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'Sport for All' and Major Sporting Events: Trends in sport Participation and the Sydney 2000 Olympic games, the 2003 Rugby World Cup and the Melbourne 2006 commonwealth Games

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**UNIVERSITY OF
TECHNOLOGY SYDNEY**

**Australian Centre for Olympic Studies
School of Leisure, Sport and Tourism, Faculty of Business**

**‘Sport for All’ and Major Sporting Events:
Trends in Sport Participation and the Sydney 2000
Olympic Games, the 2003 Rugby World Cup and the
Melbourne 2006 Commonwealth Games**

Project Paper 2

A. J. Veal and Stephen Frawley

February 2009

School of Leisure, Sport and Tourism: Working Paper 6

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Sport for All and Major Sporting Events project

This Project Paper is one of a series relating to the Sport-for-All project which are available on-line in the School of Leisure, Sport and Tourism Working Paper series available at: www.business.uts.edu.au/lst/research/research_papers.html.

Details of the papers are as follows:

- Project Paper 1:* Frawley, S., Veal, A. J., Cashman, R., and Toohey, K. (2009) '*Sport For All' and Major Sporting Events: Introduction to the Project*. School of Leisure, Sport and Tourism Working Paper 5, Sydney: UTS,
- Project Paper 2:* Veal, A. J., and Frawley, S. (2009) '*Sport For All' and Major Sporting Events: Trends in Sport Participation and the Sydney 2000 Olympic Games, the 2003 Rugby World Cup and the Melbourne 2006 Commonwealth Games*. School of Leisure, Sport and Tourism Working Paper 6, Sydney:UTS.
- Project Paper 3:* Toohey, K., and Veal, A. J. (2009) '*Sport For All' and Major Sporting Events: The Sporting Legacy of the Sydney Olympic Games: Some Observations*. School of Sport and Tourism Working Paper 7, Sydney: UTS.
- Project Paper 4:* Frawley, S. *et al.* (2009) '*Sport For All' and Major Sporting Events:: Governing Body Development and Promotion*,. School of Leisure, Sport and Tourism Working Paper 8, Sydney: UTS.

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1. Introduction

This paper is one of a series arising from the research project: *'Sport for All' and Major Sporting Events*, funded by the UTS Faculty of Business Research Grant program. The aim of the project was to explore the impact of the Sydney 2000 Olympic Games and other major sporting events on grassroots sports participation in Australia through examination of:

1. trends in sport participation in the community; and
2. the promotional and development activities of a number of sport governing bodies and their outcomes.

This paper summarises the first of these exercises in relation to the Sydney 2000 Olympic Games, the 2003 Rugby World Cup and the 2006 Commonwealth Games.

2. Data sources

2.1 Introduction

Analysing trends in sport participation in Australia has been hampered until recently by the deficiencies in official statistics. It has been noted that during the 1990s, while numerous national surveys of sport participation were undertaken by the Australian Bureau of Statistics (ABS), no more than two consecutive surveys were conducted with the same design, so that it was not possible to determine trends in participation over more than two or three years at a time (Veal, 2003). This situation has been partially corrected in recent years, enabling evaluation of the impact of events since about 2001, but the limitations of the data series of the 1990s has hampered evaluation of the impact of earlier events, such as the Sydney 2000 Olympic Games.

The following three data sources were used for this report:

1. surveys of sport and physical activity conducted by the ABS;
2. the Exercise Recreation and Sport Surveys (ERASS) conducted by the Standing Committee on Recreation and Sport (SCORS) – the committee representing the Australian Sports Commission (ASC) and state and territory departments of sport and recreation; and
3. National Physical Activity surveys conducted in 1997, 1999 and 2000 by 'Active Australia', a joint program of the Australian Sports Commission and the federal and various state/territory departments of health.

The first two data sources are discussed together.

2.2 ABS and SCORS data

Table 2.1 and Figure 2.1 present information on Australian sport/physical recreation activity surveys conducted by for the period 1999-2005. For each survey, information is included on:

Table 2.1. Sport, physical activity & exercise surveys, Australia, 1999-2005

#	Year of survey	Organisation	Survey vehicle	Survey method	Age-range	Sample size, '000s	Ref. period*	Response rate
1	1999-00	ABS	PSM	Face-to-face	18+	13	year	na
2	2000	ABS	PSM	Face-to-face	18+	6.5	year	na
3	2001	SCORS	ERASS	Telephone	15+	14	year	na
4	2002	SCORS	ERASS	Telephone	15+	14	year	na
5	2002	ABS	GSS	Face-to-face	18+	15	year	91%
6	2003	SCORS	ERASS	Telephone	15+	14	year	45%
7	2004	SCORS	ERASS	Telephone	15+	14	year	41%
8	2005	SCORS	ERASS	Telephone	15+	14	year	34%

PSM = Population Survey Monitor. GSS = General Social Survey. MPHHS: Multi-purpose Household Survey.

ERASS = Exercise, Recreation & Sport Survey. SCORS = Standing Committee on Recreation and Sport.

* period to which participation relates: year prior to interview

Figure 2.1. Interviewing schedules and participation periods covered

	1998												1999												2000												2001													
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D		
1	ABS/PSM 99/00																																																	
2	ABS/PSM 00/01																																																	
3	ERASS 01																																																	
4	ERASS 02																																																	
5	GSS 02																																																	
4	ERASS 02 contd																																																	
5	GSS 02 contd																																																	
6	ERASS 03																																																	
7	ERASS 04																																																	
8	ERASS 05																																																	
	Participation periods																																																	
	Interviewing periods																																																	

- *survey method* – the ABS surveys were conducted face-to-face, while ERASS is conducted by telephone;
- *age-range of sample* – the ABS surveys covered only persons aged 18 and over, while ERASS covers persons aged 15 and over;
- *sample size* – all samples are substantial, from 13,000 to 15,000;
- *reference period* – all surveys ask respondents about participation in the year prior to interview;
- *interviewing periods and participation reference periods covered* – the surveys are conducted quarterly (in 4 months each year: PSM, ERASS) or monthly (GSS): since respondents are asked about their participation in the *year prior to interview*, this means that participation information relates to the period starting one year before the start of interviewing. It can be seen in Figure 1 that there is considerable overlap in the participation periods covered by consecutive surveys.
- Response rates: while information is not provided for the earlier surveys, it seems that ABS achieves a much higher response rate, of 90% or more, than the commercial company responsible for ERASS, with only 40% or less.

Table 2.1 shows that, in the key period covering the hosting of the Olympic Games in Sydney, 1999-2001, the main survey vehicle for collecting participation data, the ABS *Participation in Sport and Physical Activities* (4177.0) series, based on the omnibus Population Survey Monitor (PSM), was discontinued (in November 2000) and, in effect, replaced by a new series, the annual Exercise, Recreation and Sport Surveys (ERASS), sponsored by SCORS.

The ABS/PSM survey provided an annual participation figure based on interviews conducted in four periods: August and November in one year and February and May in the following year – so published reports were based on interviewing not in a calendar year, but in a 10-month period lasting from August through to May in the following year. But, as indicated in Figure 1, since survey respondents were asked about participation in the year prior to interview, the participation period covered lasted over a 22 month period. The last complete ABS/PSM survey was the 1999-2000 survey conducted in August and November, 1999 and February and May, 2000, and covering participation from August 1998 to May 2000. The 2000-2001 survey sequence was started in August and November 2000, and then aborted, so covering participation from August 1999 to November 2000, some two months after the holding of the Sydney Olympics. Results from this latter survey were not officially published, but some aggregated data were made public in an ABS discussion paper discussed below.

No official explanation for the termination of the PSM survey vehicle has ever been published. One possibility is that the decision came from the ABS which may not have recruited sufficient ‘passengers’ to maintain the viability of the PSM, an ‘omnibus’ survey designed to cover a range of topic areas of which sport and physical activity was just one. But the decision may have come from SCORS: since the costs of conducting the sport and physical activity component of the PSM fell on the ASC and territory and state departments of sport and recreation, as represented by SCORS, it may be assumed that new arrangements were sought which offered cost savings, more control and quicker publication of results.

The replacement survey vehicle, ERASS, funded by SCORS and conducted by a commercial survey company, picked up where the PSM had left off, with interviewing commencing in February and May 2001. In theory the results from the August and November 2000 PSM could have been combined with the first two ERASS sets of results to produce a 2000-2001 result, but this was not done.

This combination of events was particularly unfortunate regarding any attempt to assess the impact of the Sydney 2000 Olympics on participation; no 'before-and-after' participation statistics based on comparable survey methodology are available.

The annual ERASS series has remained unchanged for seven consecutive years, but only the first five years are discussed in this paper. The ABS has also continued to conduct its own surveys of participation in sport and physical activities, in 2001-02 and 2005-06, but these were based on two additional vehicles, the General Social Survey (2001-02) and the Multi-Purpose Household Survey (2005-06). These survey vehicles have different methodologies from each other and from the earlier ABS/PSM surveys and so the results from them cannot be directly compared with earlier ABS surveys, with one another or with ERASS.

In interpreting data from the above secondary sources, it should be emphasised that it is only possible to speculate about the causes and effects of changes in exercise, recreation and sport (ERAS) activity levels. Any increase in participation may or may not have been affected by a major sporting event. Where there is no increase, even a fall, in participation, it could be that participation rates would have been even lower without the effect of the event.

2.3 National Physical Activity surveys

Surveys of participation in physical activity by Australians aged 18-74 were conducted in the last two weeks in November in 1997, 1999 and 2000. The surveys were designed to discover the proportion of the population engaging in physically activity for sufficient time to achieve health benefits – that is 'at least 150 minutes of walking, moderate and/or vigorous activity per week'. All activity outside the workplace was covered, including household and backyard chores, but information on individual activities is not separately itemised.

3. The Sydney 2000 Olympic Games

3.1 Introduction

None of the data sources outlined in Section 2 above is ideal for our purpose; in this and the section on the Rugby World Cup we attempt to make the best of a bad situation. Despite the inadequacy of the available data sets, we examine them to see what, if anything, they can tell us about levels of sport and physical activity before and after the Sydney 2000 Olympic Games.

