

Sports Industry Economic Analysis

Exploring the size and growth
potential of the Sport Industry
in Australia

FINAL REPORT

Office for Sport – Department of Health | KPMG Sports Advisory

March 2020

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Glossary

ANZSIC	The Australian and New Zealand Standard Industrial Classification (ANZSIC) is a classification that provides a framework for organising data about businesses by grouping business units carrying out similar productive activities.
CGE	Computable General Equilibrium models analyse both direct and indirect (flow-on) economic impacts following a shock to the economy. CGE models capture the economy as a complex system of simultaneous equations that represent interrelated economic agents operating in competitive markets. Economic theory specifies the behaviour and market interactions of economic agents, including consumers, investors, producers and governments. These agents operate in domestic and foreign goods markets, and capital and labour markets.
Domestic Production	Domestic Production considers all goods and services produced domestically (i.e., total production excluding imported goods and services)
Exports	Exported goods and services are those that are produced domestically and purchased by overseas consumers. Exports are goods and services flowing out of the country.
FTE	Full-Time Equivalent employment adjusts headcount employment figures (which capture all employees regardless of hours worked) to full-time equivalent figures by converting part time/casual workers to full time workers. This metric allows for a fairer, standardised comparison of employment across industries.
GDP	Gross Domestic Product is the total market value of goods and services produced in an economy. GDP is equivalent to gross national expenditure plus exports of goods and services, less imports of goods and services.
HES	The ABS Household Expenditure Survey (HES) (cat. no. 6530.0) collects detailed information about Australian household spending and is collected jointly with the Survey of Income and Housing, which collects data about household income, assets, liabilities and other household characteristics, such as tenure type.
Imports	Imported goods and services are those that are produced overseas and purchased by domestic consumers. Imports are goods and services flowing into the country.
I-O Tables	Input-Output Tables. The I-O tables are part of the Australian National Accounts, complementing the quarterly and annual series of national income, expenditure and product aggregates produced and maintained by the Australian Bureau of Statistics (ABS). I-O Table 2 - <i>Input by industry and final use category and imports by product group</i> is the base framework for KPMG's analysis of the economic value of the Australian Sports Industry.
IOIG	Input-Output Industry Group. IOIGs are based on the Australian and New Zealand Standard Industrial Classification (ANZSIC) and the I-O tables are published at this level of industry.
IOPG	Input-Output Product Group. IOPGs are groups of IOPCs (Input-Output Product Classification) aggregated to the IOIGs to which they are primary. I-O tables are published at this level of product classification.
Per capita	Per capita is simply a given measure expressed in 'per person' terms. Expressing measures in per capita terms allows for a fairer, standardised comparison across regions with different population sizes.
Sales	Sales is equivalent to total revenue generated, or output. For example, If a cricket bat is bought by a retailer for \$40 and sold for \$50, the retailer's sales is recorded as \$50.
Value add	Industry value add is a measure of each industry's individual contribution to the economy. Industry value add includes total compensation to employees (returns to labour), gross operating surplus & mixed income (returns to capital) and other taxes on production. Simply, value add is the difference between the price of product or service and the cost of producing it. For example, If a cricket bat is bought by a retailer for \$40 and sold for \$50, the value added by the retailer to the economy is \$10.

Preface



This Sports Industry Economic Analysis report represents the first step towards the development of a potential Industry Growth Plan.

The Australian Sports Industry is estimated to generate approximately \$32.2 billion in annual sales, resulting in a contribution to GDP of approximately \$14.4 billion and supporting approximately 128,000 full-time equivalent jobs.

The Industry value add is estimated to have grown by 13% between 2012/13 and 2016/17.

Sport is a pillar of the Australian way of life. Every weekend, millions of Australians participate in, consume or discuss sport. It can be a source of enjoyment, frustration, friendship, rivalry and pride. Sport generates strong beneficial outcomes for society through health, social, economic, cultural and environmental impacts, and the sports industry is the economic representation of this, providing the inputs and coordination required for the sport and recreation we all enjoy.

In 2018, the Commonwealth Government released Australia's first national sport plan, Sport 2030. The plan details four priorities for the sector; to build a more active Australia, achieve sporting excellence, safeguard the integrity of sport, and strengthen Australia's Sport Industry. In order to deliver against this last priority, funding was committed in the 2019-20 Commonwealth Budget to explore the development of a Sports Industry Growth Plan. This Sports Industry Economic Analysis report represents the first step towards the Growth Plan, with the objective of defining, measuring and analysing the Australian Sports Industry to provide the foundational evidence for the potential development of the Plan.

What is the Australian Sports Industry?

The sports industry in Australia is diverse, covering a wide range of sport and recreation activities, and an even broader range of economic activities. It covers the grassroots participation in both organised sport and less formal recreation, through to the high performance and professional athletes and competitions held in major stadia around the country, and broadcast on screens around the world. It includes, among other activities, the delivery of core sport and recreation services such as administration and training, the manufacturing and distribution of equipment and technology, and the delivery of sports medicine services.

As a result of these complexities, the sports industry has not been well defined historically, and attempts to estimate the economic contribution have focussed on a narrow definition of both sport and the related industry activity. The first challenge for this analysis was to

develop a broader definition of sport and the Sports Industry to ensure that the significant linkages throughout the economy are captured. Then, to further enable a robust analysis of the Industry, it has been divided into nine key segments based on the various goods, services and activities across the industry. This facilitates a more in depth analysis of each segment in order to provide a stronger evidence base for a potential future Growth Plan. Importantly, the methodology was designed to facilitate a robust but repeatable exercise, and was based within the Australian National Accounts to ensure comparability to other industries and sectors.

How big is the Australian Sports Industry?

The analysis within this report has estimated that the Australian Sports Industry generated approximately \$32.2 billion in sales in 2016/17, resulting in a contribution to gross domestic product (GDP) of approximately \$14.4 billion and supporting approximately 128,000 full-time equivalent jobs. For context, this is approximately 0.8% of GDP and 1.5% of total Australian employment.

The Industry is estimated to involve approximately \$2.5 billion in imported goods and services, and \$1.8 billion in exports. From a labour productivity perspective, approximately \$112,000 in value add is generated per worker per annum, noting that the broader outcomes of sport and recreation (e.g. social and health impacts) would make the total value higher. The Industry value add contribution is estimated to have grown by 13% between 2012/13 and 2016/17.

The largest component of the Industry is the Sports Operations segment, which can be thought of as the administration, governance, delivery and support of sport and recreation participation activities across the country. This segment accounts for 44% of industry sales, 38% of industry value add and 47% of industry employment. There are also material sales contributions from Education and Training (15.5%), Events, Facilities and Venues (12.4%), Equipment and Apparel (11.3%) and Media (11.2%).

The opportunity for growth

Looking globally, the international analysis has identified a number of comparable economies that have measured the size of their Sports Industry using a similar industry definition. The estimate of the contribution of the Australian Sports Industry at 0.8% of GDP puts us in line with countries such as Italy and Spain (0.7% and 0.8% respectively), but behind countries such as the United Kingdom (1.1%) and Poland (1.4%). If the Sports Industry in Australia grew to represent the same portion of total economic activity as the Sports Industry does in the United Kingdom, an additional \$5.6 billion in GDP and 17,900 jobs would be supported in the Australian economy.

Looking forward, there appears to be an emerging global opportunity as a result of the rapidly growing middle classes in the BRIC economies (Brazil, Russia, India and China). Should these countries household expenditure on sport grow to match the proportion that Australian households allocate to sport, the result would be an increase of approximately \$27.6 billion (\$2019, \$USD) in global household demand for sports consumption.

Where could growth come from?

Each segment of the Australian Sports Industry has been analysed within this report in order to find potential high value growth opportunities that an Industry Growth Plan may look to investigate further. While there are a number of findings detailed within, key growth opportunities appear to exist in:

- **Education and Training** – through increasing the export of sport related higher education;
- **Sports Technology** – through greater coordination and support of this innovative and high value add segment; and
- **Media** – through exploring the barriers to growth in international demand for Australian produced sport content.

It is also noted that the broader value generated by the Sport Industry (i.e. non-economic), and the interdependence amongst Sports Industry segments highlights the strategic importance of working towards growth across the entire industry. An Industry Growth Plan may look to explore a broader suite of interventions that align with the Department of Industry, Innovation and Science Industry Growth Centres Initiative, including:

- Increasing collaboration and commercialisation;
- Improving international opportunities and market access;
- Enhancing management and workforce skills; and
- Identifying opportunities for regulatory reform.

Where to from here?

While this report identifies a number of potential growth opportunities for the sector, this would need to be further explored and confirmed as part of the development of an Industry Growth Plan. The Sports Industry makes a material contribution to the Australian economy, and there appears to be significant opportunities for growth both at the aggregate Sports Industry level, and across various segments of the Industry.

It is important to note that the sports industry can also not be divorced from the broader value that is generated by sport and recreation. Various recent reports have estimated that the non-economic outcomes of sport and recreation (i.e. those in the health, social, cultural and environmental domains) are at least as big as the economic contribution made. It is therefore important for any Growth Plan, and any related analysis and evidence base, to be constructed with a view to continuing to support and grow these broader beneficial outcomes generated by sport and recreation.

The estimate of the contribution of the Australian Sports Industry at 0.8% of GDP is comparable to countries such as Italy and Spain (0.7% and 0.8% respectively), but behind countries such as the United Kingdom (1.1%) and Poland (1.4%).

There appears to be an emerging global opportunity as a result of the rapidly growing middle classes in the BRIC economies, which may increase global sports consumption by approximately \$27.6 billion (\$2019, \$USD).

Within the Australian Sports Industry, there appears to be high value growth opportunities within Education and Training, Sports Technology and Media.

1. Introduction

Strengthening Australia's Sports Industry – A thriving Australian sport and recreation industry with contemporary governance structures, world-leading research and innovation, strong economic investment, hosting global events and facilitating Australia's international interests.

- Sport 2030, Sport Australia



Project background

PROJECT CONTEXT

In the 2019-20 Commonwealth Budget, funding was committed to explore the development of a Sports Industry Growth Plan as part of implementing Sport 2030, Australia's first national sport plan. Sport is a large part of the Australian and global economy and the Sports Industry is made up of a large number of diverse but interrelated components.

In the context of the 4 strategic priorities in Sport 2030, the focus of the Sports Industry Growth Plan is on Strengthening Australia's Sports Industry and contributing to the desired outcomes of improving physical and mental health, personal development, strengthening communities and growing the economy.

The intention of the Plan is to provide stakeholders with the strategic direction required to focus collaborative business, research, education and government sector efforts to: realise commercial opportunities; ensure that the sports workforce is developed and managed to facilitate growth and performance; and export Australian sports products and services to the world.

This Sports Industry Economic Analysis report represents the first step towards the development of the Growth Plan, with a view to define the industry, and provide the framework and preliminary evidence.

SPORT 2030 – SPORT AUSTRALIA

In 2018, the Commonwealth Government released Australia's first national sport plan, Sport 2030. The plan details four priorities for the sector; to build a more active Australia, achieve sporting excellence, safeguard the integrity of sport, and strengthen Australia's Sports Industry.

THE AUSTRALIAN SPORTS INDUSTRY

The Sports Industry in Australia is diverse, covering a wide range of sport and recreation activities, and an even broader range of economic activities. It covers the grassroots participation in both organised sport and less formal recreation, through to the high performance and professional athletes and competitions held in major stadia around the country, and broadcast on screens around the world. It includes, among other activities, the delivery of core sport and recreation services such as administration and training, the manufacturing and distribution of equipment and technology, and the delivery of sports medicine services.

Almost every Australian is an industry stakeholder, and most also a customer. The industry is also constantly changing, driven by changes in wealth and income, consumer preferences and technology.

As a result of these complexities, the Sports Industry has not been well defined historically, and attempts to estimate the economic contribution have focussed on a narrow definition of both sport and the related industry activity. The methodology utilised for the analysis within this report represents a novel attempt to develop a broader definition of the Sports Industry, and to develop an estimate of the size of the industry's economic contribution acknowledging the significant linkages into the rest of the economy.

It is important to note that the Sports Industry can also not be divorced from the broader value that is generated by sport and recreation. Various recent reports have estimated that the non-economic outcomes of sport and recreation (i.e. those in the health, social, cultural and environmental domains) are at least as big as the economic contribution made. It is therefore important for any Growth Plan, and any related analysis and evidence base, to be constructed with a view to continuing to support and grow these broader beneficial outcomes generated by sport and recreation.

Project purpose and scope

PROJECT PURPOSE

Given the complexity of the Sports Industry and the definition and segmentation processes, it is important to ensure that consideration is given to the objectives of this project, the proposed Growth Plan and the broader Sport 2030 agenda.

The key objective of this phase of work is to support the potential development of the Sports Industry Growth Plan through economic analysis, which should examine the Sports Industry and determine its:

- Competitive strengths;
- Growth potential;
- Linkages to other sectors;
- Strategic importance; and
- Prospects of producing positive socioeconomic outcomes.

The related priority from Sport 2030 is: ***Strengthening Australia's Sports Industry*** *A thriving Australian sport and recreation industry with contemporary governance structures, world-leading research and innovation, strong economic investment, hosting global events and facilitating Australia's international interests.*

SCOPE

KPMG has been engaged by the Office for Sport within the Department of Health to develop this Sports Industry Economic Analysis report. More specifically, the scope of the engagement is to:

- Develop a definition of the Sports Industry and an industry segmentation with the view to clearly define the boundaries of the industry and the analysis and provide foundational structure for the development of an Industry Growth Plan.
- Economic analysis of the Sports Industry to determine the current size and economic contribution.
- Additional analysis (including analysis of international markets) to determine where potential opportunities for growth may exist.

STRUCTURE OF THIS REPORT

This Sports Industry Economic Analysis report is structured as follows:

- **1. Introduction:** This section details the project context, purpose and scope.
- **2. Summary of findings:** This section details the high level findings from the analysis. This includes those relating to the aggregate Sports Industry and the individual segments within, and covers the key insights from the complementary analyses (i.e. international analysis, regional analysis and economic modelling).
- **3. The methodology:** This section covers the approach taken to size and analyse the Sports Industry in Australia, including the theoretical framework and definitions, and the segmentation and attribution processes.
- **4. Sizing the industry:** This section details the industry sizing process and the resulting outputs in detail.
- **5. International analysis:** In this section, the Australian Sports Industry is analysed in the context of the available information on the global Sports Industry, and economies that provide comparable estimates.
- **6. Segment analysis:** This section provides an overview of each segment, and explores each through the Structure-Conduct-Performance (SCP) framework.
- **7. Economic modelling:** This section outlines the approach and results of the economic modelling exercise to determine the broader contribution of the Sports Industry, and the outcomes of a number of tested growth scenarios.
- **Appendices:** There are also a number of appendices attached to this report.
 - **Appendix A** provides additional detail supporting the methodology.
 - **Appendix B** details the regional analysis through a state and territory breakdown of the Sports Industry.
 - **Appendix C** provides more details regarding the industry reports used during the attribution process.

2. Summary of findings

This section of the report provides an overview of the key findings from the analysis.

The Sports Industry in Australia is estimated to generate \$32 billion in sales and supports 128,000 full-time equivalent annually (\$2016/17)



The Australian Sports Industry

This section provides an overview of the key findings of the analysis of the Australian Sports Industry at both the aggregate industry level, as well as for the individual segments within.

For this project, sport and recreation includes: *Human activity requiring physical exertion and / or physical skill which, by its nature and organisation, is competitive and generally accepted as being a sport, or, is engaged in for the purpose of relaxation, health and wellbeing or enjoyment.*

The Sports Industry is then defined as the following economic activity in support of sport and recreation outlined above: *The goods and services that would not exist or would be significantly different in the absence of sport and recreation (as defined above).*

In order to facilitate the analysis of the Sports Industry, it has been disaggregated into nine key segments based on the various different goods, services and activities across the industry. These are outlined in the adjacent table, and have been analysed in greater detail within section 6 of this report.

To develop an estimate of the economic contribution of the industry, the definition and the segments have been applied within the Australian National Accounts to isolate that activity that is sport related, and to develop an overall picture of the sales, value add, jobs and other economic indicators for the Sports Industry.

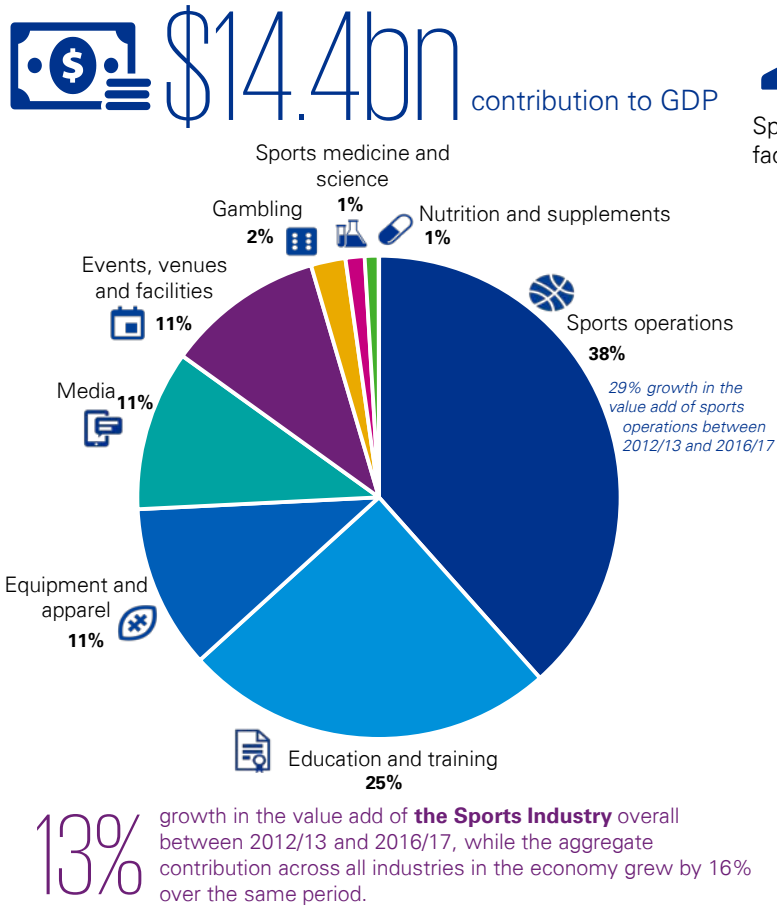
Complementary analyses have also been undertaken, including analysis of the global Sports Industry and within that comparable international economies, regional analysis of the Sports Industry across states and territories, and economic modelling using a computable general equilibrium model. The outcomes of these analyses are summarised in this section, and outlined in detail within the body of the report.

There are a number of considerations and limitations that are outlined within the methodology or within Appendix A of this report. As a result, the findings within this section should be considered estimates only, and should be viewed in conjunction with the methodology section of this report. Importantly, there are areas of the defined Sports Industry that were unable to be isolated within the national accounts, and have therefore not been included within the quantitative analysis. These are outlined within Section 4 of this report within the detailed attribution tables.

Sports Industry Segment	Description
Sports operations	Activities related to the delivery and coordination of sport, including administration, programming, coaching or instruction.
Education and training	Activities relating to the delivery of education in sport related disciplines. This excludes the teaching of physical activity itself, which is included above.
Sports medicine and science	Activities related to the delivery of health services, or research within the field of sport / sports science.
Media	The development, packaging and delivery of sport content, including broadcasting, sponsorship and marketing activities.
Events, venues and facilities	Operations of indoor or outdoor sports and physical recreation venues, ground and facilities including hosting professional sporting events.
Gambling	Gambling on sporting events and outcomes (excludes that related to horse, dog and other racing activities).
Equipment and apparel	The provision of equipment and apparel related to sporting activities, or support of sporting events.
Sports technology	Development and supply of goods and services with sport-related technology embedded.
Nutrition and supplements	Development and supply of sports nutrition and supplements.

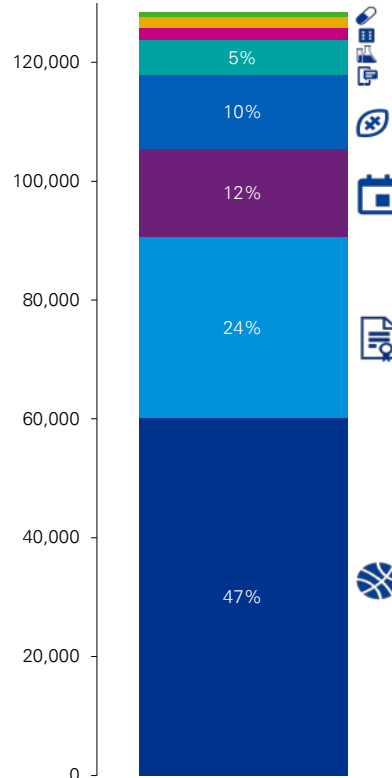
The Australian Sports Industry (cont.)

KPMG identified sports related-economic activity within the Australian National Accounts framework to arrive at an estimate of the value of the Sports Industry to the Australian economy.

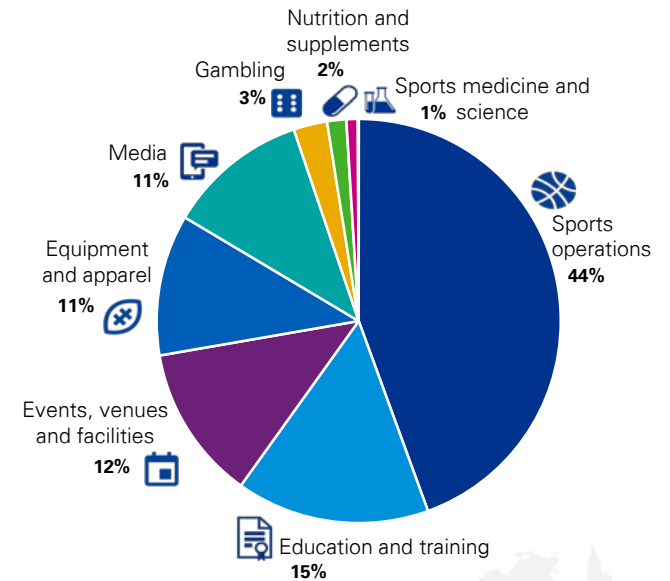


128,443 jobs (full-time equivalent)

Sports operations, education and events, venues and facilities contribute to over **80% of jobs**



\$32.2bn sports-related sales



\$1.8bn exports **\$2.5bn** imports

Largest contributors to Australian exports:

Sports operations
 Education
 Equipment and apparel

Note: Sports technology is not visible on charts

The Australian Sports Industry (cont.)

The following table displays a snapshot of each segment within the Sports Industry. It displays key statistics relevant at the segment and aggregate level to understand the composition of the industry. As the core of the Sports Industry, the Sports Operations segment unsurprisingly generates the most economic activity in the Sports Industry, followed by education and training. From a value-add per worker perspective, the Sports Tech* and Media segments are the most productive.

	Sales	Value add	Domestic production	Domestically produced and consumed	Imports	Exports	Employment (FTE)	Value add per worker	Sales growth (2012/13 – 2016/17)
Sports operations	\$14,289m	\$5,524m	\$13,637m	\$12,923m	\$652m	\$714m	60,168^	\$92k	33%
Education and training	\$4,972m	\$3,571m	\$4,964m	\$4,587m	\$8m	\$377m	30,416	\$117k	13%
Sports medicine and science	\$291m	\$185m	\$289m	\$287m	\$3m	\$1m	1,924	\$96k	67%
Media	\$3,613m	\$1,541m	\$3,377m	\$3,289m	\$237m	\$88m	6,009	\$256k	6%
Events, venues and facilities	\$3,982m	\$1,516m	\$3,801m	\$3,649m	\$181m	\$152m	14,958	\$101k	-3%
Gambling	\$863m	\$330m	\$809m	\$774m	\$54m	\$35m	1,857	\$178k	25%
Equipment and apparel	\$3,628m	\$1,574m	\$2,496m	\$2,123m	\$1,133m	\$372m	12,318	\$128k	9%
Sports technology*	\$24m	\$3m	\$5m	\$3m	\$19m	\$2m	10	\$268k	15%
Nutrition and supplements	\$495m	\$133m	\$319m	\$273m	\$176m	\$46m	783	\$170k	7%
Total Sports Industry	\$32,158m	\$14,375m	\$29,695m	\$27,908m	\$2,463m	\$1,787m	128,443	\$112k	18%

Note: totals may not sum due to rounding throughout.

^This excludes a significant number of volunteers (which is explored later in this report).

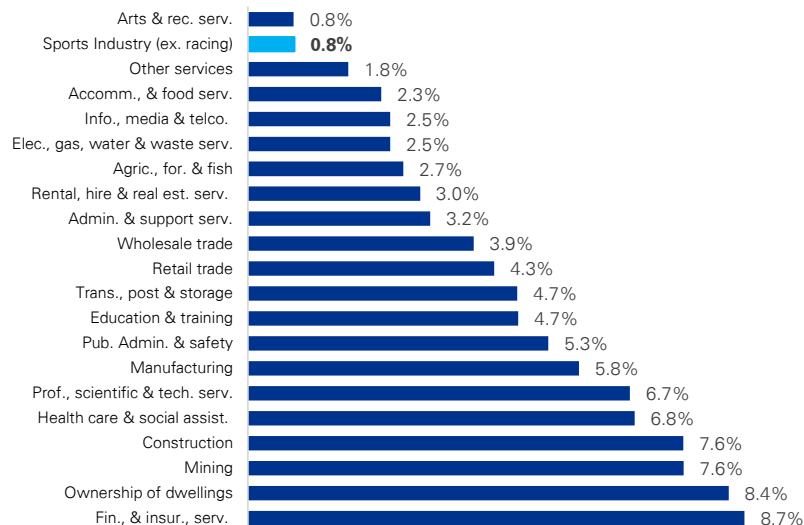
*Sports Tech is a broad segment and the activities of businesses in this segment are captured in a range of ABS-defined industries. Some of these activities will be captured in other segments of the sports industry that we have identified within the statistical accounts (e.g. Equipment and Apparel) but cannot be isolated from the activities of the other businesses in these segments. For the purpose of this exercise, Sports Tech has remained a standalone segment as it is considered a strong potential high value growth area, however only the activity that can be transparently isolated within the official statistical accounts has been captured. It follows that the results presented for Sports Tech materially under-represent the likely size of the segment. Conservative performance metrics are presented above based on what activities can be transparently attributed to this segment within the ABS statistical framework (the National Accounts). KPMG recently completed a study for LaunchVic to estimate the future size of the Sports Tech market. KPMG projected the size of the Sports Tech market in Australia to range from just under AUD \$1bn to just over AUD \$3bn per annum in 2029; and the global market for Sports Tech to range from approximately USD \$82bn to \$123bn in 2029.

Comparison with other industries

Contribution of the Sports Industry to Gross Domestic Product (GDP)

The Sports Industry, with the exclusion of animal racing operations, is estimated to have directly contributed **\$14.4 billion** towards Australia's GDP in 2016/17 (representing 0.8 percent of GDP). This places the industry at roughly a third of the size of the Accommodation & Food Services sector and a fifth of the size of Retail Trade.

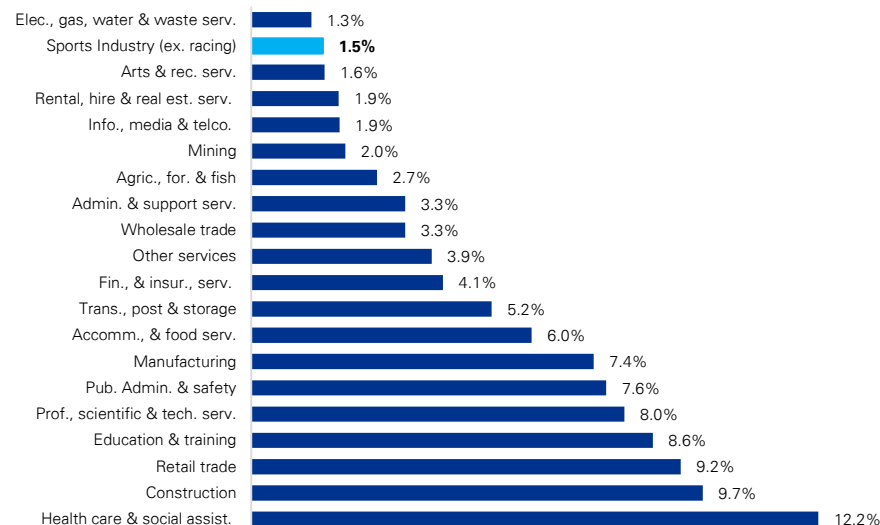
Contribution to Gross Domestic Product by industry



Australian jobs supported by the Sports Industry

The Sports Industry supported around **128,400 full-time equivalent jobs in Australia** in 2016/17 (1.5 per cent of total full-time equivalent employment in Australia). The Sports Industry provides more jobs than the Electricity, Gas, Water and Waste Services sector, and the size of the labour force is comparable to the Mining sector.

Contribution to employment by industry



Although the direct economic contribution of the Sports Industry appears less than other Australian industries, the domestic and international opportunities present within sport indicate the potential for growth. The ongoing popularity of sport, and its evolving segments, demonstrate capacity for growth over time. In addition, the Sport Industry supports social and health outcomes that are not captured within the industry values outlined above.

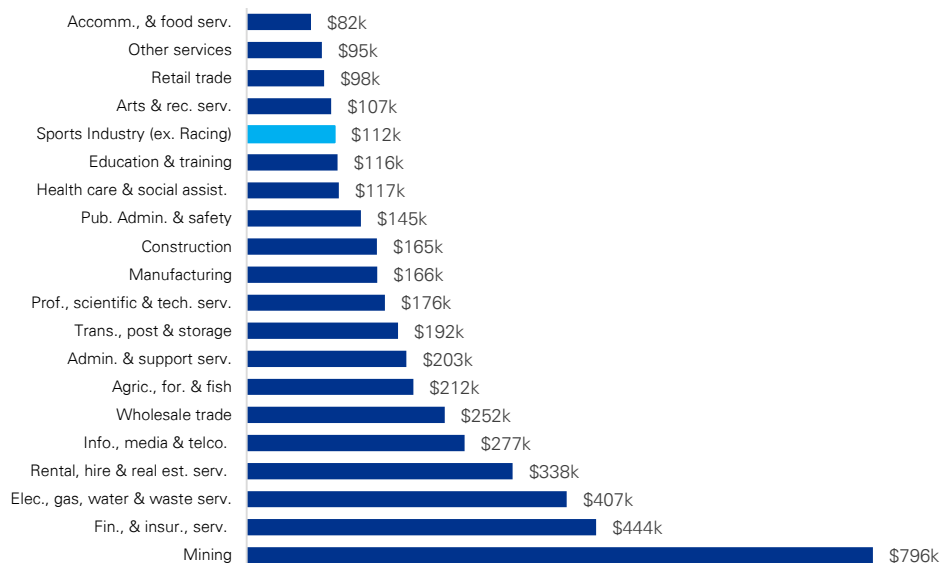
Note: The portion of sport-related activity associated with each industry (i.e., the components that when summed equal the Sports Industry) has not been removed from those industries in this analysis.

Industry labour productivity

Contribution to Gross Domestic Product by individual worker

Contribution to GDP per worker, or value add per worker, is calculated as the contribution of an industry to GDP divided by the size of that industry's workforce. In other words, value add per worker is a measure of labour force productivity. On average, each person employed by the Sports Industry contributed approximately **\$112,000** towards GDP in 2016/17. The Sports Industry's labour force is more productive than Accommodation and Food Services, Other Services, Retail Trade and Arts and Recreation sectors; and similarly as productive as the Healthcare and Social Assistance and Public Administration and Safety sectors.

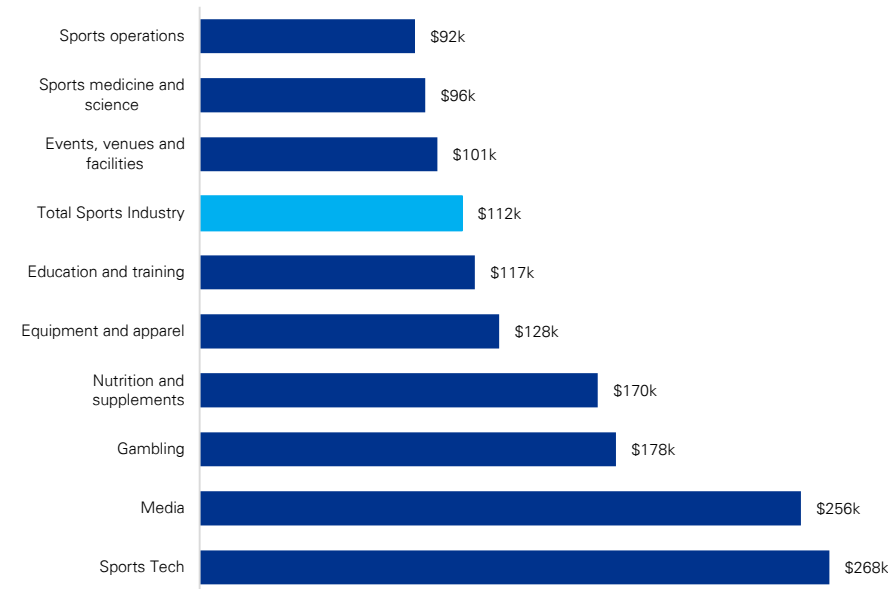
Value add per worker by industry



Contribution to Gross Domestic Product by individual worker, by segment

Within the Sports Industry the nutrition and supplements, gambling, media and sports technology segments are the most productive on a value add per worker basis. Workers in these industries are likely to be highly technical and specialised, attracting high wages compared to other segments. It is important to note that value add per-worker only considers the monetary economic contribution of each worker. The Sports Industry, in particular the sports operations segment, supports numerous additional societal benefits associated with participation in sports and recreation. Broader outcomes generated by the Sports Industry are discussed on page 18.

Value add per worker by Sports Industry segment



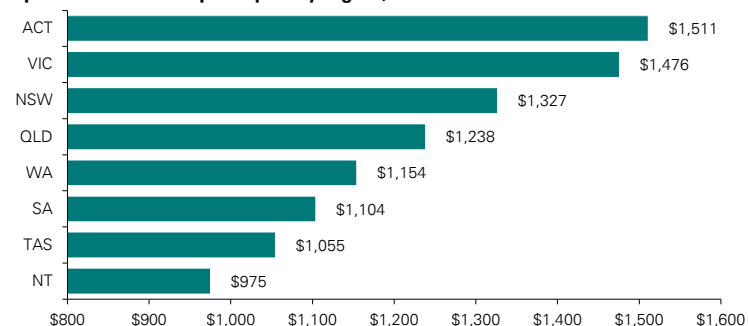
Note: Value add per worker has been calculated as the value add of each industry (2016/17 ABS National Accounts) divided by the sum of full-time-equivalent workers in each industry (ABS Census 2016, KPMG)

Regional analysis

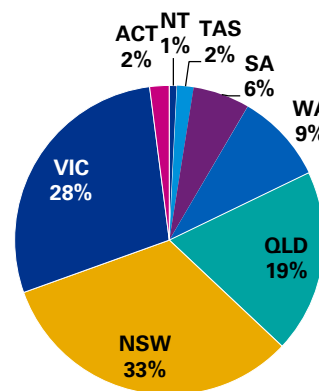
SPORTS-RELATED ECONOMIC ACTIVITY BY STATE AND TERRITORY

A regional analysis shows that the majority of sports-related sales and employment occurs in New South Wales, followed by Victoria and then Queensland. After adjusting for population sizes, the Australian Capital Territory appears as the region with the highest sports-related sales per capita followed by Victoria and then New South Wales. In terms of labour force, Victoria has the highest proportion of sports-related employees in its workforce.

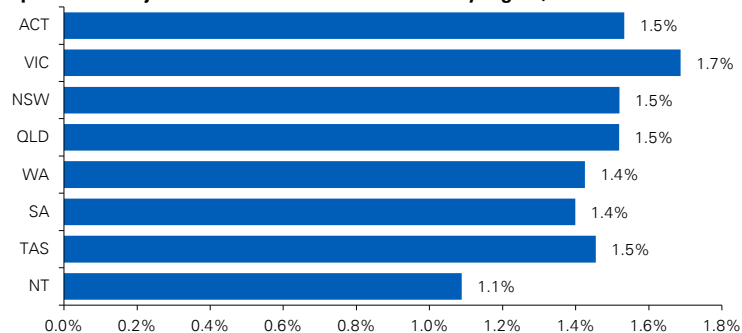
Sports-related sales per capita by region, 2016/17



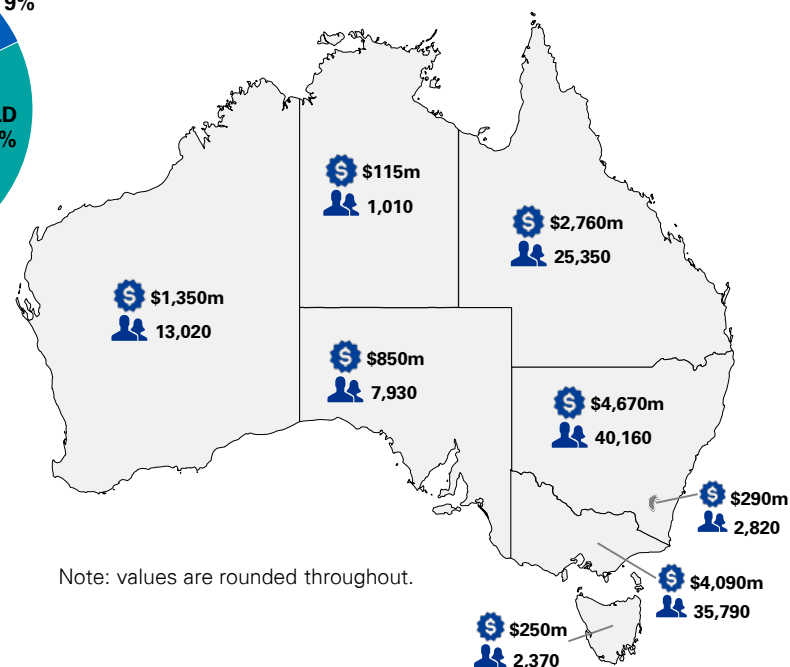
Sports-related value add by region, 2016/17



Sports-related jobs as a share of total workforce by region, 2016/17



Sports-related value add
Sports-related jobs (full time equivalent)



Note: values are rounded throughout.

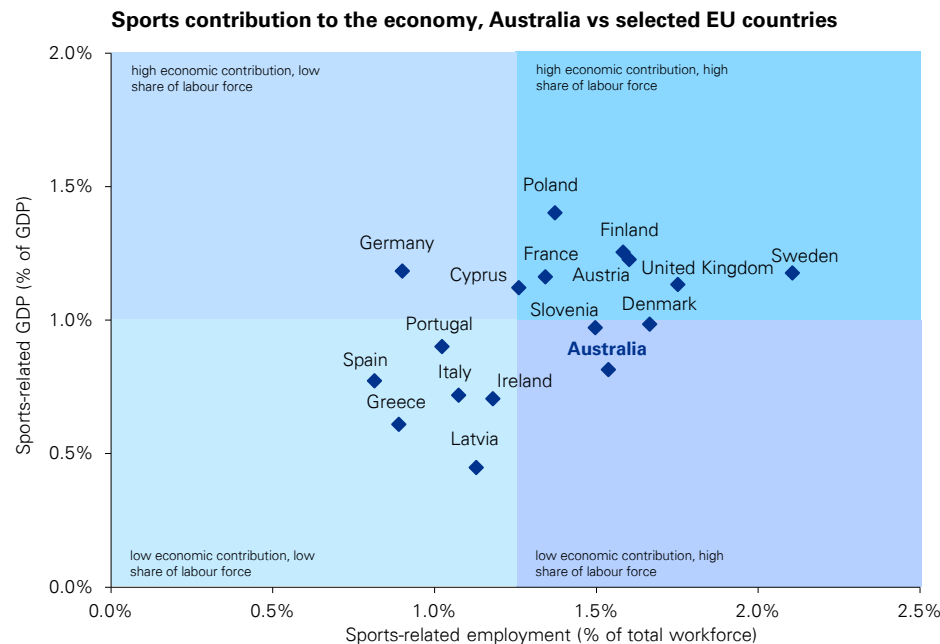
The methodology and more details results for the regional analysis are outlined in Appendix A.

International insights

ECONOMIC GROWTH POTENTIAL

Relative to other countries, Australia's Sports Industry contributes a modest amount to GDP and the labour force. For example, Poland's Sports Industry contributes 1.4 per cent to GDP whilst Sweden's Sports Industry's share of total employment is 2.1 per cent. This reinforces that growth opportunities exist for the Australian Sports Industry – the question is whether or not these opportunities can be unlocked.

If the Sports Industry in Australia grew to represent the same portion of total economic activity as the Sports Industry does in the United Kingdom, an additional \$5.6 billion in GDP and 17,900 jobs would be supported by the Sports Industry

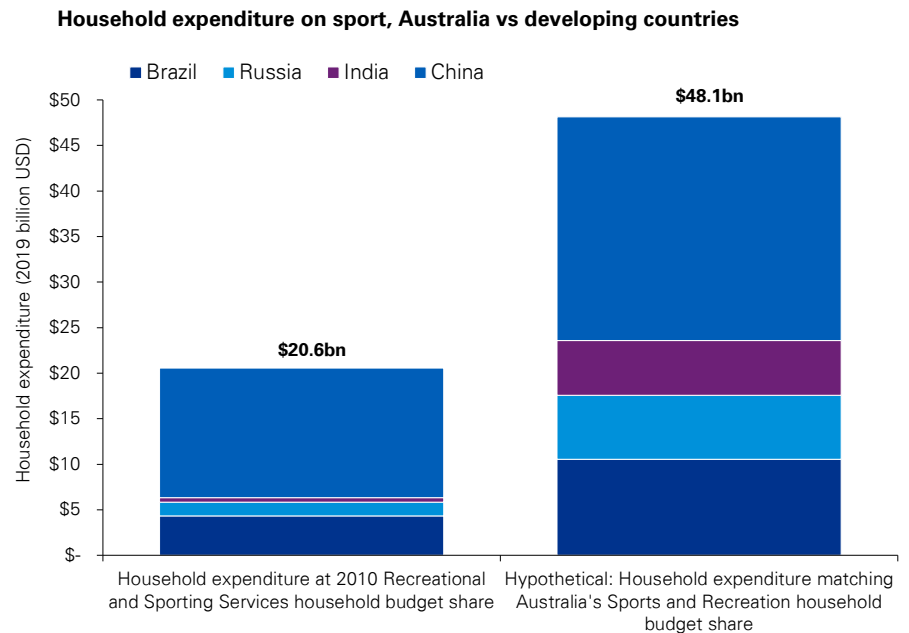


Source: KPMG Analysis; European Commission (2018). *Study on the Economic Impact of Sport through Sport Satellite Accounts*

EXPORT OPPORTUNITIES

Strong growth in global demand for sport is on the horizon as household incomes rise around the globe and discretionary spending increases. The World Bank estimated that total household expenditure by emerging economies on sport in 2010 was USD \$25 billion (inflation adjusted to 2019 US dollars).

