



Economics without tears

Olympic Game theory

Daniel Anderson, LDR's Economics Commentator, looks at the link between sports funding and British success in the Olympic medal count. He argues that the Government is right to prioritise some sports over others, but questions whether the money should be spent on elite athletes or grassroots sport.

Let's cut the chase, shall we? All this running around and jumping about is rather unseemly. Let's save ourselves a lot of time and money and effort and work out right now who's going to win all of the medals at the 2012 Olympics. It isn't a question of sport. It's a question of funding.

London only just won the right to host the Games and it's already going pear-shaped. In an astonishing feat of forward thinking, the Aquatic Centre went over-budget while it was still on the drawing board. The British gymnast who pommel-horsed the Swiss Re Tower has quit the sport for lack of funding. The British Olympic

Association has had its first bun fight with Gordon Brown (the running score on that one is 1-0 to the BOA, by the way). The Mayor is fighting with the Olympic City developers, complete with offensive remarks that – to top it all off – weren't even geographically accurate. Plus it's just occurred to me that the whole circus is going to be a major distraction during those critical weeks of Big Brother 13 – right when the housemates really start to get on each others' nerves. Think of all the money that Channel 4 will lose on the text messaging alone. (It frightens me to think that I lie awake nights wondering if that has been included as 'displacement' in the economic impact studies.)

And it's all unnecessary. Economists have devoted a remarkable amount of time developing techniques for predicting medal counts – thus proving, if nothing else, that economists have far too much time on their hands. These studies make for some interesting and, in some respects, pertinent reading.

Most of the studies agree on the basics, which is not surprising because common sense would lead to the exact

same conclusion (with less math). There are four key determinants of Olympic success: (1) Population; (2) GDP; (3) political system; and (4) host country advantage.

Countries with larger populations have a larger pool of potential athletes and therefore a higher probability of producing Olympic champions. Wealthier countries (i.e. those with higher GDP per capita) can afford to invest more in sport and individual athletes can afford to spend more time participating in sport rather than working. Political structure was particularly important during the Cold War, with communist countries consistently outperforming Western countries. This is probably because centrally planned economies could divert more resources into sport which, in the absence of democracy, provided a source of politically stabilising national prestige. Finally, host countries tend to benefit from 'home field' advantage, greater support from local spectators, and the fact that – in advance of these Games – host countries tend to increase their investment in sport.



So far, so simple – although this hasn't stopped economists from trying to 'prove' these factors in much the same way that Morgan Spurlock 'proved' that McDonald's was unhealthy, as if we couldn't figure that out for ourselves. Several of these models have demonstrated real and significant correlation between the factors mentioned above and country performance at the Olympics. Johnson and Ali (2000) found that home advantage adds a 12% chance of success (good news for the UK) and that communist countries outperform others by up to 12 medals in total (including 5 Golds). With models that good, you'd have to be a real chump to exercise.

In fairness though, these models do tend to hold up, explaining why in Athens, for example, the top ten countries (out of 199 participating) took home more than 50% of the medals, while 124 countries went home empty-handed. They certainly work well for broad categories of countries, explaining why the USA, Russia and China tend to win lots of medals, why France and Italy win a few, and why Peru and

Liechtenstein hardly ever win. Sure, you can point to individual examples of where the theory doesn't hold, but these are just exceptions to the rule. Statisticians would call them outliers. That Lithuania beat the USA in basketball doesn't prove that the theory is wrong. It simply proves that Lithuanians may be good at basketball, but they are rotten economists.

Additional success factors

So a more recent study by Alexander Matros and Soiliu Namoro of the University of Pittsburgh (2006) is particularly interesting, because it takes all of these factors as given and looks instead at differences between countries that technically should perform about the same – based on population, wealth, politics and host country experience – but that do not, for some reason. For example, Singapore and New Zealand have similar populations, per capita GDP and political systems, and neither has ever hosted the Games. Yet New Zealand has won over 60 medals over the past eight Games, while Singapore hasn't won any.

The same goes for Greece (43 medals) and Portugal (only 11). Switzerland has won over 40, but Luxembourg not a single one. China has won over 220, compared to India's eight. Between broadly similar countries there are obviously major differences that give some a competitive advantage over others.

The Matros and Namoro paper points to, among other things, different ways of funding sport in different countries. They use game theory to test the impact of different funding patterns on sports participation and performance, which can be especially relevant in the UK right now, where funding is set to increase substantially. The Government has already pledged a £600 million increase in funding for sport, comprising major grants from central government and the National Lottery.

In effect, the country has two decisions to make with all of this money: (1) which sports to fund more than others; and (2) whether to concentrate funding on elite performers or at the grassroots level.