In referring to the collectivity of sporting and other physical recreation activities, the ABS uses the term ‘sport and physical activities’, while the Standing Committee on Recreation and Sport uses the term ‘activities for exercise, recreation and sport’. In the following discussion we use the term ‘exercise, recreation and sport’ (ERAS).

The section is divided into two parts dealing respectively with national and state-level data.

3.2 National level

3.2.1 Introduction

This section discusses, respectively:

- Physical activity, 1997-2000: Active Australia data
- ERAS, 1998-2000: ABS quarterly data
- ERAS, 1999-2005: ABS/ERASS data
- ERAS, trends 2001-05: ERASS data
- Individual activities, 1991-2001: ABS/ERASS data
- Individual activities, trends 2001-05, ERASS

3.2.2 Physical activity, 1995-2000: Active Australia data

The basic results from the three National Physical Activity surveys are shown in Table 3.1. It shows a decline in participation rates between 1997 and 2000. Women showed an increase in participation between 1999 and 2000, but not enough to make up for the earlier decline.

The 2000 survey asked a specific question about activity levels since the Sydney Olympic Games, which had taken place two months before the interviews. Just 4% of respondents claimed that they had increased their level of physical activity since the games. This on the face of it appears to be inconsistent with the small increase between 1999 and 2000 shown in Table 3.1 but, given the 6% fall between 1997 and 1999, it is just possible that the Olympic Games reversed a decline which may have been taking place during the early part of 2000. While this is a small percentage, it equates to about 500,000 people nationwide. The

percentage rose to 5.6% among young people (18-29 years) but was only 1% among the oldest age-group (60-75 years).

Table 3.1 Levels of Physical Activity, Australia, 1997, 1999, 2000

	Nov. 1997	Nov. 1999	Nov. 2000
% of persons aged 18-74 achieving at least 150 minutes per week of moderate or vigorous activity or walking			
Men	63.4	59.6	57.6
Women	61.1	53.8	56.0
Total	62.2	56.6	56.8

Source: Bauman, Ford and Armstrong, 2001

Economic dimension

This study is policy-related rather than theory-based: the proposition being tested is that public expenditure on attracting and supporting major sporting events such as the Olympic Games is partly justified by the impact which the hosting of such events has on grassroots sport participation. In turn, public support for grassroots sport participation is seen as justified, in part, by the health benefits engendered. The question arises as to what extent the economic value of the health benefits generated by the hosting of the event offsets the public expenditure involved in attracting and supporting the event. To what extent can this financial dimension be estimated?

A 1988 study conducted for the then Department of the Arts, Sport, the Environment, Tourism and Territories (Roberts and Thompson, 1988) examined the benefits arising from participation in physical activity in general. These benefits arose from enhanced health, which were measured in terms of reductions in two major conditions, heart disease and lower back pain, translated into savings to the health budget and flow-on savings to industry from reduced absenteeism and increased productivity. Savings were calculated net of exercise-related costs, such as sport injuries. It was estimated that a 10% increase in participation in physical activity among the Australian population would produce benefits worth \$590 million per annum, or \$295 per activated person. At today's (2008) prices this is equivalent to about \$480 per person. This does not mean that such savings are produced for every individual who takes up exercise; the savings are produced collectively – for example, 1000 individuals taking up exercise would result in an estimated \$480,000 of savings because a certain number of heart attacks and other medical conditions would be avoided among that 1000 individuals.

Thus, if the Sydney Olympic Games was responsible for an increase of 500,000 individuals engaging in significant levels of physical activity, the value of the health benefits generated are \$240 million per annum. If the heightened level of participation is maintained over a number of years this factor alone goes a long way towards offsetting the public expenditure costs of the Games.

3.2.3 ERAS: ABS quarterly data

In November 2001 the ABS produced a draft paper on the impact of the September 2000 Sydney Olympics on grassroots participation (Vanden Heuvel and Conolly, 2001). The paper included previously unpublished quarterly PSM survey results covering the Sydney Olympic

Games period, including the only known public airing of results from the August 2000 and November 2000 PSM surveys, but the data referred only to overall sport participation; activity-specific results were not made available. The results are shown in Figure 3.1 and in full in Appendix 1.

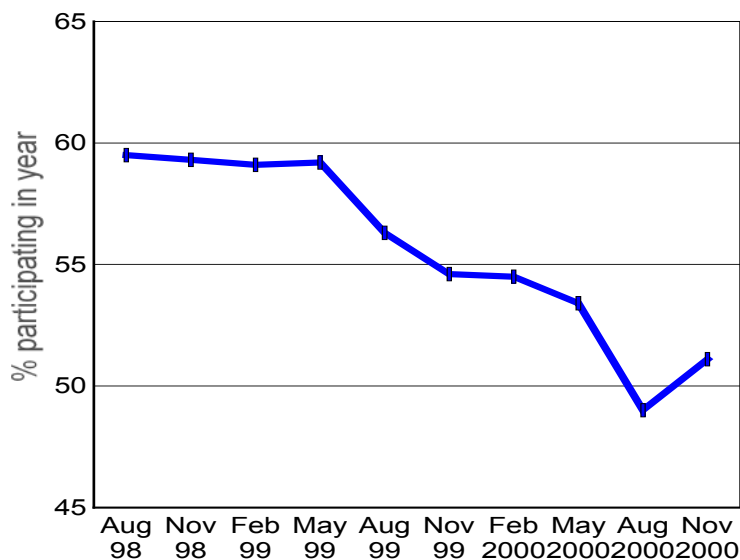


Figure 3.1. Participation in sport/physical activity, 1998-2000: ABS quarterly data

Source: Vanden Heuvel and Conolly (2001: 9)

The graph shows a steady decline in the participation rate, right up to the Olympic Games, followed by the suggestion of a reversal, but not enough to make up for the decline, even within the previous year. The ‘bounce’ in the November 2000 survey results is, from the point of view of the current study, intriguing. Bearing in mind that the participation rates refer to participation in the year prior to interview, they are akin to moving averages and so are likely to ‘smooth out’ actual fluctuations in participation, which might arise from seasonal or other factors, such as the hosting of the Olympic Games. Thus the November 2000 figure covers participation by respondents between November 1999 and November 2000, so if participation was on an upward trend during this period, it is possible that the actual participation rate in the month of November 2000 was much higher than indicated. If it was assumed that participation from November 1999 to September 2000 was at the level identified in the August 2000 survey, that is 49.0%, then to produce the 51.1% figure which emerged from the November 2000 survey would require a participation rate of 61.6% during October-November 2000, suggesting an increase of 12.6% following the Games.

It is clearly not possible to draw firm conclusions from a single month’s data, making the decision to discontinue the ABS/PSM survey even more frustrating.

3.2.4 ERAS, 1999-2001: ABS/ERASS data

Reflecting the problems in continuity of data collection discussed above, the dilemma in assessing participation trends during the period around the Sydney 2000 Games is illustrated in Figure 3.2, which shows participation rates in organised and non-organised sport and physical activities from 1999 to 2002 as indicated by the two ABS surveys (marked A), and

the five editions of ERASS (marked E). Organised and non-organised activity are included here for information, ‘organised’ meaning participation as a member of a club or with some formal program provider. Some individuals engage in both organised and unorganised forms of an activity but in this diagram these are counted only once, in the organised category. For some activities, such as team sports, the organised component of participation is highly significant while for others, such as running or surfing, non-organised participation is quantitatively more significant. Arguably organised activity is more important in policy terms since it is generally assumed to attract the bulk of public funds, but it should be borne in mind that the public sector provides and maintains much of the infrastructure used for non-organised activity, for example parks, beach infrastructure and public swimming pools. While organised and unorganised activity do merit separate analysis, this is not pursued in this paper.

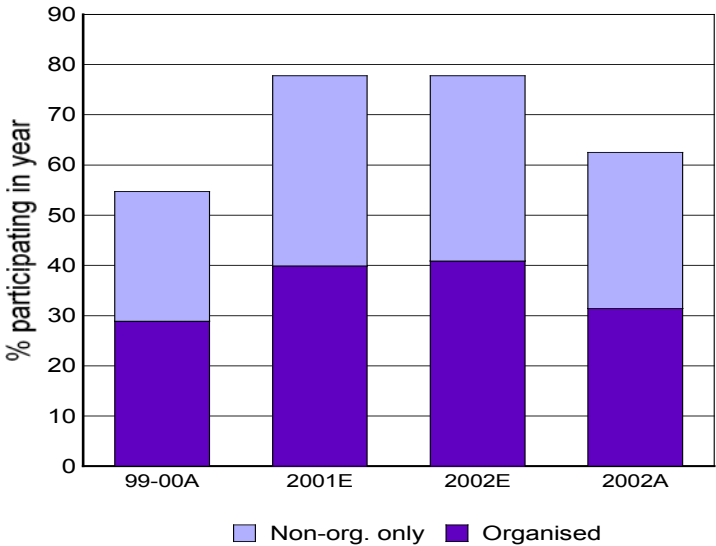


Figure 3.2 Participation in ERAS activities, 1999-2002: ABS and ERASS data
(ABS surveys marked A, popn aged 18+; ERASS marked E, popn aged 15+)

It is clear that both ABS surveys, while not strictly comparable to each other, produce lower figures than ERASS, and this seems likely to be due to the differences in design indicated in Table 2.1. The two main differences are that ERASS includes persons age 15 and over compared with 18 and over for the ABS surveys, and ERASS uses telephone interviewing compared with the ABS face-to-face interviewing.

- The age-range difference would have an unpredictable effect, varying between activities. Ideally ERASS tables excluding 15-17 year-olds should be examined but this has not been possible for this project (published ERASS tables present 15-24 year-olds as a single age-group).
- Face-to-face interviewing might be expected to produce higher participation rates if the direct communication between interviewer and respondent were to result in a more thorough process of activity recall, but this is by no means certain.
- Often, a face-to-face interview can involve the use of prompt cards providing listings of individual or groups of activities. Unlike the ERASS reports (telephone), the ABS survey (face-to-face) reports do not include a copy of the questionnaire involved, so it is not clear whether a prompt card was used.

