



**VF-rapport 13/96**

**IMPACTS ON TOURISM FROM  
MEGA-EVENTS:  
THE CASE OF WINTER OLYMPIC GAMES**

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# VF-report

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<b>Summary</b>  The tourists trade and host communities expect often that mega-events will have major effects on tourist demand. This report documents the real effects on tourism from the last 3 Winter Olympic Games, and compares them with growth theories and forecasts used during the planning of the 1994-Games in Lillehammer, Norway.	
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## **Preface**

Hallmark tourist events, as major cultural and sports events, have received considerably attention in international tourism research the last years. Most of the interest for such mega-events have been tied to the short term economical effects on the host community during the event itself. Very few studies have looked on the long term effects on tourism demand and how effects are distributed on local, regional and national level.

This report attempts to clarify both the time pattern of tourism developments and the influence zones from mega-events, by using the last Winter Olympic Games as case studies. The aim is to identify more precisely the changes going on, which may help future planners of mega-events to improve their forecasting efforts.

The report is written in English on request from potential hosts in different parts of the world, who have asked for information on the effects from the Winter Olympics in Norway in 1994. Here comparisons with earlier hosts are included.

Dr. David Lime, University of Minnesota has inspired for and read earlier papers. Thanks also to Otto Andersen, Karl Georg Høyer and Morten Simonsen for helpfull comments to the final report.

Jon Teigland  
Lillehammer/Sogndal October 1996

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## **Summary**

Winter Olympic Games is a type of mega-events often tied to high expectations about impacts on tourism development. The impacts on tourism are, however, not only related to the event and the development of facilities/ infrastructure needed, but depend also on other processes influencing the tourist markets.

This report presents development theories and available facts from the last Winter Olympic Games. The international comparisons suggest that impacts on tourism from such mega-events vary, and can be smaller and less lasting than the "big boom"-effects often expected. Growth in tourist traffic on regional level before and after the Olympics have been much lower than predicted in planning documents, and are in the cases studied related statistically to other factors than the mega-event. Locally the effects on tourism have also been lower than expected, but effects can vary substantially. The influence zone can be narrow and concentrated geografically to areas close to new and important attractions. A key to success seems to be a good understanding of the changing tourist markets, and to use mega-events to develop unique tourist attractions, with high competitive qualities. Hosts who do not have unique ideas, may not get the tourist boom expected.

The very high costs involved and much lower effects than often predicted, make it important for potential hosts and tourist suppliers to do careful market studies, impact assessments and cost/benefit analysis before planning new projects.

## Sammendrag

Vinter Olympiske leker er en type av store begivenheter som ofte er forbundet med store forventninger om turisteffekter. Endringene i turisttilstrømningen til en vertskapskommune eller region er imidlertid ikke bare knyttet til den begivenheten som blir arrangert, men avhenger også av andre prosesser som påvirker turistmarkedene.

Denne rapporten sammenligner teorier om turistutviklingen som planleggingen av de 3 siste vinterlekene har bygd på, og realitetene etterpå. De internasjonale sammenligningene viser at slike mega-begivenheter kan ha varierende turisteffekter, men at de ofte er vesentlig mindre og mer kortvarige enn forventet. Regionalt har veksten i turisttilstrømningen til vertskapet før og etter arrangementene har vært klart lavere enn prognosene i plandokumentene, og har dessuten sammenheng med andre faktorer enn de Olympiske Lekene. Lokale effekter har også være mindre enn forventet, men kan variere betydelig innen de lokalsamfunn som er berørt. Effektene lokalt er konsentrert til og nære ved områder hvor nye og viktige attraksjoner er utviklet. En nøkkel til suksess ser derfor ut til å være basert på god forståelse av hvordan turistmarkedene fungerer og endrer seg, og å bruke mega-begivenheter til å utvikle unike attraksjoner med høy konkurransevne.





# 1 Introduction

Mega-events have been defined as events with large numbers of participants or visitors, and a worldwide publicity (Socher and Tschurtschenthaler 1987). Many host communities expect a tourist boom because of such events. A belief partly based on high impact predictions from consultants and scientists. Which according to Crompton (1995) too often are not trustworthy, as the forecasts and realities can vary substantially.

To predict tourism impacts from mega events before (ex ante) the events take place will, however, always be difficult. One reason is that the planned event (the primary project) most often will stimulate other (secondary) projects both in the private and public sector, which can be difficult to predict in advance (as the development of new theme parks, museums and upgraded public services). The primary projects and also secondary ones will in addition be influenced by **unplanned changes** going on during the long planning period and afterwards, as business cycles and policy changes.

One major unplanned change influencing the 1994 Olympics in Norway, and tourism developments, was the oil-price shock in 1986, which strongly changed the Norwegian oil-based economy. The break up of Soviet Union early in the 1990' is another example of unplanned change, having a **direct effect** on the 1994 Olympics by the increased number of participating nations and visitors. The fall of the Soviets had **indirect effects** too. One of them was the increased interest rates in Europe after the German reunion, as the Germans payed (the first years) the reunion with borrowed money. Increased interest rates have influenced both tourist investments and consumption in the 1994-Olympic region during the pre-game years.

The impacts on tourism from a mega-event are, therefore, usually the result of several forces creating **interaction and cumulative effects** in a dynamic developing process over a period of 15-20 years. Such interaction processes involve both private and public sector, consumers and suppliers, and are difficult to predict (requiring flexible planning). Cumulative effects make it also difficult to identify afterwards how much of measured change is related to the event, and how much is linked to other unplanned but major change processes.

The aim of this report is to clarify some of the major effects on tourism from such mega-events by using the three last Winter Olympic Games in Calgary (1988), Albertville (1992) and Lillehammer (1994) as case-studies. The research strategy is a multiple-case approach, as described in Yin's (1984) classical book on case methods. Each Winter Game is then seen as a major (and expensive) experiment, having effects on tourism. The basic case is the tourist effects so far from the last Winter Olympic Games in 1994 in Lillehammer, Norway. The changes over time and space which this single event did create in tourism demand and supply is here compared with the main alternative development theories discussed when planning the Norwegian 1994 Winter Games. Changes in tourism flows to the Olympic host are also compared with different reference areas. This singular event case study is later on used as a starting point for intentionally **replicated case studies** in earlier Winter Games. The multiple case strategy is used in an attempt to clarify if other factors than the Olympics may explain the tourism developments before and after the event. The idea is to look for "pattern-matching" and why.

To use scientific jargon, the studies is close to a "multiple-case design with embedded multiple units of analysis", as proposed by Yin (1984). The multiple cases are the different Winter Olympics. The main unit of analysis is the changes in tourism going on during the whole event-project (the holistic unit). But also embedded units are analyst when effects are separated according to different time and space units (time-series and pattern on local, regional and national level).

This approach is chosen to increase the quality of the research design, and to make it possible for readers to judge the validity of the results (both conceptually, internally and externally). The statistical data used here are published by or on behalf of public authorities. This information have been checked, when possible, against different sources as part of a triangulation strategy. Such additional sources are included in the list of other litterature. Other scientists too can, therefore, check the reliablity of data and model estimations.

The report is, however, not written mainly for the scientific community. To make the substance accessible for as many readers as possible, the intention has been to use as little scientific jargon as possible (in the remaining text).

## 2 Basic concepts and tourist development theories

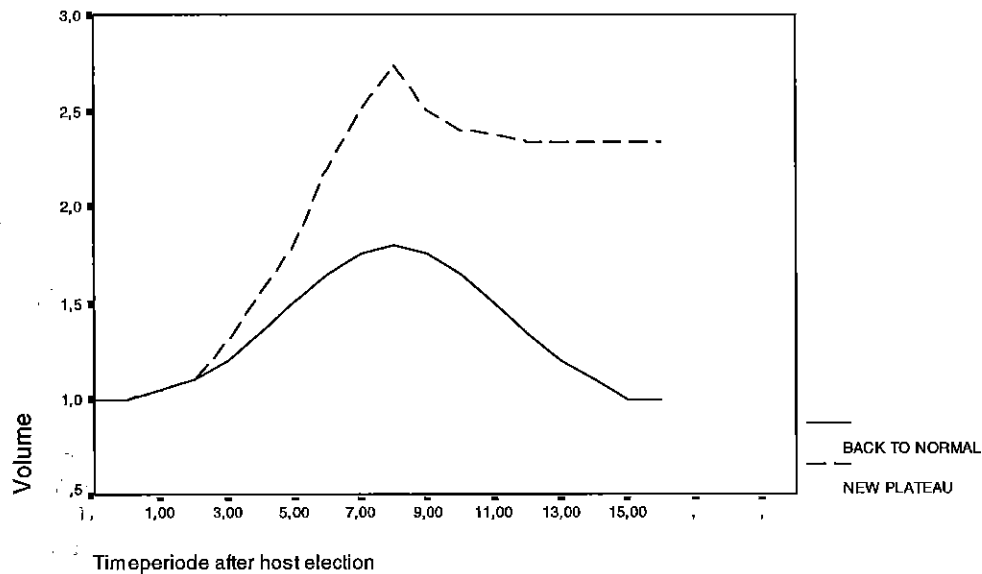
When Norway early in the 1980'ties applied for the 1994 Winter Games, the event was seen as a tool to strengthen the economic base of the host region by making it an important tourist destination. The idea was tied to the common view of tourism as a strongly growing industry, which mega-events and especially Winter Olympics would have strongly contribute too (Socher and Tschurtschenthaler 1987). Public and private investors, therefore, expected a tourism boom if Lillehammer was chosen as the host town.

Several Norwegian pre-game studies and planning documents supported "**boom theories**". Other studies had opposing views. The different pre-game theories give us now a unique opportunity to test the hypothesis against the empirical realities, which Campbell (1988) has stressed the need for. Basic concepts in the theories, explicit or implicit, are time patterns of impacts on tourist flows and geographical influence zones related to the impuls from the type of mega-event which an Olympic Game is.

### 2.1 Types of events and impuls processes

Olympic Games have so far rotated geographically between host countries and continents, being mostly an "**once upon our lifetime**" experience for the host city and region. The development processes such events can start is probably different from events which are repeated at the same location, either with fixed yearly intervals or at irregular times.

A major "once upon a time"-event in general will most probably function as one strong impuls or "shock" to the host community and the tourist industry, creating a major wave of activities. But Crompton (1995) claims that such "one-off"-events in general are unlikely to generate lasting employment because of their short term nature, and only preliminary adjustments in employment. That claim is probably based on an assumption of only short term effects on tourism flows too.



**Figure 1** Scenarios for tourist flow related to mega-events. Timepattern with flow volume in election year equal 1,0.

Expectations linked to a new plateau scenario assume that a mega-event will have lasting post-event impacts, because of an interaction between improved awareness, attractions and accessibility created by the event and new secondary projects. The cumulative effects from such improvements give the host community and region an increased competitiveness in the tourist markets, according to these theories. The **total effects** depend on the improvements in the host region compared with other tourist destinations.

But a "**back to normal**" or **bell-shaped** tourist flow can in theory also be possible, based on a scenario of only **preliminary impacts**. The changing growth rate expected in tourist flows before and after Olympic games, will then relate to the growth and decline in media attention and the economic stimulus. Changed competitiveness is less important or pre-liminary. A bell-shape will be linked to growth in preparations for the event, and a pre-game top reached during the last year before the event when new facilities usually are tested. A bell-shape relates also to economic stimulus and media attention, which continuing during the first post-game years but disappears quickly later on.

