



The Olympics and Economics 2012

Goldman
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The Olympics and Economics 2012

For some years, the GS Economics team has published a guide to the World Cup and Economics, something that is routinely one of our most popular publications. Perhaps even more than the World Cup, the Olympic Games symbolise the values of global integration, international competition and collaboration, stamina, discipline and teamwork. For Brits, even expats like me, the return of the Olympics to the UK is especially exciting. With our London office already preparing to welcome friends and visitors in a few weeks' time, we take a light-hearted look at the Olympics and Economics, for the very first time.

The highlight of this publication, spearheaded by Kamakshya Trivedi and José Ursúa in our Global group, is a series of interviews with past Olympians and Olympic personalities, to whom we are extremely grateful for participating. **Michael Johnson**—one of the greatest sprinters of all time—talks about the challenges of competing against yourself and others; journalist and former Olympian **Matthew Syed** puts the London Olympics in historical context; **Tim Hollingsworth**, the Chief Executive of the British Paralympic Association, discusses the enormous increase in the profile of Paralympians and what they represent; British swimming champion **Marc Woods** highlights the value of determination; **Peter Hudnut**, an Olympic water polo silver medallist, talks about his preparations for London 2012; and our own **Michael Evans**—an Olympic gold-medal-winning rower—discusses the parallels between sport and business.

For those of you who have seen GS economists running to client meetings or racing for the first flight out of London Heathrow, the links between economic insight and natural athleticism will already be obvious. But these links run even deeper. Bruce Bennett—an early American Olympian and star of the silver screen—was an economics graduate. As was Billy Kidd—the first American alpine skiing medallist. And Sebastian—now Lord—Coe who, alongside Steve Ovett and Steve Cram, dominated middle-distance running through my childhood, also holds an economics degree. With golf coming to the Rio Olympics in 2016, perhaps that other sporting economics major—Tiger Woods—may join this exclusive club.

Helped by our team around the world, we look here at some of the ways in which Olympic performance and economic outcomes might be linked. Kevin Daly looks at the likely economic impact for the UK. Tim Toohey, Mike Buchanan and Yu Song look at the past effects of the Sydney and Beijing Olympics, while Alberto Ramos looks ahead to the prospects for the 2016 host, Brazil. With the Euro crisis dominating investor discussions, Huw Pill and Andrew Benito examine the potential benefits of Euro integration of sports. Their bottom line—good in principle, but needs the right institutional structure—may sound familiar! Kamakshya and José show (with some massaging of the data) that countries with good growth conditions measured by our Growth Environment Scores (GES) have been more likely to win Olympic—not just economic—gold.

Nor is it just economics, but markets too, that may have an Olympic link. Hui Shan provides evidence that Olympic hosts see a boost to house prices, looking at detailed US data from Atlanta and Los Angeles. Francesco Garzarelli and George Cole show that stock markets of recent hosts have outperformed in the year after the Games. And Thomas Stolper and Constantin Burgi demonstrate that an 'Olympic RTWI'—the real trade-weighted currency of successive Olympic hosts—has appreciated strongly over the years.

Alongside all this, we provide some basic information on the Olympics—trends and performance statistics—to lighten the load.

None of this would have been possible without the Olympic spirit of our London Production team—Linda Britten, Loretta Sunnucks, Ling Luong and Julie Leavy—who have shown once again they can always go the distance and deliver gold.

We hope you enjoy the publication and the Games.

Dominic Wilson

July 11, 2012

Interview with Michael Johnson



Michael Johnson is a four-time Olympic gold medallist and world record holder, and remains the only person in history to have won gold medals in both the 200m and 400m events. He is a sports pundit with the BBC and has established himself as one of the UK's most popular sports broadcasters. Michael is founder of the Michael Johnson Performance Center, a sports training facility located in Dallas, Texas.

Q: From your experience of taking part in Olympic competitions over the past 20 years, what has changed and what remains the same about the Games?

MJ: Not much has changed at all really. One of the great things about the Games is that change doesn't come quite as quickly as in other sports because it only takes place every four years. The historical sense of the Games, the format, has remained largely the same over the last 20 years—and even going back further than that. I think they got it right from the very beginning. The format of the competition guarantees that you'll have the best athletes at their best in every Olympiad, and that's what makes this competition so great.

The only thing that has changed is that new sports have been introduced over the years. I know that in 2016 golf will be returning to the Games for the first time in many years and that's a positive because it appeals to a wider bucket of people and a new generation of viewers.

Q: Do you think there is a difference between competing in Olympic competitions hosted in your own country versus those hosted by others?

MJ: The significant difference is the build-up to the Games. For example, over the last few years there has been this constant build-up of excitement around the Games in London that you would not experience in the US or anywhere else. That excitement means that the British athletes who are going to compete in those Games probably have an advantage that relates to motivation—to go out there and train hard every day, and be dedicated and committed to the training so that you can be at your best when the Games arrive. And that's what it was like here in the US when Atlanta hosted the Games.

But once the Games begin, it really doesn't matter where they are held, whether it's in your own country or in your own city. You are not going to have any competitive advantage—even in front of a home crowd—because that's just the way the Games work. It doesn't matter where in the world the Games are held. The real advantage is the build-up.

Q: And is there a disadvantage? Is there more pressure if you are running with your home crowd behind you?

MJ: Well, pressure is specific to the particular athlete and it would be difficult to generalise how each athlete will feel and respond to pressures. Some athletes will respond positively to the fact that there is a largely British crowd

in this instance. They will feel more motivated and inspired, but some may feel afraid of that situation.

What's most important is the ability to focus on the task at hand, to be able to execute the race, or the game strategy, in the same way as you have done in the past, prior to the Games. Whatever athletes need to call on to deliver their best performance will be important. If that means using the crowd as inspiration, that's not going to put additional pressure on them. The most important thing is they need to understand how best to deal with this situation.

Q: You are the only athlete to have won both the 200 metres and 400 metres dash events in the same Olympics. What are the next peaks that athletes should aspire to in order to follow in your footsteps?

MJ: It's very difficult to have athletes in the sport of athletics who are able to win multiple medals at different events. It's difficult enough to win one event. And so it will always be a significant accomplishment for those athletes who are fortunate to have the talent to be able to compete in two or even three different events. And, as we touched on at the beginning of this conversation, the Games don't change very much from one to the next. There is this idea that after I won the Olympic gold medal in 200 and 400 metres in 1996 the next generation of athletes would try to do something else. The reality is that no one has been able to do that since. If you think back to 1936, when Jesse Owens became the first person to win four Olympic gold medals, it wasn't repeated again until Carl Lewis did it in 1984. That's how slowly things move in the Olympics and that's how significant the history-making moments are in the Olympics. They just don't happen that often. I think the next peak would be any time another athlete can excel in two different events, win medals in two different events at the Olympics. That's a significant accomplishment and one of the things many athletes will be aspiring to do. But, obviously, winning one Olympic gold medal is significant enough.

Q: What do you find most exciting about entering a competition? Is it the chance of winning, the testing of your own limits, or the desire to be better?

MJ: It's all of those things, and the great thing about the Olympic Games is that you know it is the best opportunity to do all of those things. Winning a grand prix event that happens every year somewhere around the world is one thing—but winning at the Olympic Games, with all of its historic sense, is a completely different thing. When you talk about testing your own limits and being better, there is no better opportunity to do that than at the Olympics, when you know you are testing yourself in the ultimate test

against all of the best athletes in the world. You know that everyone will be at their best because of the significance of the Games and because only one person can win that gold medal. They will have put everything they possibly could into training and preparing for this event. And so when you come out on top at this event, you have won at the highest possible level.

Q: Turning the conversation towards the connection between Olympic sports and economics, do you see any parallels between the way an athlete prepares for success and the way countries develop?

MJ: Maybe the one parallel is most athletes probably only have one opportunity to compete in an Olympics and four years to prepare for that. In many countries, in the US for example, political leaders have four years to make a difference, and so it's similar from that standpoint.

"I think they got it right from the very beginning. The format of the competition guarantees that you'll have the best athletes at their best in every Olympiad, and that's what makes this competition so great."

But economic changes in countries can take much longer to effect than four years. If you compare that to a situation with an athlete, I was able to improve over a long period of time, with short-term goals in between. But it's the consistency that I was able to establish over that period of time that ultimately allowed me to reach my full potential. The issue with countries is that it's very hard to achieve that type of consistency, with political changes dominating any ability to effect change in a country.

Q: Historically, countries have found it hard to sustain high rates of growth for long periods of time. Does your experience of running suggest that it is more important to start steadily and accelerate, or maintain a high speed from the start?

MJ: If you can establish consistency, that is ideal. Take a 400 metre race, for example. What I am trying to accomplish during that race is to accelerate quickly but not at the expense of that having a negative effect on the back end of the race. I am trying to get up to the race speed that I want to be consistent with around the track. So when I look at the split times—the intervals in the race—I would like those to be as consistent as possible, without a huge difference between what we call the non-fatigue part of the race, the beginning, versus the fatigue part of the race, the end. I am trying to minimise the differential between those two. And I would imagine that it's very difficult for a country and government to establish the type of consistency that's needed to sustain that high rate of growth for long periods of time.

There are obviously lots of other factors and market forces that will affect a country's ability to sustain that type of growth, whereas in competition there are other athletes. But you control your own destiny to some degree in terms of how well you compete as an athlete. You always want

to focus on your own race and competition, and develop a plan to accomplish the goal that's set. What's happening here in the US, and in Europe, has an effect in both places, so it's a lot more difficult to achieve that type of consistency when what happens elsewhere affects you.

Q: In a race, how much are you competing against yourself versus against your competitors?

MJ: That's a very interesting point. It's a very, very fine and difficult balance to achieve. You know going into a race that your best opportunity to win the race or to have your best performance in that race is to run and execute the race strategy that you think will give you the best opportunity to run the fastest time. That, in itself, has absolutely nothing to do with the competitors. What they do doesn't affect that. But once you are in the race, how much of it is trying to execute your race strategy to run your fastest time and how much of it is racing against the other people is a very fine balance. When do I make an adjustment in my own race strategy to race against the other athletes versus just sticking with my own race strategy? When I was competing, I was making decisions about that balance during the race—even in a race as short as 200 metres that could take less than 20 seconds.

Q: Many countries have been going through difficult times over the past few years since the crisis and the recession. How do you think sports and the Olympics more generally can bring people closer together or contribute to improving a country's mood or confidence?

MJ: I think people are generally very fed up with political processes and the bickering that comes with it. You have some politicians with one particular set of ideas as to how to fix the problems and one with another set of ideas, and this continues to create a divide between people. The Olympic Games is the epitome of non-politicised activity. It's about coming together and because of the way the competition is set up, with countries competing against one another very fairly, it gives people the opportunity to put their differences aside and get behind their country and the athletes who are representing them.

Q: At GS, we stress teamwork in everything we do. From your own experience of running in relays, what are the main things that can contribute to a team's success?

MJ: When you are running a relay, you come together with other athletes and, in many cases, those athletes would have been my main competitors just a few days earlier in the 400 metres. We all have our individual objectives as athletes. But for the relay we were able to take our individual goals and include those in a team goal. Everyone's objective is to run as fast that they can on their particular leg of the relay. The biggest issue is trying to figure out who is going to be most effective in what position on the four-man relay. That is the most significant decision that needs to be made and where people have to make some compromises. An athlete may run in a position he is not comfortable with, but if it is best for the team, then that will ultimately lead us all to success. ■

Impact on the UK: 2012 Olympics Likely to Provide Economic As Well As Sporting Benefits

A number of factors help to determine the economic and sporting legacy of hosting an Olympic Games. The management and cost effectiveness of the development and preparation for the Olympics is clearly an important factor and, in this respect, the UK appears to score relatively highly. But other factors are important in determining the overall success of an Olympics and some of these—such as the weather—are largely beyond the control of the organisers.

In terms of the economic impact of hosting an Olympics, there are short-term benefits that derive from the additional expenditure in and around the Games itself and long-term benefits that are less tangible (such as the promotion of the UK as a tourist venue and a potential location for investment). We estimate that the additional expenditure will boost UK Q3 GDP by around 0.3-0.4ppt qoq (+1.2%-1.6%qoq annualised). The less tangible benefits are, by their nature, more difficult to estimate but this doesn't mean that they are less important.

Sporting enthusiasts will (fairly) argue that a narrow focus on the economic costs and benefits of hosting an Olympics misses the point. For competitive sporting enthusiasts, perhaps the most important 'bottom line' of hosting the Games is this: over the past 10 Olympics, the host nation has won 54% more medals on average than it has won in Games it did not host. If medals are your preferred currency, this represents a high return on investment.

Olympics Preparation: On Time and Largely Below Budget

Historically, the financial reward of hosting the Olympics has been mixed: the 1972 Munich Olympics and the 1976 Montreal Olympics made significant losses, while the Games held in Los Angeles (1984), Barcelona (1992) and Atlanta (1996) each made a profit. It is too early to tell whether the 2012 London Olympics will make a profit or loss and, if one fully accounts for all of the costs related to hosting a Games, it is questionable whether an Olympics ever truly makes a profit.¹ In general, however, the management and cost effectiveness of the development and preparation for the London Games have been a success, with the infrastructure for the Games completed on time and below (the 2007) budget.

The implications for the public finances of hosting the London Olympics have been small. At the time of London's successful bid in 2005, the provisional cost of

hosting the Games was estimated to be around £3bn. This increased sharply to £9bn when the first detailed estimates of the total cost were provided in 2007 (including detailed provisioning for the construction of facilities and infrastructure, together with security and other ancillary costs). Since then, the estimated total cost has fallen to £8.5bn, partly reflecting the impact of the recession in reducing overall construction costs.

The £8.5bn represents 0.55% of annual UK GDP or 1.4% of annual government revenues (although the spending itself has been spread over a number of years). Of that total, a little less than one-quarter has come from the UK National Lottery rather than from central government receipts.

Over time, a significant portion of the government's £8.5bn bill will be recouped through the sale of land and other facilities. However, as yet there is no publicly-available estimate of the likely proceeds from those sales.

The Economic Impact of the Olympic Games

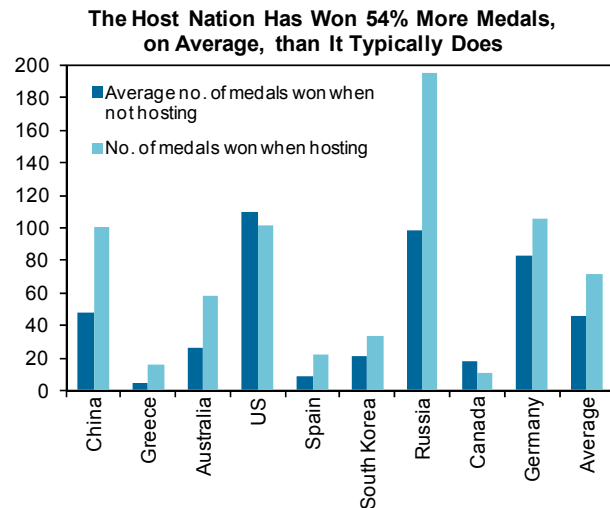
While financial management and good preparation are clearly important in establishing a successful Olympics, a narrow focus on the *financial* performance of the Games misses the wider economic impact that hosting the Olympics can have on the host nation.

In analysing this wider economic impact, it is useful to separate the short-term effects (which are relatively easy to measure) from the long-term benefits (which are less tangible in nature).

- The **short-term effects** derive from the expenditure on goods and services related to the hosting of the Olympics, which are recorded as output when the expenditure occurs. The London Organising Committee of the Olympic Games (LOCOG) estimates that it is likely to spend around £2bn in total—in temporary employment of staff, security, etc.—with more than half of this amount (around 0.3%-0.4% of GDP) likely to be spent within Q3 itself.² Hoteliers, restaurateurs and retailers are also likely to witness an increase in output as they cope with the additional demand from overseas visitors. Set against this, however, some tourists may avoid coming to the UK because of the Olympics and the output of other businesses is likely to suffer as a result of transport disruption related to the Games.

1. In accounting for the cost of hosting an Olympics, most countries (including the UK) have treated the cost of constructing facilities and infrastructure, together with security and other ancillary costs, as being separate from the cost of running the Games themselves. The London Games are expected to make a profit (in the sense that revenues will exceed the cost of running the Games) but this will still leave the government with a significant (£8-9bn) bill from construction, security and other costs.

2. In the GDP data, the production of LOCOG and others will be registered as higher output from the services sector. On the expenditure side of GDP, the cost of Olympic tickets will be treated as expenditure at the time of the Games (even though the tickets themselves were mostly sold in 2011). The organisers expect total ticket revenue to come in at £500m, or 0.15% of quarterly GDP.



Source: Sports Reference.

There are also likely to be indirect (or multiplier) effects from the additional expenditure related to the Olympics. The positive multiplier effects from this year's Games could be larger than they have been in past Olympics, such as Beijing, Athens and Sydney (when the host economies were already operating close to full capacity).

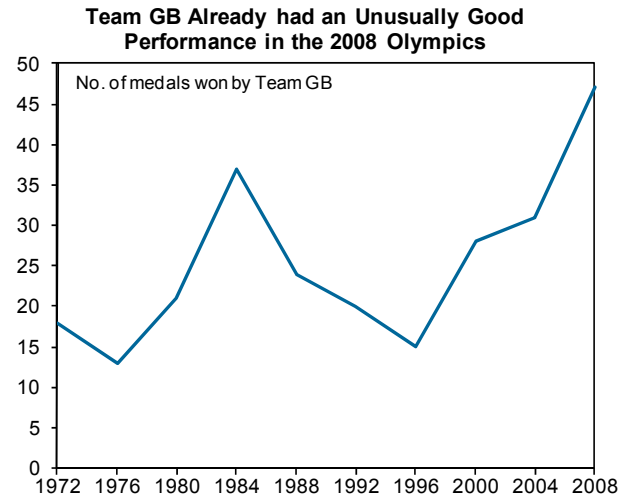
It is difficult to estimate what the net effect of the indirect and other offsetting effects will be. As a central estimate, we have assumed that these effects will net out and that the overall short-term effect of staging the London Olympics will be to boost UK economic output in 2012Q3 by around 0.3-0.4ppt qoq (+1.2-1.6%qoq annualised).³ This short-term benefit will be largely reversed in Q4.

- The **long-term benefits** of hosting the Olympics include the promotion of London and the UK as tourist venues and as a potential location for foreign investment, as well as the lasting impact on the local community from regenerating a previously run-down part of London. By their nature, these effects are more difficult to estimate but they are not necessarily less important than the short-term effects.

For the Beijing and Barcelona Olympics, in particular, ex-post studies suggest that hosting the Olympics played an important role in promoting those cities to the world. Given that London is already a high-profile city for tourism and investment, the incremental benefit from this promotion may be more limited.

Sporting Success: Hosting the Olympics Typically Provides a Significant 'Medals Premium'

Sporting enthusiasts will argue that focusing on the financial management of an Olympics or on the economic costs and benefits of being the host nation misses the point. What are the sporting benefits of hosting an Olympics?



Source: Sports Reference.

Much as there are short- and long-term economic effects from being the host nation, there are also short- and long-term benefits for sport in the host nation.

The long-term benefits take the form of the facilities that will be left behind once the Games are over and the promotion of sport in the community. The organisers of London 2012 have placed significant emphasis on the 'legacy' of hosting the Games. They have tried to ensure that the facilities will have a viable use after the Games or—where the facilities are unlikely to be viable—they have been designed in a way that allows for easy cross-over use (e.g., the main Olympic stadium will be converted to a football stadium following the Games).

