slightly better than the others become the winners of the market, getting much larger earnings than the losers (the wages of the former group exhibit a more than proportional magnitude with respect to its productivity). Typically in this kind of industries, a few individuals achieve the “superstar” status, thereby attracting extra large earnings.

In the economic literature, Noll (1974) and Rosen (1981) had already referred to the phenomenon of superstars. More recently, Dobson and Goddard (2001) stress again how skewed earnings distributions may stem from scarcity of supply of outstanding talent, together with the large audiences that they attract. Then, a reduce number of people earns enormous rewards, thereby dominating the activities in which they engage. Frank and Cook (1995) remark the fact that markets such as those of professional sports, pop culture, and arts experience similar reward structures among them, in which many individuals compete for a few big prizes at the top. The winner-take-all element is very much at work in the sports industry, as stressed by Garcia-del-Barrio and Pujol (2007). Had we to refer to some papers that have clarified the framework in which to analyse the sports industry, we could mention the contributions by Rotenberg (1956); Neale (1964) and Sloane (1971).

Sports have also a decisive influence in the field of brand development and sponsorship. The reputation of a brand is typically build upon strategic intangible assets that, in the context of sports, consist basically of player talent and sport achievements. Accordingly, brand development is closely linked to merchandising, TV rights, and other commercial sources of revenues.<sup>1</sup> The economic exploitation of brands in sport industries

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<sup>1</sup> As was shown for the industry of football (see, for instance, ESI-rg (2006) ESI-rg (2007) and ESI-rg (2008)), there is a tight empirical relationship between players’ earnings and their media value, up to the point to state that the latter explains about 90% of football clubs’ economic revenues.

has been analysed for particular cases, such as Manchester United (see Szymanski, 1998) or Real Madrid (see Blanco and Forcadell, 2006). In addition to that, the interaction between top leaders brands and sponsors are able to create productive synergies, since suitable sponsors may fulfil their task through various communication channels simultaneously (see Meenaghan, 1991).

In order to rank the media value of professional tennis players, we have followed the innovative ESI-rg methodology, whose basic guidelines develop upon the notion of media value by combining information on popularity and notoriety. This procedure has already been fruitfully applied to studying other sports businesses: Football, Basketball and Formula 1, among others. The paper uses weekly data on notoriety and popularity for the main 1,400 professional tennis players (700 women competing at the WTA and another 700 men at the ATP).

Our study discloses that Federer and Nadal were, in 2007, the undisputed leaders in the combined ranking of media value in tennis (the ranking is computed by including records on media value of players competing either in the ATP or WTA tours). According to our estimations Federer received, on average throughout the year 2007, a degree of attention 54 times bigger than the interest drawn by the average (normal) tennis player in the sample. Similarly, Rafael Nadal is given 48 points in the ESI-rg ranking, meaning that his level of media value is 48 times the level of the normal average player. On the other hand, we find five women among the top 10 tennis players in the world (as far as media value is concerned). Justine Henin is the leader among the women, whereas Maria Sharapova (6th position of the combined ranking) is the second one, receiving a share of attention that overrates the predicted one if making calculations based solely on performance and sport achievements.

Attending to the degree of concentration on the part of the supporters and the press, a reduced number of superstars absorb most of the attention in the media: the top 20 players (out of 1,400) generate 30% of the total media value in tennis. This piece of evidence points towards the winner-take-all phenomenon that we had motioned earlier.

Our analysis explores as well the extent to which sport performance increases the popularity and notoriety of the players. In line with previous studies, the sport performance of tennis players largely explains their media value achievements. The influence of non-sport related factors on the media value discloses that personal characteristics are more relevant for feminine than for masculine players. This bias, even if statistically not very

large, hints the existence of stereotypes which could be affecting the incorporation of women into particular labour markets.

Finally, the paper addresses the current debate on equal prizes policies. The issue is examined in connection with the contribution to the spectacle that tennis players provide, as evaluated by the ESI-rg media value index. Interestingly, we find that 65% of total media value generated within the tennis industry stems from men, whereas players competing at the WTA tour only represent 35% of the worldwide global interest.<sup>2</sup> Given that the gap in prizes is smaller than the difference in terms of media value contribution (since the contribution to the spectacle generated by men and women is uneven), the study puts under question the equal prize practices.

From a business perspective, the current structure of rewarding policies do not correspond to economic efficiency, as women contribute in a lesser degree than men in generating the spectacle bargained in the industry and yet they get identical prizes. Although there might be a number of good reasons for defending the current rewarding schemes, our analysis seems conclusive to think that these arguments cannot be based on economic arguments. In other words, from the point of view of the organizers and sponsors, policies on money prizes could be more efficiently designed, to account for the real economic contribution of the different agents involved in the spectacle.

## **2. Data description and methodology**

This study has been carried out using weekly data on notoriety and popularity for almost 1,400 professional tennis players: 700 competing at the WTA and another 700 at the ATP. In order to evaluate the media value that professional tennis players generate, we follow ESI-rg (Economics, Sports and Intangibles research group) methodology, whose basic guidelines develop upon the notion of media value by resorting to the notions of popularity and notoriety. The broad scope of ESI-rg methodology derives from its ability to providing homogeneous measurements of media value for individual sport players, which permits computing rankings and establishing comparisons between players and across time.

ESI-rg research group has developed a procedure to establishing measures of intangible assets within the sport and spectacle industry. The basic guidelines of this

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<sup>2</sup> If similar calculations were computed just for the 4 main tournaments (Grand Slam), these percentages become smaller: 56% for men against 44% for women.

methodology consist of estimating the intangible notion of media value through two complementary elements: popularity and notoriety. Even if both aspects are realities than can hardly be measured, ESI-rg provides a coherent devise to obtain accurate and reliable approximations of them.

The level of popularity of the players reflects the interest that each of them draws from the general public all around the world (evaluated through the presence in personal web pages, blogspots, galleries, etc.; as well as in specialized web pages of official sport institutions, commercial firms or the media). Accordingly, the level of popularity is computed as captured by the number of web pages referred to each player. To evaluate players' notoriety we register the number of news that each player generates at each period of time in the major languages (English, Spanish, French, German, Italian, Portuguese and Dutch). Hence, the notoriety index reflects the mass media exposure received by each sport player. ESI-rg individual measure of media value is obtained through combination of the popularity and notoriety indexes.

The strength of this methodology is that we are able to provide an individual measure of media value for each one of the players participating in any kind of sport competition, at any time of the competition. This also implies that we have an accurate and homogeneous measure for all players, which allow us to build rankings and to establish comparisons of media value between players and across time. From the individual measure of media value we can also infer the media value of the different tournaments or that of certain groups of players who fulfil specific criteria.

ESI-rg methodology has been successfully applied in the last years and has permitted evaluating the media value of professional sport competitions within the context of football (Spanish LFP, Champions League, World Cup in Germany), basketball (NBA and World Cup in Japan) and Formula 1. ESI-rg data sets include also other areas, like US Baseball, English Football Premiership, Italian Football Serie A or Tour de France. ESI-rg data bases are a rich source for carrying out research projects linked to economic or entrepreneurial problems in the context of intangible assets.

The data employed in the paper was gathered from different sources. Firstly, the information on media value was provided by ESI-rg that collects records on notoriety and popularity on weekly basis for almost 1,400 professional tennis players (700 of them

competing at the WTA and 700 at the ATP).<sup>3</sup> Other information, such as the money prizes, the number of tournaments and other sport performance factors, was obtained from WTA (<http://www.sonyericssonwtatour.com>) and ATP (<http://www.atptennis.com>) web pages.