If Brazil, Russia, India and China increased the portion of their household budgets allocated to sport to match the portion that Australian households allocate to sport, an additional \$27.6bn USD would be spent by households on sports globally



Growth and total value

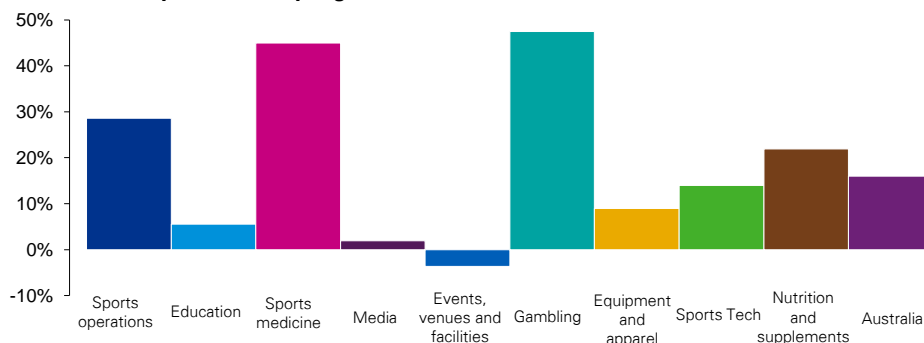
GROWTH

Sports operations is the largest segment of the Sports Industry comprising 44 per cent of total sports related sales and 38 per cent of value add. Analysis within the SCP framework outlines the importance of each of the other segments in supporting sports operations, essentially enabling participation and physical activity outcomes. The interdependence amongst segments highlights the strategic importance of working towards growth across the entire industry.

Between 2012/13 and 2016/17, the Sports Industry grew 17 per cent (see figure below for breakdown by segment). Key segments identified with strong economic growth potential include:

- **Education and training:** There appears to be an opportunity to explore the increase of sport and recreation services at the higher education level (and potentially also at the VET level).
- **Sports Technology:** Although economic activity is currently difficult to capture, innovation within the Sports Industry is necessary to outpace competition and to contribute to sustainable long-term growth for the industry.
- **Media:** Australian sporting content currently has low international demand, and there exists an opportunity to explore growing the export of this content to international consumers.

Value add in Sports Industry segments, 2012/13 to 2016/17



TOTAL VALUE

As previously outlined, the Sports Industry generates strong beneficial outcomes outside of that captured in the analysis within this report. These outcomes are beyond the defined outputs of the industry, such as sporting equipment or clothing, and produce positive benefits for participants, spectators and the broader community.

Examples of wider benefits the Sports Industry produces include:

- Positive effects for physical and mental health stemming from participation in sport. Benefits include decreasing the risk of cardiovascular disease, lowering blood pressure, increasing self-esteem and reducing psychological disorders such as depression.
- Creating a healthier workforce, which is likely to be more productive due to lower absenteeism and higher engagement.
- Involvement in sport enables participants to develop relationships with members of their community building social cohesion and socialisation. Further, national pride arises from Australia's success in international sporting events increasing social unity.

These wider benefits can stem from any of the segments in the Sports Industry and each segment makes a contribution in some way to improving social outcomes. In particular, Sports Operations facilitates the management and delivery of sport, which is critical to fostering sports participation at the grassroots through to the elite level of sport. Education is the pathway to improving future outcomes; more students studying sports-related courses will increase knowledge about its benefits. Finally, sports medicine aimed at restoring physical and mental health or preventing poor health outcomes provides benefits for all of society.

Importantly, a number of these outcomes also have flow on effects that will drive strong economic benefits (although more broadly than just within the Sports Industry). For example, improved health outcomes reduce the burden on the health system, freeing up resources for other endeavours. Increased productivity from a physically active workforce increases the economic output per worker across the entire economy.

Economic modelling

SCENARIO ANALYSIS (CGE Modelling)

To complement the broader analysis within this report, a number of scenarios have also been tested using the defined Sports Industry. KPMG's proprietary multi-industry Computable General Equilibrium (CGE) model has been used to simulate four scenarios that provide insights regarding the industry's economy-wide direct and indirect impacts, highlighting the nature and strengths of the linkages to other sectors of the economy.

As these are illustrative simulations we have not sought to calibrate the size of the shocks with reference to an actual event or planned outcome. Instead, a one per cent shock has been assumed in each case. Each scenario is simulated under two different assumptions about the economic environment, the short run and the long run. The four scenarios are summarised in the table below, and greater detail regarding the methodology and assumptions is provided within Section 7 of this report.

Scenario	Description	Potential example	GDP Impact: Short Run	GDP Impact: Long Run	Insights
1. Increase in foreign demand	A one per cent increase in demand for <i>Sport & Recreation</i> services by foreigners.	A change in preferences by foreigners in favour of Australia Sport & Recreation services.	+ 0.00008% (~ \$1.6m)	- 0.00016% (~ -\$3.0m)	This scenario suggests that in developing a Sports Industry Growth Plan consideration must be given to the state of the labour market and to the value adding capability of the Sports & Recreation industry relative to other Australian industries. Other things equal, any effort to boost activity in this industry over the longer run needs to be selective, identifying and emphasising the high value adding components of the industry. Simply increasing the size of the industry, in this scenario via export growth, does not guarantee an overall benefit to the economy in the long run.
2. Increase in demand by households	A one per cent increase in demand for <i>Sport & Recreation</i> services by Australian households.	A change in preferences by Australian households in favour of Sport & Recreation services or it might be as a result of a push to increase participation in sport.	+ 0.00128% (~ \$24.7m)	- 0.00235% (~ -\$45.2m)	Similar to the above insights, however it is also important to recognise here that household expenditure on Sport & Recreation services may have other flow-on benefits that we have not captured. These may include improved health and social outcomes, which may impact government budgets, and labour productivity. The Sport & Recreation industry plays an important role in society and its value will not be fully captured by narrow economic metrics.
3. Increase in total factor productivity	A one per cent increase in total factor productivity for the <i>Sport & Recreation</i> industry.	Such a shock may be due to a new technology, elimination of inefficiencies or an increase in volunteers.	+ 0.00493% (~ \$94.7m)	+ 0.00669% (~ \$128.5m)	This simulation shows that some measures that may be contemplated by an Industry Growth Plan can have a positive impact on value added generated by the Sport & Recreation industry and by the economy as a whole but may result in fewer FTE jobs in the industry (albeit high value adding jobs). Given that the productivity of the Sport & Recreation industry is likely to be boosted by volunteer inputs, an insight from this simulation is that any reduction in volunteers may reduce the industry's productivity and value added but may increase the number of FTE jobs.
4. Increase in technical efficiency of key input	A one per cent increase in the technical efficiency of the usage by the Sport & Recreation industry of inputs purchased from the Professional, Scientific and Technical Services industry.	Such a shock may be due to a new technology developed by a SportsTech business.	+ 0.00131% (~ \$25.1m)	+ 0.00063% (~ \$12.1m)	This simulation shows that new technologies can have a positive impact on value added and employment for the Sport & Recreation industry and the economy as a whole. Although we have not modelled any costs associated with the development and adoption of any new technology we have also not considered any significant flow-on impacts such as adoption of the technology by other industries or direct exports of the technology.

Segment analysis findings

This report also details the analysis of each segment using the Structure-Conduct-Performance Framework. The discussion below outlines the key findings for each segment.



SPORTS OPERATIONS

- Sport and recreation administration, support and delivery is the largest component of the Sports Industry both in terms of total sales and in contribution to GDP, as well as the largest provider of sports related employment. However, it results in the lowest value add per worker of the segments within the industry.
- It is noted that much of this segment does not have a profit or economic growth motive, instead focussing on the delivery of the many positive externalities of sport and recreation. As a result, this segment delivers materially more value than what will show up in the National Accounts, as it supports all sport and recreation participation (physical activity), and the benefits associated with that. It follows that the total value generated by this segment (if non-economic outcomes were included) would mean that while this is the lowest economic value add per worker segment, that is not the whole picture of the value supported by each worker (i.e. health and social outcomes).
- In addition, while this exercise and the potential Growth Plan need to focus on the Sports Industry and the associated economic outcomes, any identified opportunities or interventions need to align with and not disrupt these broader outcomes that are generated.



EDUCATION AND TRAINING

- Primary and secondary sport and physical education teaching is similar to sports operations, in that it is not focussed on economic outcomes, but is critical in the non-economic outcomes generated by sport and recreation (e.g. developing physical literacy and supporting education).
- It appears that there is an opportunity to explore increasing the export of sport and recreation related higher education by increasing the number of international students studying sport and recreation related courses in Australia. At the university level, sport and recreation educational courses have a significantly lower proportion of international student completions compared to other fields of education. In 2018, international student sport and recreation completions

accounted for 8.2% of total completions, while 37.3% of overall higher education completions were by international students. The fields of education (excluding sport, which we have defined specifically for this analysis) with the lowest proportion of international student completions were education at 12.4% and health at 15.2%, and the highest were information technology at 67.9% and management and commerce at 63.2%. This indicates that there may be significant opportunity to increase the export of sport and recreation related higher education.



SPORTS MEDICINE AND SCIENCE

- As the community ages and participation in sport rises, the potential for sport injuries and the demand for preventative measures is likely to increase, in turn boosting expenditure on sports medicine and science. A focus on the preventative side of sports medicine, and influencing a boost in the demand for these services will not only support stronger economic outcomes from this segment, but also stronger health and participation outcomes.
- Ongoing innovations to improve performance at the elite level are also necessary to maintain a competitive edge. Growth in this segment is reliant on the effective development of new treatments that appeal to professional sports teams and elite athletes. In this sense, this segment has a close relationship with Sports Tech.
- This segment has experienced significant growth in sales of 67% between 2012/13 and 2016/17, while aggregate sales across all industries in the economy grew by 26% over the same period.



MEDIA

- This segment records a high value add per worker at \$256k per FTE.
- Broadcasters are placing a higher reliance on live sporting content as part of their business strategy, as live sport content is time sensitive and therefore can secure viewership at specific times, presenting greater advertising revenue opportunities. Consumers are increasingly looking for flexibility in their broader media consumption (e.g. streaming services to watch where / when they want).

Segment analysis findings (cont.)

- There is increasing competition from international sporting content, including such competitions as the English Premier League (EPL), the National Football League (NFL) and the National Basketball Association (NBA).
- There is currently low international demand for most Australian sporting content, with this particularly prevalent for those sports that are the most popular in terms of consumption by Australians (e.g. the AFL and NRL). There may be an opportunity to explore assisting content owners and broadcasters with reaching international markets.



EVENTS, VENUES AND FACILITIES

- The events, venues and facilities segment is a large part of the structure (i.e. the exogenous factors) impacting other Sports Industry segments. Venues and facilities are one of the key enablers of sport and recreation participation, as well as professional sports events.
- Regarding events, there is significant competition between major venues (and largely between states) to attract and host these events. State government funding is often provided in order to generate benefits through attracting visitors to the event.
- This segment involves a high degree of public subsidisation. Most major venues are built, owned and maintained by state / territory governments, and the majority of community sport and recreation facilities are similarly supported by local governments.



GAMBLING

- The gambling segment has a high value add per worker reflecting the high demand skills that are required across the workforce.
- Gambling is a key revenue source for the broader Sports Industry, supporting the value of broadcast rights for professional sport and increasing fan engagement.
- There are negative externalities that exist from this segment, such as addiction and broader anti-social behaviours, that should be accounted for when considering the position of this segment within the industry.



EQUIPMENT AND APPAREL

- Very high imports within this segment. Likely to continue as comparative cost advantage internationally means that it is not profitable to manufacture within Australia. Premium products may present an opportunity however, with 'Athleisure' apparel an example of premium products that may present an opportunity. Attracting leisure consumers in addition to performance-oriented consumers will increase segment size, however these companies will still likely manufacture internationally.
- There is a growing market share going towards online sales, and this is likely to continue. A small number of large retailers dominate the physical retail market, with many small retailers either acquired by larger companies, or ceasing operations.
- Overall, given the broader shift away from manufacturing in the Australian economy and the shift towards online sales it does not appear that there is a material opportunity to grow the equipment and apparel segment, with the potential exception being the premium end of the product spectrum.



SPORTS TECH

- This segment has the highest value add per worker across the defined Sports Industry (noting the limitations with isolating the segment within the Australian National Accounts data).
- Establishing strong support programs for start-ups is likely to facilitate growth in this segment. Current Sports Tech start-ups have identified challenges to growth, such as access to skilled personnel, funding and leadership, which, if addressed, can improve opportunities for future market entrants.
- Fostering an entrepreneurial climate with dedicated assistance programs may encourage new innovations in the segment. The high concentration of Sports Tech companies within Victoria is currently both a positive in terms of the agglomeration benefits from co-location, but also presents an opportunity to expand presence across other locations.

Segment analysis findings (cont.)



NUTRITION AND SUPPLEMENTS

- Value add per worker is relatively high, reflecting the skilled nature of the workforce in this segment.
- The segment experiences strong competition from overseas suppliers, but also experiences reasonable demand from overseas markets.
- Growth in this segment is likely to stem from the rising levels of health consciousness across Australia. Customers are looking for ways to adopt a healthy and active lifestyle, which coincides with the purpose of this segment. As a healthy lifestyle increasingly becomes a normal way of life, consumers will seek products that supplement this. Facilitating a healthy lifestyle is a key growth opportunity for the segment. There does also appear to be an opportunity to capitalise on the growing middle class in Asia with the export of premium nutrition and sport supplement products.

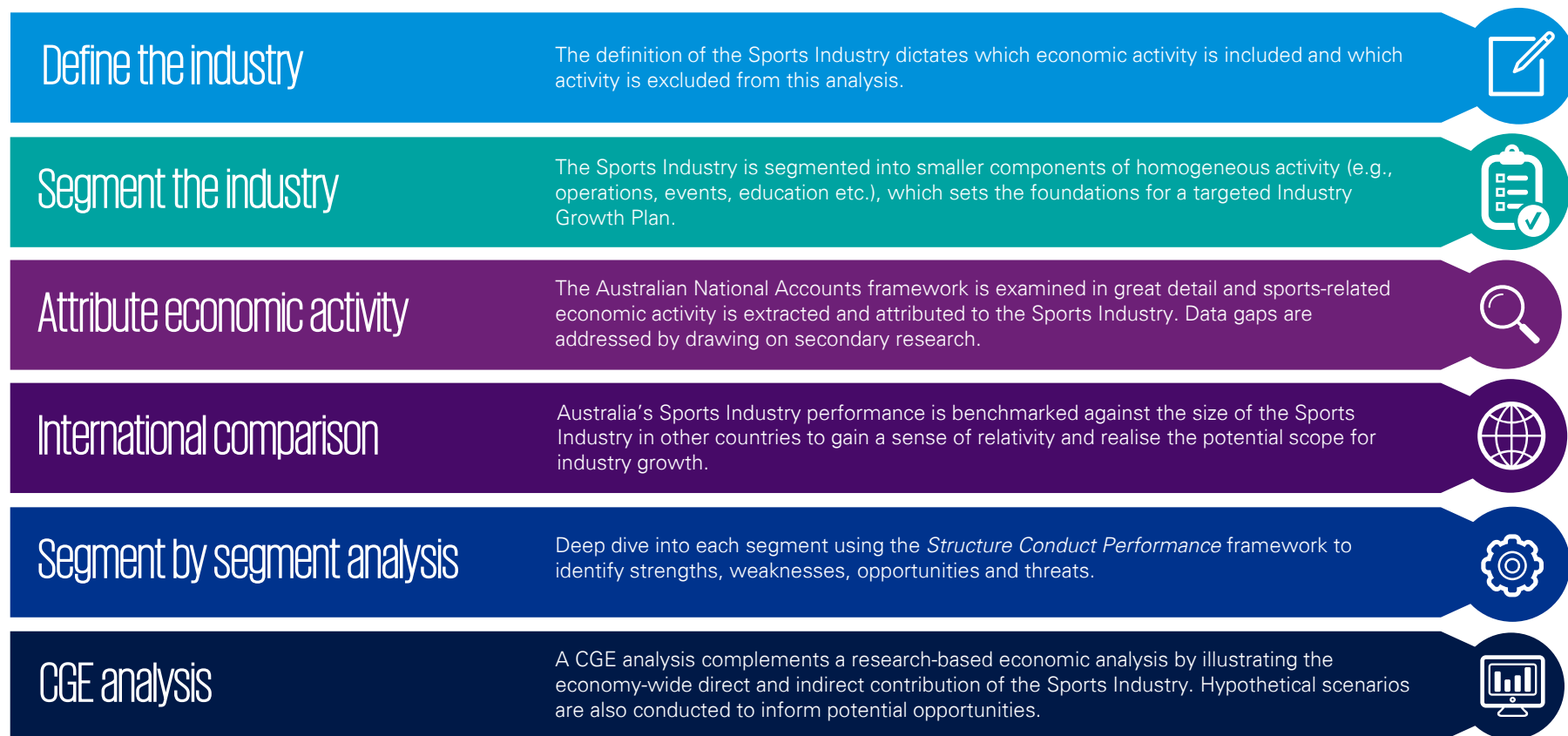
3. The methodology

This section of the report provides an overview of the approach taken to size and analyse the Sports Industry in Australia.



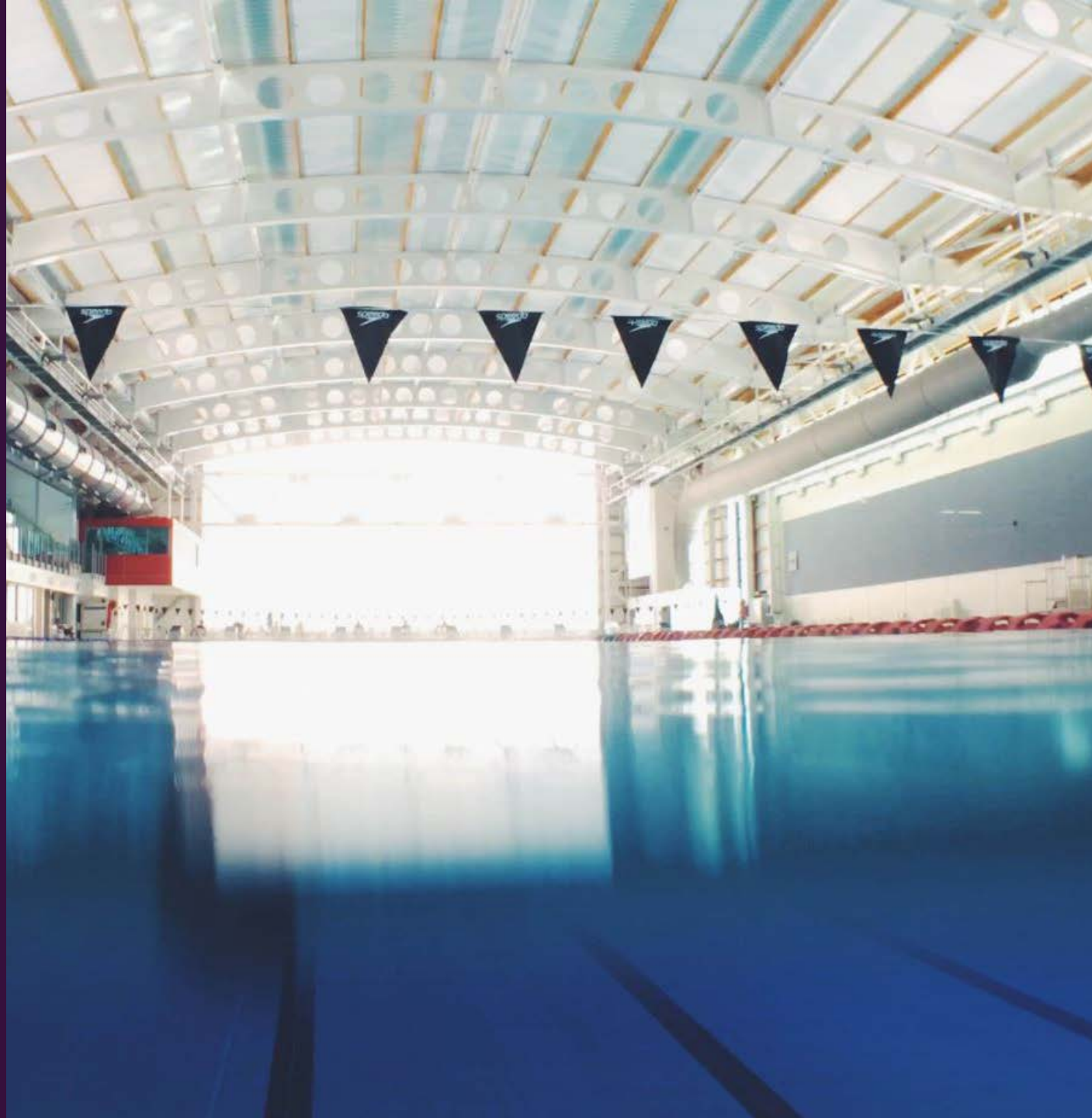
Overview

This section of the report outlines the methodology used to estimate the size of the Sports Industry in Australia, and then to analyse the industry in order to inform an Industry Growth Plan. In particular, this methodology section details the theoretical foundations for this process (including the industry definition), an overview of the industry segmentation process, and the attribution and sizing process. The diagram below details the six key activities undertaken to size and analyse the industry.



3.1 Theoretical foundations

This section outlines the foundational assumptions and approach to defining the Sports Industry in Australia.



What is the Sports Industry?

The first step in undertaking the economic analysis of the Sports Industry is to define the industry and the economic activities it encompasses. This section of the report provides the foundational definitions and assumptions that underpin the analysis that has been undertaken. In particular, the following concepts are explored and defined:

- What sport and recreation activities (i.e. physical activities) are to be included as constituting 'sport' for the analysis?
- What are the resulting goods and services that are produced and consumed in the facilitation of these activities?
- What associated economic activities should be included within the definition of the Sports Industry?

INDUSTRY DEFINITION

An industry is typically defined as a group of entities that produce similar or closely related goods and services. Alternatively, an industry can be defined on the basis of the characteristics of the consumer, as is done in the case of the tourism industry in Australia. There is no unique method for defining an industry and the method used can vary depending on the purpose of the definition or the availability of data.

Revisiting the objectives of this analysis, the rationale for defining the Sports Industry is to support the development of a potential Sports Industry Growth Plan. A successful Growth Plan will need to identify the stakeholders and activities that are within scope, and therefore a robust industry definition is a key step in this process.

There is currently no widely agreed definition of the Sports Industry. In part, this is because the definition of sport itself is evolving over time. By way of example, the following description was included within the recent Sport 2030 Plan released by Sport Australia:

"When the Australian Government talks about 'sport' and sport policy, it will now talk about a broad range of physical activities including informal, unstructured activity such as walking, riding, swimming and running as well as traditional, structured sport and new and evolving sport and physical activity offerings such as mixed martial arts, "ninja" style obstacle courses and stand-up-paddle boarding."

Sport 2030

This definition focuses on the participation element of sport, and outlines a broader idea of sport to include less formal activities (i.e. active recreation). From this the physical activities that naturally should be included in the Sports Industry can be deduced. In the context of developing an Industry Growth Plan it is important to place participation (in the physical sense) at the core of the Sports Industry and to recognise explicitly the business activities that enable sports participation and that are enabled by sports participation. In effect, the idea is to recognise the upstream and downstream linkages with the rest of the economy of businesses engaged in sports participation.

One approach to defining the Sports Industry is to define it broadly enough so that it encompasses business activities that are closely related to sports participation. Under this approach concepts used by the ABS to delineate the tourism industry are helpful. Sports characteristic activities could be defined as those that would cease to exist in their current form or be severely diminished if sports participation were to cease.

Another approach is to keep the definition of the industry as consistent as possible with that used by the statistician and to identify the linkages of the industry to the rest of the economy explicitly by articulating its sales and cost structures. This is the input-output framework that captures: (a) what inputs are purchased by the industry and from whom; and (b) what outputs are produced and to whom they are sold.

The two approaches outlined above are closely related. The strength of the linkages should be a key criteria for including or excluding business activities into a more broadly defined industry grouping. The position taken for this project is that for the purpose of developing an Industry Growth Plan it should not matter if the Sports Industry is defined broadly or narrowly as long as the linkages to the rest of the economy are accounted for properly. A broad definition of the industry means that its links to the rest of the economy are relatively confined (e.g. most of the industry's output is sold to final users like households and its inputs are generic in nature (e.g. utilities, food and beverage etc.) rather than sport-specific. A narrower definition of the industry means that the links to the rest of the economy will be more diverse.

What is the Sports Industry? (cont.)

DEFINITIONS UTILISED FOR THIS ANALYSIS

The definitions used for the project are shown in the adjacent figure. The first definition articulates sport and recreation as an activity, and the second definition is used to capture whether a good or service, industry or section of the industry should be included in the Sports Industry.

There are some important components of both definitions that are worth noting in regards to the implications for their application to the Sports Industry. The first definition represents a combination of a commonly accepted definition of sport as used by Sport Australia (i.e. physical activity that is either competitive or generally accepted as a sport), and a broader definition of active recreation (i.e. physical activity engaged in for the purpose of relaxation, health, wellbeing or enjoyment).

This definition focusses on human activity requiring physical exertion and / or physical skill, and as a result a number of activities would be excluded. An example relevant to this analysis is dog racing, which has been excluded from the Sports Industry from this project (outlined later within this methodology).

The second definition outlines the decision rule for whether goods and services and the related industry and economic activity should be included within the Sports Industry. In the absence of sport and recreation (as outlined in the first definition), if the goods or service would either not exist or would be materially different, then the related economic activity is considered to be a part of the Sports Industry.

The following section of this methodology demonstrates the theoretical framework developed to describe how the definitions were applied to determine what economic activities constitute the Sports Industry. In applying this framework, it is important to note that there will be grey areas regarding whether an economic activity should be included as part of the Sports Industry. This is particularly the case for emerging activities, such as esports and Sports Tech, where the economic links to traditional sports activities are relatively small at present but may grow significantly in the future. The approach utilised in these circumstances is one of flexibility in applying the framework, with a focus on considering the importance of each activity in the context of a Growth Plan.

SPORTS INDUSTRY DEFINITION

DEFINITION 1

Definition of the sport and recreation included for this project.

A human activity requiring physical exertion and / or physical skill which, by its nature and organisation, is competitive and generally accepted as being a sport, or, is engaged in for the purpose of relaxation, health and wellbeing or enjoyment.

DEFINITION 2

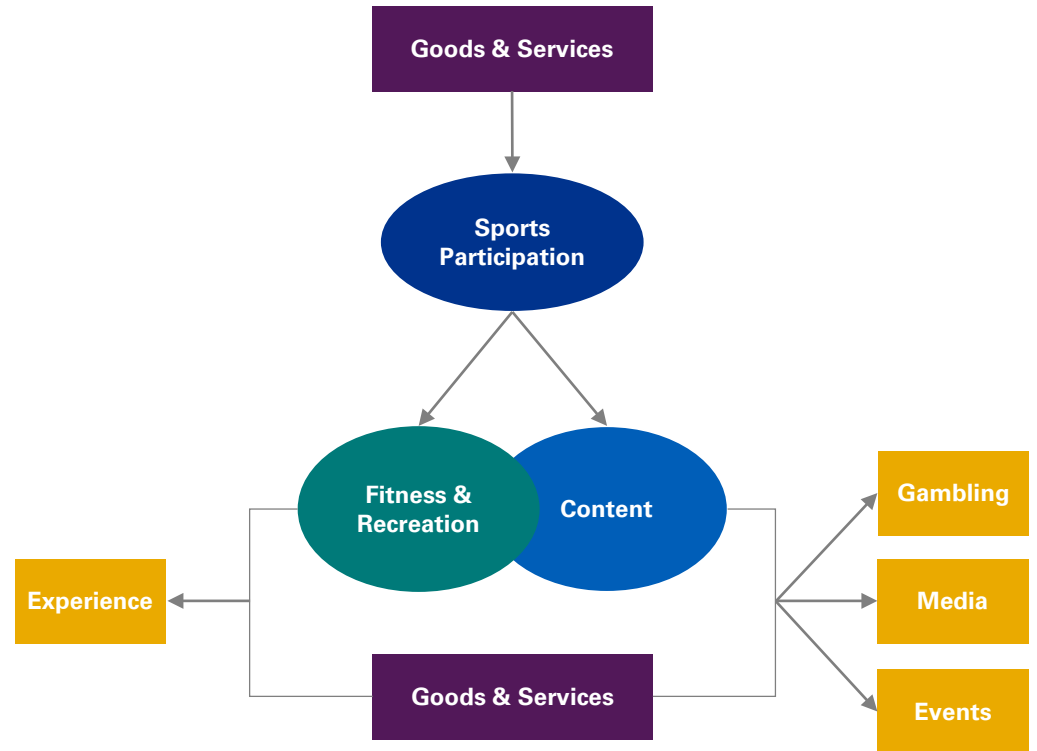
Definition of the sport and recreation economic activity included for this project.

The goods and services that would not exist or would be significantly different in the absence of sport and recreation (as defined above).

Theoretical framework

The adjacent chart is a schematic overview of the theoretical framework that was used to define the Sports Industry. It recognises sports participation as the core activity that binds the industry and it recognises the input and output linkages. The framework recognises that sport participation generates two related services; fitness and recreation and sports content. The following are the key parts of the framework:

- Sport is a construct consisting of rules, customs and / or methods for engaging in a broad range of physical activities. When combined with inputs of specific goods and services two services are produced; fitness and recreation and sports content.
- The goods and services required to engage in sport can be defined as those that **would not exist** in the absence of sport (e.g. a sports field or a cricket bat).
- Participation can be organised or unorganised. The organised component can be at different levels of competence and may range from amateur to elite professional.
- Content is the element of a sport that can be accessed by non-participants. Without participation there can be no content but participation does not automatically generate content. Content is likely to be generated by sports participation at the elite level.
- When combined with other goods and services content can be then transformed into a consumable product. This may be in the form of events where spectators attend a stadium to watch a game played or it may be in the form of media where consumers view a game or sporting endeavour on television or some other medium. Sport content can also be used to facilitate other products such as gambling. These goods and services combined with content **may or may not exist** in the absence of sport.
- Fitness and recreation can also be combined with other goods and services to generate an experience (e.g. participation in a marathon or triathlon).



Appendix A provides a more detailed version of this framework. The blue oval labelled sports participation in the simplified schematic above maps to the blue boxes related to “production” in the more detailed schematic.

It is noted that the framework is not the definition of the industry, but a tool through which the different components of the industry can be identified and categorised in terms of the roles they play, the outcomes generated and the strength of the link to sport.

3.2 Industry segmentation

The Sports Industry as defined for this analysis is broad, and therefore has been segmented into nine different segments in order to facilitate more robust and targeted analysis. This section details the segments that have been used.



Segmentation overview

SEGMENTATION OVERVIEW

As outlined previously, the Sports Industry as defined for this project encompasses a broad range of goods and services. As a result, analysing the whole industry at the aggregate level will miss some of the nuances of individual components of the industry. In order to facilitate a more robust and insightful analysis of the industry, and with a view to provide a better evidence base for the industry growth plan, the industry has been segmented into nine key segments. These have been determined in a number of ways, either based on a common good or service, a common customer, or a broader strategic importance to the industry (or potentially within a growth plan). The segments are summarised in the table below, and the following pages provide greater detail on each segment and the rationale for isolating the associated activity.

Segment	Description	Examples and considerations
Sports operations	Activities related to the delivery and coordination of sport, including administration, programming, coaching or instruction.	Sports clubs and organisations (e.g. peak bodies, SSOs etc.) Government sport related operations.
Education and training	Activities relating to the delivery of education in sport related disciplines. This excludes the teaching of physical activity itself, which is included above.	University courses in exercise science, sports administration or management etc. Training courses for personal trainers and other fitness professionals.
Sports medicine and science	Activities related to the delivery of health services, or research within the field of sport / sports science.	Exercise physiology, sports medicine or physiotherapy services. Sports science related research activities.
Media	The development / packaging / delivery of sport content, including broadcasting, sponsorship and marketing activities.	Television broadcast. Sponsorship. Marketing.
Events, venues and facilities	Activities engaging in operating indoor or outdoor sports and physical recreation venues, ground and facilities including hosting professional sporting events.	Marathon festivals. Major events. Professional sports competitions. Event ticket sales, venue operation, administration and management.
Gambling	Gambling on sporting events and outcomes.	Includes betting on sports matches, but excludes gambling on other activities that may occur through sports clubs.
Equipment and apparel	The provision of equipment and apparel related to sporting activities, or support of sporting events.	Includes equipment (e.g. cricket bat) and apparel (e.g. fan gear).
Sports Tech	Development and supply of goods and services with sport-related technology embedded.	Data analytics, wearables etc.
Nutrition and supplements	Development and supply of sports nutrition and supplements.	Sports related vitamins / minerals, workout supplements (e.g. workout drinks), hydration, energy and protein supplements etc.

The segments

SPORTS OPERATIONS

The sports operations segment aims to capture all activity relevant to the management and delivery of sport and recreation in Australia. This includes core sport and recreation operations such as fitness centres and sport clubs; administration of regional, state and national sporting associations or leagues; and occupations such as sport professionals, fitness instructors and sport coaches. In addition to the core activities, there are also enabling services which were identified on the basis that the services provided allow sport and recreation to take place. These include turf growing, boat building and professional services providing research, data analytics and engineering services related to sport. This segment does not include events, venues and facilities which have been instead isolated within a separate segment.

Horse racing and its related activities have been isolated from this segment due to the nature of the activity not conforming to the definition of sport used in this analysis. The links of horse racing to the wider Sports Industry (e.g. taxes on horse racing and betting) are noted and is discussed at the summary level within this report. This disaggregation process, and a summary estimate of horse racing, is detailed within Appendix A.

EDUCATION AND TRAINING

The education and training industry provides courses and conducts research that are crucial to the provision of inputs that support and enable physical activities, both at the participatory and elite levels. Sport related courses offered at tertiary and vocational education institutions support the Sports Industry in providing a pipeline of sport related allied health and other sport enabling occupations. These occupations stem from courses such as physiotherapy, sports medicine, nutrition and dietetics and sports coaching/officiating. Additionally, education in health and physical education is an integral component of primary and secondary schools' curriculum and represents a strong enabler of broader participation and physical activity outcomes. The education and training segment has therefore been designed to represent sport and physical activity related education across primary, secondary, vocational and tertiary levels.

SPORTS MEDICINE AND SCIENCE

This segment is a supporting by-product of sport and physical activity and it aims to capture the activity related to the delivery of health services, or research within the field of sport and sports science. At a community level this segment refers to the activities related to prevention, diagnosis and management of medical conditions that occur during or after physical activity. At an elite level sports medicine physicians provide comprehensive health management for the elite athlete to facilitate optimal performance. This involves the diagnosis and treatment of injuries and illnesses associated with exercise to improve athlete performance.

MEDIA

The relationship between sport and media exert endless and continuous influence on one another. Media generates profit through sports while sports and its contents are transmitted and consumed through media. Media can be referred to all the mediums such as television, radio, newspaper, magazines or the internet which deliver sports information, broadcast of sporting events and other related content. This analysis focuses on the generation of content and the associated television broadcasting through both free to air and subscription distribution avenues, as well as broader distribution methods in the industry which include streaming of sporting events. Further, the analysis explores this segment from production through to distribution of sports media in Australia.

EVENTS, VENUES AND FACILITIES

The events industry provides a platform for spectators to consume live sport. In essence, consumable content (including both media and gambling) relies on sporting events taking place. Inherently, events also have close links into the sports operations due to the associations, clubs and players activity existing within that segment, as well as enabling services such as tourism agency services or advertising.

Venues are required for hosting events. This segment includes both the event related activity, but also that related to the operation and maintenance of all sporting venues and facilities. Importantly therefore, this segment includes activities associated with managing all venues and facilities such as athletic fields, swimming pools and tennis courts.

The segments (cont.)

GAMBLING

The gambling industry is an important customer of the Sports Industry in that it uses sports content to generate a sport-specific service. Under a strict application of our theoretical framework it is arguable whether gambling should be included in the Sports Industry, however some components of gambling activity may cease to exist or be very different to their current state in the absence of sports content. This may be sufficient grounds for including components of the gambling industry in the Sports Industry. However, a more compelling argument for including sports gambling in the Sports Industry is that it provides significant revenue to businesses producing sports participation services (e.g. sports clubs) and businesses producing and delivering sports content (e.g. advertising revenue). The dependence of the Sports Industry on these revenues, particularly to produce content that is valuable, needs to be measured and explored in the context of an Industry Growth Plan.

The ABS identifies industry classes that contain businesses engaged in gambling associated with sport, and it is this activity that has been isolated to analyse this segment of the Sports Industry.

EQUIPMENT AND APPAREL

Equipment and apparel are required inputs for participants to engage in physical or recreational activity.

Sporting equipment has various forms depending on the sport, but it is essential to compete in the sport. The equipment ranges from balls, to gym gear, and to protective gear like helmets. Sporting equipment can be used as protective gear or as tools used to help the athletes play the sport.

Sporting apparel is clothing, including footwear, worn for sport or physical exercise. Sport-specific clothing is worn for most sports and physical exercise, for practical, comfort or safety reasons. Typical sport-specific garments include tracksuits, shorts, T-shirts and polo shirts. Specialised garments include swimsuits (for swimming), wetsuits (for diving or surfing), ski suits (for skiing) and leotards (for gymnastics).

The analysis explores this segment from manufacturing through to wholesaling and retailing in Australia.

SPORTS TECHNOLOGY

Sports technology as an industry sector is a relatively new concept and as a result, an established definition of what is included in this sector is still in the formative stages. Businesses that may be included in this sector are likely to be spread across a wide range of industry categories identified by the ABS. From the perspective of developing an Industry Growth Plan, incorporating sports technology activities in the Sports Industry is important as it represents a component of the industry that is focussed on innovation and technology and on products and services that have global markets. These attributes mean that the sports technology sector has the potential to grow rapidly and to support high value adding jobs, which warrants exploration of the sector's opportunities and threats.

NUTRITION AND SUPPLEMENTS

Sports nutrition and supplements is a supporting sector to the Sports Industry. This segment has traditionally been targeted towards athletes but a growing consumer base has expanded its products to encompass wider health and fitness supplements.

Sports supplements can be grouped into three categories

- Sports foods which provide a practical form of nutrients to meet sports nutrition goals;
- Medical supplements which may be needed to prevent or correct nutrient deficiencies that occur in athletes; and
- The category of performance supplements which are designed either to directly enhance exercise capacity or to support activities that allow the athlete to train hard, recover, achieve physique goals or reduce the risk of illness and injury.

The analysis explores this segment from manufacturing through to retailing in Australia.

3.3 Industry attribution

This section details our approach to attributing activity to the Sports Industry, and the data sources and assumptions used in that process.



The approach

In order to develop estimates of the size of the Sports Industry, the available industry and broader economic data needs to be analysed and manipulated to meet the industry definition and segments outlined in the previous sections of the methodology.

This exercise is not a straightforward task, as while there does exist some economic data that is collected and identified as related to sport, this is only a small component of overall sport and recreation related activity, and would represent a much narrower definition of the Sports Industry than that utilised for this analysis.

Therefore, in order to develop estimates of the size of those segments or components of the defined Sports Industry that are not identified as sport within the accounts need to be attributed to sport from within the industries or groupings within which they sit. In addition, in order to facilitate the insights required to support the Industry Growth Plan and the economic modelling exercise, the segments need to be identified from and attributed within the Australian National Accounts framework.

This section of the report details the methodology used to attribute and size the Sports Industry using the Australian National Accounts as a starting framework. Greater detail on a number of the components of this methodology is provided within Appendix A.

INPUT OUTPUT TABLES

The main source of information for the identification and attribution process is the Input-Output (I-O) tables. The I-O tables are part of the Australian National Accounts, complementing the quarterly and annual series of national income, expenditure and product aggregates produced and maintained by the Australian Bureau of Statistics (ABS). The tables provide detailed information about the supply and use of products in the Australian economy, and the structure of and inter-relationships between Australian industries.

There are three key reasons why the I-O tables have been used as the foundational data source for this analysis:

- **Robust attribution and insights:** The I-O tables are a powerful tool that recognise the upstream and downstream linkages with the rest of the economy, and provide detailed information relating to the performance and contribution of

different industries (e.g. value added, compensation paid to employees, gross operating surplus / gross mixed income etc.).

- **Recognition of international trade:** The I-O tables distinguish between imported and exported goods, providing an understanding of the magnitude of international linkages with the domestic Sports Industry, and the relationship between domestic consumption and imports, and domestic production and exports.
- **Replicable:** The approach used to analyse the Sports Industry within the I-O tables is designed such that, should similar data be available, it could be built upon or replicated in the future.

INPUT-OUTPUT INDUSTRY GROUPS (IOIG)

Within the I-O tables there are 114 Input-Output Industry Groups (IOIGs), and for each there exists detailed data relating to the individual cost and sales structure of the group, and the linkages with other groups.

9101 Sports and Physical Recreation Activities

The *9101 Sports and Physical Recreation Activities* IOIG provides insight into core sport activity that is closely related to the participation element of sport. However, from a Growth Plan perspective it is necessary to capture and understand the linkages (sales to and purchases from) between the 9101 IOIG to other industry groups.

This IOIG is not only useful in that it directly tells us information about that specific group, but the interaction with other IOIGs also allows us to infer information about the sporting component of other industries.

If all of a given industry's *sport-related* sales are made directly to 9101 *Sports and Physical Recreation Activities*, the proportion of that industry's total sales that are sales to IOIG 9101 can be used (either wholly or in part) to derive the share of that industry's value-add that is associated with Sports and Recreation activity.

If the IOIG cost and sales data does not wholly capture sport related production further disaggregation of the industry is required.

The approach (cont.)

ANZSIC CLASSES

Australia and New Zealand Standard Industrial Classifications (ANZSIC) allow us to develop deeper insights into the activities within each IOIG group. Each individual class within the classifications is defined in terms of a specified range of activities. The ANZSIC handbook was used to identify and isolate industry classes which incorporated a sport specific activity.

Classes represent individual business entities who perform similar primary activities. It is common for a business to engage in a range of activities wider than those designated as belonging to a particular class, and when this occurs it is classified based on its predominant activity. In order to map between ANZSIC classes and the associated IOIGs, the related industry concordances have been utilised. This methodology, and related limitations are outlined further in Appendix A.

The IOIG *9101 Sports and Physical Recreation Activities* and its associated industry classes listed in the table below can be used to illustrate key components of our approach.

9101 Sports and Physical Recreation Activities
9111 Health and Fitness Centres and Gymnasias Operation
9112 Sports and Physical Recreation Clubs and Sports Professionals
9113 Sports and Physical Recreation Venues, Grounds and Facilities Operation
9114 Sports and Physical Recreation Administrative Service
9121 Horse and Dog Racing Administration and Track Operation
9129 Other Horse and Dog Racing Activities
9131 Amusement Parks and Centres Operation
9139 Amusement and Other Recreational Activities n.e.c.

Each of the 8 classes in the adjacent table consist of specific primary activities which are distinct from each other yet all represent the *9101 Sports and Physical Recreation Activities* IOIG.

It is evident that within the *9101 Sport and Physical Recreation Activities* IOIG, that not all classes are relevant to sport in accordance with definition established for this project. Specifically, two ANSZIC classes related to horse and dog racing (i.e. 9121 and 9129) and two other ANSZIC classes (9131 Amusement Parks and Centres Operation and 9139 Amusement and Other Recreational Activities n.e.c.). Application of the definitions would clearly exclude industry classes 9131 and 9139, and the dog racing components of industry classes 9121 and 9129 from the Sports Industry.

It was further decided that Horse Racing was to be isolated from the headline attribution and sizing process, and therefore the analysis of this IOIG has been undertaken without these four classes. A number of methodological steps were taken to strip out activities belonging to Amusement and Racing from IOIG 9101 which are covered in detail in Appendix A. This Appendix also incorporates an estimate of the size of the horse racing industry based on the broader approach undertaken for this analysis.

ATTRIBUTION

A similar process to that described above has been followed for IOIGs and industry classes that encompass sport related activity consistent with the Sports Industry definition. Although the I-O tables provide data at the industry group level and not at the class level, the five attribution methods explained in detail overleaf enable the IOIGs to be disaggregated into its sport specific components.

