

Is prioritisation of funding in elite sport effective? An analysis of the investment strategies in 16 countries

DE BOSSCHER, Veerle, SHIBLI, Simon <<http://orcid.org/0000-0002-4420-115X>> and WEBER, Andreas Ch.

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Table 1: *Number of Olympic summer and winter sports in which nations won medals during the 2012 Olympic cycle and the number of sports receiving 75% of the funding*

	AUS	BRA	CAN	DEN	ESP	EST	FIN	FLA	FRA	GBR	JPN	KOR	NED	POR	SUI	WAL
Number of SUMMER sports medalled in	16	10	17	9	19	4	5	5	25	16	18	14	13	3	9	4
Number of WINTER sports medalled in	2	0	12	1	0	1	8	1	7	4	7	3	3	0	8	0
TOTAL number of sports medalled in	18	10	29	10	19	5	13	6	32	20	25	17	16	3	17	4
CN75: # sports with 75% of the funding	11	16	14	10	20	12	14	11	20	12	16	27	18	12	24	12

Table 2: Bivariate linear regression (bootstrapped) of the share of funding (independent variable) and relative performances (share of market shares of top 3 and 8 points) (dependent variable), by country – in summer sports.

country	TOP 3 (bootstrapped)				TOP 8 (bootstrapped)			
	Adjusted R ²	Unstandardized coefficients	Std. Error	p	Adjusted R ²	Unstandardized coefficients	Std. Error	p
Canada (n=28)	0.621	1.083	0.219	.004**	0.679	1.095	0.183	.001**
Great Britain (n=26)	0.613	1.257	0.352	.017**	0.834	1.339	0.162	.001**
Japan (n=27)	0.552	1.761	0.694	.081	0.55	1.407	0.528	.042*
Australia (n=28)	0.551	1.33	0.358	.027*	0.627	1.350	0.332	.022*
Netherlands (n=28)	0.508	1.553	0.428	.01**	0.589	1.635	0.26	.000**
France (n=28)	0.479	1.953	0.432	.01**	0.534	1.804	0.372	.006**
Portugal (n=28)	0.408	2.105	0.729	.046*	0.346	1.419	0.535	.064
Brazil (n=28)	0.379	1.973	0.571	.016**	0.385	1.772	0.547	.029*
Denmark (n=28)	0.371	0.961	0.402	.089	0.341	0.835	0.402	.088
Estonia (n=28)	0.301	1.329	0.639	.099	0.423	1.447	0.582	.06
Spain (n=28)	0.223	1.029	0.482	.051	0.319	1.031	0.4	.016**
Switzerland (n=28)	0.078	0.997	0.907	.398	0.087	0.278	0.235	.38
Flanders (n=25)	0.054	0.785	0.323	.070	0.569	1.464	0.348	.007**
South Korea (n=28)	0.017	0.573	0.418	.207	-0.007	0.367	0.397	.366
Finland (n=28)	0.003	0.69	0.698	.424	0.112	0.929	0.455	.15
Wallonia (n=30)	-0.015	0.287	0.339	.398	0.073	0.649	0.619	.41
TOTAL (n=445)	0.236	1.136	0.135	.001	0.36	1.123	0.071	.000

* significant at the .05 level; ** .01 level.

Table 3: comparing funding with success: overview of the CR4 and CR8 concentration ratios of funding and of top 3 and top 8 performances, by nation – summer sports only