### 3. Relative and absolute indexes of media value

In addition to provide information on the level of notoriety and popularity of the main tennis players, our analysis enables us addressing questions within the field of labour and industrial economics. Consider, for instance, the relationship between productivity (either sport performance or media value contribution) and rewards in tennis, or think about the competitive structure of the main tournaments.

Table 3.1 gathers information of the main masculine tennis players in the world. The magnitude of the media value index indicates the number by which media value of the average player in the sample has to be multiplied, in order to express the relative media value of the player under consideration.

**Table 3.1. Ranking of Media Value of Professional Tennis (Men)**

<i>Ranking of Media Value (Men)</i>				
Rank	Player	Country	Media Value	ATP 2007
1	Roger Federer	SUI	43.5	7,205
2	Rafael Nadal	ESP	36.9	5,385
3	Andy Roddick	USA	21.3	2,430
4	Novak Djokovic	SRB	19.9	4,470
5	Nikolay Davydenko	RUS	15.3	3,250
6	James Blake	USA	12.4	2,110
7	Lleyton Hewitt	AUS	11.5	1,365
8	Carlos Moya	ESP	10.8	1,620
9	Fernando Gonzalez	CHI	10.6	1,905
10	David Ferrer	ESP	10.2	2,130
11	Richard Gasquet	FRA	10.2	1,680
12	Andy Murray	GBR	10.0	1,705
13	Tommy Robredo	ESP	9.9	1,965
14	Tomas Berdych	CZE	8.8	1,735
15	Guillermo Canas	ARG	8.7	1,678
16	Marat Safin	RUS	8.6	735
17	Andre Agassi	USA	8.6	-
18	Tommy Haas	GER	8.2	1,870
19	David Nalbandian	ARG	7.7	1,375
20	JuanCarlos Ferrero	ESP	7.7	1,335

\* SOURCE: ESI-rg own calculations and ATP (<http://www.atptennis.com>)

<sup>3</sup> Further information on the methodology and its applications in ESI-rg page: [www.unav.es/econom/sport](http://www.unav.es/econom/sport)

According to our data, collected twice a week over the year 2007, Roger Federer received a level of media interest which is 54 times bigger than the average media value of the 700 best performing players at the time. Similarly, Rafael Nadal holds the second position in the ranking, thanks to a figure as high as 48. Another meaningful finding is the big distance found between the two leaders of media value and Andy Roddick, the third top player in the world. This feature suggests that the winner-take-all element here is very much at work, not just as regards the monetary rewards but as well insofar as media power is concerned.

Inspection of the data conveys also that there is a close correlation between the index of media value and the corresponding sport performance (capture through ATP points). This relationship is corroborated through the conventional statistical tools: a correlation coefficient of 0.94, which is very high.

Next, Table 3.2 shows the results for the feminine ranking, where Justine Henin emerges as the media value leader of 2007, holding a value 41 times greater than the average woman of the top 700 WTA players considered.

**Table 3.2. Ranking of Media Value of Professional Tennis (Women)**

<i>Ranking of Media Value (Women)</i>				
	<b>Player</b>	<b>Country</b>	<b>Media Value</b>	<b>WTA 2007</b>
1	JUSTINE HENIN	BEL	41.1	5,930
2	MARIA SHARAPOVA	RUS	33.3	2,861
3	SERENA WILLIAMS	USA	32.2	2,767
4	VENUS WILLIAMS	USA	31.4	2,470
5	JELENA JANKOVIC	SRB	25.5	3,475
6	SVETLANA KUZNETSOVA	RUS	24.1	3,750
7	AMELIE MAURESMO	FRA	21.7	1,906
8	ANA IVANOVIC	SRB	20.7	3,175
9	MARTINA HINGIS	SUI	16.9	1,502
10	MARION BARTOLI	FRA	14.1	2,096
11	PATTY SCHNYDER	SUI	12.2	1,704
12	ELENA DEMENTIEVA	RUS	11.8	2,022
13	ANNA CHAKVETADZE	RUS	11.8	2,625
14	ANNA KOURNIKOVA	RUS	11.6	-
15	DANIELA HANTUCHOVA	SVK	10.5	2,027
16	NADIA PETROVA	RUS	10.0	1,976
17	NICOLE VAIDISOVA	CZE	9.9	1,904
18	TATIANA GOLOVIN	FRA	8.5	1,882
19	MARY PIERCE	USA	8.3	-
20	DINARA SAFINA	RUS	8.3	1,820

\* SOURCE: ESI-rg own calculations and WTA (<http://www.sonyericssonwtatour.com>)



Elaborating separated rankings for men and women seems to be imposed by the structure of tennis competition itself, since the tournaments in which players compete are always separately organized, and so are the punctuation systems: WTA and ATP ranking.

Yet, among the strengths of the ESI-rg index, its homogeneous character permits carrying out mixed analysis for men and women. To this aim, a joint index (in which the whole sample of 1,400 individuals is taken into account, including the 700 men and the 700 women all together) has been computed. In this case, the ESI-rg ranking is computed with respect to the average of all the players, either men or women. The result of making such an exciting exercise is shown in Table 3.3, which permits to compare homogeneously the position of each ATP and WTA player. Of course, players are compared in terms of media value, although, as we show later on, information on media value allows one extracting implications that go beyond its own scope.

A number of revealing conclusions can be obtained from the joint ranking, since it is expressed with respect to the average value of the representative player in the data set.

**Table 3.3. Joint Ranking of Media Value in Professional Tennis**

<i>Joint Ranking of Media Value in Tennis 2007</i>								
<i>Rank</i>	<i>Player</i>	<i>ATP/WTA Rank</i>	<i>Country</i>	<i>Media Value</i>	<i>Prize Money(\$US)</i>	<i>GSlam 2007</i>	<i>Masters 2007</i>	
1	Federer, Roger	ATP (1)	SUI	54.3	7,405,620	3	2	
2	Nadal, Rafael	ATP (2)	ESP	48.4	4,395,185	1	3	
3	HENIN, JUSTINE	WTA (1)	BEL	28.4	4,367,086	2	2	
4	Roddick, Andy	ATP (5)	USA	25.6	1,232,070	0	0	
5	Djokovic, Novak	ATP (3)	SRB	24.2	3,313,700	0	2	
6	SHARAPOVA, MARIA	WTA (5)	RUS	22.9	1,258,550	0	1	
7	WILLIAMS, SERENA	WTA (6)	USA	22.4	2,066,641	1	1	
8	WILLIAMS, VENUS	WTA (8)	USA	21.6	1,843,187	1	0	
9	Davydenko, Nikolay	ATP (4)	RUS	19.0	1,576,775	0	0	
10	JANKOVIC, JELENA	WTA (3)	SRB	17.9	1,685,387	0	2	
11	KUZNETSOVA, SVETLANA	WTA (2)	RUS	16.9	1,962,487	0	0	
12	Blake, James	ATP (7)	USA	15.9	941,585	0	0	
13	MAURESMO, AMELIE	WTA (13)	FRA	14.8	580,104	0	0	
14	Hewitt, Lleyton	ATP (23)	AUS	14.7	662,075	0	0	
15	Moya, Carlos	ATP (16)	ESP	14.5	853,315	0	0	
16	IVANOVIC, ANA	WTA (4)	SRB	14.3	1,660,354	0	1	
17	Gonzalez, Fernando	ATP (9)	CHI	14.3	1,219,330	0	0	
18	Murray, Andy	ATP (12)	GBR	13.0	830,155	0	0	
19	Ferrer, David	ATP (6)	ESP	13.0	1,206,252	0	0	
20	Robredo, Tommy	ATP (8)	ESP	12.6	928,147	0	0	

