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## Comparative Analysis of Return of Serve as Counter-attack in Modern Tennis

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### Abstract

High performance modern tennis is characterised by high dynamism, speed in thinking and action, precision and high technical and tactical skills. In this study, we used direct observation and statistical recording of nine matches during two competition years in the tennis players Roger Federer, Rafael Nadal and Andre Agassi. In these tennis players, we studied mainly the return of serve, one of the most important shots in tennis, together with serve, as first shots in a point. We have chosen the three tennis players because they are the best example of return of serve as shown by the matches recorded and interpreted. The study we have carried out shows that return of serve makes Agassi a winner in most matches. The high percentage in Federer's serves makes his adversaries have a lower percentage in return of serve, which prevents them to win against his serve. High percentage in return of serve results in more points on the adversary's serve and an opportunity to start the offensive point. After comparing the three tennis players mentioned above, we can see that the highest percentage of points won on return of serve belongs to Agassi, which ranks him among the best return of serve tennis players in the world. The tennis player with the highest percentage in return of service is the one who wins the match, which shows, once again, the importance of the return of serve. Return of serve can be a strong counter-attack weapon if used at its highest level.

**Keywords:** tennis player, return of serve, counter-attack, analysis.

### Rezumat

Jocul actual de tenis de înaltă performanță se caracterizează prin mare dinamism, rapiditate în gândire și acțiune, precizie și o mare măiestrie tehnico-tactică. În cadrul studiului efectuat am folosit observația directă și înregistrarea statistică a unui număr de 9 meciuri pe parcursul a 2 ani competiționali, la jucătorii Roger Federer, Rafael Nadal și Andre Agassi. La acești jucători am studiat în mod special returul de serviciu, una dintre cele mai importante lovituri din tenis, alături de serviciu, cele două fiind primele lovituri din cadrul unui punct. Am ales cei trei jucători deoarece sunt cel mai bun exemplu în cazul returului de serviciu, lucru dovedit din meciurile înregistrate și interpretate. În urma studiului pe care l-am efectuat putem observa că procentajul ridicat la retur îl face învingător pe Agassi în majoritatea meciurilor disputate. Procentajul ridicat pe serviciul lui Federer îi determină pe adversarii săi să aibă un procentaj mult mai scăzut la retur, ceea ce îi împiedică să câștige contra serviciului său. Un procentaj ridicat la retur rezultă mai multe puncte câștigate pe serviciul advers și posibilitatea de a începe punctul ofensiv. În urma comparației făcute între cei 3 jucători rezultă că cel mai mare procentaj de puncte câștigate la retur îl are Agassi, fapt ce îl pune încă o dată pe primul loc în topul celor mai buni jucători de retur din lume. Jucătorul care are procentajul cel mai ridicat la retur este în final cel care câștigă meciul, din acest lucru văzându-se încă o dată importanța foarte ridicată a returului de serviciu. Returul de serviciu poate fi o armă redutabilă de contraatac dacă este folosită la nivelul său cel mai ridicat.

**Cuvinte cheie:** jucătorul de tenis, returul de serviciu, contraatac, analiză.

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## Introduction

High performance modern tennis is characterised by high level dynamism, speed in thinking and action, precision and high technical and tactical skills.

The increase of the match duration, the large number of tennis tournaments per year, and the wide range of conditions the matches are played in ask for special efforts from the tennis players who have to prove they have high physical and psychical resources. All these features of high performance make modern tennis a show of virtuosity and of high scientific preparation in all sports training parameters.(1)

High motivation level, the fight for ATP and WTA tournament points as well as involvement in the process of training and game of other scientific fields in the improvement of a great champion have changed the age of great achievements in tennis.

All these aspects prove strongly the dimension, amount and quality of the work of the tennis player, his coach and team of specialists to reach to the status of a true tennis champion.

At present, serve and return of serve play a determining role in winning a point since it is with these shots that a tennis player overtakes the point lead and wins matches. We believe that, if a return of serve is well trained, then it can be a strong counter-attack weapon in a tennis match.

Complete game means not only basic shots such as forehand and backhand, but also shots that can put pressure on the adversary since the first contact with the ball. Return of serve is one of these shots that many consider just a "shot", not a shot that can put the tennis player in an offensive position in front of his adversary who serves.(2)

## Goal

The goal of the study was to present a set of means that can optimise tennis games at highest levels and define return of serve as a counter-attack weapon in tennis; to do so, we present a comparative analysis of the return of serve in the most representative tennis players of the world: Roger Federer, Rafael Nadal and Andre Agassi.