- A major difference between the two surveys lies in the response rate: as noted above, the ABS rate is as high as 90% while for ERASS information was not published for the 2001 and 2002 surveys, but in 2003 it was 45%, falling to as low as 34% in 2005. It is possible that non-respondents include a higher proportion of people who consider themselves to be non-participants, since they are less likely to identify with a survey on ‘sport and physical activity’ or ‘exercise, recreation and sport’, so non-response would result in a bias of participation levels upwards, and ERASS participation rates are higher than ABS rates. But it is also possible that a major reason for non-response is that non-respondents are out of the house when the interview calls are made, suggesting that they may be higher than average participants.
- ERASS is a single-purpose survey while the ABS survey vehicles were multi-purpose, covering topics other than sport and recreation; this may also have affected response rates, with non-participants perhaps more likely to be non-respondents to ERASS.

The differences in age-range, questionnaire design and response rate, and the fact that results from both ABS surveys differ substantially from editions of ERASS conducted at or around the same time, lead to the conclusion that data from the two sources cannot be directly compared.

An indirect comparison may, however, be worth pursuing, based on the ratio between the ABS and ERASS surveys conducted in 2002, adopting the steps shown in Table 3.2. This is, of course, highly speculative. However, in the absence of suitable ‘before-and-after’ data, this analytical procedure has been applied at the individual activity level in Section 3.5-7.

Table 3.2. Estimating 1999-2001 change in participation

	Procedure	Source	Result
a	ERASS 2002 participation rate	ERASS 2002	77.8%
b	ABS 2002 participation rate	ABS 2002	62.5%
c	Ratio ERASS 2002 to ABS 2002	a/b	1.24
d	ABS 1999-2000 participation rate	ABS 1999-2000	54.7%
e	Estimated 1999-2000 rate	c x d	67.8%
f	ERASS 2001 participation rate	ERASS 2001	77.8%
g	1999-2000-01 change in participation rate	f-e	+10%

Economic dimension

A 10% increase in participation represents an additional 1.1 million participants aged 15 and over. Unlike the Physical Activity survey data discussed in Section 3.2.2 above, the extent to which ‘participation’, as defined in ERASS and ABS surveys, generate health benefits is not clear. Later editions of ERASS indicate that only about half of recorded participants engage in ERAS activities on three or more occasions a week. If it is assumed, therefore, that half the additional participants – some 550,000 – achieved measurable health benefits, the numbers are similar to those identified in the Physical Activity surveys, with similar generation of benefits.

3.2.5 ERAS, trends 2001-05, ERASS data

Claims for public expenditure on support for elite sport, particularly in relation to specific events such as the Olympic Games, are often accompanied by estimates of the likely impact on the number of medals to be won, but the idea that grassroots participation might be boosted as a result of hosting the Olympic Games is rarely, if ever, expressed quantitatively by policymakers. The quantum of any expected boost in participation is rarely identified: an

exception being China, which predicted a 6% increase in participation following the Beijing Games (Xu *et al.*, 1992). Similarly the length of time for which any impact might be expected to last is not discussed in policy documents. It could be that policymakers *assume* that any increase in participation will be maintained indefinitely. Or it could be that they expect additional ‘booster’ measures to be necessary from time to time to maintain or increase the participation levels achieved. In regard to the Sydney Olympic Games, we shall probably never know, since such policy expectations were never spelled out. Despite this absence of stated intent, it is nevertheless of interest to explore trends in sporting participation after the immediate post-Games period.

While analysis over the period 1999-2000 is, as we have seen, hampered by data inadequacies, this is not the case from 2001 onwards, when ERASS was conducted annually on a comparable basis. Therefore, whatever the level of participation in 2001, we can track events thereafter. Figure 3.3 shows trends for 2001-05 in organised and non-organised participation rates nationally. It shows no increase between 2001 and 2002, a significant increase in 2003, then slow growth in 2004 and 2005. Thus, it can be said that, if there was an Olympics-generated boost to participation, it was at least maintained, and marginally increased over the subsequent 5-year period.

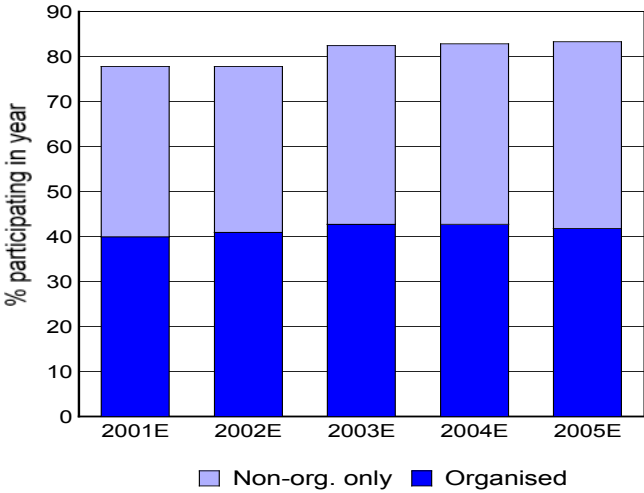


Figure 3.3 Participation in ERAS activities, 2001-05: ERASS data

Economic dimension

The overall growth in the participation rate, from 77.8% in 2001 to 83.3% in 2005, resulted in the number of recorded participants increasing from 11.7 million to 13.3 million, a rise of 1.6 million. Of this, 0.7 million resulted from population growth.

If, as suggested in Section 3.2.4, we assume that half of ERAS participation produces measurable health benefits then, of the increase of 1.6 million participants, 800,000 would produce such benefits. Using the rate established in the DASETT study, such an increase in participation would have produced savings of the order of \$430 million a year.

3.2.6 Individual activities, 1999-2001: ABS/ERASS data

In this section, the procedure of grossing up the 1999-00 ABS participation figures, as described in Section 3.1 has been applied to individual activities. In Table 3.3, data are provided for 1999-00 and 2000-01 on 23 Olympic sports for which there is information in the ABS/ERASS surveys and for 29 non-Olympic sports with participation rates of 0.3% and above. Full details of the procedure to produce the 1999-00 estimates are provided in Appendix 2.

Table 3.3. Olympic and Non-Olympic Sports: Change: 1999/00 to 2000/02

	Olympic sports			Non-Olympic sports			
	1999-00	2000-01	Change	1999-00	2000-01	Change	
	Estimate			Estimate			
	%	%	%	%	%	%	
Swimming	19.0	16.0	-3.0	Walking (other)	22.9	28.8	+5.9
Aerobics/fitness	14.1	13.0	-1.1	Golf	11.1	8.2	-2.9
Tennis	8.9	9.2	+0.3	Fishing	3.5	2.4	-1.1
Cycling	8.0	9.5	+1.5	Tenpin bowling	2.6	1.0	-1.6
Running	7.8	7.2	-0.6	Lawn bowls	3.3	1.9	-1.4
Basketball	3.8	3.5	-0.3	Netball	3.6	4.1	+0.5
Martial arts	3.1	2.1	-1.0	Surf sports	2.3	2.4	+0.1
Horse riding etc.	2.1	1.5	-0.6	Squash	2.7	2.2	-0.5
Soccer (outdoor)	2.4	3.7	+1.3	Cricket (outdoor)	2.3	2.7	+0.4
Weight-training	3.2	2.9	-0.3	Ice/snow sports	2.5	1.3	-1.2
Table tennis	1.2	0.5	-0.7	Touch football	2.0	2.7	+0.7
Volleyball	1.9	1.7	-0.2	Aust. Rules football	1.7	2.3	+0.6
Sailing	1.3	1.0	-0.3	Water ski etc.	1.1	1.2	+0.1
Canoeing/kayaking	1.0	0.7	-0.3	Scuba diving	1.4	0.5	-0.9
Badminton	0.7	0.6	-0.1	Dancing	1.1	2.0	+1.0
Hockey (outdoor)	0.9	1.0	+0.1	Darts	0.6	0.2	-0.4
Softball	0.7	0.8	+0.1	Cricket (indoor)	1.1	1.3	+0.2
Boxing	0.3	0.4	+0.1	Aquarobics	2.1	0.9	-1.2
Gymnastics	0.3	0.4	+0.1	Rugby league	1.0	1.1	+0.1
Rowing	0.2	0.4	+0.2	Shooting sports	0.4	0.4	0.0
Triathlon	0.3	0.2	-0.1	Motor sports	0.5	1.0	+0.5
Baseball	0.1	0.3	+0.2	Soccer (indoor)	0.8	1.2	+0.4
Athletics/track+field	0.4	0.7	+0.4	Rock climbing	0.6	0.8	+0.2
				Carpet bowls	0.3	0.4	+0.1
				Roller sports	0.5	0.9	+0.4
				Rugby union	0.4	0.6	+0.2
				Hockey (indoor)	0.0	0.2	+0.2
				Yoga	0.0	1.5	+1.5
				Walking (bush)	*	(5.3)	+5.3
Aggregate	81.6	77.3	-4.3	Aggregate	72.2	79.5	+2.3

Source: see Appendix 1

There is not an exact correspondence between Olympic sports and activities listed in ERASS and the ABS surveys, so some judgement has been necessary in the classification. For example:

- While there is no Olympic sport called ‘aerobics/fitness’, it seems to embrace such activities as gymnastics, running and weight lifting in an informal way, as well as the training necessary to participate seriously in any sport; and in so far as the Olympic Games might have a general effect on people’s desire to participate, get fit, etc., it seems reasonable to assume that many would respond by increasing participation in general fitness activities rather than a specific Olympic sport. It is for these reasons that it has been included among the Olympic sports.
- Similarly running is included as an Olympic sport, even though the majority of activity recorded under this heading will be recreational/fitness running, since athletics/track and field is separately recorded.
- Indoor hockey, yoga and bush-walking were included in ERASS but not separately identified in the ABS survey; but are included here for completeness.

It can be seen that, of the 14 Olympic sports, 11 showed an apparent decline in participation rate between the two dates. An overall indicator of change can be provided by adding the individual change percentages, to give an aggregate. For the Olympic sports this aggregate was -4.3.¹

Of the 14 non-Olympic sports, 7 showed a decline in participation, with an aggregate indicator of +2.3.

This suggests an overall decline in participation, which seems at variance with the figures for overall participation in Table 3.2. But in the figure for overall participation participants are counted only once, regardless of the number of activities they engaged in, so the aggregate figures in Table 3.2 could result from participants reducing the *number of activities* engaged in.

