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Australia's Cricket Supremacy – A Causality Analysis

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Abstract

In the game of cricket, Australia have reigned supreme. They have better win/loss ratios in Test matches against all opposing nations by substantial to infinite margins. These ratios are significantly magnified for Tests staged on Australian soil. In this study, we have identified several intangible factors like rule differences, match durations, ground sizes and weather conditions which likely had contributed to the Australian dominance to some extent. More significantly, we have also identified and analyzed two main causative factors, which are responsible for the win/loss ratios in favor of Australia: (1) Most of the great opposition batsmen with the exception of a few, have under-performed against Australia as compared with against other cricketing nations in general, and in Australia in particular; (2) Most of the great opposition bowlers, with few exceptions, have also under-performed against Australia and in Australia in a similar manner. These two factors amply demonstrate the causality between them on one hand and Australia's win/loss ratio on the other.

INTRODUCTION

In the history of world Test cricket, ***Australia have been the one team which reigned supreme***. They had won more Test matches than they lost against all opposition. Table I (from [1]) is a summary of all Test matches played by Australia from the inaugural Test match against England in 1877 up to and including the year 2020. (**Note**: In that table, the entries for South Africa have been corrected from [1], which did not include data from the Triangular contest played in England in 1912.) Australia's ***Win/Loss Ratio*** ranged from 1.32 (against England), 1.43 (against India), 1.81 (against West Indies) up to infinity (against Zimbabwe and ICC World XI). Overall, against all opposition, Australia played 837 Test matches, won 396 of them and lost only 226 for a win/loss ratio of 1.75.

Table I. Australia's Test Record against Opposition							
Opposition	First Test	Tests	Won	Lost	Drawn	Tied	Win/Loss Ratio
England	1877	351	146	110	95	0	1.32
South Africa	1902	101	54	26	21	0	2.07
West Indies	1930	116	58	32	25	1	1.81
New Zealand	1946	60	34	8	18	0	4.25
India	1947	102	43	30	28	1	1.43
Pakistan	1956	66	33	15	18	0	2.20
Sri Lanka	1983	31	19	4	8	0	4.75
Zimbabwe	1999	3	3	0	0	0	∞
Bangladesh	2003	6	5	1	0	0	5.00
ICC World XI	2005	1	1	0	0	0	∞
Overall	1877	837	396	226	213	2	1.75

The win/lose ratio increases against all opposition in favor of Australia if ***matches staged in Australia*** only are considered, as may be expected given home ground advantage. Table II (constructed from [2]) is the summary of all Test matches played in Australia against every opposition up to and including the year 2020. The win/loss ratio quite expectedly increased in Australia's favor against each opposing team. As examples, this ratio increased from 2.20 to 6.50 for Pakistan; from 1.43 to 3.33 for India; and 4.25 to 6.66 for New Zealand. The ratios for two additional teams from Table I (Sri Lanka and Zimbabwe) became infinite. The overall win/loss ratio rose from 1.75 (in Table I) to an emphatic 2.44 against all opposition.

Table II. Australia's Test Record on Home Grounds						
Opposition	Tests	Won	Lost	Drawn	Tied	Win/Loss Ratio
England	181	95	57	29	0	1.66
South Africa	41	21	10	10	0	2.10
West Indies	66	37	18	10	1	2.05
New Zealand	34	20	3	11	0	6.66
India	52	30	9	13	0	3.33
Pakistan	37	26	4	7	0	6.50
Sri Lanka	15	13	0	2	0	∞
Zimbabwe	2	2	0	0	0	∞
Bangladesh	2	2	0	0	0	∞
ICC World XI	1	1	0	0	0	∞
Overall	431	247	101	82	1	2.44

Some of the factors contributing to the ***home ground advantage in Australia*** are the following. Throughout much of cricket history: (**1**) ***Test matches in Australia were played over 6 days*** instead of the usual 5 days; (**2**) ***First-class matches*** (other than Tests) ***were played over 4 days*** instead of the usual 3; and (**3**) ***8-ball overs were played*** instead of the usual 6-ball overs. The opposition players, rather than the Australians had to adjust to these unfamiliar circumstances. (**4**) ***Australian cricket grounds are generally larger*** than the most in other countries and opposition batsmen have to hit the ball harder for the boundary than they are accustomed to. (**5**) ***Fewer matches are interrupted by weather in Australia*** which means that more matches proceed to conclusive results, usually to the host nation's favor. (**6**) Finally, in the early days of Test cricket, ***Timeless Tests*** were played in Australia until conclusion, which once again favored the home team.

