

Must try harder

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So which nation is really the Olympic champion? After a fortnight of competition - athlete against athlete - the results are out. But the medals table to which we have become so accustomed tells us only one story, and it is a familiar Cold War one.

Washington tops the charts, by all measures. Moscow and Beijing duke it out for second and third place, the Russians leading by total number of medals and the Chinese by the number of golds.

But the table as we know it disguises the natural advantages some nations have when prepping Olympic teams. What if we were to even out the field a bit?

Three things really make a difference to Olympic success. The first is population. More populous countries have a larger talent pool from which to draw. Bigger populations mean you're more likely to find seven-foot basketball players, capacious-lunged cyclists or dextrous gymnasts.

The second is wealth. Rich nations do better than poor ones. Wealth means you can afford to have otherwise productive members of society gyrating around a pommel horse. It also means that you can afford the training facilities, physiotherapists, sports doctors and the swanky kit that are essential components of elite sportsmanship.

Finally, totalitarianism - or at least rigorous state-planning - helps. Current (and former) dictatorships should fare better than their size and wealth merit. An autocrat can easily turn a sport into an engine of national pride, as has happened with the Cubans and their boxing. In fact there is a more subtle point. While there are incentives for individuals to train for athletic success, the facilities and culture that can create elite athletes are expensive and poorly provided by the market. State support, especially directed programmes, can ensure excellence in one sport.

By factoring in these three criteria, we can create an alternate medals table, one which ranks national performance having accounted for some of the disparities in wealth, size and government. In other words, strip away the endogenous advantages nations have over each other and try to capture how well these unbiased teams performed.

In this alternative medals table, a nation's rank depends on how its actual medal haul compared to what we might predict it should win given its size and wealth. (The table is calculated by a simple model which takes into account the factors above. Based on my analysis nearly 70 per cent of a team's Olympic performance is explained by their income, size and type of government, leaving around one third to other factors¹.)

Under the revised medals table, Australia seizes pole position (see Figure). With one-third as many people as the UK, and significantly poorer, and being a democracy to boot, they exceeded their predicted medal tally more than three times. But the real stars are the smaller, poorer nations like Hungary, Cuba and Ethiopia. Average incomes in Ethiopia are 300 times lower than in the United States and the population only a fifth of the US - Ethiopia's seven medallists far outdid themselves.

¹ For a highly accurate predictive model see Andrew Bernard's Olympic Predictions: <http://mba.tuck.dartmouth.edu/pages/faculty/andrew.bernard/olympicmedals.htm>

Even though the Iron Curtain has rusted out of existence, the former Soviet bloc has not forgotten its sports training. Many Eastern Bloc nations punched above their weight. Individual performances aside, Team GB was lacklustre compared both to the determined poor and our European neighbours. Indeed, we significantly underperformed our most economically similar European cousins, France, Germany and Italy.

The Alternative Medals Table

Country	Actual medals	Predicted medals	Out performance
Australia	49	15	334%
Russia	92	34	267%
Hungary	17	7	250%
Cuba	27	12	232%
Ethiopia	7	4	177%
Dominica	1	1	177%
Belarus	15	9	175%
Jamaica	5	3	175%
Greece	16	9	174%
South Korea	30	17	173%
United States	103	62	165%
Germany	48	30	160%
Ukraine	23	15	157%
Netherlands	22	14	154%
Bulgaria	12	8	142%
Romania	19	14	136%
Italy	32	24	134%
France	33	26	129%
Croatia	5	4	113%
United Kingdom	30	27	112%

But there are far worse performers, among nations who made it to the winner's podium. The Belgians ought to have walked off with 12 medals, and instead sloped home with four. The Mexicans should have taken 20 but only managed four. And the Indians, with their huge and diverse population, managed a solitary medal, far shy of the 24 my model predicted. What does this tell us? While the new model is a good but not great guide to Olympic performance, it does allow us to understand better the nature of the Olympic competition and what winning means.

Resources count. Athletic prowess alone is not enough. Running around Trinity College, Cambridge, as Harold Abrahams did in *Chariots of Fire*, will not set you up for victory. British success in sailing and cycling can be traced back to the influx of lottery funding into those sports over the past few years.

India's dismal performance of 1 medal for a billion people shows that without an infrastructure to find talent and nurture it, you can't produce winners. Perhaps Rajyavardhan Rathore, who won their solitary silver in the shooting, deserves a special award for getting noticed in India's scrum.

Smaller and poorer countries can excel if they choose expensive Western-style sports programmes. But these ought to be a lower investment priority for most of these nations-

and for many of them, former Soviet bloc aside, it is. So perhaps its time we started to recognise that, not even in the tournament of tournaments is the playing field level.

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