Given the extent of the manipulation of the data which has been necessary to achieve Table 3.3, any conclusions drawn must be viewed as extremely speculative, but it does suggest that any increase in participation that there may have been after the Sydney Olympic Games probably arose in non-Olympic rather than Olympic sports. This suggests that other factors are at work in addition to the direct effect on potential participants in individual sports. Such additional factors could relate to variation in the availability of physical and organisational infrastructure for different sports.

3.2.7 Individual activities, trends 2001-05: ERASS data

Regardless of the changes in participation immediately following the Sydney Games, if trends thereafter are downwards rather than upwards, then any participation ‘dividend’ may be quickly lost. Table 3.4 shows trends in national participation rates for Olympic and non-Olympic sports for the period 2001-2005. It can be seen that, of the 21 Olympic sports listed, 10 increased their level of participation or did not decline over the five year period.

The ‘star performer’ was aerobics/fitness activities, which include exercise/fitness activities undertaken at home as well as in such places as fitness centres.

¹ NB. This cannot be interpreted as a 4.3% decrease in participation because some individuals participate in more than one activity. The average number of activities engaged in by ERASS respondents is about 2, but it is not known how these are distributed between Olympic and non-Olympic sports.

Table 3.4. Individual activities: trends: 2001-2005: national (ERASS)

	2001	2002	2003	2004	2005	Change 01-05
Olympic sports	%	%	%	%	%	%
Swimming	16.0	14.9	15.3	16.5	14.4	-1.6
Aerobics/fitness	13.0	14.6	16.0	17.1	18.5	+5.5
Cycling	9.5	9.3	9.4	10.5	10.3	+0.8
Tennis	9.2	8.2	9.0	8.4	7.8	-1.4
Running	7.2	7.6	7.6	8.3	7.7	+0.5
Soccer (outdoor)	3.7	4.5	4.3	4.2	3.8	+0.1
Basketball	3.5	4.0	3.6	3.2	3.5	0.0
Weight training	2.9	2.2	2.8	2.7	2.0	-0.9
Martial arts	2.1	2.1	2.3	2.0	2.0	-0.1
Volleyball	1.7	1.9	1.3	1.5	1.3	-0.4
Horse riding	1.5	1.2	1.2	1.3	1.2	-0.3
Hockey (outdoor)	1.0	0.9	1.0	0.9	0.8	-0.2
Sailing	1.0	0.9	0.8	0.9	0.9	-0.1
Athletics /track & field	0.7	0.7	0.8	0.7	0.5	-0.2
Canoeing/kayaking	0.7	0.7	0.7	0.9	0.9	+0.2
Table tennis	0.5	0.6	0.5	0.5	0.7	+0.2
Boxing	0.4	0.3	0.4	0.6	0.4	0.0
Gymnastics	0.4	0.3	0.2	0.3	0.4	0.0
Rowing	0.4	0.4	0.3	0.4	0.3	-0.1
Triathlons	0.2	0.4	0.2	0.4	0.3	+0.1
Water polo	0.2	0.2	0.2	0.1	0.1	-0.1
Aggregate: Olympic sports	75.8	75.9	77.9	81.4	77.8	+2.0
Non-Olympic sports						
Walking	28.8	30.8	37.9	39.0	37.3	+8.5
Golf	8.2	8.7	8.2	7.9	7.1	-1.1
Bush walking	5.3	5.6	5.8	5.2	5.7	+0.4
Netball	4.1	4.1	3.9	3.6	3.6	-0.5
Cricket (outdoor)	2.7	3.0	3.2	3.1	2.9	+0.2
Touch football	2.7	2.4	2.3	2.3	2.3	-0.4
Fishing	2.4	2.3	2.6	2.3	2.1	-0.3
Surf sports	2.4	2.2	2.4	3.2	2.6	+0.2
Australian rules football	2.3	2.5	2.8	2.9	3.4	+1.1
Squash/racquetball	2.2	2.3	2.2	1.9	1.5	-0.7
Dancing	2.0	2.1	2.2	2.4	2.2	+0.2
Lawn bowls	1.9	2.3	2.3	2.3	2.2	+0.3
Yoga	1.5	3.0	3.1	3.4	3.4	+1.9
Cricket (indoor)	1.3	1.2	1.2	1.1	1.0	-0.3
Ice/snow sports	1.3	1.6	1.3	1.8	1.4	+0.1
Soccer (indoor)	1.2	1.9	1.7	1.9	1.7	+0.5
Waterskiing /powerboating	1.2	0.9	1.1	1.4	0.9	-0.3
Rugby league	1.1	1.0	1.1	1.1	1.2	+0.1
Motor sports	1.0	0.9	1.1	1.2	0.9	-0.1
Tenpin bowling	1.0	0.8	1.1	0.9	0.8	-0.2
Aquarobics	0.9	0.9	1.1	1.0	1.0	+0.1
Roller sports	0.9	0.8	0.8	0.8	0.6	-0.3
Rock climbing	0.8	0.8	0.6	0.5	0.5	-0.3
Softball	0.8	0.7	0.5	0.6	0.4	-0.4
Badminton	0.6	0.7	0.8	0.9	0.7	+0.1
Orienteering	0.6	0.9	0.8	0.6	0.8	+0.2
Rugby union	0.6	0.7	0.8	0.9	1.0	+0.4
Scuba diving	0.5	0.5	0.6	0.7	0.5	0.0
Carpet bowls	0.4	0.4	0.3	0.2	0.3	-0.1
Shooting sports	0.4	0.4	0.6	0.5	0.5	+0.1
Baseball	0.3	0.3	0.4	0.3	0.4	+0.1
Billiards/snooker/pool	0.2	0.2	0.3	0.3	0.1	-0.1
Darts	0.2	0.2	0.2	0.2	0.2	0.0
Hockey (indoor)	0.2	0.2	0.2	0.2	0.1	-0.1
Aggregate: non-Olympic sports	82.0	87.3	95.5	96.6	91.3	+9.3

The 'star *non*-performer' was swimming, Australia's highest profile and successful Olympic sport. Bearing in mind that, to be recorded as a participant, respondents only have to have participated in an activity once in the year prior to interview, the participation rate of 16% was surprisingly low even at the beginning of the period: this implies that 84% of Australian residents aged 15 and over had not participated even once in swimming in the previous year; by 2005 this proportion had risen to 85.6%.

Following close behind is tennis, with a fall of 1.4% in participation rate.

Of particular note is athletics, for which the Olympics is such an important event: although the fall in the participation rate was only 0.2%, this was from just 0.7% at the start of the period, thus during the five years athletics lost more than a quarter of its participants.

Of the 34 non-Olympic sports listed, 19 experienced an increase in participation rate or at least did not fall. Growth in the group is dominated by the 8.5% increase in the participation rate for walking, which is undefined in terms of distance and intensity. As with aerobics/fitness, it is possible that, for some people, any tendency of the Olympics to inspire them to participate or 'get fit' might find expression in walking rather than specific formal sports, but in the absence of detailed research evidence on the matter, this is only speculation.

Only two other activities, yoga and Australian Rules football, showed an increase of more than 1%.

For many of the individual activities with participation rates below 1%, a change of less than 1% can represent a significant change in the number of participants. Given the large overall sample size, such changes are statistically significant, but examination of year-by-year changes suggests that they often seem to be random fluctuations and are probably only 'real' when they show a consistent trend over 2-3 years.

While the overall trend in participation – for Olympic and non-Olympic activities – is up, the pattern is far from clear, with key activities experiencing a decline and most increases in participation being in relatively loosely defined activities (eg. walking and aerobics/fitness) and activities dominated by non-organised involvement.

Walking presents a particular challenge of interpretation, because of its nature, its popularity and the particular trend indicated. More than most activities listed, walking can vary enormously in its significance to the individual as a recreational activity and generator of benefits, from inconsequential to highly significant. The fact that it involves more than a third of survey respondents means that this uncertainty affects the whole ERAS picture. Thus, without walking the 'aggregate' score for non-Olympic activities would fall from 9.3 to 0.8. Of the growth of 8.5% in walking, 6% took place between 2002 and 2003; such a large increase suggests that a change in survey methodology may have been responsible, but there is nothing in the survey reports to suggest that this was the case, so it remains a mystery.

3.3 State data

3.3.1 Introduction

Olympic Games are formally hosted by cities rather than countries. The 2000 Olympic Games were therefore hosted by the City of Sydney, but the city, like the City of London, does not control the whole of the metropolitan area of Sydney, with its population of 4 million people, but a relatively small area covering the Central Business District, with a resident population of some 30,000 in the 1990s (although it has since had its area extended to encompass a population of about 100,000). While the City of Sydney is relatively wealthy because of its business rates (real-estate tax) base, it was the state government of New South Wales

(population 6 million) which provided the legislative and financial backing for the bid for the Games and for their organisation. Thus the residents of New South Wales had a greater financial and political interest in the Olympics than the rest of Australia, but whether this translated into a greater sporting interest than residents of other states is an empirical question. The geography of Australia is such that some residents of a state can be, and feel, remote from its capital city: in the case of New South Wales, the northern border with Queensland is 800 km north of Sydney, while the border with Victoria is 800 km to the south. Thus, it is reasonable to assume that the major impact of the Sydney Games would be on the 4 million residents of the Sydney metropolitan area.

Data available at state level are more limited than those available at national level because of the constraints of sample size. In this section we examine 2001-05 trends for ERAS participation at state levels and for individual activities for Sydney metropolitan area.

3.3.2 ERAS, State trends, 2001-05: ERASS data

Figure 3.4 shows 2001-05 trends in ERAS overall participation rates for the six states and Australia². In the period closest to the Sydney Games, 2001-02, only one state (SA) showed strong growth, while two (Qld , Vic) showing modest growth; for the others, including NSW, participation was static or in decline, before boost on 2003. Apart from the more pronounced dip in 2002, the trend for New South Wales is quite close to the national average. Overall, the pattern does not suggest an Olympics-induced increase in participation levels and this applies as much to New South Wales, the host state, as to the other five states.