Attribution methodology

A challenging aspect of sizing the Sports Industry within a national accounts framework is to determine how much activity within an industry that has been identified as sports-related (e.g. footwear manufacturing) is legitimately sports-related (e.g. sports shoe manufacturing). A number of methodologies have been applied to disaggregate economic activity provided in the Input-Output tables at the broad Input-Output Industry Group (IOIG) level to activity which is specifically sports-related. That is, to attribute a component of those industries to sport, and therefore including that component within our analysis of the Sports Industry. A summary of each methodology is provided below. Detailed information on each methodology is provided in Appendix A, and a summary of the attribution methodology framework is provided overleaf.

1. The Input-Output Tables

As previously outlined, the main source of information for attribution is the I-O tables. The I-O tables contain detailed industry sales information between the industry groups (IOIG level), as well as information relating to the cost and sales structure, and resulting value add for each group. IOIG 9101 is the Sport and Recreation industry, and as a result, there is information within the tables themselves that helps attribute components of other IOIGs based upon their interaction with that industry (either sales to or purchases from sport and recreation).

To provide an example, within the Sports Operations segment sits the ANZSIC class 0113 Turf Growing, which maps to IOIG 0103 Other Agriculture. Given the nature of that activity, all of the 0113 classification that we are looking to include (i.e. the sport specific component) has been assumed to show up in sales to Sport and Recreation within the tables (i.e. to IOIG 9101). As a result, the sales to 9101 as a proportion of overall sales within Other Agriculture (i.e., the share of total sales that are sports-related) was used to estimate the component of that industry group that relates to sport and can be included within the Sports Operations segment.

However, the application of this methodology is not always straightforward. For many sport-related industries, the portion of their activity that is Sports and Recreation is captured elsewhere in the supply chain (e.g. direct sales to households rather than supply to the Sports and Recreation sector). For these industries we turn to alternative sources of information to estimate the proportion of activity that can be attributed to Sports and Recreation.

2. The Census Employment and Income Data

If an ANZSIC class has been identified to fit within the Sports Industry definition and is wholly related to sport and recreation (e.g. 8211 Sports and Physical Recreation Instruction), an income-weighted employment share of employment in that class (out of total employment in the parent IOIG) can be assumed to represent the proportion of activity within the IOIG that is sports-related. An example of an application of this attribution methodology, and the logic behind applying income-weighted employment shares is provided in Appendix A.

If an ANZSIC class is not wholly related to sport and recreation, as is the case for the majority of classes included in segments outside of Sports Operations, for example Secondary Education which sits within the Education segment, then employment shares alone are not an accurate representation of activity tied to sport (i.e., not everyone employed in Secondary Education is a sports teacher). To derive a sensible attribution methodology for these ANZIC classes further research is required to attribute a component of the industry classes to the Sports Industry.

Attribution methodology (cont.)

3. The Household Expenditure Survey

The ABS 2015-16 Household Expenditure Survey (HES) (cat. no. 6530.0) provides an insight into how households allocate their budget across various expenditure items (693 in total). An analysis of each of the 693 expenditure items revealed some items that belong to a sports segment (e.g. sports equipment). After identifying a sports-related expenditure item, the 2008-09 ABS Input-Output Product Group (IOPG) to Household Expenditure Classification Concordance publication is utilised to determine which IOPG that item belongs to, and then also the proportion of total production at the IOPG level that relates to that product. This is then used as an estimate of the component of that product group that can be attributed to sport, which has been assumed to be representative of the same attribution within the associated IOIG classifications (detailed approach and limitations provided in Appendix A).

If the 2008-09 ABS Concordances do not include the sports-related item identified in the 2015-16 HES (i.e. the item was not included in the 2008-09 HES) an alternative methodology is followed. In these cases, the total household expenditure on a sports related item within an industry class can be assumed to be representative of the total expenditure on sport within that class. This only holds true where it can be safely assumed that all of the sports related activity relates to the production of final goods that are sold to households (i.e. consumers), as this activity can therefore be used as an estimate of the component of total sales within an industry group that relates to sport.

4. Industry Reports and Other Secondary Sources

If all of the information contained within the I-O tables, The Census and the HES has been exhausted, the next step is to turn to secondary research such as industry reports in order to determine the component of either IOIGs or the associated classes that can be attributed to the Sports Industry.

The objective of the review of industry reports and other secondary sources is to estimate either the component of individual classes identified as sport related, or to alternatively build assumptions to undertake the attribution at the industry group level without a class level breakdown.

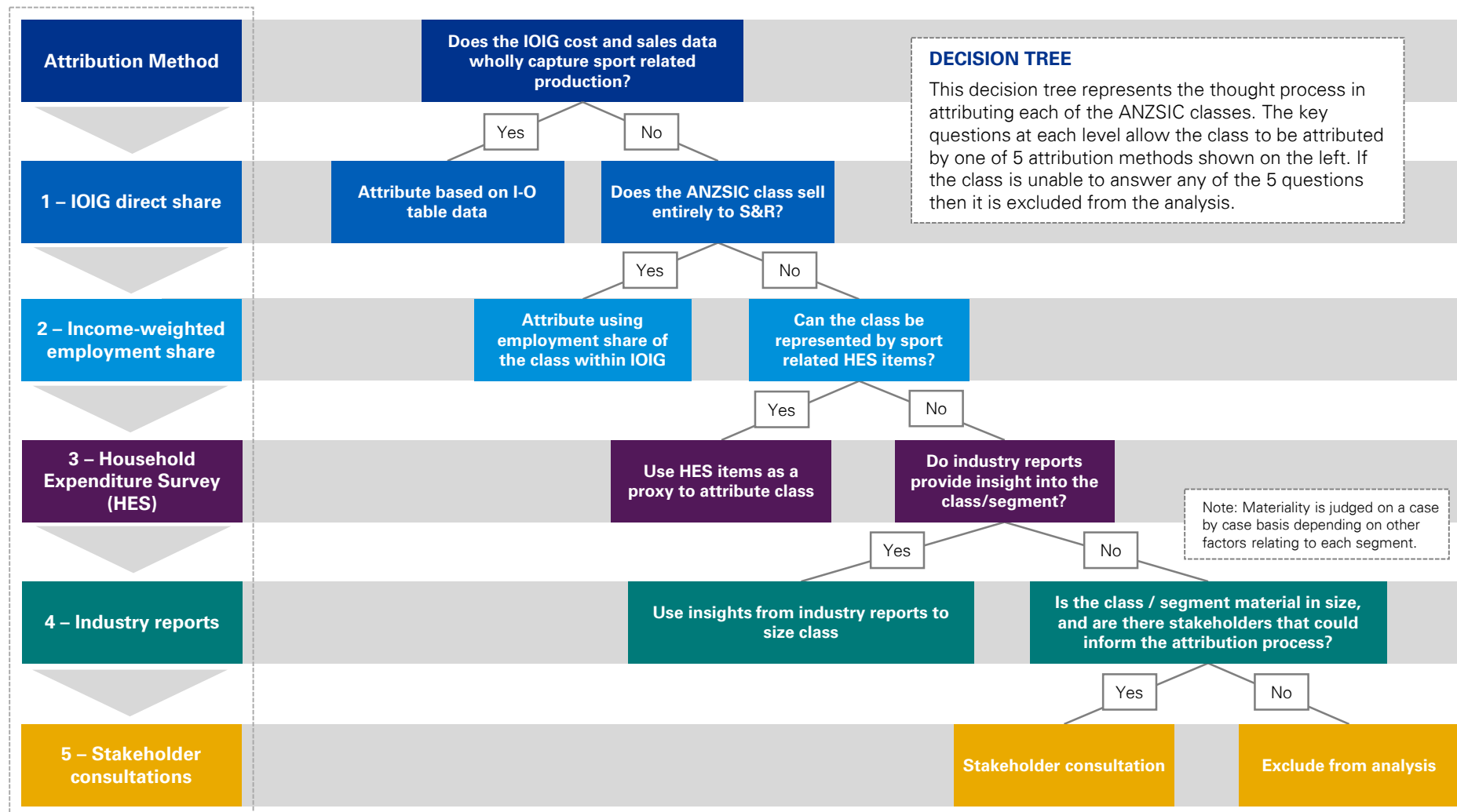
The information used has either been in the form of detailed industry reports that have explored classes or groups specifically (such as those published by IBIS World), broader studies relating to Sports Industry segments or activity, or further data sources that have been used to develop attribution assumptions.

These reports and sources that have been used as part of the attribution process are detailed within Appendix C.

5. Primary Research and Consultation

Finally, any remaining information gaps have been explored through primary research and consultation (where practical and feasible). This has been of greater importance where there is difficulty in capturing current activity, but where there is an intuitive opportunity that may be important baseline information to inform the Industry Growth Plan (e.g. sports technology).

Industry attribution decision tree



4. Sizing the Sports Industry

This section of the report outlines the detailed attribution and sizing process for attributing economic activity contained within the Australian National Accounts to each segment of the Sports Industry.



Summary

SIZING THE SPORTS INDUSTRY

This section of the report provides detail on the attribution methodology underpinning the economic valuation of Australia's Sports Industry. For each Sports Industry segment two tables of information are provided. The first table lists the industries, and the ANZSIC classes within those industries, that have been deemed sport-related, along with information about the attribution method, the final portion of activity attributed to the Sports Industry, and performance metrics such as sales, value add and employment at a granular level. The second table summarises the findings of attribution process by aggregating results to the industry level and providing additional metrics such as domestic production, international trade and contribution to GDP.

The Sports Industry generates \$32 billion in sales in Australia, approximately half of which are generated by the sports operations segment. The table below provides a summary of the information presented in this section of the report for each segment of the Sports Industry.

Segment	Total sports related sales	Domestic production	Imports	Exports	Domestic prod. and domestic cons.	Value added by Sports Industry	Sports related FTE's
Sports operations	\$14,289m	\$13,637m	\$652m	\$714m	\$12,923m	\$5,524m	60,168
Education	\$4,972m	\$4,964m	\$8m	\$377m	\$4,587m	\$3,571m	30,416
Sports medicine and science	\$291m	\$289m	\$3m	\$1m	\$287m	\$185m	1,924
Media	\$3,613m	\$3,377m	\$237m	\$88m	\$3,289m	\$1,541m	6,009
Events, venues and facilities	\$3,982m	\$3,801m	\$181m	\$152m	\$3,649m	\$1,516m	14,958
Gambling	\$863m	\$809m	\$54m	\$35m	\$774m	\$330m	1,857
Equipment and apparel	\$3,628m	\$2,496m	\$1,133m	\$372m	\$2,123m	\$1,574m	12,318
Sports Tech	\$24m	\$5m	\$19m	\$2m	\$3m	\$3m	10
Nutrition and supplements	\$495m	\$319m	\$176m	\$46m	\$273m	\$133m	783
Total	\$32,158m	\$29,695m	\$2,463m	\$1,787m	\$27,908m	\$14,375m	128,443

The attribution tables

OVERVIEW

The following pages provide detailed information for each sports segment, broken down by the ANZSIC classes captured within each industry group and segment. An explanation of the contents of these tables is provided below.

Column heading	Description
Input-Output Industry Group	Refers to the ABS-defined Input-Output Industry Group (IOIG) that has been identified as belonging to the segment. All data within the Input-Output tables is provided at the IOIG level of aggregation.
ANZSIC Class	Refers to the sports-related ABS-defined ANZSIC Class (four-digit) that has been identified as belonging to the IOIG within the segment.
Description	Provides a description of the type of sport-related activities captured within the ANZSIC Class.
Attribution Method	Refers to the final method chosen for attributing a portion of total activity in the ANZSIC class to activity that is deemed sports-related. Where industry reports have been used, a reference number is provided that corresponds to the list of all sources in the appendix of this report.
Percent attributed to sport	Refers to the final estimate of the percentage of total activity at the Class level that is sports-related.
Sports-related sales	Refers to the total sales generated by an IOIG's related ANZIC Classes (where applicable) associated with sport and recreation activity. Sports related sales have been further disaggregated in the summary tables into domestic production and imports.
Sports-related value add	Refers to the value add (contribution towards Gross Domestic Product) generated by an IOIG's related ANZIC Classes (where applicable) associated with sport and recreation activity. This is different to sports related sales as it incorporates the costs used to create the sales. Value added is approximately the difference between total sales and total cost of intermediate inputs.
Sports-related FTE's	Refers to the number of Full Time Equivalent (FTE) jobs provided by an IOIG that are tied to sport and recreation activity.
Domestic production (provided in the summary tables)	Refers to the amount of an IOIG's goods and services (measured in dollars) that was produced domestically (i.e. was not imported). Domestic production has also been further disaggregated into those goods or services that are exported, and those that are purchased domestically.
Imports (provided in the summary tables)	Refers to the value of goods and services sold by an IOIG that are sourced from overseas (i.e., imported).
Exports (provided in the summary tables)	Refers to the total value of domestically produced goods and services that are exported (i.e. sold outside of Australia).
Domestic prod. and domestic cons. (provided in the summary tables)	Refers to the value of domestically produced goods and services that an IOIG sells to domestic customers.



4.1 Sports operations

Sports operations encompasses all activity relevant to the management and delivery of sport from the grassroots through to the elite level.



Attribution of sports operations

Definition		Examples and considerations				Segment Size
Activities related to the delivery and coordination of sport, including administration, programming, coaching or instruction.		Sports clubs and organisations (e.g. peak bodies, SSOs etc.) Government sport related operations.				\$14.3 bn
Input-Output Industry Group ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
0103 Other Agriculture						
0113 Turf Growing	Non-residential turf growing related to sport activity	1 – IOIG direct share	17.8%	\$122m	\$60m	207
2302 Ships and Boat Manufacturing						
2392 Boatbuilding and Repair Services	Businesses primarily building or repairing small- to medium-size boats and recreational vessels	4 – Industry Reports (Source: IR 1)	37.5%	\$663m	\$189m	1,721
6901 Professional, Scientific and Technical Services						
6910 Scientific Research Services	Sports medicine & dietary research	1 – IOIG direct share	0.5%	\$1,113m	\$458m	2,582
6921 Architectural Services	Architectural design services required in constructing stadiums, arenas and sport fields	1 – IOIG direct share				
6923 Engineering Design and Engineering Consulting Services	Engineering services required in constructing stadiums, arenas and sport fields	1 – IOIG direct share				
6940 Advertising Services	Sports advertising such as creating billboards and developing TV commercials	1 – IOIG direct share				
6950 Market Research and Statistical Services	Sports Industry research services (e.g. Clearinghouse, ABS)	1 – IOIG direct share				
6962 Management Advice and Related Consulting Services	Sports management consulting services	1 – IOIG direct share				



Attribution of sports operations (cont.)

Definition		Examples and considerations				Segment Size
Activities related to the delivery and coordination of sport, including administration, programming, coaching or instruction.		Sports clubs and organisations (e.g. peak bodies, SSOs etc.) Government sport related operations.				\$14.3 bn
Input-Output Industry Group ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
6901 Professional, Scientific and Technical Services						
6991 Professional Photographic Services	Sports photography for teams and clubs	1 – IOIG direct share	0.5%	\$1,113m	\$458m	2,582
6999 Other Professional, Scientific and Technical Services n.e.c.	Catch all bucket of sports related professional services	1 – IOIG direct share				
8210 Arts, Sports, Adult and other Education Services (including Community Education)						
8211 Sports and Physical Recreation Instruction	Non-vocational instruction in sporting and physical activities	2 – Employment share	100%	\$2,345m	\$1,307m	17,778
9101 Sports and Recreation						
9111 Health and Fitness Centres and Gymnasia Operation	Operations of health clubs, fitness centres and gymnasia and provide a range of fitness and exercise services	2 – Employment share	100%	\$3,807m	\$1,310m	15,532
9112 Sports and Physical Recreation Clubs and Sports Professionals	Operations of individual sports clubs and physical recreation clubs that provide sporting or physical recreation opportunities to participants or entertainment for spectators	2 – Employment share	100%	\$3,339m	\$1,149m	10,836
9114 Sports and Physical Recreation Administrative Service	Operators engaged in administration of sports or physical recreation organisations	2 – Employment share	100%	\$2,038m	\$701m	5,159
9501 Personal Services						
9539 Other Personal Services n.e.c.	Personal fitness training services	4 – Industry reports (Source: IR 2)	29.7%	\$862m	\$349m	6,352



Summary of sports operations

The table below summarises the IOIG groups included in the sports operations segment with their associated key metrics providing insight into the contribution and significance of the IOIG to the Sports Industry. Note that the percentages in the % *Attributed to sport* column are relative to the segment. For example, the 9101 IOIG appears here and also in events due to differing activities within the IOIG.

Input-Output Industry Group	% Attributed to sport	Total sports related sales	Domestic production	Imports	Exports	Domestic prod. and domestic cons.	Value added by Sports Industry	Sports related jobs (FTE)
0103 Other Agriculture	0.4%	\$122m	\$116m	\$6m	\$8m	\$108m	\$60m	207
2302 Ships and Boat Manufacturing	13%	\$663m	\$535m	\$129m	\$114m	\$420m	\$189m	1,721
6901 Professional, Scientific and Technical Services	0.5%	\$1,113m	\$1,064m	\$49m	\$40m	\$1,024m	\$458m	2,582
8210 Arts, Sports, Adult and other Education Services (including Community Education)	25.9%	\$2,345m	\$2,335m	\$10m	\$172m	\$2,163m	\$1,307m	17,778
9101 Sports and Recreation (ex. horse and dog racing and amusement)	73.5%	\$9,183m	\$8,743m	\$440m	\$364m	\$8,379m	\$3,160m	31,528
9501 Personal Services	5.6%	\$862m	\$843m	\$19m	\$15m	\$828m	\$349m	6,352
Total	-	\$14,298m	\$13,637m	\$652m	\$714m	\$12,923m	\$5,524 m	60,168

Note: For each segment, there is an initial attribution table that explores the ANZSIC Class level considerations (i.e. the table on the previous two pages for this segment), and then a summary table wrapping up those consideration to the IOIG level (i.e. the table above). The attribution per cent within the ANZIC Class tables relate to the class level attribution (i.e. how much of a given Class is being allocated to the Sports Industry, whereas the attribution per cent within the IOIG summary table relates to the Group level attribution (i.e. how much of the overarching IOIG is being allocated to the Sports Industry).

To provide an example, the ANZSIC Class '0113 Turf Growing' was attributed as 17.8% Sports Industry related. '0113 Turf Growing' maps to '0103 Other Agriculture' at the IOIG level, along with a number of other Classes, however 0113 is the only class that has been identified as sport related. Using the income-weighted employment shares for that Class (2.41%) within that IOIG, it is then calculated that 0.4% of the IOIG is related to sport (i.e. $17.8\% \times 2.41\% = 0.4\%$).



4.2 Education and training

Participation in sports-related education and training to improve employment prospects and facilitate entry into the Sports Industry.



Attribution of education and training

Definition		Examples and considerations				Segment Size
Activities relating to the delivery of education in sport related disciplines. This excludes Sports and Recreation Instruction (e.g. sailing instructor), which is included in sports operations.		University courses in exercise science, sports administration or management etc. Training courses for personal trainers and other fitness professionals.				\$5.0 bn

Input-Output Industry Group ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
8010 Primary and Secondary Education Services (including Pre-Schools and Special Schools)						
8021 Primary Education	Physical education in schools as well as schools purchasing sport programs and renting fields/stadiums for competitions	4 – Industry reports (Source: IR 3)	3.3%	\$636m	\$473m	5,792
8022 Secondary Education		4 – Industry reports (Source: IR 3)	9.2%	\$1,773m	\$1,317m	13,424
8023 Combined Primary and Secondary Education		4 – Industry reports (Source: IR 3)	6.3%	\$1,207m	\$897m	6,252
8110 Technical, Vocational and Tertiary Education Services (including undergraduate and postgraduate)						
8101 Technical and Vocational Education and Training	Technical and vocational education and training related to the sports sector (e.g. Certificate III in Sport Coaching)	4 – Industry reports (Source: IR 4)	4.2%	\$327m	\$213m	1,935
8102 Higher Education	Undergraduate or postgraduate sports related courses	4 – Industry reports (Source: IR 5)	2.3%	\$1,029m	\$671m	3,013



Summary of education and training

The table below summarises the IOIG groups included in the education and training segment with their associated key metrics providing insight into the contribution and significance of the IOIG to the Sports Industry.

Input-Output Industry Group	% Attributed to sport in segment	Total sports related sales	Domestic production	Imports	Exports	Domestic prod. and domestic cons.	Value added by Sports Industry	Sports related jobs (FTE)
8010 Primary and Secondary Education Services (including Pre-Schools and Special Schools)	5.8%	\$3,615m	\$3,615m	-	\$30m	\$3,585m	\$2,687m	25,468
8110 Technical, Vocational and Tertiary Education Services (including undergraduate and postgraduate)	2.8%	\$1,357m	\$1,349m	\$8m	\$347m	\$1,002m	\$884m	4,948
Total	-	\$4,972m	\$4,964m	\$8m	\$377m	\$4,587m	\$3,571m	30,416



4.3 Sport medicine and science

The delivery of health services or research to restore / maintain physical health, improve performance and provide a competitive edge for elite athletes.



Attribution of sports medicine and science

Definition	Examples and considerations	Segment Size
Activities relating to the delivery of health services, or research within the field of sport / sports science.	Exercise physiology, sports medicine or physiotherapy services. Sports science related research activities.	\$0.3 bn

Input-Output Industry Group ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
8401 Health Care Services						
8512 Specialist Medical Services	Specialist sports injury medical practitioners	Unable to disentangle sports related specialist medical practitioners from regular medical practitioners				
8533 – Physiotherapy Services	Physiotherapy services associated with sports injuries	4 – Industry reports (Source: IR 6)	13.0%	\$291m	\$185m	1,924
8534 Chiropractic and Osteopathic Services	Chiropractic services associated with sports injuries	Unable to disentangle sports related chiropractic and osteopathic services from regular services				
8539 Other Allied Health Services	Other speciality services needed for sports related injuries	Unable to disentangle sports related allied health from all other allied health				

The table below summarises the IOIG groups included in the sports medicine and science segment with their associated key metrics providing insight into the contribution and significance of the IOIG to the Sports Industry.

Input-Output Industry Group	% Attributed to sport	Total sports related sales	Domestic production	Imports	Exports	Domestic prod. and domestic cons.	Value added by Sports Industry	Sports related jobs (FTE)
8401 Health Care Services	0.3%	\$291m	\$289m	\$3m	\$1m	\$287m	\$185m	1,924



4.4 Media

The development, packaging and delivery of sport content, including broadcasting, sponsorship and marketing activities.

Attribution of media

Definition		Examples and considerations				Segment Size
The development / packaging / delivery of sport content, including broadcasting, sponsorship and marketing activities.		Television broadcast. Sponsorship. Marketing.				\$3.6 bn
Input-Output Industry Group ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
5401 Publishing (except Internet and Music Publishing)						
5412 Magazine and Other Periodical Publishing	Sports magazines and journals	Unable to disentangle sports related magazine publishing from regular magazine publishing				
5501 Motion Picture and Sound Recording						
5511 Motion Picture and Video Production	Filming of sporting events	4 – Industry reports (Source: IR 7,8,9)	15.7%	\$1,078m	\$299m	1,355
5512 Motion Picture and Video Distribution	Distribution rights associated with televising sporting events	Distribution rights will be captured in IOIG 5601 Broadcasting (except internet)				

Attribution of media (cont.)

Definition		Examples and considerations				Segment Size
The development / packaging / delivery of sport content, including broadcasting, sponsorship and marketing activities.		Television broadcast. Sponsorship. Marketing.				\$3.6 bn
Input-Output Industry Group ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
5601 Broadcasting (except Internet)						
5610 Radio Broadcasting	Sports radio broadcasting (e.g. ABC Grandstand)	Unable to disentangle sports radio broadcasting from regular radio broadcasting				
5621 Free-to-Air Television Broadcasting	Televising sports events to free-to-air TV	4 – Industry reports (Source: IR 8)	30.2%	\$1,289m	\$631m	3,755
5622 Cable and Other Subscription Broadcasting	Subscription based sports broadcasting (e.g. Foxtel)	4 – Industry reports (Source: IR 9)	29.2%	\$1,246m	\$610m	899
5701 Internet Service Providers, Internet Publishing and Broadcasting, Websearch Portals and Data Processing						
5700 Internet Publishing and Broadcasting	Sports news websites (e.g. Cricinfo)	Unable to extract sports publishing as a percentage of all internet publishing				
5921 Data Processing and Web Hosting Services	Streaming of sports events (e.g. Kayo)	Sports streaming services included in broadcasting rights in class 5622				

Summary of media

The table below summarises the IOIG groups included in the media segment with their associated key metrics providing insight into the contribution and significance of the IOIG to the Sports Industry.

Input-Output Industry Group	% Attributed to sport in segment	Total sports related sales	Domestic production	Imports	Exports	Domestic prod. and domestic cons.	Value added by Sports Industry	Sports related jobs (FTE)
5501 Motion Picture and Sound Recording	9.9%	\$1,078m	\$841m	\$237m	\$37m	\$804m	\$299m	1,355
5601 Broadcasting (except Internet)	23.6%	\$2,535m	\$2,535m	\$0m	\$51m	\$2,485m	\$1,242m	4,654
Total	-	\$3,613m	\$3,377m	\$237m	\$88m	\$3,289m	\$1,541m	6,009



4.5 Events, venues and facilities

Events that provide a platform for participation in sport and enable live spectator consumption, and the operations of sports venues and facilities in which sport and events occur.



Attribution of events, venues and facilities

Definition		Examples and considerations			Segment Size	
Events that provide a platform for participation in sport and enable live spectator consumption, and the operations of sports venues and facilities in which sport and events occur.		Marathon festivals. Major events. Professional sports competitions. Event promotion, administration and management. Venue and facility operation.			\$4.0 bn	
Input-Output Industry Group ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
7210 Employment, Travel Agency and Other Administrative Services						
7299 Other Administrative Services n.e.c.	Ticket sales for sporting events	4 – Industry reports (Source: IR 10)	6.9%	\$672m	\$377m	1,179
9101 Sports and Recreation						
9113 Sports and Physical Recreation Venues, Grounds and Facilities Operation	Operating indoor and outdoor sports venues, ground and facilities	2 – Employment share	100%	\$3,310m	\$1,139m	13,780

The table below summarises the IOIG groups included in the events segment with their associated key metrics providing insight into the contribution and significance of the IOIG to the Sports Industry. As mentioned previously IOIG 9101 appears again here due to activities captured here being event related (managing sporting venues) . The associated percentage provided excludes horse, dog and amusement park related activities.

Input-Output Industry Group	% Attributed to sport in segment	Total sports related sales	Domestic production	Imports	Exports	Domestic prod. and domestic cons.	Value added by Sports Industry	Sports related jobs (FTE)
7210 Employment, Travel Agency and Other Administrative Services	0.8%	\$672m	\$650m	\$22m	\$21m	\$629m	\$377m	1,179
9101 Sports and Recreation	26.5%	\$3,310m	\$3,151m	\$159m	\$131m	\$3,020m	\$1,139m	13,780
Total	-	\$3,982m	\$3,801m	\$181m	\$152m	\$3,649m	\$1,516m	14,958



4.6 Gambling

Gambling services targeted towards sport-related activity.

Attribution of gambling

Definition	Examples and considerations	Segment Size
Gambling on sporting events and outcomes.	Includes betting on sports matches, but excludes gambling on other activities that may occur through sports clubs.	\$0.9 bn

Input-Output Industry Group ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
9201 Gambling						
9209 Other Gambling Activities	Internet & TAB sports betting	4 – Industry reports (Source: IR 11)	20%	\$863m	\$330m	1,857

The table below summarises the IOIG groups included in the gambling segment with their associated key metrics providing insight into the contribution and significance of the IOIG to the Sports Industry.

Input-Output Industry Group	% Attributed to sport in segment	Total sports related sales	Domestic production	Imports	Exports	Domestic prod. and domestic cons.	Value added by Sports Industry	Sports related jobs (FTE)
9201 Gambling	8.0%	\$863m	\$809m	\$54m	\$35m	\$774m	\$330m	1,857

4.7 Equipment and apparel

The manufacturing and retail distribution of sports equipment and apparel for performance and leisure use.

Attribution of equipment and apparel

Definition		Examples and considerations				Segment Size
The provision of equipment and apparel related to sporting activities, or support of sporting events.		Includes equipment (e.g. cricket bat) and apparel (e.g. fan gear).				\$3.6 bn
Input-Output Industry Group ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
1305 Clothing Manufacturing						
1351 Clothing Manufacturing	Sports clothing manufacturing	Unable to disentangle sports clothing from regular clothing. Most of this IOIG is imported				
1306 Footwear Manufacturing						
1352 Footwear Manufacturing	Sports footwear manufacturing	3 – HES	5.9%	\$201m	\$10m	66
2502 Other Manufactured Products						
2592 Toy, Sporting and Recreational Product Manufacturing	Sporting equipment manufacturing. (e.g. Archery equipment, cricket set manufacturing, billiard equipment etc.)	4 – Industry reports (Source: IR 12)	53%	\$1,222m	\$144m	716
3301 Wholesale Trade						
3734 Toy and Sporting Goods Wholesaling	Sporting equipment wholesaling. (e.g. ammunition, bicycle parts, playground equipment)	4 – Industry reports (Source: IR 13)	50%	\$575m	\$328m	1,253



Attribution of equipment and apparel (cont.)

Definition		Examples and considerations				Segment Size
The provision of equipment and apparel related to sporting activities, or support of sporting events.		Includes equipment (e.g. cricket bat) and apparel (e.g. fan gear).				\$3.6 bn
Input-Output Industry Group						
ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
3901 Retail Trade						
4241 Sport and Camping Equipment Retailing	Sport equipment retailing (e.g. bicycles, canoe, fitness equip, golf equipment)	4 – Industry reports (Source: IR 14)	82.9%	\$1,362m	\$1,040m	10,098
4251 Clothing Retailing	Sport clothing retailing (e.g. Nike, Adidas clothing products)	Sports retail stores (e.g. Rebel Sport) are captured in class 4241 above. As a result, the sports related sales will be captured in class 4241.				
4252 Footwear Retailing	Sport footwear retailing (e.g. Asics, Adidas footwear products)					
6601 Rental and Hiring Services (except Real Estate)						
6639 Other Goods and Equipment Rental and Hiring n.e.c.	Sports equipment rental and other recreational equipment rental for clubs and leagues	1 – IOIG direct share	2.6%	\$268m	\$51m	185

Summary of equipment and apparel

The table below summarises the IOIG groups included in the equipment / apparel segment with their associated key metrics providing insight into the contribution and significance of the IOIG to the Sports Industry. Note that the percentages in the *% Attributed to sport* column are relative to the segment. For example, the 3901 IOIG appears here and also in nutrition/supplements due to differing activities within the IOIG.

Input-Output Industry Group	% Attributed to sport in segment	Total sports related sales	Domestic production	Imports	Exports	Domestic prod. and domestic cons.	Value added by Sports Industry	Sports related jobs (FTE)
1306 Footwear Manufacturing	5.9%	\$201m	\$18m	\$183m	\$18m	\$0m	\$10m	66
2502 Other Manufactured Products	12.1%	\$1,222m	\$311m	\$911m	\$254m	\$57m	\$144m	716
3301 Wholesale Trade	0.5%	\$575m	\$574m	\$1m	\$74m	\$500m	\$328m	1,253
3901 Retail Trade	1.4%	\$1,362m	\$1,362m	\$0m	\$13m	\$1,349m	\$1,040m	10,098
6601 Rental and Hiring Services (except Real Estate)	0.7%	\$268m	\$231m	\$38m	\$13m	\$217m	\$51m	185
Total	-	\$3,628m	\$2,496m	\$1,133m	\$372m	\$2,123m	\$1,574m	12,318



4.8 Sports technology

Any technological solution designed to enhance human performance in athletic ability or improve spectator experience.

Attribution of sports technology

Definition

Development and supply of goods and services with sport-related technology embedded (e.g., data analytics, wearables, enhanced stadium experiences etc.). (See notes below for important methodological considerations)

Segment Size

\$24 m

Input-Output Industry Group ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
2401 Professional, Scientific, Computer and Electronic Equipment Manufacturing						
2412 Medical and Surgical Equipment Manufacturing	Sports medicine technology	Unable to identify and extract sports medicine technology.				
2419 Other Professional and Scientific Equipment Manufacturing	Sports tech start-ups (e.g. smart watch manufacturing)	3 – HES	0.2%	\$24m	\$3m	10
2429 Other Electronic Equipment Manufacturing	Sports Tech start-ups	Unable to extract Sports Tech related manufacturing				
5401 Publishing (except Internet and Music Publishing)						
5420 Software Publishing	Sports tech software design	Unable to extract Sports Tech related manufacturing				

The table below summarises the IOIG groups included in the sports tech segment with their associated key metrics providing insight into the contribution and significance of the IOIG to the Sports Industry.

Input-Output Industry Group	% Attributed to sport in segment	Total sports related sales	Domestic production	Imports	Exports	Domestic prod. and domestic cons.	Value added by Sports Industry	Sports related jobs (FTE)
2401 Professional, Scientific, Computer and Electronic Equipment Manufacturing	0.1%	\$24m	\$5m	\$19m	\$2m	\$3m	\$3m	10

Sports Tech is a broad segment and the activities of businesses in this segment are captured in a range of ABS-defined industries. Some of these activities will be captured in other segments of the sports industry that we have identified within the statistical accounts (e.g. Equipment and Apparel) but cannot be isolated from the activities of the other businesses in these segments. For the purpose of this exercise, Sports Tech has remained a standalone segment as it is considered a strong potential high value growth area, however only the activity that can be transparently isolated within the official statistical accounts has been captured. It follows that the results presented for Sports Tech materially under-represent the likely size of the segment.

KPMG recently undertook an analysis for LaunchVic to estimate the future size of the Sports Tech market. KPMG's analysis found:

- The projected size of the Sports Tech market in Australia by 2029 ranges from just under **AUD \$1bn to just over AUD \$3bn per annum.**
- The projected size of the global market for Sports Tech in 2029 ranges from approximately **USD \$82bn to \$123bn.**



4.9 Nutrition and supplements

Nutrition products aimed to improve sporting performance and enhance health and wellbeing.



Attribution of nutrition and supplements

Definition		Examples and considerations				Segment Size
Development and supply of sports nutrition and supplements.		Sports related vitamins / minerals, workout supplements (e.g. workout drinks), hydration, energy and protein supplements etc.				\$0.5 bn
Input-Output Industry Group ANZSIC Class	Description	Attribution method	% Attributed to sport	Sports related sales	Sports related value added	Sports related jobs (FTE)
1109 Other Food Product Manufacturing						
1199 Other Food Product Manufacturing n.e.c.	Domestic health supplement and protein powder manufacturing	4 – Industry reports (Source: IR 15)	2.1%	\$197m	\$48m	194
1801 Human Pharmaceutical and Medicinal Product Manufacturing						
1841 Human Pharmaceutical and Medicinal Product Manufacturing	Vitamin and sport supplement manufacturing	4 – Industry reports	1.3%	\$242m	\$42m	173
3301 Wholesale Trade						
3609 Other Grocery Wholesaling	Health food wholesaling such as wholesaling of organic and natural products	Unable to disentangle health foods from regular wholesaling goods				
3901 Retail Trade						
4129 Other Specialised Food Retailing	Retailing specialised foods such as sports nutrition products	4 – Industry reports (Source: IR 16,17)	2.9%	\$56m	\$43m	417



Summary of nutrition and supplements

The table below summarises the IOIG groups included in the nutrition/supplements segment with their associated key metrics providing insight into the contribution and significance of the IOIG to the Sports Industry. Note that the percentages in the *% Attributed to sport* column are relative to the segment. For example, the 3901 IOIG appears here and also in equipment / apparel due to differing activities within the IOIG.

Input-Output Industry Group	% Attributed to sport in segment	Total sports related sales	Domestic production	Imports	Exports	Domestic prod. and domestic cons.	Value added by Sports Industry	Sports related jobs (FTE)
1109 Other Food Product Manufacturing	1.3%	\$197m	\$140m	\$57m	\$28m	\$112m	\$48m	194
1801 Human Pharmaceutical and Medicinal Product Manufacturing	1.3%	\$242m	\$123m	\$119m	\$17m	\$106m	\$42m	173
3901 Retail Trade	0.1%	\$56m	\$56m	\$0m	\$1m	\$55m	\$43m	417
Total	-	\$495m	\$319m	\$176m	\$46m	\$273m	\$133m	783

5. International analysis

This section of the report examines the size of the Sports Industry globally and compares the role of the Sports Industry in the Australian economy to other countries in order to understand the scope of potential growth.

An analysis of household expenditure on sport around the globe reveals that rising incomes in developing economies presents a strong growth opportunity for the Sports Industry.



International analysis overview

OVERVIEW

The global Sports Industry is the accumulation of the sports markets in each country that has evolved over recent years and has emerged as a distinct sector for national economies. To understand the magnitude of the Australian Sports Industry in the global context, it must be compared to significant and comparable sports markets.

To conduct this analysis, the *Study on the Economic Impact of Sport through Sport Satellite Accounts* (Apr, 2018) provides insight into sport-related economic data suitable for the use in a Sport Satellite Account (SSA) in the European Union (EU) Member States. The *Vilnius Definition* of sport (explored in detail overleaf) provided the foundation for the analysis explored in the paper. Examining those nations most comparable to Australia will reinforce the methodology of this report in producing an estimate of a nationally significant and complex industry.

This section of the report provides:

- insight into the global Sports Industry;
- an explanation of the 'Vilnius Definition' adopted by the EU and how it differs to the KPMG definition used in the analysis; and
- a detailed evaluation and comparison of similar economies analysed through the EU's study.

Although the definitions and methodologies used differ between the KPMG and EU investigations, using national accounts and statistical methods to analyse and extract the impact of the Sports Industry remains at the core of both studies.

Being able to compare and contrast the industry across nations can help identify emerging segments, growth potential and segment exhaustion.

The Global Sports Industry

THE GLOBAL SPORTS INDUSTRY

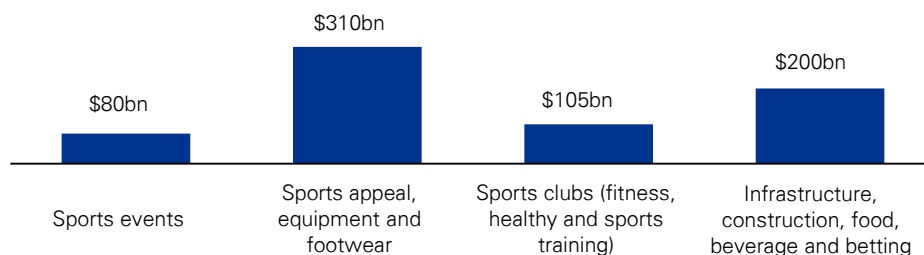
It is difficult to obtain estimates for segments of the Sports Industry that are comparable across countries. For countries that do report such information there is no consistency about what is included as sports and there is little continuity in the timing or frequency of such data.

Recognising the complexity of the global sports market, the industry can be broadly categorised into four segments:

- sports events;
- sports apparel, equipment and footwear;
- sports clubs (fitness, health and sports training); and
- infrastructure construction, food and beverage and betting.

In 2014, the global sports market was estimated at USD \$600 – \$700 billion, which at the time, accounted for approximately 1 per cent of global GDP. The diagram below demonstrates the size of the Sports Industry in 2014 on a global scale with respect to the aforementioned segments. North America dominated overall sports spending, accounting for \$266 billion, compared to \$204 billion for Europe and \$180 billion elsewhere. The share of non-event revenues in the sports market is greater outside of North America and Europe. Outside of these regions, sporting goods and licensed products account for 57% of revenues, and others account for 28%.¹

Estimated size of the global sport market across 4 key market segments



¹ ATKearney, 2014

² Global Consumption Database, World Bank

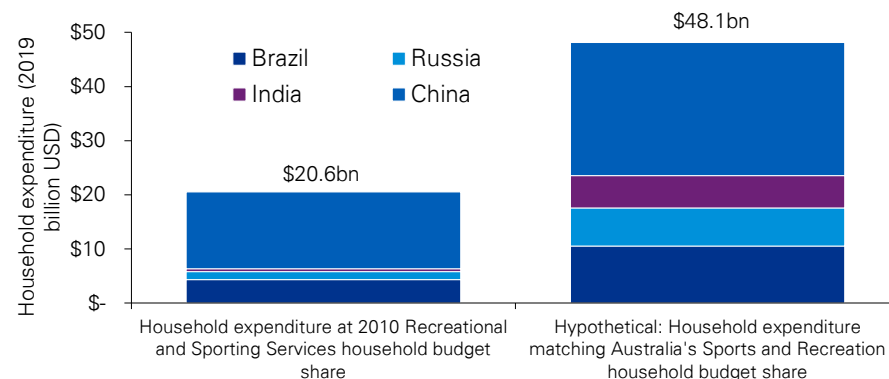
³ Australian National Accounts (2016/17). 5209.0.55.001, Table 2, Australian Bureau of Statistics

EMERGING MARKETS PRESENT AN IMMEDIATE GROWTH OPPORTUNITY FOR DOMESTIC OPERATORS WITH EXPOSURE TO THE GLOBAL SPORTS INDUSTRY

As income rises in developing economies, households are able to allocate an increasing portion of their household budget towards non-essentials. An increase in global discretionary spending is anticipated to lead to an increase in sport participation (both physical and spectator participation) and an increase in global expenditure on sports goods and services. For operators in the Sports Industry, rising income levels around the world unlocks new markets and creates opportunities for industry growth.

The 2010 World Bank Global Consumption Database produces data on household consumption patterns in developing countries. For the 90 developing countries included in the World Bank's analysis, total household expenditure on *Recreational and Sporting Services* was estimated at USD \$25 billion (inflation adjusted to 2019 US dollars).²

The chart below displays the results of a hypothetical scenario in which households in Brazil, Russia, India and China (the 'BRIC' economies) increase the portion of their household budgets allocated to sport in 2010 (0.4%; 0.2%; 0.1%; 0.6% respectively) to match the portion that Australian households allocate to sport (1.1%).^{2,3} The result is a 134% increase in household expenditure on sport from \$20.6bn USD to \$48.1bn USD (in 2019 terms), adding \$27.6bn USD to global household demand for Sports.



Comparison to Vilnius definition of sport

VILNIUS DEFINITION OF SPORT

The Vilnius Definition of Sport is an economic definition of sport agreed by the EU Working Group on Sport and Economics in 2007. The Vilnius definition of sport falls under three classifications – a statistical definition, a narrow definition and a broad definition. These definitions are described below:

- Statistical definition: corresponds to NACE¹ code 93.1 'Sport activities';
- Narrow definition: includes the statistical definition, plus all activities which provide inputs to sport, meaning all industries which produce goods that are necessary to perform sport; and
- Broad definition: narrow definition plus activities for which sport is an input, such as television broadcasting and hotels accommodating guests doing sport.

COMPARISON TO THE DEFINITION OF SPORT IN THIS REPORT

The EU's statistical definition of 'Sport Activities' (NACE code 93.1) is analogous to ANZSIC group 911 'Sport and Physical Recreation Activities', except NACE code 93.1 includes horse & dog racing whereas the ABS isolates horse & dog racing and records activity under ANZSIC group 912. The Vilnius definition of sport therefore implicitly includes horse & dog racing activity whereas KPMG excludes dog racing activity, and quarantines horse racing activity for a separate analysis. Both the narrow and broad Vilnius definitions include activity specifically related to horse racing (e.g., horse breeding, agents involved in the sale of race horses) whereas KPMG have quarantined broader horse related activity (e.g., horse farming) for a separate analysis.

Both NACE and ANZSIC classify Amusement and Recreation activity separately from sport (NACE code 93.2, ANZSIC group 913). Both the Vilnius and KPMG statistical definition of sport excludes Amusement and Recreation.