\* SOURCE: ESI-rg own calculations, ATP (<http://www.atptennis.com>) and WTA (<http://www.sonyericssonwtatour.com>)

On one hand, note the huge distance (in terms of media value) that separate the two leaders of the ranking with respect to their direct rivals. In fact, the media power of Nadal and

Federer is far beyond the levels attained by other tennis superstars. On the other hand, it is meaningful the fact that Henin's sport predominance in 2007 (she gathered more than twice the points achieved by Sharapova in the WTA ranking), does not find a similar proportion when examining media value relative status. Similarly, it is noteworthy that Hewitt (23rd in the ATP ranking) enjoys a greater level of media value than Anna Ivanovic, in spite of her being the fourth player in the WTA ranking.

Concerning the media value concentration; we have already mentioned the winner-take-all effect, which explains such a large level of media power concentration. Yet, the degree of concentration is diverse for which regards men and women. The top ten women players account for more than 36% of the whole media value generated by female players, whereas that figure is not even 27% as regards men.

#### **4. Factors explaining the sources of Media Value in tennis**

As we have already stressed, in markets like the tennis industry of spectacle the level of notoriety and popularity of players is a major source of revenues. Furthermore, certain individuals are endowed with outstanding skills that are exclusive factors procuring them large economic revenues. The crucial point to noted here is that, in one or another manner, those abilities are linked to the media value of players.

Previous studies carried out by ESI-rg revealed a strong statistical relationship between sport success and media value, a feature occurring for individual sports as well as for team-mate sports.<sup>4</sup> Those studies have also proved that media value of players is an accurate predictor for approximating their capability to generate revenues. In this regard, some factors must be taken into account:

1. The current sport performance, which attracts earnings through various sources: gate revenues, merchandising, TV contracts, publicity, sponsorship, etc.
2. The past sport attainment (as captured by the number of years in competition of the player, the historical ATP or WTA ranking, etc.).
3. The number of tournaments in which the player has participated this year.
4. Other personal individual characteristics, including non sport-related factors.

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<sup>4</sup> For instance, ESI-rg (2006) and (2008) analyse the football industry and report evidence supporting that better sport achievements implies greater levels of media value. The link is even stronger in Formula 1.

The special skills mentioned in the forth point are a major source of media value, an obvious feature in the case of popular players who attract additional revenues. We consider a relevant achievement of this paper the fact of having approximated, in an homogeneous and accurate way, the relative importance of each of these features.

Firstly, we describe the basic model on which our empirical analysis is carried out. The dependent variable is the Media Value of tennis players, as captured by the ESI-rg index. Remember that the ESI-rg ranking is computed by combination of notoriety and popularity. At some stages of our analysis, in order to reach further conclusions, we have resorted to alternative dependent variables: Notoriety and Popularity. These additional regressions have enabled us disclosing aspects that would otherwise remain unknown.

Regarding the explanatory variables, there is no question that the most important factor is sport attainment, both the current and the past level. This feature is accurately captured either by the cumulative points of sport performance (ATP for men and WTA for women), or by the Prize Money obtained throughout the season. Table 4.1 show the summary statistics of the relevant variables included in the regressions.

**Table 4.1. Summary Statistics of the Main Variables**

Men	Sample	Mean	Stand. Dev.	Min	Max
Media Value	680	1.01	2.91	0	42.68
Popularity	680	0.98	2.02	0.002	21.12
Notoriety	680	1.03	4.01	0	64.24
Tournaments2007	680	13.57	5.86	1	28
ATP 2007	680	247.95	509.59	1	7,205
ATP past	680	206.23	404.54	3.4	5,679
Prizes 2007 *	680	125.19	400.06	0	7,405.6
Prizes Past *	680	100.47	303.14	0	5,366.8
Tournaments Past	680	13.63	7.76	0.4	33.2
Rank position 2007	680	397.76	296.18	1	1,461

Women	Sample	Mean	Stand. Dev.	Min	Max
Media Value	698	1	3.53	0	40.91
Popularity	698	1	3.04	0	31.70
Notoriety	698	1	4.13	0	52.14
Tournaments2007	698	11	7.87	3	34
WTA 2007	698	209	467.94	0	5,930
WTA past	698	168	384.54	0	3,932
Prizes 2007 *	698	91	267.96	0	4,367.1
Prizes Past *	-	-	-	-	-
Tournaments Past	698	13.12	7.93	0	31.2
Rank position 2007	698	603	346.01	1	1,390

\* Earnings expressed in thousands of \$US.

Note that the sample consisted initially of 700 men and 700 women players, but missing values of some of the variables lead us to reducing the sample to 680 and 698 individuals, respectively.

It is well known that money prizes in tennis are strictly granted on the basis of sport achievement in the different tournaments. This fact permits choosing between two alternative proxy variables that accurately capture the level of sport performance. In our model, the number of points achieved in the ATP 2007 ranking accounts for current sport performance, while past sport performance is captured through the arithmetic mean of the cumulative ATP points gathered between 2002 and 2006. Had we resort to Money Prizes 2007 and past Money Prizes, instead than using ATP points, the same essential conclusions would have been reached. Table 4.2 gathers the results of the regressions for men, while the estimations for women are shown in Table 4.3.

The estimations are very satisfying and corroborate that media value in tennis depends mainly on two factors: current sport performance and past sport performance. As shown in the tables, we have computed robust standard errors estimations. The R-squared is always very high, all the more if considering that it is a cross-sectional analysis, indicating a strong explanatory power of the model. Note also that the R-squared for the Notoriety model is bigger than that attached to Popularity. More importantly, the examination of the size and significance of the estimated coefficients for “ATP 2007” and “ATP past” indicates that current performance is relatively more important for Notoriety than it is for Popularity. This outcome is not surprising, since popularity can only be built alongside with time. On the contrary, the variable capturing past sport performance (ATP past) seems to be the most crucial factor as far as Popularity of players is concerned.

In addition to the two main variables, the set of independent variables include other relevant factors. Firstly, the number of tournaments in which the player participated in season 2007 is important, as manifested by its statistically significant coefficient (t-statistic: -8.24). Note also that, in line with our expectations, the sign of the corresponding estimator is negative. In effect, on the acknowledge that we had already accounted for sport performance (through the ATP ranking), a high level of sport productivity might have been achieved by means of participating in many tournaments, rather than by reaching farther eliminatory rounds. Thus, the level of popularity and notoriety of these individuals, who compensate their weak media value with larger exposure, is naturally lower than the media power of other players.