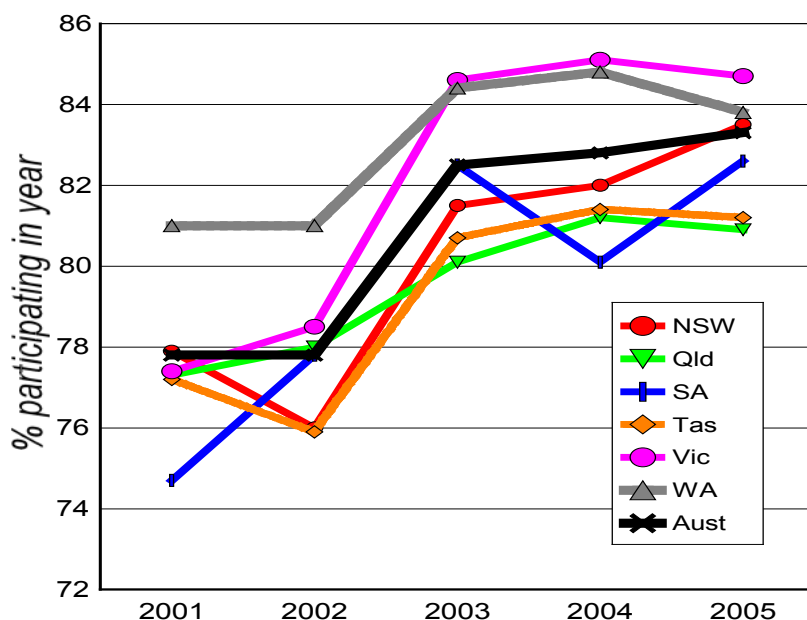


Figure 3.4. ERAS activity: participation trends, 2001-05: states
Source: ERAS data

² The two Territories, Australian Capital Territory (Canberra) and the Northern Territory have been excluded, They have a combined population of only 400,000.

3.3.3 Individual activities: trends 2001-05: Sydney met. area

Table 3.5 shows 2001-05 trends in participation in individual exercise, recreation and sport activities for the Sydney metropolitan area, with the change from 2001 to 2005 compared with the national change. The aggregate scores for Olympic and non-Olympic sports show very little difference between the Sydney and national figures, suggesting a lack of a strong Sydney-specific ‘Olympic boost’ to participation. In fact, using the aggregates, Sydney did better with non-Olympic sports.

Individual activities where Sydney participation changes were greater (or less negative) than the national average are in bold. Among Olympic sports these were: outdoor soccer, basketball, sailing, horse riding, table tennis, athletics, canoeing and badminton. Curiously, Sydney showed greater *declines* than the national average in swimming and tennis. Explanations for these differences have not been explored.

As with the national figures, some activities fluctuate rather than showing a consistent trend. In some cases reasons for this can be surmised, for example weather conditions affecting outdoor seasonal activities. Given the number of activities involved, the chances of one or more figures being a statistical aberration are quite high, with the probability increasing for the activities with lower participation levels.

SCORS is continuing to conduct ERASS through to 2009 and probably beyond, thus providing an improving data-base for future development of explanations for trends in participation.

3.4 Sydney 2000 Olympic Games: Conclusions

A number of conclusions can be drawn from the above analysis.

1. Major sporting event host cities, governments, National Olympic Committees and individual sporting governing bodies claim that increased grassroots sporting participation is an anticipated legacy of the Olympic Games, and the International Olympic Committee is committed to a policy of ‘Sport for All’. These can be seen as part of the campaign to muster public support for the hosting of the Games and, invariably, to justify the expenditure of public funds for the purpose. Like any public policy, this one should be exposed to rigorous testing as part of the process of public accountability, and this can only be done by ensuring that measures of grassroots sport participation are available for the host city, region and nation on a comparable basis before and after the hosting of the Games. The recent IOC initiative, the Olympic Games Global Impact (OGGI), will require organising committees to collect annually a range of data from the time of the announcement of the successful bid until two years after the event; among these is ‘participation rates in sport’. It remains to be seen how effective this will be in providing the appropriate data (Toohey and Veal, 2007: 74).

Table 3.5. Individual activities: trends 2001-05: Metropolitan Sydney

	2001	2002	2003	2004	2005	Change 01-05	National: 01-05	
Olympic sports	% of 15+ population participating in last year							
Swimming	21.0	18.8	19.6	20.2	17.5	-3.5	-1.6	
Aerobics/fitness	14.8	17.4	18.0	18.0	19.9	+5.1	+5.5	
Tennis	11.8	9.4	11.0	10.4	9.6	-2.2	-1.4	
Running	8.3	8.9	8.4	10.8	8.6	+0.3	+0.5	
Cycling	8.0	8.6	7.3	9.3	8.2	+0.2	+0.8	
Soccer (outdoor)	5.1	7.1	5.9	7.4	7.5	+2.4	+0.1	
Weight training	2.8	1.9	2.6	3.1	1.6	-1.2	-0.9	
Basketball	2.6	3.8	3.6	2.7	3.3	+0.7	0.0	
Martial arts	2.6	2.2	2.5	2.1	2.5	-0.1	-0.1	
Volleyball	1.6	1.5	0.6	0.9	0.6	-1.0	-0.4	
Sailing	1.3	0.9	1.0	0.9	1.4	+0.1	-0.1	
Softball	0.9	1.1	0.3	0.5	0.4	-0.5	-0.4	
Hockey (outdoor)	0.7	0.5	0.6	1.1	0.7	0.0	-0.2	
Horse riding	0.7	0.6	0.6	0.8	1.3	+0.6	-0.3	
Table tennis	0.6	0.1	0.4	0.5	0.9	+0.3	+0.2	
Athletics/track & field	0.5	0.9	0.6	0.5	0.4	-0.1	-0.2	
Baseball	0.5	0.4	0.6	0.5	0.6	+0.1	+0.1	
Boxing	0.5	0.2	0.2	1.1	0.4	-0.1	0.0	
Canoeing / kayaking	0.5	1.4	0.6	0.8	1.3	+0.8	+0.2	
Gymnastics	0.5	0.4	0.1	0.5	0.4	-0.1	0.0	
Rowing	0.5	0.3	0.0	0.4	0.3	-0.2	-0.1	
Badminton	0.4	0.2	0.3	0.9	0.8	+0.4	+0.1	
Triathlons	0.2	0.4	0.2	0.3	0.1	-0.1	+0.1	
Archery	0.1	0.3	0.1	0.1	0.0	-0.1	-	
Aggregate: Olympic sports						+1.8	+2.0	
Non-Olympic sports								
Walking	27.1	29.4	36.6	37.3	35.8	+8.7	+8.5	
Golf	8.4	7.4	8.5	8.3	7.1	-1.3	-1.1	
Bush walking	7.7	6.7	7.1	7.0	7.4	-0.3	+0.4	
Cricket (outdoor)	3.2	2.8	2.8	3.3	2.1	-1.1	+0.2	
Surf sports	3.2	2.3	2.7	4.0	3.5	+0.3	+0.2	
Touch football	2.8	3.4	3.2	2.3	3.2	+0.4	-0.4	
Netball	2.7	3.6	2.6	2.7	2.7	0.0	-0.5	
Squash/racquetball	2.2	2.3	2.3	2.5	1.4	-0.8	-0.7	
Yoga	2.2	4.9	3.7	4.3	5.0	+2.8	+1.9	
Dancing	2.0	2.8	2.9	3.4	2.9	+0.9	+0.2	
Ice / snow sports	2.0	3.0	1.9	3.3	1.6	-0.4	+0.1	
Rugby league	2.0	1.1	1.1	1.2	2.1	+0.1	+0.1	
Fishing	1.8	0.7	1.9	1.3	1.0	-0.8	-0.3	
Cricket (indoor)	1.3	0.9	0.8	1.2	1.0	-0.3	-0.3	
Rock climbing	1.3	1.1	0.6	0.8	0.8	-0.5	-0.3	
Aquarobics	1.0	1.0	1.4	1.2	1.0	0.0	+0.1	
Roller sports	1.0	0.9	0.6	0.5	0.5	-0.5	-0.3	
Soccer (indoor)	0.9	1.9	1.6	2.0	1.8	+0.9	+0.5	
Tenpin bowling	0.9	1.1	1.2	0.9	0.7	-0.2	-0.2	
Lawn bowls	0.8	1.9	2.2	2.1	2.4	+1.6	+0.3	
Waterskiing/powerboating	0.8	0.8	0.7	1.2	0.5	-0.3	-0.3	
Motor sports	0.7	0.8	0.7	0.8	0.8	+0.1	-0.1	
Rugby union	0.7	1.0	0.9	1.2	1.2	+0.5	+0.4	
Scuba diving	0.6	0.6	0.7	0.4	0.8	+0.2	0.0	
Carpet bowls	0.4	0.0	0.4	0.2	0.2	-0.2	-0.1	
Australian rules football	0.2	0.5	0.9	0.9	0.6	+0.4	+1.1	
Darts	0.2	0.0	0.1	0.2	0.1	-0.1	0.0	
Shooting sports	0.2	0.2	0.4	0.2	0.2	0.0	+0.1	
Hockey (indoor)	0.1	0.1	0.0	0.1	0.0	-0.1	-0.1	
Aggregate: non-Olympic sport						+10.0	+9.3	

2. The Sydney 2000 Olympic Games is a case study of the failure to follow this principle. While national surveys of sporting participation were undertaken by the Australian Bureau of Statistics (ABS) on a number of occasions during the 1990s, the last of these, covering the Sydney Games period, was terminated half-way through the year-long interviewing process and replaced by another survey series, conducted by a commercial survey company on behalf of another public organisation, the Standing Committee on Sport and Recreation (SCORS). Results from the new survey series proved to be not comparable with those from the earlier ABS surveys. The sensitivity of leisure participation survey results to survey and questionnaire design is well documented (Cushman *et al.*, 2005). Only summary results from the final, truncated ABS survey were made publicly available. As a result of this change of survey vehicle it has not been possible to compare 'before and after' sports participation rates with any confidence
3. Given these limitations, it has not been possible to draw firm conclusions regarding the effect of the Sydney 2000 Olympic Games on grassroots sport participation. Some of the tentative observations arising from a number of data sources are:
 - The National Physical Activity Survey, which includes non-sporting physical activity, suggested that there may have been some increase in physical activity attributable to the Sydney Games, but this was identified only in November 2000 and has not been followed up at national level.
 - Quarterly data from the truncated ABS 2000-01 survey suggests an increase in sport and physical activity levels between August and November 2000, reversing a consistent downward trend since early 1999, but this survey series was terminated at this point.
 - The results of manipulation of ABS 1999-2000 survey data to make them comparable with the Standing Committee on Recreation and Sport (SCORS) ERASS data suggested that there could have been a 10% increase in the exercise, recreation and sport (ERAS) participation rate between 1999-2000 and 2001, but this is very speculative.
 - Annual ERASS data from 2001 to 2005 suggests a pattern of continuing modest growth in ERAS participation rates.
 - Similar manipulation of the ABS 1999-2000 data to that indicated in c. above was applied to individual activities and it was found that, the estimated increase in participation between 1999-2000 and 2001 was due not to Olympic activities, which, overall, were in decline, but to non-Olympic activities. Modest increases in both Olympic and non-Olympic activities was noted in the period 2001 to 2005, but this was largely due to the inclusion of aerobics/fitness activities (+5.5%) among the Olympic activities and the ill-defined activity of walking (+8.8%) among the non-Olympic activities.
 - Examination of state-based participation data and data for the Sydney metropolitan area failed to identify any pronounced effect of the 2000 Olympics on ERAS participation in New South Wales, the host state, or Sydney, the host city.