	CR4&8 funding	CR4&8 top 3	CR4&8 top 8		CR4&8 funding	CR4&8 top 3	CR4&8 top 8
Great Britain				Japan			
1. Aquatics				1. Judo			
2. Rowing	44.2%	59.3%	59.5%	2. Football	43.1%	52.1%	47.6%
3. Cycling				3. Aquatics			
4. Athletics				4. Athletics			
5. Sailing				5. Wrestling			
6. Canoe	69.7%	80.5%	80.7%	6. Gymnastics	63.1%	88.8%	83.1%
7. Hockey				7. Volleyball			
8. Equestrian				8. Table tennis			
Australia				Canada			
1. Aquatics				1. Aquatics			
2. Cycling	44.6%	65.9%	66.8%	2. Rowing	47.2%	45.0%	45.3%
3. Rowing				3. Athletics			
4. Football				4. Basketball			
5. Athletics				5. Canoe			
6. Hockey	74.6%	89.6%	84.4%	6. Football	70.6%	79.0%	77.1%
7. Sailing				7. Cycling			
8. Basketball				8. Gymnastics			
France				Spain			
1. Athletics				1. Athletics			
2. Handball	25.5%	45.4%	42.0%	2. Basketball	35.3%	41.1%	42.9%
3. Aquatics				3. Aquatics			
4. Cycling				4. Canoe			
5. Sailing				5. Sailing			
6. Judo	47.8%	82.4%	75.6%	6. Cycling	55.5%	71.4%	68.1%
7. Canoe				7. Handball			
8. Rowing				8. Football			

Denmark				Switzerland			
1. Handball				1. Gymnastics			
2. Rowing	52.4%	33.3%	25.3%	2. Aquatics	42.3%	67.6%	59.8%
3. Football				3. Tennis			
4. Sailing				4. Cycling			
5. Badminton				5. Athletics			
6. Aquatics				6. Volleyball	67.3%	81.1%	75.7%
7. Cycling	80.4%	95.6%	85.7%	7. Triathlon			
8. Table Tennis				8. Football			
Netherlands				Brazil			
1. Aquatics				1. Athletics			
2. Cycling	37.1%	56.8%	57.1%	2. Gymnastics	28.7%	51.7%	45.6%
3. Volleyball				3. Sailing			
4. Sailing				4. Judo			
5. Rowing				5. Aquatics			
6. Athletics	83.1%	86.0%	61.2%	6. Handball	50.4%	87.6%	83.1%
7. Judo				7. Volleyball			
8. Equestrian				8. Canoe			
Portugal				Estonia			
1. Athletics				1. Athletics			
2. Judo	39.3%	80.0%	47.1%	2. Basketball	46.8%	50.0%	58.7%
3. Handball				3. Volleyball			
9. Basketball				9. Rowing			
4. Aquatics				4. Judo			
5. Volleyball	62.7%	100.0%	75.4%	5. Cycling	69.3%	50.0%	64.0%
6. Football				6. Aquatics			
10. Canoe				10. Tennis			
Finland				S-Korea			
1. Athletics				1. Shooting			
2. Football	45.0%	11.8%	29.2%	2. Athletics	31.3%	21.5%	19.8%
3. Shooting				3. Badminton			
9. Gymnastics				4. Aquatics			

4. Volleyball				5. Hockey			
5. Wrestling	71.6%	94.1%	88.5%	6. Judo	50.8%	41.1%	40.3%
6. Sailing				7. Cycling			
10. Basketball				9. Gymnastics			
Flanders				Wallonia			
1. Cycling				1. Tennis			
2. Athletics	43.5%	30.8%	56.4%	2. Athletics	45.7%	17.4%	36.8%
3. Gymnastics				3. Rugby			
9. Aquatics				9. Basketball			
4. Judo				4. Table Tennis			
5. Volleyball	67.3%	46.2%	75.6%	5. Judo	72.1%	26.1%	51.4%
6. Tennis				6. Aquatics			
10. Rowing				10. Gymnastics			

Figures are in **bold** when the relative funding is higher than the relative success

Figure 1: Policy cycle of a prioritisation strategy (adapted from De Bosscher et al., 2011; De Peuter et al., 2007; Mihaiu et al., 2010)

Figure 2: Concentration ratios CR4 and CR8 and Herfindahl index of the sports funded in the sample nations: Olympic and non-Olympic sports (ranked by CR8)

Figure 3: Scatterplot of the CR8 values against the total national elite sport expenditures (from government, national Olympic Committees and national coordinated sponsorship).