But, for competitive sporting enthusiasts, perhaps the most important 'bottom line' of hosting the Games is the short-term benefit they typically bring by way of a larger medals haul. The chart on the left compares the number of medals won by the host nation over the past 10 Olympics with the number of medals won when that nation was not the host (note that the US hosted the Games twice in recent history). On average, the host nation has won 54% more medals than when it was not the host nation. If medals are your preferred currency, this represents a high return on investment.

This result should be interpreted with some caution: first, there has been significant variation in the 'medals premium' across time (the medals haul of the former Soviet Union in 1980 was artificially boosted by the boycott of the US and other Western states); and, second, the 2008 Olympics was already an unusually good Games for the UK, which could imply that further progress from that medal tally will be more difficult (chart on the right). Nevertheless, if the experience of past Olympics provides a reliable guide, 2012 should be a vintage year for *Team GB*.

Kevin Daly

3. This 'bottom-up' estimate is broadly consistent with 'top-down' estimates of past Olympic Games once one scales for differences in the size of the project relative to the economy as a whole.

Interview with Matthew Syed



Matthew Syed is a British journalist, broadcaster and author of *Bounce*, an international bestseller on the science of performance. He has won numerous prizes for his writing, including Feature Writer of the Year at the SJA Awards and Sports Journalist of the Year at the British Press Awards. He is also a three-time Commonwealth table tennis champion and a two-time Olympian.

Q: It has been more than 60 years since London last hosted the Olympics. How has sport changed over those past 60 years and what has remained the same?

MS: The thing that remains the same is the competitiveness of the athletes, and the reason why people are interested in sport, which is because it is a metaphor for the competitive struggle that we see beyond sport. It's a vividly objectified hierarchy and magnifies the difference between success and failure in a way that things beyond sport often turn into a grey area. I think that is the essential reason for the lure of sport today, 60 years ago and in ancient Greece.

The way it has changed is in the professionalism with which athletes approach their competitions: 60 years ago the majority of competitors were gentlemen amateurs, part of the old English ethos of effortless superiority—the idea that there is something rather unappealing about being professional. Now it's different. Almost all of the athletes at the Olympics are paid for what they do. And in most respects this is a very good thing. Professionalism has allowed people from all demographics to get involved in sports, rather than those who were already independently wealthy enough to play sport without having to worry about earning any money. And of course the infrastructure surrounding sport has become more professional, more focused on marketing and television.

Q: And how has London changed since 60 years ago?

MS: London as a city has changed rather dramatically in terms of its demographics, its culture, its cosmopolitanism and also in the fact that 60 years ago it was still recovering from the trauma of war. The Games in 1948 were called the 'Austerity Olympics', and there is a sense in which there is austerity today, albeit of a fundamentally different kind.

Q: As a former Olympic athlete representing Britain, are there ways in which the forthcoming Games are particularly meaningful for you?

MS: This is almost certainly the only time that the Games will take place in London in my lifetime, so as a British athlete there is something rather enticing about that. For the British athletes who compete in London, the level of media interest will be that much higher because they are in a home game, and therefore they will be under far more intense pressure because they know that if they win, they will be iconic figures, possibly for the rest of their life, and if they lose they will be destined for anonymity. That

'sliding doors' moment that all Olympics provide will be particularly intense in London for home-grown athletes. That will be part of its fascination: who will be able to cope with the pressure and who won't. Having played in two Olympics myself, that pressure is difficult to deal with and different athletes deal with it in different ways.

From a political point of view, sport has done rather well in public subsidy over the last 15 years in this country, and that has increased in the seven years since we won the bid to host 2012. It will be interesting to see whether or not that remains in place afterwards. That's the more strategic issue.

Q: Do you see any similarities between the way athletes compete and succeed and the way businesses and economies thrive?

MS: There is one very important similarity. There is a mythology that success in sport is largely a consequence of natural talent, that certain people are born with genetic attributes that enable them to excel, and others lack those genetic attributes and are destined not to excel. That widely held notion about sport is largely, on a deep analysis, untrue. Most of the variation in success and failure you see in sport is to do with highly efficient learning. So creating a culture that institutionalises its principles of accelerated learning—and that is true at Barcelona Football Club and Spartak Moscow Tennis Club—has nothing to do with genetic sequencing in Catalonia or suburban Moscow, and much more to do with culture, environment and mindset.

Increasingly, businesses that will thrive in a competitive environment are those that are more critically aware of the way in which culture and environment shape the learning process on a day-by-day basis.

Q: You have written extensively about the role of talent versus practice in excelling in sport. Do you think corporates—Goldman Sachs, for example—should try to identify the most talented person for every job, or focus more on training and ingraining culture in those already in their jobs?

MS: There is not necessarily a tension between those two things. If one has a choice between 10 different people for a particular position, then it makes sense to choose the best one at this particular time. The danger is if those who were selected on the basis of their current level of ability draw the inference that they are good enough, because that idea can often lead to the view that therefore I don't need to persevere because I already have what it takes to be very, very good. Not only corporates, but

football clubs and universities often find highly pernicious consequences associated with recruiting those who are labelled or defined as talented.

On any given day somebody is going to be far more critically engaged with what they are doing and what they could have potentially done differently, and the challenge is to institutionalise usable feedback into the environment so that things improve over time. It is well established that feedback on what one does and also thinking about what one could have done—the counterfactuals—are one of the most important elements in the learning process. Those who think of themselves as talented, that binary notion that either you have it or you don't, are far less engaged in what they do.

Q: These Games come at a difficult time for countries and communities in many parts of the UK and the world. Do you think sport in general and the Olympics in particular can contribute to making life a bit better?

MS: By and large, people tend to overestimate the significance of sports in terms of creating social change. There are lots of different strands to this. One is that sportspeople are inspirational and therefore get young people who watch them to do amazing things. This is often said in a particular social context: for example, Cathy Freeman inspired aborigines or Mohammed Ali inspired black people in 1960s America. There is a tiny bit of evidence to support that idea. But it is a mistake to think that sport, and the iconography of sport, is anything like a substitute for genuine social and political action. What really helped black people in 1960s America were the Civil Rights Act and the Voting Rights Act.

“There is a mythology that success in sport is largely a consequence of natural talent...Most of the variation in success and failure you see is to do with highly efficient learning.”

The other idea that leading athletes inspire young people to get involved in sports is not very credible either. What tends to happen is that the ‘already active’ just pick up a particular sport that they watch or migrate from a different sport. There is not much evidence that great sporting feats get the ‘inactive’ off their sofas and into sport. Certainly in this country, the number of people playing sport has remained pretty static for the last 10 years. The success that Britain has had in sport through the lottery funding has done little to boost participation.

The other thing worth mentioning is that playing sport does not by itself lead to great social outcomes and does not produce things like punctuality or reduced delinquency. It's the fact that there are inspirational people within the sporting context giving messages and tools that the youngsters can benefit from. The Greenhouse Charity is one example of where sport is being used as a tool to

improve the behaviour of young people. But it isn't just about getting lots of young people to play sport without any deeper thought about what to say to the children in that context. One has to think very clearly about what kinds of coaches, what kinds of messages, what kinds of interventions are going to make a difference, and Greenhouse does that very well.

Q: Economists often build projections of what can happen in the future, such as our BRICS projections out to 2050, originally made in 2003 and updated recently. What will the Olympics look like in 2050?

MS: Long-term projections clearly have a lot of uncertainties, but one thing I would say is that the Olympics survived for over a thousand years in ancient Greece. I think sport will exist in some form in 2050 and in a hundred years, and that we will continue to be interested in it. In terms of the Olympics, all sorts of different things could happen. Young people today are very interested in video games and who knows what they will be interested in 10 or 15 years' time. The Olympics will need to change consistently to retain the interest of each new generation and I don't know what form that will take. It is possible that the nostalgia alone of having things such as javelin, archery and fencing will be enough to sustain people's interest. But I suspect we will need to change in terms of the composition of the sports to keep people fascinated. The Olympics, like any other institution, will have to change to thrive.

Q: Related to that, how do you see the impact of emerging markets on the Olympic Games evolving in line with their growing footprint in the global economy?

MS: The thing to bear in mind is what happens to the composition of sports. At the moment, many sports are rather difficult for those in lower income groups or countries to get involved with, such as sailing or equestrianism. If they change sports to make them more democratic—by including, for example, kabaddi or amazing sports like sepak takraw—then poorer countries and even those in an early stage of economic development have a much better chance of winning. In fact, the composition of sports hasn't changed much. Most of them are old, aristocratic sports put in by the founders, and many are still there even though they are only practised in tiny leagues in the western world. I would like to see sports become more democratic and inclusive.

Britain has quite high per capita spending on elite sports for a western democracy. Sailing is a perfect example—boats are very costly. For equestrianism, you need a horse. For rowing, you need a boathouse, boats and oars. For track cycling, you don't really have a chance without a wind tunnel, a velodrome. It's different with running, where you just need a pair of shoes. There is a dramatic difference between sports that only a tiny group of countries can afford to invest in and the others. ■

Gold Goes Where Growth Environment Is Best—Using Our GES to Predict Olympic Medals

Economists like to think that the toolkit of their profession helps them explain many things or, as some would claim, everything that is interesting about human behaviour. In the context of the forthcoming Olympic Games in London, therefore, the key question is whether economic variables can help explain and predict success at the Olympics itself.

At one level, this seems like a daft question even to consider. It is hard to imagine that economic variables could even begin to capture the kind of individual skill, mental determination and hunger that drive athletes to perform feats of unimaginable virtuosity that is the stuff of Olympic legends. But at the level of a country, it may be possible to identify the ingredients that unlock success at the Games. And a clue to what those ingredients might be was revealed by Tim Hollingsworth, the Chief Executive of the British Paralympic Association, and one of the external guests we interviewed for this book on the Olympics and Economics. As he explains:

“...when you create a world class environment you are far more likely to create world class athletes.”

What is a ‘world class environment’ and how do we measure it across countries? Luckily, we have an answer in our GS Growth Environment Scores (GES), a proprietary broad measure of growth conditions across countries, which we have aggregated annually since 1996. They are designed to capture important features of the economic, political and institutional environment that affect productivity performance and growth across countries, and we use these scores to guide our own thinking about countries’ long-term growth potential. The GES are highly correlated with per capita income levels, and so we use income levels as a proxy for GES in our historical pre-1996 exercises. But, compared with income levels, the GES are a better and more holistic measure of the kind of ‘world class environment’ that Tim Hollingsworth refers to in the quote above.

And, indeed, this is what we find: gold does go where the growth environment is superior—as can be seen in our predictions for a final medals table for the London 2012 Olympics, based on the results of our empirical exercises.

Higher GDP per Capita Has Historically Meant More Medals

Exactly 100 years ago, at the 1912 Stockholm Olympics, Baron Pierre de Coubertin—the French founder of the International Olympic Committee—won a gold medal for literature for what is perhaps the most famous of all sports poems, the *Ode to Sport*.¹ One of the verses in the poem starts with the lines:

“O Sport, you are Progress! To serve you, a man must improve himself both physically and spiritually.”

In fact, data suggest that the reverse is equally true—progress and improvement in economic growth have historically often equalled progress in sport. Back then, France’s GDP per capita was already the 10th-highest in a sample of countries that made almost 90% of global output, and represented about 80% of US GDP per capita. In addition to its literary merits, Coubertin’s gold medal contributed to an incipient trend whereby richer countries were attaining more Olympic medals. This trend—with a few economically significant countries winning a bulk of the Olympic medals on offer—has continued in recent times. For example, less than 10 countries participating in the 2008 Beijing Olympics won more than half of the almost 1,000 gold, silver and bronze medals that were distributed.

In Table 1 we explore the relationship between medal attainment and economic variables by estimating a panel regression that uses very long-run data (since the first modern Olympics in Athens in 1896). We show the results for three basic models. The first model includes GDP per capita, an indicator or ‘dummy’ variable for whether the country was the Olympic host or not, and a developed market dummy. The second model replaces the developed market dummy with a measure of democratic advancement. And the third model includes a quadratic term for GDP per capita (to capture any non-linearity), with variables that control for both country-specific and period-specific factors.

In general, the results are quite intuitive but nevertheless subtle. In particular, per capita income levels are

Table 1: Long-Run Record Shows Medals Are Correlated with Income, Development and Hosting Games

Dep. variable:	Sum of All Medals per Olympics		
Model:	A	B	C
Constant	-21.1 ***	-37.9 ***	-67.5 ***
Log(GDP per capita)	3.1 **	5.0 ***	15.2 ***
Log(GDP per capita) ²			-0.7 **
Host Dummy	54.6 ***	54.7 ***	37.9 ***
DM Dummy	5.5 **		
Democracy		0.2 *	
Cross-section FE	N	N	Y
Time FE	Y	Y	Y
Observations	805	769	805
Cross Sections	41	40	41
R ²	0.28	0.28	0.78
Effect from increase in GDP per capita by 1 SD:			
<i>(Calibrated impact of 1SD increase represents a change in GDP per capita from a sample-median of around \$6.0k to \$15.5k.)</i>			
	+3.0	+4.7	+2.0

Note: Panel regressions (OLS); sample: 1896-2008; sum of gold, silver and bronze; *, **, *** denote 10%, 5% and 1% significance.

Source: Sports Reference, Barro-Ursúa Macro Data; Polity IV Project, GS Global ECS Research.

1. Yes, there used to be a sport category for Art Competitions, which also included architecture, music, painting and sculpture. For information on current and extinct sports see Trend # 7 in our “Ten Olympic Trends” Section.

Some Sports Are More Sensitive to Income and Host Effects

Not all sports are created equal, and the relationship between Olympic success and the economic variables we have discussed may differ across sports for a number of reasons. It is more expensive to participate in some sports, such as Sailing or Equestrianism, and this may limit participation from low-income countries, but success may also vary on account of different traditions, culture and the demographic characteristics of the population or the geographic features of each country.

Table 2 builds on the previous regression exercise shown in Table 1, using a wider data sample since the 1950s for roughly 150 countries. For a selection of sports, it shows how well a set of variables—GDP per capita and its square, the ratio of income to that of the US, democracy and a dummy for host countries—are able to explain medal attainment (R^2 in the first column). The highest explanatory power is reached in Canoeing, Diving, Fencing, Swimming and Table Tennis. But others are high too, such as Equestrianism, Gymnastics and Wrestling. On the other side of the spectrum are Football, Softball and Triathlon, where Olympic success appears to be less well-explained by those variables.

The last two columns of the table focus on two key effects. The first column shows the impact (in number of medals) from an increase in GDP per capita of one standard deviation above its median. The strongest boost-effect applies to Cycling, Judo, Rowing and Swimming, which would see their average number of medals rise by 0.5-1 per game. Weaker effects apply to Archery, Canoeing, Sailing and Taekwondo, with increases from 0.3-0.5 medals per game, followed by sports that show either a lesser effect or no effect at all. The second effect, seen in the last column of the table, shows the expected medal increase from hosting the games—while maintaining everything fixed. In this case, the largest

Table 2: Income and Host Effects Vary Across Sports

	R^2	Income Effect	Host Effect
All	0.87	6.57	20.85
Archery	0.43	0.34	0.52
Canoeing	0.67	0.43	0.04
Cycling	0.43	0.95	1.44
Diving	0.68	-0.08	0.60
Equestrianism	0.55	0.12	0.66
Fencing	0.71	0.22	0.24
Football	0.14	0.06	0.10
Gymnastics	0.55	0.30	2.63
Handball	0.23	0.12	-0.03
Hockey	0.38	0.21	0.28
Judo	0.57	0.73	0.44
Pentathlon	0.29	-0.05	-0.04
Rowing	0.54	0.56	1.00
Rhythmic Gym.	0.54	0.04	0.15
Sailing	0.53	0.47	1.14
Shooting	0.63	0.26	0.50
Softball	0.22	0.09	0.05
Swimming	0.82	0.53	1.98
Synchr. Sw im.	0.36	0.11	0.09
Table Tennis	0.72	0.21	0.22
Taekwondo	0.22	0.46	0.31
Tennis	0.21	0.32	0.37
Trampoline	0.19	0.09	0.29
Triathlon	0.07	0.16	0.01
Volleyball	0.21	0.09	0.34
Water Polo	0.27	0.07	0.21
Weightlifting	0.54	0.01	0.38
Wrestling	0.61	0.11	1.36

Note: Results from panel regressions (OLS); sample: 1956-2008; dependent variable is sum of gold, silver and bronze medals; period and time FE; italics denote cases of less than 10% significance. Independent variables are log(GDPpc) and its square, ratio of income to US, democracy, and dummy for host. Income effect based on 1SD increase over median.

Source: Sports Reference, Penn World Tables, Polity IV Project, GS Global ECS Research.

impact applies to Cycling, Gymnastics, Rowing, Sailing, Swimming and Wrestling, which would be expected to see roughly 1.5-3.0 more medals per game. Other sports—such as Football, Rhythmic Gymnastics and Water Polo—display smaller ‘hosting’ effects.

positively and strongly associated with medal attainment. But there is more to medal attainment than simply high income levels. As the first regression in column A shows, even after controlling for income levels, there is a positive and significant association from being a developed economy, suggesting that there is something additional in the institutional and structural environment of developed countries that boosts medal attainment above and beyond the pure income effect. The non-linear income term in the last column suggests that the boost to Olympic success from an increase in income is strongest at lower levels of GDP per capita, and that this effect fades at high-income levels, again suggesting that there is something more going on here than simply high incomes.

Overall, however, the regressions do a fairly good job of explaining the cross-section and time-series variation in Olympic success. The last row in the table shows that

increasing GDP per capita by one standard deviation would be associated with 2-5 more medals per game (for many countries, this would be quite an improvement—in terms of medals and GDP per capita).

Note also that a very significant impact comes from hosting the Olympics. In some cases, hosting the Olympics has meant increasing the number of medals by more than 50% with respect to what countries would have otherwise attained.²

Improvements in Our Growth Environment Scores (GES) Boosts Medals

Beyond income, what is it about countries with higher GDP per capita that makes them more prone to Olympic success? At some level, the answer must involve factors related to the local sports culture, facilities and infrastructure, as well as training and focus, which

2. This 50% uplift is similar to what Kevin Daly documents on page 5, i.e., that host nations have won 54% more medals on average in the past 10 Olympic games.

facilitate the improvement of sports performance. But at a more fundamental level there are underlying conditions that allow for those factors to occur in the first place.

Our GES are actually a good metric of those underlying conditions, and we can use them to assess the contribution of improving growth conditions on Olympic medal attainment. In a nutshell, our GES are designed to capture important features of the economic, political and institutional environment that affect productivity performance and growth across countries. Our headline GES (ranging on a scale from 1-10) comprises six ‘buckets’ reflecting different aspects of the institutional and economic reality of countries: political conditions, macroeconomic stability, macroeconomic conditions, human capital, technology and the microeconomic environment.³ Together, they provide a summary statistic for the broad institutional and economic environment for each country, something that goes beyond just income levels, although they are still correlated with income levels.

Chart 1 shows the estimated impact (again in number of medals) from an increase of 1 point in our GES—for the headline and for each of the six buckets. The underlying econometric model includes a host dummy, and also the level of population (the pool of possible athletes) as controls. Fit levels are satisfactory and coefficients on our GES are significant in all but one of the cases. The equivalence is that—controlling for everything else—a 1 point increase in our GES is associated with 1 additional medal per game. In some cases, such as political stability and the micro environment, the boost-effect is closer to 3, while for human capital and technology it is roughly 2. Our GES thus fine-tune the conclusions we had obtained from the correlation of Olympic success and income.