4. The Rugby World Cup, 2003

4.1 Introduction

The Rugby Union World Cup was hosted by Australia in 2003. The problem faced in analysing the Sydney 2000 Olympic Games, of dealing with the 2000 change in survey vehicle, does not therefore arise in this case, since the annual ERASS program was well underway by 2003. And dealing only with a single sport also greatly simplifies the exercise. This section therefore contains just two sub-sections, dealing with national trends in rugby participation and state trends.

4.2 National trends

Table 4.1 shows that participation in Rugby Union increased steadily over the period 2001 to 2005.

The annual increase in percentages, of between 0.03 and 0.15 are not significant statistically (the margin of error for these figures is $\pm 0.2\%$), but the persistence of the trend suggests that it was real. The difference between the participation rate of 0.67% in 2002, the year before the World Cup, and 1.04% in 2005, two years after the event, is statistically significant. The largest increase took place in 2002-03, suggesting that the World Cup may have had an impact.

Table 4.1. Participation in Rugby Union, Australia, 2001-05

Persons aged 15+ participating in year			
	%	Number, '000s	% increase in number of participants over previous year
2001	0.64	96.4	
2002	0.67	102.1	+5.9
2003	0.82	127.8	+25.2
2004	0.91	144.6	+13.1
2005	1.04	165.9	+14.7

Source: ERASS

The increase in the number of participants reflects both the increase in participation rate and the increase in population. The population aged 15 and over increased by about 200,000 per annum, or almost a million over the period. The number of participants increased by 69,500 over the period, of which about 6000 was due to the population increase and the rest to the increase in participation rate. The number of participants increased by 72% over the period, including a 25% increase in 2002-03.

Over 90% of rugby union participants are male and over 80% are aged 15-34. The substantial growth in participants is therefore even more impressive when it is noted that the population of males aged 15-34 increased by only 100,000 over the study period.

It should be noted that, while the number of male rugby participants increased by 79% over the period, the number of female participants increased by just 20%, suggesting that the World Cup was less of an influence on women.

4.3 State trends

Rugby Union is stronger in some states than others, as Table 4.2 shows. The main two 'rugby states', New South Wales and Queensland, show a significant growth in participation over the study period, but, while New South Wales shows a marked increase from 2003 to 2004, in Queensland the growth came in 2003, with a small decline in 2004. This may reflect the pattern of publicity and/or organisational response during the build-up to the World Cup. Of particular note are the 2004-05 figures for the other four states. Prior to 2004 their participation numbers were too small for ERASS to reliably record, but this changed in 2004 and was maintained in 2005. The high number for Western Australia in 2003 appears to be a statistical aberration.

Table 4.2. Rugby Union participation rates by state, 2001-05

	NSW	Qld	SA	Tas	Vic	WA
	%	%	%	%	%	%
2001	0.90	1.17	*	*	*	*
2002	1.09	1.00	*	*	*	*
2003	1.01	1.45	*	*	*	0.90
2004	1.53	1.40	0.34	0.38	0.06	0.36
2005	1.64	1.67	0.38	0.34	0.23	0.40

Source: ERASS. * = less than 0.1%

The underlying growth in population means that the absolute growth in the number of rugby players was even more pronounced, as shown in Table 4.3. The combined number of players in the two rugby states rose by 61,000, or almost 80%, between 2001 and 2005, with the bulk of the growth taking place from 2003 onwards.

Table 4.3. Rugby Union: numbers of participants, NSW and Qld, 2001-05

	NSW		Qld		Total	
	'000s	% increase over previous year	'000s	% increase over previous year	'000s	% increase over previous year
2001	45.4		32.6		78.0	
2002	56.0	+23.3	28.4	-12.9	84.4	+8.2
2003	52.6	-6.1	42.5	+49.6	95.1	+12.7
2004	80.8	+53.6	42.5	0.0	123.3	+29.7
2005	87.2	+7.9	52.1	+22.6	139.3	+13.0

Source: ERASS.

It can be concluded, therefore, that a significant increase in the popularity of rugby occurred following the hosting of the Rugby World Cup in 2003, both in the two main 'rugby states' and the other four states.

4.4 Rugby World Cup: Conclusions

At national level, a significant increase in grassroots participation in rugby union coincided with the hosting of the 2003 World Cup. The participation rate increased from 0.67% in 2002 to over 1% by 2005. The rate of increase in numbers of participants was even more marked because of the growth in population during the period, with numbers increasing from just over 100,000 in 2002 to 166,000 by 2005.

The bulk of the increase in participation was concentrated in the 'rugby states' of New South Wales and Queensland. In the other four states participation in rugby was too low to be measured by ERASS, given the limitations of state sample sizes, but in 2004 and 2005 measurable participation rates, of up to 0.4%, were recorded.

The data clearly suggests that the hosting of the World Cup had a significant impact on grassroots rugby participation.

5. The Melbourne 2006 Commonwealth Games

5.1 Introduction

Empirical analysis of the Melbourne Commonwealth Games, held in April 2006, was not included in the original grant proposal for the Sport for All project, but the delay in completing the project has made it possible to include this section because of the availability of data.

In examining the impact of this event, not only do we have available the results of ERASS for 2005, 2006 and 2007, but in the 2006 edition of ERASS specific questions on the Commonwealth Games were included.

5.2 ERAS activities, national trends

Figure 5.1 shows national trends in organised and non-organised ERAS activities from 2001 to 2007. It shows that participation increased from 2001, reaching a peak in 2005, but declined in the last two surveys. Thus there was no rise in participation coinciding with the hosting of the Commonwealth Games.

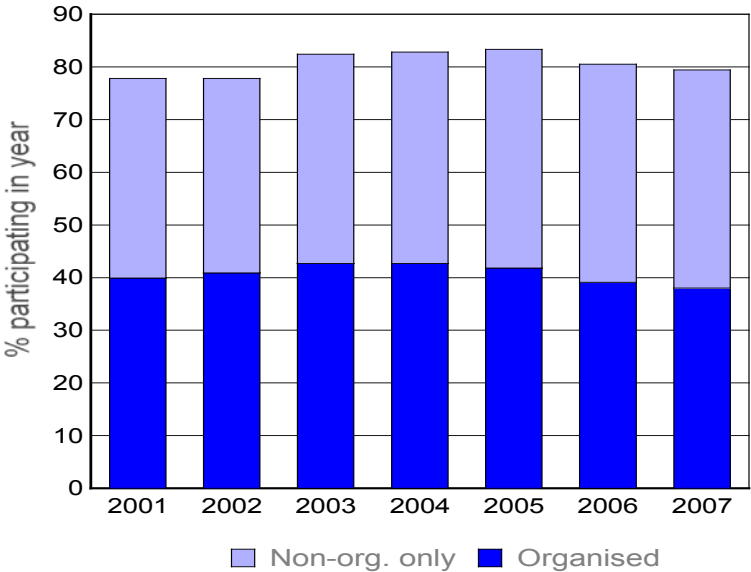


Figure 5.1. ERAS participation rates, 2001-07: national
Source: ERASS

5.3 ERAS activities: state trends

Since the Games were hosted in Victoria, it might be expected that, even if no effect was apparent at national level, some impact would be seen in that state. Figure 5.2 shows state-specific participation in exercise, recreation and sport and it can be seen that all states experienced a decline in participation over the three year period, with Victoria's decline of 5%

being the second largest, after New South Wales at 5.6%. So there is no evidence here of a Commonwealth Games induced boost in participation in the host state.

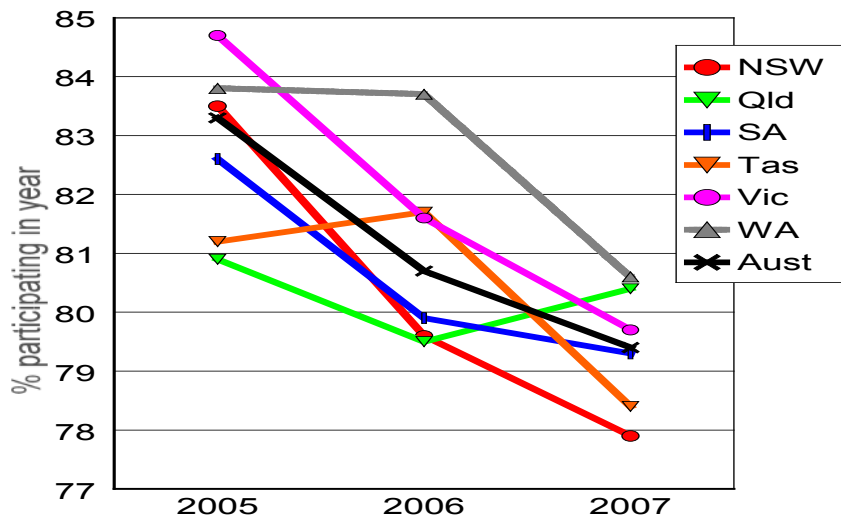


Figure 5.2. ERAS participation, 2005-07, by state

5.4 Individual activities: Victoria

Table 5.1 presents participation rates for Victoria for the 52 activities included in ERAS with participation rate of at least 0.2% in 2007. They are divided into Commonwealth Games and non-Commonwealth Games activities; as with the Olympic Games, aerobics/fitness is included in the Commonwealth Games group as covering a wide range of fitness/training activities.