Events which is repeated with intervals at the same location, as many festivals are, will probably function as several waves which over time may strengthen each other through a diffusion process. Swedish studies show that a geographically regular event or **on-going sports events** as the yearly Wasa winter sport festival, have followed such a development pattern with strongly increased attendants over a long time period until a recent levelling off. One reason for the growth is that the catchment area did increase over time, as the awareness of the regular festival spread to areas further away over 20-30-40 years (Bohlin 1996).

"One-off" events as the Olympics, will not have the same diffusion effects over time for each host. But hosting a mega-event can inspire locals and others to organize other events before and afterwards at the same location. The Games will in such cases have a "butterfly-effect", triggering a dynamic development process where even small changes may have large impacts over time. The planning of the Olympics seldom includes such effects, but are mostly based on theories of effects from one single large impulse.

## **2.2 Time patterns of effects**

The Olympic Games itself have short duration, with the Winter Games lasting no more than 14-16 days. Application, planning and preparation, however, often last 10-15 years or more. The impact on the host town and region lasts, therefore, a long period, with the event itself as a short boom.

Effects may vary substantially during the **total project-period**, which cover the many years from the idea of an event emerge until the implementation organizations are downsized afterwards and the facilities adapted to new use. The impacts during the total project period can be divided into the effects during the **event-period** itself (often 3 months, including the month before and after the Olympic event), pre-game effects before the event period starts, and the short and long-term post-game effects afterwards. But definitions of such effect periods varies in the literature.

"One-off" or single event theories about the development of tourist flows in host regions during the total project period often follow two basic forms; a **new plateau scenario**, and a "**back to normal**"- alternative (figure 1).

A "**skewed bell-shape**" is possible because of shadow effects and time-lags. One type of shadow-effect is related to time linkages between the different Olympic Games. Host selection is usually made 7-8 years before a new event takes place.

A newly elected host could, therefore, during the first post-election years experience a shadow-effect of the next games in the row, giving low growth rates the first years. The host of the 1976-Summer Olympics, Montreal, had a World Fair 9 year earlier. That Fair may have made Montreal well known internationally, reducing tourist impacts from the later Olympics, which was a shadow-effect on level, not timing.

A skewed bell-shape visitor flow relates also to the host community's need to accommodate experts and workers during the planning and development period. The volume of work related traffic will depend on the degree of self-supportiveness, with higher importing needs of experts in smaller host communities. Work related traffic will be preliminary and disappear afterwards. Learning visits from new hosts will appear both before, during and after an event, but will most probably be of a much smaller volume than pre-game import of experts.

The need to learn may, however, partially explain why visits during the Norwegian Olympics in 1994 increased especially from countries (USA and Japan) who will be hosting the next Winter Olympics.

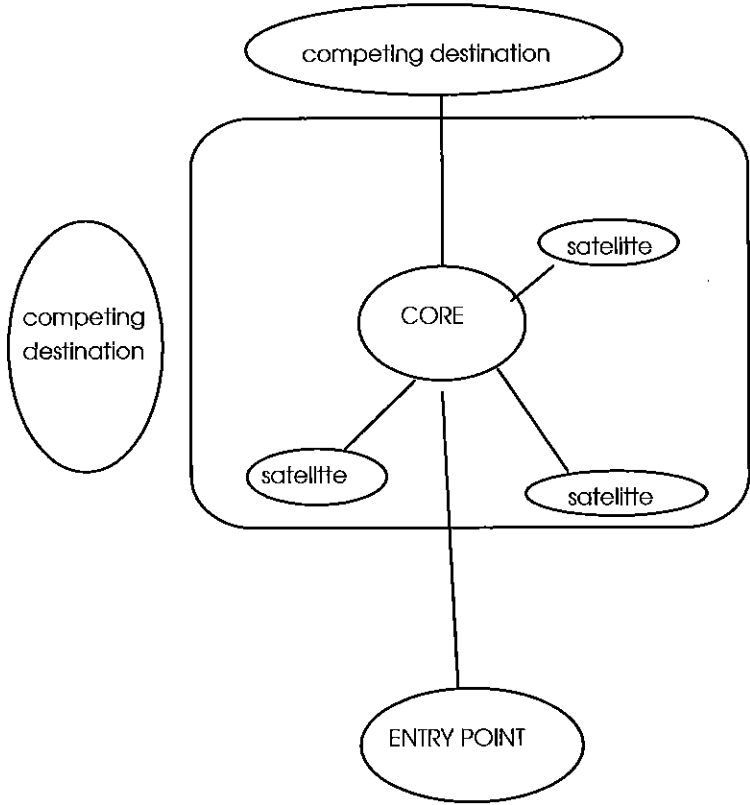
A **time lag** can contribute to skewness in tourist flows after a mega-event. New tour operators and sales channels, who want to offer products in the host region after a mega-event, need often a year for their preparations. Independent leisure travellers make also their decisions so early that a mega-event may not influence the first holiday season afterwards, but later ones. The **awareness effects** have then a time-lag of one year between media-exposure and the effective travelling behaviour (demand) among international leisure tourists (Kang and Perdue 1992).

### **2.3 Geographical influence zones**

The basic Olympic Game idea is to concentrate the event to one **host city** or town, but accepts also the use of secondary sites (**satellites**) within an

one-hour driving distance. The host community is often referred to as the Olympic core, while the satellite region include also the neighbour communities with the satellite areas, or the regional administration unit which the host city belongs to (the Olympic Region).

The **influence zone** of the event will vary, depending on the distribution of venues and facilities to different types of satellite areas. But besides impacts in satellites in or close to the host region, effects can also be seen at entry and departure-points to the host-country and region, especially close to airports receiving international visitors. Intervening tourist attractions along major travel corridors will be influenced too, beside competing tourist destinations (figure 2).



**Figure 2.** The structure of geographical influence zone of mega-events.

The competition effects between an Olympic host and alternative tourist destinations may be larger on the international than on domestic markets.

The international effect will then be among foreign visitors who travels to the host of an event instead of destinations in other countries. Such **international substitution effects** were reported after the Summer Olympics in Seoul in 1988, which increased South Korea's regional market share with 1-3 % (Kang and Perdue 1992).

**Domestic substitution effect** will also occur if a mega-event reduces the flow of domestic holidays abroad during the winter and summer seasons. Both of these two external substitution effects were expected to be substantial in a Norwegian Pre-game study supporting "big boom theories" (Asheim et al. 1990). That study expected the 1994-Olympics to reduce the Norwegian demand for holidays abroad with 10% during winter times for a period of 10 years after the Olympics, and increase the foreign demand for holidays in Norway with 10% too during the the 10 first post-game years.

Internal displacement and relocation effects may in addition occur inside the host region or nation before, during and after a mega-event. Foreign and domestic demand can be relocated internally, from other tourist destinations in the host country to the city and region hosting the event. Tourist suppliers in competing destinations have often expressed concern for such internal effects. This is based on a fear of unfair competition because of public founding/subsidies of Olympic facilities and infrastructure.

Relocation of tourists from other regions will be a benefit for the host region. **Internal relocation** can, however, be a problem for the **host nation**, if the main effect of using national public money on a mega-event is to move tourists from one internal region to another. If a mega-event does not induce enough new tourists to compensate internal relocations, then the result for the host country will approach zero.

Displacement is not only a geographic phenomenon, but can also relate to changes in timing of tourist flows. A study from the 1984 Summer Games in Los Angeles indicates that 70% of usual business visitors to LA postponed arrivals during the event period, a form of time displacement as the business traffic increased accordingly afterwards (Lazer 1986). Most leisure based attractions in the LA-area reported also the business to be down 20-35 % from normal traffic (Pyo et al 1988). Reduced demand was partly due to the many locals who moved away during the event to escape



congestion problems. That is another type of displacement in space (Economic Research Associates 1984).

## **2.4 Locations and type of host community**

Olympic Games are hosted by a city or town, but the size of the event make it necessary for both the host region and nation to be highly involved. The hosts of the last Winter Olympics have, however, been very different.

The last Winter Olympics in 1994 took place in a small Norwegian town, Lillehammer, located in the periphery of Europe. The host town and region had national importance as a tourist destination, based on Nordic skiing. It lacked both the alpine ski facilities and accomodation capacity which most international winter tourist destinations have. During summer time, Lillehammer was an important stop-over place for foreign tourists travelling to the main tourist attractions in Norway, the fiords and Northern Norway. Lillehammer had only 23 500 inhabitants and 3 500 tourist beds when in 1988 elected by the International Olympic Committee (IOC).

The Winter Olympics in Albertville in 1992 took place in one of the main tourist regions in Central-Europe, close to the markets in the host country France. The Olympic region of Savoie in the northern parts of the French Alps is one of the largest developed ski areas in the world, with 992 km of groomed ski runs, and 590 skilifts. The accomodation capacity is tremendous with beds for 401 000 visitors in wintertime (1993/94). Most of the capacity (84 percent) is, however, in second homes and apartments. Only 5 percent have hotel qualities (Observatoire du tourisme en Savoie hiver 93/94). The French Olympic region is mainly a winter destination with 3/4 of the annual visitors during the ski season. 75-80 percent of the winter traffic is concentrated to a 14 weeks long peak season in January-April.

The Canadian host in 1988, the City of Calgary, is the energy capital of Canada with headquarters of most of the oil and gas industri, situated just one hour east of internationally very attractive national parks in the Rocky Mountains. The city itself has a substantial accomodation industry, with approx 9500 rooms/units in total during the 1988-Olympics. In addition there is high accomodation capacity in the mountain tourist resorts west of Calgaray, in or close to the National Park of Banff (with approx 4500

rooms/units in 1990). Banff alone have 4 million visitors a year. Most international visitors coming to this part of Canada, are sightseeing or skiing in this mountains (Alberta Tourism Pulse January 1993), using Calgary as an entry- or departure point.

The geographical distribution of Olympic facilities inside this 3 Olympic host regions, have varied substantially. The concentration of facilities was low in Albertville, France, in 1992 when the satellites included 10 towns and 14 venues spread over a large Olympic region. The concentration was high in Lillehammer who originally planned to have all events within "walking distance" from the host town. The **compact game** idea of Lillehammer was, however, changed to a compact Olympic core inside or around the town itself, supplied with three satellites within 1/2-1 hour travelling. The City of Calgary in Canada used 2 satellites for alpine and nordic skiing.

The location patterns of facilities inside the host region influence most probably the impacts from the Olympics. A very decentralised event will spread the impacts to a larger area, and make the impacts "thinner" in that way. A very compact event, as in Lillehammer, should at the other side, concentrate the impacts and make them more easy to identify.

The location of the host town in relation to potential tourist markets is important, as increasing distance is usually a restraining factor on tourist flows. Albertville with short distance to large population centers in Europe should, therefore, have a more voluminous catchment area than Lillehammer, in the periphery of Europe, with only a few million persons inside a one day travel distance. The drawing power of a tourist attraction depends, however, also on the uniqueness, diversity and price/quality of a host region compared with alternative tourist destinations. The consumer's awareness and image of a potential tourist resort is important too. If a mega-event not induces a significant change in the attractiveness of a host town, then the impacts on tourism may be accordingly.

The relative size of the host community will probably also influence the volume of impacts, in the way that the equal number of visitors and equal volume of economic stimulus should have higher relative impacts in a small community than in large ones. The impacts in Lillehammer, with originally only 3 500 tourist beds, should then naturally be larger than in

the Albertville-region with a tourist receiving capacity of 400 000 tourist beds. And also larger than in the city of Calgary who had approx. 650 000 inhabitants in 1988, or 27 times more than Lillehammer.