Figure 4A: Scatterplot of the CR8 values (as a proxy of prioritisation) against the outputs (market shares 2012 cycle) in summer sports

Figure 4B: Scatterplot of the CR4 values against the outputs (market shares 2012 cycle) in winter sports

Figure 1

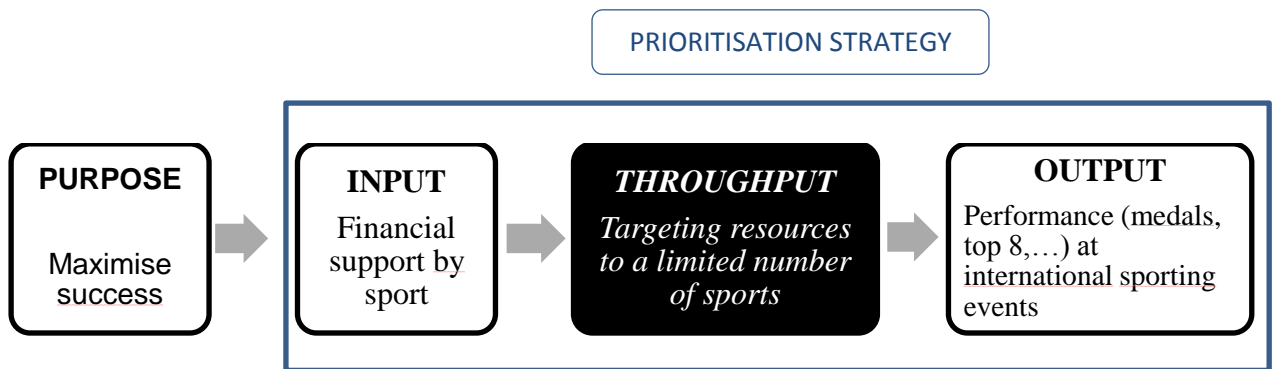


Figure 2

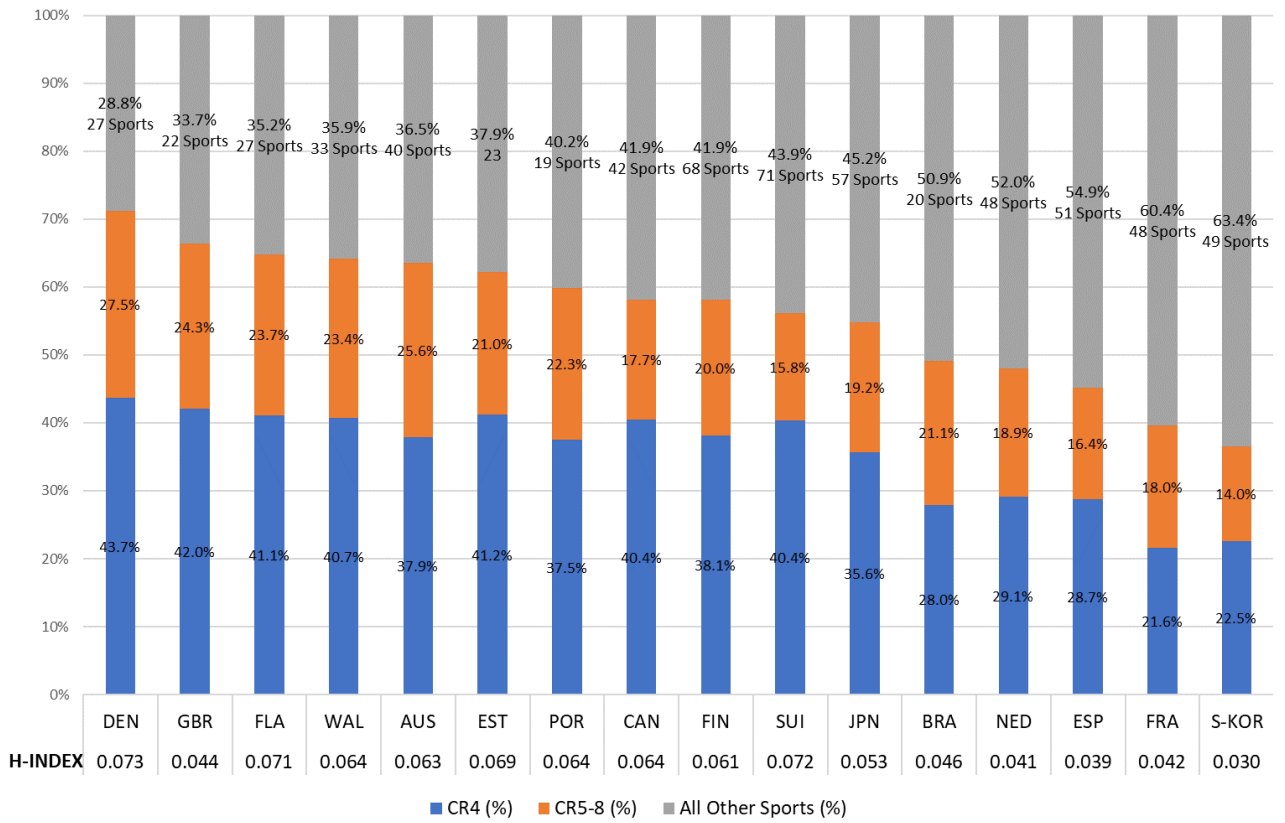