In this paper, we search for more tangible and ***quantifiable factors*** such as ***batting and bowling performances of the leading opposition players*** against Australia in general and in Australia in particular. We then establish the causality between these factors and the win/loss ratios of the Australian team.

BATTING AVERAGES OF GREAT NON-AUSTRALIAN BATSMEN

The ***batting average*** is commonly regarded as the most important parameter by which the greatness of a batsman is measured. It is defined as the quotient of the total runs scored by a batsman over the number of times dismissed. In this study, we consider three categories of batting averages: (**1**) ***Test batting average*** α_1; (**2**) ***Test batting average against Australia*** α_2; and (**3**) ***Test batting average in Australia*** α_3. If R_1 = total Test runs scored; D_1 = number of times dismissed in Tests; R_2 = total Test runs scored against Australia; D_2 = number of times dismissed by Australia; R_3 = total Test runs scored in Australia; and D_3 = number of times dismissed in Australia, then:

$$\alpha_1 = \frac{R_1}{D_1} \tag{1}$$

$$\alpha_2 = \frac{R_2}{D_2} \tag{2}$$

and

$$\alpha_3 = \frac{R_3}{D_3} \tag{3}$$

The batting average is a ***direct quantity***: the higher the batting average, the greater the batsman is considered to be. In this study, we have selected 27 of the greatest batsmen in cricket history who had played against Australia and retired by the year 2020, who had averaged above 49.00 and batted at least 60 innings (Table III, from [3]). Their respective batting averages α_1, α_2 and α_3 are shown in Table III. The values of α_1 and α_2 are readily found in the literature [3]; but α_3 had to be calculated manually. Somewhat surprisingly, 7 of the 27 batsmen (Sutcliffe, Barrington, Walcott, Tendulkar, Younis Khan, Gavaskar and de Villars) had managed to achieve higher averages against

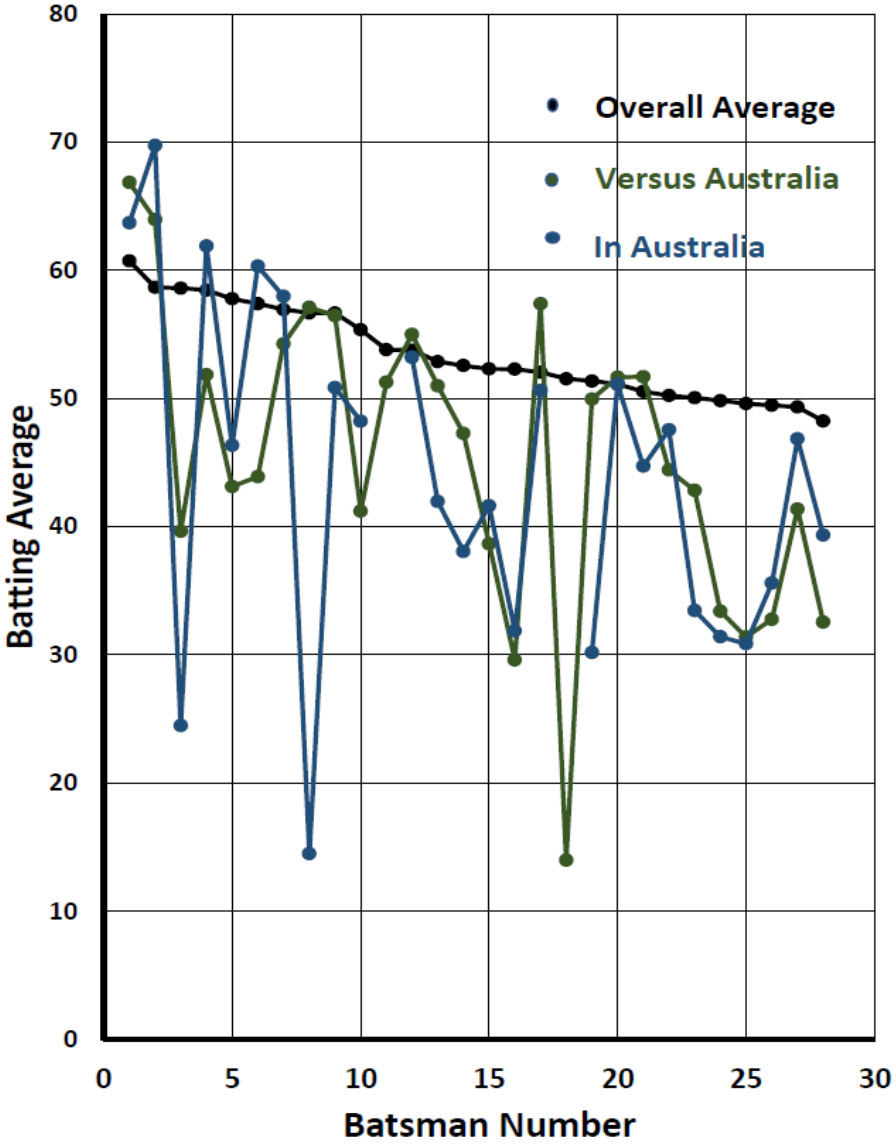
Australia (α_2) than their respective overall averages (α_1). Only 5 batsmen (Sutcliffe, Barrington, Hammond, Sangakkara and Hobbs) had higher batting averages in Australia (α_3) than their overall averages (α_1).

