

# **China, USA, Great Britain and the rest – Olympic medal prospects**

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## **The flourishing field of medals predictions**

Several studies attempt to predict the medal distribution in Olympic Games by means of macro-societal factors such as Gross Domestic Product (GDP) and population, as well as geographical and climatic features (<http://www.topendsports.com/events/summer/medal-tally/rankings-predicted.htm>).

One such study is prepared by Daniel Johnson, who is professor in economics at Colorado College, USA. He has made medal predictions at several Olympic Games based on a mathematical simulation model. The most important variables in his model are GDP per capita, size of population and host country advantage. In the last decades, his predictions have had a high degree of accuracy (93%)

(<http://news.nationalpost.com/2012/03/13/professor-has-a-surprisingly-accurate-formula-for-predicting-olympic-medal-results/>).

In Beijing 2008, China won more gold medals than USA. According to Johnson's predictions for London 2012, USA will top the medal table with 34 gold medals. China will come second in terms of gold medals (33), followed by Russia (25), Great Britain (20) and Germany (19). USA is also expected to win the most medals in total (99) with Russia in second place (82 medals). China will be a distant third with 67 medals, followed by Germany (60) and Great Britain (45). The ranking is similar to Beijing 2008 apart from the fact that USA is expected to win more gold medals than China and Russia will surpass China in terms of medals in total.

Other predictions (Sport Illustrated, USA Today, Wall Street Journal and other studies of university professors) are based on models and/or expert opinions and have different outcomes but almost all of them predict USA to come out on top both in terms of gold medals and total medals (<http://www.businessday.co.za/articles/Content.aspx?id=177021>).

## **Another prediction (last world championships) – medals and top-8 points**

Birkbeck Sport Business Centre and the Danish Institute for Sport Studies has made its own contribution to the flourishing field of medal predictions. Actually, the contribution is more of a calculation than an actual prediction. It calculates a medal table based on the results from

the last world championships in all the economic disciplines supplemented with current world rankings in sports such as tennis where world championships do not exist. However, it can be seen as a prediction based on the assumption that the results in London will be similar to the results in the most recent competitions which resemble the Olympics most in terms of prestige and worldwide coverage. It can be argued that such results provide a better basis for predictions than calculations based on macro-societal factors such as GDP per capita. Maybe it is also better than expert opinions.

Table 1 shows the medal table and total number of medals at the last world championships in all Olympic disciplines and at the Olympic Games in 2008.

**Table 1:**

	<b>Latest world championships* (July 2012)</b>				<b>Olympic Summer Games 2008</b>			
	<i>G</i>	<i>S</i>	<i>B</i>	<i>Total</i>	<i>G</i>	<i>S</i>	<i>B</i>	<i>Total</i>
<i>China</i>	44	32	20	96	51	21	28	100
<i>USA</i>	39	18	26	83	36	38	36	110
<i>Russia</i>	31	22	27	80	23	21	29	73
<i>Great Britain</i>	20	27	14	61	19	13	15	47
<i>Germany</i>	15	19	19	53	16	10	15	41
<i>Japan</i>	14	11	11	36	9	6	11	25
<i>Australia</i>	13	17	7	37	14	15	17	46
<i>France</i>	13	16	16	45	7	16	18	41
<i>Italy</i>	12	8	12	32	8	9	10	27
<i>Kenya</i>	7	6	4	17	6	4	4	14
<i>Brazil</i>	7	5	5	17	3	4	8	15
<i>Iran</i>	7	3	5	15	1	-	1	2
<i>South Korea</i>	6	6	17	29	13	10	8	31
<i>New Zealand</i>	6	4	10	20	3	2	4	9
<i>Belarus</i>	5	4	8	17	4	5	10	19
<i>Ukraine</i>	5	3	8	16	7	5	15	27
<i>Jamaica</i>	4	4	1	9	6	3	2	11