**Table 4.2. Estimation of the models: Media Value, Notoriety and Popularity (MEN).**

Number of obs = 680  
 F( 6, 673) = 149.65  
 Prob > F = 0.0000  
 R-squared = 0.9253  
 Root MSE = 0.8010

Media Value	Coef.	Rob.Std.Err.	t	P> t
ATP 2007	0.0043	0.0003	14.36	0.000
ATP past	0.0041	0.0010	3.85	0.000
Slam 2007	1.0031	0.8949	1.12	0.263
Tournaments2007	-0.0615	0.0074	-8.24	0.000
No language	-0.2444	0.0728	-3.35	0.001
Big Country	0.1871	0.0691	2.71	0.007
_cons	0.3678	0.0947	3.88	0.000

Number of obs = 680  
 F( 6, 673) = 155.95  
 Prob > F = 0.0000  
 R-squared = 0.9396  
 Root MSE = 0.99011

Notoriety	Coef.	Robust Std. Err.	t	P> t
ATP 2007	0.0063936	0.0004527	14.12	0.000
ATP Past	0.0023967	0.0015771	1.52	0.129
Slam 2007	5.20777	1.3366920	3.90	0.000
Tournaments2007	-0.080439	0.0101138	-7.95	0.000
No language	-0.078182	0.0883011	-0.89	0.376
Big Country	0.2175494	0.0794105	2.74	0.006
_cons	0.2067356	0.1054122	1.96	0.050

Number of obs = 680  
 F( 6, 673) = 145.63  
 Prob > F = 0.0000  
 R-squared = 0.7929  
 Root MSE = 0.92576

Popularity	Coef.	Robust Std. Err.	t	P> t
ATP 2007	0.0023725	0.0002751	8.62	0.000
ATP Past	0.0058137	0.0007134	8.15	0.000
Slam 2007	-3.201405	0.6067747	-5.28	0.000
Tournaments2007	-0.042619	0.0075204	-5.67	0.000
No language	-0.410693	0.0816488	-5.03	0.000
Big Country	0.1567239	0.0855339	1.83	0.067
_cons	0.528890	0.1214526	4.35	0.000

Then, a couple of auxiliary variables were incorporated into the regressions to avoid sources of potential bias that could distort our results. On one hand, the fact that important languages like Chinese were not used in the searching for news, entails measurement errors that must be tackled. Accordingly, a dummy variable was added to control for the relevant languages that were not taken into account at the searching stage. Similarly, another dummy was included for controlling large countries (in terms of population) as well as the degree of Internet access and penetration.

All the estimations, initially carried out for 680 observations, were later on replicated for the reduce sample of the top 200 players. The outstanding similarity of the results allow us concluding that our findings are largely conclusive.

The models estimated for the WTA sample convey essentially identical conclusions than those for the ATP tour. The results in Table 4.3 display again a very high explanatory power of the model, and report very similar outcomes in all regards. In order to stress some particularities, one could mention the fact that the Popularity models seems to be better described for the case of women than it was for men.

Again, it is oblique mentionning that all the previous conclusions would experience no change whatsoever should we have run regressions with the 200 top female players, instead of using the whole sample of 700 women.

In summary, one of the findings of our analysis is that sport success has decisive influence on media value of players, but also that part of this media value depends on personal characteristics of the individuals, a feature that is even more relevant in the case of women. Besides, as previous ESI-rg reports have already stated, the potential revenues of players can be better figured out from their media value than using only records of sport performance.

The baseline model that has been developed so far is a valid framework in which developing the analysis of further issues. Once the validity of the model have been checked out, and being convenced of the high internal efficiency of the tennis industry, we can address other issues. In particular, at last ESI-rg methodology provides us with an accurate tool for addressing the controversial issue of equal Money Prize rewards in tennis. The huge amount of information on Popularity and Notoriety makes it affordable that we tackle this appealing and challenging issue in the nest seccion.

**Table 4.3. Estimation of: Media Value, Notoriety and Popularity models (WOMEN).**

Number of obs = 698  
 F( 6, 691) = 63.66  
 Prob > F = 0.0000  
 R-squared = 0.8916  
 Root MSE = 1.1689

Media Value	Coef.	Rob.Std.Err.	t	P> t
WTA 2007	0.0046	0.0004	10.03	0.000
WTA past	0.0030	0.0005	6.11	0.000
Slam 2007	4.5383	3.2358	1.40	0.161
Tournaments2007	-0.0315	0.0075	-4.18	0.000
No language	-0.3138	0.1120	-2.80	0.005
Big country	0.0015	0.1114	0.01	0.989
_cons	0.0170	0.1122	0.15	0.879

Number of obs = 698  
 F( 6, 691) = 63.03  
 Prob > F = 0.0000  
 R-squared = 0.8985  
 Root MSE = 1.3204

Notoriety	Coef.	Rob.Std.Err.	t	P> t
WTA 2007	0.0064252	0.0007073	9.08	0.000
WTA Past	0.0017009	0.0005327	3.19	0.001
Slam2007	7.56139	3.449043	2.19	0.029
Tournaments2007	-0.028360	0.007874	-3.60	0.000
No language	-0.316832	0.0948835	-3.34	0.001
Big Country	0.0246363	0.1066604	0.23	0.817
_cons	-0.220145	0.1235844	-1.78	0.075

Number of obs = 698  
 F( 6, 691) = 45.67  
 Prob > F = 0.0000  
 R-squared = 0.8577  
 Root MSE = 1.1533

Popularity	Coef.	Rob.Std.Err.	t	P> t
WTA 2007	0.0030344	0.000384	7.90	0.000
WTA Past	0.0041006	0.0004806	8.53	0.000
Slam 2007	1.621036	3.311912	0.49	0.625
Tournaments2007	-0.030321	0.0079376	-3.82	0.000
No language	-0.371384	0.1169866	-3.17	0.002
Big Country	-0.096856	0.1163739	-0.83	0.406
_cons	0.2524034	0.1196892	2.11	0.035

## 5. Media Value and Equal Prize Policies

The economic theory recommends employing more intensively those inputs which are more productive. This general principle applies in the sport industry context too, as shown by Szymanski and Smith (1997) or Hoehn and Szymanski (1999) for example, even if a full discussion of the issue would entail attending to further refinements.<sup>5</sup>

The purpose of this section is to examine whether or not this feature holds in the tennis industry, and to establish to what extent it applies. Naturally, one can think of good reasons for establishing equal prizes policies in tennis tournaments, which would advise in favour of identical rewards for men and women. Our scope however is far from using other arguments than those of strict economic nature. Hence, this section simply aspires to addressing the issue from the economic perspective: to what extent money prizes in tennis tournaments correspond to the economic contribution of players? Is there room for improvements in efficiency at the tennis industry of spectacle?

According to our understanding, tennis players generate added value along with the shares of media value that they generates. Then, the level of media value is achieved mainly through sport success, although there are also other factors involved. In any case, sponsors or any firm in search for sport superstars will be willing to pay large amounts of money for having the support, in their marketing campaigns, of the most popular players. In summary, the media value attention drawn by players is a essential factor in order to determine their potential capacity of attracting revenues. In competitive markets, wage is established in accordance with the marginal revenue product of the worker, which in the present case depends on the media value power.