The size of economic stimulus that the event represent will most likely also influence the volume of impacts on the host community and the tourist sector. The volume and quality of change in infrastructure and facilities, and volume of the media attention and the degree of success of the event, will be other factors of relevance.

The costs, attendance and media coverage have according to all indicators increased substantially during the last 20 years, reaching a very high level during the last games in 1994. The Lillehammer-Olympics in 1994 had a total cost of approx. 1 500 million US\$, including private investments, public infra-structure and operating costs. 12 000 persons worked for the organizers, paid or voluntary, and 30 000 official guests were accommodated in addition to "normal" tourists. 1,2 million tickets were sold and approx. 1 million additional viewers came to the free venues. Up to 200 000 visitors came each day to Lillehammer during the 16-day event, and 669 million TV-viewers joined the experience in 134 different countries on an average day. It would be strange if such a volume of economic stimulus, the event itself and the media coverage, should not have some impacts on a small town and the tourist industry before, during and after the event. Especially as the Lillehammer Games had an enthusiastic public and 16 days with sunshine (the best winter weather ever).

The media coverage and economic stimulus from the Lillehammer-game were higher than earlier, with the costs of the 94-Games 25 percent higher than in Albertville only 2 years earlier. One reason for the increased costs is that Lillehammer had very little facilities and infrastructure before elected as host. The Lillehammer-Games was, therefore, a true mega-event according to most criteria, which should have substantial effects on tourism if the common impact theories are correct.

The Winter Olympic Games in 1994 was, therefore, in many ways a critical test of theories of "tourist boom"-effects from mega-events. If the Lillehammer-Games do not have strong lasting effects on tourism, who can, and under what circumstances?



## 3 Forecasts and actual effects in the Norwegian case

### 3.1 Forecasts and dynamic projects

One problem when comparing pre-game forecasts and the realities afterwards, is that the event-concept can change substantially during the planning period. The original idea for the Norwegian 1994 Winter Olympics was, for example, to create a relatively **cheap and concentrated event** with most of the venues "within walking distance". But the cost estimates increased sharply after the host election in 1988. Within 6 months the official cost estimates had increased 5 times, before the Norwegian Parliament decided to fix an upper limit (of approx. 1 billion US\$). The costs increased partly by the fact that a small town with 23 500 inhabitants in no way could pay the bill. As the national authorities in any case had to pay, the locals and other interests wanted to get as much out of the "national bank" as possible. Neighbour communities eagerly wanted parts of the cake too, and some major event facilities was moved out (by the Parliament) from the core to the neighbours to reduce "after-use" problems.

Another important aspect forgotten in Norwegian impact assessments was the many dynamic forces in the public sector. A mega-event with national importance will often trigger several other public projects, not necessarily related directly to the event itself. Such secondary public projects have been very important, at least in Lillehammer, where national and regional authorities changed their priorities after the host election, and was willing to locate new public facilities or upgrade public services in the Olympic region. Among the results are new postoffices, railway station, art museum, transportation museum, national alpine sports centre and national indoor skating centre.

Some of these public investments were planned without the Olympic games, but was now moved forward in time. The **acceleration effect** may result in reduced public sector activity afterwards (as the rest of Norway now seems to think that the Olympic hosts have got "more than enough" of public money). The end-effect may perhaps be zero over time, giving the

partly unwanted effect that some professions have much less to do after the games than normally, with the downsizing of the activity.

The fact that the economic costs of the 1994-event increased 5 times and, therefore, became a much larger external impulse to the local economy than expected, could make it reasonable to expect substantial higher effects too than originally forecasted, especially for employment effects. But also for the local tourist industry as the sports facilities and cultural institutions developed for the event included a larger number and higher quality than planned originally. Here, however, only the original forecasts for tourism traffic developments are used as a reference.

### **3.2 Forecasts and actual demand effects**

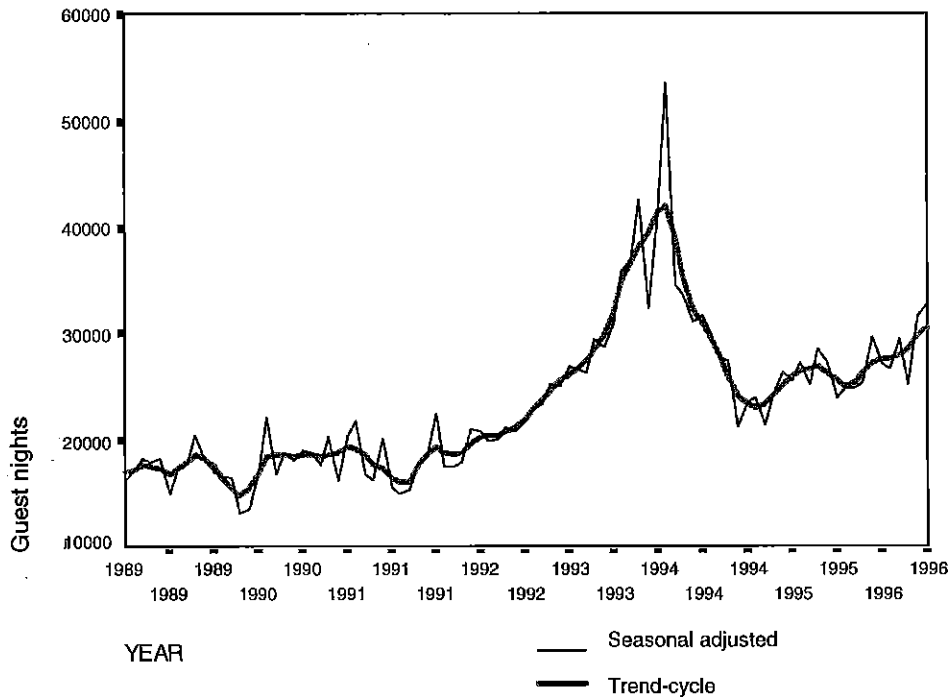
The Lillehammer municipality based its tourism planning after the host election on a "new plateau" scenario (Lillehammer Næringssselskap 1989), expecting an 125% increase in traffic to the Olympic core between 1988 and year 2000, or 7% annually during a 12 year forecasting period.

Regional planning authorities in the Norwegian 1994-Olympic region (Oppland County) also based their tourism planning on a very strong growth from 1989, expecting an increase of 102% in the tourist flow regionally up to year 1995 (Oppland Fylke 1989), or approx. 11% annually during a 6 year forecasting period. Officially the regional growth forecast was somewhat lower (88% increase). But then the accommodation of many refugees at hotels was included in the baseline 1988 tourist statistics, which of course should not be counted as tourists. A local scientist was even more optimistic than the regional authorities and claimed that the regional tourism traffic would growth 15% annually during pre-game years because of the Olympics (Kamfjord 1990). The strong growth was expected in all parts of the region, not only the Olympic core.

Statistics from 1995 show now the realities. The regional growth so far has been 55% below the original and less optimistic estimates. Nearly all growth (92%) have been in leisure tourism, of which 65% have been foreign tourists with a major part from Germany. The growth in conference traffic regionally have been very low, and only 1% of the original forecasts from the regional planning authorities. The increased flow of well paying

guests have, therefore, been much lower than expected to the Norwegian Olympic county (Oppland).

Most of the regional growth from 1989 on (71%) have been in the Olympic satellite and core communities. But tourist flow to the Olympic core itself, Lillehammer, have been lower (approx. 1/2) than forecasted (by 1996), after a much higher peak during the preparations and event period. A low growth the first 3 years after the host election in autumn 1988 is one reason, partly because of a national downturn in the economy during 1988-1991. The traffic first started to grow during summer 1992, less than 2 years before the event, with a high peak close to and during the 1994 Olympics (figure 3).



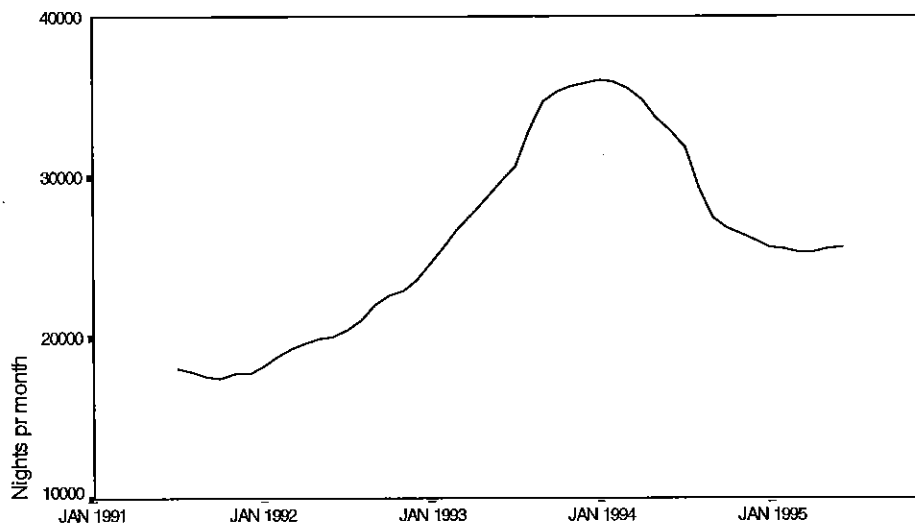
**Figure 3** Traffic-trend in Lillehammer 1989-1996. Monthly guestnights at commercial suppliers with 20 beds and more.

Data source: Norwegian Central Bureau of Statistics.

This comparison is based on the assumption that all growth is related to the Olympics, which of course is a bold assumption. Parts of the growth in

tourist traffic on national, regional and local level during 1989-1991 is most probably related to an upturn in the Norwegian business-cycle (which not allways follow the general European business cycles timewise because of the national oil and gas incomes. As lower oil prices reduce Norwegian incomes but increase available incomes in non-oil producing countries).

The effects on tourism from changes in Norwegian national economy will be discussed more in detail later on (see 3.4). Here we will try to eliminate effects from the upturn in national business-cycle, by using only data from 1991 on. The time pattern can then easier be identified by estimating the yearly moving average of monthly guest nights in the core community, Lillehammer. That indicator shows a combination of "new plateau" and "back to normal" developments (figure 4). But the impacts do here only refer to the geographically core of the influence zone, and all growth in accomodation traffic from 1991 is interpreted as an effect of the 1994-Olympics.