The table shows that, of the 18 Commonwealth Games activities, only five experienced an increase in participation rates over the three year period.

- Aerobic/fitness shows the greatest increase of +1.0%; it is possible that this was Commonwealth Games-induced but, as we have seen, this activity group has shown a continual increase nationally since the first edition of ERASS in 2001, which suggest that other factors are at work in its continued growth.
- Athletics/ track and field is one of the most prominent of the Commonwealth Games activities and, while the increase was only +0.2%, this was from a base of just 0.4%, so the number of participants will have at least doubled.

Of particular note, on the other hand is the relatively large falls in participation rates for the high profile sports of swimming, cycling, basketball and netball.

The non-Commonwealth Games activities showed a similar pattern of decline with, curiously, Australian Rules football showing the largest fall, at -3.4%.

Table 5.1. Individual activities, 205-2007, Victoria (ERASS)

	2005	2006	2007	Change 2005-07
Commonwealth Games activities	%	%	%	%
Aerobics/fitness	19.8	20.5	20.8	+1.0
Swimming	13.9	11.8	11.3	-2.6
Cycling	11.5	12.0	10.7	-0.8
Running	8.8	7.7	8.7	-0.1
Basketball	5.1	4.8	3.5	-1.6
Netball	4.4	3.5	3.8	-0.6
Weight training	2.5	3.5	2.3	-0.2
Lawn bowls	2.3	1.8	1.8	-0.5
Badminton	1.0	1.3	0.8	-0.2
Squash	1.0	1.6	1.1	+0.1
Table tennis	1.0	0.9	0.5	-0.5
Shooting sports	0.7	0.6	0.5	-0.2
Hockey (outdoor)	0.6	1.0	0.3	-0.3
Triathlons	0.6	0.3	0.3	-0.3
Athletics/ track & field	0.4	0.5	0.6	+0.2
Boxing	0.4	0.4	0.5	+0.1
Gymnastics	0.3	0.1	0.2	-0.1
Rugby union	0.2	0.1	0.4	+0.2
Aggregate				-6.4
Non-Commonwealth Games activities				
Walking	37.0	37.8	34.0	-3.0
Tennis	8.2	7.8	6.4	-1.8
Golf	7.6	6.9	6.8	-0.8
Australian rules football	6.7	4.5	3.3	-3.4
Bush walking	5.3	4.5	4.6	-0.7
Cricket (outdoor)	4.0	4.0	3.3	-0.7
Yoga	3.6	3.5	3.1	-0.5
Soccer (outdoor)	3.1	3.3	3.6	+0.5
Dancing	2.1	2.7	2.2	+0.1
Ice/snow sports	2.0	1.1	1.1	-0.9
Soccer (indoor)	2.0	2.5	1.6	-0.4
Surf sports	2.0	1.1	1.2	-0.8
Fishing	1.7	1.3	1.4	-0.3
Martial arts	1.6	1.4	1.7	+0.1
Horse riding	1.1	1.5	0.7	-0.4
Aquarobics	1.0	1.1	1.0	0.0
Tenpin bowling	1.0	0.9	0.6	-0.4
Volleyball	1.0	1.0	0.7	-0.3
Waterskiing / powerboating	1.0	1.0	0.4	-0.6
Roller sports	0.8	0.7	0.6	-0.2
Sailing	0.8	0.5	0.5	-0.3
Cricket (indoor)	0.7	1.3	0.8	+0.1
Motor sports	0.7	1.0	1.1	+0.4
Baseball	0.4	0.3	0.2	-0.2
Rock climbing	0.4	0.4	0.3	-0.1
Canoeing / kayaking	0.3	0.2	0.7	+0.4
Carpet bowls	0.3	0.3	0.3	0.0
Rowing	0.3	0.4	0.5	+0.2
Scuba diving	0.3	0.3	0.4	0.1
Touch football	0.3	0.3	0.4	+0.1
Softball	0.2	0.2	0.3	+0.1
Rugby league	0.1	0.3	0.2	+0.1
Aggregate			152.2	-13.7

5.5 Additional questions on Commonwealth Games effects

In the 2006 edition of ERASS a series of questions was asked relating to the Commonwealth Games.

For the first set of questions the approach was indirect: the sample was divided into a pre-Games sample (interviewed Nov 2005 and Feb. 2006) and a post-Games sample (interviewed May 2006 and Aug. 2006³) and asked whether, compared with a year ago, the time spent participating in ERAS had increased or decreased or stayed the same. Table 5.2 presents the results for Victoria and Australia as a whole. It can be seen that there is virtually no difference between the pre-Games and post-Games responses and no significant difference between the Victorian and national responses. Thus, if there was any impact of the Commonwealth Games on participation, this approach failed to identify it.

Table 5.2. Change in participation over 12 months

	Victoria		Australia	
	%	%	%	%
	Pre-Games interviews	Post-Games interviews	Pre-Games interviews	Post-Games interviews
Increased	29.3	28.8	28.3	28.0
Decreased	49.9	48.8	50.6	50.8
Stayed the same	20.3	22.3	21.0	21.1
Don't know/refused	0.5	0.2	0.1	0.1
Total	100.0	100.0	100.0	100.0

For those who recorded an increase in participation, a follow-up question was asked about the reason for the increase. For the pre-Games sample the Commonwealth Games did not feature as a reason in any state except South Australia, where it was indicated as a reason by 1% of respondents. For the post-games sample the only state where the games were mentioned as a reason was Victoria, but again the proportion was only 1%.

Additional questions were asked about dropping activities and the taking up of new activities in the last year and reasons for doing so: approximately 25% of respondents took up a new activity and 20% dropped an activity. As with the earlier time-related questions, there were no significant differences between the pre-Games and post-Games interviews, no significant difference between Victoria and the other states and the Commonwealth Games did not feature as a reason for the changes.

This approach produces an interesting by-product concerning sport behaviour. If 25% take up a new activity each year while 20% drop an activity, this should result in a healthy growth in overall participation but, as we have seen, this is not the case. Further analysis of these results would obviously be desirable to establish the extent to which the changes reflect participants swapping activities and the extent to which they reflect new recruits into sport and the loss of participants from sport. It would also have been interesting if the questions had been continued in subsequent editions of ERASS to see whether the levels were consistent over time.

³ The 2006 ERASS report indicates that the post-Games interviews were conducted in May 2006 and November 2006, but it is assumed that this was a misprint and it should have been August 2006. NB. A revised version of the 2006 ERASS report was published to correct errors caused by use of the wrong population figures, but the revised version does not include the Commonwealth Games-related data.

Finally, respondents were asked whether the hosting of the Commonwealth Games made them feel more or less positive towards Australia. Only 1-2% felt less positive, and around two thirds felt the same, the proportions who felt more positive are shown in Table 5.3. It can be seen that there was a post-Games increase in the proportion with a more positive attitude in four of the states and Victoria had a significantly higher proportion and a larger increase than the other states.

Table 5.3. Effect of hosting of Commonwealth Games on attitude toward Australia

	NSW	Qld	SA	Tas	Vic	WA	Aust.
	% with more positive attitude						
Pre-Games interviews	30.0	26.7	28.5	22.9	31.3	26.3	29.0
Post-Games interviews	29.9	26.9	32.7	28.7	40.9	29.9	32.2

Unfortunately this question was not continued in the 2007 ERASS, so it is not known how long-lasting the ‘feel-good’ factor was.

5.6 Commonwealth Games: Conclusions

- During the period 2005 to 2006, ERAS grassroots participation rates were in decline, at national level and in all states. This does not, therefore, provide evidence of a positive effect on participation as a result of hosting the 2006 Commonwealth Games, although it is recognised that there is a possibility that the Games may have prevented an even steeper decline in participation rates. The decline in participation in the host state, Victoria, was the second largest, after New South Wales.
- Examination of participation in individual activities in Victoria shows that Commonwealth Games sports and non-Commonwealth Games sports were both subject to declining participation rates.
- Additional questions in the 2006 edition of ERASS divided respondents into pre-Games interviewees (Nov 2005 and Feb 2006) and post-Games interviewees (May 2006 and August 2006) and asked the two groups about changes in ERAS participation over the last twelve months, but no differences between the two groups were found, even for the host state, and the Commonwealth Games did not feature as a reason for any changes in participation patterns.
- Respondents were asked how the hosting of the Games affected their feelings towards Australia and it was found that pre-Games about 30% felt positive and this increased to 32% post-Games: the proportions were higher, and the post-Games effect more pronounced, in Victoria than in the other states.

6. Conclusions

This section reproduces the conclusions presented in Sections 3.4, 4.4 and 5.6 above.

6.1 *Olympic Games: general*

Major sporting event host cities, governments, National Olympic Committees and individual sporting governing bodies claim that increased grassroots sporting participation is an anticipated legacy of the Olympic Games, and the International Olympic Committee is committed to a policy of 'Sport for All'. These can be seen as part of the campaign to muster public support for the hosting of the Games and, invariably, to justify the expenditure of public funds for the purpose. Like any public policy, this one should be exposed to rigorous testing as part of the process of public accountability, and this can only be done by ensuring that measures of grassroots sport participation are available for the host city, region and nation on a comparable basis before and after the hosting of the Games. The recent IOC initiative, the Olympic Games Global Impact (OGGI), will require organising committees to collect annually a range of data from the time of the announcement of the successful bid until two years after the event; among these is 'participation rates in sport'. It remains to be seen how effective this will be in providing the appropriate data (Toohey and Veal, 2007: 74).