Figure 3

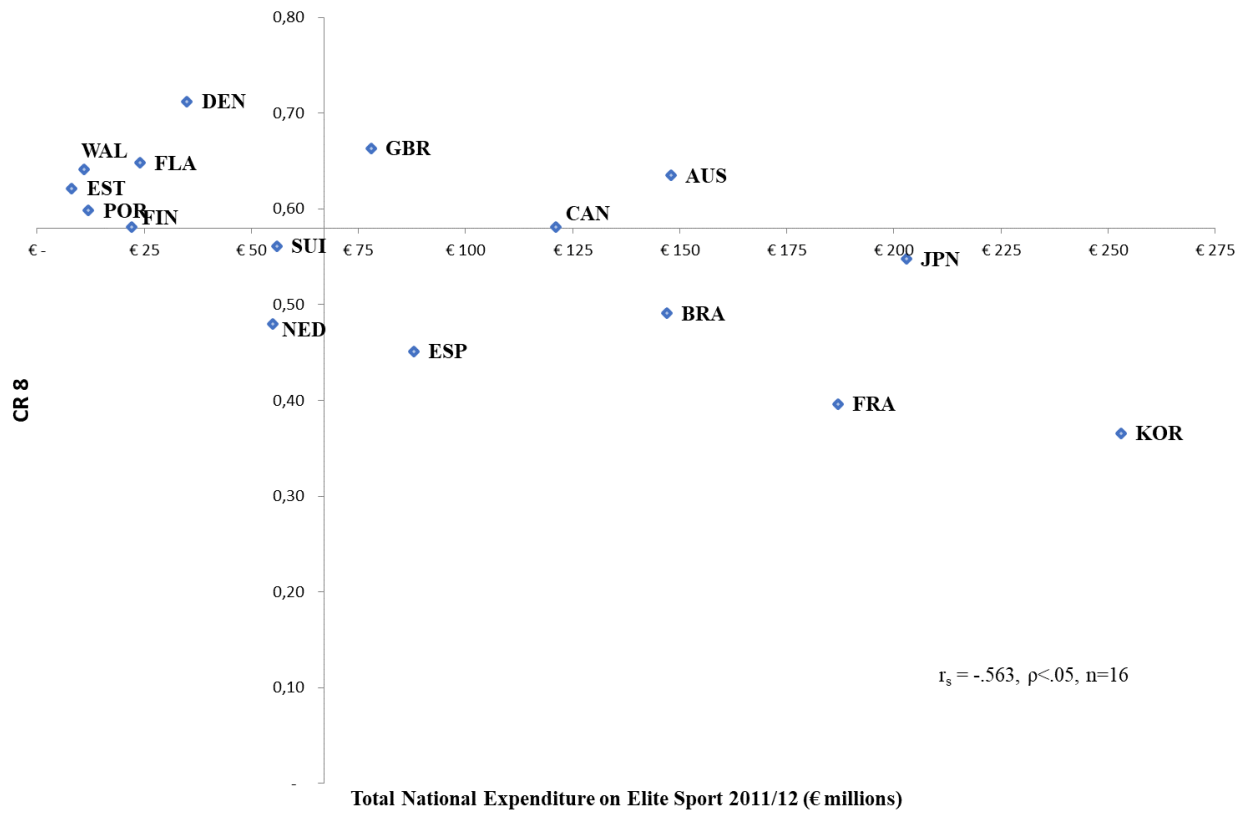


Figure 4A

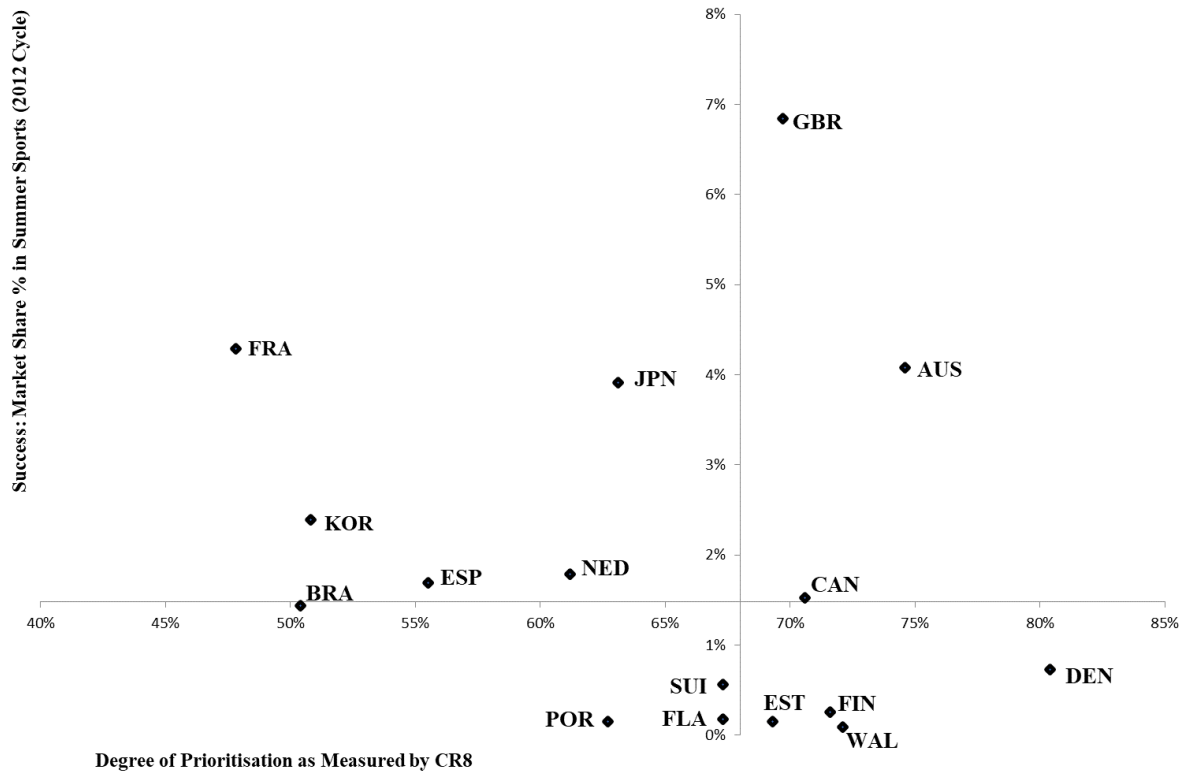
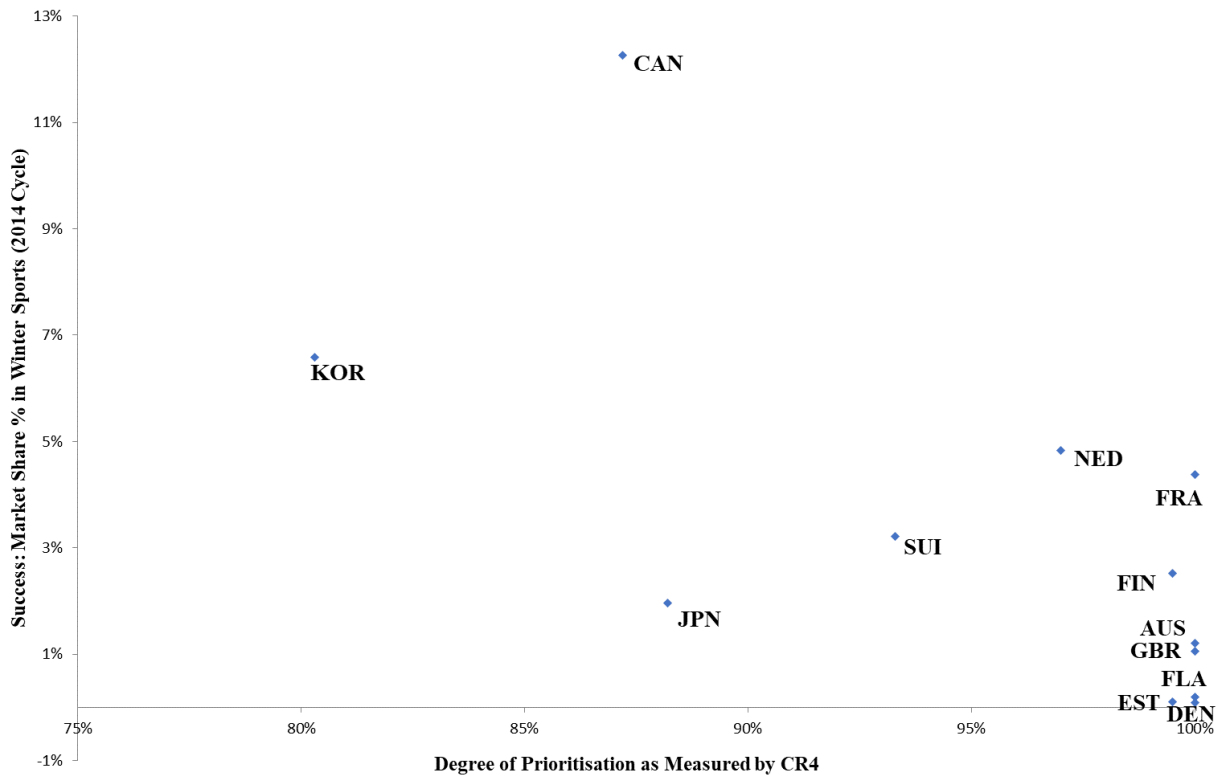