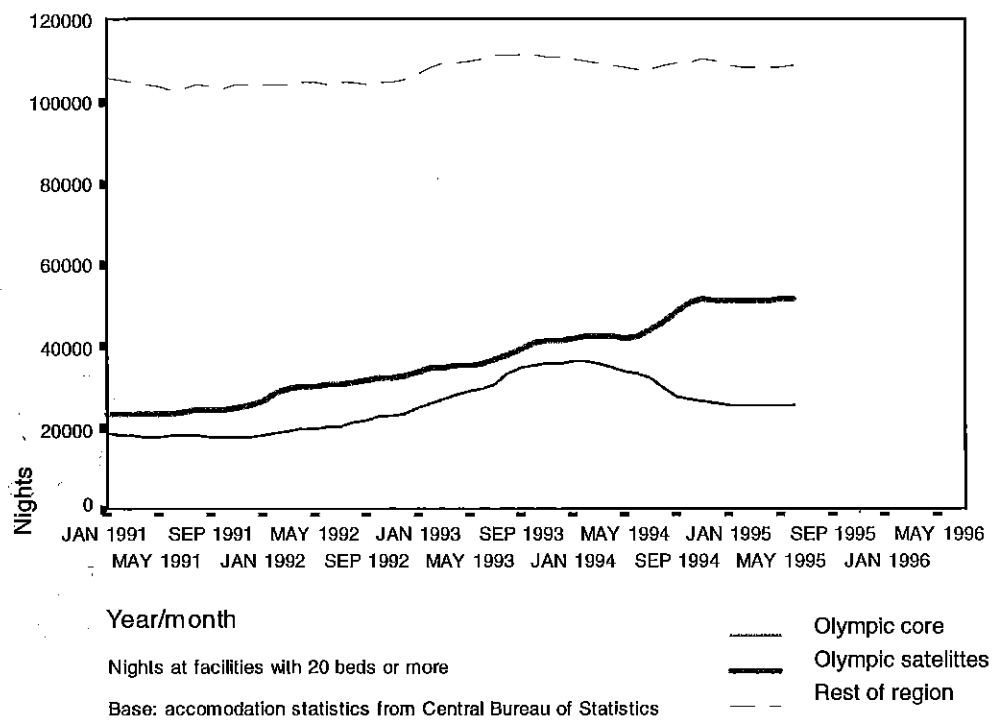


Source: The Norwegian Central Bureau of Statistics

**Figure 4.** Commercial guest nights in Lillehammer 1991-1995. Accomodation facilities with 20 beds and more. Seasonal adjusted figures (12 month moving average).



Most of the growth before and after the 1994 Winter Olympics have, however, been in the major satellite communities in the close neighbourhood of the Olympic core, where major new alpinee facilities and resorts have been built. A major summer theme park has become an important attraction in that area too. The tourist flow to the satellite communities (Øyer, Gausdal and Ringebu) did, therefore, increase 100% between 1991 and 1994, and 40% during 1995. The tourist traffic to the community with the main Olympic alpinee facility (Øyer) increased almost 500% from 1991 to 1995 (but from a low level of only 4000 guest nights per month or 135 persons a night in average). Tourist traffic in the Olympic County outside of the Olympic core and satellites have been much lower than expected, and only 16% in total between 1991 and 1995, not 15% per year as in the most optimistic forecasts (figure 5).



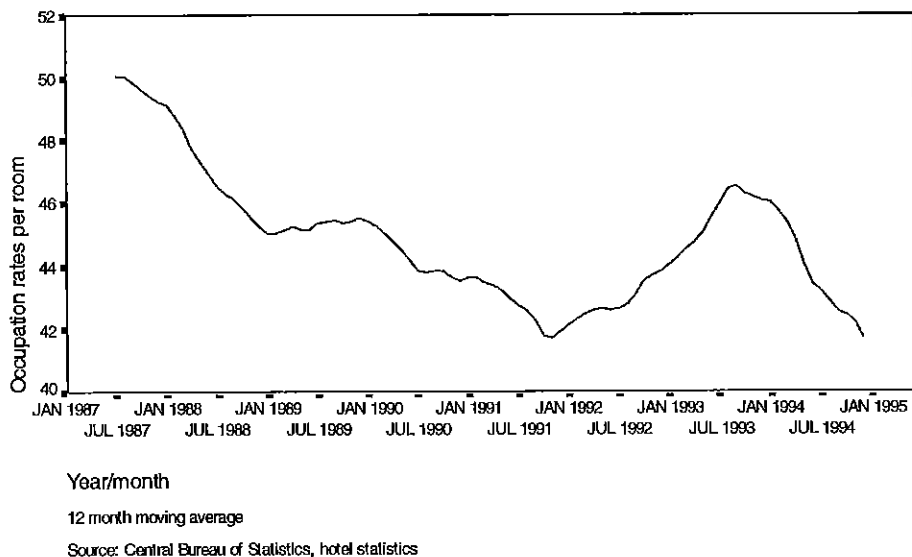
**Figure 5.** Traffic-trends in Olympic Region 1991-1996. Seasonal adjusted monthly guestnights. 12 month moving average.

### 3.3 Impacts on suppliers

The small town of Lillehammer was chosen as host of the 1994-Olympics because of the "compact games concept", not because of a large accommodation capacity to take care of the 35 000 visitors expected to the Games, normal tourists not included.

The sever lack of accommodations made the event organizing committee very interested in increasing the capacity, using high subsidies to generate the needed developments. Their short term interest resulted in a 75% increase in permanent tourist beds (6200 new beds) in the core and satellite region from 1988 to 1994, between the host election and the games. In addition 15 800 **temporary beds** was built in preliminary hotels and buildings that afterwards have been moved or used for other purposes (Spilling 1994). Such a large growth in accommodation capacity is unique, as most Olympic hosts have had high capacity or oversupply when elected.

The increased accommodation capacity was not followed by a similar growth in demand. One result is a clear decrease in occupation rates on regional level (figure 6), a process which started before Lillehammer was elected as the 1994-host.



*Figure 6. Occupation rates in Olympic Region (Oppland County). Seasonal adjusted 1987-1996. Accommodation facilities with 20 beds and more.*

One preliminary effect of the 1994-Olympics was, therefore, that the regional occupation rates increased during the last pre-game year, because of accommodation needs during the final preparations. But the increased permanent capacity combined with reduced demand later on from event workers, gave the occupation rates a strong downward turn again after the Games. In addition to lower occupation rates a reduced turnover per guest night have emerged, indicating clear price pressures in the Olympic region after the 1994-games. Information on average price has, however, only been published from July 1993 on from the Norwegian Central Bureau of Statistics.

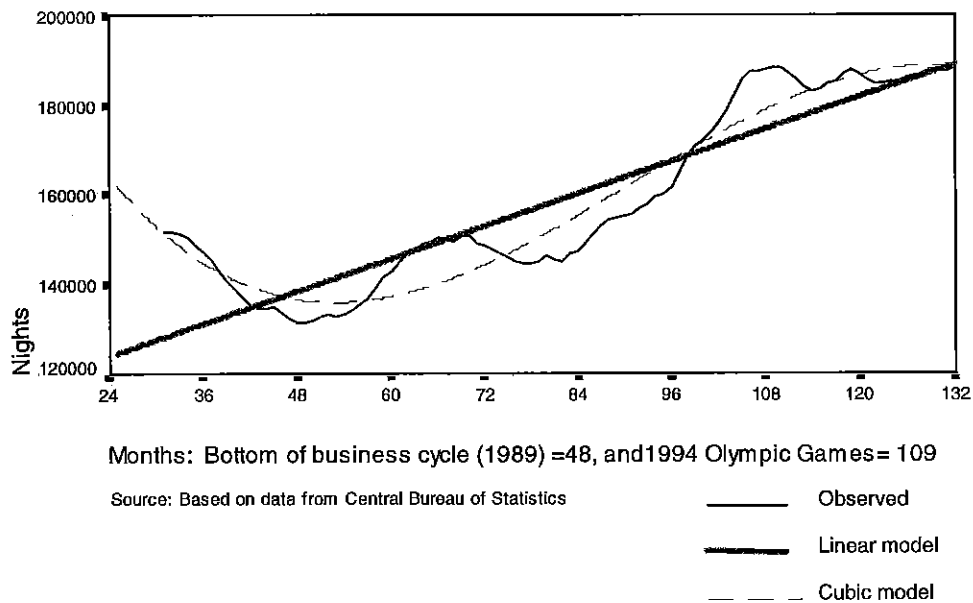
The low and reduced regional occupation rate (only 42% in 1995), combined with reduced turnover per guest night, indicate growing economical post-game problems in the Norwegian Olympic Region from 1994 on. A new economical study verifies this, and show that the turnover per night in the Olympic Region was 32% below the national average during 1995, and decreasing (Jacobsen et al. 1996). In other words, the Olympics have not made the host region attractive enough among the consumers to fill up the increased commercial accomodation capacity developed by the private sector and the organizers of the Olympics. This unbalanced market situation can be a long term effect. As it most probably will take years before the tourist traffic has increased enough to move average occupation rates up from 42% to profitable rates of 55-60%.

The overcapacity in the Olympic Region may also influence the tourist trade in other parts of Norway, changing tourist flows and prices in the future. So far, however, the effects of the 1994-event on areas outside the Olympic core and satellites are different from what competing destinations and national authorities have expected.

### **3.4 Effects from other unplanned changes going on**

A major part of the Norwegian national income decreased when the oil price went down in 1986, with strong reduction also in private consumption and domestic demand for both business and leisure travelling. The bottom of the business cycle came in 1989, but the domestic travel demand first reached earlier levels when the national economy (GDP) and

private consumption started to increase again in 1990-91 (Central Bureau of Statistics 1995). This business cycle influenced the traffic also in the Olympic region (figure 7).

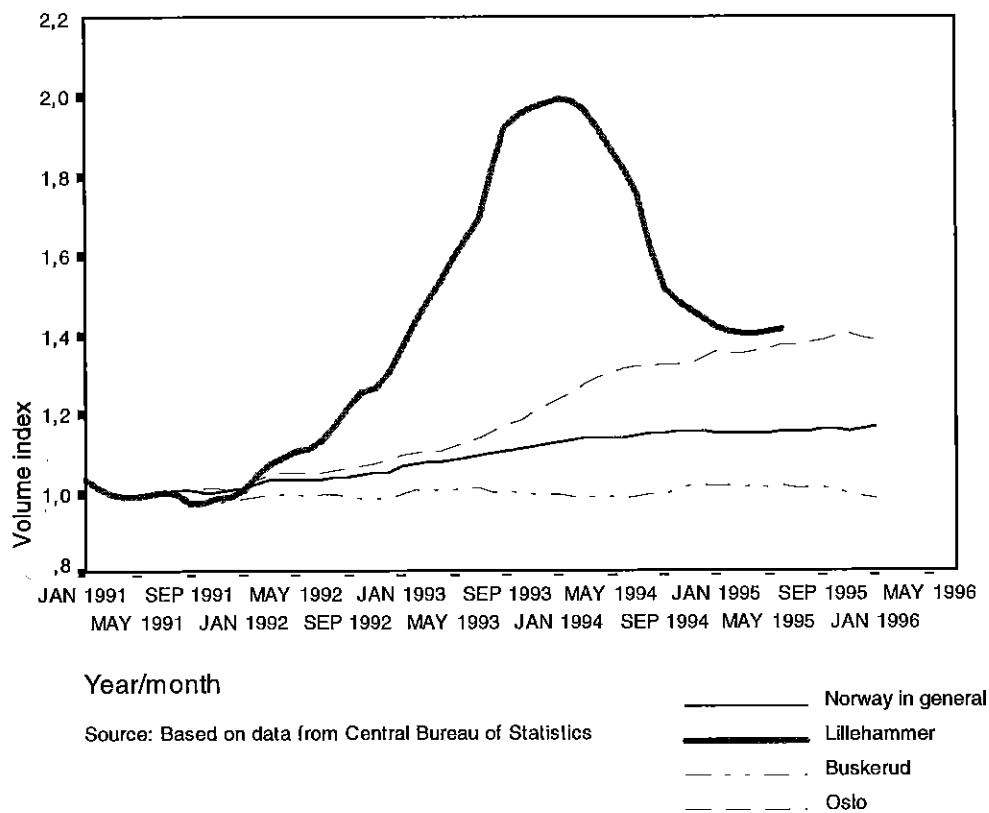


**Figure 7.** Traffic-trend in the Olympic Region (Oppland County). Guestnights 1987-1996 at accomodation facilities with 20 beds and more. Seasonal adjusted moving average.