The Vilnius definition is based on the 2008 Classification of Products by Activity (CPA) which provides detail on 3,142 subcategories, compared to the KPMG definition which is based on the 2006 Australian and New Zealand Standard Industrial Classification (ANZSIC) list which provides detail on 506 ANZSIC classes. The greater depth of data available in the 2008 CPA classifications enables the Vilnius definition to

identify granular sport-related activity that is not distinguished in the ANZSIC list.

It is unclear from the list of NACE classes included in the Vilnius definition how activity in an industry class loosely-related to sport (e.g., C 19.20.25 Kerosene-type jet fuel) is isolated as being sport-related (e.g., Manufacture of Petrol used in sports vehicles). The process of attributing sport-related activity to ANZSIC classes has been the biggest limitation in deriving a broad definition of sport in Australia. Presumably, inclusion of this type of activity in the Vilnius definition is made possible by the availability of much richer and granular EU data; data that is not publicly available in Australia (and if collected, would likely be statistically unreliable due to small sample sizes).

Both approaches are similar in the way in which they aim to capture the different segments of the Sports Industry. The broad Vilnius definition includes a great deal of industry classes, many of which KPMG has excluded on the basis that either the industry would not be materially different in the absence of sport, or that no Australian data is available to attribute sport-related activity to the industry deemed to have a sport-related component attached to it.

On the basis of KPMG excluding industries that would not be materially different in the absence of sport, the scope of the KPMG definition in comparison to the Vilnius definition sits in between the narrow and broad Vilnius definitions:

Definition	Level of scope
Vilnius Definition	Statistical definition
Vilnius Definition	Narrow definition
KPMG Definition	
Vilnius Definition	Broad definition

¹ A specific industry standard classification code used in the European Union. NACE is an acronym for "Nomenclature statistique des activités économiques dans la Communauté européenne"

International comparison (Narrow definition)

EUROPEAN UNION SATELLITE ACCOUNTS VS KPMG STUDY

The table below compares Australia with the top performing EU economies in terms of sports-related GDP. Note, the data for the EU study presented here was collected in 2012 using the narrow Vilnius definition.¹ All values have been converted to Australian dollars using the average 2012 exchange rate.²

Indicator	Germany	France	United Kingdom	Italy	Australia	Spain
Sport-related GDP	\$79.89bn	\$33.58bn	\$27.93bn	\$16.45bn	\$14.38bn	\$10.96bn
Sports-related GDP per capita	\$995	\$515	\$438	\$277	\$584	\$234
Percent of total GDP	2.3%	1.3%	1.3%	0.8%	0.8%	0.8%
Sports-related employment	1,041,882	390,455	643,728	280,957	128,443 ³	165,946
Percent of total employment	2.7%	1.5%	2.3%	1.3%	1.5%	1.0%
Sports education services (percent of sport-related GDP)	\$12.48bn (16%)	\$16.71bn (50%)	\$4.79bn (17%)	\$6.08bn (37%)	\$3.57bn (25%)	\$5.20bn (47%)

SPORTS-RELATED GDP AND GDP PER CAPITA

Compared to EU economies, Australia ranks fifth in order of the nominal value of the sport-related component of each country's GDP. Expressed in per capita terms (i.e., taking into account the difference in population sizes across countries), the Australian Sports Industry ranks seventh across all 28 EU economies behind Germany, Luxembourg, Austria, Denmark, Finland and Sweden (Note: these countries, besides Germany, are not shown in the table above).

SPORTS-RELATED GDP AS A PERCENTAGE OF TOTAL GDP

The value of Australia's Sports Industry is estimated to represent 0.8 percent of total Australian GDP, placing Australia 24th (out of 28 EU countries plus Australia) by this metric. Whilst the structure of the economy differs across countries, this finding highlights that Australia is lagging behind the EU when comparing the relative importance of its Sports Industry to its domestic economy.

SPORTS-RELATED EMPLOYMENT

The EU study found that the contribution of the Sports Industry to a country's GDP is not necessarily reflective of the size of the Sports Industry's labour force (i.e., the productivity of the Sports Industry is highly variable across countries). In Australia, 1.5

percent of employees work in the Sports Industry, placing the country 11th out of 28 EU countries plus Australia. Ranked by value-added by worker (i.e., the productivity of each worker), Australia ranks 3rd behind Luxembourg and France.³ This makes Australia a relatively attractive place for investment in the Sports Industry.

SPORTS EDUCATION SERVICES

Sports education services appears as a consistent driver for the Sports Industry across the top performing EU economies. Under the EU's statistical definition of industries, education services includes the provision of sports instruction by camps and schools or by professional sport instructors, and teachers or coaches to groups of individuals. This definition overlaps with both the *Education* and *Sports Operations* segments in KPMG's study, which makes a direct comparison of the strength of this industry between the EU and Australia challenging. Nevertheless, education is evidently a key component of the Sports Industry - the education services industry is the largest component of the Sports Industry in France, Italy and Spain. In Australia it is the second largest segment of the Sports Industry according to KPMG's study.

¹ European Commission (2018). Study on the Economic Impact of Sport through Sport Satellite Accounts

² 2010 – 2013 Historical Daily Exchange Rates of the Australian Dollar Against the Euro, RBA

³ Note: Australia's FTE count (128,443) was adjusted to headcount (172,745) prior to calculating and comparing value-add per worker for direct comparison with the findings of the EU study.

Refining the EU definition of sport

CONTRASTING DEFINITIONS OF SPORT

The KPMG definition of sport includes only those industries that would be materially different in the absence of sport. In contrast, the Vilnius definition, adopted across the EU, falls under three classifications, with the scope of the KPMG definition sitting between the narrow and broad definition.

The composition of national EU Sports Industry data is only available at the broad definition level.¹ To reliably compare the size of the sports industry between EU countries and Australia, the broad Vilnius definition has to be refined to reach a suitable definition that is as comparable as possible to the KPMG definition.

ADJUSTING THE VILNIUS BROAD DEFINITION

CPA classifications produced by the European Commission outline the subcategories, which form each sector of the Sports Industry as defined in the Vilnius broad definition. Using these subcategories as a guide, best efforts have been made to determine whether the activities that comprise a sector are aligned to the Australian ANZSIC list. To maintain definitional accuracy throughout the refinement process, the following criteria was used to refine the broad definition:

1. To exclude those sectors that would not be significantly different in the absence of sport.
2. To exclude those sectors which are unable to be reconciled with the Australian definition because of fundamental differences in their estimation.

Selected examples of sectors that were removed from the broad definition to better align with the KPMG definition of sport are outlined in the table at right.

Further, the Vilnius broad definition of sport includes activities related to horse racing across its sectors. In the following international analysis, the Australian definition of sport displays the results of the main analysis plus the addition of horse-related activities. This ensures the definition of sport remains comparable across countries.

Sector		Description
H49 - H52	Land, pipeline, water and air transport services and associated warehousing services	The provision of transport services would not cease to operate in the absence of sport.
G46	Wholesale trade services	The goods and services included within this sector are unable to be reconciled with the Australian definition of wholesale services. The CPA classifications showed that the Vilnius definition goes beyond the scope of the Australian definition.
C19 C22 C25	Coke and refined petroleum products Rubber and plastic products Fabricated metal products	To be comparable with the Australian definition of manufacturing, these sectors were removed.
N78	Employment services	This sector sits outside of the scope of the Australian definition of sport.
N79	Travel agency, tour operator and other reservation services	This sector would not be significantly different in the absence of sport.
Q87	Residential care services	The operation of residential care services is not reliant on the ongoing existence of a sports industry.

¹ The European Commission. (2018). <https://op.europa.eu/en/publication-detail/-/publication/865ef44c-5ca1-11e8-ab41->

Growth potential

GROWTH POTENTIAL

The scatter chart to the right plots selected EU country's according the contribution of their Sports Industry to GDP and to the workforce. This allows for a quick comparison of the relative performance of Australia's Sports Industry against the performance of the industry in EU countries.

The four coloured quadrants can be used as a reference for relative performance:

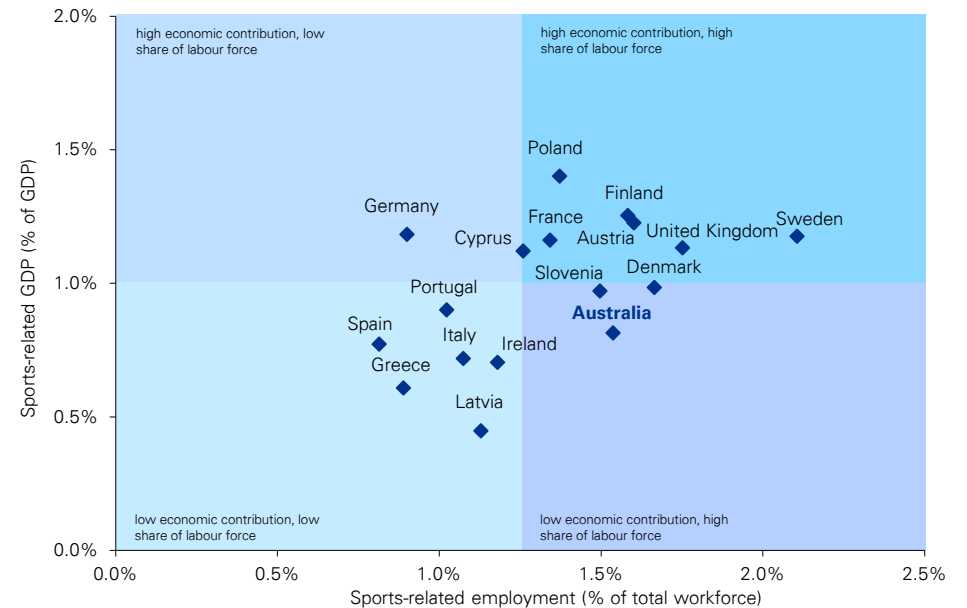
- Top left: the Sports Industry makes a high economic contribution, but represents a low share of the domestic workforce.
- Top right: the Sports Industry makes a high economic contribution, and represents a high share of the domestic workforce.
- Bottom left: the Sports Industry makes a low economic contribution, and represents a low share of the domestic workforce.
- Bottom right: the Sports Industry makes a low economic contribution, but represents a high share of the domestic workforce.

This analysis displays the contribution of the Sports Industry to GDP and to the workforce under the adjusted Vilnius definition, which allows the EU countries to be compared more closely to Australia. From this analysis, Australia lies in the low economic contribution and high share of labour force quadrant. Other countries featured in this analysis, such as Poland, Sweden and the United Kingdom show a high economic contribution and high share of the labour force, making the contribution of their Sports Industry's, in both employment and GDP, relatively stronger than Australia.

Relative to other countries, Australia's Sports Industry contributes a modest amount to GDP and the labour force. For example, Poland's Sports Industry contributes 1.4 per cent to GDP whilst Sweden's Sports Industry's share of total employment is 2.1 per cent.

Without a technical improvement or an uplift in workforce productivity it would be unlikely that a country's Sports Industry could grow to represent a larger portion of GDP without having a detrimental impact on the performance of other industries (i.e., diverting economic resources away from other industries).

Sports contribution to the economy, Australia vs selected EU countries



Hypothetical scenario: If the Sports Industry in Australia grew to represent the same portion of total economic activity as the Sports Industry does in the United Kingdom, an additional \$5.6 billion in GDP and 17,900 jobs would be supported in the Australian economy by the Sports Industry. Source: KPMG Analysis

Source: KPMG Analysis; European Commission (2018). *Study on the Economic Impact of Sport through Sport Satellite Accounts*

Growth potential (cont.)

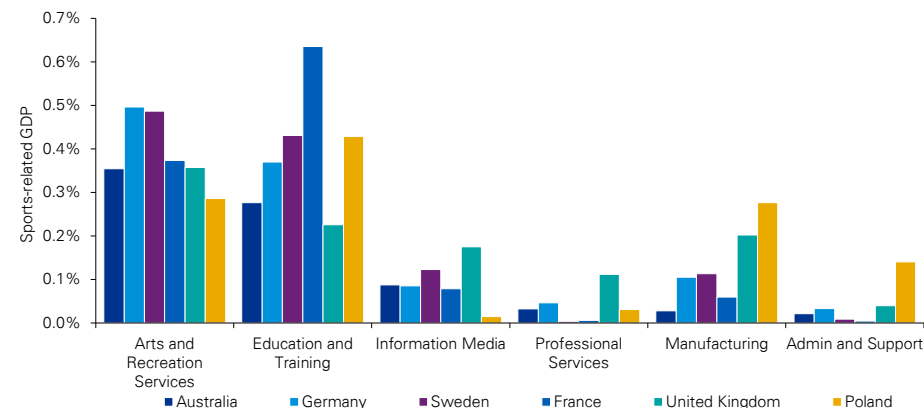
GROWTH POTENTIAL OF SPORTS-RELATED GDP

The chart below shows the sports-related contribution by industry to GDP for Australia and comparable EU countries, using the adjusted Vilnius definition.

Using the best performing (highest component of overall GDP) Sports Industries in the EU as a benchmark for industry-specific sports-related economic contribution, key areas where Australia's Sports Industry could improve have been identified below.

- Australia's **Arts and Recreation Services** trails behind the contribution made by Germany and other EU countries, signalling room for improvement.
- Although a strong performing segment for Australia, **Education and Training** fails to match the contribution made by other European countries. France's contribution is over double the size of Australia's, presenting growth potential for Australia's Sports Industry.
- Poland's sports-related **Manufacturing** industry is approximately 10 times larger than Australia's. Whilst Australia would benefit from increasing domestic production and exports of sports-related manufactured goods, Australia does not have an economic advantage in this industry and growth in this area of the industry would be challenging to achieve.

Sports contribution to GDP by industry, Australia vs selected EU countries



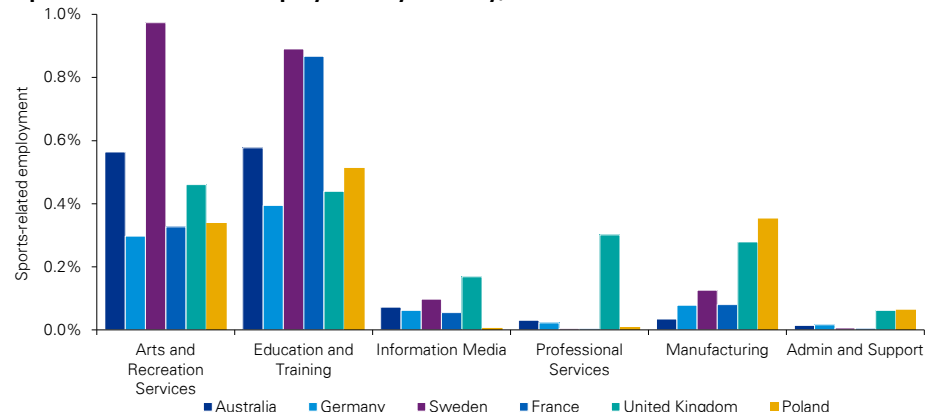
GROWTH POTENTIAL OF SPORTS-RELATED EMPLOYMENT

The following chart displays the sports-related contribution of industry to employment for Australia and best performing EU countries (highest component of overall employment related to sport).

- Sweden has the highest proportion of sports-related employment in the EU, with jobs concentrated in **Arts and Recreation Services** and **Education and Training**. Both industries contribute approximately double the amount of sports-related employment in comparison to Australia. To increase Australia's share of sports-related employment, ongoing growth potential exists across each of these industries.
- Despite Australia having the near lowest sports economic contribution in **Arts and Recreation Services** and **Education and Training**, the employment share in these industries is greater than most EU countries. The workforce in Germany, France, the United Kingdom and Poland is more efficient in these industries. This signals a potential opportunity for productivity improvements in Australia.

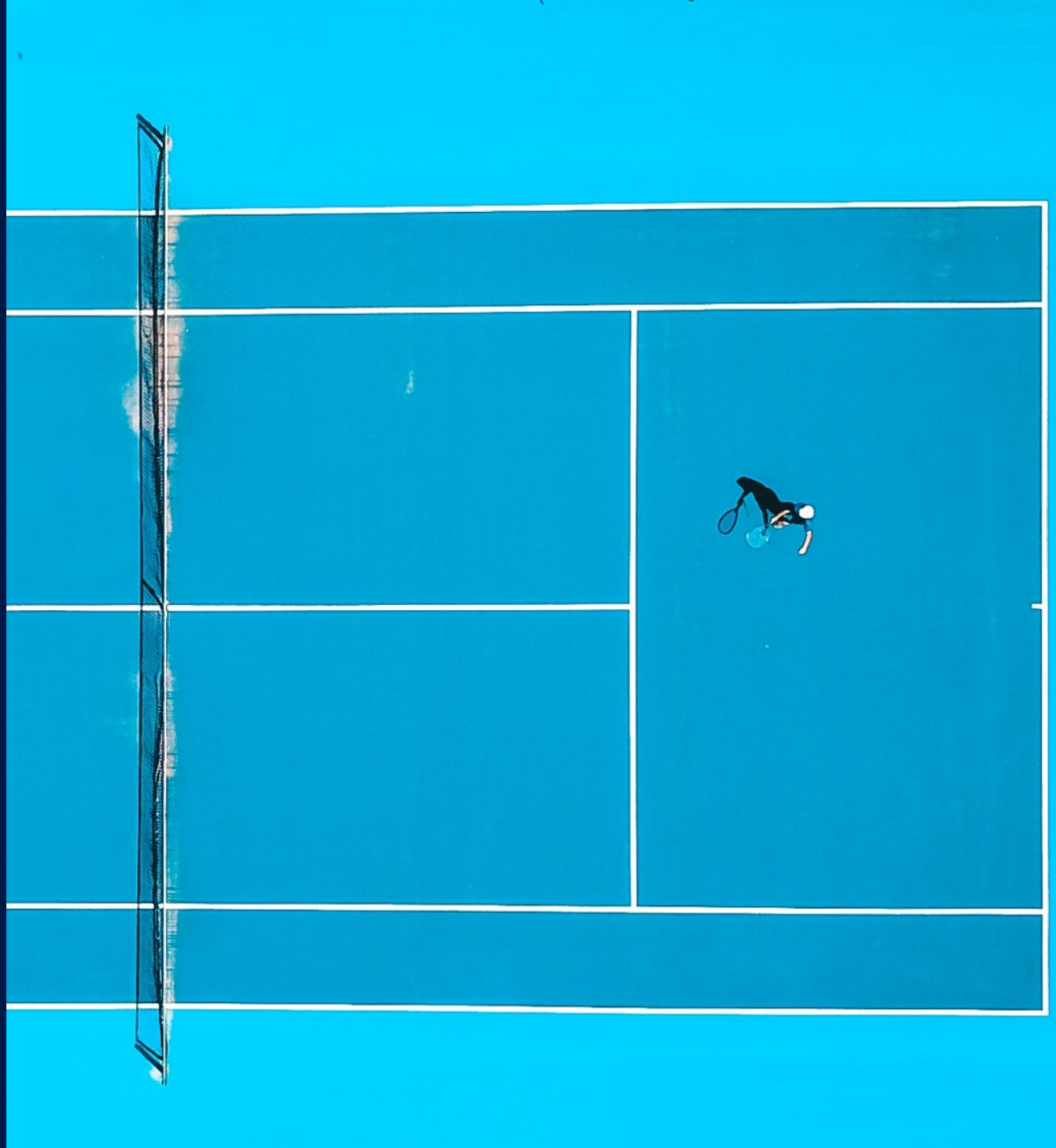
Source: KPMG Analysis; European Commission (2018). *Study on the Economic Impact of Sport through Sport Satellite Accounts*

Sports contribution to employment by industry, Australia vs selected EU countries



6. Segment analysis

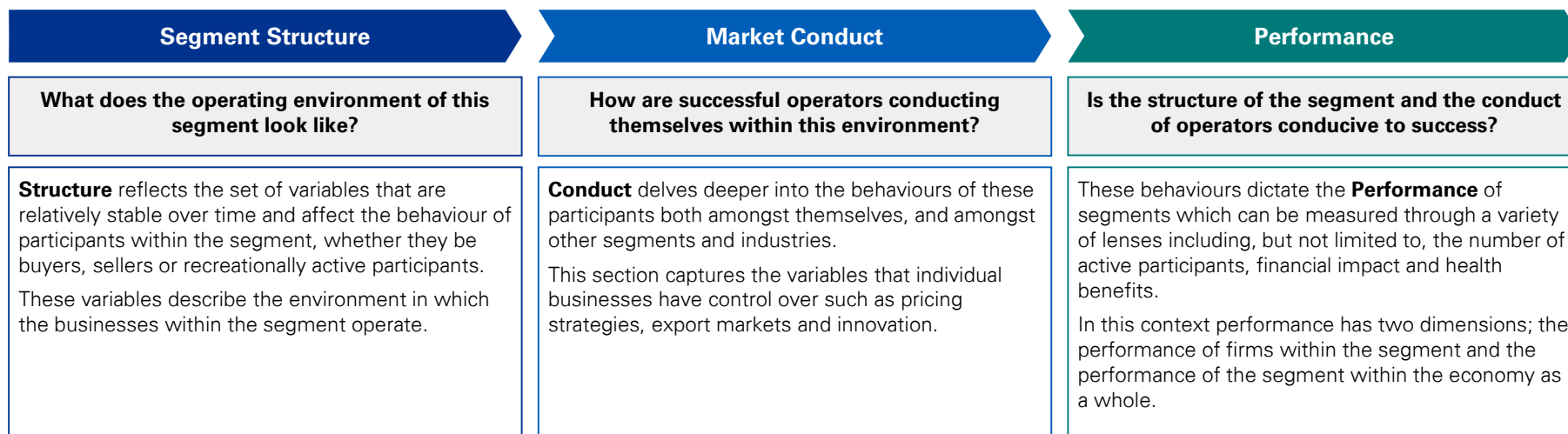
This section outlines the analysis of each segment using the Structure-Conduct-Performance framework.



SCP framework overview

THE STRUCTURE-CONDUCT-PERFORMANCE FRAMEWORK

The Structure-Conduct-Performance (SCP) framework can be used to provide a comprehensive understanding into the organisation of each segment within the Sports Industry. The content covered by the SCP framework is summarised in the diagram below:



This framework goes beyond the statistical analysis performed earlier and delivers insights into the fundamental factors that drive and facilitate the operations of the segment. The following analysis will develop the context of each segment which is to be considered alongside the attribution analysis.

Summary of performance

PERFORMANCE INDICATORS

Each sports segment has been assessed across a series of performance indicators to understand their individual economic contribution to the Sports Industry. Performance indicators are intended to support the Structure and Conduct components of the SCP analysis. Comparisons can be made across the segments given a selected indicator, such as sales or value add. In addition to the contemporaneous economic contribution of each segment in 2016/17, a sales growth indicator has been included to show how each segment has performed over time. The methodology used to derive sales growth indicators for each segment is provided in Appendix A.

Each performance indicator has been ranked from 1 to 9 (1 ranked the highest) across the segments to identify strengths and opportunities across the Sports Industry. In the SCP analysis, each rank corresponds with a descriptive measure of performance, i.e., high, medium or low. The rank for each indicator is shown at the right of each estimate in the table below.

- **High** – the performance indicator is ranked 1 to 3 across the segments.
- **Medium** – the performance indicator is ranked 4 to 6 across the segments.
- **Low** – the performance indicator is ranked 7 to 9 across the segments.

Segment performance	Sales	Value add	Employment (FTE)	Value add per worker	Exposure to imports*	Exports*	Sales Growth
Description	Total sales or industry output	Contribution towards GDP	Full time equivalent employees	Contribution of each employee to GDP	Expenditure on imported goods and services (% of sales)	Value of goods and services exported (% of domestic prod.)	Sales growth between 2012/13 and 2016/17
Sports operations	\$14,289m 1	\$5,524m 1	60,168 1	\$92k 9	\$652m (4.6%) 4	\$714m (5.2%) 5	33% 2
Education and training	\$4,972m 2	\$3,571m 2	30,416 2	\$117k 6	\$8m (0.2%) 1	\$377m (7.6%) 4	13% 5
Sports medicine and science	\$291m 8	\$185m 7	1,924 6	\$96k 8	\$3m (1.0%) 2	\$1m (0.3%) 9	67% 1
Media	\$3,613m 5	\$1,541m 4	6,009 5	\$256k 2	\$237m (6.6%) 6	\$88m (2.6%) 8	6% 8
Events, venues and facilities	\$3,982m 3	\$1,516m 5	14,958 3	\$101k 7	\$181m (4.5%) 3	\$152m (4.0%) 7	- 3% 9
Gambling	\$863m 6	\$330m 6	1,857 7	\$178k 3	\$54m (6.3%) 5	\$35m (4.3%) 6	25% 3
Equipment and apparel	\$3,628m 4	\$1,574m 3	12,318 4	\$128k 5	\$1,133 (31.2%) 7	\$372m (14.9%) 2	9% 6
Sports Tech	\$24m 9	\$3m 9	10 9	\$268k 1	\$19m (79.2%) 9	\$2m (40.0%) 1	15% 4
Nutrition and supplements	\$495m 7	\$133m 8	783 8	\$170k 4	\$176m (35.6%) 8	\$46m (14.4%) 3	7% 7



6.1 Sports operations

Sports operations encompasses all activity relevant to the management and delivery of sport from the grassroots through to the elite level.



Sports operations

Defining the good/service: The sports operations segment aims to capture all activity relevant to the administration, management and delivery of sport and recreation.

Defining the market: The operation of core sport and recreation activities such as fitness centres and sport clubs; administration of regional, state and national sporting associations or clubs or leagues; and occupations such as sports professionals, fitness instructors and sport coaches.

Segment Structure

Demand: Both physical and spectator sport participation rates drive demand in this segment.

Downstream industries: Sports gambling providers and media buying agencies contribute strongly to earnings in this segment.

Target audience: This segment caters to all demographics. It captures activity at the grassroots through to the elite level of sport.

Market concentration: Low levels of market concentration.

Capital intensity: Low to medium. Labour costs represent the largest share of business costs in this segment.

Profits re-invested: Profit is not a key performance metric for much of this segment. E.g. many sports clubs re-invest profits into improving on-field performance.

Industry assistance: Medium. Federal, state and local governments contribute significantly to this segment through enabling capital works, provision of assets and enacting policies that support physical and spectator participation.

Barriers to entry: Barriers to entry are low to medium for sports clubs and sports coaches; but very high at the professional / elite level of sport.

Market Conduct

Market strategy: Organisations need to promote their brand so that fans and players are attracted to their particular offering and spend more on their sport.

Competition: High competition within this segment due to the wide variety of sporting activities (internal competition) and alternative forms of leisure and entertainment available to the public (external competition).

Grassroots participation: The success of sports operations stems from a healthy grassroots community which enables the emergence of new talent and growth of the supporter base.

Success on the world stage: Success on the world stage boosts local fan numbers and participation.

Female participation: There has been a recent surge in female sport participation following strong support from clubs and government.

Workforce: This segment is labour intensive and relies heavily on volunteer labour at the grassroots level.

International trade: The sector is becoming more globalised as Australian consumers increasingly watch foreign-based sporting leagues. Some sports have explored international growth opportunities, for example the AFL has pushed for international growth by hosting games overseas in countries like China and England.

Performance

Sports-related sales

- **High** - estimated at \$14,289m (**rank 1 out of 9** Sports Industry segments)

Sports-related value add

- **High** - estimated at \$5,524m (**rank 1 out of 9** Sports Industry segments)

Sports-related employment

- **High** - estimated at 60,168 FTEs (**rank 1 out of 9** Sports Industry segments)

Sports-related value added per worker

- **Low** - estimated at \$92k per FTE (**rank 9 out of 9** Sports Industry segments)

Exposure to competing imports

- **Medium** – around 5% of domestically consumed products are imported (**rank 4 out of 9** Sports Industry segments)

Exports to international markets

- **Medium** – around 5% of domestically produced products are exported (**rank 5 out of 9** Sports Industry segments)

Growth/decline

- **High** – 33% growth in sales since 2012/13 (**rank 2 out of 9** Sports Industry segments)

Sales

\$14,289m

Value Added

\$5,524m

Employment

60,168 FTE

Value added per Worker

\$92k per year

Imports

\$652m (5%)*

*of all goods consumed locally

Exports

\$714m (5%)*

*of all goods produced locally

Growth in sales

33%

*2012/13 to 2016/17



Sports operations (cont.)

STRUCTURE

Key activities associated with this segment

Key activities include the operation of core sport and recreation activities such as fitness centres and sport clubs; administration of regional, state and national sporting associations or leagues; and occupations such as sports professionals, fitness instructors and sport coaches. In addition to the core activities, there are also enabling services such as turf growing, boat building and professional services providing research, data analytics and engineering services.

Participation in sports and physical activities

Sports Australia's AusPlay survey revealed the top participation sports and physical activities for Australians in 2018.¹ Results are shown in the table below.

Activity	Annual participants	Percentage of population
Walking	8,783,064	35%
Fitness / gym	6,874,541	27%
Swimming	4,505,531	18%
Running / athletics	3,334,693	13%
Cycling	2,359,660	9%
Football (soccer)	1,767,288	7%
Tennis	1,202,011	5%
Bush walking	1,189,493	5%
Basketball	1,017,968	4%
Golf	1,015,150	4%
Yoga	984,362	4%
AFL	913,668	4%
Netball	901,903	4%
Cricket	798,618	3%
Dancing	688,293	3%

Spectator participation by sport

Analysis of attendance data reveals AFL to be the most attended sporting code in Australia by a significant margin.² Results are shown in the table below.

Sport	Total attendance	Average attendance per event
AFL	7,952,040	23,895
Rugby League	3,520,070	17,130
Cricket	2,095,106	21,163
Football (soccer)	1,963,885	7,951
Basketball	818,900	6,499
Rugby Union	657,942	15,665

Demand drivers

- **Sport participation:** rates of sports participation are the backbone of this segment. Growth in sports participation rates is supported by success on the world stage, physical education at schools and a healthy and inclusive grassroots community.
- **Spectator sport participation:** revenue earned through broadcasting rights and sponsorship of elite sporting events strongly supports this segment. An increase in spectator / viewership numbers creates additional advertising value and therefore revenue for this segment.
- **Government support:** policies that encourage sports participation are favourable for this segment.
- **Health conscious consumers:** the general public is becoming increasingly health conscious, increasing demand for gyms and fitness centres. Fitness / gym was the second most participated in physical activity in 2018.
- **International interest:** there is considerable scope for Australian sports to become an interest in international markets (e.g. AFL) and / or for Australia to invest in increasing talent in sports that are already established on the international stage (e.g. football marquee players).



Sports operations (cont.)

- **Changing participation preferences:** there has been a recent and ongoing shift in participation trends, with higher growth in the less formal or less organised sport and recreation activities (i.e. a shift towards active recreation). In addition, cultural changes as Australia becomes more multi-cultural has led to a shift away from traditional sports to those that historically had lower participation.

CONDUCT³

Focus on membership base

AFL and NRL clubs have made significant efforts to increase their revenue base by expanding into more stable revenue streams, including drives to grow their membership bases.

Negotiating high value broadcasting rights

As television channels increasingly demand live content, administrators in this segment have successfully negotiated higher-valued broadcasting rights. This has led to strong growth for the segment overall.

Code competition

Competition among sporting codes has become more intense over recent years, beyond broadcast rights deals.

- **Nationalisation:** Many top-tier sporting competitions have made efforts to expand beyond their home state and nationalise their competitions.
- **Differentiate:** Sporting codes have sought to increase market share by introducing new variations of the sport. The Big Bash League was introduced in 2011, while AFL Women's and AFLX began in 2017 and 2018, respectively. Increased participation has particularly benefited amateur sports leagues through growth in competition fees.
- **International:** International sports have emerged as a competitive threat to the domestic sports operations industry, as pay TV and streaming platforms make spectating these sports increasingly accessible. Notable competitions include the English Premier League as well as the US-based NBA and NFL.

Supporting grassroots sports

The long-term success of sporting codes stems from supporting a healthy grassroots community from which new talent and a long-term fan base emerges. The larger sporting codes (e.g., AFL, Cricket, NRL, Soccer etc.) provide special community programs, junior competitions and in-school training experiences.

Promoting female participation in sport

Female participation in sport has surged in recent times. Codes that have actively promoted and supported female participation, particularly in traditionally male-dominated sports, have seen growth in participation rates, attendance rates and revenue in recent years. Notable examples are AFL Women's and Women's cricket.

Marketing

Effective marketing campaigns result in more spectators on a regular basis and greater sport participation.

Technological change

Sporting codes that provide content on online platforms and provide additional content for users are likely to attract market share. Interactive mediums such as fantasy sports ensure that fans are engaging with the sport on a more regular basis.

High volunteer reliance

Much of this segment is highly reliant on a partially voluntary workforce, including roles such as coaches, officials, administrators and food and beverage operators. As a result, the true value add per worker (i.e. if calculated by total worker hours inclusive of volunteer hours) is likely to be materially lower than that reported within this analysis, and this segment already has the lowest value add per worker.

Sport governance

The sector has a common structure within a given sport. Individual clubs are affiliated as part of a local or regional sport association, which in turn is a member division of a state sporting organisation (SSO), which also is responsible to a national sporting organisation (NSO). Each tier of governance has a different role and responsibility, with these differing based on the maturity and professionalism of the sport.



Sports operations (cont.)

PERFORMANCE

Qualitative outcomes

The links between physical activity and improved health outcomes are well-established and accepted. The Federal Department of Health's physical activity guidelines are based on a 2012 systematic review of 127 journal articles that found physical activity is associated with numerous health benefits.⁴ In particular, a high level of evidence was found for several health outcomes including cardio-metabolic health, adiposity and the prevention of obesity, musculoskeletal health, mental health and cardiorespiratory fitness.

Improved health outcomes provide private benefits to individuals through quality of life enhancements, increased productivity and income-earning potential and through lower costs of living insofar as a portion of associated medical expenses is borne by the individual. Importantly, from a public policy point of view, improved health outcomes also provide public benefits by reducing the burden on the public health system and by increasing the productive capacity of the economy.⁵

In 2018, KPMG and Sport Australia released a report that explored the Value of Community Sport Infrastructure within Australia.⁶ This report found that the total annual value was at least \$16.2 billion, of which only \$5.5 billion related to direct economic activity. The remainder included \$4.9 billion in health value, \$5.1 billion in social value and \$0.8 billion in health induced productivity improvements. This provides some insight into the relative magnitude of the broader value generated by sport and physical activity.

Quantitative analysis

- Relative to other sports segments the sports operations segment is, naturally, the largest contributor to the Sports Industry in terms of sales, value add and employment. The sports operations segment is at the core of the Sports Industry.
- Value add per worker is low (reflective of the low wages offered by this segment) which suggests that investments in this segment are not likely to add more monetary value to the economy than investments in other segments. A focus on improving the productivity of the workforce in this segment is desirable. That

considered, value add per worker does not capture the value of the many positive externalities associated with this segment and it is likely that investments in this segment will lead to positive qualitative outcomes for society as a whole.

- The segment has a moderate exposure to international trade.
- This segment has experienced an impressive growth in sales of 33% between 2012/13 and 2016/17, while aggregate sales across all industries in the economy grew by just 26% over the same period.

KEY INSIGHTS

Increasing the sport participation rate, both physical and spectator, is the key to facilitating growth in this segment. As the cornerstone of the Sports Industry, growth in the sports operations segment creates positive flow-on benefits across all segments. Rising health consciousness amongst the general public provides an opportunity for the sports operations segment to harness these sentiments and boost the sports participation rate. In particular, female participation in sport and female spectatorship is a key growth opportunity.

Sources:

¹ Sports Australia, 2018 AusPlay survey. Based on annual participation (organised out-of-school activities only for children 0-14; all activities for adults 15+).

² AusStadiums (2018/19).

³ IBISWorld Pty Ltd.

⁴ Okely, Anthony D., et al. "A systematic review to update the Australian physical activity guidelines for children and young people." (2012).

⁵ KPMG (2018). Policy options to reduce cost barriers to children's participation in sport.

⁶ KPMG (2018). The Value of Community Sport Infrastructure (https://www.clearinghouseforsport.gov.au/__data/assets/pdf_file/0007/804067/VoCSI_Final_June_2018.pdf).



6.2 Education and training

Participation in sports-related education and training to improve employment prospects and facilitate entry into the Sports Industry.



Education and training

Defining the good/service: Enrolment in sports-related education allows students to up-skill, re-train, enter the workforce for the first time or improve employment prospects in the Sports Industry following course or program completion.

Defining the market: The availability and accessibility of sports-related training for students to improve employment opportunities in the Sports Industry. This includes primary and secondary education services, VET education and higher education.

Segment Structure

Demand: Those interested in gaining the skills necessary to work within the Sports Industry. Motivation includes the availability of work opportunities in the Sports Operations segment in Australia and overseas.

Public funding: Government funding can affect the availability of positions, and the cost and accessibility of education and training for students. Government policies can encourage people to participate in further education.

Changing workforce: The casualisation of the workforce and changes in the unemployment rate has encouraged students to enrol in education to improve employment prospects.

Student enrolments: The restriction of placements prevents access to courses.

International landscape: International students are an important part of the higher education sector as students increasingly choose to study in Australia. These students must meet specific criteria to be eligible to study in Australia.

Institutional setting: Operating as part of the broader education system, sports education draws on subject matter from other disciplines to create sports-specific content.

Market Conduct

International market: Australia attracts a large number of international students seeking to attain education and training qualifications relevant to a range of industries, including sport.

Flexible study options: Different modes of attendance are available for students to improve the accessibility of study.

Facilities: State-of-the-art facilities improve student outcomes and practical experience.

Industry needs: To attract enrolments, providers need to respond and anticipate the needs of the industry, in this context driven largely by the needs of the domestic and international Sports Operations segment.

Innovation: Integration of new technologies with traditional teaching techniques to support learning, including on the job.

Industry partnerships: Partnerships with organisations can improve learning opportunity and employment outcomes for students.

Performance

Sports-related sales

- **High** - estimated at \$4,972m (**rank 2 out of 9** Sports Industry segments)

Sports-related value add

- **High** - estimated at \$3,571m (**rank 2 out of 9** Sports Industry segments)

Sports-related employment

- **High** - estimated at 30,416 FTEs (**rank 2 out of 9** Sports Industry segments)

Sports-related value added per worker

- **Medium** - estimated at \$117k per FTE (**rank 6 out of 9** Sports Industry segments)

Exposure to competing imports

- **Low** – around 0.2% of domestically consumed services are imported (**rank 1 out of 9** Sports Industry segments)

Exports to international markets

- **Medium** – around 8% of domestically produced services are exported (**rank 4 out of 9** Sports Industry segments)

Growth/decline

- **Medium** – 13% growth in sales since 2012/13 (**rank 5 out of 9** Sports Industry segments)

Sales



\$4,972m

Value Added



\$3,571m

Employment



30,416 FTE

Value added per Worker



\$117k per year

Imports



\$8m (0.2%)*

*of all goods consumed locally

Exports



\$377m (8%)*

*of all goods produced locally

Growth in sales



13%

*2012/13 to 2016/17



Education and training (cont.)

STRUCTURE ¹

Public funding

The education industry receives federal and state government funding. Government funding affects the availability of student places and the cost of education and training for students. Government policies can encourage people to participate in tertiary education by providing subsidies for courses, increasing the number and range of funded training institutions. The introduction of the VET Student Loans scheme in January 2017 imposed tighter course eligibility requirements, reduced the cap available on loans, and reduced or removed subsidies for many courses impacting demand for vocational education.

Changing workforce

To remain competitive in the changing employment landscape, workers generally seek to update their skills or re-train to improve employment prospects. As competition rises, further education will likely become more important for employment, encouraging students to enrol in vocational education. With unemployment rises, demand for vocational education and training increases as people seek to increase their skills and enhance their employability.

Student enrolments

The Federal Government uncapped university places and implemented a demand-driven system in the sector in 2012. These structural changes allowed students that would otherwise have enrolled at TAFE or another VET provider to enrol at university. Assuming eligibility criteria is met, this change allows all students the opportunity to study their preferred training course.

International landscape

The reputation of education providers (largely based on rankings reflecting research capability) and the cost of courses affect overseas enrolments in Australian education services. Education providers need to employ qualified and experienced teaching staff to build a positive reputation and offer high-quality courses, and are required to maintain strong research programs. Fluctuations in the Australian dollar also impact the price competitiveness of Australian institutions.

To study vocational education and training in Australia, international students are required to obtain a study visa subclass 500. To be eligible, students must already be

accepted into a full-time place at a provider listed on the Commonwealth Register of Institutions and Courses for Overseas Students. Applicants are also required to undergo other assessments to confirm their eligibility to study in Australia.

CONDUCT

International market

The international student market represents a key export industry for Australia and continuing to attract foreign students is crucial for ongoing success of the industry. The largest share of international students in Australia as at September 2019 are from China, India and Nepal.²

In 2018, 4,247 international students enrolled in Sports and Recreational vocational education and training courses representing 1.8 per cent of international enrolments and 0.16 per cent of the total student (domestic and international) share. The international appetite to study Sports and Recreation in Australia is slowly growing. International enrolments grew just under 5 percent from 2017 to 2018 from 4,050 students to 4,247 students.³

At the higher education level, sport and recreation educational courses have a significantly lower component of international student completions compared to other fields of education. In 2018, international student sport and recreation completions represented 8.2% of total completions, while 37.3% of overall higher education completions were by international students. The fields of education (outside of sport, which has been defined for this analysis) with the lowest proportion of international student completions were education at 12.4% and health at 15.2%, and the highest were information technology at 67.9% and management and commerce at 63.2%. This indicates that there may be a significant opportunity to increase the export of sport and recreation higher education.

Flexible study options

Flexible study options allow students to choose how to study and reach education milestones. Whether a student needs to combine study with other commitments such as balancing a full-time job or family life, having options makes study more accessible. To improve flexibility, education providers offer a number of study modes including: on campus, online, part-time, intensive and mixed-mode attendance.



Education and training (cont.)

Facilities

Facilities available by an institution can differentiate the learning outcomes of students and provide a point of difference for attracting future students. In the context of sport, exposing students to the practical tools and equipment used in the workplace increases familiarity and competency when moving into the industry. Facility quality is also an important predictor of teacher retention.

Industry needs

In 2018 there were 106,370 domestic enrolments in the field of Sport and Recreation.³ This represented approximately 4 per cent of all domestic enrolments in vocational education and training. To attract future enrolments and stimulate further levels of education in the Sports Industry, providers must understand industry needs and anticipate changes in demand. Remaining adaptive to the needs of the Sports Industry will ensure the courses and skills desired by students are available when required.

Innovation

Various technologies have been adopted by education providers to support student learning, such as digital classrooms and online assessments. Industry participants are increasingly delivering courses online and making programs more accessible by developing their mobile capabilities.

Industry partnerships

Partnerships with reputable organisations and institutions provides students with access to apprenticeships and traineeships that improve learning opportunities and enhance employment outcomes.

PERFORMANCE

- Relative to other segments the education sector is a major contributor to the Sports Industry in terms of sales, value added and employment.
- Value add per worker is moderate which suggests that contributing to the workforce is unlikely to add significant monetary value to the economy compared to other segments.

- The segment currently experiences limited competition from international suppliers, and, given the inclusion of all levels of education services in this segment, experiences moderate demand from overseas markets. Education exports are driven by international students in the higher education sector.
- The segment experienced 13 per cent growth in sales between 2012/13 and 2016/17 which was supported by growth in the higher education sector. The higher education sector represents a relatively small proportion of this segment. This may change if the Sports Operations segment continues to grow in size and sophistication and the higher education sector sees opportunities to develop and deliver internationally recognised sports-related courses.

Note: The SCP analysis has focussed on vocational and higher education as this was considered to be where potential economic growth opportunities may be uncovered. Primary and secondary teaching can be thought of as similar to much of the sports operations segment, in that they do not have a profit motive and largely exist to deliver participation and physical literacy outcomes. Government intervention in this space is similarly undertaken with a view to support, such as the Commonwealth Sporting Schools program.