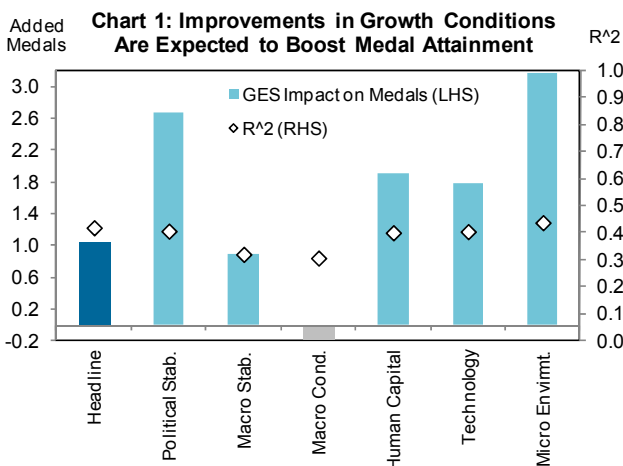
Let’s Predict Olympic Success in London 2012

One of the ‘fun’ parts of building econometric models is that if they are reasonably good at explaining the past, they can then be used to forecast the future. In this case, we want to predict the eventual country medals tallies at London 2012.

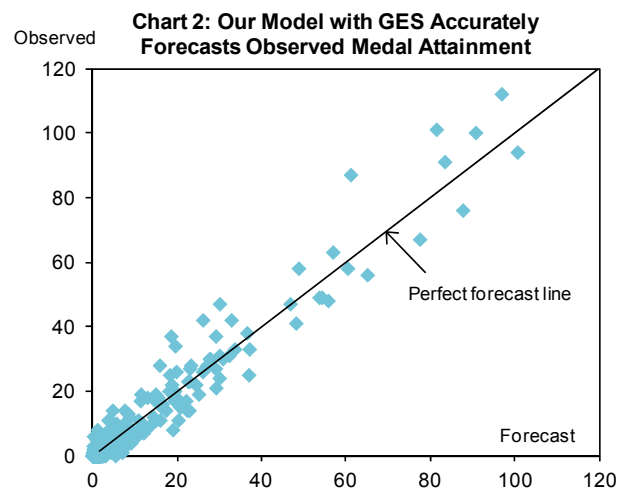
The baseline model that we use to do this is a panel regression featuring as explanatory variables our headline GES, a host dummy, population and lagged medal attainment. As a starting point, note that the model does fairly well at explaining medal outcomes from previous Olympics, or that it works well in what economists call ‘in sample’. Chart 2 shows the ‘in sample’ results, where we compare what the model would have predicted in the past four Olympic Games (which is as far back as our GES extend) versus what actually happened in terms of medal attainment. The 45° degree line represents a perfect forecast, and the fact that our scatter shows a high concentration of points around that line makes us quite confident that our model can satisfactorily predict Olympic success.

We are now finally ready to unveil our predictions for London 2012. Table 3 shows our forecasts for medals in London 2012—gold on the left-hand side, and total number of medals on the right-hand side. In each case, we also show each country’s medal attainment in Beijing 2008, and the difference between the 2012 forecasts and the latter (a positive number means we expect the country to win more medals in 2012 than were attained in 2008).

Our forecasts reflect two very clear patterns revealed in our analysis. First, countries with superior growth environments and higher incomes are expected to win more medals, and, second, there is also a marked host effect that will likely bump up the number of medals



Note: Effect from 1pt increase in GES by bucket. Results from panel regressions (OLS); sample 1996-2008; dependent variable: sum of gold, silver and bronze medals; no FE. Model includes host dummy and log(pop) as controls. All signif. at 1% except Macro Cond.
Source: Sports Reference, Penn World Tables, GS Global ECS Research.



Note: Results from model with GES-headline as indep. var.; OLS panels; sample: 1996-2008; includes host, population, and lagged medals as controls; period FE.
Source: Sports Reference, Penn World Tables, GS Global ECS Research.

3. The variables that go into each of these buckets are as follows: Political Conditions (corruption, rule of law, political stability), Macroeconomic Stability (deficit, debt, inflation), Macroeconomic Conditions (investment, openness), Human Capital (life expectancy, schooling), Technology (the penetration of mobile telephones, personal computers, internet, and secure servers), and Microeconomic Environment (costs to start a business, urbanisation, patents and R&D). The most recent revamp of our scores and the latest results appear in our *Global Economics Paper* 211, “Our 2011 GES: A Sharper Signal for Growth”, March 2012.

Table 3: Our Forecasts for 2012 Gold and Total Medals

2012 GOLD Forecasts				2008	Change in	2012 TOTAL Forecasts				2008	Change in	GES	Population
Ranking		Medals	Medals	Medals	Medals	Medals	Medals	Medals	Medals	2011	2012e (mills.)		
1	United States	37	36	1	1	United States	108	110	-2	7.0	315		
2	China	33	51	-18	2	China	98	100	-2	5.4	1,355		
3	Great Britain	30	19	11	3	Russia	74	73	1	4.9	142		
4	Russia	25	23	2	4	Great Britain	65	47	18	6.8	63		
5	Australia	15	14	1	5	Australia	46	46	0	7.6	23		
6	France	14	7	7	6	France	41	41	0	6.5	63		
7	Germany	14	16	-2	7	Germany	41	41	0	7.0	82		
8	South Korea	10	13	-3	8	South Korea	31	31	0	7.7	49		
9	Italy	10	8	2	9	Italy	30	27	3	5.8	61		
10	Ukraine	9	7	2	10	Ukraine	27	27	0	4.7	45		
11	Japan	8	9	-1	11	Japan	26	25	1	6.7	127		
12	Belarus	6	4	2	12	Belarus	19	19	0	5.6	9		
13	Spain	6	5	1	13	Canada	19	18	1	7.1	35		
14	Canada	6	3	3	14	Spain	19	18	1	6.2	46		
15	Brazil	6	3	3	15	Brazil	18	15	3	5.4	197		
16	Netherlands	6	7	-1	16	Netherlands	17	16	1	7.4	17		
17	Kenya	5	6	-1	17	Kenya	14	14	0	3.6	42		
18	Kazakhstan	4	2	2	18	Kazakhstan	13	13	0	4.8	17		
19	Poland	4	3	1	19	Poland	12	10	2	5.7	38		
20	Hungary	4	3	1	20	Hungary	11	10	1	6.1	10		
21	New Zealand	3	3	0	21	New Zealand	11	9	2	7.4	4		
22	Jamaica	3	6	-3	22	Jamaica	10	11	-1	4.7	3		
23	Turkey	3	1	2	23	Norway	10	9	1	8.1	5		
24	Norway	3	3	0	24	Turkey	9	8	1	4.9	75		
25	Romania	3	4	-1	25	Romania	9	8	1	5.3	21		
26	Ethiopia	3	4	-1	26	Switzerland	9	7	2	7.5	8		
27	Switzerland	3	2	1	27	Ethiopia	8	7	1	3.4	89		
28	Azerbaijan	2	1	1	28	Azerbaijan	7	7	0	5.2	9		
29	Argentina	2	2	0	29	Argentina	7	6	1	5.4	41		
30	Uzbekistan	2	1	1	30	Uzbekistan	7	6	1	4.7	29		
31	Indonesia	2	1	1	31	Czech Republic	7	6	1	6.2	11		
32	Czech Republic	2	3	-1	32	Indonesia	7	5	2	4.5	244		
33	Georgia	2	3	-1	33	Slovakia	6	6	0	6.0	5		
34	Slovakia	2	3	-1	34	Georgia	6	6	0	4.8	4		
35	Armenia	2	0	2	35	Armenia	6	6	0	4.9	3		
36	Nigeria	2	0	2	36	Sweden	6	5	1	7.6	9		
37	India	2	1	1	37	Nigeria	5	4	1	3.3	165		
38	Thailand	2	2	0	38	Thailand	5	4	1	5.3	64		
39	Sweden	2	0	2	39	India	5	3	2	3.9	1,223		
40	Lithuania	2	0	2	40	Lithuania	5	5	0	6.0	3		
41	Slovenia	1	1	0	41	Slovenia	5	5	0	6.6	2		
42	Mexico	1	2	-1	42	Austria	5	3	2	6.9	8		
43	Austria	1	0	1	43	Finland	5	4	1	7.2	5		
44	Finland	1	1	0	44	Mexico	5	3	2	5.0	115		
45	Mongolia	1	2	-1	45	Mongolia	4	4	0	5.7	3		
46	Serbia	1	0	1	46	Ireland	4	3	1	6.1	5		
47	Iran	1	1	0	47	Serbia	4	3	1	5.2	7		
48	Colombia	1	0	1	48	Iran	3	2	1	4.9	77		
49	Algeria	1	0	1	49	Colombia	3	2	1	4.9	47		
50	Ireland	1	0	1	50	Algeria	3	2	1	5.1	36		

Note: Results from model described in the note to Chart 2.

Source: Sports Reference, Penn World Tables, IMF, GS Global ECS Research.

attained by Great Britain (11 more gold medals, and 18 more overall). The US is expected to lead the group, with something close to 36 gold medals and 110 overall. Our estimates also predict that the top 10 ranks will include five G7 countries (the US, Great Britain, France, Germany and Italy), two BRICs (China and Russia), one N11 country (South Korea), and one additional developed and emerging market (Australia and Ukraine, respectively). Based on our analysis, these 10 countries will likely capture more than half of all medals attained during the Games. The rest of the countries in the list are a diverse mix from various parts of the world, broadly led by Europeans and including Asian, Latin American and African nations.

So, ultimately, it appears that gold does go where growth and the overall growth environment are best. For the next few weeks, our forecasts will be competing against other predictions for validation in the real world. Like many people around the world—economists and non-economists alike—we will be eagerly following the medal outcomes of the long-awaited London 2012 Olympics. As Coubertin himself said, “*the most important thing in the Olympic Games is not winning but taking part.*” We believe the same applies to our forecasts, and although we would be delighted to see them hit their targets perfectly, we will have succeeded as long as they have provided some food for thought. The die is cast—enjoy the Games!

José Ursúa and Kamakshya Trivedi

Interview with Tim Hollingsworth



Tim Hollingsworth has been Chief Executive of the British Paralympic Association since July 2011. Tim was previously COO at UK Sport, the nation's high performance sport agency, where he was responsible for the strategic direction and delivery of Major Events and International Relations Programmes.

Q: The Paralympics have come a long way since the first quadrennial Games held in 1960. What are the milestones of the Games since then?

TH: I would agree about the speed of travel since the first formal Games and, of course, the birthplace of the movement 12 years before that in Stoke Mandeville in 1948. There have been several milestones but I would suggest two that demonstrate the journey of the Paralympics. First, 16 years on from Rome in 1960, in Toronto, where for the first time the sport was extended beyond spinal injury and paraplegic athletes. You had a very significant broadening of the impairment groups, including events for visually impaired athletes and events for amputees. And from that you get a tremendous signal as to the purpose of the Games, a shift away from them being about rehabilitation and the medical aspect of the impairment, and much more towards the concept that it's about the sporting competition.

The key milestone, though, the one that did more to transform the Games than anything else in terms of its current potential, were the Seoul Games in 1988. It was the first Games where the city and the venues were the same for both the Olympics and the Paralympic Games. All of a sudden you had a situation where this four-year event became really linked into the Olympic cycle, and linked into the view that this is the pinnacle for athletes to aim towards over a period of four years. Not only were the Games held in venues created for the Olympics, they were also very well supported, and so there was a sort of step-change in terms of expectations of what the Games could be. And since Sydney, Beijing and particularly London, we are now heading towards an explosion in the number of countries and athletes participating.

Q: How do you feel about the Paralympics taking place in London given the UK's special connection because of the first competition held a few years after World War II?

TH: I think it's a very significant element of what London will be about and it is fair to say that we are a nation with a very proud history in Paralympic sport. We have taken part in all the Games since 1948, we have a proud track record of success and, most recently, in the past three Games we've finished in the top two in the medals table. But there is also the additional point about the birthplace of the movement: in this country we have the equivalent of Mount Olympus and Greek history in the vision and the drive of Dr. Ludwig Guttmann and in the way that we think about sports as an effective means by which disabled people can be engaged.

The excitement is palpable around London, and I think this is for three reasons. First, the venues, the staging, the city are going to be fantastic. It's going to be a hugely well-organised and well-presented Games. Second, there is a genuine excitement about the unprecedented level of interest at this stage among the British population. I don't know the exact numbers but something like only a thousand tickets for the Paralympics were ever sold formally as recently as 2004. The advance sales of tickets for Beijing were very, very small, although they ensured the venues were full come competition time. We've already sold over 1.2 million tickets and we have venues that are sold out. That's totally off the scale relative to expectations. The third reason is unequivocally that it is the birthplace of the movement. We should feel very proud of that link.

Q: Great Britain ranked second in the medals table in the past three Paralympics. What were the main ingredients of those successes and what stories do you think we will be talking about in the 2012 Games?

TH: The main ingredient of that success in the past has been a genuine belief in the importance of the sporting element in the Paralympics. We should be very proud of the fact that, relative to a lot of our competitors, we have invested in it publicly through an organisation called UK Sport, which distributes Olympic and Paralympic funding through the National Lottery and government funds. Although it has not necessarily paid for the Paralympic funding in every area, it has been in place since before Sydney and therefore we've been able to offer our athletes the opportunity to have the necessary support to be world class athletes in terms of coaching, sports and medical services, in terms of training and competition, travel costs, equipment, rest and recuperation, and the ability to train full time. A lot of athletes have benefited from that over the past 14 years or so, and when you create a world class environment you are far more likely to create world class athletes.

One of the other success stories has undoubtedly been the role models that were around at the time to inspire the next generation: the likes of Tanni Grey-Thompson and Chris Holmes. What I know will happen in London is that we will have a new generation of role models and inspiring athletes who will hopefully make not only the next generation of world class athletes but also inspire people to take up sports and see sports as a means by which they can improve their lives and become healthier. And that applies to disabled people just as much as it does to non-disabled people.

All that hopefully will combine to ensure that we maintain our performance in London and we create those role models. Even if we only match the medal tally from Beijing, which was 102 over the course of the Games, that is an average of 10 medals a day for British athletes. That in itself would be fantastic.

Q: For economists, maximising opportunities tends to mean making the most of a given set of resources or endowments. Do Paralympic athletes embody that kind of principle?

TH: I am always cautious of starting in that place because Paralympic athletes are doing exactly the same as Olympic and other non-disabled athletes. They are seeking to maximise all the resources, strengths and endowments given to them. It is not about the disability but about whether they have the will, the spirit, the physical prowess and technical skill to be the best in their sports. And so I would emphasise that.

“Focusing on what an athlete can do rather than what an athlete can’t do is a fundamental challenge to people’s understanding of disability and how they view the world around them.”

What you are suggesting is true insofar as the ability of Paralympic athletes, the disabled athletes, to maximise whatever is available, based on the impairment that they have, is palpable in Paralympic sports. That’s the true power that the Paralympics will potentially have. So, yes they do embody maximising a given set of resources and endowments. But they don’t do that exclusively, Olympic athletes do that too. They just have a different set of resources and endowments.

Going back to my starting point, and this is a phrase I have heard Tanni Grey-Thompson use on a public platform many times: *“disabled people should reserve the right to be rubbish at sport”*. It isn’t just because people have overcome an impairment that brings them to the Paralympic Games. They are actually at the Paralympic Games because they are world class at their sport. But it should also be the case that other disabled people can play that sport at a much lower level.

Q: Do the achievements of Paralympic athletes reinforce the value of a diverse workforce for corporates more generally?

TH: I believe the right place to start when talking about the Paralympic Games is the sport because this is a festival of world class sport: in terms of numbers, it’s already the second-largest sporting event in the world, with 4,000+ athletes from 160 nations coming to London. But if you look for what Paralympic sports can bring in addition, it is the ability to make people connect directly with disability in a way that challenges perceptions very quickly—because you are forced into thinking about what is possible rather than assuming that a disability is something that prevents people from doing things.

I think the brand of the Paralympics in terms of the wider context of disability in society and the workplace is incredibly strong. If you wanted to have something that could demonstrate disability positively, the Paralympic Games is as good as it gets because it’s sport and very recognisable, very accessible and at a very high level.

Focusing on what an athlete can do rather than what an athlete can’t do is a fundamental challenge to people’s understanding of disability and how they view the world around them. Normally, the barriers are there because of non-disabled people’s attitudes rather than because of the attitudes of disabled people themselves. And if non-disabled people are in positions of leadership, then, yes, there is a chance to change attitudes towards disability within business and stress the value of diversity.

Q: Have emerging economies changed the landscape of the Paralympic Games over the past few decades?

TH: I think there is still a long way to go but there is evidence that this is changing. A big stepping stone is the fact that the next Summer Games are in Brazil in 2016. Brazil is already a top 10 nation in medal terms in the Paralympic Games and will undoubtedly improve on that in London. And it will be a real threat come 2016. The rest of the top of the medal table is dominated by the nations you might expect to see there, but there are clear examples of where that is changing.

Q: GS economists have made economic projections for the BRIC countries out to 2050. How will the Paralympics evolve from now until then?

TH: London is going to be an incredibly important milestone on the journey that you just described for the next 40 years because there is a much greater awareness and understanding of what the Paralympic Games can be globally. And I hope this fast progression will continue as far as 2050. Maybe not the number of sports because you are reaching close to saturation point with all the areas around classification and the number of competitions that are required. I don’t think there is going to be much more expansion of the actual competition. For example, in athletics there are something like 12 separate 100 metres finals in order to accommodate all the different impairment levels.

As you progress and as people pay more interest, you reach a tipping point where that becomes unsustainable. You almost need to retrench in terms of the amount and the level of competition. The interesting balance in thinking about the movement going forward is, on the one hand, a significant upward curve in terms of awareness, excitement, profile and brand, and the way in which people appreciate the Games. On the other hand, the Games themselves have to work out how they match up to that greater expectation in terms of the quality of the competition across the board, the number of events and the robustness of classification. All that will become more challenging as the profile of the Games grows. ■

Summer Olympics and Local House Prices: The Cases of Los Angeles and Atlanta

Hosting the Olympics can affect many aspects of the host city’s economy, from tourism to infrastructure and from local wages to tax revenues. One of these aspects is house prices. There are two advantages to using house prices as a barometer to measure the impact of the Olympics on the host city. First, housing markets are intrinsically local and, as a result, the economic impact on local house prices should be more noticeable than that on national measures, such as stock prices or country exports. Second, house prices potentially capture both the benefits and any local costs associated with hosting the Games.

In theory, hosting the Olympic Games can affect local house prices through three channels:

- The hosting city often builds sports facilities and improves city amenities after being chosen by the International Olympic Committee (IOC). To the extent that such spending on infrastructure is subsidised by the federal and/or state government and the benefits of the public investment outweigh the costs to the host city, local house prices may increase in response.
- The Olympics may help raise the host city’s profile globally and provide a boost to its tourism industries and local economy. Such benefits may be capitalised in local house prices as well.
- The Games may even generate intangible benefits for the local population, such as pride, confidence and optimism, which in turn can boost the local economy and house prices.