The issue under examination here is the efficiency of current policies of equal payment being settled for the major tennis tournaments. For testing if such imposition finds support in economic arguments, we develop a baseline model in which the dependent variable is Money Prizes and the main explanatory variable is the joint index of media value (Media Value Mixed) of players shown in Table 3.3 (which is report in more length in the Data Appendix). Both variables are perfectly comparable for all the tennis players,

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<sup>5</sup> In sports economics, players or clubs are typically considered as profit maximizer agents. However, following from the earlier work of Sloane (1971), Kesenne (1996, 2000) has argued that, in the world of European soccer, clubs can be treated as win maximizers (subject to a profit constraint) rather than profit maximizers, leading to different conclusions about competitive restraints. Similarly, Garcia-del-Barrio Szymanski (2009) find consistent evidence of win maximizing (subject to a zero profit constraint) behavior in both the Spanish and the English leagues.



regardless of their sex. Then, we include a dummy variable to account for all the women in the sample, testing if the corresponding estimator is statistically significant. A negative (and significant) coefficient, would indicate that women are paid less than what their media value deserve, and the opposite occurs if the sign is positive (and significant). Table 5.1 shows a description of the main variables used in the estimations of the models.

**Table 5.1. Summary Statistics of the Main Variables**

Variable	Sample	Mean	stand.Dev.	Min	Max
Money Prizes 2007 *	1,378	107.78	339.94	0	7,405.62
N Tournaments 2007	1,378	12.26	7.07	1	34
Media Value Mixed	1,378	1	3.15	0	52.85
Woman	1,378	0.50	0.50	0	1
Tournaments past	1,378	13.37	7.85	0	33.2
Joint Ranking 2007	1,378	701.43	404.62	1	1,400

\* Earnings expressed in thousands of \$US.

We have run different versions of the model, where the explanatory power in all the cases was about 85% ( $R^2$  of 0.85). More importantly, note that the coefficient of the dummy Women (controlling for this group of players of feminine sex) is statistically positive and highly significant, implying that women players are paid above the economic value they generate, at least according to our measures of media value contribution. The results of two alternative models, shown in Table 5.2, do not give place to question this conclusion.

**Table 5.2. Estimations of the Prize Money Model**

Number of obs = 1378 F( 2, 1375) = 53.75 Prob > F = 0.0000 R-squared = 0.8463 Root MSE = 133.38				
Prizes 2007	Coef.	Rob.Std.Err.	t	P> t
-----+-----				
Media Value Mixed	99.3284	9.6221	10.32	0.000
Woman	25.8666	7.3864	3.50	0.000
_cons	-5.2970	9.7207	-0.54	0.586
Number of obs = 1378 F( 3, 1374) = 106.00 Prob > F = 0.0000 R-squared = 0.8473 Root MSE = 133.0				
Prizes 2007	Coef.	Rob.Std.Err.	t	P> t
-----+-----				
Media Value Mixes	98.7883	9.8614	10.02	0.000
Tournaments 2007	1.5542	0.6633	2.34	0.019
Woman	29.5679	7.1539	4.13	0.000
_cons	-25.6840	7.5526	-3.40	0.001

In other words, given that the gap in prizes is smaller than the difference of media value contribution, the study puts under question the equal prize practices. In fact, such type of rewarding policies do not respond to economic efficiency, as women contribute in a lesser degree than men in generating the spectacle to be bargained in the industry. This outcome seems very conclusive since the same result is reached through applying alternative empirical analyses.

## **6. Conclusions**

Our analysis of the media value of professional tennis players concludes that Roger Federer was the absolute leader in 2007. The status of Rafael Nadal is not far from that achieved by Federer, while Justine Henin gets the third position in the ranking and is the most valuable female player in terms of media value.

Based on weekly observations, our study shows that Federer received, throughout the year 2007, a degree of attention in the media which is 54 times bigger than the interest shown by the average tennis player in the sample. Similarly, Rafael Nadal reaches 48 points in the ranking, meaning that his level of media value is 48 times that of the representative average player (in a data base of 1,400 individuals). These two players achieve rates that are far away from the levels attached to other main players. It suggests that the battle between these two big stars concentrates the attention of supporters and press. Among the ladies, Sharapova (6th position of the combined ranking) is the second most important woman in terms of media value. She receives a share of attention that overrates the position she holds as regards performance and sport achievements. Five women are found among the top ten media value players in the world.

A reduced number of superstars absorb most of the attention in the media: the top 20 players (out of 1,400) generate 30% of the total media value in tennis. This paper has provided insights on other relevant aspects, such as the monthly evolution of media value or the distribution of notoriety among the 128 tennis players participating in Grand Slam tournaments during the year 2007. Besides, we have estimated to what extent sport performance increases the popularity and notoriety of the players. In line with previous reports, in which several sport industries were analyzed, the sport performance of tennis players largely explains their media value achievements.

The study examines as well the influence of non sport related factors on the media value of individuals, disclosing that personal characteristics are more relevant for feminine than for masculine players. This bias, even if statistically not very large, hints the existence of non sport-related factors that are at work here.

Thanks to the large data set collected by ESIRg, comprising records for almost 1,400 players (700 at the WTA and 700 at the ATP), the study dares addressing the current debate on equal prizes policies. The issue is examined in connection with the contribution to the spectacle that individual tennis players provide, as evaluated by the ESIRg media value index. The report finds that 65% of total media value generated within the tennis industry stems from men, whereas the players in the WTA tour only represent 35% of the global interest. If the same calculations are computed for the main tournaments (Grand Slam), these percentages are smaller: 56% for men against 44% for women.

A similar conclusion can be obtained from the examination of the data in the Appendix. It collects information on the 200 more relevant tennis players in terms of media value, reporting that 136 of the 200 players (that is to say, 68%) are male players. Furthermore, this proportion grows bigger as we lessen the size of the sample: 73% of the 100 most noticeable players are men.

Given that the gap in prizes is smaller than the difference in terms of media value contribution, the study puts under question the equal prize practices. In fact, such type of rewarding policies do not respond to economic efficiency, as women contribute in a lesser degree than men in generating the spectacle to be bargained in the industry. This outcome seems very conclusive since the same result is reached through applying alternative empirical analyses.