The regional growth in 1989 and 1990 can, therefore, be related to adjustments of travel demand "back to normal" at the end of the business cycle. Parts of the growth after 1991-92 are most probably also an effect of the general growth in the Norwegian economy, which has expanded strongly during the rest of the 1990' partly because of growth in oil and gas production. This has now made Norway the second largest oil and gas exporter in the world, only after Saudi Arabia.

The substantial changes in national economy in the same time period as the Olympics, give identification problems. But one possible strategy for clarifying the effects of the mega-event itself could be to compare the developments in the Olympic areas with the developments in reference areas during the same years.

Possible reference areas could be Norway in general or other major tourist destinations, as for example a major competing area in the leisure market (Buskerud county) or in the conference market (Oslo, the capital). The effects from 1994 Winter Olympics in the host town can then be measured as the difference in development over time between the reference areas and the host town as shown in figure 8.



*Figure 8. Relative accomodation development 1991-1996. An indexed seasonal adjusted monthly guestnights, with volume in 1991 as 1,0.*

The choice of reference areas is a crucial one as effect studies using comparative strategies often is based on the **assumption** that changes in reference areas reflect only general change processes, and are independent of the event one wants to measure the effect off. If a mega-event like the Olympics has national impacts on tourism flows, or changes the internal market situation for competing destinations, then such an assumption is not

easy to defend. Especially as financing of mega-events by national authorities are most often based on expected (positive) effects on national tourism. Forecasts for the next Summer Olympic Games, Sydney 2000, for example, are based on assumptions of an induced increase of 100% or 2 million extra international visitors to Australia in general between 1994 and year 2004 (Mules and McDonald 1994).

To use the national level as a reference for general changes without a mega-event will, therefore, be contrary to expectations. It needs at least an assessment of the relationship between changes in the event-region/town, or a documentation of independence. Such assessments can be done by using multivariate model estimations, adjusting for other important factors influencing the travel demand.

Norwegian model estimations done so far document independence. There is no statistical significant change in monthly accommodation demand related to the Norwegian mega-event after the 1994-Olympics, either in domestic or foreign demand on national level. It has neither been a significant change (positive or negative) in tourist flows to the main competing destination on the leisure market (Buskerud), when demand is adjusting for the other factors and measured in number of overnights. But the accommodation demand in Oslo (the capital) increased significantly from May 1994 off (with approx. 10 percent more than explained by growth in GDP, calendar effects or a general increase in Oslo). There has been a significant change too, but negative, in the areas north of the Olympic satellites (Nord-Gudbrandsdalen) after the Olympics. This may indicate a **relocation effects**, in the way that some tourists are not travelling as far as earlier with a "rainshadow-effect" behind the Olympic host.

The increased demand for accommodation in Norway in general and the other areas between 1991 and 1996 is statistically related to the growth in Norwegian economy combined with a general increasing trend in travelling. Most of the growth in the foreign demand is related to increased German traffic, which is linked to internal growth factors in Germany (6 week payed holiday etc). The domestic effect of economic growth in Norwegian demand is, however, lagged 11 months. This indicate that it takes approx. one year before an improved national economy trickles down to the Norwegian consumers. The demand is then measured by the Norwegian Central Bureau of Statistics as monthly accommodation guest

nights, and here adjusted for seasonal factors (by using months as dummy variables).

The statistical models used "explain" 98-99% of the variations in the monthly changes between 1991 and 1996 both on national level and in the competing destinations. This findings are remarkable stable when data from one time period are removed from the tested model. Comparisons between the developments in the Olympic region and the main competing destinations (Buskerud and Oslo) will, therefore, most probably underestimate (if Buskerud is used as reference) and over-estimate (is Oslo is used) because of effects from the other factors in the models.

The weighted linear regression models used have then been designed not only to simplify the complex realities in general, but also to eliminate effects from monthly variations between different years because of snow variations, unusual flooding in June 1995 etc.

The theory behind the models have been that the monthly variations in demand are mainly related to:

- seasonal factors (climatic, work/school patterns and seasonal price adjustments)
- calendar effects (number of weekends and days in months)
- a general yearly growth in the interest in travelling
- an additional growth related to increase in Norwegian economy (lagged 11 months on domestic demand and no lag on foreign demand)
- a special change during the Olympic event
- an additional "kick" (up or down) after the Olympic event because of positive marketing, image and new facilities in the Olympic region.

Table 1 and 2 give information on the models used, their parameters and level of significance (but without monthly data on the seasonal variations which should have little interest here). Variables with T larger than 2 are significant.

The parameters in the models can be combined with actual accommodation figures. They indicate then that the increase in foreign demand on national level after the 1994 Olympics has been approx 1.9 percent, compared with the last pre-game years and adjusted for other factors. This is much less

than the 10% lasting increase expected in a Norwegian pre-games forecast. The domestic demand on national level decreased 1% from May 1994 on, when adjusted for other factors. This is contrary to pre-games theories, which forecasted a clear increase in domestic demand on national level in 10 years afterwards.

*Table 1: Models for domestic and foreign monthly demand on national level for accomodation facilities with 20 or more beds (guest nights per month).*

	Norwegian demand		Foreign demand	
Dependent variable	Number of monthly Norwegian guest nights		Number of monthly foreign guest nights	
Independent variables	Parameter	T	Parameter	T
Seasonal effects (month as dummy)	Monthly variations not shown here		Monthly variations not shown here	
Calendar effects				
Number of weekends	11 351	10.47	-1 630	-0.31
Days in month	48 764	1.84	24 041	2.29
General trend (year)	20 180	6.84	10 454	3.45
GDP-growth lagged 11 month	6440	3.52		
GDB-growth, no lag			5268	3.03
Olympic period (dummy)	32 947	2.6	53 159	0.73
After the Olympic period (dummy)	- 7718	1.16	6986	0.73
Intercept constant	- 1260222*	-1.53	-697934	-2.13
R square	0.998		0.994	
F	865.4		315.7	

\* Referring to the first month seasonal adjusted (December, with only 50% av normal demand, and therefore a negative sign)

The parameters and actual accomodation figures indicate **internal relocation or displacement effects**. During the event period itself adjusted demand decreased 20% in areas north of the event (Nord-Gudbrandsdalen) and 8% in a competing destination (Buskerud). The negative development



was probably a displacement effect among the usual guest groups who expected higher prices and congestions because of the Olympics in a large influence zone, and therefore stayed away.

At the same time preliminary and unusual growth was recorded in and around Oslo, the capital of Norway. There the adjusted demand increased 27% during the event month, as Oslo was the entry point for most foreigners during the event and an intervening attraction in itself. The foreign traffic increased, therefore, in Oslo as much as 120% a few weeks.

The different developments show that the influence zone of the event itself was, therefore, not circular and symmetrical, but very variable geographically. The variations on national level depend, most probably, on functional factors with increased traffic along the main corridors, and on the perception normal visitors have of potential negativ effects.

*Table 2: Models of monthly demand in competing destinations (Buskerud and Oslo) for accomodation facilities with 20 or more beds (guest nights per month).*

	Buskerud		Oslo	
Dependent variable	Number of monthly guest nights		Number of monthly guest nights	
Independent variables	Parameter T		Parameter T	
Seasonal effects (month as dummy)	Monthly variations not shown here		Monthly variations not shown here	
Calendar effects				
Number of weekends	1548	1.08	9482	0.53
Days in month	1700	0.37	2568	1.49
General trend (year)	-2508	-2.12	8060	9.02
GDP-growth lagged 11 month	2953	4.94	1472	0.023
Olympic period (dummy)	-10694	-1.83	36977	13.65
After the Olympic period (dummy)	866	0.31	14765	5.95
Intercept constant	33724	0.24	-70218	-1.29
R square	0.992		0.995	
F	319.7		281.2	

\* Referring to the first month seasonal adjusted (December)

The effects after the Olympic event on domestic and foreign demand are approx. equal, but with opposing signs (negative and positive). Nearly all **net change** on national level can, therefore, be explained by general changes, except the changes going on **regionally** before and during the Olympics itself, and in the event season. (The lack of effects on national level is partly consistence with a study of Lee et al (1996) from South Korea, which conclude that the Summer Olympics in 1988 contrary to expectations had no significant effect on tourism to that country during the year of the event).

The effects of the 1994 Olympics can, therefore, be defined as the difference in time pattern in traffic volume between Norway in general and the different parts of the host region (table 3). Positive and lasting effects is then only identifiable in the Olympic core and satellites. The tourist flow to the Olympic core (Lillehammer) was one year after the event (1995) 29 percent points higher than in Norway in general, but 6% lower than in the 3 main competing alpin centers (Hemsedal, Oppdal and Tynset). The tourist flow had, however, increased 100% in the satellite areas in general, and 5 times in Øyer, the community where the new Alpine resort has been built. More than half of the growth in the olympic satellite areas came after the Olympic event.

In the rest of the Olympic county, outside of the satellite areas, the tourist demand is reduced approx. 10 percent compared with the Norwegian average. Nearly all of the reduction came after the 1994-Olympics. The reduction may, hopefully, be a short term negative relocation effect from the event, as this parts of the Olympic county had a growth following the national trend before the 1994-Olympics.

**Table 3.** Monthly accomodation in commercial facilities with 20 beds and more. Index for seasonal adjusted data (12 month moving average) with July 1991=100. Data source: Central Bureau of Statistics.

Year	Norway in general	Lillehammer	Øyer	Olympic satellites in general	Olympic county outside satellites	Main competing alpin centers *)
1991	101	99	103	100	101	100
1992	104	114	238	127	102	112
1993	109	170	419	155	107	143
1994	114	175	485	189	106	153
1995	115	144	595	215	105	150

\*) Hemsedal, Oppdal and Trysil, which Torjus Bolkesjø, Telemarksforsking, kindly have made data available from

### 3.5 Effects, impacts and cost-effective policies

The reference areas have here been used in an attempt to identify the effects of the 1994 Winter Olympic Games in Lillehammer during a periode of 5 years, from 1991 and up to 1996. During the same periode, the Norwegian national authorities tried to help other local communities to develop tourism too. The general tourism development policy has been based on national economic support to a limited number of destinations choosen by regional authorities as part of a concentrated effort strategy.

This national "back-up" strategy on destination level are now under evaluation. One finding so far is that the growth in tourist traffic have been twice as high in "backed up" destinations as in Norway in general (Bolkesjø and Hovland 1996).

If the "backed up" destinations was used as reference areas in this report, then the effects of different tourist development policies had been possible to evaluate. But fully comparable data have not been available so far. Recent statistics indicate, however, that the 1994 Olympics did cost approx. 100 times more and had only twice the effects on tourism between 1990 and 1995, compared with the much cheaper regional "back up"

tourism policy. This preliminary findings show that national authorities can choose between alternative strategies for tourism development on regional and local level, with very different cost-effectiveness.

The effects on tourism are then measured only by one narrow indicator; the volume of change in number of commercial accomodation guest nights. That indicator is often used in tourism studies, as it is an objective measurement of change. But in some cases, even small changes can be important for the tourist industry and local communities. If tourist facilities are close to bankruptcy, a small growth in tourist numbers can be very valuable and have large impacts on the local community. It is, therefore, an important distiction between change, measured as "effects", and the value of change, evaluated as "impacts". This report looks mostly on effects.

## 4 International comparisons

### 4.1 Effects during the event season

#### 4.1.1 Effects in the host core

The local effects during the 1994 event itself were immense in the small town of Lillehammer. **Turnover** in permanent accommodation facilities increased 458% in the core community during February 1994 compared to the same month one year earlier, and 227% in the Olympic satellite region. The turnover in non-permanent accommodation and from rental of private homes and second homes is then not included.