<i>Azerbaijan</i>	4	3	7	14	1	2	4	7
<i>Greece</i>	4	2	1	7	-	2	2	4
<i>Canada</i>	3	11	5	19	3	9	6	18
<i>Netherlands</i>	3	8	7	18	7	5	4	16
<i>Hungary</i>	3	5	5	13	3	5	2	10
<i>Spain</i>	3	2	12	17	5	10	3	18
<i>Poland</i>	2	8	2	12	3	6	1	10
<i>Kazakhstan</i>	2	7	7	16	2	4	7	13
<i>Turkey</i>	2	5	4	11	1	4	3	8
<i>Cuba</i>	2	4	7	13	2	11	11	24
<i>Czech Republic</i>	2	4	3	9	3	3	-	6
<i>Slovakia</i>	2	2	1	5	3	2	1	6
<i>Bulgaria</i>	2	1	3	6	1	1	3	5
<i>Norway</i>	2	1	1	4	3	5	1	9
<i>Austria</i>	2	-	-	2	-	1	2	3
<i>Serbia</i>	1	4	2	7	-	1	2	3
<i>Denmark</i>	1	3	4	8	2	2	3	7
<i>Sweden</i>	1	3	2	6	-	4	1	5
<i>Uzbekistan</i>	1	1	4	6	1	2	3	6
<i>Switzerland</i>	1	1	3	5	2	1	4	7
<i>Lithuania</i>	1	1	2	4	-	2	3	5
<i>Latvia</i>	1	1	1	3	1	1	1	3
<i>Romania</i>	1	-	6	7	4	1	3	8
<i>Etiopia</i>	1	-	4	5	4	1	2	7
<i>Belgium</i>	1	-	3	4	1	1	-	2
<i>Slovenia</i>	1	-	2	1	1	2	2	5
<i>Israel</i>	1	-	1	2	-	-	1	1
<i>Ireland</i>	1	-	1	2	-	1	2	3

<i>Argentina</i>	1	-	-	1	2	-	4	6
<i>Botswana</i>	1	-	-	1	-	-	-	-
<i>Grenada</i>	1	-	-	1	-	-	-	-
<i>Chile</i>	1	-	-	1	-	1	-	1
<i>Portugal</i>	-	3	1	4	1	1	-	2
<i>Georgia</i>	-	2	4	6	3	-	3	6
<i>South Afrika</i>	-	2	3	5	-	1	-	1
<i>Chinese Taipeh</i>	-	2	3	5	-	-	4	4
<i>Puerto Rico</i>	-	2	1	3	-	-	-	-
<i>Croatia</i>	-	2	4	6	-	2	3	5
<i>India</i>	-	1	3	4	1	-	2	3
<i>North Korea</i>	-	1	1	2	2	1	3	6
<i>Thailand</i>	-	1	1	2	2	2	-	4
<i>Estonia</i>	-	1	-	1	1	1	-	2
<i>Kuwait</i>	-	1	-	1	-	-	-	-
<i>Malaysia</i>	-	1	-	1	-	1	-	1
<i>Montenegro</i>	-	1	-	1	-	-	-	-
<i>Saudi Arabia</i>	-	1	-	1	-	-	-	-
<i>Singapore</i>	-	1	-	1	-	1	-	1
<i>Sudan</i>	-	1	-	1	-	1	-	1
<i>Tunesia</i>	-	1	-	1	1	-	-	1
<i>Mexico</i>	-	-	4	4	2	-	1	3
<i>Finland</i>	-	-	3	3	-	1	2	3
<i>Colombia</i>	-	-	2	2	-	1	1	2
<i>Indonesia</i>	-	-	2	2	1	1	3	5
<i>Morocco</i>	-	-	2	2	-	1	1	2
<i>Mongolia</i>	-	-	2	2	2	2	-	4
<i>St. Kitts and Nevis</i>	-	-	2	2	-	-	-	-