Figure 4B



APPENDIX 1: Herfindahl index, Concentration ratios and number of funded sports in each nation

Country	Herfindahl*10	CR1	CR4	CR8	Number of funded sports (nSport)	Threshold if all sports equally funded (1/nSport)
Denmark	0.733	13.95%	43.70%	71.20%	35	2.86%
Switzerland	0.723	20.80%	40.40%	56.10%	79	1.27%
Flanders	0.710	17.04%	41.10%	64.80%	35	2.86%
Estonia	0.686	15.91%	41.20%	62.10%	31	3.23%
Wallonia	0.645	13.42%	40.70%	64.10%	41	2.44%
Canada	0.641	14.20%	40.40%	58.10%	42	2.38%
Portugal	0.638	14.51%	37.50%	59.80%	27	3.70%
Australia	0.634	14.91%	37.90%	63.50%	48	2.08%
Finland	0.614	16.58%	38.10%	58.10%	76	1.32%
Japan	0.526	12.03%	35.60%	54.80%	65	1.54%
Brazil	0.462	9.05%	28.00%	49.10%	28	3.57%
Great Britain	0.440	14.36%	42.00%	66.30%	30	3.33%
France	0.418	5.96%	21.60%	39.60%	56	1.79%
the Netherlands	0.409	7.88%	29.10%	48.00%	56	1.79%
Spain	0.391	9.26%	28.70%	45.10%	59	1.69%
South Korea	0.302	6.74%	22.50%	36.60%	57	1.75%
MEDIAN	0.624	14.07%	38.00%	58.10%	45	2.23%