## Material and Methods

The research methods we have used in the study were:

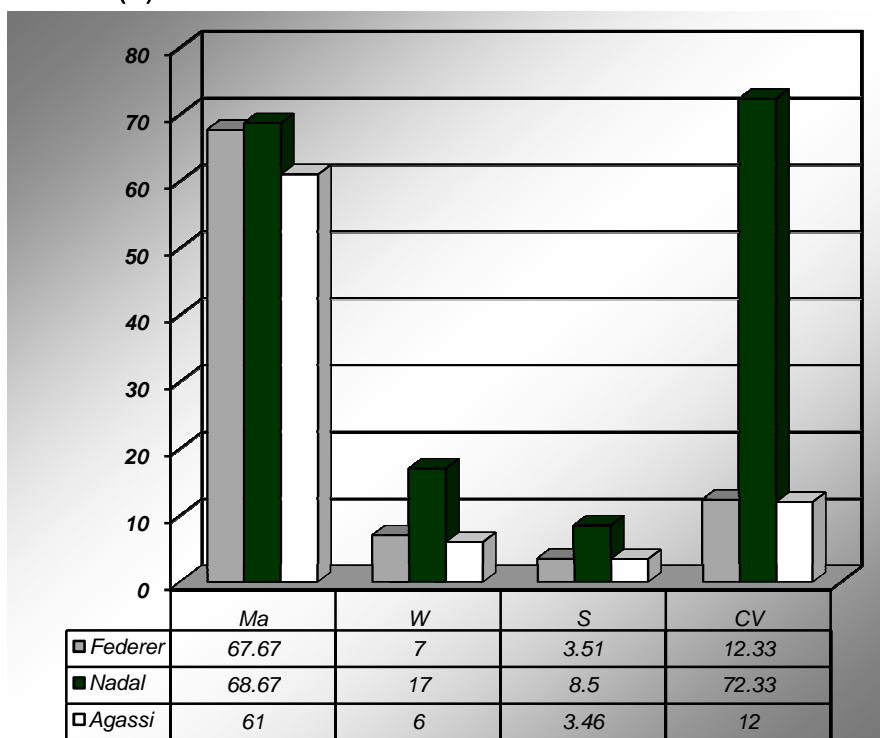
1. **Bibliographical study.**
2. **Observation.** Observation is one of the main methods of direct investigation of reality: it represents the starting point in getting factual, concrete materials that make up the grounds for analysis. This method consists in intentional, thorough, and systematic monitoring of certain facts under normal conditions of any type of process aiming at seizing the main and/or differentiating aspects. The main field of observation is subject behaviour. Thus, as far as subject response to environment, adversary and results during the match is concerned, we can refer to a few aspects we have monitored in particular, that can influence positively or negatively a tennis match. Some of these aspects are:
  - The way in which a tennis player approaches the situation: with confidence, with ease, dominated or dominating;
  - The way in which he responds to the situations developed by his adversary during the match;
  - The way in which he organises his actions: impulsive, thorough, lacking control;
  - The way in which he speaks, mimics, or makes gestures when losing or winning a point.(3)
3. **The statistical-mathematical method.** The statistical-mathematical indices we have used were arithmetic mean ( $\bar{x}$ ), amplitude as the simplest index of dispersion marked with "W" (representing the difference between the extreme values of a distribution), standard deviation (S), variability coefficient (CV), and percentage calculus (%).
4. **The graphical method.**
5. **The video recording analysis method.** In this study, we have used direct observation and statistical recording of nine tennis matches during two competition years in the tennis players Roger Federer, Rafael Nadal and Andre Agassi. We studied, in these tennis players, the return of serve in particular, one of the most important tennis shots, together with serve – in fact, the first shots in a point. We have chosen the three tennis players because they are the

best examples of returns of serve, which has been proved by the matches recorded and interpreted. During the two years of evolution in

the three top tennis players, they improved the serve and the return of serve in particular, which is shown by the percentages of the two shots.

**Results**

**Points won upon first serve (%)**



**Graph 1.** Points won upon first serve (%)

Graph 1 shows that the points won upon first serve (%) is superior in Nadal with an average of 68.67% compared to Federer with 67.67% and to Agassi with 61.00%. Amplitude is the difference of extreme values of distribution – in our case, Federer 7, Nadal 17 and Agassi 6. Standard deviation is the index most used in normal frequency distributions. In our case, the highest index is in Nadal, 8.5, followed by Federer with 3.51 and Agassi with 3.46.