6.2 *Sydney 2000 Olympic Games*

- The Sydney 2000 Olympic Games is a case study of the failure to follow this principle. While national surveys of sporting participation were undertaken by the Australian Bureau of Statistics (ABS) on a number of occasions during the 1990s, the last of these, covering the Sydney Games period, was terminated half-way through the year-long interviewing process and replaced by another survey series, conducted by a commercial survey company on behalf of another public organisation, the Standing Committee on Sport and Recreation (SCORS). Results from the new survey series proved to be not comparable with those from the earlier ABS surveys. The sensitivity of leisure participation survey results to survey and questionnaire design is well documented (Cushman *et al.*, 2005). Only summary results from the final, truncated ABS survey were made publicly available. As a result of this change of survey vehicle it has not been possible to compare 'before and after' sports participation rates with any confidence
- Given these limitations, it has not been possible to draw firm conclusions regarding the effect of the Sydney 2000 Olympic Games on grassroots sport participation. Some of the tentative observations arising from a number of data sources are:
 - The National Physical Activity Survey, which includes non-sporting physical activity, suggested that there may have been some increase in physical activity attributable to the Sydney Games, but this was identified only in November 2000 and has not been followed up at national level.
 - Quarterly data from the truncated ABS 2000-01 survey suggests an increase in sport and physical activity levels between August and November 2000, reversing a consistent downward trend since early 1999, but this survey series was terminated at this point.

- The results of manipulation of ABS 1999-2000 survey data to make them comparable with the Standing Committee on Recreation and Sport (SCORS) ERASS data suggested that there could have been a 10% increase in the exercise, recreation and sport (ERAS) participation rate between 1999-2000 and 2001, but this is very speculative.
- Annual ERASS data from 2001 to 2005 suggests a pattern of continuing modest growth in ERAS participation rates.
- Similar manipulation of the ABS 1999-2000 data to that indicated in c. above was applied to individual activities and it was found that, the estimated increase in participation between 1999-2000 and 2001 was due not to Olympic activities, which, overall, were in decline, but to non-Olympic activities. Modest increases in both Olympic and non-Olympic activities was noted in the period 2001 to 2005, but this was largely due to the inclusion of aerobics/fitness activities (+5.5%) among the Olympic activities and the ill-defined activity of walking (+8.8%) among the non-Olympic activities.
- Examination of state-based participation data and data for the Sydney metropolitan area failed to identify any pronounced effect of the 2000 Olympics on ERAS participation in New South Wales, the host state, or Sydney, the host city.

6.3 2003 Rugby World Cup

At national level, a significant increase in grassroots participation in rugby union coincided with the hosting of the 2003 World Cup. The participation rate increased from 0.67% in 2002 to over 1% by 2005. The rate of increase in numbers of participants was even more marked because of the growth in population during the period, with numbers increasing from just over 100,000 in 2002 to 166,000 by 2005.

The bulk of the increase in participation was concentrated in the 'rugby states' of New South Wales and Queensland. In the other four states participation in rugby was too low to be measured by ERASS, given the limitations of state sample sizes, but in 2004 and 2005 measurable participation rates, of up to 0.4%, were recorded.

The data clearly suggests that the hosting of the World Cup had a significant impact on grassroots rugby participation.

6.4 Melbourne 2006 Commonwealth Games

- During the period 2005 to 2006, ERAS grassroots participation rates were in decline, at national level and in all states. This does not, therefore, provide evidence of a positive effect on participation as a result of hosting the 2006 Commonwealth Games, although it is recognised that there is a possibility that the Games may have prevented an even steeper decline in participation rates. The decline in participation in the host state, Victoria, was the second largest, after New South Wales.
- Examination of participation in individual activities in Victoria shows that Commonwealth Games sports and non-Commonwealth Games sports were both subject to declining participation rates.
- Additional questions in the 2006 edition of ERASS divided respondents into pre-Games interviewees (Nov 2005 and Feb 2006) and post-Games interviewees (May 2006 and August 2006) and asked the two groups about changes in ERAS participation over the last twelve months, but no differences between the two groups were found, even for the host

state, and the Commonwealth Games did not feature as a reason for any changes in participation patterns.

- Respondents were asked how the hosting of the Games affected their feelings towards Australia and it was found that pre-Games about 30% felt positive and this increased to 32% post-Games: the proportions were higher, and the post-Games effect more pronounced, in Victoria than in the other states.

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Data sources

- ERASS reports are available from: www.ausport.gov.au/information/scors
- ABS reports area available from: www.abs.gov.au under Themes> Culture and Recreation

Appendix 1: Participation in Sport/Physical Activities, Australia, 1998-2000

Year	Interview period	Participation period	% of persons aged 18+ participating in year prior to interview
1998-99	August 1998	Aug '97 – Aug '98	59.5
	November 1998	Nov '97 – Nov '98	59.3
	February 1999	Feb '98 – Feb '99	59.1
	May 1999	May '98 – May '99	59.2
	Year	Aug '97 – May '99	59.4
1999-00	August 1999	Aug '98 – Aug '99	56.3
	November 1999	Nov '98 – Nov '99	54.6
	February 2000	Feb '99 – Feb 2000	54.5
	May 2000	May '99 – May 2000	53.4
	Year	Aug '98 – May 2000	54.7
2000-01	August 2000	Aug '99 – Aug 2000	49.0
	November 2000	Nov '99 – Nov 2000	51.1

Source: ABS PSM data from Vanden Heuvel and Conolly (2001).

Appendix 2: Analysis of ABS & ERASS data, 1999-2000

The two ABS surveys carried out in 1999-2000 and 2001-02 produce overall substantially lower levels of participation than the editions of ERASS in 2001 and 2002. To compare the 'before' situation (ABS 1999-2000 – column D) with the 'after' situation (ERASS 2001 – column F), the ABS 1999-2000 survey has been weighted by the ratios (column C) of ERASS 2002 (column A) to ABS/GSS 2002 (column B) to produce weighted estimates of 1999-00 participation rates (column E).

	A ERASS 2002	B ABS/GSS 2002	C Ratio A:B	D ABS/PSM 1999-00	E ABS Wtd D x C	F ERASS 2001	G Change E - F
Olympic sports							
Swimming	14.9	10.9	1.37	13.9	19.0	16.0	-3.0
Aerobics/fitness	14.6	10.9	1.34	10.5	14.1	13.0	-1.1
Tennis	8.2	6.8	1.21	7.4	8.9	9.2	0.3
Cycling	9.3	5.7	1.63	4.9	8.0	9.5	1.5
Running	7.6	4.6	1.65	4.7	7.8	7.2	-0.6
Basketball	4.0	2.4	1.67	2.3	3.8	3.5	-0.3
Martial arts	2.1	1.5	1.40	2.2	3.1	2.1	-1.0
Horse riding etc.	1.2	0.9	1.33	1.6	2.1	1.5	-0.6
Soccer (outdoor)	4.5	2.6	1.73	1.4	2.4	3.7	1.3
Weight-training	2.2	0.9	2.44	1.3	3.2	2.9	-0.3
Table tennis	0.6	0.6	1.00	1.2	1.2	0.5	-0.7
Volleyball	1.9	1.1	1.73	1.1	1.9	1.7	-0.2
Sailing	0.9	0.7	1.29	1.0	1.3	1.0	-0.3
Canoe/kayaking	0.7	0.5	1.40	0.7	1.0	0.7	-0.3
Badminton	0.7	0.6	1.17	0.6	0.7	0.6	-0.1
Hockey (outdoor)	0.9	0.5	1.80	0.5	0.9	1.0	0.1
Softball	0.7	0.3	2.33	0.3	0.7	0.8	0.1
Boxing	0.3	0.3	1.00	0.3	0.3	0.4	0.1
Gymnastics	0.3	0.3	1.00	0.3	0.3	0.4	0.1
Rowing	0.4	0.4	1.00	0.2	0.2	0.4	0.2
Triathlon	0.4	0.3	1.33	0.2	0.3	0.2	-0.1
Baseball	0.3	0.3	1.00	0.1	0.1	0.3	0.2
Athletics/track+field	0.7	0.2	3.50	0.1	0.4	0.7	0.4
Aggregate					81.6	77.3	-4.3
Non-Olympic sports							
Walking	30.8	25.3	1.22	18.8	22.9	28.8	5.9
Golf	8.7	7.5	1.16	9.6	11.1	8.2	-2.9
Fishing	2.3	3.5	0.66	5.3	3.5	2.4	-1.1
Tenpin bowling	0.8	0.9	0.89	2.9	2.6	1.0	-1.6
Lawn bowls	2.3	1.9	1.21	2.7	3.3	1.9	-1.4
Netball	4.1	3.1	1.32	2.7	3.6	4.1	0.5
Surf sports	2.2	2	1.10	2.1	2.3	2.4	0.1
Squash	2.3	1.7	1.35	2.0	2.7	2.2	-0.5
Cricket (outdoor)	3.0	2.5	1.20	1.9	2.3	2.7	0.4
Ice/snow sports	1.6	0.9	1.78	1.4	2.5	1.3	-1.2
Touch football	2.4	1.7	1.41	1.4	2.0	2.7	0.7
Aust. Rules	2.5	2.1	1.19	1.4	1.7	2.3	0.6
Waterski etc.	0.9	0.9	1.00	1.1	1.1	1.2	0.1
Scuba diving	0.5	0.4	1.25	1.1	1.4	0.5	-0.9
Dancing	2.1	1.8	1.17	0.9	1.1	2.0	1.0
Darts	0.2	0.3	0.67	0.9	0.6	0.2	-0.4
Cricket (indoor)	1.2	0.9	1.33	0.8	1.1	1.3	0.2
Aquarobics	0.9	0.3	3.00	0.7	2.1	0.9	-1.2

Rugby league	1.0	0.7	1.43	0.7	1.0	1.1	0.1
Shooting sports	0.4	0.6	0.67	0.6	0.4	0.4	0.0
Motor sports	0.9	0.9	1.00	0.5	0.5	1.0	0.5
Soccer (indoor)	1.9	0.9	2.11	0.4	0.8	1.2	0.4
Rock climbing	0.8	0.5	1.60	0.4	0.6	0.8	0.2
Carpetbowls	0.4	0.5	0.80	0.4	0.3	0.4	0.1
Roller sports	0.8	0.6	1.33	0.4	0.5	0.9	0.4
Rugby union	0.7	0.6	1.17	0.3	0.4	0.6	0.2
Hockey (indoor)	0.2	0.2	1.00	0.0	0.0	0.2	0.2
Yoga	3.0	2.1	1.43	0.0	0.0	1.5	1.5
Walking (bush)	5.6	3.2	1.75	0.0	*	(5.3)	(5.3)
Aggregate					72.2	79.5	+2.3