<i>Afghanistan</i>	-	-	1	1	-	-	1	1
<i>Armenia</i>	-	-	1	1	-	-	6	6
<i>Bahamas</i>	-	-	1	1	-	1	1	2
<i>Cyprus</i>	-	-	1	1	-	-	-	-
<i>Dominican Rep.</i>	-	-	1	1	1	1	-	2
<i>Moldova</i>	-	-	1	1	-	-	1	1
<i>Tajikistan</i>	-	-	1	1	-	1	1	2
<i>Trinidad and Tobago</i>	-	-	1	1	-	2	-	2
<i>Vietnam</i>	-	-	1	1	-	1	-	1
<i>Zimbabwe</i>	-	-	1	1	1	3	-	4
<i>Cameroon</i>	-	-	-	-	1	-	-	1
<i>Panama</i>	-	-	-	-	1	-	-	1
<i>Nigeria</i>	-	-	-	-	-	1	3	4
<i>Algeria</i>	-	-	-	-	-	1	1	2
<i>Kyrgyzstan</i>	-	-	-	-	-	1	1	2
<i>Ecuador</i>	-	-	-	-	-	1	-	1
<i>Iceland</i>	-	-	-	-	-	1	-	1
<i>Egypt</i>	-	-	-	-	-	1	1	
<i>Mauritius</i>	-	-	-	-	-	-	1	1
<i>Togo</i>	-	-	-	-	-	-	1	1
<i>Venezuela</i>	-	-	-	-	-	-	1	1

*\* The calculation is prepared in a way that reflects a simulated Olympic Games. This implies that the results from world championships in the Olympic disciplines are modified according to the participation criteria in the Olympic Games, i.e. when the number of participants in each discipline is lower in the Olympics than in world championships, then only a similar number are included from the world championship rankings and subsequent placings are ranked one better than their actual results in the world championships.*

The calculations prepared by Birkbeck Sport Business Centre and the Danish Institute for Sport Studies supplement the normal focus on medals with a calculation/prediction of top-8 points (1. place: 8 points, 2. place: 7 points, ... 8. place: 1 point). The number of top-8 points reflects the number and rankings of finalists (e.g., track finals in athletics and swimming

finals), quarter finalists (e.g., football, basketball, boxing and tennis) and other results close to the medal positions. The number of top-8 points is a more reliable indicator of broad-based elite sport excellence than the medal table and the total number of medals. This is particularly so for smaller nations where medal achievements may reflect the presence of one or two top performers and are highly dependent on marginal differences in performance, which may be a poor indicator of the general performance level.

Table 2 shows top-8 points in all Olympic Summer Games 1988-2008 and the latest world championships. The table includes the 30 nations with the highest number of top-8 points at the latest world championships. In addition to the points total, the table also shows rankings according to the total number of top-8 points in each Olympic Summer Games.

**Table 2:**

	<i>1988</i>	<i>1992</i>	<i>1996</i>	<i>2000</i>	<i>2004</i>	<i>2008</i>	<i>2012</i>
<i>USA</i>	959 (2)	1067 (2)	985 (1)	1001 (1)	1032 (1)	1068 (1)	966 (1)
<i>China</i>	315 (8)	525 (4)	573 (4)	580 (4)	672 (3)	967 (2)	935 (2)
<i>Russia</i>	#	#	729 (3)	866 (2)	869 (2)	806 (3)	892 (3)
<i>Great Britain</i>	338 (7)	283 (11)	200 (17)	337 (8)	385 (8)	498 (6)	609 (4)
<i>Germany</i>	523 (4)	891 (3)	765 (2)	721 (3)	624 (4)	499 (5)	592 (5)
<i>France</i>	270 (10)	420 (5)	444 (5)	502 (6)	420 (6)	475 (7)	494 (6)
<i>Australia</i>	241 (12)	292 (9)	440 (6)	623 (4)	553 (5)	514 (4)	451 (7)
<i>Japan</i>	172 (16)	260 (14)	209 (15)	236 (14)	387 (7)	330 (9)	405 (8)
<i>Italy</i>	237 (13)	262 (13)	386 (7)	401 (7)	353 (9)	359 (8)	343 (9)
<i>South Korea</i>	286 (9)	281 (12)	285 (9)	300 (11)	326 (10)	289 (10)	277 (10)
<i>Ukraine</i>	#	#	294 (8)	318 (9)	318 (11)	276 (11)	269 (11)
<i>Canada</i>	197 (15)	214 (16)	235 (11)	222 (17)	225 (17)	253 (13)	242 (12)
<i>Belarus</i>	#	#	199 (18)	234 (15)	192 (19)	206 (17)	213 (13)
<i>Poland</i>	218 (14)	233 (15)	229 (13)	223 (16)	184 (20)	215 (15)	212 (14)
<i>Spain</i>	67 (23)	287 (10)	211 (14)	208 (19)	284 (12)	246 (14)	207 (15)
<i>Netherlands</i>	137 (18)	169 (19)	208 (16)	275 (13)	230 (14)	211 (16)	200 (16)
<i>Brazil</i>	67 (23)	59 (26)	140 (21)	122 (22)	135 (22)	178 (18)	192 (17)