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## Data Appendix

Ranking	Joint Media Value 2007		April	May	June	July	Aug	Sept	Oct	2007Average
1	Roger Federer	ATP	63.5	55.2	58.6	51.8	48.1	57.4	35.3	52.9
2	Rafael Nadal	ATP	64.0	51.1	68.6	54.0	43.8	27.3	19.2	46.8
3	JUSTINE HENIN	WTA	27.2	28.1	35.4	27.4	28.6	36.8	19.5	29.0
4	Andy Roddick	ATP	17.7	20.5	25.6	32.4	33.7	33.5	18.3	25.9
5	Novak Djokovic	ATP	18.4	17.9	27.6	17.8	26.1	34.7	25.4	24.0
6	MARIA SHARAPOVA	WTA	16.6	21.4	31.5	29.0	25.1	24.1	13.5	23.0
7	VENUS WILLIAMS	WTA	12.7	16.3	20.1	33.8	26.1	29.0	20.1	22.6
8	SERENA WILLIAMS	WTA	18.9	22.3	27.3	24.8	23.1	24.9	14.6	22.3
9	JELENA JANKOVIC	WTA	14.0	21.2	27.6	11.9	18.7	23.0	14.2	18.7
10	SVETLANA KUZNETSOVA	WTA	16.6	17.1	16.2	12.3	18.2	27.9	18.9	18.2
11	Nikolay Davydenko	ATP	18.4	18.4	20.0	10.8	20.4	22.5	15.4	18.0
12	James Blake	ATP	12.3	13.5	12.2	13.5	22.0	21.3	15.9	15.8
13	Lleyton Hewitt	ATP	14.9	21.0	22.6	13.2	12.6	11.2	10.8	15.2
14	AMELIE MAURESMO	WTA	21.6	21.2	21.8	19.2	6.3	6.0	8.1	14.9
15	ANA IVANOVIC	WTA	12.6	14.3	27.7	14.1	12.9	11.4	8.0	14.4
16	Carlos Moya	ATP	17.4	17.7	19.0	12.1	12.9	12.4	7.7	14.2
17	Fernando Gonzalez	ATP	22.4	21.1	12.7	8.2	8.0	10.0	13.3	13.7
18	David Ferrer	ATP	16.1	12.0	7.1	8.4	15.6	19.5	13.0	13.1
19	Tommy Robredo	ATP	18.4	16.7	17.0	8.9	8.2	7.5	9.2	12.3
20	Richard Gasquet	ATP	17.0	13.9	11.9	17.1	6.7	7.2	11.4	12.2
21	Andy Murray	ATP	12.2	9.1	8.3	9.3	11.0	11.2	17.2	11.2
22	MARTINA HINGIS	WTA	14.7	12.4	10.9	10.0	11.3	10.7	6.6	10.9
23	Tomas Berdych	ATP	17.8	12.4	9.5	10.0	6.9	8.5	10.1	10.7
24	Marat Safin	ATP	13.8	14.1	12.8	12.5	7.7	6.0	6.5	10.5
25	Andre Agassi	ATP	14.1	13.4	13.9	9.3	7.2	7.4	7.7	10.4
26	Guillermo Canas	ATP	18.1	15.5	15.5	6.7	5.3	4.0	5.9	10.2
27	MARION BARTOLI	WTA	6.0	7.6	10.7	19.9	9.0	8.2	7.8	9.9
28	Tommy Haas	ATP	9.2	7.9	7.0	10.0	10.7	12.6	11.7	9.9
29	Juan Carlos Ferrero	ATP	15.9	12.6	10.2	11.6	5.2	3.5	5.1	9.2
30	Ivan Ljubicic	ATP	10.6	11.9	12.0	5.3	4.9	6.4	8.7	8.5
31	ANNA CHAKVETADZE	WTA	5.1	5.6	8.0	9.8	11.7	13.0	6.7	8.5
32	Juan Ignacio Chela	ATP	13.0	11.8	6.7	5.5	8.4	8.1	4.4	8.3
33	Tim Henman	ATP	6.7	6.4	8.9	9.9	8.2	8.5	7.3	8.0
34	ELENA DEMENTIEVA	WTA	9.2	12.0	9.5	5.7	6.1	4.6	8.8	8.0
35	PATTY SCHNYDER	WTA	10.5	12.3	9.7	8.3	6.8	3.8	4.2	7.9
36	Marcos Baghdatis	ATP	11.5	10.4	11.6	8.5	4.4	4.3	4.3	7.8
37	Filippo Volandri	ATP	20.8	16.6	7.7	4.0	2.3	1.6	1.6	7.8
38	Juan Monaco	ATP	7.3	9.8	6.5	6.7	9.1	8.4	6.5	7.8
39	David Nalbandian	ATP	9.8	9.8	11.0	6.2	6.3	4.8	4.6	7.5
40	Igor Andreev	ATP	10.5	10.9	12.5	4.8	3.2	3.4	6.4	7.4
41	DANIELA HANTUCHOVA	WTA	7.0	8.4	8.0	6.9	4.3	6.5	9.3	7.2
42	NADIA PETROVA	WTA	10.5	8.3	6.2	7.5	6.6	4.8	5.8	7.1
43	Philipp Kohlschreiber	ATP	13.2	9.6	6.4	3.4	2.9	4.5	6.8	6.7
44	Mikhail Youzhny	ATP	9.4	9.5	8.6	6.1	3.8	3.8	5.1	6.6
45	Thomas Johansson	ATP	6.0	4.2	4.0	5.9	6.4	7.7	11.2	6.5
46	David Martin	ATP	0.9	0.7	0.7	6.1	11.3	12.0	13.2	6.4
47	NICOLE VAIDISOVA	WTA	4.3	9.2	13.8	8.4	2.9	2.6	3.0	6.3
48	Paul-Henri Mathieu	ATP	8.8	7.9	7.8	7.8	4.1	2.4	5.0	6.2

49	Gael Monfils	ATP	6.1	9.7	8.3	9.3	4.8	2.7	2.5	6.2
50	Michael Russell	ATP	0.9	5.8	5.8	4.7	7.9	8.1	9.1	6.1
51	Radek Stepanek	ATP	7.4	6.8	4.8	6.2	7.5	4.1	5.1	6.0
52	LINDSAY DAVENPORT	WTA	4.7	4.6	5.1	5.7	4.1	7.2	9.3	5.8
53	TATIANA GOLOVIN	WTA	5.2	3.8	4.0	7.0	4.9	5.0	10.2	5.7
54	DINARA SAFINA	WTA	7.0	8.0	6.9	2.9	4.8	4.5	5.2	5.6
55	Nicolas Almagro	ATP	10.1	9.5	3.9	5.2	4.8	3.0	1.6	5.4
56	Gaston Gaudio	ATP	10.9	9.5	6.3	3.5	2.3	2.0	2.2	5.3
57	kournikova	WTA					3.6	5.4	6.0	5.0
58	SANIA MIRZA	WTA	3.6	3.9	4.1	6.9	6.6	4.3	4.8	4.9
59	Fernando Verdasco	ATP	4.2	4.2	5.9	5.3	5.0	4.0	5.5	4.9
60	Nicolas Massu	ATP	9.0	8.4	4.6	3.3	2.3	2.4	3.1	4.7
61	Martin Lee	ATP	0.3	0.2	0.2	4.6	8.5	9.0	9.9	4.7
62	Arnaud Clement	ATP	6.4	5.9	7.2	4.4	3.7	2.4	2.8	4.7
63	Andre Sa	ATP	0.4	0.4	0.4	4.7	8.1	8.9	9.7	4.7
64	Benjamin Becker	ATP	6.4	4.9	4.8	3.7	3.7	3.5	5.2	4.6
65	Gilles Simon	ATP	6.4	5.1	3.4	5.4	4.5	3.6	3.4	4.6
66	SHAHAR PEER	WTA	5.2	5.1	4.2	3.2	5.4	4.7	3.9	4.5
67	Brian Wilson	ATP	2.3	1.7	1.6	4.5	6.6	7.0	7.9	4.5
68	MARY PIERCE	WTA					3.6	5.0	4.9	4.5
69	Matthew Smith	ATP	0.2	0.2	0.2	3.9	8.2	8.8	10.0	4.5
70	Mardy Fish	ATP	4.3	5.1	4.0	5.1	5.4	4.3	2.9	4.5
71	David Novak	ATP	0.0	0.0	0.0	2.0	8.0	12.7	8.4	4.4
72	Nicolas Kiefer	ATP	3.0	3.3	4.1	6.6	4.6	4.2	5.0	4.4
73	Donald Young	ATP	0.5	0.4	0.4	3.9	8.9	8.8	7.8	4.4
74	Agustin Calleri	ATP	8.8	6.8	3.6	3.4	4.1	2.4	1.5	4.4
75	Jarkko Nieminen	ATP	8.4	6.5	5.0	2.2	2.8	2.4	3.2	4.4
76	Simon Rea	ATP	0.1	0.0	0.0	4.0	8.0	8.6	9.0	4.3
77	Sebastien Grosjean	ATP	7.5	5.9	4.6	2.7	3.0	2.6	3.2	4.2
78	Olivier Rochus	ATP	6.1	5.8	4.7	2.6	1.9	3.1	5.3	4.2
79	Stanislas Wawrinka	ATP	3.7	3.4	2.0	4.1	5.4	4.6	6.1	4.2
80	Ivo Karlovic	ATP	1.8	2.3	4.8	4.1	4.4	3.3	8.6	4.2
81	FRANCESCA SCHIAVONE	WTA	3.3	3.6	3.7	5.1	3.8	4.6	5.2	4.2
82	Lee Childs	ATP	0.1	0.1	0.3	3.8	7.3	8.3	9.4	4.2
83	Jonas Bjorkman	ATP	2.0	4.3	7.7	4.0	2.0	4.1	5.0	4.2
84	Feliciano Lopez	ATP	2.8	2.3	3.1	5.3	5.3	5.1	4.8	4.1
85	Dmitry Tursunov	ATP	3.3	2.7	3.8	4.4	3.6	4.2	6.6	4.1
86	Phillip King	ATP	0.1	0.1	0.1	3.7	7.3	8.0	8.7	4.0
87	Fabrice Santoro	ATP	2.7	3.9	5.1	5.6	3.1	3.5	3.9	4.0
88	Kevin Anderson	ATP	0.9	1.0	0.7	3.4	6.4	7.2	7.9	3.9
89	Marc Lopez	ATP	0.3	0.3	0.2	3.5	7.2	8.0	8.1	3.9
90	Albert Costa	ATP	1.4	1.3	1.4	3.5	6.1	6.8	6.5	3.9
91	MARA SANTANGELO	WTA	4.8	5.2	5.9	3.8	1.7	2.7	2.8	3.9
92	Oscar Hernandez	ATP	7.8	6.0	3.4	2.1	2.4	2.5	2.4	3.8
93	Kevin Kim	ATP	0.5	0.5	0.7	4.2	6.5	6.9	7.2	3.8
94	Greg Jones	ATP	0.3	0.2	0.5	3.6	6.6	7.2	8.1	3.8
95	Potito Starace	ATP	6.7	5.9	3.9	3.1	2.3	1.7	3.0	3.8
96	ANABEL MEDINA	WTA	5.2	6.9	4.8	2.1	2.2	2.5	2.2	3.7
97	SYBILLE BAMMER	WTA	3.6	4.5	5.4	2.8	3.7	3.0	2.8	3.7
98	Kristof Vliegen	ATP	5.7	5.5	4.8	2.8	1.7	1.9	3.1	3.7
99	Jordane Doble	ATP	0.0	0.0	0.0	3.1	6.8	7.4	8.1	3.6