Table III. Non-Australian Batsmen ranked by Test Average

Non-Australian Test Batsman	Test Av. Rank	Test Nation *	Test Innings **	Test Batting Average		
				Overall	versus Australia	in Australia
H Sutcliffe	1	E	84	60.73	66.85	63.70
KF Barrington	2	E	131	58.67	63.96	69.73
ED Weekes	3	WI	81	58.61	39.66	24.50
WR Hammond	4	E	140	58.45	51.85	61.90
GS Sobers	5	WI	160	57.78	43.14	46.35
KC Sangakkara	6	SL	233	57.40	43.90	60.33
JB Hobbs	7	E	102	56.94	54.26	57.97
CL Walcott	8	WI	74	56.68	57.12	14.50
L Hutton	9	E	138	56.67	56.46	50.86
JH Kallis	10	SA	280	55.37	41.22	48./23
AD Nourse	11	SA	62	53.81	51.27	-
SR Tendulkar	12	I	329	53.78	55.00	53.20
BC Lara	13	WI	232	52.88	51.00	41.97
Javed Miandad	14	P	189	52.57	47.28	38.07
R Dravid	15	I	286	52.31	38.67	41.64
Mohammad Yousuf	16	P	156	52.29	29.61	31.88
Younis Khan	17	P	213	52.05	57.40	50.63
A Flower	18	Z	112	51.54	14.00	-
S Chanderpaul	19	WI	180	51.37	49.96	30.20
SM Gavaskar	20	I	214	51.12	51.66	51.11
AB deVillars	21	SA	191	50.66	51.70	44.73
IVA Richards	22	WI	182	50.23	44.43	47.56
DCS Compton	23	E	131	50.06	42.83	33.47
DPMD Jayawardeene	24	SL	252	49.84	33.41	31.42
Inzamam-ul-Haq	25	P	200	49.60	31.40	30.87
FMM Worrell	26	WI	87	49.48	32.78	35.60
V Sehwag	27	I	180	49.34	41.38	46.86
GC Smith	28	SA	205	48.25	32.57	39.36

* E = England; WI = West Indies; SL = Sri Lanka; SA = South Africa; I = India; P = Pakistan; Z = Zimbabwe

** Minimum: 60 Innings



(Fig. 1)

The perspective becomes more transparent in Fig. 1. In that figure, the ***batsmen are numbered serially*** with diminishing batting average α_1. All three averages are plotted against the serial numbers of the batsmen. Clearly, a select few batsmen had managed to pierce their averages against Australia (α_2 and α_3) above α_1. But the vast majority of the batsmen had their α_2 and α_3 values well below their α_1 values. This demonstrates that the diminishing batting averages against Australia (α_2) and in Australia (α_3) constitute ***causative factors*** for the enhanced win/loss ratio for the Australian Test cricket teams.