KEY INSIGHTS

Remaining responsive to industry needs is vital to attracting future enrolments. The courses available to students must align to the needs of the Sports Industry and be revised often, as the skills demanded by the industry change. The possibility of improved employment prospects is attractive to potential students.

Further, international students present a growth opportunity for the segment, particularly in higher education. As Australian education exports grow, the Sports Industry could showcase its tertiary sports-related course offerings internationally to increase Australia's market share of international students enrolled in sports-related courses.

Sources:

¹ IBISWorld Pty Ltd.

² Student numbers, Department of Education.

³ Total VET activity program enrolments 2014-18, NCVER VOCSTATS.



6.3 Sport medicine and science

The delivery of health services or research to restore / maintain physical health, improve performance and provide a competitive edge for elite athletes.



Sports medicine and science

Defining the good/service: This segment involves the diagnosis and treatment of injuries and illnesses associated with exercise. Services provided by this segment aim to restore / maintain physical health, improve performance and provide a competitive edge at the elite level of sport.

Defining the market: This segment captures activity related to the delivery of health services, or research within the field of sport / sports science.

Segment Structure

Demand: Underlying demand is driven by rates of sports participation and type of sport (injury-prone sports support demand in this segment). An ageing population is also supporting demand in a similar way. Further, the professionalisation of sport, and increased drive from athletes to gain an edge / marginal improvement, is increasing the focus on sports science.

Target audience: This segment caters to all demographics.

Market concentration: Low levels of market concentration.

Capital intensity: Low to medium. Majority of business costs are labour costs. Sophisticated operators require costly laboratory and equipment costs.

Industry assistance: Low level of assistance via various government insurance schemes.

Barriers to entry: Medium. Difficult for new entrants to acquire a client base.

Regulation: Medium. Qualifications and registrations are required.

Market Conduct

Market strategy: Educating the general public about the benefits of sports medicine, science and health care in order to expand market share.

Research: Conducting research in order to discover new / enhanced treatments to take to market.

Competition: High competition within this segment, both within industry and across service types.

Peak bodies: Accreditation and qualification is usually administered and regulated by peak bodies within the industry.

Workforce: This segment is labour intensive. Employees are highly qualified.

International Trade: Low imports and exports. Operations are predominantly domestic.

Performance

Sports-related sales

- **Low** - estimated at \$291m (**rank 8 out of 9** Sports Industry segments)

Sports-related value add

- **Low** - estimated at \$185m (**rank 7 out of 9** Sports Industry segments)

Sports-related employment

- **Medium** - estimated at 1,924 FTEs (**rank 6 out of 9** Sports Industry segments)

Sports-related value added per worker

- **Low** - estimated at \$96k per FTE (**rank 8 out of 9** Sports Industry segments)

Exposure to competing imports

- **Low** - around 1% of domestically consumed services are imported (**rank 2 out of 9** Sports Industry segments)

Exports to international markets

- **Low** - around 0.5% of domestically produced services are exported (**rank 9 out of 9** Sports Industry segments)

Growth/decline

- **High** - 67% growth in sales since 2012/13 (**rank 1 out of 9** Sports Industry segments)

Sales



\$291m

Value Added



\$185m

Employment



1,924 FTE

Value added per Worker



\$96k per year

Imports



\$3m (1%)*

*of all goods consumed locally

Exports



\$1m (0.5%)*

*of all goods produced locally

Growth in sales



67%

*2012/13 to 2016/17



Sports medicine and science (cont.)

STRUCTURE ^{1 2 3 4}

Key activities associated with this segment

This segment captures activity related to the delivery of health services, or research within the field of sport / sports science. The activities predominately captured in the quantitative analysis of this segment are physiotherapy, chiropractic and osteopathic services.

Peak bodies

- Australasian Academy of Podiatric Sports Medicine
- Australasian College of Sport and Exercise Physicians
- APA – Sports Physiotherapy Australia
- APS – College of Sport and Exercise Psychologists
- Exercise and Sports Science Australia
- Sports Chiropractic Australia
- Sports Dieticians Australia
- Sports Doctors Australia

Demand drivers

- **Sport participation:** Participation in organised and casual sports can lead to injuries that require specialised sports medicine and science services. Some sports have a higher risk of injury than others.
- **Disposable income:** Rates of participation in organised sport and expenditure on non-critical sports related health services increase with disposable income.
- **Private health insurance/Medicare:** Health insurance reduces the out-of-pocket expenses for health services. A lift in the financial rebate or an expansion of services covered by insurers will lead to an increase in demand.

Target audience

The majority of revenue earned by sports health professionals is derived from injuries incurred in amateur sports. Professional sports associations and clubs only contribute a minor proportion to industry revenue.

Barriers to entry

- **Regulation:** Participation in this segment requires necessary qualifications and operators must meet relevant regulatory requirements.
- **Competition:** This segment is highly competitive and acquiring an adequately large customer base to cover initial investment requirements is challenging for new entrants.

CONDUCT ^{2 3 4}

Research and development

Advances in the treatment of physical conditions are largely informed by clinical research. Successful operators leverage R&D to differentiate themselves in the marketplace by providing the latest and most effective treatment methods.

Reputation

Operators that establish reputations in the community and the medical profession for sound and consistent results are more likely to attract and maintain a client base.

Specialised services

Operators in this segment are increasingly offering specialised services, such as tailored treatment services to professional sports teams and elite athletes.

Membership of an industry organisation

Becoming a member of an industry organisation signals credibility to the marketplace and allows for industry accreditation.

Optimising price & lobbying for insurance coverage

Successful operators optimise fees at a level that maximises profitability while remaining attractive to customers. The ability to offer private health insurance rebates can also influence pricing structures.



Sports medicine and science (cont.)

PERFORMANCE

- Relative to other sports segments the component of the sports medicine and science segment that we have been able to identify contributes a low to moderate amount to the Sports Industry in terms of sales, value add and employment.
- Value add per worker is low for this segment, however this is likely to reflect that there are a number of sports medicine related occupations that have low associated wages. There is the potential that workers in high end science and performance improvement may have higher value add per FTE than what appears in the quantitative analysis.
- The segment has a low exposure to international trade.
- This segment has experienced an impressive growth in sales of 67% between 2012/13 and 2016/17, while aggregate sales across all industries in the economy grew by 26% over the same period.
- There is scope for this industry to continue growing as the population ages, sports participation increases, and consumers become more aware of the health benefits associated with sports medicine and science. Scope exists for pockets of high value add activities at the elite level of sport.

Sources:

- ¹ Sports Medicine Australia.
- ² IBISWorld Pty Ltd.
- ⁴ Exercise & Sports Science Australia.
- ⁵ Australian Physiotherapy Association.

KEY INSIGHTS

As the community ages and participation in sport rises, the potential for sport injuries and the demand for preventative measures is likely to increase, in turn boosting expenditure on sports medicine and science.

Ongoing innovations to improve performance at the elite level is also necessary to maintain a competitive edge. This analysis indicates that growth in this segment is reliant on the effective development of new treatments that appeal to professional sports teams and elite athletes.

6.4 Media

The development, packaging and delivery of sport content, including broadcasting and associated commercial activities.

Media

Defining the good/service: The development, packaging and delivery of sport content, including broadcasting and associated commercial activities.

Defining the market: The competition between market players to secure broadcasting rights for major domestic and international sporting leagues and events via traditional and emerging platforms.

Segment Structure

Demand: Sport participation and spectator sport participation drive the demand for this segment which is more heavily influenced by sports with large fan bases.

Target audience: Avid sports fans and leisure viewers consume sports media across a number of platforms including television, radio and magazines.

Broadcasting rights: Intense competition between market players to secure broadcasting rights deals for live sport games. Few networks compete for top-tier leagues and international sporting events.

Time sensitivity: Sports is time-sensitive as viewers expect to be able to watch sports events live, increasing the demand for these programs over other types of entertainment.

Globalisation: Increasing within the segment as technology develops and consumers have more access to international sporting markets.

Regulation: The Federal Government imposes anti-siphoning legislation to ensure greater access to sporting events.

Content: This segment is highly reliant on the quality of the sporting content that can be broadcast. In this way, it is closely linked with the events, venues and facilities segment.

Market Conduct

Shifting strategy: Live sports provide a halo effect for industry operators, enabling improved ratings for the overall network.

Digital dominance: Technological change has driven changes in consumer viewing patterns, with viewers choosing to consume media across a range of multimedia platforms.

Online presence: Illegal streaming and downloading websites threaten legitimate viewership.

Import markets: Australian consumers have a growing desire to watch international events and sporting leagues.

Export markets: Top-tier sporting competitions have made efforts to expand beyond Australia and to internationalise their competitions.

New products: Sports have been adjusting their traditional competitions in order to respond to changing consumer preferences (e.g. T20 Cricket).

Alternate / complementary experiences: The consumption of sport is increasingly being enhanced with complementary experiences such as sports betting integration or fantasy sports competitions.

Performance

Sports-related sales

- **Medium** – estimated at \$3,613m (**rank 5 out of 9** Sports Industry segments)

Sports-related value add

- **Medium** – estimated at \$1,541m (**rank 4 out of 9** Sports Industry segments)

Sports-related employment

- **Medium** – estimated at 6,009 FTEs (**rank 5 out of 9** Sports Industry segments)

Sports-related value added per worker

- **High** – estimated at \$256k per FTE (**rank 2 out of 9** Sports Industry segments)

Exposure to competing imports

- **Medium** – 7% of domestically consumed products are imported (**rank 6 out of 9** Sports Industry segments)

Exports to international markets

- **Low** – 3% of domestically produced products are exported (**rank 8 out of 9** Sports Industry segments)

Growth/decline

- **Low** – 6% growth in sales since 2012/13 (**rank 8 out of 9** Sports Industry segments)

Sales

 \$3,613m


Value Added

 \$1,541m

Employment

 6,009 FTE

Value added per Worker

 \$256k per year

Imports

 \$237m (7%)*

*of all goods consumed locally

Exports

 \$88m (3%)*

*of all goods produced locally

Growth in sales

 6%

*2012/13 to 2016/17

Media (cont.)

STRUCTURE ^{1 2}

Broadcasting rights

Live sports are some of the most popular events on television and radio, generating substantial advertising revenue for broadcasting rights holders. Acquiring the rights to live sport is a lucrative market as it retains its value on television, in contrast to regular programming that many consumers can watch online, at a later date or on-demand. Television networks are increasingly reliant on broadcasting live sports to generate ratings, boosting advertising revenue.

Examples of broadcasting competitors include free-to-air channels Channel 7, Channel 9 and Channel 10, pay-television players Foxtel, Telstra and Fox Sports and online streaming services such as Kayo Sports and Optus Sport.

To gain an understanding of the competitiveness of acquiring sports media rights:

- In August 2015, the AFL signed a six season broadcast rights deal with Channel Seven, Foxtel and Telstra valued at \$2.5 billion. The value of the new deal exceeded the previous \$1.3 billion five-year deal signed in 2011.
- The Australian Rugby League Commission, which oversees the NRL, signed a five season \$1.8 billion deal in November 2015 with Channel Nine, Fox Sports and Telstra.
- Cricket Australia secured a six-year \$1.2 billion deal in April 2018 with Fox Sports and Channel Seven to broadcast Australian international cricket matches, the Twenty20 Big Bash Leagues and other domestic cricket competitions.

Time sensitivity

Broadcasting rights have become increasingly important to broadcasting networks, as consumers have little desire to watch a sports match or event once the outcome is known. As a result, live sports is a key driver of ratings growth for many major players as the event loses value once the match is over.

Globalisation

The sector is becoming more globalised as Australian consumers increasingly watch foreign-based sporting leagues via online and pay-television platforms, with examples

including the English Premier League and the US National Basketball Association.

Regulation

The Federal Government imposes anti-siphoning legislation (derived from Section 115 of the Broadcasting Services Act (1992)) to ensure that certain sporting events are not provided exclusively on pay-television and are televised at no cost to the general public. Major events such as the Olympic Games, the Melbourne Cup, the Australian Open, AFL and NRL finals, cricket and other events are covered in the anti-siphoning legislation. The list is split between Tier A events, which have to be shown on main free-to-air channels, and Tier B events, which can be shown on digital multi-channels or other platforms.

CONDUCT

Shifting strategy

Television networks have shifted their strategies to maximise ratings and increase their advertising revenue in response to changing viewing patterns. There is growing competition between television networks to acquire live sports broadcasting rights that are rating successes (such as the NRL, AFL, Spring Carnival, Australian Open, Summer Olympics and Winter Olympics) which lead to further benefits over traditional television programs. Acquiring these rights enables networks to use in-game advertising to cross-promote their own programs, or boost ratings for shows that air directly before or after a sporting event.

New / adjusted products

Sports have been developing different versions of their matches in order to respond to changing consumer preferences, such as T20 cricket which is considered to appeal to a wider audience as it is a shorter and more intense form of cricket. In addition, sports have been looking at adjusting rules within traditional forms of sport with a view to increasing the viewership of matches.

Alternate / complementary experiences

The consumption of sport is increasingly being enhanced with complementary experiences such as the integration of sports betting within broadcasting, or fantasy sports competitions.

Media (cont.)

Digital dominance

Sports broadcasting is migrating to online and mobile platforms providing an alternative viewing platform to traditional television or radio. Competition for digital and online streaming rights is likely to intensify as rivals such as Telstra and Optus aim to leverage coverage of sporting competitions like the English Premier League to increase sales for their core products.

Online presence

The online presence is significant as viewers seek to watch international sporting events. As illegal streaming and downloading websites become more accessible along with faster internet connection speeds, viewership numbers through legitimate broadcasting platforms is threatened.

Import markets

The growing fan bases of international leagues, such as the National Football League and National Basketball League has caused Australian broadcasters to compete to import overseas sports leagues. For example, Optus Sports has exclusive rights to the live coverage of the English Premier League until 2021/22. Further, broadcasters compete for the rights to major annual international sporting events such as the Tour de France (SBS until 2023) and Super Bowl (Seven Network until 2022).

Export markets

Although sporting codes exist elsewhere, the national segment is dominated by local sporting leagues which have little viewership outside of Australia. This landscape is changing as national leagues try to internationalise their sport. The AFL has expanded to playing games overseas in countries like China and England. In 2017 the AFL played its first premiership season fixture between Gold Coast and Port Adelaide in Shanghai, China. Major Australian sporting events such as the State of Origin are exported internationally via international broadcasting channels such as Sky Sports.

PERFORMANCE

- Relative to other sports segments, the media segment is a moderate contributor to the Sports Industry in terms of sales, value add and employment.
- Value add per worker is high relative to its contribution which suggests that investment in the workforce is likely to add more value to the segment than investment in other segments.
- The segment has moderate exposure to international trade although demand for Australian media exports is low. This may present an opportunity for growth.
- Media has experienced minimal sales growth of 6 per cent between 2012/13 and 2016/17, representing one of the lowest growth rates across the segments.

KEY INSIGHTS

As demand for broadcasting live sports increases amongst players in the sports media segment, the cost of acquiring broadcasting rights is likely to continue increasing. With the ongoing emergence of online platforms, traditional and digital networks are experiencing increased competition.

Although Australia demonstrates high interest in international sporting leagues, this is generally not reciprocated and there is currently limited overseas interest in domestic sporting competitions. If Australia is able to successfully increase international demand for its national sporting leagues, there is a potential growth opportunity via export markets.

Sources:

¹ IBISWorld Pty Ltd.

² Winning in the business of sports, (2014), AT Kearney.



6.5 Events, venues and facilities

Events that provide a platform for participation in sport and enable live spectator consumption, and the operations of sports venues and facilities in which sport and events occur.



Events, venues and facilities

Defining the good/service: Activities engaging in operating indoor or outdoor sports and physical recreation venues, grounds and facilities. Events, venues and facilities facilitate participation in sport and recreation and provide a platform for spectators to consume live sport.

Defining the market: The segment captures major events, marathons, professional sports competitions, event ticket sales, venue and facilities operation, administration and management. The target audience is broad.

Segment Structure

Demand: Demand is driven by the general public's preferences for sport, either as a spectator or participant. Major demand drivers are discretionary spending on sports, recreation and culture; sports participation rates; and public capital expenditure.

Target audience: Venues and facilities enable spectator participation and physical participation in various sports. This segment caters to a wide range of people with a wide range of sport-related interests. Major events attract international audiences.

Market concentration: Low levels of market concentration.

Capital intensity: Highly capital intensive.

Technology: Moderate level of technological change, primarily in the development of new facilities and upgrading existing facilities to enhance user/spectator experiences.

Industry assistance: High level of assistance. Majority of large scale venues established with assistance of government funding, and many events also receiving subsidisation depending on the scale / type of event.

Barriers to entry: High due to capital requirements. Large scale venues typically require public assistance.

Market Conduct

Market strategy: Understanding changing consumer preferences for sport, effective marketing campaigns, innovation and event planning.

Competition: Moderate competition. Venues compete for events and contracts with major sports teams, with particular competition between states / territories. Venues and facilities compete with alternative forms of entertainment and physical recreation for a portion of the household budget.

Innovation: Participation growth (both spectator and physical) is supported by the continual maintenance and upgrading of venues and facilities. For stadium operators, the quality, location and capacity of the venue are differentiating factors.

Purchases: Purchases include merchandise, food and beverages sold at sports grounds.

Workforce: Jobs range from stadium operation management positions to groundskeepers to ticket collection staff. Much of the industry at the grass-roots level also relies on volunteer labour.

International trade: Low imports and exports. Operations are predominantly domestic. Events can attract tourism (exports), however it is noted that this has not been captured within the quantitative analysis of this segment.

Performance

Sports-related sales

- **High** - estimated at \$3,982m (**rank 3 out of 9** Sports Industry segments)

Sports-related value add

- **Medium** - estimated at \$1,516m (**rank 5 out of 9** Sports Industry segments)

Sports-related employment

- **High** - estimated at 14,958 FTEs (**rank 3 out of 9** Sports Industry segments)

Sports-related value added per worker

- **Low** - estimated at \$101k per FTE (**rank 7 out of 9** Sports Industry segments)

Exposure to competing imports

- **Low** - around 5% of domestically consumed products are imported (**rank 3 out of 9** Sports Industry segments)

Exports to international markets

- **Low** - around 4% of domestically produced products are exported (**rank 7 out of 9** Sports Industry segments)

Growth/decline

- **Low** - -3% growth in sales since 2012/13 (**rank 9 out of 9** Sports Industry segments)

Sales



\$3,982m

Value Added



\$1,516m

Employment



14,958 FTE

Value added per Worker



\$101k per year

Imports



\$181m (5%)*

*of all goods consumed locally

Exports



\$152m (4%)*

*of all goods produced locally

Growth in sales



-3%

*2012/13 to 2016/17



Events, venues and facilities (cont.)

STRUCTURE

Key activities associated with this segment

The segment captures major events, marathons, professional sports matches, event ticket sales, venue and facilities operation, administration and management. The target audience is broad. Activities captured in this segment include:

- Athletic field, football field, cricket ground and stadium operation
- Court and arena operation (e.g., tennis court)
- Golf course and practice range operation
- Indoor facility operation (e.g., swimming pools, bowling alleys)
- Motor racing track and speedway operation
- Event management
- Sports ticketing

The majority of activity in this segment is centred around sporting events and venues that enable spectator participation.

Demand drivers

Major demand drivers include:

- **Levels of discretionary income:** this segment is competing for the portion of discretionary household expenditure on recreation and entertainment. As real household incomes increase, households have more money to spend on sporting events, venues and facilities.
- **Industry assistance:** the majority of major venues in Australia are developed and maintained with the aid of public funding. Government's appetite for capital expenditure programs can enhance and bolster this segment.
- **Spectator participation:** the degree to which sports fans are willing to physically attend the event instead of consuming the same entertainment via alternative mediums (i.e. television or live streaming).
- **Sports participation:** the degree to which the general public are willing to participate in sport, and therefore utilise venues and facilities.

Capital intensity and reliance on industry assistance

Stadia are capital intensive assets. The upfront cost of major stadia (re) developed in Australia over the past 10 years is in the order of \$10,000 per seat in current day dollars.¹

Typically, ownership of major venues in Australia rests with the public sector (at a state or local level). This is due to the fact that Australian stadia have historically not been able to generate commercial returns to entice private sector development and ownership following the significant upfront capital expenditure associated with developing such assets. The significant ongoing lifecycle asset maintenance and replacement costs associated with venues of this nature, along with the volatility of operating cash flows which are dependent (amongst other factors) on the event calendar and attendance levels of venue hirers also impacts the ability of a private entity to generate a sufficient commercial return.

Governments are often willing to absorb the financial burden of a venue in order to attract content that generates broader economic benefits, such as inbound tourism, as well as broader social and civic benefits.

Technology

The landscape of venues and events can change quickly. Sports stadia can structurally last for more than 50 years, however, can become obsolete well before. New in-stadium technologies, trends in premium hospitality offerings and the increased security requirements following terror-related events are impacting the design and performance of venues in ways not envisaged during their development.

Limited event calendar

One of the key reasons for a lack of investment by sporting codes and clubs into major stadium ownership is that they do not have a big enough event calendar to support stadium development. Venue operators that are able to consolidate content from multiple teams (e.g. the AFL) are more likely to be able to secure a strong event calendar to support operational profitability, however, individual teams may need to rely on other funding streams. Historically, governments have managed this risk by securing multiple sporting tenants.



Events, venues and facilities (cont.)

CONDUCT ³

Differentiation by improving the fan experience

The broader fan experience is recognised by all codes and teams as being critical to successful fan attraction, engagement and retention. This includes the experience from travelling to the game until the patron returns home, and incorporates the full range of interactions a fan has with the team, service providers and other spectators.

In-stadium experience includes factors such as premium seating, members and active support areas, technology and food and beverage infrastructure. Codes and teams are judged on this fan experience.

Membership

Venues and facilities encourage participants sign up to become members, which encourages loyalty and return patronage.

Optimum capacity utilisation

Venue operators must carefully balance the quality and availability of seating, ticket prices and food and beverage prices with the anticipated demand for sporting events.

Diversification

Venues and facilities are not just sporting venues, and are able to unlock alternative revenue streams by providing their facilities to non-sporting events, such as business / community event, entertainment events or festivals.

Esports

Esport is a rapidly growing recreational activity that involves participation at various levels of proficiency, including elite professionals. Elite level esport is generally packaged into content that is delivered to audiences at venues and through digital media (e.g. streaming platforms). The growing popularity of esports presents an opportunity for traditional sports clubs to diversify their entertainment offering and manage the growth and development of domestic esports.

PERFORMANCE

- Relative to other sports segments the events, venues & facilities segment contributes a reasonable to high amount to the Sports Industry in terms of sales, value add and employment.
- Value add per worker is low (reflective of the low wages offered by this sector) which suggests that investments in this segment are not likely to add more monetary value to the economy than investments in other segments.
- The segment has a low exposure to international trade.
- This segment has experienced a decline in sales of 3% between 2012/13 and 2016/17, while aggregate sales across all industries in the economy grew by 26% over the same period.

KEY INSIGHTS

To facilitate growth in this segment, venues and facilities must invest in upgrades and ongoing maintenance to ensure a positive experience for spectators. If spectators are satisfied with the services and facilities available, the likelihood of repeat attendance increases. In-venue experience as well as out-of-venue experience, such as travel to / from the venue, also contributes to overall fan experience. Ensuring consistently positive fan experiences at live events underpins growth in this segment.

It is noted that venues and facilities in their own right are significant components of the 'structure' of some of the other Sports Industry segments and therefore key enablers of the performance of those segments (e.g. sports operations).

Sources:

¹ KPMG (2017). Stadium ownership: competitive edge or unwanted burden?

² NSW Government, Office of Communities (2012). Stadia Strategy.

³ IBISWorld Pty Ltd.



6.6 Gambling

Gambling services targeted towards sport-related activity.

Gambling



Defining the good/service: Sports gambling is a form of entertainment. Participants risk wagers on yet to be determined outcomes in exchange for a chance of financial reward.

Defining the market: Industry operators provide sports gambling services. The industry includes online gambling services but excludes casinos, poker machines and lottery operations.

Segment Structure

Demand: Underlying demand is driven by the popularity of sport entertainment, coupled with the willingness of consumers to gamble on sport over other forms of entertainment. Increases in household disposable income lift demand.

Target audience: This segment caters to a wide range of adults with an interest in sport.

Market concentration: High levels of market concentration.

Capital intensity: Moderately capital intensive.

Technology: High. Demand for digital services is growing.

Industry assistance: Low level of assistance.

Barriers to entry: Medium.

Regulation: Highly regulated and highly taxed.

Reliance on Media sector: The sports related gambling sector is dependant on media to generate content.

Market Conduct

Market strategy: Understanding changing consumer preferences for sport, effective marketing campaigns, expanding market share. Bookmakers are increasingly offering promotions and incentives to attract punters.

Competition: High competition, both within-industry and with other forms of gambling (e.g., casino, lottery and poker machines).

Online presence: Online gambling services (including apps) are increasing in popularity.

Consolidation: Larger companies typically seek to acquire small firms to grow revenue and market share.

Workforce: Sports betting agencies hire educated persons with skills such as mathematics, statistics, marketing and programming.

International Trade: Low imports and exports. Operations are predominantly domestic.

Performance

Sports-related sales

- **Medium** - estimated at \$863m (**rank 6 out of 9** Sports Industry segments)

Sports-related value add

- **Medium** - estimated at \$330m (**rank 6 out of 9** Sports Industry segments)

Sports-related employment

- **Low** - estimated at 1,857 FTEs (**rank 7 out of 9** Sports Industry segments)

Sports-related value added per worker

- **High** - estimated at \$178k per FTE (**rank 3 out of 9** Sports Industry segments)

Exposure to competing imports

- **Medium** – 6% of domestically consumed services are imported (**rank 5 out of 9** Sports Industry segments)

Exports to international markets

- **Medium** – 4% of domestically produced services are exported (**rank 6 out of 9** Sports Industry segments)

Growth/decline

- **High** – 25% growth in sales since 2012/13 (**rank 3 out of 9** Sports Industry segments)

Sales

 \$863m


Value Added

 \$330m

Employment

 1,857 FTE

Value added per Worker

 \$178k per year

Imports

 \$54m (6%)*

*of all goods consumed locally

Exports

 \$35m (4%)*

*of all goods produced locally

Growth in sales

 25%

*2012/13 to 2016/17

Gambling (cont.)



STRUCTURE ¹

Key activities associated with this segment

The segment captures sports gambling services. The industry includes online gambling services but excludes casinos, poker machines and lottery operations. For the purpose of this analysis horse, harness and dog racing has been excluded. Key players include: TAB, Flutter Entertainment (Sportsbet), BetEasy, Ladbrokes and Bet 365.

Demand drivers

- **Changes in real household discretionary income:** labour markets and tax rates influence how much consumers are willing to spend on gambling services.
- **Spectator sport participation:** the degree to which sports fans are interested in the game influences the quantity of wagers and the amount spent on each wager.

Barriers to entry

- **Regulation:** sports betting agencies must meet certain financial criteria and register with their relevant state or territory licensing authority.
- **Taxes:** the introduction of the point-of-consumption tax has increased the difficulty for prospective operators to enter the industry and operate feasibly, as operating margins have been weakened by the tax.
- **Competition:** this segment is highly competitive and acquiring an adequately large customer base to cover initial investment requirements is challenging.

CONDUCT ¹

Market research and understanding

Industry operators require detailed knowledge and understanding of the local market, with extensive preparation and research needed prior to sporting events to calculate odds and maximise profitability.

Differentiation

Online sports betting agencies are increasingly offering promotions and incentives for consumers, with some partnering with streaming services to allow consumers to watch sporting events live. Sports betting agencies are increasingly offering exotic

wagers such as multi-bets to provide consumers with more options and entertainment. Some bookmakers have also launched cash-out features, where customers can receive their payout prior to an event's conclusion.

Production of premium services

Bookmakers need to provide high-quality betting information to punters to attract, inform and retain clients and grow their operations.

Online and mobile services

Sports betting agencies are increasingly developing digital access via websites and mobile applications.

PERFORMANCE

- Relative to other sports segments the gambling segment contributes a reasonable amount to the Sports Industry in terms of sales, value add and employment.
- Value add per worker is high which suggests that investments in this segment is likely to add more monetary value to the economy than investments in other segments. However, it is noted that some of the negative externalities associated with gambling (i.e. addiction) are likely to prevent government assistance or investments in this segment.
- The segment has a low exposure to international trade.
- This segment has experienced a reasonable growth in sales of 25% between 2012/13 and 2016/17, while aggregate sales across all industries in the economy grew by 26% over the same period.

KEY INSIGHTS

Ongoing improvements to usability and accessibility as technology develops is likely to facilitate growth in this segment. Offering incentives and expanding betting options is attractive to consumers. Gambling is a key revenue source that supports the broader operations of the Sports Industry.

Sources:

¹ IBISWorld Pty Ltd



6.7 Equipment and apparel

The manufacturing and retail distribution of sports equipment and apparel for performance and leisure use.

Equipment and apparel

Defining the good/service: The segment includes sporting goods not limited to traditional fitness and sporting equipment, camping accessories, and water sport, snow sport and skating equipment. The segment also includes fitness and athletic clothing and footwear for performance and leisure use.

Defining the market: The segment captures manufacturing and retail distribution of sports equipment and apparel with retail representing both in-store and online sales. Products in this segment are consumed by people of all ages, with varying levels of sports participation.

Segment Structure

Demand: Discretionary income, consumer sentiment, sport participation rates and leisure-time availability drive demand for sport equipment and apparel.

Target audience: Sport participation is popular across all age groups although individual attitudes towards exercise and fitness differ. The goods demanded evolve across a consumer's lifetime.

Manufacturing: As Australian manufacturers struggle to compete against low-cost international manufacturers, goods are largely imported for sale to consumers.

Retailing: Major players control Australia's leading retail sport stores. As the market evolves, the retail landscape is changing to include new offerings.

Market concentration: Medium levels of market concentration.

Capital intensity: Moderately capital intensive in manufacturing and low in retailing.

Barriers to entry: Moderate as new entrants are deterred by the industry's competitive landscape.

Globalisation: Individuals of all age groups progressively fill leisure time with alternative activities, such as internet browsing and video gaming.

Market Conduct

Market strategy: As consumers alter their perception of traditional equipment and apparel offerings, the market must change to meet evolving needs.

Competition: Price is a major source of competition between wholesalers as retailers want to pay the lowest price possible. The segment is also subject to external competition from foreign online operators.

Online presence: Online markets provide greater product variety at a lower price for consumers.

Export markets: Although the industry is reliant on foreign imports, a weakening Australian dollar has improved export conditions.

Innovation: Consumers are generally responsive to new technologies. Met by consumer interest, technology drives ongoing sales of equipment and apparel.

Workforce: Retail stores are likely to employ low-skilled workers, particularly in part-time and casual roles. Product manufacturing requires skilled workers with specialist knowledge. To harness comparative advantage, Australian designed innovations are likely to be manufactured overseas.

Performance

Sports-related sales

- **Medium** - estimated at \$3,628m (**rank 4 out of 9** Sports Industry segments)

Sports-related value add

- **High** - estimated at \$1,574m (**rank 3 out of 9** Sports Industry segments)

Sports-related employment

- **Medium** - estimated at 12,318 FTEs (**rank 4 out of 9** Sports Industry segments)

Sports-related value added per worker

- **Medium** - estimated at \$128k per FTE (**rank 5 out of 9** Sports Industry segments)

Exposure to competing imports

- **High** - around 31% of domestically consumed products are imported (**rank 7 out of 9** Sports Industry segments)

Exports to international markets

- **High** - around 15% of domestically produced products are exported (**rank 2 out of 9** Sports Industry segments)

Growth/decline

- **Medium** - 9% growth in sales since 2012/13 (**rank 6 out of 9** Sports Industry segments)

Sales

 \$3,628m

Value Added

 \$1,574m

Employment

 12,318 FTE

Value added per Worker

 \$128k per year

Imports

 \$1,133m (31%)*

*of all goods consumed locally

Exports

 \$372m (15%)*

*of all goods produced locally

Growth in sales

 9%

*2012/13 to 2016/17

Equipment and apparel (cont.)

STRUCTURE ^{1 2}

Manufacturing & retailing

There is significant pressure on industry operators as low-cost manufacturers from China and high-quality manufacturers from the United States continue to dominate the market. Domestic manufacturing facilities are anticipated to increasingly move overseas due to the availability of lower production costs. Incidences of wholesale bypass have increased, with retailers increasingly placing bulk orders directly with manufacturers in an attempt to reduce mark-ups. Manufacturers of sporting goods supply products to a range of downstream markets including wholesalers, retailers and industry associations.

Market concentration

The sport equipment retailing market share concentration is with four top players, accounting for over 40% of total revenue in 2018-19. Industry concentration is trending upward through an increase in acquisitions. Super Retail Group operates 670 stores across Australia including retail brands such as Rebel Sport, Supercheap Auto and Boating Camping and Fishing (BCF). Progressively, the Group is converting its network of brands into these key retailers. The four largest players in fitness and athletic apparel account for just under 70% of industry revenue in 2018-19. The benefits of bulk purchasing, having a nationally recognised brand and other synergies have allowed Rebel Sport, The Athlete's Foot, Lorna Jane and Foot Locker to gain a foothold in the industry. Changing consumer preferences may provide space for new entrants for niche markets.

Capital intensity

The industry is typically labour-intensive as employees are required to handle day-to-day tasks such as providing customer service, stocking shelves, displaying merchandise, processing transactions and tracking inventory. The nature of the industry requires a certain level of expertise and knowledge from its retail employees, as consumers that intend to purchase high-quality products typically require specific advice and information. Manufacturing facilities require moderate capital investment as machinery and equipment is required for the production process. Typically a high level of well-trained staff are also required as labourers, technicians and designers.

Barriers to entry

The most prominent barrier to entry for prospective manufacturers and retailers is the start-up costs involved. The initial cost of opening or purchasing a retail outlet and providing sufficient inventory can be prohibitive. New entrants need to establish ample upstream supply relationships with manufacturers to secure high-quality, low-cost stock.

Globalisation

Traditionally participation in sport is a common leisure activity however as technology advances and alternative options are increasingly available, consumers must trade-off leisure time activity between sporting activities and popular sedentary activities, such as internet browsing, television viewing and video gaming. Global recognition of the negative health impacts of these activities is shifting attitudes towards maintaining health and wellbeing. In particular, growing concerns about children's health is anticipated to lead to increased sports participation for this age cohort.

CONDUCT

Market strategy

The increase in health consciousness in Australia and growing awareness of the importance of regular exercise encourages consumers to engage in more sport activities including running, yoga, swimming and team sports. Government initiatives promoting active lifestyles have also created opportunities for sports equipment retailers. Industry retailers have also successfully made sportswear an integral part of customers' lifestyles by changing consumer attitudes, as people increasingly wear active wear as leisure wear. Lorna Jane and Lululemon Athletica are two examples of companies that have built market share by catering to this specific market.

'Athleisure' describes the movement of sports apparel away from functional use towards leisure use. Basketball and golf are two examples of sports that present an opportunity for retailers to turn traditional sports wear into lifestyle products.

Equipment and apparel (cont.)

Competition – Internal

While price is an important aspect of competition, consumers are often willing to pay a premium for high-quality products that offer benefits such as performance enhancement. Consumers also expect to be charged a higher price at speciality sports store where they will receive expert advice from staff, for example Rebel Sport and The Athlete's Foot.

Competition – External

External competition from discount department stores and foreign online retailers are a barrier to industry growth. Further, lower-end retailers have entered the market selling mainly own-branded products at a discounted price. While the quality may be perceived as inferior, consumers shop in these stores for value for money, in particular in the market for children's products.

Online presence

The accessibility of online shopping has introduced consumers to online-only sportswear retailers and foreign online operators. These establishments often sell a larger variety of sporting equipment and apparel at lower prices than retailers through reduced overhead costs. This trend has intensified competition for fitness and athletic stores as value-conscious consumers can now search and compare products across a variety of channels to find the best value for money.

Import / export markets

Equipment and apparel manufacturing remains intense as consumer demand for lower priced products has fuelled the availability of cheap goods from Asian countries, particularly China. Domestic manufacturing facilities have also increasingly shifted to low-cost production locations. Continued import competition for sporting goods has altered the mix and quality of products available to consumers.

A weakened Australian dollar has increased demand for overseas sales of Australian products with New Zealand, the United States and Macau remaining the dominant destinations for exports. Australian manufacturers face competition from low-cost sporting manufacturers overseas.

Innovation and Workforce

Significant product innovation takes place in the industry and consumers are generally responsive to new technologies. Industry operators have tapped into this trend for apparel by introducing performance-based products that promote benefits such as moisture wicking, breathability, comfort, fit and flexibility. Products such as compression wear have become increasingly popular. Understanding customer demands and innovating relevant products can generate consistent sales and increase profit margins.

PERFORMANCE

- Relative to the other segments the contribution of the equipment and apparel segment is moderate to high. The segment is high performing in terms of value add.
- Although sports-related value add is high, value add per worker is modest which suggests that worker productivity diminishes as more workers enter the segment.
- Equipment and apparel has high exposure to international trade. The segment has a high level of imports relative to other segments and significant demand for domestically produced products overseas.
- The segment has experienced moderate sales growth of 9 per cent between 2012/13 and 2016/17.

KEY INSIGHTS

There is a growing market share going towards online sales, and this is likely to continue. A small number of large retailers dominate the physical retail market, with many small retailers either acquired by larger companies, or ceasing operations. Overall, given the broader shift away from manufacturing in the Australian economy and the shift towards online sales it does not appear that there is a material opportunity to grow the equipment and apparel segment, with the potential exception being the premium end of the product spectrum.

Sources:

¹ IBISWorld Pty Ltd.

² Australian Sporting Goods Association.

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6.8 Sports technology

Any technological solution designed to enhance human performance in athletic ability or improve spectator experience.

Sports technology

Defining the good/service: The segment is wide-ranging and is likely to include goods defined within other segments such as manufacturing and retailing equipment and apparel. It includes but is not limited to fan engagement, stadium and facilities technologies, wearables and performance enhancement and sports analytics.

Defining the market: Sports Tech lies at the intersection of technology and sport and encompasses any technological solution designed for a sporting context.

Segment Structure

Demand: Innovative technology that enhances human performance including advancements in athletic ability and spectator experience.

Labour force: Gaps in education are a barrier to growth as start-ups require highly skilled workers.

Funding: Rising investor interest as the segment expands although more is required to match the industry's potential.

Industry assistance: Medium levels of assistance from Government.

Competition: High levels of competition acts as a barrier to entry. Knowledge, cutting edge ideas, and innovation dominate this segment.

Size: A rapidly growing industry as innovators capture small improvements in sports performance through technology.

Market entrance: Public funds are available in Victoria for eligible start ups, but access to the limited funding is highly competitive. Local government support in Victoria is high and numerous support networks exist, attracting talent to the area. This makes entrance into the segment by operations outside of Victoria challenging.

Market Conduct

Innovation: Level of innovation is high and advancing.

Competition: Competition is growing as more start-ups unlock opportunities to advance human performance.

Level of concentration: High levels of location concentration creates barriers to entry for outsiders.

Export potential: Companies must unlock export opportunities and promote Australian capabilities.

Labour force: To avoid a skills shortage training programs that will facilitate segment growth should be promoted throughout higher education providers.

Accelerator: Programs such as accelerators, incubators and co-working spaces are viewed as a valuable source of support for start-ups.

Performance

Sports-related sales

- **Low** - estimated at \$24m (**rank 9 out of 9** Sports Industry segments)

Sports-related value add

- **Low** - estimated at \$3m (**rank 9 out of 9** Sports Industry segments)

Sports-related employment

- **Low** - estimated at 10 FTEs (**rank 9 out of 9** Sports Industry segments)

Sports-related value added per worker

- **High** - estimated at \$268k per FTE (**rank 1 out of 9** Sports Industry segments)

Exposure to competing imports

- **High** - around 81% of domestically consumed products are imported (**rank 9 out of 9** Sports Industry segments)

Exports to international markets

- **High** - around 45% of domestically produced products are exported (**rank 1 out of 9** Sports Industry segments)

Growth/decline

- **Medium** - 15% growth in sales since 2012/13 (**rank 4 out of 9** Sports Industry segments)

Sales

 \$24m

Value Added

 \$3m

Employment

 10 FTE

Value added per Worker

 \$268k per year

Imports

 \$19m (81%)*

*of all goods consumed locally

Exports

 \$2m (45%)*

*of all goods produced locally

Growth in sales

 15%

*2012/13 to 2016/17

Sports technology (cont.)

STRUCTURE ^{1 2}

The Sports Tech sector includes the following diverse and evolving segments:

- Social, marketing and fan engagement;
- Stadium and facilities;
- Wearables and performance enhancement;
- Sports analytics;
- Management and event technology;
- Esports; and
- Media, broadcasting and sponsorship.

Labour force

Participation in the segment requires a particular technical skillset. Current gaps in education remains a barrier to growth across the sector although recognition of the necessary skills has prompted an increase in higher education in the required fields. The most difficult skills for Sports Tech start-ups to access are computer / information technology skills followed by sales and business development skills.

Funding

In a recent industry survey, 40 percent of Sports Tech start-up respondents identified funding as a perceived barrier to growth in the early stages of the start-up.¹ As the industry undergoes technological transformation, investors are noticing emerging business potential. Sports Tech start-ups are accessing a variety of funding sources, including government grants, angel investment and venture capital.

Industry assistance

Industry leadership and support for new technology, as well as cross-sector collaboration is an opportunity to accelerate the growth of start-ups. Partnerships with universities and support services that highly value Sports Tech, such as Australian Sport Technologies Network “ASTN”, can be an important resource and support system.

For example, the ASTN facilitates introductions to sports markets, networking sessions, mentoring programs, funding and knowledge on access to markets.

The potential for both industry and technological partnerships provides larger market

opportunities and significantly increases a start-up’s ability to scale. Victoria alone currently has approximately 30 accelerator programs to assist with business growth.¹

Competition

High levels of competition acts as a barrier to entry. Market entrance requires unique, innovative ideas that will enhance human performance. Australian start-ups export heavily to the global market and must compete with innovative solutions across the world. Securing the intellectual property of an innovation is critical to successful business growth.

Size

Modest in size, the Sports Tech industry in Australia is emerging with high growth potential as innovation develops. Capturing small improvements in performance through technology is valued and enables significant opportunities for market entrance.

Market entrance

Sports Tech accounts for four percent of start-up activity in Victoria, home to 65 per cent of Australia’s sport technology companies. The concentration of the sports sector, co-location of sporting codes headquartered in Melbourne and an extensive calendar of major sports events are key facilitators of this success.

The high-density and levels of concentration of a diverse range of start-ups is cited as a key support for rapidly growing companies due to the robust testing environment and availability of support services it allows. Establishing a similar start-up in another region of Australia poses an obstacle for market entrance.

CONDUCT

Competition

High levels of competition persists once a start-up is established. Companies must remain adaptive to the growing national and international market and must ensure their innovation remains unique.

At a global level, countries seeking to become leaders in the emerging Sports Tech sector have the opportunity to secure a substantial part of the growing global market.

Sports technology (cont.)

Innovation

Australia's sporting industry contributes a vast array of social, economic and health benefits, improving the wellbeing and liveability of cities and communities. Technology and innovation continue to disrupt the way Australians engage and participate in sport, contributing to the rise of Sports Tech and its applications.

Innovation that enhances human performance is the crux of Sports Tech, intersecting technology with the Sports Industry. Disability, mobility and inclusive sports are growing nationally and globally, each presenting significant innovation opportunities. Technology that fuels active recreation is also a key growth opportunity as global and local sports sectors aim to increase sports participation.

Level of concentration

The high levels of market concentration are barriers to success for Sports Tech companies established outside of Victoria. These companies do not have access to a range of supports including student talent and research capabilities.