Matros and Namoro have tackled the first question head on and found that



there is, indeed, a statistically significant correlation between the relative funding of different sports and a country's eventual positioning in the medal count. Particularly interesting is the breakdown of medals between countries like Russia, the USA and Germany, who – between them – have won the lion's share of medals at past Games, but relatively few in the same events. For all the medals that they win, you would expect to see lots of podiums with an American, a Russian and a German standing on them. But you don't. They appear to have tacitly divided the medal count between them, each country focusing their funding on different sports.

You also see some smaller countries becoming ultra-specialist in a small basket of sports in the hope of securing a few medals. Take, for example, the South Koreans and short-track speed skating at the Winter Games. For that matter, take the Lithuanians and basketball – hey, maybe they knew what they were doing after all.

The implication is this: it's not the size of the sports budget that matters,

so much as the way it is spent. That means picking and choosing which sports to back, supporting some and disappointing others. Those are the kind of trade-offs that the Labour party is notoriously loath to make in its constant search for a Third Way where everybody wins. Sorry, but in sports funding, as in sport, there have to be winners and losers if the country as a whole is going to climb its way up the medal table. So it is actually encouraging to note that UK Sport has already come clean and said that the majority of extra funding will go to those sports where UK athletes are already successful (such as cycling, rowing and sailing), as opposed to those in which we rarely even field a team (handball, volleyball or basketball).

Investing to win

All of which raises an important question: does winning matter? According to the International Olympic Committee, the Games are supposed to be about competition between individuals, not between countries. The Olympic Spirit emphasises participation rather

than winning. But is anyone really buying that? The reality is that the success of a country's athletes is an important source of national prestige. We all look at the medal table and our country's place in it. The British Olympic Association even has an explicit target of moving the UK from tenth to fourth in the medal table by 2012.

We want to win and, as demonstrated by Matros and Namoro, winning means investing in certain sports more than others. But who, specifically, do we invest in? The superstar performers who are more likely to win medals in upcoming Olympics? Or do we invest the money in mass participation at the grassroots level in the hope of creating a larger pool of potential future superstars? These are two very different propositions. The first suggests massive investment in athletes and coaches and key facilities and centres of excellence. Loughborough and Bath will make out like bandits. The second spreads the investment much wider, in schools and playing fields, in local communities and on publicity and promotion.

People tend to forget that these are



two radically different visions of sports funding. One does not follow from the other. In fact, all other things being equal, you could say that they are mutually exclusive. It is yet another uncomfortable trade-off that Government doesn't like to talk about, although funnelling the grant through UK Sport implies that it is favouring elite athletes over the grassroots approach.

That is less encouraging. The red herring, in this case, is the nation's health. Because there isn't a sports project going that doesn't somehow raise the spectre of our impending death. Virtually all of them link their objectives back to the health agenda and are predicated on getting Britain active again. It is vital that we have a 25-metre climbing wall in Pembrokeshire, because we are a nation of smoking, alcoholic, lard buckets and we need to climb a wall right now or we'll die. Well, that's normally the gist of it.

This is, of course, rubbish. The fact is that elite athletes and the rest of us do not play well together. This is a problem faced by any facility that tries to cater for both markets. It is an issue that was especially highlighted by the recent scramble for 50-metre swimming pools. There was a period last year when you couldn't move in this country for fear of falling into the hole dug for a proposed Olympic-sized pool. But who actually uses them? Local people don't use 50-metre pools for splashing about with their kids. Grannies don't share lane time with Olympic hopefuls. The lifeguards just frown at you when you do cannonballs off the high dive. The Aquatic Centre design went over budget and it didn't even have a single waterslide!

For every Olympic-sized pool you build, you improve facilities for a few elite athletes, but deny them to the mass market. How does that make us healthier? Most of us just end up down

the pub, watching the Olympics on TV and gorging ourselves on national pride and pork scratchings. The flipside is that you invest at the grassroots level, which may or may not pay off in the future (but at least we'll be around to find out), and bear the highly public wrath of Olympians and their supporters who then feel 'betrayed' by their own Government – as they did earlier this year when they weren't explicitly mentioned in Brown's pre-Budget speech.

All these difficult decisions and trade-offs – who needs it? So I go back to my original recommendation. Let's invite one economist from every competing nation and settle it all right now. Very neat and simple and, as we've seen, remarkably accurate.

That also leaves me with enough space in this column to address that other age-old question in UK sport.

Will Tim Henman win Wimbledon? No. He won't.

Daniel Anderson,
LDR Economics Commentator

Locum Consulting does not claim any association with the IOC, the British Olympic Association, London 2012 Limited, the London Organising Committee of the Olympic Games or any other company or body involved with the organising and planning of the XXX Olympiad, and this publication is not intended to infer such an association.