The turnover for the local permanent hotels could most probably been much higher if the Organizing Committee had not made price contracts with most hotels early. National authorities did in addition impose strict price control during the last weeks. To reduce prices some foreign interests even built their own temporary hotels. The prices, therefore, increased "only" 83 percent in the Olympic region in general, and 100% in Lillehammer during the event.

The high volume of temporary accommodation reduced price pressures and removed parts of the market from the permanent suppliers during the event. The occupancy rate in the permanent facilities, even in the Olympic core was, therefore, less than 85% during the event month. One reason is that normal tourists did not come as usual. 2/3 of Danish tourists who are important winter visitors, stayed away during the 1994 event-period. But the declining flow of "normal" tourists during the 1994 event were more than compensated by other visitors to the core community. Foreign traffic increased especially, with 42% regionally and 148% in the core community. Much of the Norwegian visitors stayed with relatives and friends, and on less expensive temporary accommodation as close to the core area as possible.

The 1994 Norwegian "compact game" concept had, however, strong concentration effect locally on the visitors. The willingness among visitors to commute long distances between accommodation and sports facilities was much lower than anticipated, making the 1994 Games a major

disappointment for hotels in the periphery of the Olympic satellite region. Hotels even 20-25 minutes away from the town centre had much lower traffic than expected, but the displacement effect lasted only a short time. The concentration effect was especially large in the catering business. A location more than 500 meters away from the main street of Lillehammer, where most visitors stayed in the evenings, were the main reason for several bankruptcies afterwards.

A preliminary strong regional concentration and timewise peak-effect during the Olympic season seems to be common among the last hosts of Winter Olympics. The tourist traffic to the Austrian host town of Innsbruck increased during the Olympic winter seasons, both in 1964 and 1976. But traffic was reduced back to normal the next winter. The short term effect locally was, therefore, not lasting (or hidden by other factors reducing the demand). The tourist effect locally was larger in 1964 than from the games repeated in 1976, 12 years later in Innsbruck (Schulmeister 1976). That may indicate a **reduced impact of additional games in the same location**.

The Winter Games provided an amazing boost to the hotel industry also in Calgary during the event-period of January-/February 1988. The occupancy and average room rate recorded during February 1988 resulted in a 261 percent increase in **room revenue** compared with the same month in 1987. The rates increased also during January, with the early arrival of Olympic production crews (Laventhol & Horwath 1988).

It was the combination of much higher occupancy and room rates, and higher room sales, which gave record revenues in Calgary. During February, the month of the event, **occupancy rates** did increase with 59 percent, with **prices** up 200 percent from the same month one year earlier (Pannell Kerr Forster 1988). The increased occupancy during January-February was 44 percent compared with the same two months during the 3 last pre-game years, and 35 percent higher than during the first 3 post-game years. The net-effect of the Calgary-Olympic games during the event-period was, therefore, most probably between 35 and 44 percent in increased occupancy rates.

The overnight traffic in the City of Calgary also increased during the rest of the Olympic winter season (January-April) with occupancy rates up 26 percent and room rates up 48 percent in average compared with the pre-

game winter seasons. Parts of the increase can be related to post-game events, as the ParaOlympic games for handicaps.

The accommodation traffic to the French host of the 1992 Winter Olympics, did not grow but decreased during the event period (January-February) both in the host-region of Savoie and the main Olympic destinations in Tarentaise (which had approx. 83% of the guest nights during winter in 1993/94). Strong reduction in traffic came during the event itself, with a loss of more than 0.8 million nights compared with the same weeks during the last pre-game winter. The tourist traffic to Tarentaise went down 41 percent during the third week of February 1992 compared with the same week the year before! Traffic increased, however, in January 1992. The recorded reduction in traffic to the "Olympic core areas" in Tarentaise during January-February 1992 was, therefore, five percent or 330 000 nights compared with the average of the 3 last pre-game winters. Visits also increased in December and later in the Olympic winter season, giving a total seasonal gain of approx. 0.6 million more nights compared with the 3 pre-game winter seasons.

#### **4.1.2 Regional effects during the event season**

A similar displacement effect is recorded in the rest of the French Olympic region. The traffic in general to Savoie decreased 12.5 percent or approx 600 000 nights during February 1992 which means that the whole region had reduced traffic during the event-month itself compared with the year before. This must have been relocated to other destinations outside of the host region (an external displacement effect), or postponed visits to later periods or years. The regional traffic in general increased, however, substantially one month before the event, in January 1992 (up 15 percent), partly compensating for the larger decrease in February. The net-regional effect during the event-period January-February compared with previous winter season was, therefore, a loss of 3 percent. Growth before and after the event in December made up for the decrease in January and February, giving the host region of Savoie a net gain of 3 percent during the Olympic season compared with the year before (Mission Développement Prospective 1992).

The demand for the hotels in the French region varied more than the general traffic, with a growth in demand in January 1992 of 26 percent.

That growth was lost in February, during the event it self, when the hotel nights decreased 11 percent compared with the same months during last pre-game year (Observatoire du tourisme en Savoie hiver 91/92 No. 7).

The decreased traffic during the game-period in the French host region was most probably a displacement effect, because of a fear for high prices and congestions among the usual visitors, especially from France. The domestic reaction was in reality larger than stated above, as some of the reduced French traffic was compensated by an increase of foreign visitors during the Olympic event. The foreign traffic to the hotels in Savoie-region increased with approx 90 000 nights, or 26 percent from winter 1991 to 1992.

The same reduction in traffic during the event-season is recorded in the Olympic region in the Rocky Mountains west of the Canadian Host of Calgary. Major alpine tourist centres west of Calgary experienced a reduced traffic flow of 15-20 percent during the winter Olympic season (Alberta Tourism 1990). That reduction was most probably a **temporary displacement effect** because of the consumers fear of congestion and high prices. The tourist flow regionally was back to the pre-game level one year after the 1988-Olympics. Regionally, therefore, the short term effect from the Calgary Olympics was negative as in Innsbruck, except in the two small satellite areas where the alpine and Nordic ski competitions took place (Kananaski and Canmore).

A preliminary **displacement effect among the usual tourists during the event season or period** seems, therefore, to be normal in Olympic host regions. The **adjacent region** to Innsbruck, in Tyrol, had reduced tourism both during the Olympic season in 1964 and in 1976, with an increase back to normal the next winter (Brönnimann 1982). The fact that German overnights in Swiss and Italian Alps increased substantially during the same season as German tourist disappeared in the Austrian Olympic region indicate that **displacement** was the reason (DPA Group 1985). Normal tourists stayed away to save money and have the preferred holiday qualities.



## 4.2 Pre-game effects

Positive pre-game effects on tourism demand is clear in the Norwegian host town and parts of the host region when using the developments in Norway in general as a reference. If all of the "extra growth" in the Olympic host community is a pre-game effect, then preparing for 1994 Winter Olympics increased tourist flows to Lillehammer itself with 60% above "normal growth-rate" between 1991 and summer 1993, and 45% in the Norwegian Olympic satellite communities in general.

70% of the growth in the Olympic region the last two pre-game years was Norwegian visitors. The strong domestic growth was very different from developments in a main competing destination in the leisure market (Buskerud), where Norwegian demand decreased 2-3 % before the 1994 Olympics. The increased domestic demand in the host town, but not in that reference area, could indicate an **internal relocation effect**. But parts of the growth in the Norwegian Olympic core community was most probably induced (extra) demand related to a strong interest among Norwegians and partly foreigners for pre-game **sightseeing**, especially after the Olympic facilities were ready from early 1993 on.

Another part of the pre-game growth in Lillehammer in domestic demand was also "extra-demand" in the form of business visitors, taking part in preparations for the Games. That growth was not a substitution effect where traffic was taken from competing destinations. The need to import experts and supplies was, however, preliminary. The wellpaying business traffic decreased therefore 27% in the Olympic county after 1994. The sightseeing interest has also decreased rapidly afterwards, as reflected in tickets sold to tourists at the different Olympic sports facilities in Lillehammer.

Pre-game effects are small or not observable in available statistics from Innsbruck, Calgary and Albertville. One important reason is, most probably, the very different size of the host communities. The small Norwegian host town with 23 500 inhabitants had to import much more equipment and expertise than for example Calgary with 1/2 million inhabitants and a strong service sector. The lack of basic sports and TV-facilities in Lillehammer made it

also necessary to use the available accommodation capacity in a much higher degree, which make pre-game effects easier to identify.

It was minimal new hotel developments in Calgary itself, in preparation for the Winter Olympics. The city had an over-supply of accommodation from 1983 on, after a building boom associated with the oil boom in 1979. Average room rates recorded from 1984 on was, therefore, lower in constant 1981 dollars than during any year 10 years earlier (1974-1983). Several existing hotels were, however, renovated and upgraded before the 1988-Olympics (Laventhol & Horwath 1988).

Pre-game-effects on tourism demand is not easy to identify in statistics from the City of Calgary itself. A substantial increase in winter traffic one year before the 1988-games, when new facilities usually are tested, was expected (DPA Group 1985). But occupancy went up only 2 percent and room rates down 7 percent in Calgary during winter 1987 compared with the previous winter. One reason can be that several sports facilities was finished late, with less sports related pre-game traffic as the result. Other unplanned changes going on during the last pre-game years may also hide pre-game tourism effects during wintertime. The large accommodation capacity in Calgary reduces of course also the relative impacts from the preparations of the Olympics.

The huge accommodation supply in the French host region (400 000 beds) explain why the regional authorities was not concerned with the accommodation supply, but primarily used the French 1992-winter Olympics as a tool to improve regional infrastructure and facilities, and influence the internal regional balance. Among the main infrastructure projects was a new motorway, a direct speed train to Paris and upgrading of the regional airport to charter traffic capacity.

Improved quality and diversity of products was also an important concern for the French planners. In addition to new sports facilities, and upgraded cultural heritage attractions, 211 hotels were renovated during the four last pre-game years, with 10 percent subsidy from the Olympic Organizing Committee. In addition 35 new hotels were built, increasing the capacity in classified hotels with 12 percent to 16 500 rooms (Savoie Conseil General 1994).

The information on hotel supply in the French host region is, however, confusing. Official sources operate with higher hotel capacity before the games (25 131 beds in 1987) and lower afterwards (21 722 in 1993/94), which in case means that the hotel capacity in the French Olympic region decreased with 3400 beds or 14 percent (Observatoire du tourisme en Savoie Avril 89 and hiver 1993/94). The different figures may perhaps relate to stricter classification of hotels.

Total accommodation capacity in the French Olympic region increased according to official statistics (Observatoire du tourisme en Savoie Avril 89 and hiver 1993/94) with 21 percent or approx. 70 000 beds between winter 1987 and 1993/94. Nearly all of the expansions were in second homes and apartments, partly in new resorts which opened just before the winter Olympics in 1992. The main destination, Tarentaise, did get its share of the expansion, as the accommodation capacity increased there too with 21 percent during the 1987-1994 period. 80 percent of increased bed capacity came before 1992 and the Olympic games.

Statistics on the flow of tourists to Savoie between the host-election and the event-period, have not been available for the first years of pre-game period. Tourism to Tarentaise and the new French host-region increased, however, before the Canadian Olympics in Calgary. Both winter and summer traffic had a small peak in 1988, during the year of the Calgary-Olympics. The traffic to the French host region decreased the following two years before an increase back to 1988-level the last pre-game year. The peak in Savoie during 1988 is most probably related both to high domestic economic activity, and the introduction in France of a new general 5th holiday week, which should be used outside the summer season. The leveling off in winter accommodation demand in the French host region between 1989 and 1991 is most probably related to poor snow conditions, which reduced sales for the French ski industry to rock bottom during 1990/91 (Cockerell 1994).