On the other hand, the high levels of concentration in Victoria is beneficial for locally based companies. The strength of the Victorian sector has created opportunities for collaboration and partnership as well as offering a credible reputation that has opened access to international markets. The strength of local relationships and local networks supports business growth.

Export potential

The global Sports Tech market is growing and is considered an emerging global sector. 57 per cent of start-ups are exporting outside of Australia with key marketing being the United States, United Kingdom, New Zealand, China and India.¹ As such, the growth occurring across the sector in Australia demonstrates a real opportunity to become a recognised leader in the industry. Australians are developing the capabilities required to contribute to the global market, skills that must be showcased and exported globally. The developing national industry suggests there is considerable export potential of Australian labour and products.

Labour force

Access to talent that is suitable to grow a Sports Tech company and launch it globally is a challenge many start-ups face. The promotion of the necessary skills in universities and partnering with tertiary education providers across Australia will prevent a skills shortage as the industry grows.

Finding quality talent is a key challenge identified by start-ups to achieving higher growth at all stages of development, but greatest as start-ups enter the product development stage.

Intellectual property

Protecting IP is paramount to success in this segment. Appropriate regulations and protections must be in place to ensure that participants innovate with confidence. Protecting IP globally can be challenging.

Accelerator

Sports Tech start-ups have indicated that dedicated support programs such as accelerators, incubators or co-working spaces would be a valuable source of support.

An example of an accelerator program is the established program by the ASTN. The ASTN has a formalised Sports Tech Accelerator Program that provides leadership in the commercialisation, development and promotion of Australian-inspired sports technologies. This Program enables the ASTN to provide free guidance and advisory for suitable sports technology start-ups across Australia. The Program focuses on:

- improving investment and market readiness;
- assisting in developing a business model that is effective, financially sound and prepares for scalability; and
- accelerating time-to-market to better take advantage of opportunities.³

Similar accelerator programs across Australia, such as that available in Queensland (UQ Hype) would be beneficial in preparing domestic start-ups for global competition and improving growth prospects.

Sports technology (cont.)

PERFORMANCE

As previously mentioned, performance for this segment is difficult to analyse because the segment is hard to isolate within the Australian National Accounts and is likely to be captured within other segment.

Reflective of this, sports-related sales, value add and employment is ranked the lowest of the segments in the Sports Industry. This segment also experiences strong competition from overseas suppliers although there is an appetite for domestically produced goods in international markets.

The KPMG report for LaunchVic includes the follow estimates about the future size of the Sports Tech market, which is expected to grow significantly over the next decade.

- In 2016 the ABS included Wearable fitness technology as an expenditure category for the first time. This category represents 1 per cent of household expenditure on sport.
- Total public and private expenditure on sports in Australia is estimated to equate to AUD \$17.5bn to \$21.4bn in 2029. The projected size of the Sports Tech market in Australia by 2029 ranges from just under AUD \$1bn to just over AUD \$3bn per annum.¹
- Based on a mid-point scenario analysis and range of GDP expenditure on sports as a percentage of total expenditure, the projected size of the global market for Sports Tech in 2029 ranges from approximately USD \$82bn to \$123bn.

KEY INSIGHTS

Establishing strong support programs for start-ups will facilitate growth in the segment. Current Sports Tech start-ups have identified challenges to growth, such as access to skilled personnel, funding and leadership, which, if addressed, can improve opportunities for future market entrants.

Sources:

¹ The Sports Tech Report: Advancing Victoria's start-up ecosystem (2019), LaunchVic.

² Australian Sport Technologies Network, <http://astn.com.au/>

³ ASTN Start-up Accelerator Program, <http://astn.com.au/astn-startup-accelerator-program/>

Sports Tech is a broad segment and the activities of businesses in this segment are captured in a range of ABS-defined industries. Some of these activities will be captured in other segments of the sports industry that we have identified within the statistical accounts (e.g. Equipment and Apparel) but cannot be isolated from the activities of the other businesses in these segments. For the purpose of this exercise, Sports Tech has remained a standalone segment as it is considered a strong potential high value growth area, however only the activity that can be transparently isolated within the official statistical accounts has been captured. It follows that the results presented for Sports Tech materially under-represent the likely size of the segment.

The attribution analysis identified several input-output industry groups where sports-related technology may be present. However, given the complexity of this segment and data limitations, it was not possible to isolate the contribution of Sports Tech across the identified industry groups. Examples of possible industry groups where Sports Tech is likely captured across the economy include:

- Professional, Scientific and Technical Services
- Medical and Surgical Equipment Manufacturing
- Other Professional and Scientific Equipment Manufacturing
- Other Electronic Equipment Manufacturing
- Software Publishing



6.9 Nutrition and supplements

Nutrition products aimed to improve sporting performance and enhance health and wellbeing.



Nutrition and supplements

Defining the good/service: Sports nutrition products include but are not limited to pre, post and intra-workout products, products to increase endurance and aid muscle growth, fat burners and energy boosters.

Defining the market: The segment captures manufacturing and retail distribution of sports nutrition products with retail representing both in-store and online sales. Products generated by this segment are tailored towards people with active lifestyles.

Segment Structure

Demand: Driven by people with active lifestyles or proactive in preventing health problems.

Target audience: Traditionally been focused on gym goers and fitness enthusiasts but is beginning to expand and cater for to less active consumers using sports nutrition products for weight management purposes.

Manufacturing: Mainly supplies to export markets and direct-to-consumer retailers. Raw materials are imported to manufacture products.

Retailing: Key outlets include pharmacies, supermarkets, specialty stores, online, fitness centres, export markets. Online presence is growing.

Market concentration: Low levels of market concentration.

Capital intensity: Moderately capital intensive in manufacturing and low levels in retailing.

Barriers to entry: High due to heavy regulations enforced by the Therapeutic Goods Administration (TGA).

Globalisation: Health consciousness around the globe is growing and fuelling demand for this segment.

Market Conduct

Market strategy: Understanding consumer preferences and implementing them into manufacturing processes and price accordingly.

Competition: Imports from foreign producers continue to rise due to cheaper products and wider ranges.

Online presence: Online market bringing cheaper products is growing significantly for specialised stores. This also provides consumers with easy access foreign producers.

Export markets: Australian manufacturing of nutrition and supplements possesses a good reputation in foreign countries, particularly across Asia. Asian countries are beginning to invest in Australian markets.

Innovation: Strong consumption demand has been met by product innovation within the industry.

Workforce: Firms are likely to employ highly skilled with specialist knowledge to support the manufacturing process.

Performance

Sports-related sales

- **Low** – estimated at \$495m (**rank 7 out of 9** Sports Industry segments)

Sports-related value add

- **Low** – estimated at \$133m (**rank 8 out of 9** Sports Industry segments)

Sports-related employment

- **Low** – estimated at 783 FTEs (**rank 8 out of 9** Sports Industry segments)

Sports-related value added per worker

- **Medium** – estimated at \$170k per FTE (**rank 4 out of 9** Sports Industry segments)

Exposure to competing imports

- **High** – around 36% of domestically consumed products are imported (**rank 8 out of 9** Sports Industry segments)

Exports to international markets

- **High** – around 14% of domestically produced products are exported (**rank 3 out of 9** Sports Industry segments)

Growth/decline

- **Low** – 7% growth in sales since 2012/13 (**rank 7 out of 9** Sports Industry segments)

Sales



\$495m

Value Added



\$133m

Employment



783 FTE

Value added per Worker



\$170k per year

Imports



\$176m (36%)*

*of all goods consumed locally

Exports



\$46m (14%)*

*of all goods produced locally

Growth in sales



7%

*2012/13 to 2016/17



Nutrition and supplements (cont.)

STRUCTURE ^{1 2}

Manufacturing & retailing

The nutrition and supplement manufacturing industry mainly supplies export markets and direct-to-consumer retailers. These retailers include supermarkets, pharmacies and specialty stores. The industry faces import competition for many industry products, with various downstream markets importing cheaper products rather than sourcing them from domestic manufacturers.

Market concentration

The four major players in the industry are estimated to account for less than 40% of market share in 2018-19. Go Vita has the highest number of stores in the market, with 135 independently owned and operated stores. In contrast, just under 70 stores operate under the Nutrition Warehouse banner in Australia. In terms of manufacturing, the segment includes many pharmaceutical manufacturers that manufacture for a range of different companies that mainly specialise in marketing products. Manufacturing is characterised by a small number of specialised enterprises.

Capital intensity

Firms need manufacturing and packaging facilities for production, requiring substantial capital investment. However, employees also require a high level of knowledge to operate machinery and synthesise chemical compounds. Additionally, many industry employees are required to understand topics beyond manufacturing operations, such as health and nutrition sciences, chemistry and sports science. These additional requirements have made the industry increasingly dependent on specialists and professionals. The retail industry is highly dependent on labour to conduct tasks such as sales, store maintenance, stocking and sourcing industry products and providing advice to consumers regarding nutrition products and supplements.

Barriers to entry

The segment's products are strictly governed by the Therapeutic Goods Act 1989, under regulation by the Therapeutic Goods Administration (TGA). Under this Act, nutritional supplements are regulated as medicines, despite being classified as complementary medicines. As per the Act's requirements, most industry products must be registered on the Australian Register of Therapeutic Goods, and only those approved by the TGA can be sold in Australia.

Globalisation

There has been a rise in the number of health-conscious customers around the globe. They look for ways to adopt a healthy and an active lifestyle, which has fuelled the demand for health-oriented food products. Thus, sport nutrition supplements in Australia endure the same kind of traction in North America, Europe as well as Asia-Pacific regions. Healthy lifestyle is becoming a normal way of life, with concerns over obesity and food sensitivity likely to continue to rise.

CONDUCT ^{1 2}

Market strategy

The market conduct is determined based on consumer preferences. In Australia the segment has benefited from increasing health consciousness as a growing number of consumers have adopted a holistic and proactive approach to their health and wellbeing, driving demand for industry products. Increasing enthusiasm for active and healthy lifestyles has influenced the success of the sports nutrition sector, as consumers have been purchasing industry products to complement their training regimes and diets. In response to these trends, manufacturers are targeting a wider consumer base, with an increasing range of active nutrition products available to help consumers manage their weight. For example, protein powders are used by gym-goers for muscle growth and regeneration, and they are also attracting the interest of consumers that use sports nutrition products for weight management.



Nutrition and supplements (cont.)

Competition - internal

Traditionally, most organisations manufacture a range of largely comparable products with similar benefits. Key brand owners have heavily relied on discounting products, resulting in the market for nutrition and supplement products becoming increasingly commoditised.

Competition - external

External competition has been one of the greatest barriers to industry growth. Imports have grown to account for nearly half of domestic demand for nutrition and supplements in 2018-19. Online sales of nutrition products and supplements have also negatively affected domestic manufacturers, with many consumers buying from foreign websites offering cheaper products and wider ranges.

Online presence

Online shopping has become increasingly commonplace as the internet becomes more integrated into consumers' lives. Online operators have often been able to undercut bricks and mortar stores due to their lower overhead and marginal costs. Products sold by the segment are relatively similar in nature and typically sold based on price. As a result, online sales of low-value, high-volume industry products are anticipated to grow as consumers seek out discounted nutrition products and supplements across a variety of online retailers, including specialty nutrition and supplement online retailers and online pharmacies.

Import / export markets

Imports and exports for nutrition and supplements are accounted for at the manufacturing level. Imports account for half of the domestic market at the manufacturing level. These imports majorly comprise of ingredients used in local nutrition manufacturing and are expected to continue to increase. At the same time, demand from Asian markets for high-quality Australian nutrients and supplements is expected to boost exports as well.

South-East Asian markets have been the source of this export growth, due to this high demand for quality Australian-made nutrition and supplements. Due to Australia's location and various trade arrangements, China, New Zealand and South-East Asian nations are the greatest exports markets for domestic manufacturers. China,

Singapore and other Asian countries are expected to demand more industry products.

Innovation and workforce

Industry firms that have access to innovative technologies or human capital can improve efficiency and increase product offerings. This factor can generate greater sales and increase profit margins.

PERFORMANCE

- Relative to other sports segments the nutrition & supplements sector is a low contributor to the Sports Industry in terms of sales, value add and employment.
- Value add per worker is relatively high (reflecting the skilled nature of the workforce in this segment) which suggests that investments in this segment are likely to add more value to the economy than investments in other segments.
- The segment experiences strong competition from overseas suppliers, but also experiences reasonable demand from overseas markets.
- This segment has experienced a weak growth in sales of 7% between 2012/13 and 2016/17, while aggregate sales across all industries in the economy grew by just 26% over the same period.

KEY INSIGHTS

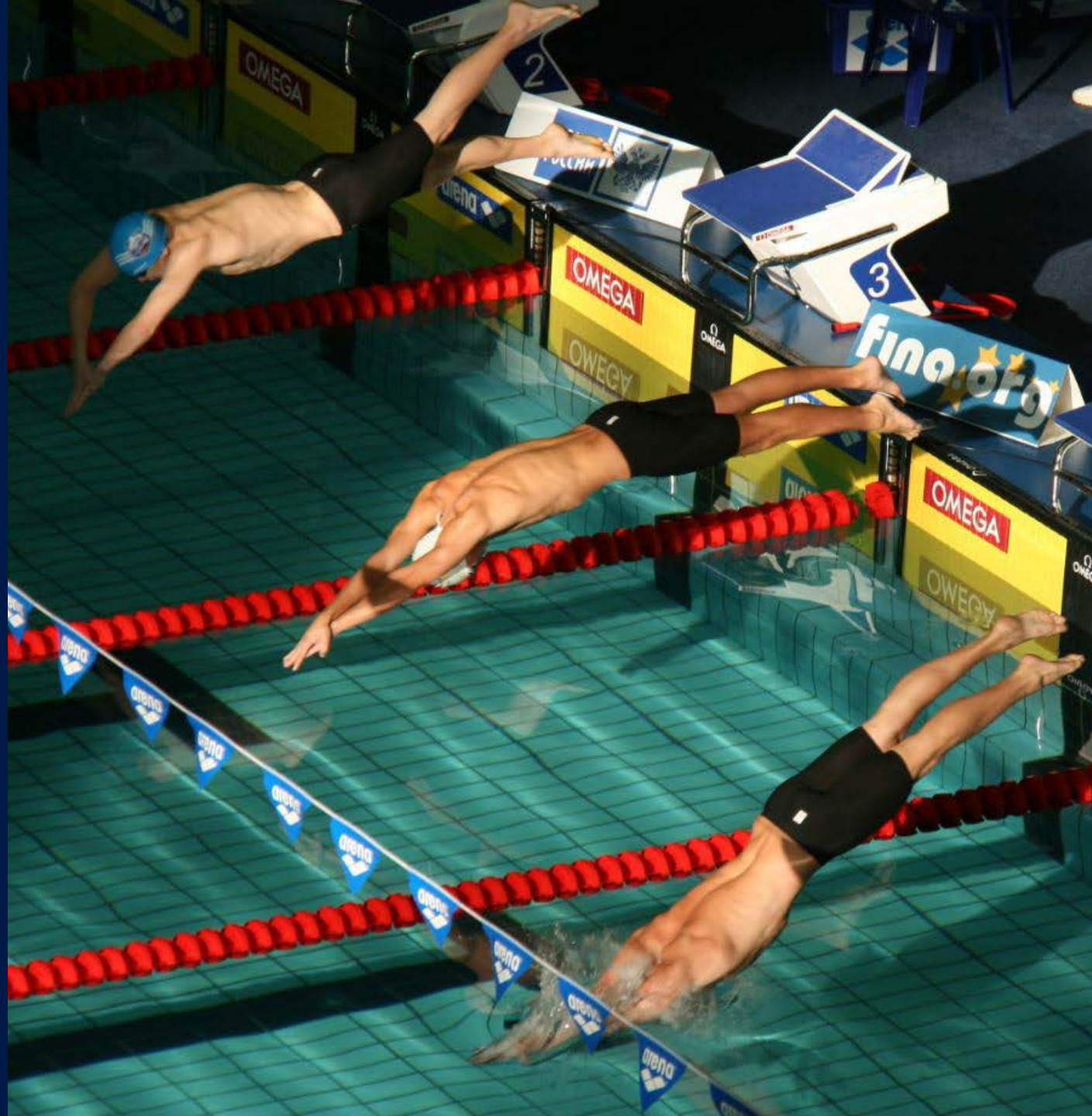
Growth in this segment is likely to stem from the rising levels of health consciousness across Australia. Customers are looking for ways to adopt a healthy and active lifestyle, which coincides with the purpose of this segment. As a healthy lifestyle increasingly becomes a normal way of life, consumers will seek products that supplement this. Facilitating a healthy lifestyle is a key growth opportunity for the segment. There does also appear to be an opportunity to capitalise on the growing middle class in Asia with the export of premium nutrition / sport supplement products.

¹ IBISWorld Pty Ltd

² Australian Institute of Sport. *The AIS Sports Supplement Framework 2019*

7. Economic modelling

This section details the approach to and results of the economy-wide modelling exercise.



Economic modelling

Overview

In this section we use KPMG's proprietary multi-industry Computable General Equilibrium (CGE) model to simulate four scenarios that provide insights regarding the industry's economy-wide *direct* and *indirect* impacts, highlighting the nature and strengths of the linkages to other sectors of the economy. The scenarios are designed to highlight the sensitivity of key economic performance metrics, such as jobs and value added, to generic variables that can be mapped to a range of potential levers that might be considered in an Industry Growth Plan. This will round out the evidence base that can be drawn upon in the development of the Sports Industry Growth Plan by providing additional information about the quantitative importance of potential changes in producer behaviour and market structure.

The four scenarios that we have modelled are increases in:

1. **Foreign demands** for Australian *Sports & Recreation* services;
2. **Household demands** for Australian *Sports & Recreation* services;
3. **Total factor productivity** for the Australian *Sports & Recreation* industry; and a
4. **Technology change** that reduces the effective costs of inputs of *Professional, Scientific & Technical* services to the Australian *Sports & Recreation* industry.

As these are illustrative simulations we have not sought to calibrate the size of the shocks with reference to an actual event or planned outcome. Instead, a one per cent shock has been assumed in each case so that the results can be interpreted as elasticities and scaled to derive estimates for a broad range of events or outcomes that might be contemplated. To assist with providing context for these elasticities we relate the one per cent shocks to the relevant dollar values of the variables of interest.

Each scenario is simulated under two different assumptions about the economic environment. The first is a short term economic environment where industry-specific capital stocks do not respond to the shocks and there is sufficient slack in the labour market so that real wages are not impacted. The alternative economic environment is characterised as the long run with capital stocks free to respond and real wages adjusting to clear the labour market with aggregate employment fixed.

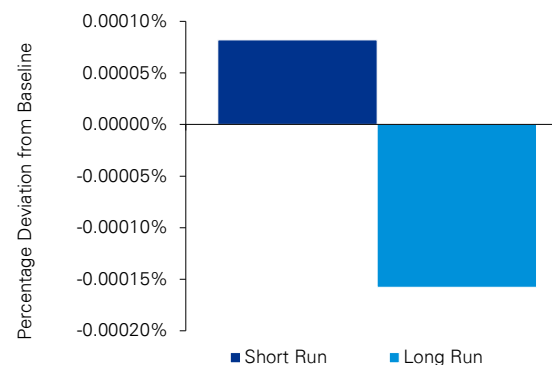
Simulation results for GDP are reported as percentage deviations from the baseline while for employment we report the increment in FTE jobs relative to the baseline.

1. Increase in foreign demand

In this scenario we consider a one per cent increase in demand for *Sport & Recreation* services by foreigners. The initial impact of this shock is to move the foreign demand curve for *Sport & Recreation* services to the right by the equivalent of around \$9 million (i.e., other things equal demand for exports of *Sport & Recreation* services increase by \$9 million). Such a shock may be due to a change in preferences by foreigners in favour of Australia *Sport & Recreation* services or it might be as a result of better promotion of existing services in overseas markets. In the case of the latter driver it is important to note that we have not modelled any costs associated with achieving this outcome (e.g., promotion costs).

The figure below shows that the increase in foreign demands for *Sport & Recreation* services boosts GDP in the short run by about 0.00008% (or around \$1.6 million). The same shock in the longer term has a negative impact on GDP. In the longer term aggregate employment is assumed not to respond to the shock (i.e., the baseline rate of unemployment is at its equilibrium level and labour supply does not respond to the shock). This means that the *Sport & Recreation* industry, which is relatively labour intensive, must displace labour from other industries in the economy. This process bids up the price of labour, adversely impacting labour-intensive industries and cost-sensitive traded goods industries.

GDP Impact: Increase in foreign demand for Sport & Recreation services



Economic modelling (cont.)

1. Increase in foreign demand (cont.)

The adjacent figure shows the employment results by industry division. Employment in the *Sports & Recreation* industry increases by 37 and 35 FTEs in the short run and long run environments respectively. At the economy-wide level employment is unchanged in the long run environment (by assumption) while aggregate employment in the short run environment increases by 32 FTEs.

The above analysis suggests that in developing a Sports Industry Growth Plan consideration must be given to the state of the labour market and to the value adding capability of the *Sports & Recreation* industry relative to other Australian industries. Other things equal, any effort to boost activity in this industry over the longer run needs to be selective, identifying and emphasising the high value adding components of the industry. Simply increasing the size of the industry, in this scenario via export growth, does not guarantee an overall benefit to the economy.

Employment Impact: Increase in foreign demand for Sport & Recreation services



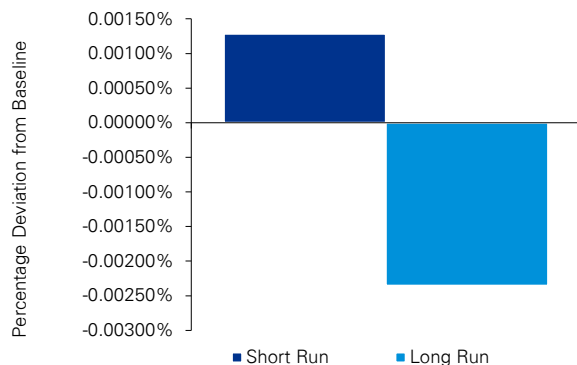
Economic modelling (cont.)

2. Increase in demand by households

In this scenario we consider a one per cent increase in demand for *Sport & Recreation* services by Australian households. The initial impact of this shock is to move the demand curve for *Sport & Recreation* services by households to the right by the equivalent of around \$103 million (i.e., other things equal household demands for *Sport & Recreation* services increase by \$103 million). Such a shock may be due to a change in preferences by Australian households in favour of *Sport & Recreation* services or it might be as a result of a push to increase participation in sport. In the case of the latter driver it is important to note that we have not modelled any costs associated with achieving this outcome. In modelling this shock we have assumed that the initial impact is for households to increase their spending on *Sport & Recreation* services by \$103 million and to decrease their spending on other goods and services by an equivalent amount.

The GDP results are summarised in the chart below. The importance of the assumed economic environment is again apparent. In the short run environment GDP increases by about 0.0013% (equivalent to around \$25 million) but decreases by about 0.0024% in the long run environment. The employment results in the adjacent chart show an increase of 614 and 548 FTEs for the *Sport & Recreation* industry in the short and long run environments respectively.

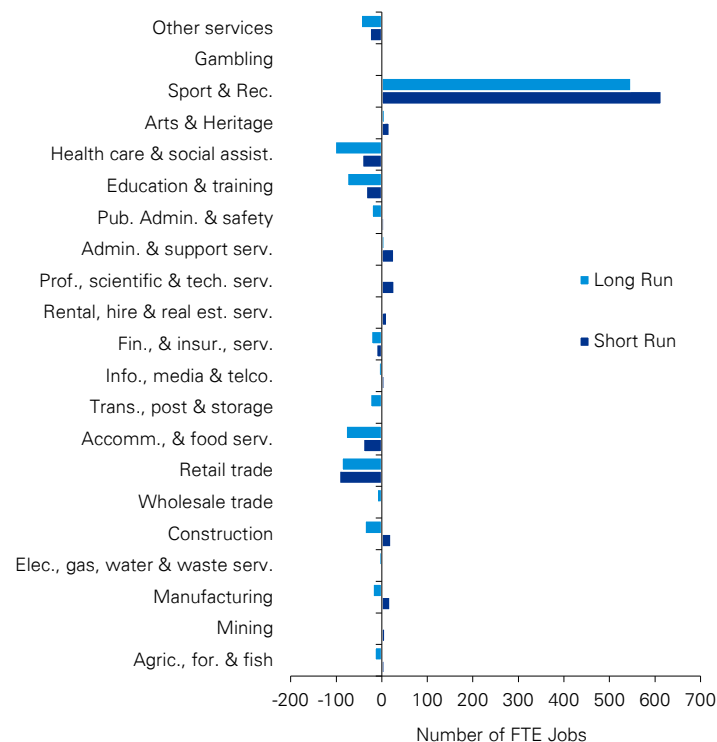
GDP Impact: Increase in household demand for Sport & Recreation services



environment where aggregate employment is constrained to not change. In the short run environment the increase in aggregate employment of just over 500 FTEs is less than the increase in FTEs for the *Sport & Recreation* industry.

It is important to recognise that household expenditure on *Sport & Recreation* services may have other flow-on benefits that we have not captured. These may include improved health and social outcomes, which may impact government budgets, and labour productivity. The *Sport & Recreation* industry plays an important role in society and its value will not be fully captured by narrow economic metrics.

Employment Impact: Increase in household demand for Sport & Recreation services



Economic modelling (cont.)

3. Increase total factor productivity

In this scenario we consider a one per cent increase in total factor productivity for the *Sport & Recreation* industry. The initial impact of this shock is to reduce costs for the *Sport & Recreation* industry by just over \$63 million (i.e., other things equal it costs the *Sport & Recreation* industry \$63 million less to produce the same amount of output). Such a shock may be due to a new technology, elimination of inefficiencies or an increase in volunteers. We have not modelled any costs associated with achieving any of these outcomes.

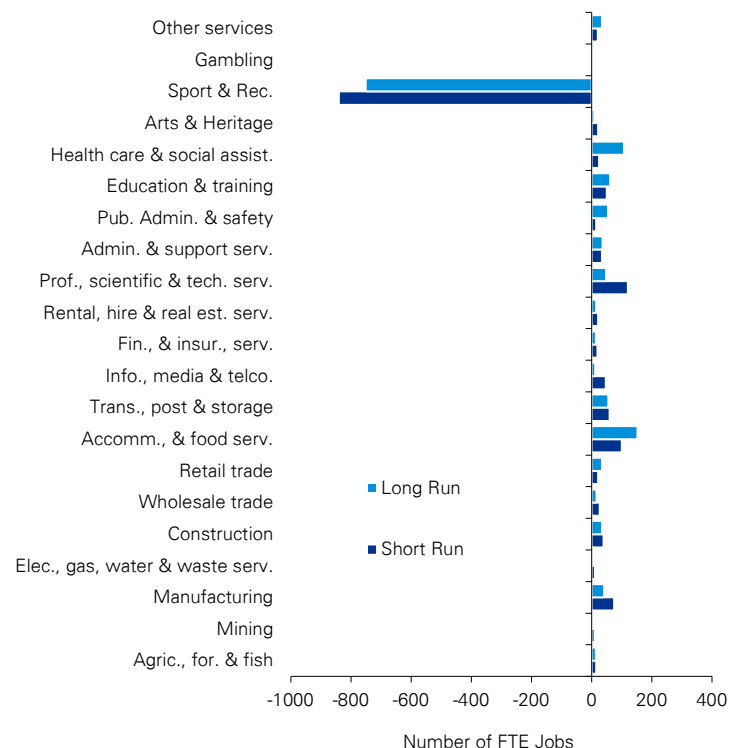
The chart below shows that an increase in total factor productivity for the *Sport & Recreation* industry increases GDP in both the short and long run environment (i.e., 0.005% and 0.007% respectively, which translates to around \$95 million and \$128 million). Productivity improvements increase the economy's resource base and unlike demand shocks their primary impact is not displacement of resources from one industry to another.

The employment results in the adjacent chart show a decrease of 840 and 750 FTE jobs in the *Sport & Recreation* industry in the short and long run environments respectively. All other industries increase employment. Despite the decrease in FTE jobs, real value added generated by the *Sport & Recreation* industry increases. This is because workers and other factors of production are more productive, meaning that fewer

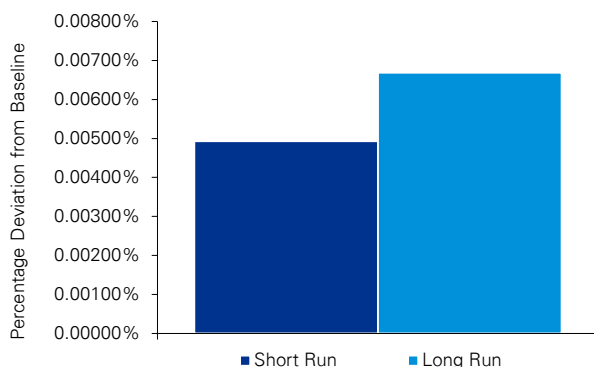
workers and other factors of production are required to produce the same output.

This simulation shows that some measures that may be contemplated by an Industry Growth Plan can have a positive impact on value added generated by the *Sport & Recreation* industry and by the economy as a whole but may result in fewer FTE jobs in the industry (albeit high value adding jobs). Given that the productivity of the *Sport & Recreation* industry is likely to be boosted by volunteer inputs, an insight from this simulation is that any reduction in volunteers may reduce the industry's productivity and value added but may increase the number of FTE jobs.

Employment Impact: Increase in Sport & Recreation industry TFP



GDP Impact: Increase in Sport & Recreation industry TFP



Economic modelling (cont.)

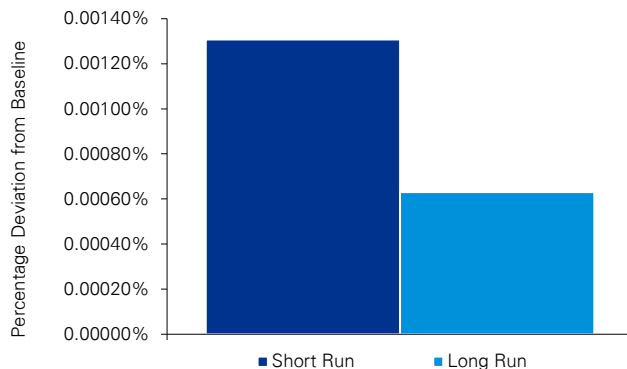
4. Increase in technical efficiency of key input

In this scenario we consider a one per cent increase in the technical efficiency of the usage by the *Sport & Recreation* industry of inputs purchased from the *Professional, Scientific and Technical Services* industry. The initial impact of this shock is to reduce costs for the *Sport & Recreation* industry by just over \$16 million (i.e., other things equal it costs the *Sport & Recreation* industry \$16 million less to produce the same amount of output). Such a shock may be due to a new technology developed by a SportsTech business. We have not modelled any costs associated with developing such a technology.

The chart below shows that technical efficiency improvement by the *Sport & Recreation* industry increases GDP in both the short and long run environment (i.e., 0.0013% and 0.0006% respectively, which translates to around \$25 million and \$12 million). The improvement in technical efficiency effectively increases the economy's resource base, which means that displacement effects are minimal.

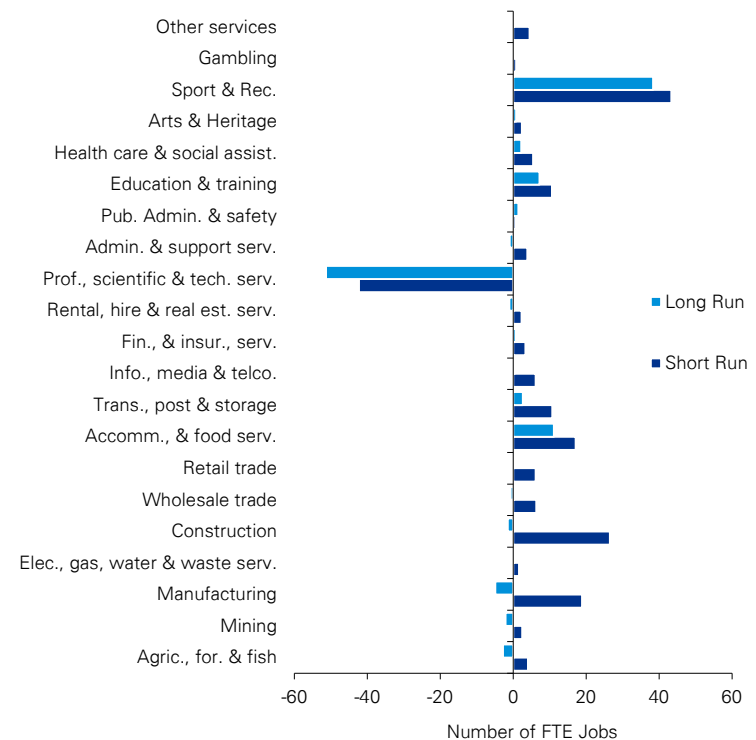
The employment results in the adjacent chart show an increase of 43 and 38 FTE jobs in the *Sport & Recreation* industry in the short and long run environments respectively. All other industries increase employment apart from the *Professional, Scientific and Technical Services* industry, which sheds jobs because the *Sport & Recreation* industry produces each unit of its output with fewer inputs from the *Professional, Scientific and Technical Services* industry.

GDP Impact: Increase in technical efficiency of key input to Sport & Recreation industry



This simulation shows that new technologies can have a positive impact on value added and employment for the *Sport & Recreation* industry and the economy as a whole. Although we have not modelled any costs associated with the development and adoption of any new technology we have also not considered any significant flow-on impacts such as adoption of the technology by other industries or direct exports of the technology. These are issues that could be further explored in the context of developing an Industry Growth Plan.

Employment Impact: : Increase in technical efficiency of key input to Sport & Recreation industry

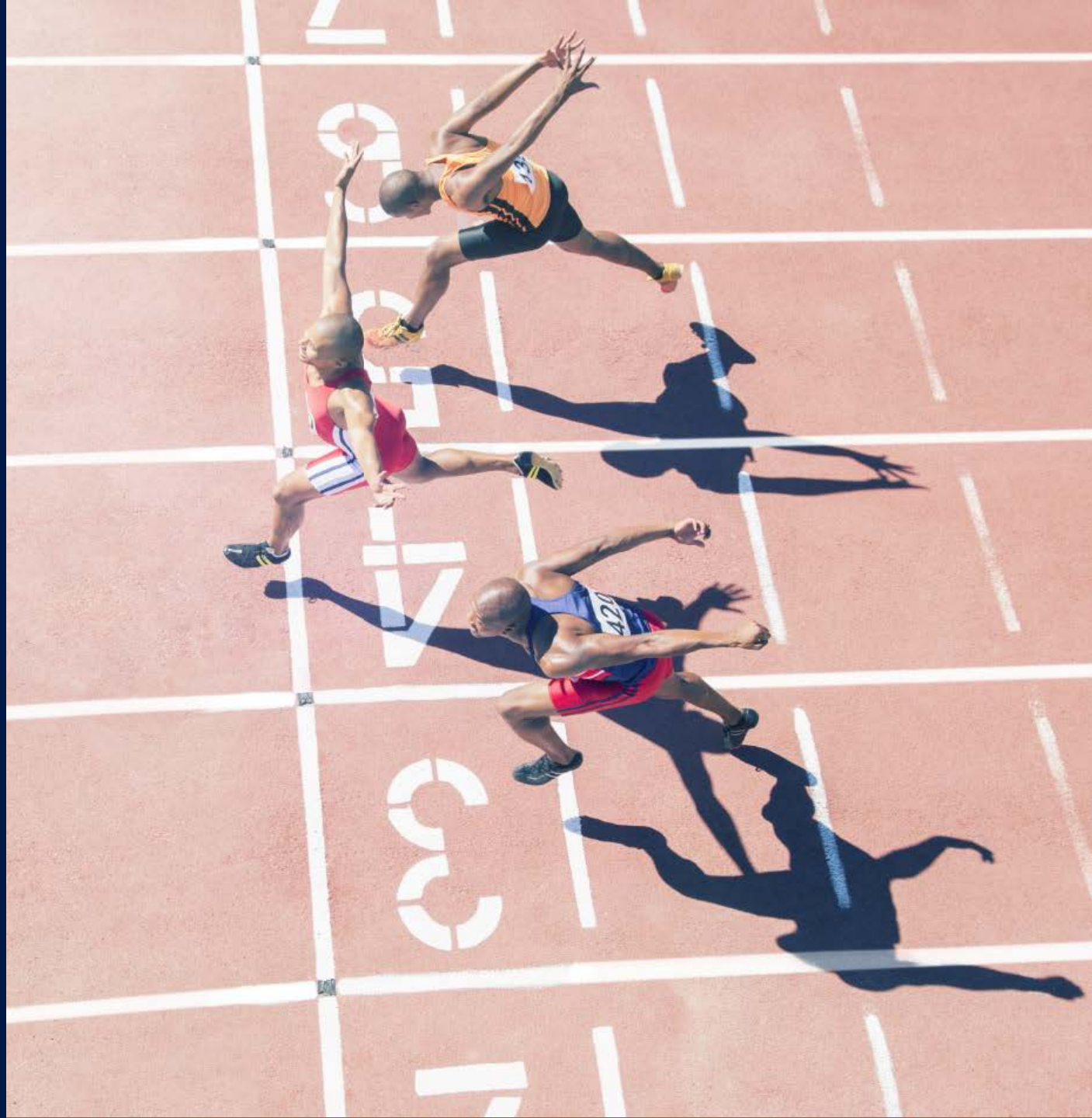


Appendices

Appendix A: Additional detailed methodology

Appendix B: Regional analysis

Appendix C: Industry reports



Appendix A

Additional detailed methodology

- Theoretical framework
- Input-Output tables
- Income weighted employment shares
- Household expenditure survey
- ABS industry and product concordances
- Disaggregating IOIG 9101 (Sports and Recreation)
- Attribution summary
- Horse racing activity
- Sales growth methodology
- Limitations

Theoretical framework

DISCUSSION

The figure on the following page is designed to help navigate the difficult task of delineating the Sports Industry. The core of the industry is built around engagement in physical activity associated with recreation and / or the attainment of physical fitness (sports participation). Sports participation can be organised or non-organised and can be competitive or non-competitive in nature. Competitive physical activities can be done at different levels of competency and intensity ranging from amateur grass-roots participation to the elite professional level.

OUTPUTS: FITNESS & RECREATION AND CONTENT

Participation in sport, regardless of the level of engagement, requires inputs of a range of goods and services, including facilities like grounds or courts, equipment and apparel and footwear. At the grass-roots level significant inputs of volunteer labour are required and financial support is provided by governments and / or sporting organisations. As the level of engagement tends towards the elite and professional levels the nature and sophistication of inputs requires changes. This includes paid coaches and support staff, analytics and sports-medicine to name a few. To support this level of activity the content generated by engagement in physical activity at the elite and professional level is packaged into commercial products that are sold to businesses and consumers. Support by government through funding and / or provision of infrastructure and amenities also occurs at this level, particularly in the case of elite sport activities that are not commercially viable but where community expectations are that the endeavour should be supported with public funding because of benefits associated with national pride and identity (e.g. Olympic events).

DEGREE OF PHYSICAL ACTIVITY

One of the challenges in considering what physical activities (sports) qualify to be included in the Sports Industry is that some candidate activities include a physical component but are defined by the contribution of equipment (e.g. motor racing) or animals (e.g. horse-racing, equestrian, rodeo). The physical requirements of the athletes competing in these activities and the fact that they are generally recognised as sports means that they should be included as part of the Sports Industry. This raises the issue of esports and whether they should be included. For many esports physical dexterity is an important attribute for players and at the elite level training

includes a significant component of physical activity that contributes to physical fitness. An added complexity with esports is that even if they are not included in the Sports Industry on a stand-alone basis they may need to be considered in the context of being integral parts of the business activities of organisations that are clearly in the Sports Industry. For example, AFL teams have esports teams as do major soccer clubs (e.g. Manchester City FC).

INPUTS REQUIRED TO PRODUCE AND DELIVER FITNESS & RECREATION AND CONTENT

To support and enable participants to engage in physical activity a diverse range of goods and services are required as inputs. This ranges from the obvious inputs that are necessary for participants to engage in the physical activity, such as:

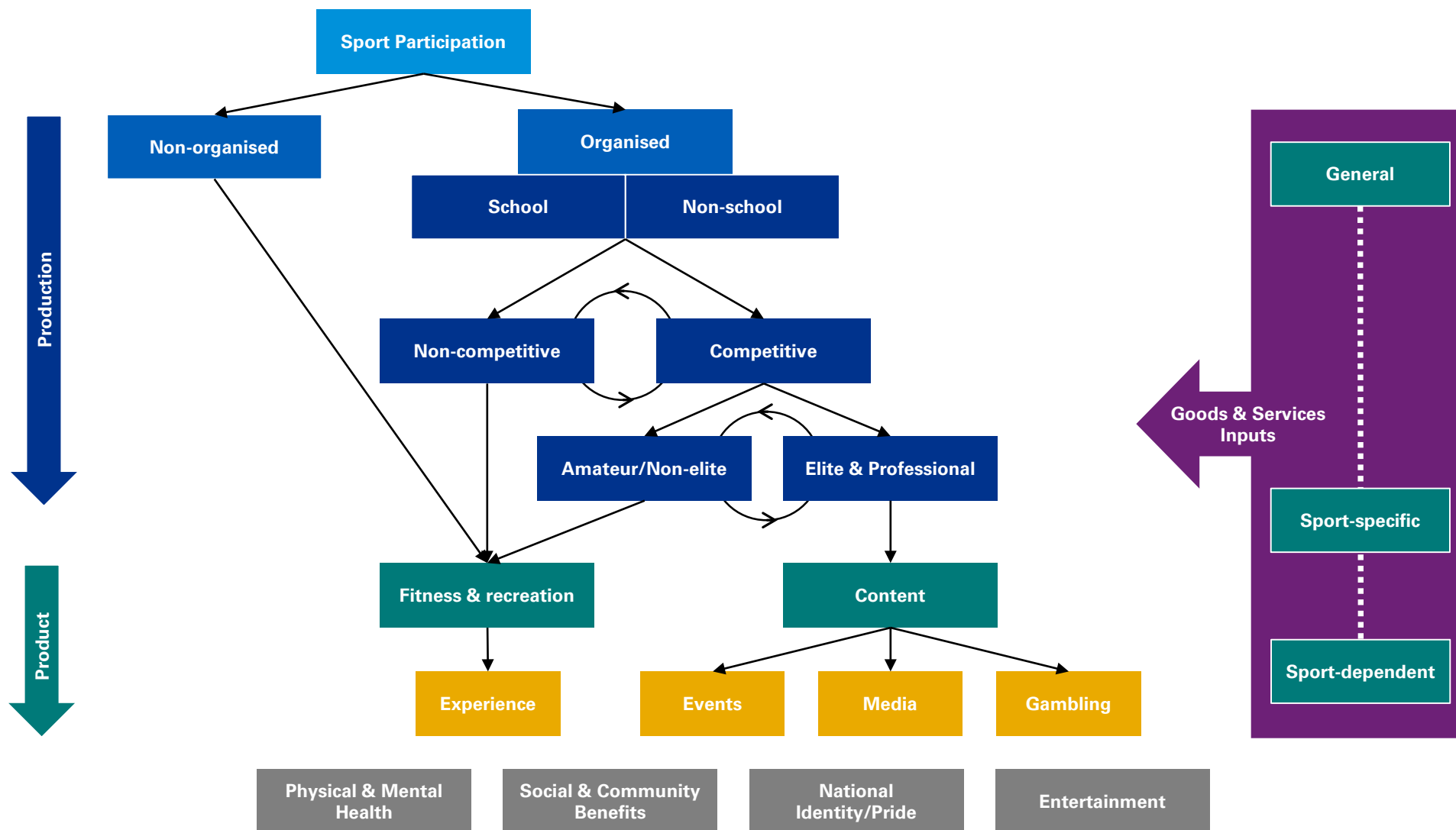
- Fields, courts, gymnasiums and other venue; or
- Equipment, clothing and apparel.