APPENDIX 2: Overview of sports that receive the highest share of funding (CR4) in each nation (see below as table version)

Sport	AUS	BRA	CAN	DEN	ESP	EST	FIN	FLA	FRA	JPN	KOR	GBR	N-IRL	NED	POR	SUI	WAL	Count
Aquatics	14.9%		14.2%		6.7%				4.8%	7.8%	4.2%	13.7%		7.9%		6.5%		9
Archery																		0
Athletics		9.0%			9.3%	15.9%	9.2%	8.8%	5.9%	5.7%	6.6%	9.0%			14.5%		10.0%	11
Badminton											5.0%				7.2%			2
Basketball					7.7%	8.8%											8.5%	3
Boxing																		0
Canoe					5.0%													1
Cycling	7.8%							17.0%				9.5%		7.7%				4
Equestrian																		0
Fencing																		0
Football	7.6%			10.4%			6.0%	8.1%		10.0%			7.5%					6
Gymnastics		6.6%						7.2%								7.6%		3
Handball				13.9%					4.9%						7.8%			3
Hockey													8.6%					1
Judo		6.1%								12.0%					7.9%			3
Modern Pentathlon																		0
Rowing	7.7%		6.0%	10.6%								9.8%						4
Rugby*													7.3%				8.8%	2
Sailing		6.2%		8.7%									5.9%	6.6%				4
Shooting											6.7%							1
Table Tennis																		0
Taekwondo																		0
Tennis																	13.4%	1
Triathlon																		0
Volleyball						7.0%								7.0%				2
Weightlifting																		0
Wrestling																		0
Biathlon																		0
Bobsleigh																		0
Curling																		0
Ice hockey							6.3%		6.0%								5.4%	3
Luge																		0
Skating			6.4%				16.6%											2
Skiiing			13.8%			9.5%										20.8%		3
Totals	38.0%	27.9%	40.4%	43.6%	28.7%	41.2%	38.1%	41.1%	21.6%	35.5%	22.5%	42.1%	29.3%	29.2%	37.4%	40.3%	40.7%	

Note: the colours are based on conditional formatting, from green (highest) to red (lowest).

APPENDIX 2: Overview of sports that receive the highest share of funding (CR4) in each nation

Sport	AUS	BRA	CAN	DEN	ESP	EST	FIN	FLA	FRA	JPN	KOR	GBR	N-IRL	NED	POR	SUI	WAL	Count
Aquatics	14.9%		14.2%		6.7%				4.8%	7.8%	4.2%	13.7%		7.9%		6.5%		9
Archery																		0
Athletics		9.0%			9.3%	15.9%	9.2%	8.8%	5.9%	5.7%	6.6%	9.0%			14.5%		10.0%	11
Badminton											5.0%				7.2%			2
Basketball					7.7%	8.8%											8.5%	3
Boxing																		0
Canoe					5.0%													1
Cycling	7.8%							17.0%				9.5%		7.7%				4
Equestrian																		0
Fencing																		0
Football	7.6%			10.4%			6.0%	8.1%		10.0%			7.5%					6
Gymnastics		6.6%						7.2%								7.6%		3

Wrestling																		0
Biathlon																		0
Bobsleigh																		0
Curling																		0
Ice hockey						6.3%		6.0%						5.4%				3
Luge																		0
Skating			6.4%				16.6%											2
Skiing			13.8%			9.5%									20.8%			3
Totals	38.0%	27.9%	40.4%	43.6%	28.7%	41.2%	38.1%	41.1%	21.6%	35.5%	22.5%	42.1%	29.3%	29.2%	37.4%	40.3%	40.7%	

Note: the colours are based on conditional formatting, from green (highest) to red (lowest).