BOWLING AVERAGES OF GREAT NON-AUSTRALIAN BOWLERS

The ***bowling average*** is regarded as the most important parameter by which the greatness of a bowler is measured. It is defined as the quotient of the total runs conceded by a bowler over the number of wickets captured by the bowler. In this study, we consider three categories of bowling averages: (**1**) ***Test bowling average*** β_1; (**2**) ***Test bowling average against Australia*** β_2; and (**3**) ***Test bowling average in Australia*** β_3. If $\acute{R}_1$ = total Test runs conceded; W_1 = number of Test wickets captured; $\acute{R}_2$ = total Test runs conceded against Australia; W_2 = number of Australian wickets captured; $\acute{R}_3$ = total Test runs conceded in Australia; and W_3 = Test wickets captured in Australia, then:

$$\beta_1 = \frac{\acute{R}_1}{W_1} \tag{4}$$

$$\beta_2 = \frac{\acute{R}_2}{W_2} \tag{5}$$

and

$$\beta_3 = \frac{\acute{R}_3}{W_3} \tag{6}$$

Unlike the batting average, the bowling average is an ***inverse quantity***: the lower the bowling average, the greater the bowler is deemed to be. In this study, we have selected 20 of the greatest bowlers in cricket history who had played against Australia and retired by the year 2020, who had averaged below 25.00 and bowled in at least 40 Test matches (Table IV, from [4]). Their respective bowling averages β_1, β_2 and β_3 are shown in Table IV. The values of β_1 and β_2 are readily found in the literature [4]; but β_3 had to be calculated manually. Only 5 of the 20 bowlers (Garner, Laker, Hadlee, Holding and Bishop) had managed to achieve better (i.e., lower) averages against Australia (β_2) than their respective overall averages (β_1) and only 4 bowlers (Ambrose, Laker, Hadlee and Bishop) had lower bowling averages in Australia (β_3) than their overall averages (β_1).

Table IV. Non-Australian Bowlers ranked by Test Average

Non-Australian Test Bowler	Test Av. Rank	Test Nation *	Test Matches **	Test Bowling Average		
				Overall	versus Australia	in Australia
MD Marshall	1	WI	81	20.94	22.51	23.15
J Garner	2	WI	58	20.97	20.89	25.37
CEL Ambrose	3	WI	98	20.99	21.23	19.79
JC Laker	4	E	46	21.24	18.77	21.20
FS Trueman	5	E	67	21.57	25.30	27.48