<i>New Zealand</i>	115 (19)	129 (20)	76 (30)	63 (39)	96 (28)	123 (24)	183 (18)
<i>Hungary</i>	353 (6)	339 (6)	232 (12)	212 (18)	228 (16)	161 (19)	182 (19)
<i>Kenya</i>	85 (21)	73 (25)	86 (27)	90 (29)	67 (36)	143 (22)	168 (20)
<i>Kazakhstan</i>	#	#	102 (26)	116 (24)	119 (25)	152 (20)	148 (21)
<i>Cuba</i>	#	328 (7)	256 (10)	310 (10)	245 (13)	253 (12)	146 (22)
<i>Azerbaijan</i>	#	#	?	?	?	18 (31)	138 (23)
<i>Czech Republic</i>	?	?	106 (25)	101 (26)	121 (24)	90 (27)	136 (24)
<i>Denmark</i>	70 (22)	79 (24)	108 (24)	92 (29)	98 (26)	87 (28)	132 (25)
<i>Iran</i>	?	?	?	66 (?)	?	3 (?)	125 (26)
<i>Romania</i>	249 (11)	295 (8)	186 (19)	280 (12)	224 (18)	149 (21)	114 (27)
<i>Jamaica</i>	?	?	?	68 (37)	79 (29)	124 (23)	101 (28)
<i>Sweden</i>	156 (17)	182 (18)	138 (22)	145 (20)	127 (23)	106 (25)	98 (29)
<i>Turkey</i>	?	?	?	76 (33)	97 (27)	60 (39)	94 (30)
<i>Sovjet Union</i>	1317 (1)	1200 (1)	#	#	#	#	#
<i>GDR</i>	937 (3)	#	#	#	#	#	#
<i>Yugoslavia</i>	111 (20)	#	#	#	#	#	#

#: did not participate

?: not calculated

### **The struggle for first place: China versus USA**

In all Olympic Summer Games in the period 1996-2004, USA ended on top of the medal table which ranks nations according to the total number of first, gold medals, second, silver medals, and third, bronze medals. In 2008, the hosts amassed a massive 51 gold medals with USA far behind with 36 gold medals. However, in terms of total number of medals USA was clearly better than China (110 versus 100 medals) and ended as the best nation, as it has been ever since 1996. Also in terms of top-8 points, USA was clearly on top in 2008 as in the three previous Olympic Summer Games.

As mentioned above, almost all predictions have USA as the best nation in the London Olympics both on the medal table and in terms of numbers of medals. This is in accordance with the official Chinese expectations as expressed by a top Chinese sports official a few

months before the Games (<http://sports.ndtv.com/othersports/othersports/item/188697-china-expects-medal-tally-drop-at-olympics>).

However, this is not what the results from the latest world championships tell us. If the results in London correspond with the calculations shown in tables 1 and 2, China will become the top nation, not only in terms of gold medals but also in relation to the total number of medals. China may not do as well in London as in the last world championships, partly because some Chinese athletes have a track record of cracking under pressure and perform below level in Olympic Games on foreign soil. However, the difference in terms of total medals in the last championships is huge (China: 96, USA: 83) and USA needs to do much better relative to China than in the last world championships if they shall keep the position as the top medal winning nation.

Table 2 shows that USA will still be best nation in terms of top-8 points if the London 2012 results correspond to the results from the last world championships. However, the lead over China will be radically reduced. The lead was 360 points in 2004 and 101 points in 2008. The Chinese results in 2008 were no doubt boosted by the host country effect and one would expect that USA's lead would increase in London 2012. However, this does not seem to be the case. At the last world championships USA's lead was only 32 points.