Beyond these necessary inputs there are many other goods and services that support and / or enable the activities to be performed at the elite and professional level and to be accessed by non-participants:

- Development and operation of stadiums and arenas;
- Management of sporting teams and individuals;
- Media production and delivery;
- Event organisers;
- Coaches and support staff;
- Sports medicine, science and nutrition; and
- Sports analytics.

These support and enabling activities in turn give rise to demands for inputs from other industries. For example, the education and training industry provides courses and conducts research that is crucial to the provision of inputs that support and enable physical activities at the elite levels.

Theoretical framework



Attribution: Input-Output tables

OVERVIEW

The main source of information for attribution is the Input-Output (I-O) tables. I-O tables are part of the Australian national accounts, complementing the quarterly and annual series of national income, expenditure and product aggregates. The tables provide detailed information about the supply and use of products in the Australian economy, and the structure of and inter-relationships between Australian industries.

If it can be safely assumed that all of the sport specific component of a given industry appears as sales to Sport and Recreation within the I-O tables (i.e. to IOIG 9101), the proportion of that industry's total sales that are sales to Sports and Recreation are used to derive the share of that industry's value-add that is associated with Sports and Recreation activity.

WHY USE INPUT OUTPUT TABLES?

Robust attribution: The I-O table is a powerful tool that recognises the upstream and downstream linkages with the rest of the economy of businesses engaged in sports participation.

Recognition of international trade: The I-O tables distinguish between imported and exported goods, providing an understanding of the magnitude of international linkages with the domestic Sports Industry.

DISAGGREGATION OF IOIG 9101 REQUIRED

A limitation of the I-O tables is that IOIG 9101 Sport and Recreation also includes two ANSZIC industry classes related to horse and dog racing (9121 Horse and Dog Racing Administration and Track Operation and 9129 Other Horse and Dog Racing Activities) and two other ANSZIC industry classes related to amusement (9131 Amusement Parks and Centres Operation and Amusement and 9139 Other Recreational Activities n.e.c.). To ensure that the Sports Industry is sized in line with the definition of sport for the purpose of this report, activity tied to these industries was excluded from IOIG 9101. The methodology for disaggregating IOIG 9101 into its various components and stripping out activity relating to horse, dog and amusement is detailed in Appendix B.

EXAMPLE

Within the Sports Operations segment sits the ANZSIC class 0113 Turf Growing, which maps to IOIG 0103 Other Agriculture. Given the nature of that activity, all of the

0113 classification that should be included (i.e. the sport specific component) can be safely assumed to show up in sales to Sport and Recreation within the tables (i.e. to IOIG 9101). As a result, the sales to 9101 as a proportion of overall sales within Other Agriculture (i.e., the share of total sales that are sports-related) was used to apportion a component of that industry group to the Sports Operations segment.

The table below summarises this attribution methodology.

	A	B	C	D	E	F	G	I
Supply \ Use	Sports and recreation (excl. Horse and Dog racing, Amusement) (\$m)	Rest of industry groups (\$m)	Total industry uses (\$m) (A + B)	Final uses (\$m)	Total supply (\$m) (C + D)	Sports-related share of total supply (A/E)	Value add (\$m)	Sports-related share of value add (\$m) (F*G)
0103 Other Agriculture	122	17 030	17 188	11 391	28 579	0.4%	14 060	\$60m

DETAILED INPUT-OUTPUT TABLES (PRODUCT DETAILS)

The ABS publishes a version of the I-O tables with information on supply and use by detailed product item based on the Input-Output Product Classification (IOPC). The IOPC is an industry-of-origin product classification, specifically developed for the compilation and application of Australian I-O tables. The product detail I-O tables break down the total sales of each IOPG into its IOPC components (i.e., product sales shares).

These tables can be used to attribute sports-related IOPC activity to a given IOPG (and by association, IOIG). In practice, these tables proved only partially useful in one instance (when attributing ticket sales activity to IOPG 7210 Employment, Travel Agency and Other Administrative Services). Not many IOPC's are strictly sports related (requiring further research to attribute sports-related activity) and for some IOPC's no sales data was published due to its unreliability.

The detailed tables were used to ensure that the results of a sales-share driven attribution approach would not materially differ from the preferred methodology of using income-weighted employment shares to isolate sports-related activity within an IOIG. Income-weighted employment shares are preferred because wages are more closely related to the measurement of value add (the measurement of an industry's contribution to GDP) than sales.

Income weighted employment shares

OVERVIEW

If an ANZSIC class within IOIG identified as being sports-related is well defined (e.g., boat builders, sports coaches), an income-weighted employment share (out of total employment within the IOIG) is applied to estimate the portion of activity within the IOIG that represents sport related activity.

Employment shares are weighted on the basis of income levels to avoid over or under estimating the dependence of the identified IOIG on Sport and Recreation. A worker's income is generally a reflection of a worker's output. By weighting an ANZSIC class' employment share for its share of total income, the fact that some workers are more productive (in an economic sense) than others is accounted for.

DERIVING INCOME WEIGHTED EMPLOYMENT SHARES

The ABS Census provides information on total employment and weekly income for each ANZSIC class. In order to derive an income-weighted employment share for each ANZSIC class within each IOIG some adjustments to the Census data are required.

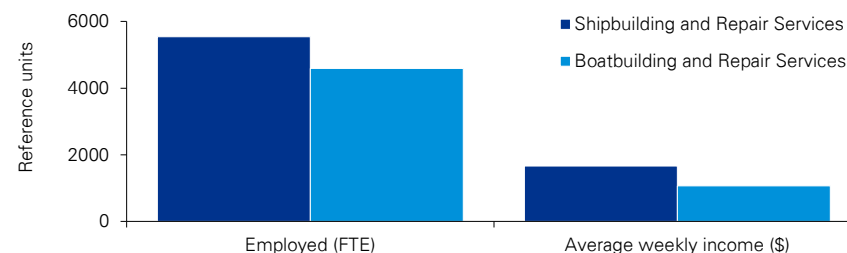
Firstly the number of Full Time Employees (FTE) in each ANZSIC class had to be calculated by taking a weighted sum of full-time employees, part-time employees and those employed but away from work. The average income for each ANZSIC class was calculated by converting the reported income brackets (i.e. \$800-999, \$1,000-1,249 etc.) to their respective mid-points and then averaging based on the distribution of responses.

Finally, each ANZSIC class' share of total employment in its parent IOIG was adjusted for the average income tied to that class relative to other classes contained within the IOIG.

EXAMPLE OF APPLICATION

Boatbuilding and repair services represent 45% of employment in IOIG 2302 Ships and Boat Manufacturing, but earn just 39% of the total income generated by both Boat builders and Ship builders.

Employment and Income in IOIG 2302 Ships and Boat Manufacturing



On the economic theory-based assumption that wages are a reflection of a worker's output, it would be inappropriate to attribute activity in IOIG 2302 tied to Sports and Recreation on the basis of Boat builder's share of employment in the IOIG (45%). Wages, and therefore value added by this sector, are predominately driven by Shipbuilding and Repair Services and this attribution method needs to reflect this to avoid overstating the dependence of this industry on Sports and Recreation.

After weighting the employment shares for income shares, the final income weighted employment share for Boatbuilding and Repair Services becomes 35% (down from a non-weighted employment share of 45%).

COMPLEMENTS INDUSTRY REPORTS/SECONDARY RESEARCH

For the purpose of this project, income weighted employment shares alone are often not useful because it is uncommon for an ANZSIC class to solely capture sport-related activity. However, the income weighted employment shares are a useful tool for disaggregating an IOIG into its ANZSIC class components. Once activity in a given ANZSIC class is isolated, secondary research (i.e., detailed industry reports at the ANZSIC class level) was utilised to isolate the sports-related activity within an ANZSIC class.

For example, an industry report on Boatbuilding and Repair Services revealed that 37.5% of activity in this ANZSIC class was related to 'small vessels' (e.g., sports-related vessels such as canoes and rowing boats). By using the income weighted employment share in conjunction with the industry report finding, the sports-related component of IOIG 2302 Ships and Boat Manufacturing can be isolated.

HES survey & ABS industry and product concordances

OVERVIEW

The ABS Household Expenditure Survey (HES) (cat. no. 6530.0) collects detailed information about Australian household spending and is collected jointly with the Survey of Income and Housing, which collects data about household income, assets, liabilities and other household characteristics, such as tenure type.

Table 40 of the Australian National Accounts: Input-Output Tables maps Input-Output Product Groups (IOPG) to Household Expenditure Classification (HEC) items (equivalent to the list of expenditure items provided in the HES). Whilst this mapping is available alongside each release of the I-O tables, the 2008-09 release of the National Accounts (cat. no. 5209.0.55.001) was the last publication to include weights alongside the mapping of HEC items to corresponding IOPG's. These weights are useful for the task of attributing a given industry's reliance on Sports and Recreation.

EXAMPLE

Sports-related equipment and apparel was identified as an important segment of the Sports Industry. Within this segment belongs IOIG 1306 Footwear Manufacturing, which includes ANZSIC class 1352 Footwear Manufacturing.

It is likely that not all of this IOIG's sport related activity is captured as sales to IOIG 9101 Sports and Recreation. It is more probable that this industry's sales are predominately to wholesale, retail and household sectors; therefore activity cannot simply be attributed according the Input-Output tables. Further, employment shares cannot be utilised because all of the employment in ANZSIC 1352 cannot be wholly attributed to sports-related goods. Inspection of Table 40 of the 2008-09 Australian National Accounts: Input-Output Tables reveals that, of all of the items captured within IOPG 1306 Footwear Manufacturing, *sports equipment* represents 6% (see table at right). Thus it is assumed that 6% of activity in IOPG 1306, and by association IOIG 1306, is linked to the Sports Industry.

IOPG	Weight	Household Expenditure Classification (HEC)
1306 Footwear Manufacturing	7%	Childrens and infants footwear
	19%	Clothing nfd
	32%	Footwear nfd
	8%	Mens footwear
	8%	Other miscellaneous goods nec
	6%	Sports equipment
	20%	Women's footwear
Sum	100%	

METHOD 2 - NO WEIGHTS EXIST

If the 2008-09 ABS Concordances do not include weights for the sports-related item identified in the 2015-16 HES (i.e., the item was not included in the 2008-09 HES, therefore no weights are available) an alternative method is followed. The proportion of total household expenditure on an IOPG (taken at purchasers prices from the Input-Output tables) represented by the estimated total household expenditure on the sports-related item tied to that IOPG (provided in the HES) is calculated and assumed to represent the portion of industry activity tied to the production of the sports-related item.

EXAMPLE

Household expenditure on Wearable Fitness Tech (based on the 2015-16 HES) scales up to around \$11m of total household expenditure (nationally) on this product. According to the IOIG to HES Classification mapping, Wearable Fitness Tech belongs to Professional, Scientific, Computer and Electronic Equipment Manufacturing.

According to Table 4 of the Input-Output tables, total household expenditure (at purchasers prices) on Professional, Scientific, Computer and Electronic Equipment Manufacturing in 2016-17 was \$22,889m. The proxy value for the amount of activity within the Professional, Scientific, Computer and Electronic Equipment Manufacturing industry tied to the production of Wearable Fitness Tech is therefore 0.05% (\$11m out of \$22,889m).

Disaggregating IOIG 9101 Sports and Recreation

OVERVIEW

The eight ANZSIC industry classes identified by the ABS as part of Input-Output Industry Group (IOIG) 9101, Sports and Recreation are:

- 9111 Health and Fitness Centres and Gymnasias Operation
- 9112 Sports and Physical Recreation Clubs and Sports Professionals
- 9113 Sports and Physical Recreation Venues, Grounds and Facilities Operation
- 9114 Sports and Physical Recreation Administrative Service
- 9121 Horse and Dog Racing Administration and Track Operation
- 9129 Other Horse and Dog Racing Activities
- 9131 Amusement Parks and Centres Operation
- 9139 Amusement and Other Recreational Activities n.e.c.

IOIG 9101 Sport and Recreation includes two ANZSIC industry classes related to horse and dog racing (i.e., 9121 and 9129) and two other ANZSIC industry classes (9131 Amusement Parks and Centres Operation and 9139 Amusement and Other Recreational Activities n.e.c.). Application of our methodology would clearly exclude industry classes 9131 and 9139 and the dog racing components of industry classes 9121 and 9129 from the Sports Industry.

A number of methodological steps were taken to strip out activities belonging to Amusement and Dog Racing from IOIG 9101. These steps are outlined below.

DISAGGREGATION METHODOLOGY – STEP ONE

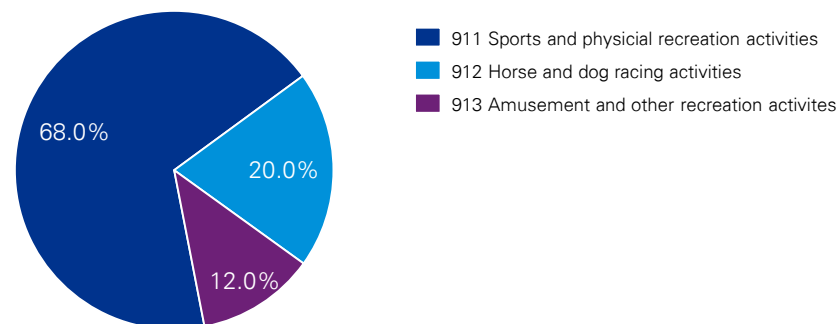
The ABS Arts and Recreation Services data cube, published in the 2014-15 issue of Australian Industry (cat. no. 8155.0) provides a breakdown of various operational metrics (e.g., income, expenses and wages etc.) for ANZSIC sub divisions of interest:

- **911 Sports and Physical Recreation Activities** (covering ANZSIC classes 9111, 9112 and 9113);
- **912 Horse and Dog Racing Activities** (covering ANZSIC classes 9121 and 9129);
- **913 Amusement and Other Recreational Activities** (covering ANZSIC classes 9131 and 9139).

With this information we were able to derive a sensible split of activity amongst each Sports and Recreation ANZSIC sub division according to its share of total Sports and

Recreation expenses (see below). The share of total expenses was chosen as a proxy for share of total industry activity because a close comparison (relative to other indicators such as income or employment shares) can be drawn between a particular industry's expenses and information relating to that industry's cost structure contained within our main source of information, the Input-Output table. Note: value-add shares, instead of expense shares, were used to split value-add figures in the Input-Output tables according to the same methodology described here for costs.

Share of total Sports and Recreation activity expenses



At this point 12% of activity in IOIG 9101 can be disregarded on the assumption that it is associated with Amusement and other Recreation Activities. Next, a methodology had to be devised for isolating horse racing activity from the 20% of Sports and Recreation activity tied to horse and dog racing. This methodology is outlined below.

DISAGGREGATION METHODOLOGY – STEP TWO

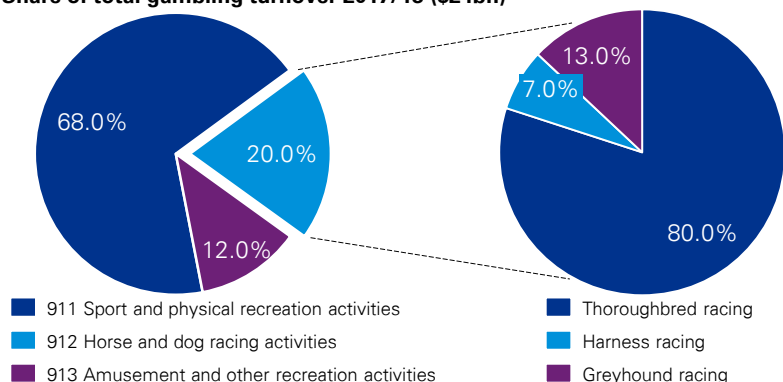
Each financial year Racing Australia publishes 'A guide to the racing industry in Australia'. The latest guide (2017-18) includes estimates on the total amount of gambling revenue generated by thoroughbred, harness and dog racing respectively. We use the share of total gambling turnover amongst these three activities as a way of splitting dog racing from the horse racing and harness racing industry. We consider this a reasonable assumption given the dependence of these sectors on gambling revenue.

Disaggregating IOIG 9101 Sports and Recreation (Cont.)

DISAGGREGATION METHODOLOGY – STEP TWO (Cont.)

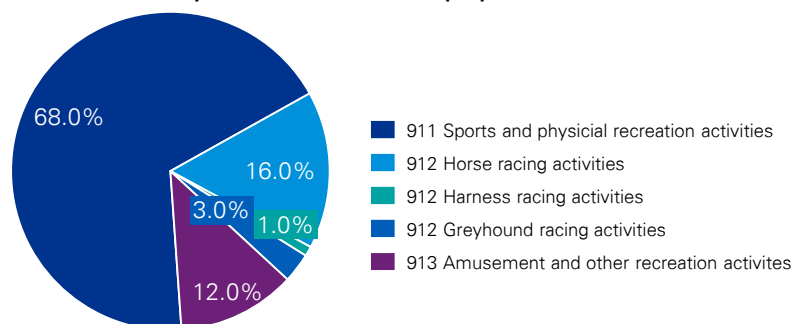
The figure below shows the share of gambling revenue between thoroughbred, harness and greyhound racing in 2017/18.

Share of total gambling turnover 2017/18 (\$24bn)



By apportioning the total expenses recorded by the Horse and Dog Racing industry to the thoroughbred, harness and greyhound industries, according to the share of gambling turnover in the thoroughbred, harness and greyhound racing activities, dog racing activity can be isolated (see below). Dog Racing activities are estimated to represent a relatively small portion of the Sports and Recreation IOIG (3%).

Detailed share of total Sports and Recreation Activity expenses



DISAGGREGATION METHODOLOGY – STEP THREE

A reasonable methodology for stripping Amusement and Dog Racing activities out of the Sports and Recreation IOIG has been derived. In the absence of further information, it is assumed that 68% of the cost structure contained within the Sports and Recreation IOIG column of the Input-Output table is tied to our definition of the Sports Industry, a further 17% is tied to Horse racing activity (quarantined for further analysis) and 15% is disregarded on the basis that it is activity not defined as sport.

The application of this disaggregation methodology to the Input-Output table was refined to account for the fact that not all industries supply activities within the Sports and Recreation IOIG in equal proportions. For example, it would be unrealistic to assume that the Veterinary Pharmaceutical and Medicinal Product Manufacturing industry is supplying 68% of its product to (human) Sports and Physical Recreation activities or 12% to Amusement Activities. The table below provides an overview of the application of the disaggregation methodology to the IOIG data, stating four identified industries where inputs of judgement were required to derive sensible splits. Alternative disaggregation methodologies were not considered for industries with no relevance to the Sports Industry.

Supplying Industry	Share of IOIG 9101 Sports and Recreation					Sum
	911 Sports and Rec -	912 Horse racing activities	912 Harness racing activities	912 Greyhound racing activities	913 Amusement and other recreation activities	
0102 Poultry and Other Livestock (e.g., Horse Farming)	0.0%	92.2%	7.8%	0.0%	0.0%	100.0%
0103 Other Agriculture (e.g., Turf Growing)	77.5%	18.0%	1.5%	3.0%	0.0%	100.0%
1802 Veterinary Pharmaceutical and Medicinal Product Manufacturing	0.0%	79.9%	6.7%	13.3%	0.0%	100.0%
2302 Ships and Boat Manufacturing	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Rest of the industries considered in scope	68%	16%	1%	3%	12%	100.0%

Note: The portion of activity removed from a sub group is shared across the remaining sub groups according to the ratio of use-of-inputs by the remaining sub groups.

Attribution summary

Sports operations	Attribution	Sports medicine	Attribution	Equipment and apparel	Attribution
0103 Other Agriculture		8401 Health Care Services		1305 Clothing Manufacturing	
0113 Turf Growing	17.8%	8512 Specialist Medical Services	-	1351 Clothing Manufacturing	-
2302 Ships and Boat Manufacturing		8533 Physiotherapy Services	13.0%	1306 Footwear Manufacturing	
2392 Boatbuilding and Repair Services	37.5%	8534 Chiropractic and Osteopathic Services	-	1352 Footwear Manufacturing	5.9%
6901 Professional, Scientific and Technical Services		8539 Other Allied Health Services	-	2502 Other Manufactured Products	
6910 Scientific Research Services	0.5%			2592 Toy, Sporting and Recreational Product Manufacturing	53%
6921 Architectural Services		Media	Attribution	3301 Wholesale Trade	
6923 Engineering Design and Engineering Consulting Services		5401 Publishing (except Internet and Music Publishing)		3734 Toy and Sporting Goods Wholesaling	50%
6940 Advertising Services		5412 Magazine and Other Periodical Publishing	-	3901 Retail Trade	
6950 Market Research and Statistical Services		5501 Motion Picture and Sound Recording		4241 Sport and Camping Equipment Retailing	82.9%
6962 Management Advice and Related Consulting Services		5511 Motion Picture and Video Production	15.7%	6601 Rental and Hiring Services (except Real Estate)	
6970 Veterinary Services		5512 Motion Picture and Video Distribution	-	6639 Other Goods and Equipment Rental and Hiring n.e.c.	2.6%
6991 Professional Photographic Services		5601 Broadcasting (except Internet)			
6999 Other Professional, Scientific and Technical Services n.e.c.		5610 Radio Broadcasting	-	Sports Tech	Attribution
8210 Arts, Sports, Adult and other Education Services (including Community Education)		5621 Free-to-Air Television Broadcasting	30.2%	2401 Professional, Scientific, Computer and Electronic Equipment Manufacturing	
8211 Sports and Physical Recreation Instruction	100%	5622 Cable and Other Subscription Broadcasting	29.2%	2412 Medical and Surgical Equipment Manufacturing	-
9101 Sports and Recreation		5701 Internet Service Providers, Internet Publishing and Broadcasting, Websearch Portals and Data Processing		2419 Other Professional and Scientific Equipment Manufacturing	0.2%
9111 Health and Fitness Centres and Gymnasia Operation	100%	5700 Internet Publishing and Broadcasting	-	2429 Other Electronic Equipment Manufacturing	-
9112 Sports and Physical Recreation Clubs and Sports Professionals	100%	5921 Data Processing and Web Hosting Services	-	5401 Publishing (except Internet and Music Publishing)	
9114 Sports and Physical Recreation Administrative Service	100%			5420 Software Publishing	-
9501 Personal Services		Education	Attribution		
9539 Other Personal Services n.e.c.	29.7%	8010 Primary and Secondary Education Services (including Pre-Schools and Special Schools)		Nutrition and supplements	Attribution
		8021 Primary Education	3.3%	1109 Other Food Product Manufacturing	
Events, venues and facilities	Attribution	8022 Secondary Education	9.2%	1199 Other Food Product Manufacturing n.e.c.	2.1%
7210 Employment, Travel Agency and Other Administrative Services		8023 Combined Primary and Secondary Education	6.3%	1801 Human Pharmaceutical and Medicinal Product Manufacturing	
7299 Other Administrative Services n.e.c.	6.9%	8110 Technical, Vocational and Tertiary Education Services (including undergraduate and postgraduate)		1841 Human Pharmaceutical and Medicinal Product Manufacturing	1.3%
9101 Sports and Recreation		8101 Technical and Vocational Education and Training	4.2%	3301 Wholesale Trade	
9113 Sports and Physical Recreation Venues, Grounds and Facilities Operation	100%	8102 Higher Education	2.3%	3609 Other Grocery Wholesaling	-
				3901 Retail Trade	
		Gambling	Attribution	4129 Other Specialised Food Retailing	2.9%
		9201 Gambling			
		9209 Other Gambling Activities	20%		

Horse racing activity

OVERVIEW

As discussed previously, economic activity tied to horse racing (specifically, horse racing activities and harness racing activities) has been quarantined for separate analysis. This section of the report presents an overview of the findings from the additional analysis. These findings are in addition to the results of the main Sports Industry analysis presented earlier in this report.

RESULTS

The table below summarises the IOIG groups associated with horse racing activity along with their associated key metrics providing insight into the contribution and significance of the IOIG to the horse racing industry.



Input-Output Industry Group	% Attributed to horse racing	Total sports related sales	Domestic production	Imports	Exports	Domestic prod. and domestic cons.	Value added by horse racing	Horse racing related jobs (FTE)
0102 Poultry and Other Livestock	0.91%	\$76m	\$74m	\$2m	\$2m	\$72m	\$50m	106
0103 Other Agriculture	0.11%	\$31m	\$29m	\$1m	\$2m	\$27m	\$15m	52
1302 Tanned Leather, Dressed Fur and Leather Product Manufacturing	1.56%	\$54m	\$19m	\$35m	\$16m	\$3m	\$4	16
1802 Veterinary Pharmaceutical and Medicinal Product Manufacturing	23.35%	\$910m	\$177m	\$733m	\$177m	\$0m	\$53m	108
6901 Professional, Scientific and Technical Services	0.13%	\$280m	\$267m	\$12m	\$10m	\$257m	\$115m	649
9101 Sports and Recreation (<u>horse racing activity only</u>)	100%	\$3,069m	\$2,922m	\$147m	\$122m	\$2,800m	\$600m	7,740
9201 Gambling	25.05%	\$2,693m	\$2,524m	\$169m	\$110m	\$2,414m	\$1,028m	5,794
Total		\$7,112m	\$6,012m	\$1,100m	\$438m	\$5,575m	\$1,865m	14,465

Sales growth methodology

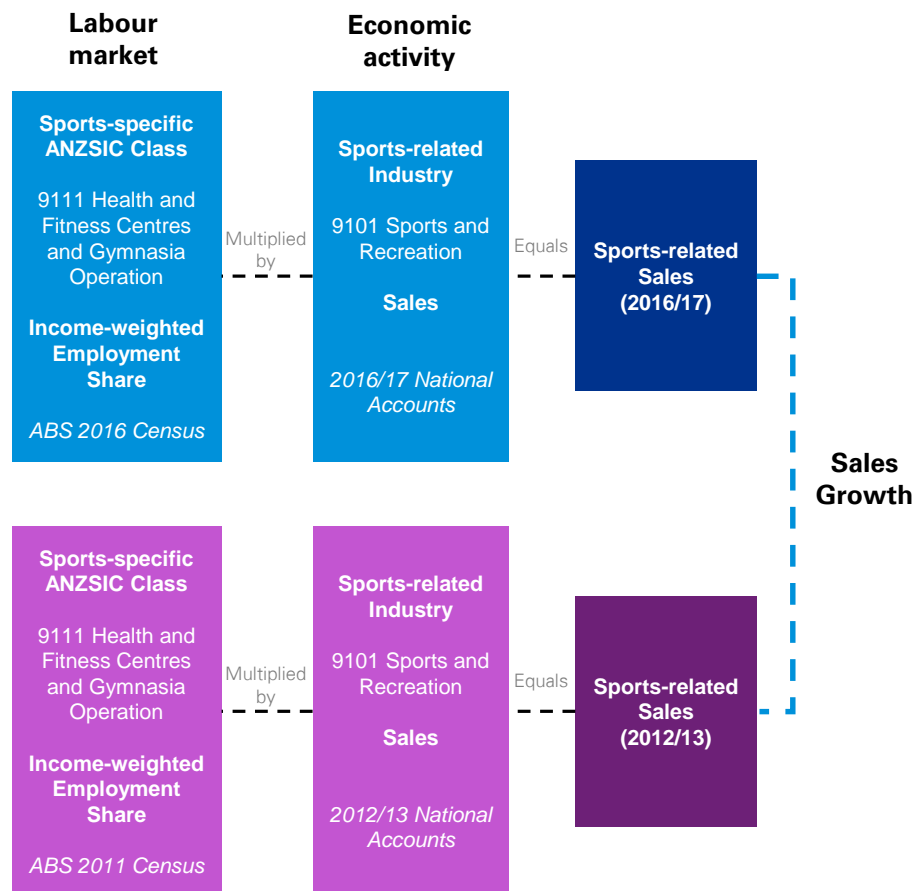
GROWTH IN SALES BY SEGMENT

Given the importance of employment shares in attributing economic activity in the National Accounts to the Sports Industry, a time series analysis must be cognisant of a changing labour market over time.

Where KPMG has examined growth in the Sports Industry and its segments the analysis has been conducted using the 2011 Census combined with the 2012/13 National Accounts (the closest available National Accounts publication to the 2011 Census) and the 2016 Census combined with the 2016/17 National Accounts publication. By following this methodology, KPMG's estimated growth figures consider changes in employment and income shares as well as general growth in economic activity. The figure to the right aims to visualise this methodology using an example in a simple framework.

An alternative approach would be to keep income and employment shares fixed (i.e. a fixed labour market assumption), whilst analysing changes in economic activity only. The downside of this approach is that a fixed labour market assumption is likely to become increasingly tenuous over longer periods of time (i.e., the further the year of the National Accounts publication departs from the year of the Census).

For replication of KPMG's methodology across National Account publication releases in-between Census years a fixed labour market can be assumed, or the ABS Labour Force survey can be used to approximate changes in sport-specific employment by examining labour movements across industries at the 1 digit ANZSIC level. Regularly published labour force and income data at the 4-digit ANZSIC class level, as utilised in this study, is not publically available outside of the Census publications.



Limitations

ATTRIBUTION METHODS ARE ROBUST, FINDINGS ARE ESTIMATES ONLY

In the absence of costly detailed business surveys covering very large nation-wide sample sizes, attributing sports-related economic activity to industry groups is necessarily a best-estimate exercise. KPMG has undergone this process following a robust and transparent methodology, within the confines of the National Accounts framework published by the ABS. KPMG's estimates are likely to be on the conservative-side given that a great deal of activity known or assumed to be sport-related could not be isolated and extracted from the available data in a robust fashion, and was excluded on this basis.

SEGMENTATION PROCESS IS DESIGNED TO AVOID DOUBLE COUNTING

A key priority of the segmentation process was to ensure that activity was not double counted across multiple segments (to avoid an inflated estimate of the size of the Sports Industry). This meant that activity attributed to certain segments could belong to other segments, and vice versa. Sports Technology is a good example of a segment where activity known to fall under the 'Sports Technology' umbrella term is likely to be captured elsewhere (e.g., sports-related professional services are captured in the Sports Operations segment; and sports-related wearable technology is likely captured in the Equipment and Apparel segment).

PERCENTAGES OBTAINED FROM INDUSTRY REPORTS MAY NOT BE REPRODUCIBLE

KPMG has drawn on secondary research to fill information gaps that arose during the attribution process. Industry reports provide granular detail on the shares of activity types associated with ANZSIC classes. These shares are not reproducible and would, in the absence of further research, be fixed over time. Findings from these industry reports are provided in Appendix C.

CORRESPONDENCE BETWEEN INPUT-OUTPUT PRODUCT GROUPS AND INPUT-OUTPUT INDUSTRY GROUPS

Information contained within the Australian National Accounts, Input-Output Tables, Table 2 shows input by Input-Output Industry Group (IOIG) and final use category and imports by Input-Output Product Group (IOPG). When analysing the linkages between industries in the Input-Output framework using Table 2, KPMG has implicitly assumed that the sales activity tied to an IOPG is wholly produced by the IOPG's corresponding IOIG (IOIG's are classified by the ABS on the basis of that industry group's dominant

activity/product, aka. IOPG).

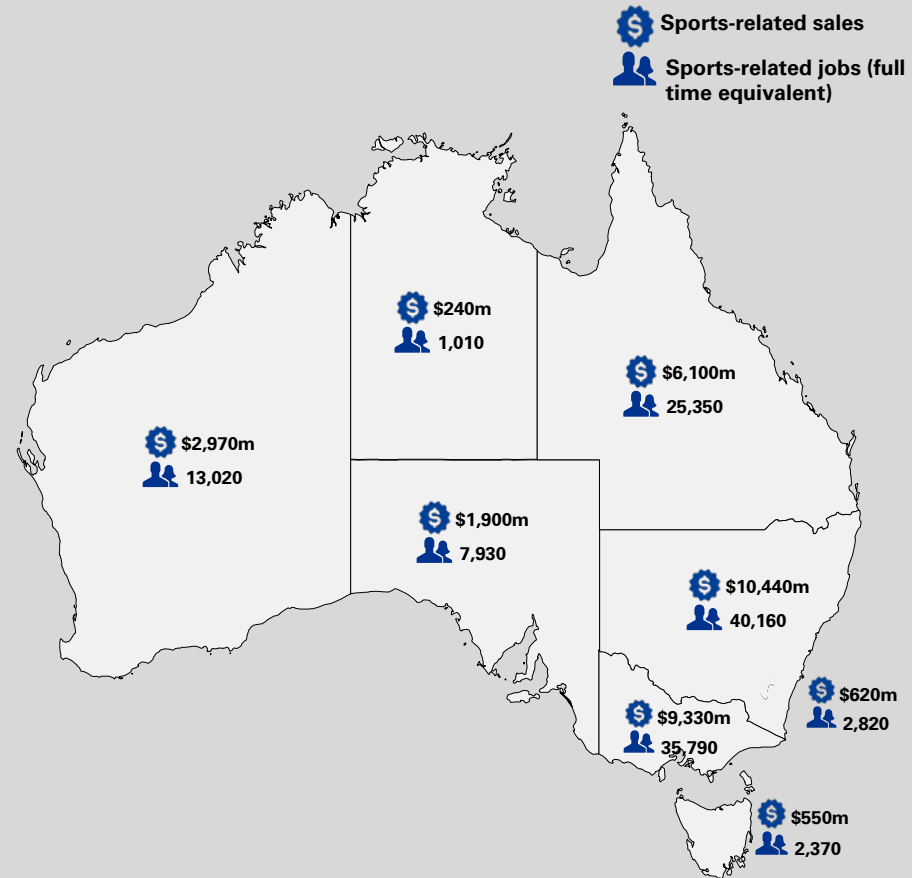
This assumption could result in an overestimation of the sports-related economic activity attributed to a given industry, if it is the case that the observed sales activity recorded against an IOPG is enabled via the production efforts of multiple industries (activity which, in any case, is not revealed in Table 2). Analysis of the diagonal elements in Table 1 of the National Accounts, *Australian production by product group by industry*, reveals that KPMG's assumption is reasonable. The large majority of IOIG's identified as being sports-related produce between 90 and 100% of the industry's corresponding IOPG. The IOIG's with weaker links to a specific IOPG are the manufacturing, wholesaling and retail IOIGs (60-70% of goods are produced by these IOIG's relate to their corresponding IOPG). Activity in these IOIG's is notoriously challenging to isolate due to the nature of the product/good. For example, the manufacturing industry produces many different types of products (i.e., activity is spread across multiple product groups) and an interrelationship exists between these particular industries (e.g., wholesale markets and retail markets represent marginal activity along the broad supply chain).

INCOME-WEIGHTED EMPLOYMENT SHARES ARE CALCULATED AT A FIXED POINT IN TIME

When using income-weighted employment shares to disaggregate economic activity from the IOIG level to the ANZSIC class level, KPMG has assumed that i) the share of employment across ANZSIC classes and ii) average incomes across ANZSIC classes has not materially changed since this data was collected by the ABS on Census night. Note that where KPMG has examined growth in the Sports Industry and its segments the analysis has been conducted using the 2011 Census combined with the 2012/13 National Accounts (the closest available National Accounts publication to the 2011 Census) and the 2016 Census combined with the 2016/17 National Accounts publication. Therefore, KPMG's growth figures consider changes in employment and income shares as well as general growth in economic activity. An alternative approach would be to keep income and employment shares fixed (i.e. a fixed labour market assumption), whilst analysing changes in economic activity only. The downside of this approach is that a fixed labour market assumption is likely to become increasingly tenuous over longer periods of time (i.e., the further the year of the National Accounts publication departs from the year of the Census).

Appendix B Regional analysis

This section details the approach and findings from the analysis of the Sports Industry by State and Territory.



Regional analysis

SPORTS-RELATED ECONOMIC ACTIVITY BY STATE AND TERRITORY

Using ABS Census employment shares at the 4-digit ANZSIC level KPMG has estimated the value of the Sports Industry to each Australian State and Territory.

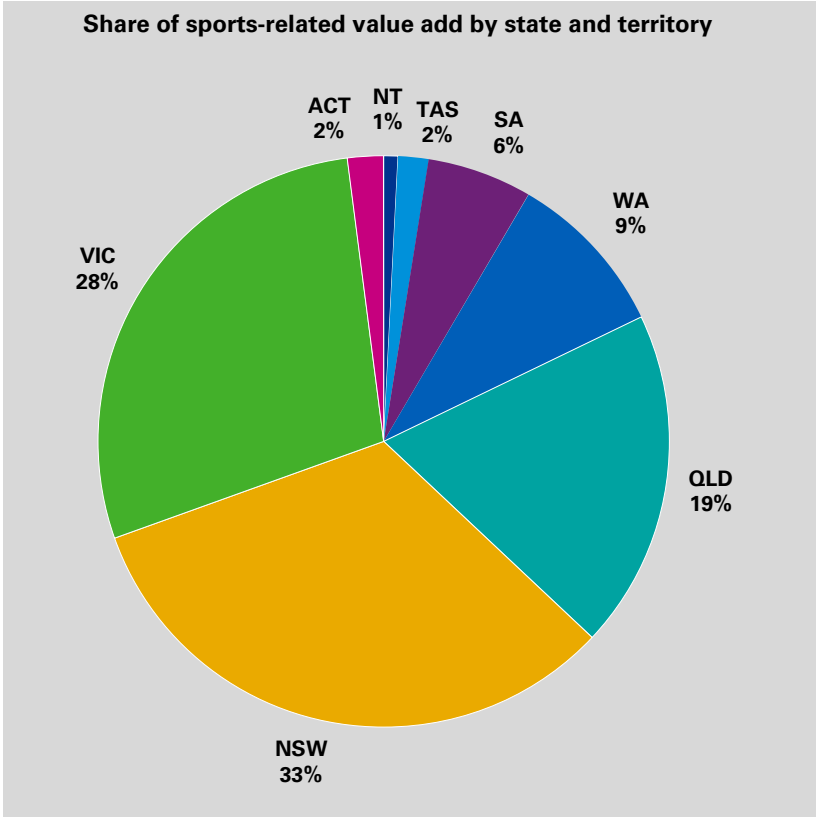
Sport-related economic activity captured by KPMG’s analysis at the national level has been apportioned to regions based on each region’s share of employment in each sport-related 4-digit ANZSIC Class. This methodology allows sport-related activity to be directly attributed to the regions that are responsible for producing that activity. Findings from this detailed method are more reliable than simply apportioning aggregate sports-related activity to regions based on employment shares at less granular industry classifications (e.g., according to a 1-digit ANZSIC level).

The adjacent chart highlights the share of total sports related value add, broken down by state and territory. This outlines that the majority of Sports Industry value add and employment occurs in New South Wales (33% of value add), followed by Victoria (28% of value add) followed by Queensland (19% of value add).

The table below summarises the findings of the regional analysis, outlining the sports related value add and sports related full-time equivalent jobs by state and territory. This is further disaggregated by segment later in this appendix.

State / Territory	Sports-related sales	Sports-related value add	Sports-related FTEs
New South Wales	\$10,440m	\$4,670m	40,160
Victoria	\$9,330m	\$4,090m	35,790
Queensland	\$6,100m	\$2,760m	25,350
Western Australia	\$2,970m	\$1,350m	13,020
South Australia	\$1,900m	\$850m	7,930
Australian Capital Territory	\$620m	\$290m	2,820
Tasmania	\$550m	\$250m	2,370
Northern Territory	\$240m	\$115m	1,010

Note: values are rounded throughout.



Regional analysis (cont.)

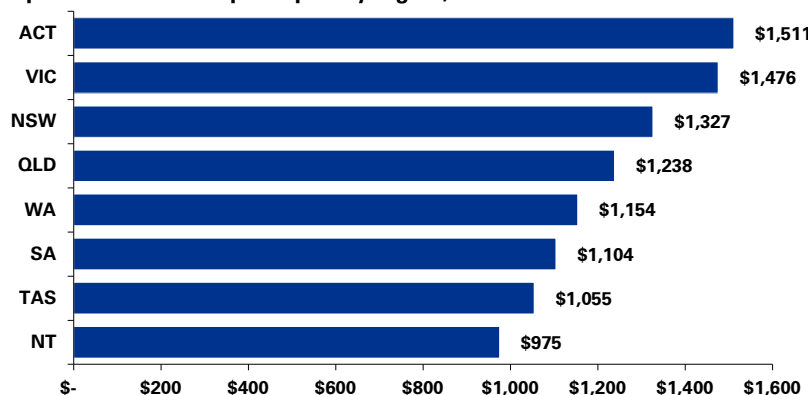
RELATIVE SPORTS-RELATED ECONOMIC ACTIVITY BY STATE AND TERRITORY

The analysis on the previous page showed the absolute level of sales, value add and employment by the Sports Industry across States and Territories. The analysis presented here adjusts for the difference in the size of the population and the size of the labour force across each state and territory to gain a sense of relativity across regions.

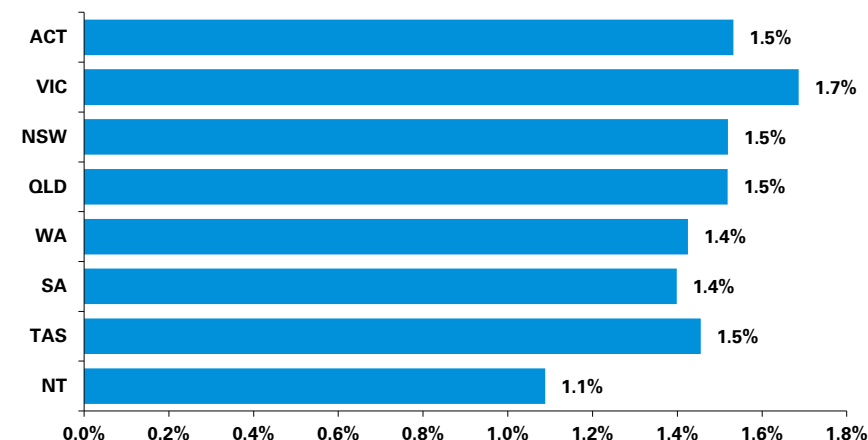
After adjusting for each region's population size, the ACT appears as the region with the highest sports-related sales per capita (\$1,511 per person) despite being 6th overall in absolute sales terms. KPMG's prior examination of children's participation in sport found clear evidence of the relationship between household income and sports participation, which could explain why the ACT, which has Australia's highest level of average full-time earnings (ABS cat. no. 6302) has such high sales of sports-related goods and services.

In terms of labour force, Victoria has the highest proportion of sports-related employees in its workforce (1.7%), Northern Territory has the lowest (1.1%). When using value add per worker as an indicator of productivity, sports-related workers in New South Wales, Victoria and the Northern Territory appear as the most productive regions.