**Pre-game effects** in the French host region is not evident after the Canadian event became history. An expected time-linkage between these two mega-events is, therefore, not identifiable in tourist flows to Savoie. The tourist traffic to the "Olympic core areas" of Tarentaise increased, however, substantially during the last pre-game summer and winter in

1991. An increase which may be linked to visitors coming for sightseeing the new Olympic facilities or prepare the Games.

The winter traffic was on a relatively stable level the last 3 pre-game seasons both in the main winter destination of Tarentaise and in Savoie in general. The statistics from the French Olympic host region do, therefore, not indicate any major tourist impacts at regional level before the event-period (but such impacts may be hidden by other unplanned changes as variable snow conditions). It was, however, an increase in the summer traffic to Tarentaise the last pre-game summer (up 7 percent) compared with earlier summers.

Pre-game effects in Lillehammer was small in Lillehammer too the first pre-game years. One reason is that the growth rates in leisure traffic to the Norwegian host was influenced both in 1989 and 1990-91 by a declining national economy. But domestic business cycles have most probably influenced pre-game developments in Calgary and Albertville too.

#### **4.3 Post-game effects**

The tourist flow to the Norwegian host community may have stabilized from 1995 on, approx. 25-30% above national level. Time will show if that will be a new plateau, or a new dynamic growth pattern will emerge as in the neighbour community (Øyer) where the main Alpine facility was located.

Available statistics from other host regions do not indicate that earlier Winter Olympic Games have started the dynamic growth processes in tourist demand afterwards, as needed in the Lillehammer region to reduce the high over-supply and price pressure. Time patterns in tourist flows in Innsbruck followed instead a "back to normal" development, both after the 1964 and 1976 Winter Olympic Games (Brönnemann 1982).

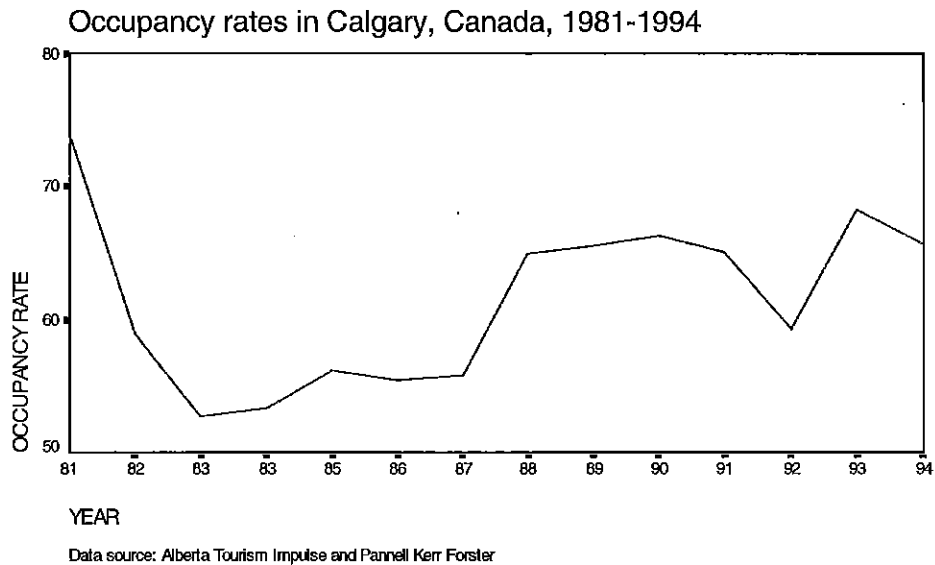
A study show that the long term effects most probably is low too (Socher and Tschurtschenthaler 1987).

The lack of lasting effects in the Austrian host town have been a surprise to Norwegian planners, as Innsbruck has a unique location close to the large

German tourist market, and only one hour away from München with one million inhabitants. Innsbruck's location very close to the main Brenner-highway between Germany and Northern Italy, should not be an disadvantage either. The fact that the German tourist demand has been the main growth source in Europe during the years after the two Austrian Winter Olympics, with growth especially for wintersports, can neither explain why the lasting post-game effects in Innsbruck has been so low.

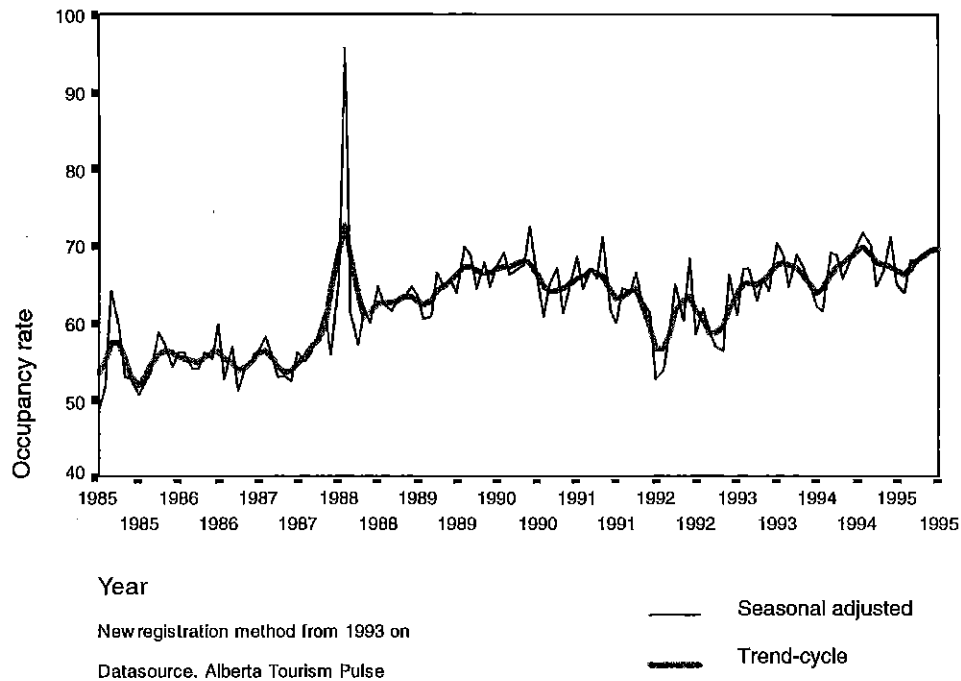
One reason for the low post-game effects in Innsbruck can, however, be that earlier Winter Olympics had not the same huge media- and TV-attention as later Games have experienced. Strongly increased international marketing effects later on may, therefore, be one reason why statistics from Calgary, Albertville and also Lillehammer indicate a "new plateau" development the first post-game years. But the Winter Games in Calgary and Albertville have not created any dynamic growth pattern later on. (It's too early to know what the long term effects in Lillehammer will be).

Accommodation traffic and room rates in Calgary were up 10-20 percent the first three post-games-years (Pannell Kerr Forster). But the tourist flow was nearly back to pre-game level four years later, during the economical downturn in 1992. Before increasing again because of another change in the Canadian oil and gas industry (figure 9). The data source here is then occupancy rates on yearly basis, and not overnights. But the accommodation capacity in Calgary was large and did change very little in volume before and after the Olympics in 1988, because of earlier over-supply. Stable capacity means that the changes in occupancy rates give good indication also of changes in demand.



***Figure 9. Occupancy rates in Calgary, Canada 1981-1994.***

The changes in average yearly occupancy rates do, however, hide significant short term changes during the 1988-Olympic season. Monthly data, which have been available from 1985 on, give a clear visual picture, when seasonal adjusted (figure 10) both of the effects during the Winter Olympics itself and afterwards. The increased occupancy rates during the Olympics and after the Games have been an important reason for improved economics in the hotel industry in the area.



*Figure 10. Monthly occupancy rates in Calgary 1985-1993.*

The new plateau development in Calgary after the Winter Olympics in 1988 is, however, most probably linked closely to unplanned changes in the economy of the Canadian host province and city. When the international oil price dropped substantially in 1986, two years before the 1988 Olympics, the Canadian host province of Alberta changed the tax system to prevent a decline in the very important oil and gas industry. A change that increased the profit in this industry with 30 percent in 1987. One year later, during the Olympic year of 1988, the increased profit was followed by an increase in salaries and a domestic demand of 8%, reaching its highest level of growth since 1981. The unusual high economic growth most probably explains major parts of the change in visits to Calgary after the 1988 games, as the provincial economy stabilised at a 10 percent higher level from 1988 on (Alberta Statistical Review 1988 and 1993). The effects from the 1988 Olympics came, therefore, in reality on top of a strong regional economic wave.

Multivariate model estimations confirm the importance of regional economic change at the end of the 1980'ties. Neither the Olympics, nor the period afterwards, have statistical significant influence on the yearly occupancy rates in Calgary. The only significant factors, explaining 91% of yearly change in occupancy rates, are changes in regional economy and changes in room rates in Calgary (table 4).

*Table 4: Model of demand for accomodation in Calgary, measured as yearly occupancy rates 1981-1991*

Dependent variable; Occupancy rate annually	Parameter	T
Independent variables; Final domestic demand in constant \$, Province of Alberta, no lag	0.278	6.194
Room rates in Calgary	-0.055	-1.655
Olympic year (dummy)	2.423	0.559
After the Olympic year (dummy)	-2.505	-0.704
Intercept constant	-55.78	-2.56
R square	0.910	
F	15,29	

Durbin Watson test: 2.372. Data source: Alberta Treasury. Bureau of Statistics. Alberta Statistical Review. Edmonton.

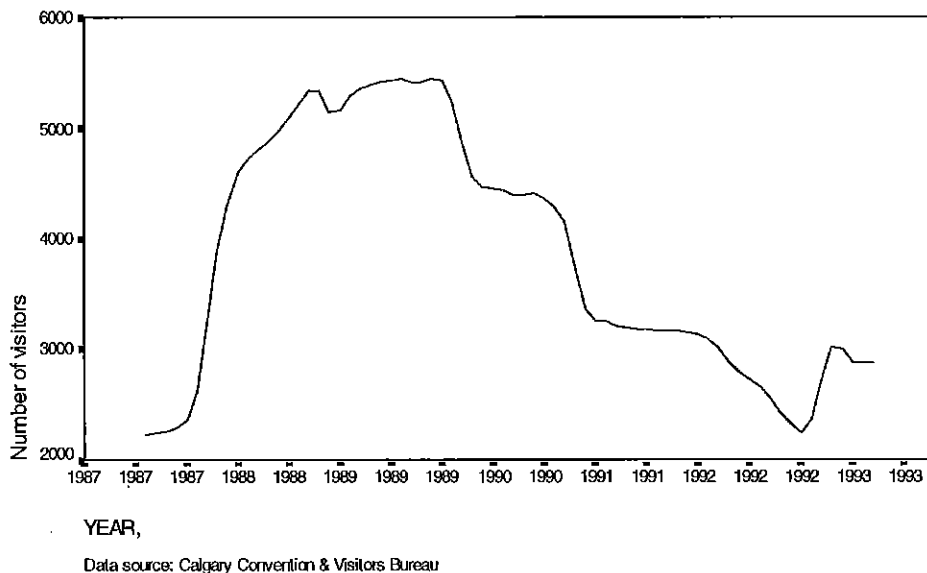
This model estimation is based only on yearly changes in occupancy rates, as data on regional economic development have only been available on yearly basis. The effects of the economic growth in the Province of Alberta have been positive on accomodation demand. The regional economic growth was then either measured by gross domestic product in Alberta or final domestic demand in constant \$. Increased room rates had a negative effect as expected.