This evidence indicates that a major shift of power is on its way. China seems to be on its way to becoming the undisputed best nation in Olympic Summer Games independent of which performance measure is used. In Beijing, China won 38 of its 51 gold medals in sports which they have traditionally dominated: badminton, diving, gymnastics, shooting, table tennis and weightlifting. In some of these sports, China is totally dominant and is expected to win all gold medals. In addition, during the last decade, China has become medal contenders in almost all sports, including sports such as boxing, rowing and canoeing, in which it was previously far behind or not even competing. In London, the male Chinese swimmers can be expected to prevail for the first time with the long distance swimmer Sun Yang and Wu Peng who recently defeated Michael Phelps in 200m butterfly as the big stars. It is only in team sports such as football and basketball and in the equestrian disciplines that China is without medal chances, and in athletics the Chinese medal chances are also very few.

The results from the last world championships indicate that the number of medals and top-8 points will be the lowest in any Olympic Games since the collapse of 'state amateurism'. In 1988 where the Soviet Union and the countries in Communist Eastern Europe won 51% of all medals. Now, the medal share of the 15 countries of the former Soviet Union and the Central and Eastern European countries is less than 25% in total. The remaining number of medals has increased as a result. Furthermore, the number of disciplines on the Olympic programme has also increased by 25%. Even so, the USA's number of medals and top-8 points has increased only marginally since then and its share of medals and total number of top-8 points has decreased significantly.

American athletes will figure prominently among the most prolific stars of the Games. USA has traditionally won loads of medals in some of the most prestigious Olympic sports such as athletics and swimming and also more recently in artistic gymnastics. At the latest world



championships 31 of its 39 gold medals, and 57 of its 83 medals in total were won in these sports. USA also dominates in basketball and women football and have good doubles players in tennis but in other sports the medal prospects of US athletes are relatively modest.

### **The host nation effect and the other top nations**

The host nation almost always improves its standing at Olympic Games in comparison with previous Games. The only exceptions are Atlanta 1996 where USA won fewer medals than four years earlier, and Montreal 1976 where Canada failed to win a single gold medal. The improvement is often huge, for instance in 1992 where Spain won 13 gold medals compared to a total of 5 gold medals in all previous Olympic Summer Games.

In 2008, Great Britain (or rather, Great Britain and Northern Ireland) had their best Olympic Games since then 1920s and ended as an unexpected no. 4 on the medal table with 19 gold medals and 47 medals in total. After Beijing, British sport officials considered it almost impossible to maintain this position four years later even with the home country advantage. Since then, the results of British athletes have gradually improved. The position has been maintained in sports where Great Britain has recently been the dominant nation (rowing, sailing and track cycling) and its results have improved in almost all Olympic sports. At the latest world championships in the Olympic disciplines, Great Britain won 61 medals, including 20 gold medals. Most impressively, the performance of Great Britain was better than ever before in terms of top-8 points. In 2008, it was the sixth best nation in this respect. Germany and Australia were no. 4 and 5, respectively. The Australian top-8 points tally has been better than Great Britain's in all Games from 1996-2008 but at the latest world championships Great Britain clearly surpassed its arch rivals from Down Under with a clear lead in terms of 35% more top-8 points. Germany has traditionally had a much broader based strength in Olympic sports than Great Britain. In terms of top-8 points, Germany has been significantly better than Great Britain ever since the 1920s. However, the results from the latest world championships show that Great Britain has surpassed Germany, not only in terms of medals but also in relation to top places in general.

A large part of the host country effect originates from sustained extraordinary investments in Olympic sports. This effect takes the form of a gradually increasing level of performance and is probably manifest in the improvements in world rankings and world championships since 2008, including the most recent one. An additional host country effect derives from the advantages of competing on home soil and in familiar surroundings. This effect means that we can expect an even better outcome in terms of medals and top places than in the latest world championships. Recently, UK Sport set a medal target of 48 which is very cautious indeed if recent results are taken into account. The expectations in the media and the general public are much higher. A recent survey shows that more than 50% expect Britain to become at least the third best nation at the Games, and also several commentators believe that Britain has a chance of winning more gold medals than Russia and end as no. 3 on the medal table.

Although Russia only won five more gold medals than Great Britain in Beijing, it is probably a step too far to expect more British than Russian gold medals. The results from the latest world championships show clear and broad based Russian progress compared to the relatively poor level of performance in Beijing. In terms of medals, Russia is still clearly below its level in the 2000 and 2004 Olympics which is partly a mirror reflection of the rise of China. However, the top-8 points standing shows clear Russian progress. The top-8 points sum is now higher than in 2000 and 2004. Actually, Russia is not much after USA and China in this respect.