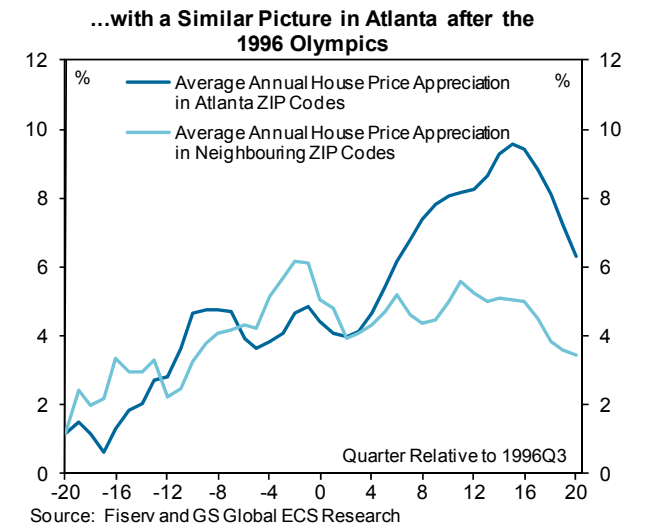
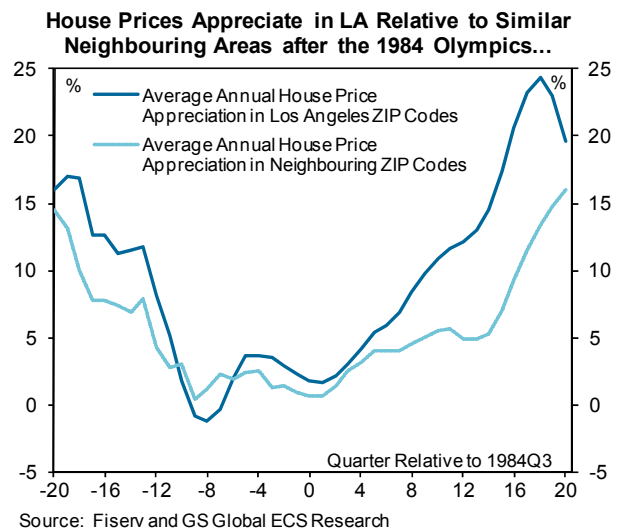
Ultimately, the magnitude of the Olympic effect on house prices is an empirical question. Previous literature on this topic has generally found little evidence that house prices

increase after hosting Olympic Games. However, it is unclear whether this is because the lack of granular house price data prevents researchers from constructing suitable comparison groups or because the Olympics truly have no effect on house prices. For example, Somerville and Wetzel (2010), who examine the impact of Olympic Games on metro area house price movements, use comparison areas that are very far apart—Los Angeles vs. Seattle and Atlanta vs. Dallas.¹

In the US, house price indexes are available at the ZIP code level (Zone Improvement Plan, a geographical coding system used by the US Postal Service since 1960s). Because ZIP codes are much smaller than metropolitan areas, we use them to construct more suitable comparison groups for Olympic host cities such as Los Angeles and Atlanta. Specifically, we use the ZIP code level house price indexes provided by Fiserv. These indexes are based on the same repeat-sales methodology as the well-known S&P/Case-Shiller index. The data are available with a quarterly frequency for about 5,300 ZIP codes from 1975Q1 through 2012Q1.

To construct comparison groups for Los Angeles and Atlanta, we first draw a circle with a 250-mile radius around each city. We then choose the ZIP codes that fall into this circle but are located outside of Los Angeles and Atlanta. Lastly, we discard ZIP codes that are outside of any metropolitan areas to ensure our results are not driven by differences between urban and rural areas. Our sample contains 319 ZIP codes in Los Angeles and 139 ZIP codes in Atlanta. We find 322 and 115 ZIP codes in the corresponding comparison groups, respectively.

The charts below show the average year-on-year house price appreciation rates for the host cities and their



1. See Tsur Somerville and Jake Wetzel, 2010. “Hunting for the Olympics Bounce: Any Evidence in Real Estate.” Center for Urban Economics and Real Estate Discussion Paper 2010-01, University of British Columbia Sauder School of Business.

Regression Results Show Significant House Price Appreciation in LA and Atlanta After the Games

Dep Var: YoY House Price Appreciation (%)	Los Angeles Unweighted	Atlanta Unweighted	Los Angeles Pop Weighted	Atlanta Pop Weighted
Hosting City after the Games	1.5	1.1	1.2	0.9
	7.3	2.9	5.3	2.2
ZIP Code Fixed Effects	Yes	Yes	Yes	Yes
Quarterly Time Fixed Effects	Yes	Yes	Yes	Yes
R ²	0.57	0.70	0.60	0.73
Number of Observations	11,529	3,234	10,248	2,247
Sample Period	1982Q1-1987Q1	1994Q1-1999Q1	1982Q1-1987Q1	1994Q1-1999Q1

Note: t-statistics in italics.

Source: Fiserv and GS Global ECS Research

comparison groups from 20 quarters before the Games to 20 quarters after. Although house price appreciation rates in the host cities and their comparison groups look similar before the Games, house prices increased after the Games in the host cities relative to the comparison groups. The effect is small during the first year after the Games, but it increases in the second and third year. The two charts on the previous page provide evidence to suggest that hosting the Olympics can affect local house prices.

To evaluate the Olympic effect on house prices more systematically, we place more restrictions on our sample and estimate a difference-in-differences regression model. For example, we reduce the radius of the geographical circle around Los Angeles and Atlanta from 250 miles to 150 miles. This change reduces the number of ZIP codes in the comparison group to 230 for Los Angeles and 15 for Atlanta. We also narrow the event window from 20 quarters to 10 quarters before and after the Games. Choosing a smaller geographical area and narrower event window helps support the identification assumption that the observed differences between the host cities and their comparison groups are driven by the Summer Olympics but not anything else. We include both ZIP code fixed effects and quarterly time fixed effects in the regression to allow for regional variation across ZIP codes and common but time-varying economic shocks.

The table above displays our estimates. On average, hosting the Olympics increases the annual appreciation rate of local house prices by about 1 percentage point (ppt). Assuming the effect lasts for 10 quarters after the Games, the cumulative effect is 2.5ppt. Because some

ZIP codes are larger than others and, therefore, their house price indexes may be measured more accurately, we also estimated models with observations weighted by the 1990 population in these ZIP codes. The results are little changed. In results not shown, we also examined the house price movements around the time when the hosting city of the next Summer Olympic Games is announced. We did not find that house prices increase more for the host city than for its comparison group after the announcement, suggesting that the Olympic effect on house prices is driven by the actual Games rather than the anticipation of the Games.

The above analysis provides some surprisingly supportive evidence that the Olympic Games can have a positive impact on local house prices. That said, the analysis is based on just two Summer Olympics and the findings described here may not apply to all host cities or to all Olympic events. Country- and city-specific factors, such as whether the city has held the Olympic Games previously, how elastic the local housing supply is and how the city finances the investment associated with the Olympic Games could affect the link between the Games and local housing markets.

Housing markets in London face a unique set of challenges heading into the Olympics: a backdrop of slow economic growth, a deleveraging banking sector, higher bank funding costs and a significant tightening in mortgage credit availability relative to before the financial crisis. Nevertheless, our findings send a hopeful message to the London real estate market after this summer.

Hui Shan

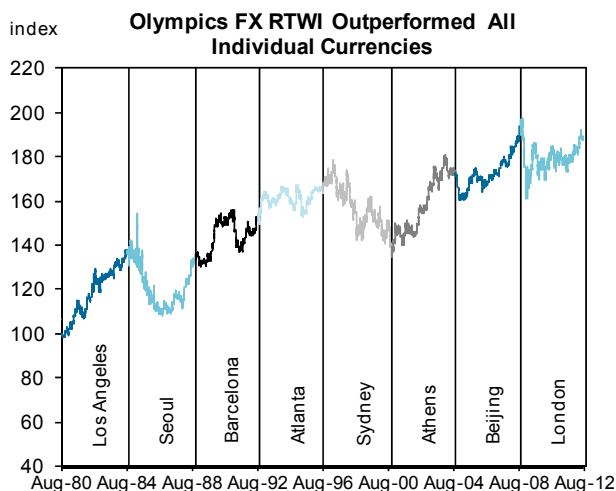
The Olympics as a Winning FX Strategy

Is it possible that the Olympics affect foreign exchange markets? At first glance, this may seem unlikely as the Olympics are a relatively small event when compared to the size of the Global FX market, which turns over several trillion Dollars every single day. However, from an economic point of view, the question does make some sense. In a standard open economy model, government spending such as constructing the Olympic sites and improving the infrastructure typically leads to real appreciation. Also, a country hosting the Olympics is likely to see an influx of visitors during the actual Games. This would be recorded as a services export in the balance of payments and, all else equal, it would increase the demand for local currency.

To investigate whether the Games do affect FX markets, we constructed a real effective exchange rate for the Olympics, by combining the Goldman Sachs Real Trade Weighted FX Indices (GS RTWI) of the host countries starting after the Moscow Olympics in 1980. For example, the GS RTWI for the Chinese Yuan is used between August 29, 2004 (the closing date of the Athens Olympics) and August 24, 2008 (the closing ceremony of the Beijing Olympics). For host cities in the Euro area, we use the Euro RTWI.

The Olympic RTWI has appreciated by around 90% since the end of the Moscow Olympics in 1980, which is vastly more than any other individual currency (apart from a few hyperinflation cases with highly unstable exchange rates). The table shows that the currency with the second-strongest real appreciation was the Japanese Yen: it has appreciated by around 54% since 1980, and remains substantially below the appreciation of our synthetic Olympic index. This suggests that individual currencies do tend to appreciate more than usual in the run-up to hosting the Olympics. By systematically picking the next hosting currency, the Olympic FX Index tends to pick ‘winning’ currencies more often than ‘losers’.

However, there are a few important caveats. First, the four-year periods preceding the Seoul 1988, Sydney 2000 and London 2012 Olympics saw the host currency depreciate. In other words, the Olympic FX Index is not guaranteed an FX Gold Medal. Second, real effective exchange rates can appreciate because of high inflation rather than nominal appreciation. Carry may be higher as well, meaning that investors may still be able to benefit, but Olympic currencies are not guaranteed to appreciate in nominal terms.



Source: GS Global ECS Research.

To check the performance of the Olympic currency, we calculated the return to date on an initial investment of \$100 in the Olympic currency at the end of the Moscow Games, including carry. Following the host country rules laid out above, this would mean that at the end of the Beijing Olympics the investment would have been shifted out of Renminbi and into Sterling. Starting with \$100 in 1980, this Olympic investment would currently be held in Sterling and worth about \$1,020. In comparison, investing \$100 in rolling 1-year USD investments would have returned only about \$700.

In summary, the empirical results suggest that a synthetic Olympic currency would outperform over time. Even though Olympic investment spending is a relatively small share of GDP (for example, around 0.8% for the UK 2012 Games), one potential explanation is that there is a positive selection bias in picking the host city. For example, countries with strong growth in the years before a decision would be able to invest more in their Olympics bid, increasing the chances of winning the Games. This is even more so if growth is supported by a structural story that lasts longer than just one business cycle. The Beijing Olympics are an obvious recent example.

Overall, we continue to doubt that the Olympics directly affect the foreign exchange market. However, the Olympics may be a rather simple tool to pick long-term ‘winners’ in the FX market with good long-term appreciation potential.

Thomas Stolper and Constantin Burgi

The Olympics RTWI Outperformed Individual TWIs

RTWI	Olympics	USD	EUR	JPY	GBP	CAD	CHF	AUD	SEK	NOK
% Return*	89.27	4.46	-4.18	53.72	-21.52	14.26	26.86	19.78	-25.90	7.01
RTWI	NZD	CNY	HKD	INR	IDR	KRW	MYR	PHP	SGD	THB
% Return*	30.14	-61.06	9.16	-45.91	-55.09	-19.37	-36.16	-3.01	26.71	-22.33
RTWI	TWD	CLP	COP	VEF	ILS	ZAR				
% Return*	-26.03	-29.17	-7.60	17.42	13.39	-44.79				

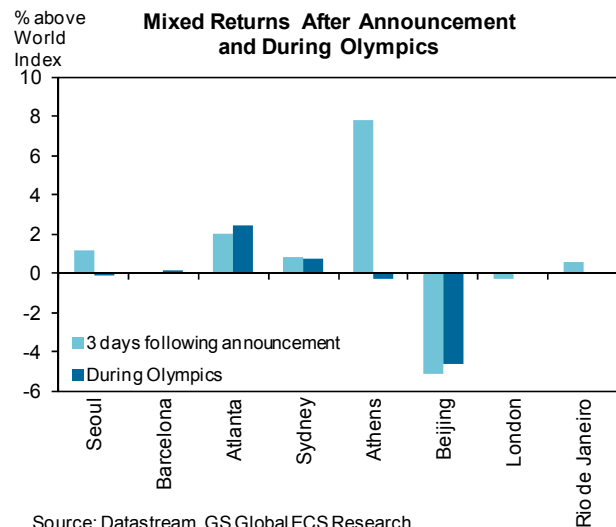
*Since 1980. Source: GS Global ECS Research.

Impact of Olympics on Stock Markets

Hosting the Olympics results in a number of economic effects that could have an impact on stock markets. Aside from the benefit of raising the international profile of the host country as both a tourism and investment destination, the announcement of a winning Olympic bid means major investment in infrastructure, including stadiums, accommodation and transport to prepare for the Games. For example, as part of the 2012 Games, the London Olympic Delivery Authority has awarded \$9.4bn in contracts to business, and the government has invested an additional \$10.2bn in transport and infrastructure projects, representing around 0.8% of UK GDP. This investment offers potential benefits for local business, in particular for sectors such as construction and engineering.

How might this be reflected in markets? If markets were forward-looking, we would expect the benefits of the Olympics to be priced into local equity markets at the time of the announcement, since the approximate magnitude of required investment would be known in advance. Various studies have examined the impact of the Olympic host announcement on stock prices, with mixed conclusions. In particular, Dick and Wang (2008) find evidence that, on average, host stock markets are positively affected by Olympic host announcements. However, Liu (2011) finds little clear evidence that the Chinese stock market was affected (positively or negatively) by either the 2000 host announcement, when Beijing was considered a favourite to win before ultimately losing the bid to Sydney, and the 2008 announcement, when Beijing was awarded the Games.

To visualise the impact of the Olympic host announcement, we chart returns following the last eight Olympics host city announcements, including London and Rio De Janeiro (chart above). We calculate stock index returns above the benchmark MSCI World index for the winning country over a three-day window following the announcement.



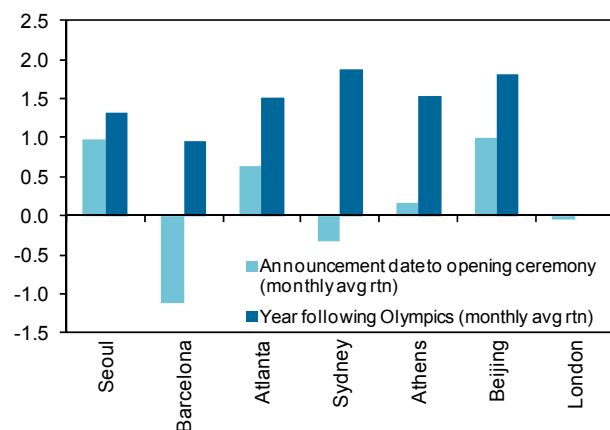
Source: Datastream, GS Global ECS Research.

While there is variation among the host nation stock markets, all but China and the UK have positive returns in the three days following the announcement. The Greek stock market stands out as the top performer: it outperformed the benchmark by almost 8% after the 1997 announcement for the 2004 Games. For London, the day following the announcement in 2005 was the July 7 bombing, causing the FTSE to fall 1.3%, before rebounding. The chart above also shows returns above benchmark during the two weeks of the Games, albeit with no obvious pattern. China's winning bid announcement coincided with turbulent markets in the midst of the global downturn in July 2001, while the Olympics in August 2008 took place on the brink of the financial crisis.

To see the longer-term impact of the Olympics, we measure the performance of the host stock market against a world benchmark over the six to seven years between announcement and the opening ceremony of the Games, as well as the returns in the year following the Olympics (chart below left). The equity markets in China, Korea, the US and Greece outperformed leading up to the Olympics, whereas those in Spain, Australia, and the UK underperformed. The latter three stock markets each suffered from headwinds in the global cycle leading up to the 1992, 2000 and 2012 Olympics.

Interestingly, all recent Olympic hosts have outperformed the MSCI World index in the 12 months following the Olympics. This is true of recent hosts regardless of the size of the economy or state of development, suggesting either the local market is boosted by the international profile of the Games, or is perhaps relieved to have the Games behind them. Given the below-average performance in the UK since the Olympic announcement, UK investors may hope for a continuation of this trend, looking forward to a positive year in equities following the London 2012 Games.

China and Korea Outperformed Before Olympics and Recent Hosts Outperformed Afterwards



Source: Datastream, GS Global ECS Research.

Francesco Garzarelli and George Cole

Interview with Michael Evans



Michael Evans is a vice chairman of The Goldman Sachs Group, Inc. and global head of Growth Markets for the firm. He is a member of the Management Committee and the Client and Business Standards Committee. He was also a member of the Canadian men's eights rowing team that won the gold medal at the 1984 Summer Olympics in Los Angeles.

Q: You were part of the Canadian Olympic rowing team. What part of that training has been most helpful to your career since then?

ME: A 2,000-metre rowing race is very often won or lost by less than a second. Everything matters, including what's going through your head when the oar is out of the water.

Training six to seven hours a day in preparation for the Olympics requires enormous discipline and considerable sacrifice. Moreover, rowing and winning with seven other oarsmen and a coxswain requires perfect synchronisation of technical, physical and mental elements to optimise energy transfer, speed and efficiency. In short, teamwork. Thousands of hours spent training instilled in me the critical importance of both discipline and teamwork.

The training is gruelling but the races, while exhilarating, are brutal. Rowing 2,000 metres in five to six minutes is an all-out sprint from the first stroke to the last. After years of intense training, the difference in physical capabilities among the best crews is relatively small. As a result, races are rarely won by teams demonstrating superior athletic ability. More often, mental toughness and an unwavering will to win are what separate boats at the finish line.

The development of discipline, teamwork, mental toughness and the will to win—these aspects of training have been most helpful for my career.

Q: Do you think there are any parallels between the coordination required in successful rowing teams and the ways in which economies and businesses prosper?

ME: The parallels are considerable. When a country's politicians and economic leaders maintain a coordinated orientation toward policies that foster long-term growth, the results can be dramatic. South Korea is a prime example. Policymakers there have consistently pursued a pro-growth philosophy in policies on industry, openness to trade, infrastructure, technology, education and financial markets. The results include substantial human capital, a large manufacturing base and wealth creation: since 1980, per capita GDP has risen more than fivefold. Moreover, Korea's openness has put the economy in a position to benefit from growth elsewhere in Asia. This approach doesn't preclude political disagreements—certainly South Korea has its share. But a pro-growth psychology tends to transcend political squabbles.

I'd also highlight another important aspect of coordination: confidence. Any great rowing crew has a strong, shared confidence in its ability to win. You don't often see this spirit in any pre-race histrionics—the high-fives and chest-thumping seen in other sports. Instead, successful teams exhibit unspoken self-belief that sustains the crew throughout the race.

Confidence is equally important for a successful economy. Particularly in the world's developed economies, I think we're seeing some erosion in confidence driven by uncertainty and a lack of trust in prevailing systems. The underlying issues are significant: prospects for growth despite high debt; the burden of entitlements in an environment of strained funding; the commitment to painful structural reforms; increased economic integration in some regions and a pullback in others. Regaining confidence on these and other important issues isn't sufficient for economic prosperity, but I do think it will be a necessary feature of any broad-based global recovery.

Q: The Olympics have taken place in difficult times before. Do you think they can contribute to making things better? If so, how?

ME: The Olympics is one of the few truly global events that captures the attention of people on every continent. In times of conflict, the Olympics can be a source of unity and an example of shared humanity. The Games recognise national identities but transcend them as well. Viewers see something universal in the effort and sacrifice of athletes from around the world. That's an extremely valuable contribution.