100	Florian Mayer	ATP	4.3	5.8	5.1	2.8	2.8	2.1	2.1	3.6
101	Alberto Martin	ATP	2.8	2.3	1.5	3.0	4.6	5.0	5.5	3.5
102	Juan Martin Del Potro	ATP	1.9	4.2	6.3	3.1	3.4	2.9	2.2	3.4
103	NATHALIE DECHY	WTA	5.3	4.2	4.2	3.2	2.6	2.3	2.0	3.4
104	Julien Benneteau	ATP	5.7	5.5	4.2	2.1	2.4	1.6	2.3	3.4
105	Robin Soderling	ATP	6.8	4.3	3.5	6.2	1.2	0.9	1.0	3.4
106	Jose Acasuso	ATP	5.6	5.0	2.6	2.9	3.8	2.3	1.5	3.4
107	Marcos Daniel	ATP	0.6	1.2	0.9	3.6	6.0	6.6	4.3	3.3
108	Martin Fischer	ATP	0.1	0.1	0.1	3.1	6.3	6.7	6.7	3.3
109	FLAVIA PENNETTA	WTA	3.6	2.3	2.4	2.3	1.6	3.0	7.7	3.3
110	MARIA KIRILENKO	WTA	2.5	2.1	2.3	2.4	3.1	3.8	6.1	3.2
111	Daniel Brands	ATP	1.2	0.5	0.1	2.8	5.5	5.9	6.1	3.2
112	Nicolas Mahut	ATP	1.7	2.1	5.9	4.6	1.6	2.2	3.9	3.1
113	KATARINA SREBOTNIK	WTA	3.5	3.6	4.1	3.2	2.7	2.2	2.8	3.1
114	Michael Berrer	ATP	0.3	0.2	1.0	3.5	4.4	4.9	7.2	3.1
115	MICHAELLA KRAJICEK	WTA	3.2	4.2	4.5	4.1	2.2	1.4	2.1	3.1
116	GISELA DULKO	WTA	5.5	3.9	2.7	1.9	2.4	2.2	2.9	3.1
117	LUCIE SAFAROVA	WTA	3.8	4.7	5.1	2.3	2.2	1.7	1.5	3.0
118	VIRGINIE RAZZANO	WTA	2.5	1.8	2.2	1.3	2.9	2.9	7.0	3.0
119	EMILIE LOIT	WTA	3.0	4.8	3.9	2.8	2.3	1.5	2.1	2.9
120	Janko Tipsarevic	ATP	1.3	3.1	4.3	3.1	1.8	2.4	4.2	2.9
121	MARY PIERCE	WTA	3.1	3.6	4.2	3.5	2.6	1.5	1.6	2.9
122	Alexander Waske	ATP	6.1	4.4	1.8	1.6	1.2	2.2	2.8	2.9
123	Albert Montanes	ATP	3.9	4.8	3.5	2.6	2.3	1.3	1.5	2.8
124	JULIA VAKULENKO	WTA	7.9	4.8	1.3	0.6	2.0	1.9	1.3	2.8
125	ALONA BONDARENKO	WTA	5.8	5.2	2.6	1.4	1.6	1.4	1.6	2.8
126	AGNES SZAVAY	WTA	1.0	0.7	0.7	1.3	5.3	7.3	3.2	2.8
127	Gustavo Kuerten	ATP	3.1	3.3	4.0	1.9	1.4	2.3	3.4	2.8
128	Robby Ginepri	ATP	2.5	3.2	4.1	2.1	3.2	2.5	1.8	2.8
129	Guillermo Coria	ATP	4.0	3.8	3.9	2.3	1.7	1.8	1.7	2.7
130	Jurgen Melzer	ATP	3.7	4.0	2.8	1.0	1.8	2.4	3.5	2.7
131	Andrei Pavel	ATP	3.4	2.0	2.5	3.5	2.7	2.4	2.6	2.7
132	AKIKO MORIGAMI	WTA	4.3	2.3	1.8	6.0	1.5	1.2	1.8	2.7
133	AI SUGIYAMA	WTA	3.7	2.6	3.2	3.2	2.6	1.7	1.7	2.7
134	Max Mirnyi	ATP	3.6	2.8	4.0	2.0	2.4	2.3	1.4	2.6
135	TAMIRA PASZEK	WTA	2.5	3.0	4.0	2.7	1.8	2.4	1.8	2.6
136	Mario Ancic	ATP	3.1	2.8	2.5	2.1	2.3	2.2	3.0	2.6
137	SAMANTHA STOSUR	WTA	4.4	4.8	3.7	1.7	1.3	1.1	0.8	2.6
138	TATHIANA GARBIN	WTA	4.7	3.8	3.6	2.7	1.4	0.8	0.6	2.5
139	Hyung-Taik Lee	ATP	1.4	1.5	1.5	3.7	3.7	3.1	2.8	2.5
140	Stefan Koubek	ATP	1.1	1.9	1.5	3.1	2.5	2.6	5.0	2.5
141	Juan Antonio Marin	ATP	0.4	0.2	0.2	2.3	4.6	5.1	4.7	2.5
142	Florent Serra	ATP	3.3	3.1	2.7	3.7	1.6	0.9	2.0	2.5
143	Luis Horna	ATP	1.7	3.7	2.5	2.9	2.0	2.1	2.1	2.4
144	AGNIESZKA RADWANSKA	WTA	1.1	2.3	2.2	1.9	3.7	3.2	2.6	2.4
145	CAMILLE PIN	WTA	3.1	2.7	2.1	2.3	2.3	1.5	2.9	2.4
146	ELENA VESNINA	WTA	1.7	3.3	2.6	3.2	1.5	1.7	2.7	2.4
147	MEGHANN SHAUGHNESSY	WTA	2.6	3.6	3.5	1.7	2.1	1.8	1.3	2.4
148	VICTORIA AZARENKA	WTA	3.5	2.0	0.8	1.3	2.7	2.6	3.8	2.4
149	VERA ZVONAREVA	WTA	2.2	2.2	2.1	1.4	1.7	2.6	4.3	2.4
150	ANASTASIA MYSKINA	WTA	2.7	3.9	4.2	1.9	1.2	1.2	1.3	2.3