In Beijing, the German medal tally was the worst ever with only 41 medals, which is exactly half the number of medals won by German athletes in 1992. Since then, Germany has suffered a steady, gradual decline. This is partly due to the decreasing effect of unification in terms of the inclusion of athletes groomed in the successful former East German elite sports model. However, it is remarkable that the total number of German medals at the last Olympics was practically identical to the number of medals won by West Germany alone in 1988, when the total number of medals was much lower and at a time when the sporting power of the Eastern bloc reached its zenith. Germany will probably do better than in Beijing if the results from the latest world championships are a reliable indicator. However, other indicators point in the direction of a continued German decline. For instance, whereas Germany qualified eight teams at the last Olympics, they have only qualified a team in three (volleyball for men, handball for both men and women) of the 12 team sports for the Olympics in London.

France will probably become the sixth best nation in London both in terms of number of medals and top-8 points. In Beijing they were only no. 10 on the medal table because of a low number of gold medals (7). At the latest world championships, France won a total of 13 gold medals. Although this was partly a result of a host country effect in judo, this indicates that, in London, the number of gold medals will probably increase. The number of medals and top-8 points also seems to increase compared to 2008. France is the country which has the broadest based strength in Olympic sports. They win medals and top-8 points in more sports than any other nation. However, the broad base is not being transformed into an equivalent number of medals and total top-8 points. France has traditional positions of strength in judo and fencing, but their position in these sports is eroding and the only sports in which France is dominating are marginal sports such as BMX cycling and canoe slalom.

The results since 2008 including the latest world championships show that Australian Olympic sports are at a significantly lower level than in 2008. This is not a new phenomenon. Australia reached an impressive level in 2000 and has since experienced gradually deteriorating results. This is what usually happens after a successful home Olympics. The formation of the Australian Institute of Sport in 1981 together with a huge increase in financial support for elite sports created a framework which has been more efficient in terms of talent development and elite results than any other elite sport model in history apart from the former East German model. Australian athletes have maintained a high level but others have copied (aspects of) the model and the Australian lead in terms of infrastructure and funding has shrunk. However, the Australian performance level in terms of medals and top-8

points was still very high in the 2004 and 2008 Olympics. Even if it will probably be lower in London, it is still at a level which is much higher than what can be expected from its economic strength and the size of the population. In this respect, Australia is still the undisputed superpower in world elite sports.

Whereas Australia is suffering decline, other nations can be expected to progress in London. This will no doubt be the case for Japan. The results from the latest world championships indicate that Japan's performance in London, i.e. its medal tally and its top-8 points, will be the highest ever. At the latest world championships, Japan won 36 medals and scored 405 points which is 11 medals and 75 points more than in Beijing. The results indicate that Japan will experience its most successful Olympic Summer Games since 1936, apart from the 1964 Games at home in Tokyo. Together with Great Britain, Brazil and Russia, Japan is one of the few countries which has not experienced belt-tightening in recent years in relation to elite sports funding. The Japanese government has decided to support the (failed) bid to host the 2016 Games and the ongoing bid to host the 2020 Games with increased funding of Olympic sports. It is hoped that the consequent improvement of the international competitiveness of Japanese Olympic athletes will create enough goodwill to offset the domestic opposition in Japan against the Olympic bid which threatens to derail the bid.

### **The decline of Cuba and the rise of New Zealand**

Contrary to Russia, for most countries in Central and Eastern Europe the decline since the collapse of the communist regimes will deepen in London 2012. The most extreme case is Romania. In 1984, Romania was no. 2 on the medal table in the Los Angeles Games which was boycotted by the other communist countries in Eastern Europe. As recent as year 2000, Romania was still no. 12 in the top-8 points list. Then a rapid collapse followed. In 2008, the ranking was no. 21, and at the latest world championships the ranking was as low as no. 27. Romania won less top-8 points than countries such as New Zealand, Azerbaijan, Iran and Denmark. Romania has almost no medal candidates except from the female gymnasts.