The variability coefficient is a percentage approximation of the ratio between standard deviation and arithmetic mean. The lower the variability coefficient, the more obvious the grouping of data around the arithmetic mean is. In our case, variability coefficient was 12.33 in Federer, 12.37 in Nadal, and 12.00 in Agassi.

**Points won upon first serve (%)**

Graph 2 shows that the highest percentage of points won upon first serve was in Federer, 78.33%,

compared to Nadal with 68.33% and to Agassi with 71.33%.

As far as amplitude is concerned, the highest index was in Nadal (22), followed by Federer (18) and Agassi (12).

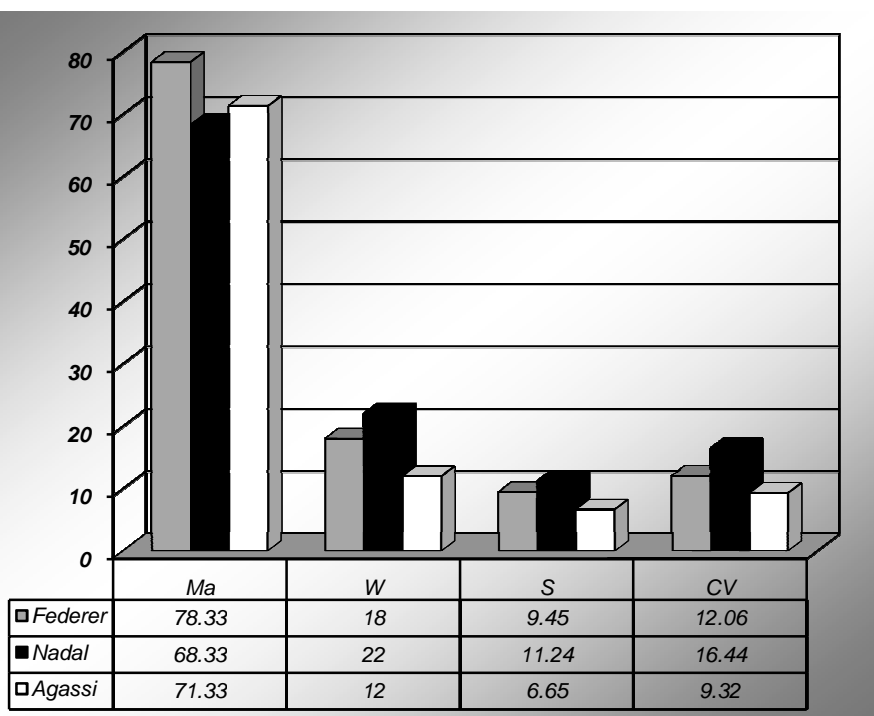
As shown in Graph 2, standard deviation in Federer is 9.45, in Nadal, 11.24 and in Agassi, 6.65.

Variability coefficient in Nadal is 16.44 (the highest one), compared to Federer (12.06) and to Agassi (9.32).

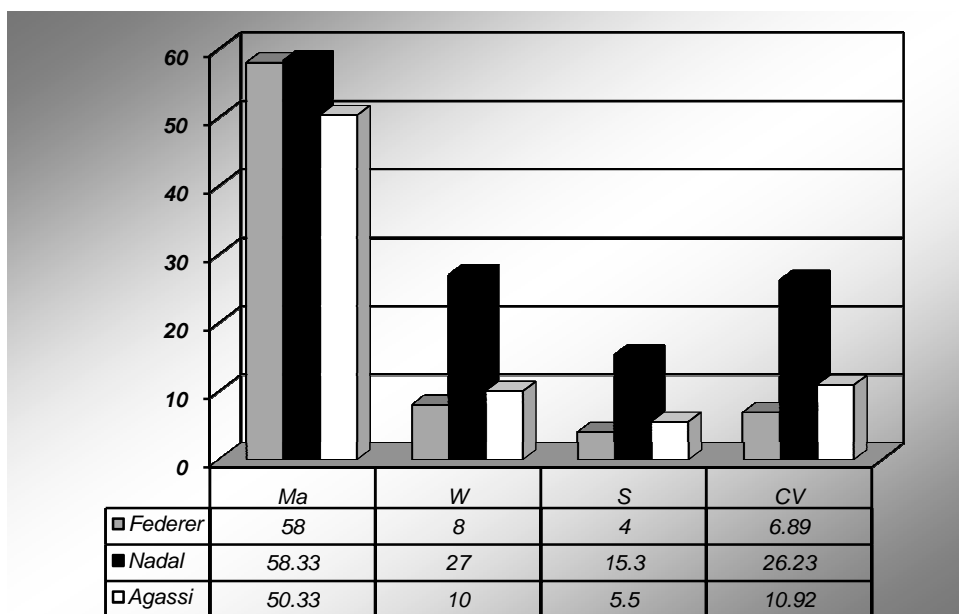
**Points won upon second serve (%)**

Graph 3 shows the points won upon second serve in percentage. We see that Nadal (58.33%) is above the other two tennis players / Federer, with 58.00% and Agassi with 50.33%.