With everything going on in the world right now, a great London Olympics could potentially have an outsized impact on global sentiment.

Q: One of our business principles stresses creativity and imagination in everything we do. How do you think these two qualities can improve the performance of Olympic athletes?

ME: Certainly in some events—such as gymnastics, diving or football—creativity is integral to reaching the medal stand. But it's also central to success in events that appear to reward pure endurance, strength and speed. Athletes must visualise each part of their event. They must see themselves transcend their personal limits ahead of time. Imagination, creativity and audacity fuel great performances.

Q: In your role as head of Growth Markets at GS, you have witnessed firsthand the remarkable changes taking place in the world today. How do you think emerging markets have changed, and will continue to change, the Olympic landscape?

ME: At the core of our Growth Markets strategy is a point that many of us, including Jim O'Neill, have been making for some time: many economies in the so-called emerging world actually emerged long ago and are now pillars of global growth.

For China, this holds true on both the global economic stage and the Olympic medal stand. China's economy is now the second-largest in the world. We think it will surpass the United States by the middle of the next decade. The Beijing Summer Games in 2008 provided a tangible display of China's remarkable progress. China's economic development has also enabled investment in Olympic training programmes that have consistently and increasingly produced gold medal winners.

"In times of conflict, the Olympics can be a source of unity and an example of shared humanity. The Games recognise national identities but transcend them as well."

As other Growth Market countries continue their development, and the middle class grows, I would expect many to increase investment in Olympic programmes and produce more champions. The greatest strength of the Olympics is the purity and continuity of the competition—the medal podium welcomes all comers. Greater diversity on the podium can only be a good thing for the Games' global appeal.

Q: You have led the firm's business in Asia, a region you know particularly well. What are the key aspects of Asia's transformation from the Seoul Olympics in 1988 to the Beijing Olympics in 2008 that we are likely to continue to see going forward?

ME: Asia has witnessed significant growth in the nearly quarter of a century since the Seoul Olympics. In 1990, the region accounted for about 24% of global GDP. In 2030, we think that figure will be close to 40%, and Asia's influence will expand commensurably.

The Asian financial crisis in 1998 was in retrospect a key turning point. It produced painful structural reforms leading a number of countries in Asia to pursue prudent financial policies and build substantial foreign exchange reserves. Many governments in the region are likely to continue this approach.

The crisis in 1998 also forced leaders in the region to examine the quality of past growth. There was a realisation that an economic model driven purely by exports was unsustainable. In time, this has led to policies that promote consumption. The rise of the consumer in Asia is a very powerful trend, and we're at a relatively

early stage in its development. Many opportunities lie ahead. Increasing consumption will power trade within the region, which is already substantial. The rise of the consumer also means increased resource consumption, posing new challenges to global supply and the environment. And the trend will be critical for investors and corporates looking to capitalise on the region's growth.

Q: What are some of the main connections you would see between the Olympics and Economics?

ME: When infrastructure investment for an Olympics is done well, the Games can make a great contribution to the development of a city. In 1984, reflecting on financial difficulties in prior years, Peter Ueberroth oversaw the Summer Olympics in Los Angeles as a business, without detracting at all from the spirit of the competition. This set a standard for the modern Games as a source of growth and revitalisation for the host city. Australia made substantial investments for the 2000 Summer Games in Sydney. In particular, the Airport Line tunnel linking Sydney Airport with the Central Business District cut travel time between the two from an hour to about 20 minutes. This has had a great impact on the city. In addition to the investment in infrastructure, hosting the Olympics can raise the awareness and brand of a city or country. The Beijing Games accomplished that goal.

Beyond that, the Olympics are a testament to the positive impact of broadened participation and inclusion. My first Olympic experience in Montreal in 1976 was also the first to feature women's rowing events. I saw the impact on the sport firsthand: it was not just positive for women who competed then and who hoped to compete in future Olympics. It broadened the appeal of the entire sport, drawing a larger audience and greater interest. A similar trend emerges in economic growth when women are full participants in the workforce: the more women work, the larger the workforce population, which increases household incomes and leads to greater consumption. This boosts education levels and leads to more prosperous communities. Inclusion can be a powerful multiplier.

Q: GS has been at the forefront of long-run economic research, projecting growth in the BRICs and other countries all the way to 2050. What do you think the Olympics will look like in the future?

ME: With the 2016 Games scheduled for Brazil, the Summer Olympics will have been hosted on five continents. Perhaps with growth across major African economies such as Egypt, Nigeria and South Africa over the next few decades, the IOC will be able to award a Summer Games to that continent. As an example, South Africa hosted a very successful World Cup in 2010.

That said, I hope the Games of 2052 look a lot like London 2012. The purity of the traditional Olympic events, pursued by athletes who have dedicated their lives to excellence in search of a medal, is something I'd like to see endure. ■

Would the Euro area Make a Medal-Winning Olympic Team?

“Wir sind jetzt die Nummer 1 in der Welt ... Jetzt kommen die Spieler aus Ostdeutschland noch dazu. ... Es tut mir leid für den Rest der Welt, aber wir werden in den nächsten Jahren nicht zu besiegen sein.”

(trans.) “We are already the best team in the world, and now we are going to add the top players from East Germany. ... It is a pity for everyone else, but we will be unbeatable for the foreseeable future.”

Franz Beckenbauer, speaking at the press conference following the 1990 World Cup final. In 1990, Germany was reunified (under Chancellor Helmut Kohl) and won the World Cup (under the management of Beckenbauer).

A Unified Approach to the Olympics?

If the Olympic teams of Euro area countries were to unify in the manner of their monetary policies, what impact would this have on their Olympic medal-winning performance?

Applying the logic of Franz Beckenbauer to the Euro area would suggest a significant improvement. If, as Beckenbauer expected, a united Germany would outperform the two separate Germanies, an Olympic team combining the sporting prowess of 17 Euro area countries should excel. At a minimum, on the basis of Beckenbauer’s logic, one would expect a combined Euro area team to win more medals than the sum of those won by teams from its constituent individual parts.

Integration: Pros and Cons

But there is an important caveat here. While combining forces will improve the quality of a team by widening and deepening the pool of talent from which selection can be made, it also reduces the number of entries in the competition. For a team sport like soccer, the benefits of the former are likely to outweigh the costs of the latter: hence Beckenbauer’s assertion.

In the Olympics, individual rather than team sports dominate: a unified Euro area team would have a significantly smaller number of competitors than 17 individual countries. Where margins of winning are small and (as a result) luck inevitably plays a relatively more substantial role in determining results, having fewer entrants may lower the final medal tally.

East Germany Outperformed a United Germany

	Years	Participants	Sports	Gold	Silver	Bronze	Total	Medals per Games	Medals per participant	Medals per sport
Germany	1992-2008	3021	220	159	149	159	467	93.4	0.15	2.12
E Germany	1968-88	1715	134	192	165	162	519	86.5	0.30	3.87
W Germany	1968-88	2215	169	67	82	94	243	40.5	0.11	1.44
Combined Germany	1968-89	3930	..	259	247	256	762	127.0	0.19	..

Source: Sports Reference, GS Global ECS Research.

A variety of other relevant factors also support the expectation of better medal performance from a unified team:

- The intra-Euro area competition implied by the need to select Olympic entrants from a much wider pool may force athletes to train harder simply to be selected, honing their skills in a way that makes them more competitive on the global Olympic stage.
- Focusing the resources of the Euro area as a whole on a smaller number of top quality athletes with a real chance of winning medals would improve the overall medal count relative to a situation where those resources are distributed over a broader set of entrants with, on average, less likelihood of taking gold.
- Allowing high class athletes to specialise in their best event in the knowledge that others of a similar standard will focus on other events can improve their performance and thus the overall medal return.

Against these, there are other factors which operate in the opposite direction—after all, despite Beckenbauer’s confidence, Germany has failed to add to its three World Cup triumphs since reunification:

- One cannot deny the role that national pride plays in driving sporting excellence. In the unforgiving environment of international sport, the extra motivation taken from representing one’s country may have a decisive effect: while athletes may be inspired to extra efforts by competing for Germany or France, representing a Euro area team may not arouse the same passion—and results could suffer as a consequence.
- Support from the stands—again, something that may make a difference when the line between success and failure is so narrow—may be less passionate for a ‘remote’ Euro area than for a home country enjoying a greater emotional connection.
- Lastly, in order to raise their profile and status, small countries may be prepared to devote a greater share of national resources to achieve sporting success. East Germany is a case in point—although its well-documented programme of institutionalised doping illustrates how such nationalistic ambitions can lead in dangerous and damaging directions.

German Lessons

The German experience offers some insight into how Olympic performance could be improved by unifying teams at the Euro area level. The table on the previous page shows the medals won by Germans at the Olympics before and after reunification in 1990.

At first glance, the table does not suggest that German reunification led to a significant improvement in medal-winning performance. On the contrary, East Germany alone won more medals (and more gold medals) at the six Olympic Games prior to reunification than the united Germany has won in the five Games since. The number of medals won per participant is also much lower for the unified Germany than it was for East Germany before reunification.

Looks Like Team Spirit

This first table shows overall medal performance. Given the distinction we made between team and individual events above, in the second table we focus on team sports and evaluate how reunification influenced Olympic performance in these events. It is in this domain that the benefits of integration are likely to be most pronounced.

We first compare the combined medal performance of the two German teams prior to reunification with that of a unified German team since: the difference is shown in column A of the table below. Economists call this an ‘event study’ analysis—we simply look at changes ‘before and after’. The exercise shows mixed results: better performance in hockey, but worse in football (for example).

To Assess the Impact, It is Not Just the Difference, But the ‘Difference in Differences’ That Matters

Sport		Pre-reunification 1968-1988				Post-reunification 1992-2008		A	B
		East Germany	West Germany	Combined	France	United Germany	France	Difference	Difference-in-Differences
		1	2	3 = 1+2	4	5	6	5 - 3	(5 - 3) - (6 - 4)
Athletics	4x100m Relay (men)	1	1	2	3	0	0	-2	1
	4x100m Relay (women)	4	2	6	0	0	1	-6	-7
	4x400m (men)	1	3	4	1	0	0	-4	-3
	4x400m (women)	4	2	6	0	1	0	-5	-5
Swimming	4x100m Freestyle (men)	2	0	2	0	2	0	0	0
	4x100m Freestyle (women)	5	2	7	0	2	0	-5	-5
	4x100m Medley (men)	2	1	3	0	2	0	-1	-1
	4x100m Medley (women)	4	3	7	0	2	0	-5	-5
Gymnastics	Team all-around (men)	5	0	5	0	0	0	-5	-5
	Team all-around (women)	5	0	5	0	0	0	-5	-5
Rowing	Eights (men)	3	2	5	0	2	0	-3	-3
	Eights (women)	3	0	3	0	1	0	-2	-2
	Coxed 4s (men)	5	2	7	0	1	0	-6	-6
	Coxed 4s (women)	3	0	3	0	0	0	-3	-3
	Quadruple sculls (men)	3	1	4	0	3	1	-1	-2
	Quadruple sculls (women)	1	0	1	0	5	0	4	4
Cycling	100km Team time trial (men)	2	0	2	0	1	1	-1	-2
	4000m Team pursuit (men)	3	4	7	0	2	1	-5	-6
Hockey	Men	0	2	2	0	3	0	1	1
	Women	0	1	1	0	2	0	1	1
Volleyball	Men	1	0	1	0	0	0	-1	-1
	Women	1	0	1	0	0	0	-1	-1
Handball	Men	1	1	2	0	1	2	-1	-3
	Women	2	0	2	0	0	0	-2	-2
Fencing	Men's foil	0	3	3	5	1	1	-2	2
Waterpolo	Men	0	1	1	0	0	0	-1	-1
Football	Men	3	1	4	1	1	0	-3	-2
Averages								-2.29	-2.18

Source: Sports Reference, GS Global ECS Research.

But, as economists, we are sceptical of such simple ‘before and after’ comparisons. In our view, these exercises offer a poor guide to the impact of unification on medal-winning performance: they fail to control for other factors that have influenced German success at the Olympics over the period we are studying. Ideally, we would seek to control for these other factors and identify the impact of unification more precisely, so as to develop a more refined view of what would happen if—other things equal—teams were to unify elsewhere.

To illustrate, consider the rise of China: it only started routinely participating in the Olympics at the Los Angeles Games in 1984, but has subsequently invested heavily in improving its sporting performance (and, of course, has a vast pool of potential talent to draw upon). Chinese entry has affected the medal-winning opportunities of other countries, including Germany. It was easier to win medals prior to 1984 (and thus before German reunification) than after. If we do not control for this effect, we would end up with a (downward) biased estimate of the impact of reunification, which would lead us to forecast too weak an impact of Euro area integration on Olympic medals won.

Economists use an approach called ‘difference-in-differences’ estimation to deal with this problem. This approach compares the change in performance in the case of interest with the change seen in a control group over the same period. The differences between these two changes in performance (i.e., the ‘difference-in-differences’) captures what is special about the case being studied, controlling for other factors that influence the control group.

To use our example above, by comparing how German medal performance changed across reunification with how (say) French medal performance changed over the same period, we purge the impact of Chinese Olympic participation from our estimate of the impact of German reunification, since both Germany and France will have been influenced by China.

Not surprisingly, the key challenge in applying this approach is to identify a good control group. Two criteria are relevant here: (1) controls should perform similarly to Germany prior to reunification; and (2) controls should not experience a spill-over from the impact of reunification on German performance.

The latter criterion is challenging: in a ‘zero sum’ context like competing for Olympic medals, Germany’s gains must come at the expense of other countries. Nonetheless, we apply this difference-in-differences approach and select France as the control. The results are shown in column B of the table on the previous page.

Across the set of sports evaluated, the results remain mixed. We do see some cases of improvement, notably in hockey. But on average we identify a deterioration in German medal-winning performance after reunification. However, a closer look at the table reveals that France may not be a very good control group. There are few French medal winners in the sports we consider, either before or after reunification. While this suggests caution in interpreting the difference-in-differences result, evaluating the robustness of our base case by using US results as an alternative control (not shown, for brevity) does not alter the conclusions.

Benefits of Sporting Integration

Our analysis identifies benefits from sporting integration in specific cases, but these cannot be generalised across all events. On average, German medal performance at the Olympics has deteriorated since reunification, even in the team events where the benefits should have been greatest.

We have identified a large number of potential pros and cons of unification: to capture the benefits, one naturally needs to develop a structure that maximises the former and minimises the latter. This requires a high degree of institutional development.

Sounds familiar? These messages may resonate with the Euro area’s ongoing attempts to grapple with its financial and sovereign crises.

Andrew Benito and Huw Pill

Interview with Marc Woods



Marc Woods was diagnosed with cancer at the age of 17 and, as a result, his left leg was amputated below the knee. Marc had competed in local races before his diagnosis, but he stepped up training after surgery and went on to win a race while still on chemotherapy. Six months later, he was swimming faster with one leg than he ever had with two. He represented Great Britain 18 months later. He has won a total of 12 Paralympic medals, four of them gold.

Q: You are an ambassador for the forthcoming London 2012 Olympics. What are the main activities that you are involved in with that role?

MW: The role as ambassador was initially to encourage people to support the bid for London, so a lot of former athletes and current athletes were involved with London becoming a host city. Subsequently, I've been involved in a programme called International Inspiration, which was devised to make good on the promise that the London bid team made in Singapore to inspire a generation of young people around the world. That's a very bold statement.

The idea of International Inspiration was to impact young people's lives around the world. The best example I can give of the kind of work they've been doing is in Bangladesh, where many young people drown each year during the monsoon season. International Inspiration set up a 'learn to swim' programme, and now tens of thousands of young people have learned to swim, so it will have an impact on saving lives in Bangladesh. I was involved with the programme launched in Malaysia—that was about inclusivity and trying to make sure that there was physical education for every young person in Malaysia. Not just the able-bodied but also people with a disability. So, it's a fantastic programme and that's where the bulk of my involvement with London 2012 has been.

Q: Your own story is amazing. You fought a difficult battle against cancer when you were a teenager, but emerged a stronger and even faster swimmer. What part of your remarkable story do you stress when you talk to young people with similar or other difficulties?

MW: I'm very careful not to suggest that people should try and live their lives how I live my life, or should try and cope with their cancer how I coped with it, because it's a very personal experience. It's a bit like grieving, and everybody grieves differently. When I do speak to young people who are going through something similar, I talk about how I coped with it and, in particular, about how when I was diagnosed I didn't know how long I had left to live. I didn't know whether this cancer diagnosis meant that I had six months, six years or 60 years left to live.

But I did know that I wanted to make the most of the time that I had, whatever that was. And so when I talk to young people who are going through those kinds of situations, it's about making the most of the time that you have right now. It could be that you've got decades ahead

of you but, even if you haven't, try and make the most of that time, whether it's reconnecting with friends or doing something that you wanted to do.

Q: Given the current economic troubles of the world, both in the UK and beyond, do you think the forthcoming Games have a special significance?

MW: I'm sure there'll be plenty of people in the UK who'll be thinking—why have we spent so much money on the Games? And the bid process and the numbers considered might have been quite different had we known where we would be now. But the media don't always paint a very even picture. They talk about the money spent, but not about the fact that the vast majority of it is going to UK businesses. And they don't talk about the fact that it enhances London's reputation as a destination. I've spoken at dozens of conferences in Barcelona in the last two years, which were held because Barcelona was an Olympic city. And this is 20 years on. All those things are very difficult to measure in terms of the positive impact on the economy.

I'm sure the benefit to the UK will be fantastic from an economic point of view, and we're not even talking about the legacy in terms of inspiring young people in the UK to live healthy lifestyles and take up sport. If we inspire just 1% of young people to take up sport who wouldn't have done so, then that impact will be huge throughout the rest of their lives.

Q: Over 17 years of competitions, you won dozens of medals, not just in the Paralympics but across a range of competitions. How does the satisfaction of competing differ from the satisfaction of winning?

MW: There's an age-old phrase: it's not winning that matters, it's taking part. But most athletes would agree that winning feels a lot nicer than simply taking part.

The first thing to consider is that you enter into competitions not being afraid of failing but doing everything that you possibly can to avoid losing. And for me, the bulk of the satisfaction I got from my career was the satisfaction of being prepared to the best of my ability. If I can train the best that I can for the next two hours, for the next session today, for the rest of the week, for the rest of the year, the net result is I'm as prepared as I can be, I can give it my best shot, and if I lose, then I've competed to the best of my ability and I can still be proud of that. But the fact that I've done everything day by day to the best of my ability means I've got a better chance of winning anyway. That's a very long answer to your

question but I would say we all enjoy competition but it feels better when you win.

Athletes wouldn't exist if they quit the first time they were beaten. Over a career, you lose a lot and you hope that you will win on the big stage. But you get better at picking yourself up and carrying on. I think it's what athletes do, it's what human beings do generally, and we get better at not being scared of competition.

Q: After many years building your swimming career you recently transitioned into mountaineering. What were the main challenges and what advice would you give to people considering a major switch in career?

MW: When I knew I was coming to the end of my career I wanted a change. And one of the things that was important to me was that I wanted to stop being worried about all the little details that made me an elite athlete, and I wanted to become a beginner at something. I wanted to learn something fresh, so climbing, mountaineering was an opportunity for me to do that since I knew nothing about it.

“Over a career, you lose a lot and you hope that you will win on the big stage. But you get better at picking yourself up and carrying on. I think it's what athletes do, it's what human beings do.”

Also, I enjoyed the scenery of mountaineering. It's a lot better than the scenery of swimming. You spend your whole time looking at the bottom of a pool and a black line, whereas mountaineering offers you some incredible sights.