Another big loser is Cuba which has experienced a sharp decline in terms of medals and top places. Cuba has been an overachiever in Olympic Games ever since 1972, led, primarily, by its boxers. Cuba has also had several gold winners in prestigious track and field events. At the last five Olympic Games, Cuba has won from 24 to 31 medals and the range of top-8 points is from 328 as the highest to 245 as the lowest. However, Cuba won only 13 gold medals and totalled only 146 top-8 points at the latest world championships in the Olympic disciplines. This is a massive decline. In the last world championships, Cuba won medals in only five sports and even the traditional position as the top nation in boxing was vacated and Cuba won only three boxing medals. In London 2012, the results may turn out to be somewhat less disastrous but Cuba will no doubt experience deteriorating performance levels and experience a significant drop in competitiveness compared to previous Olympic Games.

Contrary to Cuba, New Zealand has experienced significant progress recently and the small country from the Southern Hemisphere may become the big success story of London 2012. At the latest world championships, New Zealand won 20 medals (6 gold, 4 silver and 10 bronze) and 183 top-8 points. This is a huge improvement compared to 2008 (9 medals, 123 points), and the 2008 Games was one of the most successful Games New Zealand's history. Recently, New Zealand has been remarkably successful in rowing, which is a sport that has hitherto always been dominated by big nations. New Zealand won eight medals at the world championships in rowing in 2011. Another position of strength is sailing where New Zealand won a total of three medals at the last world championships. New Zealand won medals in six other sports. This is a success story worth studying and learning from. The country has only 4.4 million inhabitants and is not particularly rich. It was ranked no. 23 in the IMF rankings of country GDP per capita and the financial support of elite sports is not particularly generous. The country experiences success in Olympic sports in spite of the fact that the by far most popular sport in New Zealand is rugby. Other popular sports such as cricket and netball for women are likewise not Olympic sports. Among probable reasons for its extraordinary success is a selective approach to funding. Only a limited number of sports receive funding. High managerial efficiency and well developed talent recruitment based on a highly developed school sports system are other factors that contribute to the success.

### **Other nations**

Brazilian Olympic athletes are also becoming more competitive than ever before. In the 2008 Games, Brazil was more successful than in previous Games and the progress seems to be continuing. The results at the latest world championships were even better than in the 2008 Olympics. Brazil won 7 gold medals (only 3 gold medals in 2008) and 192 top-8 points (178 in 2008). The progress is easy to explain. The high economic growth rates have provided the government and corporate sponsors with means for increased support. In addition, the successful bid to host the Olympic Games in 2016 in Rio de Janeiro has led to increased financial support of Olympic sports and the building of a support structure similar to what exists in more established sporting nations. Now, Brazil wins medals in many different sports, and not only in its traditional strongholds (football, volleyball and beach volleyball).

Other countries can be expected to progress significantly in London. Prominent examples are oil rich Azerbaijan and Iran. India will also progress. There are Indian medal contenders in sports such as archery, badminton, boxing, shooting, tennis and wrestling. However, the progress is from a very low starting point. India has long been 'the sick man' of international sports. It is rock bottom in rankings of medals per capita. No other country is doing worse than India in this respect. The high economic growth rates can be expected to lead to an improved standing in international sports competitions. However, very little has happened hitherto in this respect. India may well fail to win more than a couple of medals in London but their much improved standing in top-8 points ranking (see table 2) shows that improvements are on its way.

Among the Nordic European countries, Denmark and Norway will do better than the others whereas Sweden and, in particular, Finland are falling further behind. This prolongs the effect of long term development trends. At the last world championships, Denmark was the best Nordic country with 8 medals and 132 top-8 points. This was clearly better than Sweden (6 medals, 98 top-8 points). Sweden is almost double the size of the other Nordic countries and hitherto Sweden has always won more top-8 points than the other Nordic countries. At the latest world championships, Norway won more gold medals than the other Nordic countries, just as they did in the 2012 Games. Finland was one of the superpowers in international elite sport in the mid-war period but nowadays it has only a few medal contenders. At the last four Olympic Games, Finland won only half as many medals as Denmark and only 43% of the Danish top-8 points, and the difference seems to be increasing. In the latest world championships, Finland won 3 medals and 26 points (only 20% of the total points of Denmark). It seems that the Danish and the Norwegian elite sports model, with an independent central elite sport organization, results in better results than the Swedish and Finnish models which do not have such an overarching structure and have less government involvement in elite sports.