Likewise, in amplitude, standard deviation and variability coefficient all indices show Nadal is superior (27.00) to the other two tennis players (15.30 and 26.23, respectively).



**Graph 2.** Points won upon first serve (%)



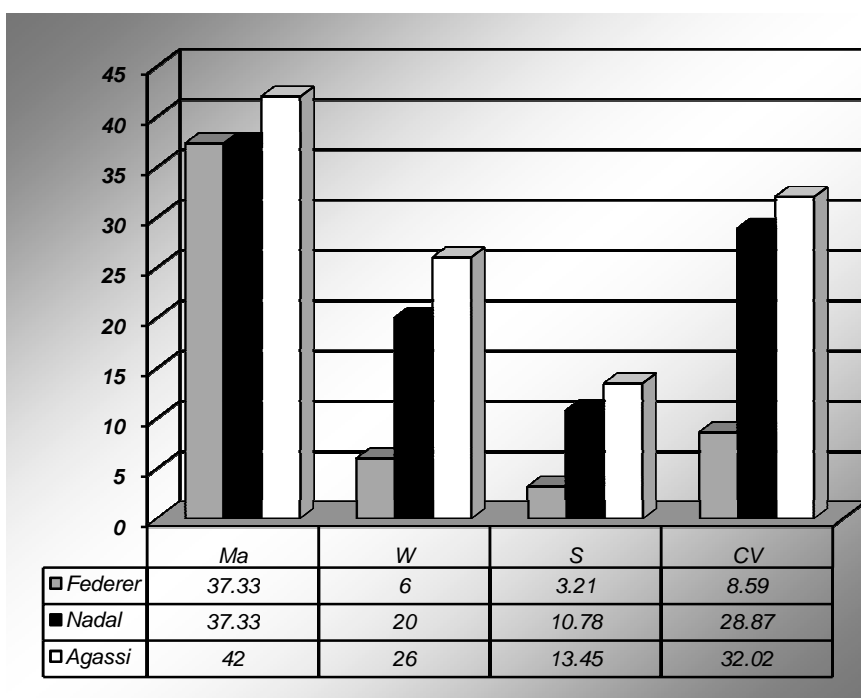
**Graph 3.** Points won upon second serve (%)

**Points won upon return of serve**

Graph 4 shows that, in the return of serve, Agassi is neatly superior to the other two tennis players. The mean of the return of serve in Agassi is 42.00, much higher than that of Federer and Nadal (37.33). Likewise, amplitude, standard deviation and

variability coefficient rank Agassi first:  $W = 26.00$ ,  $S = 13.45$  and  $CV = 32.02$ .

Finally, results show that Agassi has the highest percentage in return of serve, which makes him the best return server in the world.



Graph 4. Points won upon return of serve (%)

### Conclusions

The study we have carried out allows us to draw the following conclusions:

- The high percentage in return of serve makes Agassi a winner of most matches.
- The high percentage in serve in Federer makes his adversaries have a much lower percentage in return of serve, which prevents them from winning against his serve.
- With constancy of speed in the first serve and a high percentage of points upon his serve, Federer wins much easier than the other tennis players.
- A high percentage in serve results in a low return of serve, i.e. more chances to win the point in the tennis player who uses the serve at higher levels.
- A high percentage upon return of serve results in more points won upon the serve of the adversary and an opportunity to start the offensive point.
- The comparison of the three tennis players shows that the highest percentage of points won upon return of serve is in Agassi, which ranks him once again first among the best serve returners of the world.

- Besides a good return of serve one also needs a high percentage serve.
- Nadal, known for his rather defensive game, manages to dominate his adversaries due to his high percentage upon serve and particularly upon return of serve.
- Return of serve should not be used as a mere “shot”, but rather as a starting shot in an offensive point.
- The tennis player with the highest return of serve percentage is finally the winner of the match, which points to the importance of the return of serve.
- Return of serve can be a strong counter-attack weapon is used at its highest level.

### References

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