I would say to people generally that whether you succeed or fail, you have to replace the current thing you're doing with a different goal because if you don't, you're left with a bit of a black hole. This is why a lot of athletes become depressed when they retire. They have this huge goal to try and win an Olympic or a Paralympic gold medal and, when they retire, they have nothing to replace it and they're lost. I always encourage people to replace their goals, so that you finish one goal and you step straight into the other one—but not to let them overlap, because then the new goal detracts from the current goal.

Q: At many companies, including GS, an important part of success comes from the effort people put into their jobs. What has been the most important motivation behind your efforts?

MW: Early in my career, I found motivation quite difficult. I spent some time thinking about what did motivate me, and there were five key things. The first was that I wanted to win a gold medal—it sounds obvious but I was working towards that. The second was that I enjoyed being fit and healthy. The third was the lifestyle—I represented my country, travelled around the world and that was great. The fourth was the camaraderie of the team, and the fifth was the respect that I had for my coach.

At any one time, one of those five things would keep me on track and keep me motivated and, in some ways, maybe the gold medal is a little bit like the salary that people have when they're doing their job. It's the reason why you do your job, but it can't be the only reason because some day that won't mean anything. I could be struggling with motivation one day—it could be four years before I get a chance to win the gold medal, so it doesn't help me go to training. But the respect for my coach might help me, the fact that I don't want to let him down. So, I realised that if I could have many reasons to do the things that are important to me, they would help me keep me on track.

Q: Of the four Paralympic values of courage, determination, inspiration and equality, which have you relied on most as a Paralympic athlete?

MW: Well, I think determination is absolutely critical. Funnily enough, sometimes people will say to me, “Oh I could have been an Olympic athlete.” And I'll say, “Well if you could have been, you would have been. You were missing something. You might have had the talent but you didn't have the determination, didn't have the resilience.” Because there are constant setbacks on a day-to-day basis, you become exhausted, you get injured, you have a lack of money; there's lot of things that can stop you, so determination and resilience are absolutely critical for any athlete. ■

Sydney 2000: "The Best Olympic Games Ever." Was It Worth It?

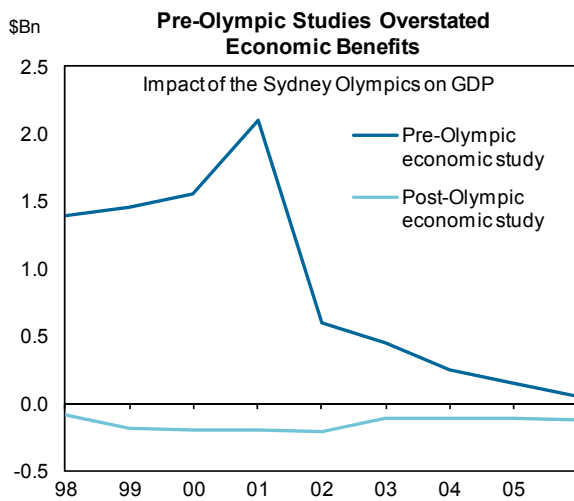
Australia's come-from-behind win in its September 1993 bid to host the Games of the XXVII Olympiad in Sydney in 2000 was a night that Australians celebrated enthusiastically. Although Australia entered the final round as the underdog, it secured eight of the available 11 votes, to finish just two votes ahead of China, sending the Australian bid team and the Australian press corps ecstatic. This euphoria was repeated on the conclusion of the Sydney Olympic Games when then IOC Chairman Juan Antonio Samaranch declared at the Closing Ceremony "I am proud and happy to proclaim that you have presented to the world the best Olympic Games ever." With the Athens and Beijing Games described by the then IOC successor as "unforgettable, dream Games" and "truly exceptional", respectively, Australia felt that it had achieved a significant return on its investment.

Measured in terms of Olympic medal success, Australia's return on investment was indeed high. It finished with 58 medals (16 gold, 25 silver and 17 bronze), placing it fourth on the medal tally, behind China (59 medals), Russia (88 medals) and the USA (92 medals).

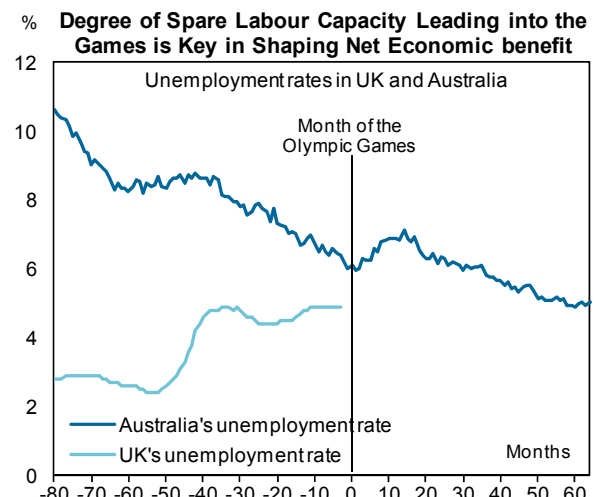
However, even before the Olympics were over, analysts were questioning whether it was all worth it? Ex-ante studies such as the Arthur Andersen/CREA report (1999) suggested the direct costs of hosting the Olympics would be A\$8.4bn (1996 prices), with expenditure spread over seven years, and the debt repayments and tourism impact assumed to last for a further five years after the event. In terms of the economic benefits of hosting the Olympics, this study predicted a 0.9% boost to Gross State Product for New South Wales, and for Australia it was predicted to provide a 0.4% boost to GDP. That is a A\$3.8bn economic benefit expected in 2000 and a net present value benefit of A\$6.5bn (1996 prices). While prospective studies of this kind certainly set the expectation for a significant economic return, retrospective studies suggest that the economic benefits were significantly overstated.

A detailed costing by the NSW Auditor General found that the NSW government made a loss of A\$1.3bn, with A\$6.5bn in expenses exceeding A\$5.2bn in revenue. While the spillover benefits from the hosting of the Olympics extend far beyond the government sector—to include associated tourist spending, national recognition and intangibles such as convenient viewing times and the promotion of healthy lifestyles—a fuller assessment of the economic benefits of hosting the Olympics reveal that the benefits may not be worth the costs. Studies such as "The Sydney Olympics, Seven Years On: An Ex-Post Dynamic CGE Assessment" by Madden and Giesecke from Monash University conclude that the Sydney Olympics delivered a net economic loss for the Australian economy of over \$2bn over the period from 1997-98 to 2005-06. They contend that the ex-ante studies overestimated two key assumptions. The first was an overestimation of the tourism impact, for which they found no discernible increase. The second concerned the degree of flexibility in the labour market. Madden and Giesecke found that labour market conditions were closer to full employment than the ex-ante assumption of slack in the labour market. Indeed, it was this key observation that most affected the ex-post analysis of the economics of the hosting of the Olympic Games due to displacement and cost effects.

In the run-up the London Olympics this is an important observation. Some parallels can be made between the Sydney and the London Games. These include: the host cities are large population centres of the home nation; significant national investment in new infrastructure has been made; public support for the Games is high; and the host nation's exchange rate is near cyclical lows at the time of hosting. However, the defining feature of whether the London Games provides a better economic return than the Sydney Games could well be the high degree of slack in the UK economy in 2012 compared with a capacity constrained Australian economy in 2000.



Source: Arthur Andersen/CREA, Giesecke and Madden.



Source: Datastream.

While the Head of the Australian Olympic Committee, John Coates, recently conceded that London is set to host an even better event than Sydney, the economic issue of whether the London Olympics delivers a positive economic return may well come down to the degree of slack in the UK economy at the time of hosting the event. Of course, for the majority of Australians and Britons the real question is who finishes in front on the medal tally. For the record, Australia has finished ahead of the UK in

10 of the 16 Games held since London last hosted the Olympics in 1948. This is a rivalry that transcends economics. Contingent valuation studies suggest UK citizens are prepared to subsidise the London Games by around £2bn. From an Australian perspective, we suspect a good deal of this is just to ensure they finish ahead of Australia by the closing ceremony on August 12.

Tim Toohey

The Beijing Olympics (2008)—Looking for Positives Despite the Global Financial Crisis

The Beijing Olympic Games in 2008 took place against the backdrop of the global financial crisis (GFC), making it especially hard to disentangle any ‘Olympic effects’ from the large swings in activity occurring at the same time. Hosting the Olympic Games is generally thought to boost investment demand in the host country via the construction of facilities and additional tourism. But the Beijing Games do not appear to have had this effect on China’s economy. Given that the broad economy was overheating during the build-out phase for the Games, the increase in investment demand is likely to have been very modest. Moreover, efforts to reduce pollution led to a shutdown of heavy industry near Beijing, adding to the weakness stemming from the 2008 global financial crisis. Tourist arrivals may have helped but they were still relatively weak on account of the crisis.

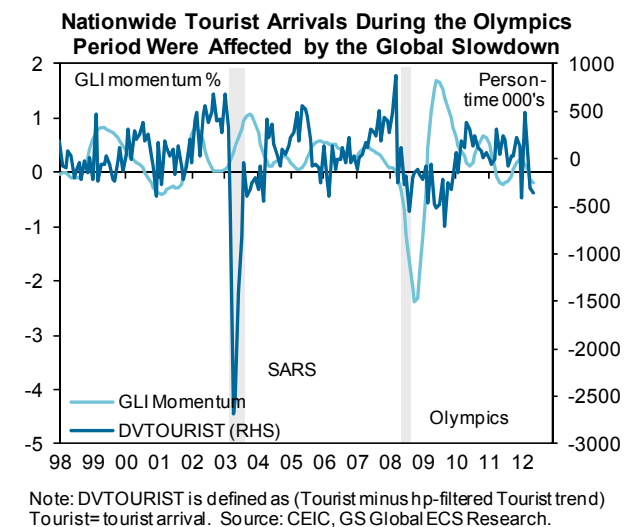
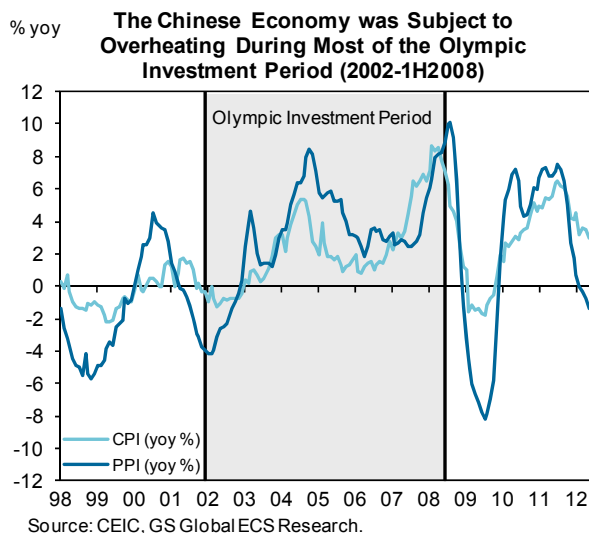
Little Additional Investment

Gauging net additional investment as a result of hosting the Games is always tricky. The specific investment numbers released by the government related to gross investment, and a large but unknown share of this gross investment would have been made with or without the Olympics. In addition, other investment may have been

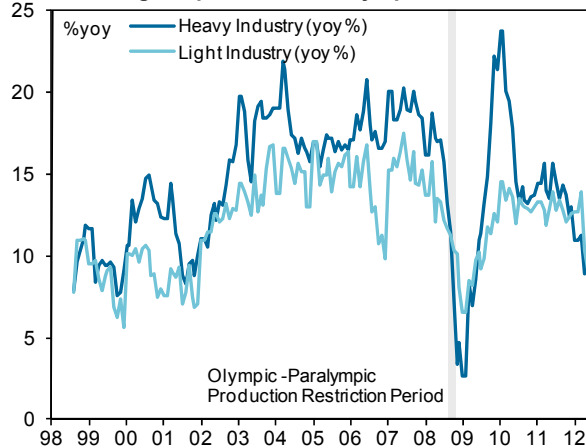
cut back as China’s economy was overheating during most of the period when Olympic-related investments were under way. This means that the unknown amount of additional investment made by Beijing and other host cities was at the cost of the other cities/areas of the economy. It is unlikely that the economy was overheating due to the Olympic-related investment itself, as the amount was relatively small compared with total GDP. According to Reuters estimates, (gross) Olympic investment was \$40bn, spread over a six and half year period, equivalent to 0.3% of GDP during the period 2002-1H2008.

No Tourism Boom

Tourism did not live up to expectations either. Chinese tourist arrivals are highly correlated with global growth. The Olympics may have had a positive effect in this respect, but it is unlikely to have been sufficient to offset the negative effects of the global slowdown. Indeed, over the period when the Olympics were being held, tourist arrivals reached one of the lowest points since data started in 1998. This suggests that Beijing’s fully packed hotels and tourist facilities were not entirely representative of nationwide conditions at the time.

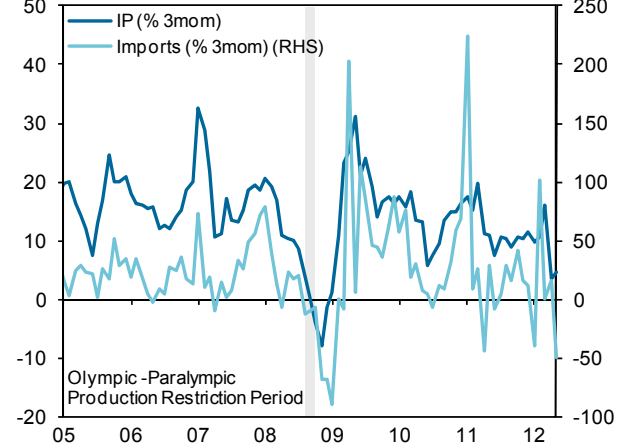


Heavy Industrial Production Growth Saw a Large Fall During the period of the Olympic Shut Down



Source: CEIC, GS Global ECS Research.

Chinese Sequential Imports Growth Worsened Following the IP Slowdown



Source: CEIC, GS Global ECS Research.

Pollution Abatement Concerns Likely Contributed to the Economic Slowdown in Late 2008

In an effort to make the environment as healthy as possible for the athletes, Beijing shut down or restricted production at heavy polluters within a 500km radius of the city. This area included Hebei and Inner Mongolia, two of the key heavy industrial production bases in China. At the time, Hebei accounted for one-quarter of the country's steel production. This supply shock contributed to the slowdown of secondary industry and the overall economy. Heavy industrial production was, unsurprisingly, particularly badly hit. From June to October 2008, light industrial production fell 3ppt, from 13.3% to 10.3%, while heavy industry fell close to 10ppt, from 17.1% to 7.3%yoy. While policymakers had intended to bring about only a temporary shutdown, many plants decided not to return to production once the ban was lifted at the end of the Paralympic Games. This is unsurprising given that heavy industrial producers face significant fixed costs. Although the generally weaker demand outlook may not have justified plant closures, once closed, demand was insufficient to justify reopening. This suggests that attempts to reduce pollution for the Olympics may have led to slower growth.

Broader Benefits for the Economy and Society

Although the expected economic boost from hosting the Olympic Games did not materialise, the Games did have some broader positive effects.

Some of the improvements to the environment were temporary in nature, but other changes have proved more long-lasting. Higher standards for pollution control now exist, and facilities such as the Olympic Park (a large green area in north of the city) and increased environmental awareness mean that the sky in Beijing is occasionally blue. More than 90% of the total investment for the Games was in telecommunications, transportation and utilities, and most of this has been fully utilized since. The majority of the sports facilities have also been used: the main stadium, the 'Birds' Nest', has hosted

events ranging from the Italian football Super Cup to pop concerts and car racing. Some facilities could be put to even better use if Beijing's transport system were improved.

Except for the usual underperformance of China's men's football team (one draw and two defeats), the country's athletes performed exceptionally well at the Beijing Games. China came top of the gold medals table for the first time ever, which is fairly extraordinary given that it only rejoined the competition in 1984. It was ranked No. 4 at the time, and this was already considered a positive surprise. This has undoubtedly had a positive impact on national pride. The state-driven system has played a key role in promoting sporting excellence, as it has in many other (current and former) Socialist countries. But there was an encouraging development at the Beijing Games, a deepening in China's global interconnectedness, with more foreign coaches training Chinese athletes in areas where China had previously been relatively less skillful and many Chinese athletes competing on behalf of other teams in areas where Chinese athletes excel, such as table tennis and badminton. This exchange has been maintained since the Games—for example, with Nicolas Anelka and Didier Drogba (footballers) and Stephon Marbury (basketball).

In recent years, the public's expectations for an even more impressive medal haul at the London Olympics have started to wane. The public appears to be more concerned about the health and fitness of the general public rather than heading the medals table. This is undoubtedly a positive trend given the increase in diseases such as obesity, particularly among young children, that are more prevalent in advanced economies. Together, these social and environmental benefits demonstrate the breadth of the potential impact of hosting Olympic Games.

Yu Song and Michael Buchanan

Interview with Peter Hudnut



Peter Hudnut has been a member of the United States men's water polo team for 11 years. The team won the silver medal at the 2008 Beijing Olympics. He also played for various professional teams in Europe before the Beijing Games. Peter graduated from Stanford Graduate School of Business Class of 2011 and is looking forward to pursuing a career at Goldman Sachs after participating in the London Olympics.

Q: You participated in the Beijing Olympics four years ago. What aspects of the London Olympics are you looking forward to, apart from the competition itself?

PH: It is something I have been dreaming about since the Beijing Olympics, and the true answer is everything, because each Olympic Games has its own character, its own aura, its own mystique and charm. Beijing was my first time in the Olympics as a participant. I was an alternate in the 2004 Olympics because of an injury I suffered. It was also my first time in China.

This Olympics in London is special because it's my last Olympics. And there are so many things about the Olympic experience, competition aside. Just the feeling in the Olympic village at opening ceremonies—there is an electric energy in the air. Picture being in a small village where 10,000 athletes are trying to pursue their potential. That creates an environment that words cannot do justice to. It's a very humbling experience and yet at the same time invigorating. It makes you ready to take on and do bigger and better things. That is the reason why so many of us have sacrificed so much to try to become an Olympian.

Q: It has been more than 100 years without a gold medal in water polo for the US, and you and the US team are trying to make it happen at London 2012. What are the main elements of your preparation towards this goal?

PH: In my personal preparation, which is very similar to team preparation, it's first and foremost about being a student of the Game. You are always studying, you are following your own tactics and your own plays. But you are always studying your opponent to see if you are on the right path. And you are constantly setting goals. Every day I go to the pool with a new goal, something that I know I need to work on to hit those little goals to make sure you are on the right track.

Communication is also very important for the team. I have a leadership role on the team yet everyone has to be a follower, a good team-mate. Everyone has to be a good cheerleader at times. I think that support and balance, the camaraderie, leadership and togetherness is a huge element in our team preparation because at the Olympics everyone is a good player. It comes down to that bond, that experience both in the sport and with your team. That's something we have benefited from over the last few years. Of the 13 athletes on this Olympic team, nine have been training together since the 2000 Olympics.

And then also it's about being hungry: the Olympic training process is a very brutal one. If you include the video sessions, we are training nine hours a day right now. In Beijing it didn't feel like we won a silver. It felt like we lost the gold. I think that's a big part of creating that hunger.

Q: You have suffered injuries, undergone difficult surgery and made a very successful comeback from those challenges. What kept you going through all of that?

PH: This is a very hard question for me to answer because it implies that I questioned if I could or should continue. Even when I had broken my back and I had a cyst on my spinal cord that had basically cut off the sciatic nerve going to my right leg, I can honestly say that I did not question my attempts at coming back, because my hunger had not abated. I was an eight- or nine-year-old boy who had a dream and when I started playing water polo at 13, I knew that I was going to do whatever it took.