The unplanned business cycle from 1987 on explains also why the Calgary-Olympics did not have the **geographical relocation effects** that have been expected in some Norwegian impact theories. The inhabitants of the host province, Alberta, did not increase domestic travels to provincial destinations after the Game. Alberta's market share of total overnight trips by Albertians dropped instead in 1988, the year of the Canadian Olympic



games. Alberta Tourism states (Alberta Tourism Impulse March 1989) that the decrease": support the theory that Albertans tend to vacation closer to home during tough economic times, and when economic circumstances improve they are inclined to get out of the province."

The interest among domestic and foreign tourists for the Olympics itself may also be temporary. The visits to the information centre in the Olympic park in Calgary had a short boom after the 1988- events, with a major reduction a few years after the Olympics. The half timing was only 3 years (figure 11).

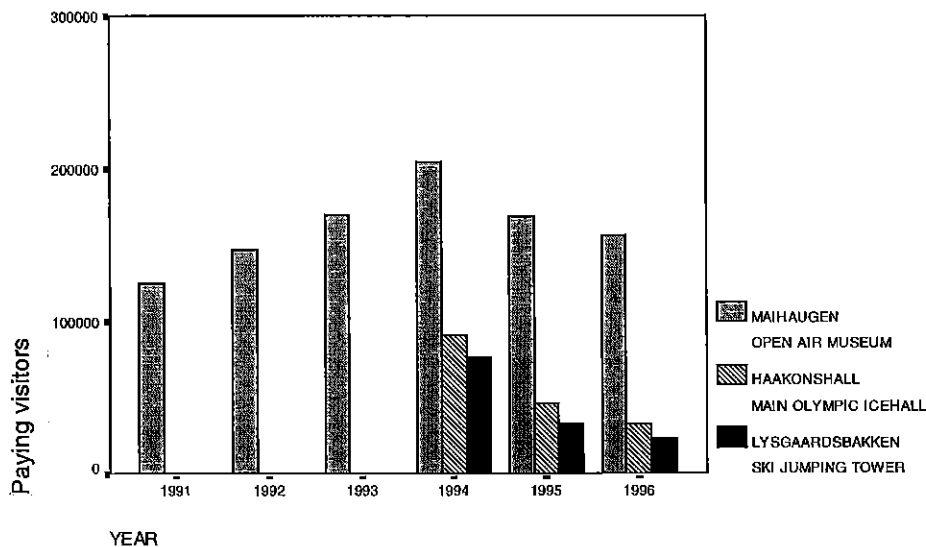


**Figure 11.** Visitors to Calgary Park information centre 1987-1993. Monthly number, seasonal adjusted. Moving 12 month average.

The brief interest among tourists for the Olympic sport facilities have been a reality also in Lillehammer. The number of paying visitors to the main sports facilities was sharply reduced both during summer 1995 and 1996 compared with summer 1994. 3 years after the Norwegian Winter Olympics, during May-August 1996, the number of tickets sold to visitors to the ski jump tower was only 30% of sale during the same months in 1994. The number of tickets to tourist visitors to the main Olympic ice hall

was reduced to 39% of the volume during summer 1994. The reduction of interests among visitors had, therefore, also in the Norwegian case a half-timing of only 2-3 years. The relative low interests for post-game Olympic experiences among tourists is also reflected in the visitation to a special Olympic experience center created after the 1994-games in Lillehammer. That expensive and technically advanced "memory"-center, with Olympic pictures and filmshow etc., did get only approx. 20% of the visitors expected and was closed after bankruptcy autumn 1996.

The traditionally main tourist attraction in Lillehammer, the largest open air museum and cultural heritage center in the Nordic countries (Maihaugen), have also experienced a reduction of visitors during post-games years, after a strong grow during the last years before the 1994-Olympics. More than half of the growth from 1991 to 1994 was gone during summer 1996. But the number of visitors was 25% higher in summer 1996 than summer 1991, 5 years earlier (figure 12).



*Figure 12: Number of paying tourist visitors to the main Olympic sport facilities after the Lillehammer Games, and to the main traditional tourist attraction (Maihaugen). Summerseason May-August 1991-1996.*  
 Source: Maihaugen and Lillehammer Olympia Vekst.

The Olympic museum (Halle Olympique) in the French Olympic host town of Albertville have also experienced a quick reduction in visitors interests, as in Calgary and Lillehammer . The number of visitors during summer 1995 was nearly half (55%) of visitation during the first opening season in 1993 (Mission Développement Prospective 1992-1995). As in the Canadian and Norwegian case, the short lived interest among tourists in French Olympic "memories" and sightseeing sport facilities, is not linked to any reduction in volume of tourists.

Tourist developments in general in the French host region after the Winter Olympics follows in many ways the same pattern as in Calgary. Winter traffic to Savoie approached a new plateau after the 1992 games, at least in the first two post-game seasons, when the traffic was approx. 10-15 percent above pre-game level. The tourism flow before the 1992-event was, however, reduced by insufficient snowfall and sluggish growth in French purchasing power during the three last pre-game winters of 1989-91 (Savoie conseil general 1994).

Parts of the increased winter traffic in the French host region from 1992 on may, therefore, be explained by improved economy and snow conditions. But Cockerell (1994) claims that tourist growth in Savoie during the first post-game winter was much higher than recorded in Austrian Alps (up only 1.8 percent) and Italian Alps (down 9 percent). The French post-event growth is, therefore, most probably also related to improved competitiveness. A question is, however, if increased French competitiveness is linked to the Olympics or other changes. Richard and Friend (1995) explain the substantial growth of British skiers to the French Olympic host region from 1992 on (the main growth segment) as an interaction effect. Not related to the Olympics, but to increased prices in Austria and Switzerland (who have tied their exchange rates to the German Mark), and British consumers attempt to reduce costs of their winter sports holidays by using car to the closer French resorts.

Price consciousness may explain also that nearly all the growth in the French host region before and after the event have been in second homes and apartments. Hotel demand did not increase more than capacity. The tourist demand during summer season has not changed from Pre-game years (Mission Développement Prospective 1990 -1994). The French

holiday surveys do not indicate that the 1992 Winter Olympics have increased the interest for winter sports in France.

Barbier (1996) conclude, therefore, that the French Olympics did basically not change a stagnating domestic and foreign demand for visits to the Olympic region. But only the future will show if the Winter Olympic Games in Albertville and Lillehammer will have a sustainable long term effect on tourism demand from now on.

## 5 Conclusions

The tourism developments so far in the Norwegian host town and region are in many ways lower than expected by both private investors and public authorities. One effect of the too high expectations is a clear overcapacity of commercial accommodation supply afterwards. Another effect is serious economical problems in the host town, which now have decided to reduce its public budget with 12-15% from 1997 on. The recent sale of the major alpine facility for 1 (one) U.S. dollar to prevent bankruptcy reflects also that the realities have been different from local expectations (and forecasts by more or less serious advisors).

The expected high economic effects from sports events and much lower realities, seems to be a normal experience internationally. Crompton (1995) have recently reviewed 20 pre-event impact assessments, and the international literature on sports economics, and found major shortcomings. Most serious is perhaps his conclusion that in many cases errors in assessments of impacts from sports-events "have been used to deliberately mislead decision-makers and the public", leading to too high expectations.

Crompton (1995) identifies eleven major errors in economic impact assessments made in advance (ex ante). One error is that the influence zone is unclear or assumed to be much larger than realities afterwards justify. Another error is that economic impact assessments too often is based on studies from other communities, where the business interrelationships may be different. New events and situations should, therefore, be analysed and assessed independently.

The findings in this report confirm the last conclusion, as tourist developments before and after Winter Olympics can vary according to local and national circumstances, and depend on several different factors. But when assessing impacts from "once upon a time-events" as the Olympics, in advance (ex-ante), very often some of the needed information on effects will come from earlier hosts. Such information must, however, be adjusted to the new event and situation, based on facts on the combination of factors influencing developments in earlier host towns and regions.

When assessing impacts from new events on different influence zones, it can also be important to know that lasting impacts from Winter Olympics on tourism flows have been insignificant outside the host communities, as in the Norwegian case. The effects has been statistical insignificant in the Canadian case too, when adjusted for the effect of general economic growth. Both of this countries/provinces have, however, probably rather mature winter sports and summer tourist markets. The effects can be different in other countries and situations with strongly growing domestic or foreign tourist markets.

In countries with mature tourist markets, increases in accommodation supply regionally should be made very carefully to prevent oversupply. Increases should be linked to sustained growth in demand, reflecting general change processes or major improvements in competitiveness. (Rather simple monitoring systems of accomodation demand can be created to guide decision makers). Potential hosts, who are not a major oil and gas exporter having an oil boom at the same time or after the Olympics, should not expect a new plateau development as in Calgary and Lillehammer after the game.

Future hosts, when planning Olympic Games, should also be concerned with substantial regional displacement effects during the event season and plan accordingly. Careful market studies are important before private tourist developments. If permanent accomodation or catering supply is developed, then the right location is an important success factor. The timing can also be important, as evidence from earlier hosts show that demand first starts to increase shortly before the event.

Future hosts should also know that the 1994 Winter Olympics did cost the Norwegian nation more than one billion US\$ for an event lasting two weeks. It gave a strong and concentrated economic impuls to the local and regional economy. But less than 300 new permanent jobs was created directly in the host town and region before and during the Olympic year (Spilling 1994). Each direct permanent job did, therefore, cost more than 3 million US dollars. It may be cheaper ways of reducing unemployment, if the Olympics create many more jobs later on. But a retrospective evaluation study for the City of Calgary 5 years after the Olympics did not

identify any linkages between the 1988-Olympics and new business activities or employment in the host city (Mount and Leroux 1994).

Crompton (1995) refers to several studies which show that sports events and major facilities frequently have no significant impact on the host cities economy. One of the references (Burns & Mules 1986) claims that "where large capital construction for special events is involved, on occasions the net economic impacts may be negative. This is because speculations flourish in the hyped up atmosphere of such events and developers, acting on imperfect information, may embark on ventures which are basically unsound". Compton too refers to Roberts and McLeod (1989) who add that "A common legacy of many past events has been huge debt and a great deal of under-utilized infrastructure".

The last Winter Olympics have, as far as known, not created any huge debts (as national authorities have covered the costs). But the Norwegian case show that new infrastructure should be more closely related to local needs afterwards, as the many top standard and large sport facilities which the small Norwegian host community of Lillehammer got, have been a mixed blessing. The local community of 24 000 inhabitants do for example not need two major icehockey halls with 13 000 permanent seats. Especially as the two neighbour towns got their Olympic icehockey halls too.

Even cases as the Norwegian where oil rich national authorities covered all or nearly all of building costs, the running and maintaining of sports and cultural facilities can be an economic problem afterwards. Incomes from the many new and large Olympic facilities do cover only 1/3 of Lillehammer's running costs. The large alpine facilities developed for the 1994-Olympics was, therefore, recently sold for less than 1 (one) US dollar, to prevent a bankruptcy. Economical problems after the 1994 Olympics make it now necessary for Lillehammer to reduce local public budget too and to sell off public property. One effect is substantial lower public services, with increased number of kids in school classes, closure of the only major public swimming pool, closure of the only place for local homeless people, reduced help to locals with handicaps etc.

One of the main conclusions from the Norwegian Winter Olympics is, therefore, that planners of mega-events should be much more concerned about the effects and needs in the host communities afterwards.



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