151	Andreas Seppi	ATP	2.2	1.5	1.4	4.2	2.1	1.3	3.7	2.3
152	Marc Gicquel	ATP	3.5	2.6	3.1	2.8	1.5	1.4	1.6	2.3
153	Diego Cristin	ATP	0.0	0.0	0.0	2.1	4.3	5.0	4.9	2.3
154	Pablo Gonzalez	ATP	0.3	0.2	0.1	2.3	4.0	4.4	4.9	2.3
155	NA LI	WTA	2.3	2.5	1.8	4.8	3.7	0.4	0.4	2.3
156	Dominik Hrbaty	ATP	4.4	3.1	2.0	1.6	2.2	1.4	1.1	2.3
157	Rainer Schuettler	ATP	4.6	2.9	1.1	0.7	0.7	2.0	3.5	2.2
158	KAIA KANEPI	WTA	3.2	3.4	3.3	2.2	1.4	1.0	0.9	2.2
159	Dick Norman	ATP	0.5	0.5	0.5	3.1	3.5	3.7	3.5	2.2
160	ALICIA MOLIK	WTA	1.7	2.0	3.0	2.9	1.3	1.5	2.7	2.2
161	Frank Dancevic	ATP	0.4	0.4	0.9	4.6	4.8	1.5	2.4	2.1
162	VANIA KING	WTA	3.1	2.0	1.5	2.5	1.3	1.4	3.0	2.1
163	Daniel Yoo	ATP	0.0	0.0	0.0	1.8	3.8	4.4	4.5	2.1
164	Olivier Patience	ATP	2.1	3.3	3.6	1.5	1.7	1.3	1.2	2.1
165	Fernando Vicente	ATP	0.7	2.3	1.9	1.8	2.4	2.7	2.7	2.1
166	Sergio Roitman	ATP	1.7	2.5	2.5	2.9	2.0	1.1	1.5	2.1
167	SEVERINE BREMOND	WTA	3.6	2.9	2.0	2.7	1.3	0.8	1.0	2.0
168	ALIZE CORNET	WTA	1.4	3.4	4.2	0.7	1.4	1.8	1.4	2.0
169	Nicolas Lapentti	ATP	0.9	2.7	2.8	2.7	1.7	1.2	1.9	2.0
170	Alberto Francis	ATP	0.0	0.0	0.0	1.9	3.7	4.1	4.0	2.0
171	ELENI DANILIDOU	WTA	2.3	1.5	1.4	1.2	1.7	2.5	3.1	2.0
172	LISA RAYMOND	WTA	2.6	1.5	1.6	3.8	2.1	1.1	0.9	1.9
173	Santiago Gonzalez	ATP	0.3	0.4	0.3	2.2	3.3	3.3	3.7	1.9
174	Morgan Phillips	ATP	0.0	0.0	0.0	1.7	3.7	4.1	3.9	1.9
175	Michael Llodra	ATP	1.2	2.2	2.7	2.2	1.4	1.4	2.4	1.9
176	Sam Querrey	ATP	1.8	1.8	1.8	2.2	2.8	1.7	1.3	1.9
177	James Pade	ATP	0.0	0.0	0.0	1.9	3.7	4.0	3.7	1.9
178	Jonathan Marray	ATP	0.1	0.1	0.3	1.3	3.3	4.0	4.2	1.9
179	Paul Capdeville	ATP	1.1	1.9	1.7	2.1	2.1	2.2	2.0	1.9
180	Mariano Zabaleta	ATP	1.5	2.3	2.3	2.6	2.0	1.3	1.0	1.8
181	Christopher Lam	ATP	0.0	0.0	0.0	1.6	3.4	3.9	3.4	1.8
182	Carlos Berlocq	ATP	0.9	2.3	2.3	2.2	1.4	1.4	1.8	1.8
183	Albert Portas	ATP	0.6	0.5	0.4	1.5	2.9	3.3	3.0	1.8
184	Mark Philippoussis	ATP	2.4	2.2	2.3	2.1	1.3	1.0	1.0	1.8
185	ROBERTA VINCI	WTA	1.9	1.4	1.1	2.6	2.3	2.0	1.1	1.8
186	JAMEA JACKSON	WTA	0.6	0.9	1.5	4.6	3.5	0.6	0.5	1.8
187	Jo-Wilfried Tsonga	ATP	0.6	0.3	2.6	1.9	2.3	2.2	2.2	1.7
188	Diego Hartfield	ATP	1.0	3.4	2.5	2.3	1.6	0.7	0.6	1.7
189	Lucas Engel	ATP	0.2	0.1	0.0	1.5	3.2	3.8	3.4	1.7
190	Jamie Baker	ATP	0.2	0.1	1.0	1.6	2.6	3.1	3.4	1.7
191	Amer Delic	ATP	1.9	2.7	2.1	1.1	1.7	1.4	1.0	1.7
192	Paul Goldstein	ATP	1.7	0.9	0.6	2.1	2.5	2.0	1.9	1.7
193	MILAGROS SEQUERA	WTA	1.4	3.3	2.9	2.5	1.0	0.2	0.2	1.7
194	Xavier Malisse	ATP	2.9	2.2	1.6	1.1	1.1	1.3	1.4	1.7
195	Ricardo Mello	ATP	1.1	0.9	0.7	1.9	2.0	2.1	2.8	1.6
196	Miles Armstrong	ATP	0.0	0.0	0.0	1.4	2.9	3.6	3.4	1.6
197	CATALINA CASTANO	WTA	1.6	2.7	2.0	1.1	1.1	1.2	1.6	1.6
198	Martin Vassallo Arguello	ATP	0.7	0.7	0.5	2.6	2.8	1.3	2.6	1.6
199	Tyler Cleveland	ATP	0.0	0.0	0.0	1.3	3.2	3.7	3.1	1.6
200	Greg Rusedski	ATP	2.2	1.8	2.0	1.8	1.1	1.1	1.3	1.6