I suppose that's what makes an Olympian, that willingness to go the extra yard. I just viewed it as a great challenge, something that the majority of people didn't think I could do, and that definitely motivated me to prove that I could. I used to draw the Olympic rings on my arm and, as a nine-year-old boy, I used to think that the idea of the Olympics, the idea of pursuing your potential, of struggling for things, is very important. As a young boy, I had some learning disabilities and we moved a lot. Yet the Olympic movement, which is greater than any individual in my opinion, lit a fire in me. That fire has definitely not gone out.

Q: You are an MBA graduate from one of the best universities in the world. What part of the preparation of an Olympian applies to the success of a business?

PH: There are staples that every Olympian shares—hard work, sticking to the goals, learning from mistakes, having an open mind, being able to collaborate and function well on the team, as well as the fire inside most Olympians: they want to be better, to do better—the idea of chasing down your potential not only as an athlete but in all walks of life.

I always talk about something I learnt from my high school water polo coach: the four Ds: desire, determination, dedication, discipline. That is a fundamental that I have lived by since the age of 13. The desire is what gets you up in the morning. The determination gets you to push your boundaries every

day. You need dedication to get up and do it day after day. The discipline is what got me through graduate school. I felt like a fish out of water in my first quarter at graduate school. And, looking back, working hard and really knowing that I don't know everything, something that was abundantly clear in my first quarter in business school, was important. It got me out there asking for help, finding mentors and getting guidance. I think that is key to success in whatever you do.

Q: You are planning to join Goldman Sachs after your participation in the London Games. How will your Olympic experience help you in the new job?

PH: A lot of it relates to what I just mentioned. Relationship building is obviously important—that you become immersed in this small city of other athletes and you quickly learn to adapt and communicate, even if there is not the same language, and you learn from the people around you how to push yourself and reach your potential. Heads of state always talk to their teams and one of the quotations that President Bush mentioned at the last Olympics was from Teddy Roosevelt—it's called "The Man in the Arena" and it basically embodies the idea of giving everything to a worthy cause. You will have errors, but with great devotion and striving to do your best, no matter what the outcome, you will succeed.

"Just the feeling in the Olympic village at opening ceremonies—there is an electric energy in the air. Picture being in a small village where 10,000 athletes are trying to pursue their potential. That creates an environment that words cannot do justice to. It's a very humbling experience and yet at the same time invigorating."

That's very clear in the Olympic journey. This idea of, yes, I might mess up, yes, I'm not perfect; but on this day, I am striving to be better. And in a professional context pursuing every day with that same sort of voracious enthusiasm to be better is, I think, equally important.

Q: It is said that success in water polo requires the endurance of a marathon, the toughness of hockey and the strategy of chess. Is there anything in that description of water polo that you believe can be used to improve the strategy of an investment plan?

PH: Yes, definitely. Much like an investment plan, in water polo there is a very detailed strategy. But we always plan for contingencies. And as in the world of investing, you have to be flexible, be able to change and adapt or revisit your strategy. Communicating and adapting are incredibly important in both.

And then it comes down to execution of the strategy. Water polo is a fun, but viciously demanding sport—a

description that can also apply to investing. At the last two Olympics we were called by some the most versatile and fit athletes just because we have to master so many different plays. Much like an investment plan or strategy, you have to have a great understanding of so many different areas, not just of financial instruments but of the greater world and macro landscape around you.

Q: In the Economics research department at Goldman Sachs, we often make long-run projections for economic growth, sometimes all the way to 2050? How do you see the Olympics evolving over a similar term?

PH: There will definitely be changes in sports themselves. In addition, I think one of the challenges that not many people talk about is the ability of host cities to create better or bigger Olympic experiences. As the Olympics becomes a bigger and bigger event, it increasingly runs into the realities of urban planning, as local people and businesses are inconvenienced in order to make room for the Games. This is a tension that will eventually need to be resolved.

As for the spirit of the Olympics, it really depends on how stories are told, how marketing portrays the athletes, how over-involved commercialisation becomes. The spirit of competition sometimes can become lost in focusing only on medals or only on commercialised athletes.

And sometimes there is a potential to lose that main idea of the Olympics—that it is important to put aside political and other differences, and focus on the competition. Every so often in the Games you have people who use the podium or the platform of the Olympics as a moment to protest, and stand up for things outside of the Olympic movement that they believe in. Some of that is admirable—although it should take place before or after the Olympics, not during it. The Olympics is supposed to be the one place where all countries unite under a common flag and a common bond, and compete fully and put all differences aside. That's something that is really special and I sincerely hope it is never lost.

You will always have kids, and even young adults, who have big dreams which involve the Olympics. So portraying the importance of the struggles, the meaning behind the Olympics, is important and something that will have to be reemphasised and renewed generation after generation. Commercialisation and countries' medal ambitions will always be there but I just hope that it doesn't take away from the spirit and purity of the ideals of the Games—the same ideals that inspired me as a kid. I had that dream, and people around me, a great supporting cast, let me believe that with hard work and dedication I could get there. I think those lessons need to be passed on. ■

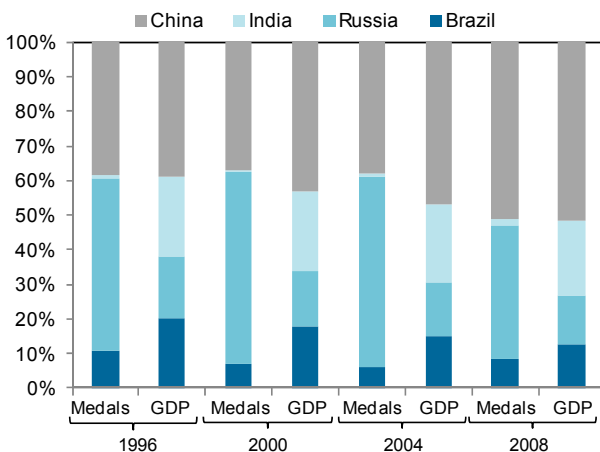
The Next Olympic Games in Brazil (Rio de Janeiro 2016)

Brazil will host the XXXI Olympic Summer Games in 2016 in the beautiful city of Rio de Janeiro. Two years before that, it will host another of the world's most popular sporting events: the 2014 FIFA Soccer World Cup, with the final scheduled to be played in Rio's majestic Maracanã stadium, which will also be a key Olympic venue. While both events will present significant organisational and logistical challenges, they will also offer a unique opportunity to showcase a modern, increasingly cosmopolitan and globally integrated Brazil.

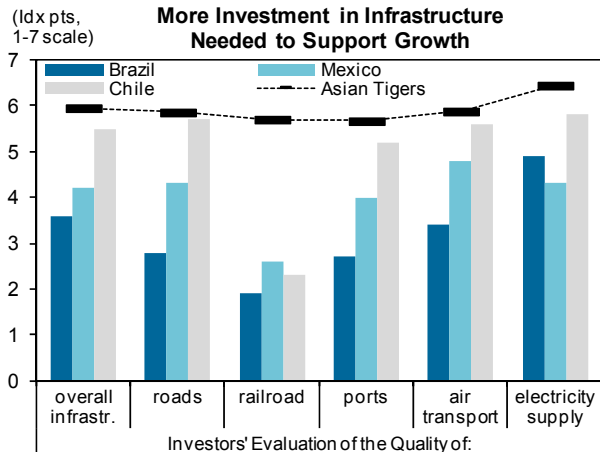
This is the first time the Games will be held in South America and the first time in a Latin American country since Mexico City 1968. Rio de Janeiro is the second-largest city in Brazil (with a population of just over 6mn) and the most popular tourist destination in South America. Rio is known for its striking natural setting in the Guanabara Bay, sandy beaches, carnivals, a diverse musical heritage and, of course, an unmatched passion for soccer and beach volleyball. Rio became a World Heritage Site in July 2012: the first city to receive this title from UNESCO in the Natural Landscape category.

At the 2008 Beijing Olympics, Brazil collected 15 medals (three of which were gold), including two in the country's national sport of soccer. Brazil has also excelled in volleyball in Olympic competition: its women's team won gold and the men's team silver in Beijing, as well as a silver and bronze in men's beach volleyball. Brazil is currently the seventh-largest economy in the world in US Dollar-denominated GDP terms (PPP-adjusted), and the fifth-largest country in terms of land mass and population, but finished only in 17th place in terms of total medals in Beijing. Furthermore, within the BRICs universe, Brazil has been punching below its relative economic weight in the Olympics, as does India. This is in part a reflection of the strong official emphasis placed on sports excellence in China and Russia. As has been the experience in other hosting nations, Brazil hopes to benefit in 2016 from the home Olympic dividend and collect a number of medals that is more in line with its relative economic weight in the world and within the BRICs group.

BRICs Shares of Olympic Medals and GDP (PPP)



Source: GS Global ECS Research.



Note: 1= extremely underdeveloped; 7= sufficient and reliable. Source: World Economic Forum, 2011-12 Global Competitiveness Index.

In recent years, Brazil has embraced a set of conventional market-friendly macroeconomic policies that allowed the economy to overcome a number of structural imbalances and attract record high levels of foreign capital. This, in tandem with a favourable external backdrop on average, has led to important social and economic gains over the last 15 years. Happily, the benefits of growth and overall macro-financial stability have trickled down the income scale. For example, the middle class has grown significantly over the past decade—an estimated 31mn people were lifted out of poverty between 1999 and 2009, and more than 100mn people are now part of the middle class (i.e., more than half of the population). Furthermore, the middle class is expected to reach around 60% of the population by 2018. The opportunities presented by these transformations should not be underestimated, as there are now as many middle-class and high-income earners in Brazil as the combined population of France and Britain. In all, the days of large fiscal deficits, high inflation and debt levels, external imbalances, and economic booms and busts have given way to smoother business cycles.

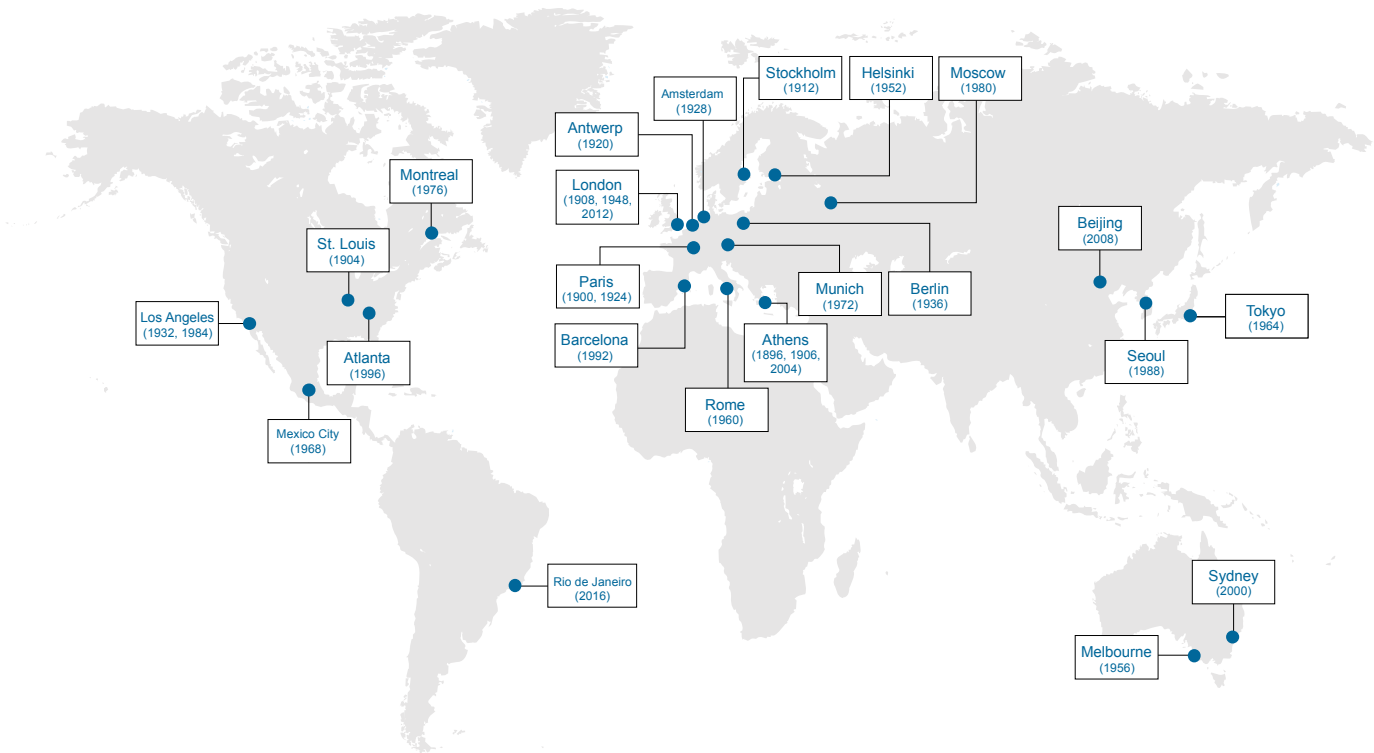
Despite these advances, potential growth (at slightly below 4% per year) is still low in absolute terms and in comparison with other more dynamic EM and fellow-BRIC economies. This is a reflection of structural impediments to growth that have yet to be addressed: a large infrastructure deficit after years of low investment, low domestic savings, a high and distortionary tax burden, high levels of labour informality, still comparatively low levels of human capital, and a low degree of openness to trade. In this regard, hosting two very large global sporting events presents an opportunity to boost investment in infrastructure. Brazilian government estimates suggest that up to US\$50bn (about 2% of GDP) will be spent over the next seven years in preparation for these two large events. Hopefully, this will generate large long-term multiplier effects in the economy and boost potential GDP growth in the years to come. Stay tuned...following a stop-over in London, the Olympic flame travels south to Rio.

Alberto Ramos

Ten Olympic Trends Viewed Through an Economic Lens

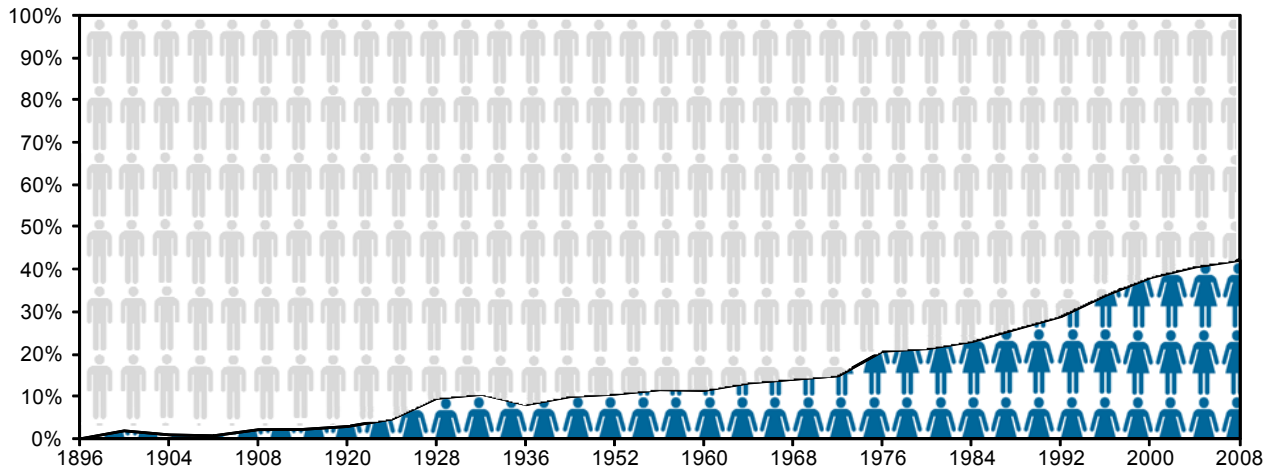
This section explores the links between Economics and the Olympic Games by analysing trends and scrutinising scores. Below are 10 exhibits that describe how various aspects of the Olympics have evolved from the first modern Games in 1896 all the way to London 2012. Following that, we reproduce the medals tables from the most recent Olympic and Paralympic competitions in 2008, and the first modern Games in 1896 and 1960 respectively. Let the data crunching begin...

① The Olympic Radar is Now Becoming Truly Global, Reaching EMs in Recent Times



Source: GS Global ECS Research.

② Share of Women Athletes Has Been Rising and Will Likely Continue to Rise



Source: Sports Reference, GS Global ECS Research.

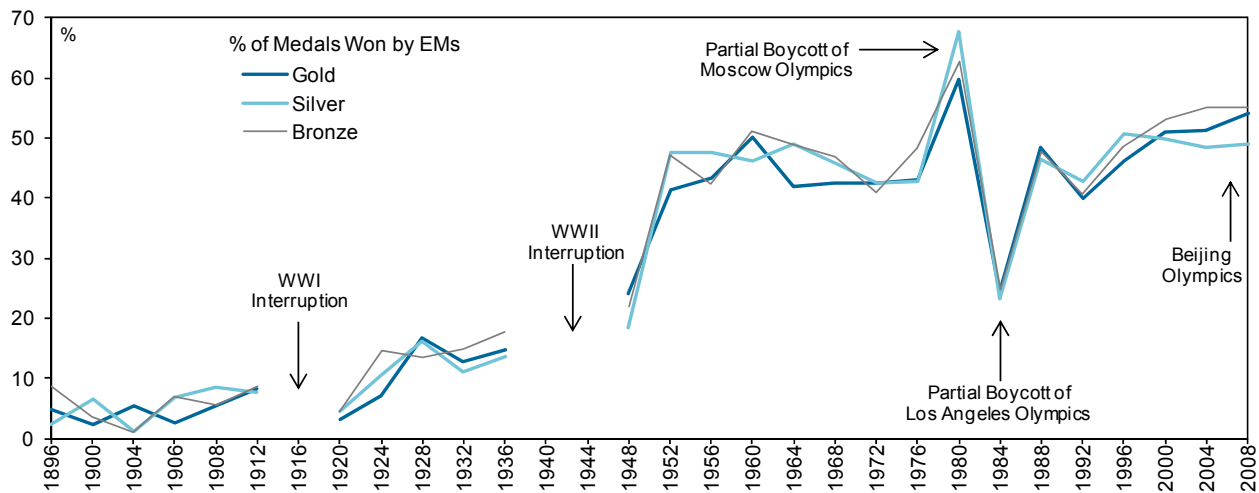
3 Olympic Games Cover a Broad Set of Nations with Different Income Levels

Year	City	Country	Participating Countries	GDP per capita in Host Country	Relative to US GDP per capita (%)	
					0	20 40 60 80 100 120
2012	London	Great Britain	204	32,474	77	77
2008	Beijing	China	204	5,518	13	13
2004	Athens	Greece	201	24,137	59	59
2000	Sydney	Australia	200	30,909	79	79
1996	Atlanta	United States	197	34,660	100	100
1992	Barcelona	Spain	169	20,357	64	64
1988	Seoul	South Korea	159	9,927	32	32
1984	Los Angeles	United States	140	27,573	100	100
1980	Moscow	Soviet Union	80	12,579	50	50
1976	Montreal	Canada	92	21,644	93	93
1972	Munich	West Germany	121	17,387	80	80
1968	Mexico City	Mexico	112	6,702	33	33
1964	Tokyo	Japan	93	7,749	45	45
1960	Rome	Italy	83	7,419	48	48
1956	Melbourne	Australia	67	11,933	80	80
1952	Helsinki	Finland	69	6,392	46	46
1948	London	Great Britain	59	9,533	77	77
1936	Berlin	Germany	49	6,235	84	84
1932	Los Angeles	United States	47	5,671	100	100
1928	Amsterdam	Netherlands	46	8,261	111	111
1924	Paris	France	45	5,166	73	73
1920	Antwerp	Belgium	29	4,899	78	78
1912	Stockholm	Sweden	29	4,208	71	71
1908	London	Great Britain	22	6,258	121	121
1906	Athens	Greece	21	3,380	59	59
1904	St. Louis	United States	15	5,268	100	100
1900	Paris	France	29	3,729	80	80
1896	Athens	Greece	12	3,154	80	80

Note: GDP per capita in 2005 constant PPP-International Dollars.