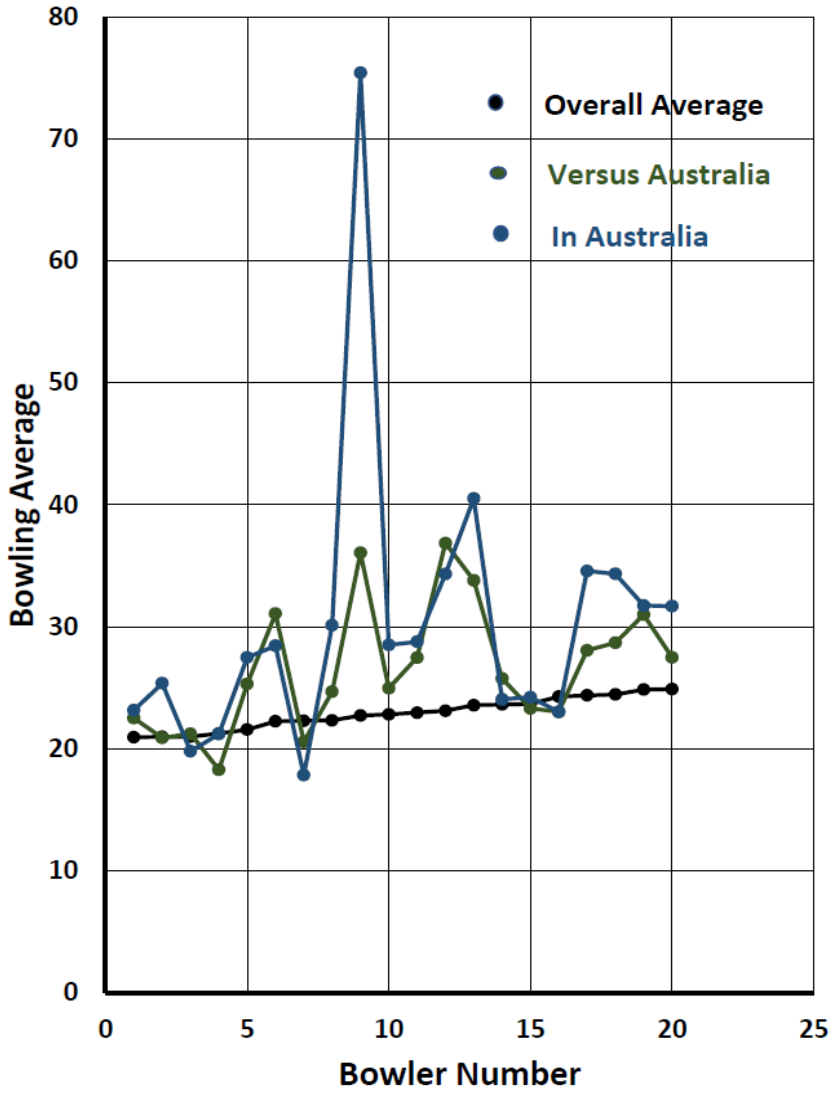
Table IV. Non-Australian Bowlers ranked by Test Average

Non-Australian Test Bowler	Test Av. Rank	Test Nation *	Test Matches **	Test Bowling Average		
				Overall	versus Australia	in Australia
AA Donald	6	SA	72	22.25	31.07	28.44
RJ Hadlee	7	NZ	86	22.29	20.56	17.83
VD Philander	8	SA	64	22.32	24.67	30.12
M Muralitharan	9	SL	133	22.72	36.06	75.41
Imran Khan	10	P	88	22.81	24.96	28.51
DW Steyn	11	SA	93	22.95	27.47	28.77
SM Pollock	12	SA	108	23.11	36.85	34.31
Waqar Younis	13	P	87	23.56	33.80	40.50
Wasim Akram	14	P	104	23.62	25.76	24.05
MA Holding	15	WI	60	23.68	23.30	24.22
IR Bishop	16	WI	43	24.27	23.02	23.02
H Verity	17	E	40	24.37	28.06	34.57
CA Walsh	18	WI	132	24.44	28.68	34.33
JB Statham	19	E	70	24.84	30.98	31.74
AV Bedser	20	E	51	24.89	27.49	31.68

* WI = West Indies; E = England; SA = South Africa; NZ = New Zealand; SL = Sri Lanka; P = Pakistan

** Minimum: 40

Once again, the perspective becomes clearer in Fig. 2. In that figure, the ***bowlers are numbered serially*** with increasing bowling average β_1. All three averages are plotted against the serial numbers of the bowlers. Clearly, a select few bowlers managed to lower their averages against Australia (β_2 and β_3) below β_1. But the vast majority of the bowlers had their β_2 and β_3 values well above their β_1 values. This demonstrates that the enhanced bowling averages against Australia (β_2) and in Australia (β_3) constitute additional ***causative factors*** for the enhanced win/loss ratio for the Australian Test cricket teams.



(Fig. 2)

SUMMARY

In this study, we have identified several intangible factors like rule differences, match durations, ground sizes and weather conditions which likely contributed to the Australian dominance in cricket. More significantly, we have identified and analyzed two main causative factors, which are responsible for the win/loss ratios in favor of Australia: the under-performance of the greatest opposition batsmen and bowlers against Australia in general and in Australia in particular. These two factors amply demonstrate causality between them on one hand and Australia's win/loss ratio on the other.

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