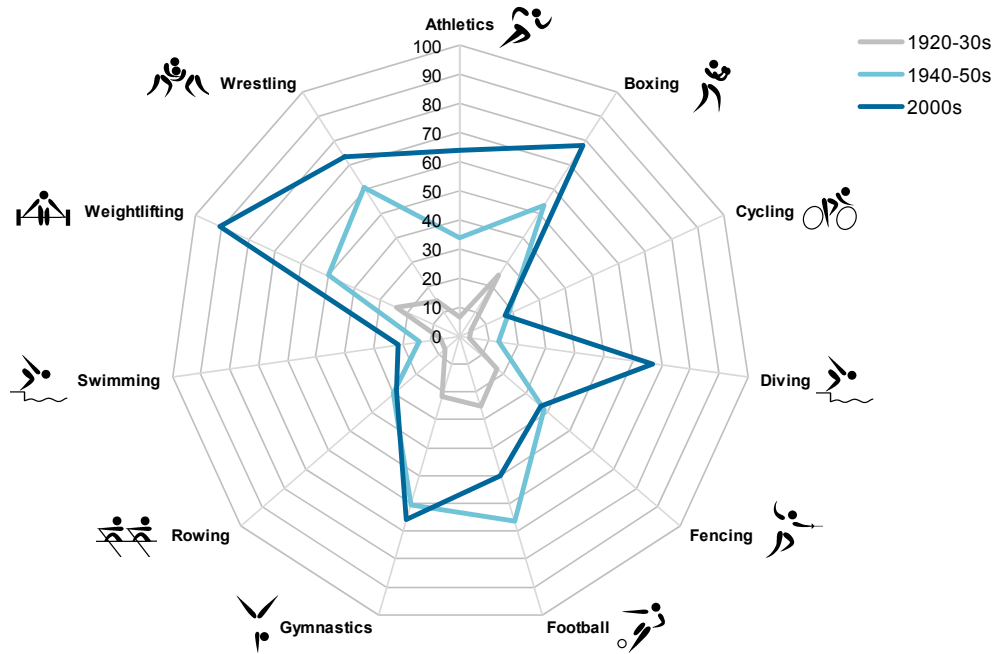
Source: Sports Reference, World Bank, Barro-Ursúa Macro Data, Global ECS Research.

4 Emerging Markets Now Win Half of All Olympic Medals, Reflecting their Growing Influence



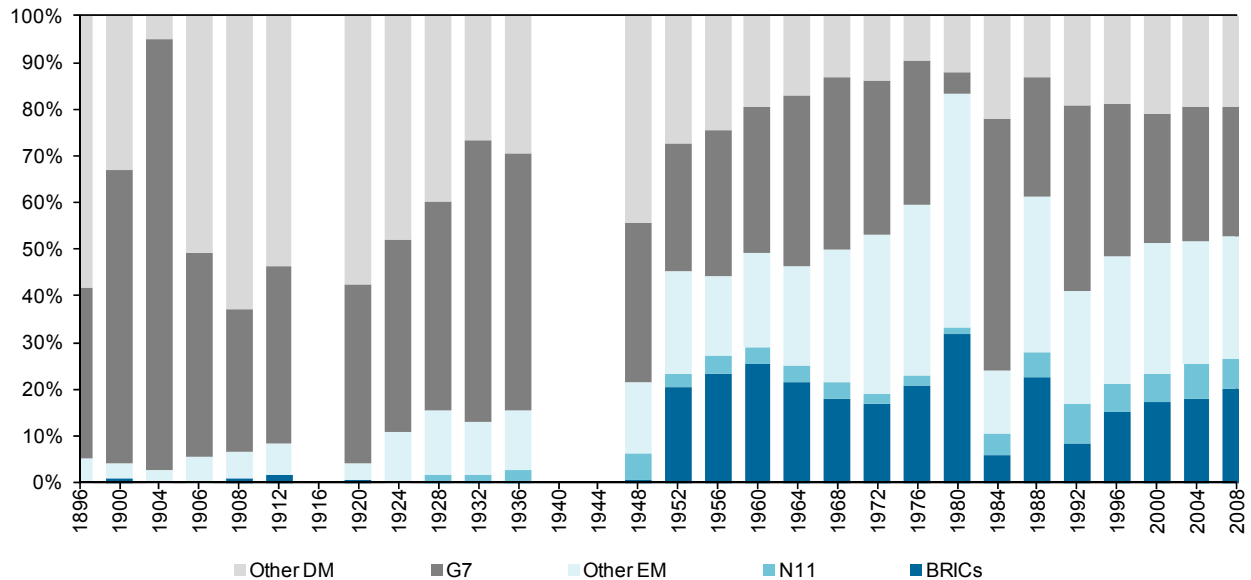
Source: Sports Reference, GS Global ECS Research.

5 Emerging Markets Have Become Leaders or Stronger Competitors in Many Sports



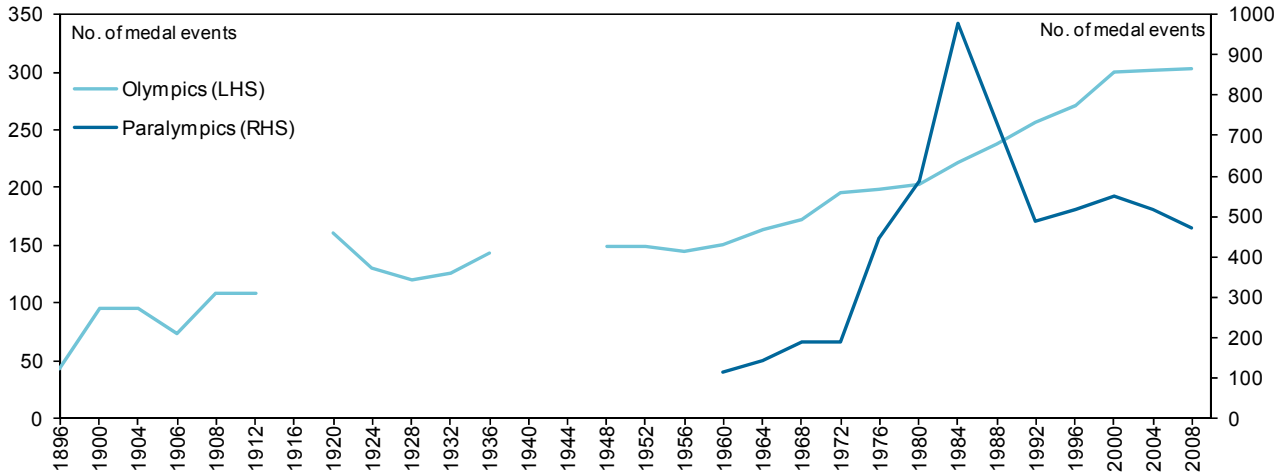
Note: Scale refers to share of medals won.
Source: Sports Reference, GS Global ECS Research.

6 Split of Medals around the Globe is Moving Towards Emerging Economic Groups



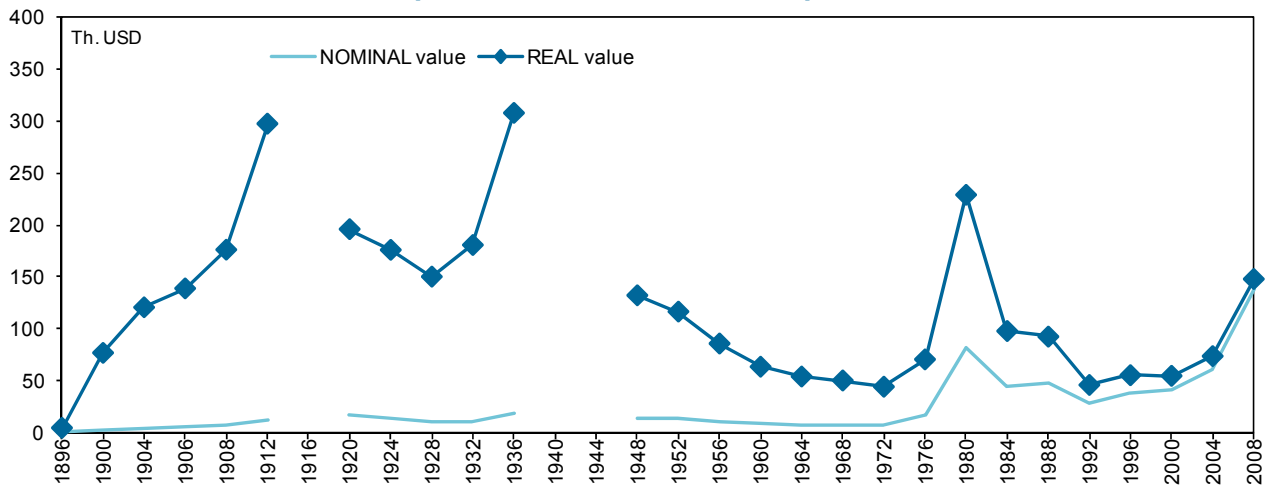
Source: Sports Reference, GS Global ECS Research.

8 Number of Medal Events Has Increased Markedly in Both the Olympics and the Paralympics



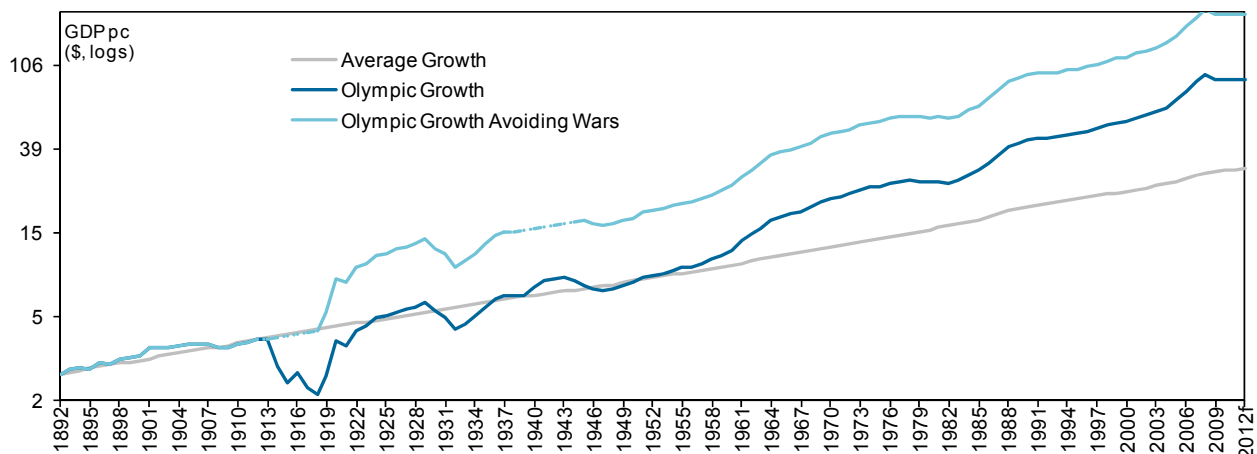
Source: Sports Reference, International Paralympics Committee, GS Global ECS Research.

9 Monetary Value of Distributed Gold Medals Has Declined as Composition Effects Offset More Competitions



Note: Values are adjusted for estimated changes in the metal content of medals; one per winner; deflated with US CPI.
Source: Sports Reference, USGS, Bloomberg, MeasuringWorth.com, GS Global ECS Research.

10 'Olympic Economies', Constructed by Linking Host Countries, Grow Faster on Average



Note: Assumed start is GDP per capita in Greece 1892. Olympic paths follow growth in successive upcoming host countries (avoiding wars assumes growth during the period was the world's average instead of war growth). Average growth is that of host countries for the long run.
Source: Barro-Ursua Macro Data, GS Global ECS Research.

Medals Tables

Medal Count for the Olympics in Athens 1896

Country	Gold	Silver	Bronze	Total
United States of America	11	7	2	20
Greece	10	17	19	46
Germany	6	5	2	13
France	5	4	2	11
Great Britain	2	3	2	7
Hungary	2	1	3	6
Austria	2	1	2	5
Australia	2	0	0	2
Denmark	1	2	3	6
Switzerland	1	2	0	3
Mixed NOC*	1	1	1	3

*Teams made up of athletes representing different National Olympic Committees (NOCs), called mixed-NOCs teams.

Source: Wikipedia.

Medal Count for the Paralympics in Rome 1960

Country	Gold	Silver	Bronze	Total
Italy	29	28	23	80
Great Britain	20	15	20	55
Germany	15	6	9	30
Austria	11	8	11	30
United States of America	11	7	7	25
Norway	9	3	4	16
Australia	3	6	1	10
Netherlands	3	6	0	9
France	3	3	1	7
Argentina	2	3	1	6
Rhodesia	2	1	2	5
Ireland	2	0	0	2
Switzerland	1	3	0	4
Belgium	1	1	1	3
Finland	1	0	0	1
Israel	0	2	2	4
Malta	0	2	2	4

Source: Wikipedia.

Medal Count for the Most Recent Olympics in Beijing 2008

Country	Gold	Silver	Bronze	Total
People's Republic of China	51	21	28	100
United States of America	36	38	36	110
Russian Federation	23	21	29	73
Great Britain	19	13	15	47
Germany	16	10	15	41
Australia	14	15	17	46
Republic of Korea	13	10	8	31
Japan	9	6	10	25
Italy	8	9	10	27
France	7	16	18	41
Ukraine	7	5	15	27
Netherlands	7	5	4	16
Kenya	6	4	4	14
Jamaica	6	3	2	11
Spain	5	10	3	18
Belarus	4	5	10	19
Romania	4	1	3	8
Ethiopia	4	1	2	7
Canada	3	9	6	18
Poland	3	6	1	10
Hungary	3	5	2	10
Norway	3	5	1	9
Brazil	3	4	8	15
Czech Republic	3	3	0	6
New Zealand	3	2	4	9
Slovakia	3	2	1	6
Georgia	3	0	3	6
Cuba	2	11	11	24
Kazakhstan	2	4	7	13
Denmark	2	2	3	7
Mongolia	2	2	0	4
Thailand	2	2	0	4
Switzerland	2	1	4	7
Democratic People's Republic of Korea	2	1	3	6
Argentina	2	0	4	6
Mexico	2	0	1	3
Turkey	1	4	3	8
Zimbabwe	1	3	0	4
Azerbaijan	1	2	4	7
Uzbekistan	1	2	3	6
Slovenia	1	2	2	5
Bulgaria	1	1	3	5
Indonesia	1	1	3	5
Finland	1	1	2	4
Latvia	1	1	1	3
Belgium	1	1	0	2
Dominican Republic	1	1	0	2
Estonia	1	1	0	2
Portugal	1	1	0	2
India	1	0	2	3
Islamic Republic of Iran	1	0	1	2
Cameroon	1	0	0	1
Panama	1	0	0	1
Tunisia	1	0	0	1
Sweden	0	4	1	5
Croatia	0	2	3	5
Lithuania	0	2	3	5
Greece	0	2	2	4
Trinidad and Tobago	0	2	0	2
Nigeria	0	1	3	4
Austria	0	1	2	3
Ireland	0	1	2	3
Serbia	0	1	2	3
Algeria	0	1	1	2
Bahamas	0	1	1	2
Colombia	0	1	1	2
Kyrgyzstan	0	1	1	2
Morocco	0	1	1	2
Tajikistan	0	1	1	2
Chile	0	1	0	1
Ecuador	0	1	0	1
Iceland	0	1	0	1
Malaysia	0	1	0	1
South Africa	0	1	0	1
Singapore	0	1	0	1
Sudan	0	1	0	1
Vietnam	0	1	0	1
Armenia	0	0	6	6
Chinese Taipei	0	0	4	4
Afghanistan	0	0	1	1
Egypt	0	0	1	1
Israel	0	0	1	1
Republic of Moldova	0	0	1	1
Mauritius	0	0	1	1
Togo	0	0	1	1
Venezuela	0	0	1	1

Source: Wikipedia.

Medal Count for the Most Recent Paralympics in Beijing 2008

Country	Gold	Silver	Bronze	Total	Country	Gold	Silver	Bronze	Total
People's Republic of China	89	70	52	211	Slovakia	2	3	1	6
Great Britain	42	29	31	102	Finland	2	2	2	6
United States of America	36	35	28	99	Thailand	1	5	7	13
Ukraine	24	18	32	74	Portugal	1	4	2	7
Australia	23	29	27	79	Norway	1	3	3	7
South Africa	21	3	6	30	Cyprus	1	2	1	4
Canada	19	10	21	50	Latvia	1	2	0	3
Russian Federation	18	23	22	63	Singapore	1	1	2	4
Brazil	16	14	17	47	Venezuela	1	1	2	4
Spain	15	21	22	58	Saudi Arabia	1	1	0	2
Germany	14	25	20	59	Hungary	1	0	5	6
France	12	21	19	52	Chinese Taipei	1	0	1	2
Republic of Korea	10	8	13	31	Turkey	1	0	1	2
Mexico	10	3	7	20	Mongolia	1	0	0	1
Tunisia	9	9	3	21	Israel	0	5	1	6
Czech Republic	6	3	18	27	Angola	0	3	0	3
Japan	5	14	8	27	Jordan	0	2	2	4
Poland	5	12	13	30	Lithuania	0	2	0	2
Netherlands	5	10	7	22	Serbia	0	2	0	2
Greece	5	9	10	24	Argentina	0	1	5	6
Belarus	5	7	1	13	Slovenia	0	1	2	3
Islamic Republic of Iran	5	6	3	14	Bulgaria	0	1	1	2
Cuba	5	3	6	14	Colombia	0	1	1	2
New Zealand	5	3	4	12	Iraq	0	1	1	2
Sweden	5	3	4	12	Bosnia and Herzegovina	0	1	0	1
Hong Kong, China	5	3	3	11	Pakistan	0	1	0	1
Kenya	5	3	1	9	Papua New Guinea	0	1	0	1
Italy	4	7	7	18	Romania	0	1	0	1
Egypt	4	4	4	12	United Arab Emirates	0	1	0	1
Nigeria	4	4	1	9	Lebanon	0	0	2	2
Algeria	4	3	8	15	Belgium	0	0	1	1
Morocco	4	1	2	7	Estonia	0	0	1	1
Austria	4	1	1	6	Jamaica	0	0	1	1
Switzerland	3	2	6	11	Lao People's Democratic Republic	0	0	1	1
Denmark	3	2	4	9	Malaysia	0	0	1	1
Ireland	3	1	1	5	Namibia	0	0	1	1
Croatia	3	1	0	4	Puerto Rico	0	0	1	1
Azerbaijan	2	3	5	10	Syrian Arab Republic (SYR)	0	0	1	1

Source: Wikipedia.

We, Andrew Benito, Michael Buchanan, Constantin Burgi, George Cole, Kevin Daly, Francesco Garzarelli, Huw Pill, Alberto Ramos, Hui Shan, Yu Song, Thomas Stolper, Tim Toohy, Kamakshya Trivedi, Jose Ursua and Dominic Wilson, hereby certify that all of the views expressed in this report accurately reflect my/our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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