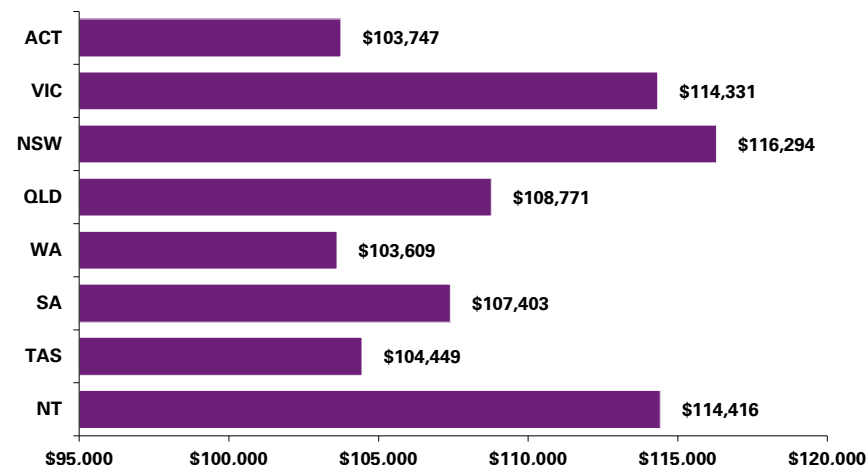
Sports-related sales per capita by region, 2016/17



Sports-related jobs as a share of total workforce by region, 2016/17



Sports-related value add per worker by region, 2016/17

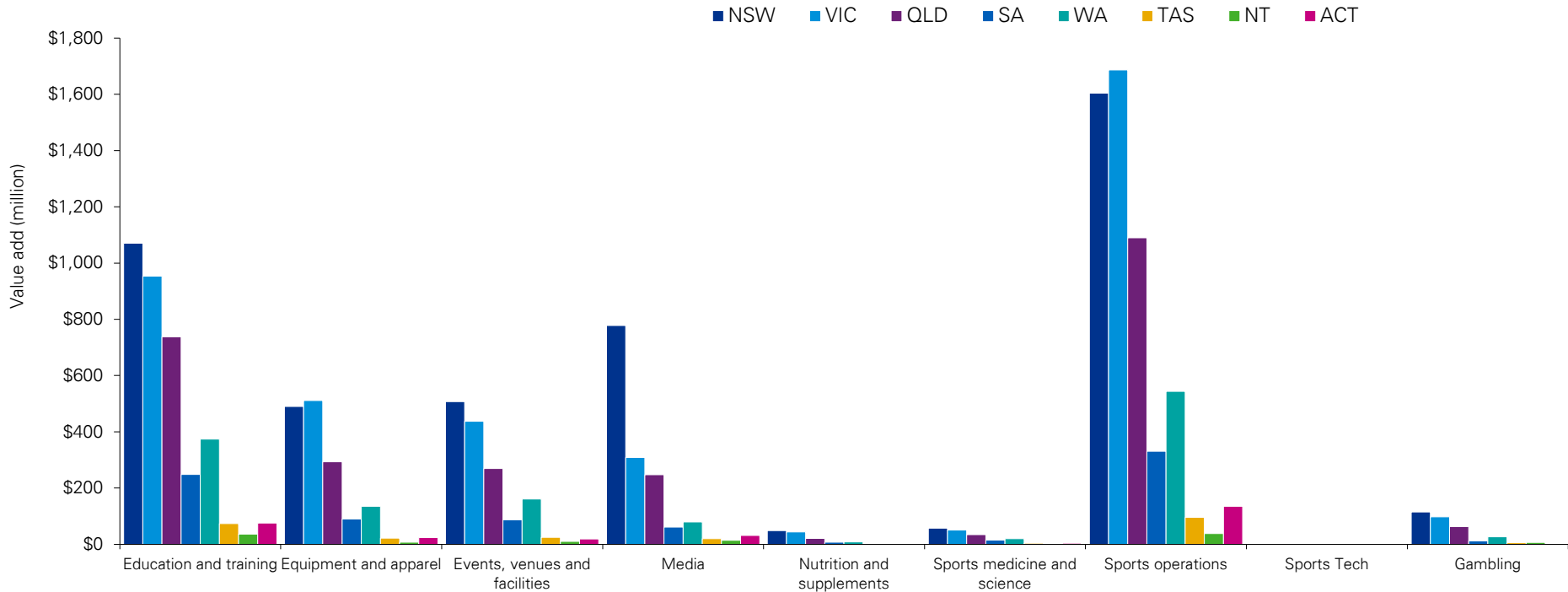


Regional analysis (cont.)

SPORTS-RELATED SEGMENT VALUE ADD BY STATE AND TERRITORY

The chart below highlights the absolute size of value add for each segment within the Sports Industry, across Australia’s regions. This analysis allows for a side-by-side comparison of the magnitude of economic activity within each sports segment across regions. The analyses on the following pages adjust for the difference in the size of economies across regions by first analysing the importance of each segment to each region, then the importance of each region to each segment.

Value add within each sports segment by region



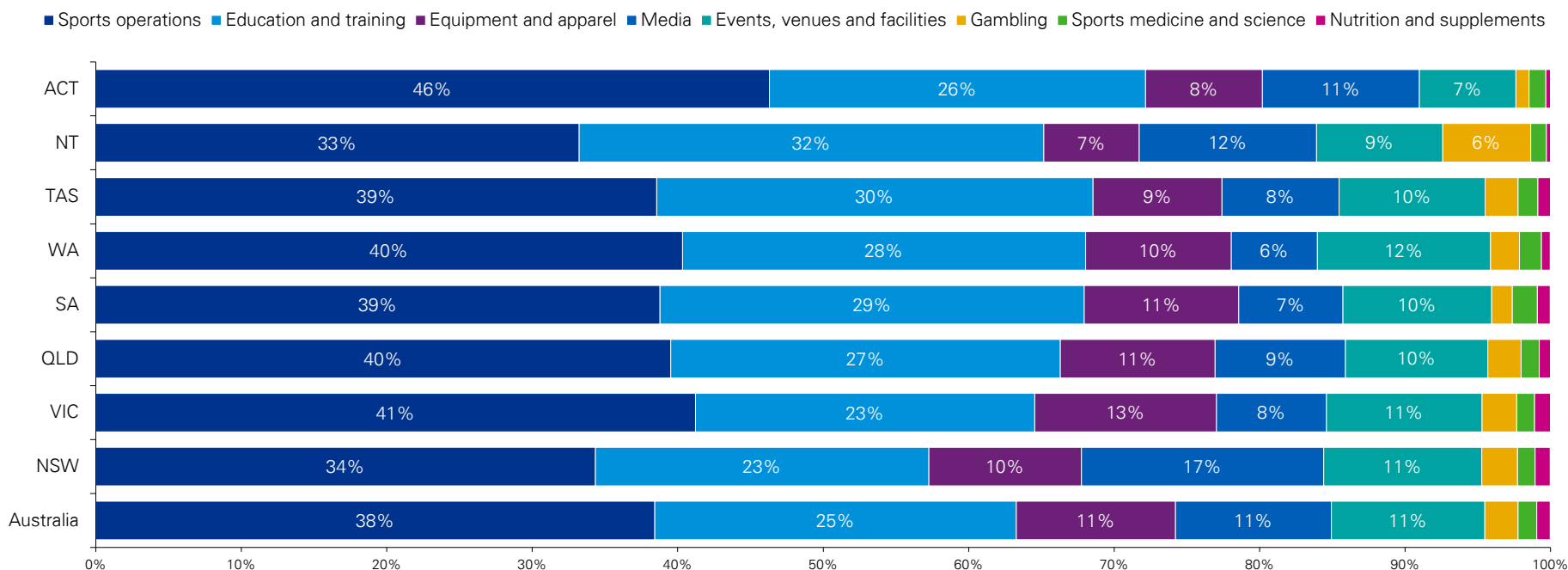
NOTE: State and Territory values have been estimated by KPMG using ABS Census employment shares at the 4-digit ANZSIC level. Sport-related economic activity captured by KPMG’s analysis at the national level has been apportioned to regions based on their shares of employment in each ANZSIC class deemed sport-related.

Regional analysis (cont.)

BREAKDOWN OF STATE AND TERRITORY SPORTS INDUSTRY SALES, BY PROPORTION OF SALES BY SEGMENT

The chart below highlights the importance of each sports segment to each region's Sports Industry. For example, compared to other regions the ACT has the highest proportion of sports operations activity within its Sports Industry (46% of Sports Industry sales in the ACT are attributed to the sports operations segment). Compared to other states / territories, the NT has the highest proportion of education and gambling activity within its Sports Industry.

Segment-specific share of value add by region



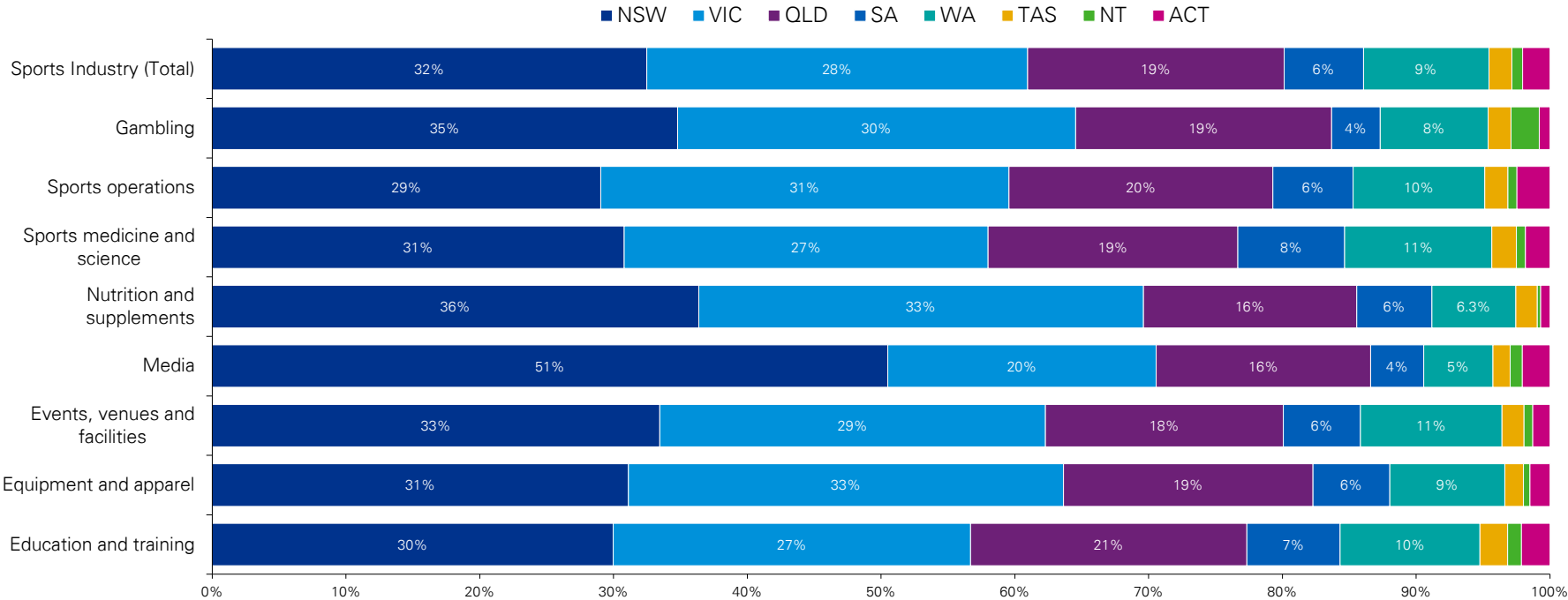
The Sports Technology segment has been excluded from this analysis due to lack of data.

Regional analysis (cont.)

BREAKDOWN OF SEGMENT SALES, BY PROPORTION OF SALES BY STATE AND TERRITORY

The chart below highlights the importance of each region to each Sports Industry segment. For example, NSW contributes approximately half of all sports-related value add in the Media segment (51%).

Region specific share of value add by segment



The Sports Technology segment has been excluded from this analysis due to lack of data.

Appendix C

Industry reports

This appendix details the industry reports used during the attribution process for each segment.

Source code	Report name	Source
IR 1	C2392 - Boatbuilding and Repair Services	IBISWorld (Nov, 2018)
IR 2	S9539 - Babysitting and Other Personal Services	IBISWorld (June, 2019)
IR 3	Staff in Australia's Schools 2013: Main Report on the Survey	Australian Council for Educational Research (April, 2014)
IR 4	NCVER Statistics	National Centre for Vocational Education Research (2018)
IR 5	Department of Education and Training Statistics	Department of Education and Training (2018)
IR 6	Q8533 - Physiotherapy Services	IBISWorld (Feb, 2019)
IR 7	J5511 - Motion Picture and Video Production	IBISWorld (March, 2019)
IR 8	J5621 - Free-to-Air Television Broadcasting	IBISWorld (April, 2019)
IR 9	News Corp 2018 Annual Report	News Corp (2018)
IR 10	OD4104 - Online Event Ticket Sales	IBISWorld (Sep, 2018)
IR 11	Australian Gambling Statistics 34th Edition	Queensland Government Statistician's Office, Queensland Treasury (2018)
IR 12	C2592 - Toy and Sporting Goods Mfg.	IBISWorld (Jan, 2018)
IR 13	F3734 - Toy and Sporting Goods Whl.	IBISWorld (Sep, 2019)
IR 14	G4241 - Sport and Camping Equipment Retailing	IBISWorld (May, 2019)
IR 15	OD5417 - Vitamin and Supplement Mfg.	IBISWorld (Oct, 2019)
IR 16	OD5364 - Vitamin and Supplement Stores	IBISWorld (Jun, 2019)
IR 17	OD4091 - Online Vitamin and Supplement Sales	IBISWorld (Feb, 2019)

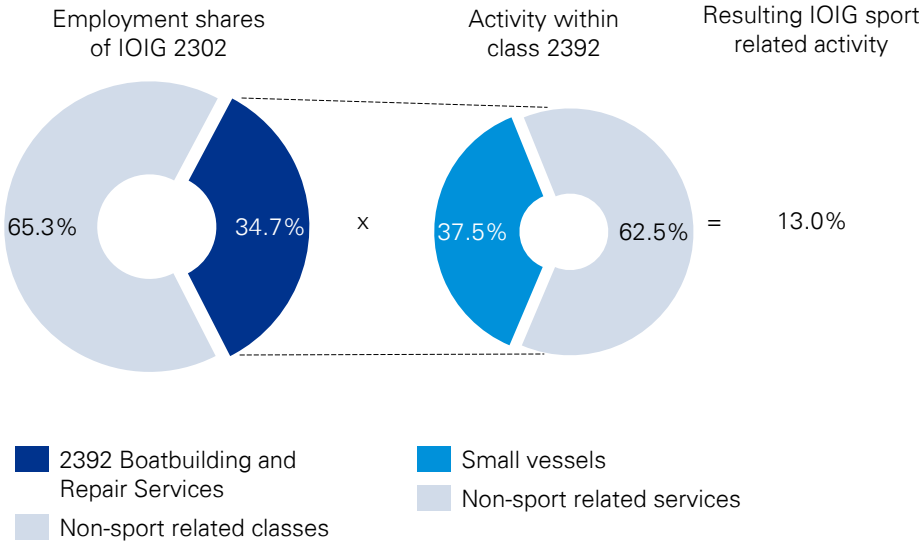
Industry report insights

IR 1: C2392 – Boatbuilding and Repair Services

This industry report was used to further disaggregate the 2392 Boatbuilding and Repair Services class which sits within the 2302 Ships and Boat Manufacturing IOIG. The 2392 Boatbuilding and Repair Services class required further disaggregation as not all of the class could be classified as sport. The industry report provided insight into specific sport related services provided within the class. These services include:

- Small vessels

which represented 37.5% of all revenue generated within the class. Through the income-weighted employment shares, it was estimated that the 2392 Boatbuilding and Repair Services class represented 34.7% of employment in IOIG 2302. Therefore it is estimated that 37.5% of the 34.7% employed in IOIG 9501 are associated with sport related activity. This results in 13.0% of the activity in the 2302 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process.



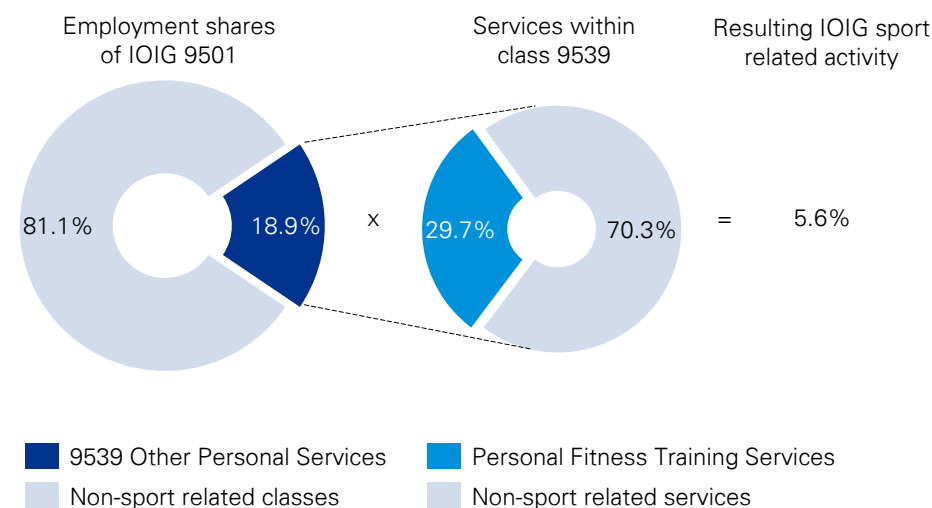
Industry report insights (cont.)

IR 2: S9539 - Babysitting and Other Personal Services

This industry report was used to further disaggregate the 9539 Other Personal Services n.e.c. class which sits within the 9501 Personal Services IOIG. The 9539 Other Personal Services n.e.c. class required further disaggregation as not all of the class could be classified as sport. The industry report provided insight into specific sport related services provided within the class. These services include:

- Personal Fitness Training Services

which represented 29.7% of all revenue generated within the class. Through the income-weighted employment shares, it was estimated that the 9539 Other Personal Services class represented 18.9% of employment in IOIG 9501. Therefore it is estimated that 29.7% of the 18.9% employed in IOIG 9501 are associated with sport related activity. This results in 5.6% of the activity in the 9501 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process.

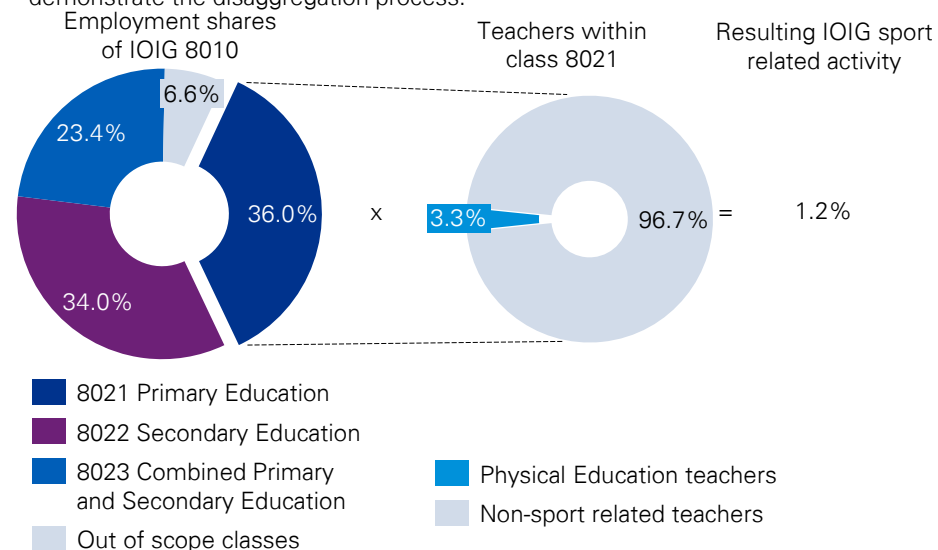


IR 3: (Primary Schools): Staff in Australia's Schools (SIAS) 2013: Survey Report

This SIAS survey was used to further disaggregate 8021 Primary Education, 8022 Secondary Education and 8023 Combined Primary and Secondary Education which all sit within 8010 IOIG Primary and Secondary Education Services (including Pre-Schools and Specials Schools). 8021, 8022, 8023 classes require further disaggregation as not all of the activity within the classes could be classified as sport. For simplicity, each class is explained in isolation beginning with 8021 Primary education. The SIAS survey provided insight into specific sport related teachers. These include:

- Primary School Health and Physical Education teachers

which represented 3.3% of all primary school teachers. Through the income-weighted employment shares, it was estimated that the 8021 class represented 36% of employment in IOIG 8010. Therefore it is estimated that 3.3% of the 36% employed in IOIG 8010 is associated with sport related activity. This results in 1.2% of the activity in the 8010 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process.



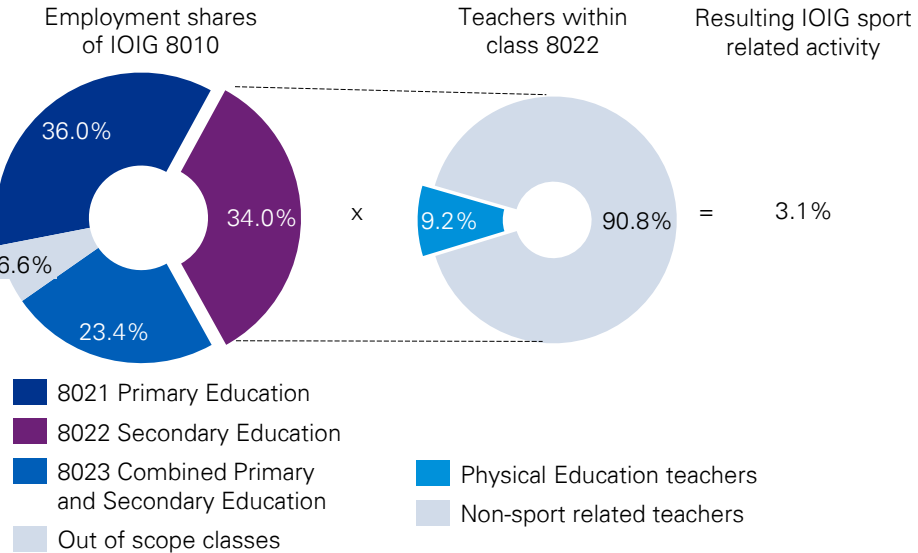
Industry report insights (cont.)

IR 3: (Secondary Schools): SIAS 2013: Survey Report

The SIAS survey was also used to further disaggregate 8022 Secondary Education which sits within 8010 IOIG Primary and Secondary Education Services (including Pre-Schools and Specials Schools). The 8022 class required further disaggregation as not all of the activity within the classes could be classified as sport. The SIAS survey provided insight into specific sport related teachers. These include:

- Secondary School Health and Physical Education teachers

which represented 9.2% of all secondary school teachers. Through the income-weighted employment shares, it was estimated that the 8022 class represented 34% of employment in IOIG 8010. Therefore it is estimated that 9.2% of the 34% employed in IOIG 8010 is associated with sport related activity. This results in 3.1% of the activity in the 8010 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process.

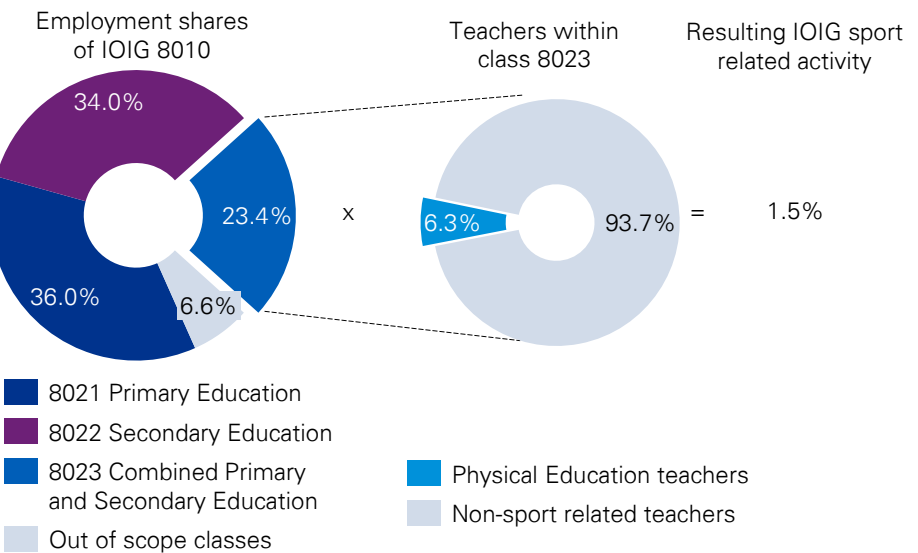


IR 3: (Combined Primary and Secondary Schools): SIAS 2013: Survey Report

The SIAS survey was also used to further disaggregate 8023 Combined Primary and Secondary Education which sits within 8010 IOIG Primary and Secondary Education Services (including Pre-Schools and Specials Schools). The 8023 class required further disaggregation as not all of the activity within the classes could be classified as sport. The SIAS survey provided insight into specific sport related teachers. These include:

- Combined Primary and Secondary School Health and Physical Education teachers

which represented 6.3% of all combined school teachers. Through the income-weighted employment shares, it was estimated that the 8023 class represented 23.4% of employment in IOIG 8010. Therefore it is estimated that 6.3% of the 23.4% employed in IOIG 8010 is associated with sport related activity. This results in 1.5% of the activity in the 8010 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process. To obtain sport related activity attributable to the IOIG, the 3 classes (8021, 8022 and 8023) were aggregated to give 5.8%.

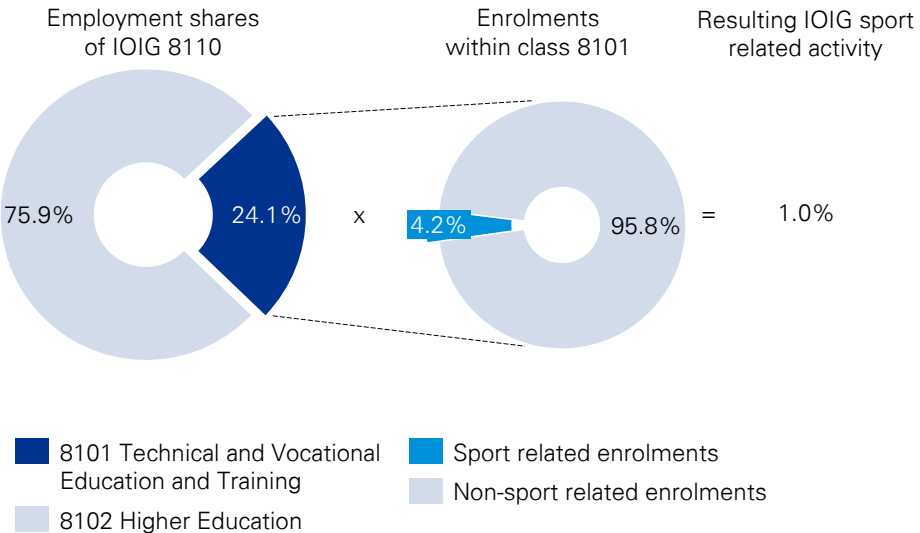


Industry report insights (cont.)

IR 4: National Centre for Vocational Education Research (NCVER) Statistics

The publicly available dataset provided by the NCVER was used to further disaggregate the 8101 Technical and Vocational Education and Training class which sits within the 8110 IOIG Technical, Vocational and Tertiary Education Services (including undergraduate and postgraduate) IOIG. The 8101 Technical and Vocational Education and Training class required further disaggregation as not all of the class could be classified as sport.

The dataset provided insight into the specific sport related courses offered and number of enrolments in vocational education around Australia. In 2018, sport related course enrolments represented 4.2% of all enrolments in vocational education. Through the income-weighted employment shares, it was estimated that 8101 Technical and Vocational Education and Training represented 24.1% of employment in IOIG 8110. Therefore it is estimated that 4.2% of the 24.1% is associated with sport related activity. This results in 1.0% of the activity in the 8101 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process.



IR 5: Department of Education and Training Statistics

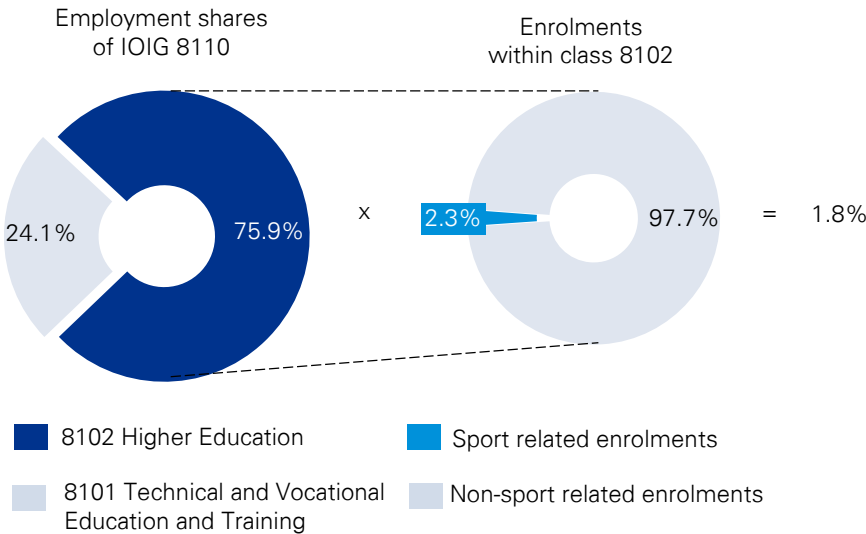
The Department of Education and Training provided KPMG with a dataset that was used to further disaggregate the 8102 Higher Education class which sits within the 8110 IOIG Technical, Vocational and Tertiary Education Services (including undergraduate and postgraduate) IOIG. The 8102 Higher Education class required further disaggregation as not all of the class could be classified as sport.

The dataset provided insight into the specific sport-related courses offered and number of completions in higher education around Australia. In 2018, sport related course completions represented 2.3% of all completions in higher education. These courses include:

- Chiropractic and Osteopathy
- Human Movement
- Nutrition and Dietetics
- Physiotherapy
- Podiatry
- Rehabilitation Therapies not elsewhere classified
- Sport and Recreation Activities
- Sport and Recreation not elsewhere classified
- Sports Coaching, Officiating and Instruction

Through the income-weighted employment shares, it was estimated that 8102 Higher Education represented 75.9% of employment in IOIG 8110. Therefore it is estimated that 2.3% of the 75.9% is associated with sport related activity. This results in 1.8% of the activity in the 8102 IOIG being associated with sport. The diagram overleaf demonstrates the disaggregation process.

Industry report insights (cont.)

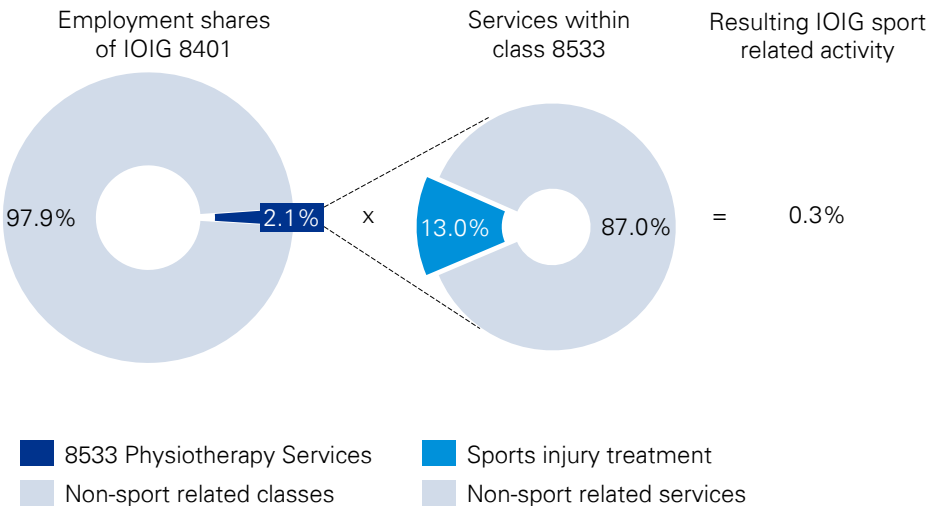


IR 6: Q8533 - Physiotherapy Services

This industry report was used to further disaggregate the 8533 Physiotherapy Services class which sits within the 8401 Health Care Services IOIG. The 8533 Physiotherapy Services class required further disaggregation as not all of physiotherapy activity could be classified as sport. The industry report provided insight into specific sport related services provided within the class. These services include:

■ Sports injury treatment

which represented 13% of all revenue generated within the class. Through the income-weighted employment shares, it was estimated that the 8533 Physiotherapy Services class represented 2.1% of employment in IOIG 8401. Therefore it is estimated that 13% of the 2.1% employed in IOIG 8401 are associated with sport related activity. This results in 0.3% of the activity in the 8401 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process.



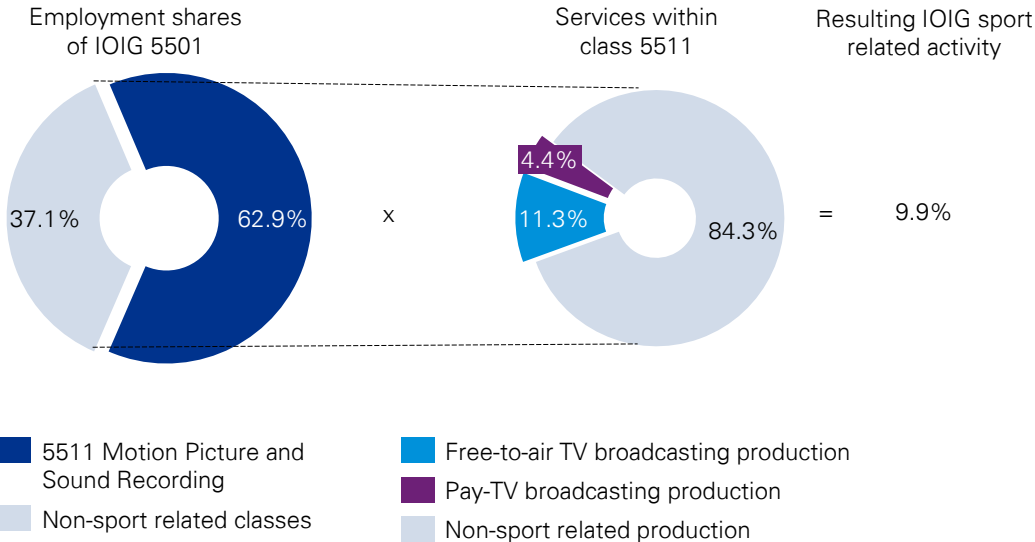
Industry report insights (cont.)

IR 7: J5511 – Motion Picture and Video Production

This industry report was used to further disaggregate the 5511 Motion Picture and Video Production class which sits within the 5501 Motion Picture and Sound Recording IOIG. The 5511 Motion Picture and Video Production class required further disaggregation as not all of the class could be classified as sport. The industry report provided insight into sport related media producers within the class. These services include:

- Free-to-air TV broadcasters
- Pay-TV broadcasters

These segments represent 37.5% and 15% of production respectively. To obtain the sport related activity within these broadcasters, the ratios discussed in IR 7 and IR 8 were used (detail shown overleaf). IR 7 reveals that Australian sport represents 30.2% of total Free-to-Air revenue. IR 8 reveals that sports distribution rights represents 29.2% of all contractual obligations for Foxtel. Using these ratios as proxies for sport production in Free-to-Air and Pay-TV broadcasting, sport related production can be evaluated. For example, of the 37.5% produced by Free-to-Air broadcasters, 30.2% can be attributed to sport. Similarly, of the 15% produced by Pay-TV broadcasters, 29.2% can be attributed to sport. This results in sport related production constituting 11.3% from Free-to-Air broadcasters and 4.4% from Pay-TV broadcasters. Summing the two percentages results in 15.7% of all production being sport related. Through the income-weighted employment shares, it was estimated that the 5511 Motion Picture and Video Production class represented 62.9% of employment in IOIG 5501. Therefore it is estimated that 15.7% of the 62.9% employed in IOIG 5501 are associated with sport related activity. This results in 9.9% of the activity in the 5501 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process.



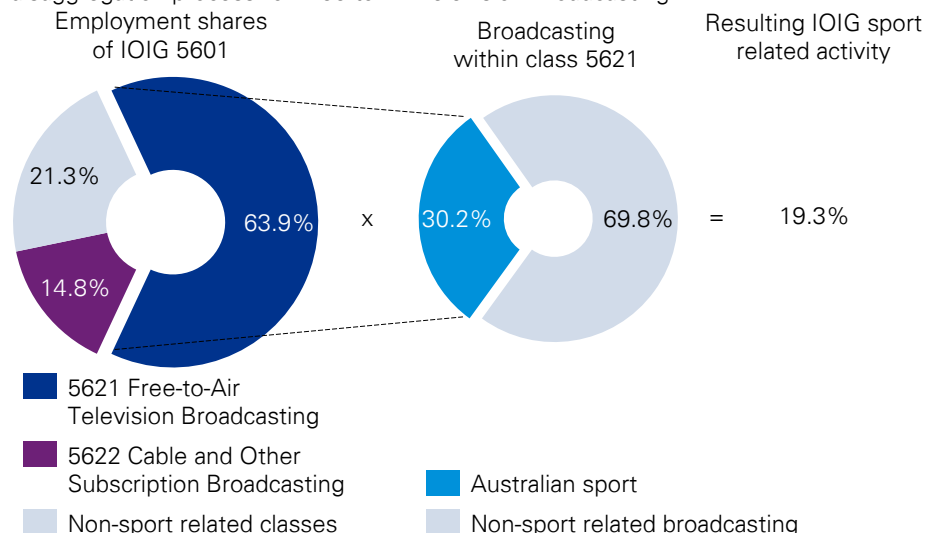
Industry report insights (cont.)

IR 8: J5621 – Free-to-Air Television Broadcasting

This industry report was used to further disaggregate the 5621 Free-to-Air Television Broadcasting class which sits within the 5601 Broadcasting (except Internet) IOIG. The 5621 class required further disaggregation as not all of Free-to-air television could be classified as sport. The industry report provided insight into specific sport related services provided within the class. These services include:

- Australian sport

which represented 30.2% of all revenue generated within the class. Through the income-weighted employment shares, it was estimated that the 5621 Free-to-Air Television Broadcasting class represented 63.9% of employment in IOIG 5601. Therefore it is estimated that 30.2% of the 63.9% employed in IOIG 5601 are associated with sport related activity. This results in 19.3% of the activity in the 5601 IOIG being associated with sport. Pay-TV broadcasting is included in this IOIG and is explored in isolation through IR 8. The diagrams below demonstrate the disaggregation process for Free-to-Air Television Broadcasting:

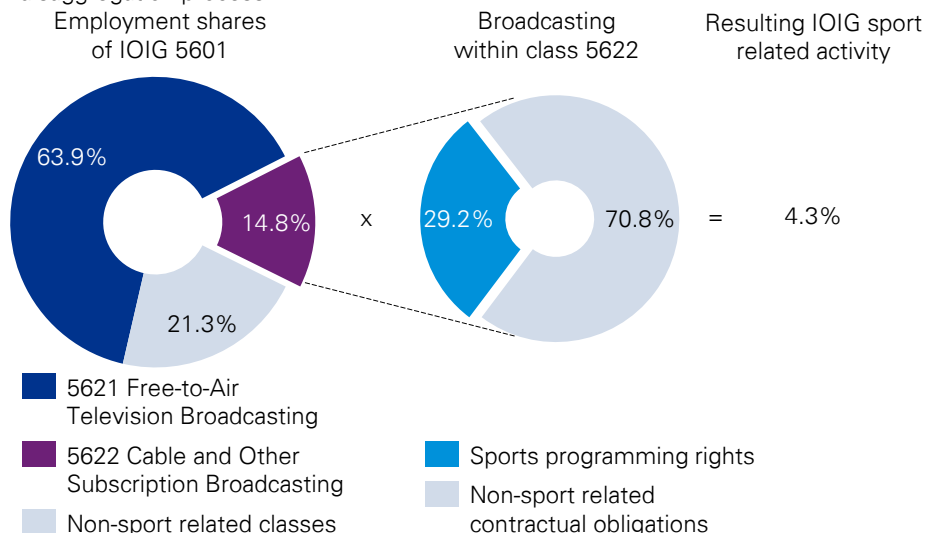


IR 9: News Corp 2018 Annual Report

This industry report was used to further disaggregate the 5622 Cable and Other Subscription Broadcasting class which sits within the 5601 Broadcasting (except Internet) IOIG. The 5622 Cable and Other Subscription Broadcasting class required further disaggregation as not all of Pay-TV broadcasting could be classified as sport. The industry report provided insight into specific sport related services provided within the class. These services include:

- Sports programming rights

which represented 29.2% of total commitments and contractual obligations. Through the income-weighted employment shares, it was estimated that the 5622 Cable and Other Subscription Broadcasting class represented 14.8% of employment in IOIG 5601. Therefore it is estimated that 29.2% of the 14.8% employed in IOIG 5601 are associated with sport related activity. This results in 4.3% of the activity in the 5601 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process.



Industry report insights (cont.)

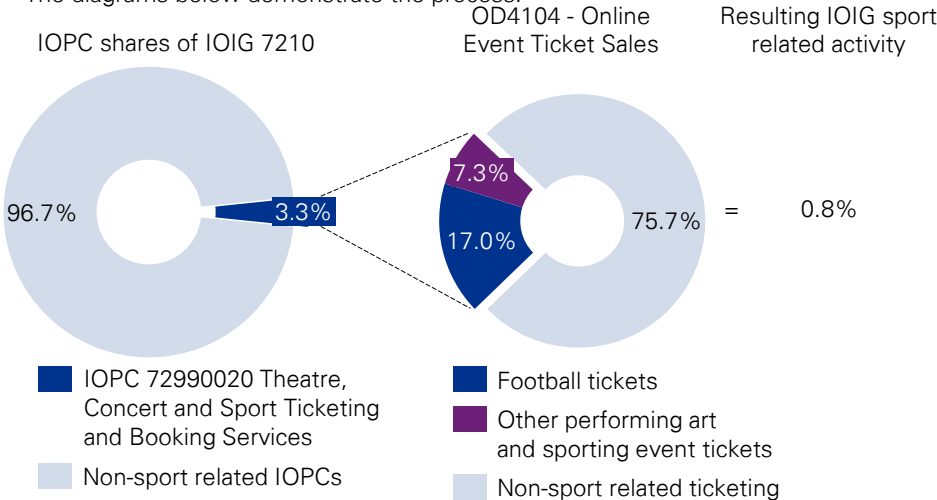
IR 10: OD4104 - Online Event Ticket Sales

Specialised industry reports provide information on smaller and newer industries which are not captured at the ANZSIC level. This report was used to quantify sports related ticket sales under the robust assumption that all online event ticket sales would sit under IOIG 7210 Employment, Travel Agency and Other Administrative Services and subsequently ANSIC class 7299 other Administrative Services n.e.c. This method does not account for sales at the event (i.e. tickets sold at the kiosk) and therefore is a conservative estimate. IOPC 72990020 Theatre, Concert and Sport Ticketing and Booking Services was used to disaggregate the 7210 IOIG.

Method:

- 1. Obtain IOPC 72990020 sales as a fraction of total sales within IOIG 7210: 3.3%
- 2. Multiply the fraction by the sport related component of online ticket sales: 24.3% (17% from football tickets + 7.3% assuming that half of 'Other performing art and sporting event tickets' is sport related)

The diagrams below demonstrate the process:



IR 11: Australian Gambling Statistics 1991-92 to 2016-17 34th Edition

This publicly available report provided by the Queensland Government Statistician's Office (QGSO) was used to further disaggregate 9201 Gambling IOIG. The report provided insight into total gambling expenditure in Australia segmented by racing, gaming and sport betting. Expenditure was defined by QGSO as the net amount lost or, in other words, the amount wagered less the amount won, by people who gamble.

The report provided insight into the total sports betting expenditure in Australia. This was divided by total household expenditure on gambling (at purchasers prices¹). The final ratio was used to disaggregate the 9201 IOIG to obtain the proportion of gambling on sport. The equation below demonstrates the attribution process:

Disaggregation method

$$\frac{\text{Sports betting expenditure}}{\text{Total household expenditure on gambling}} = \frac{\$1,062m}{\$13,222m} = 8.0\%$$

Resulting IOIG sport related activity

¹Data obtained from: Australian National Accounts: Input-Output Tables, 2016-17 Table 4. Reconciliation of Flows at Basic Prices and at Purchasers' Prices by Product Group

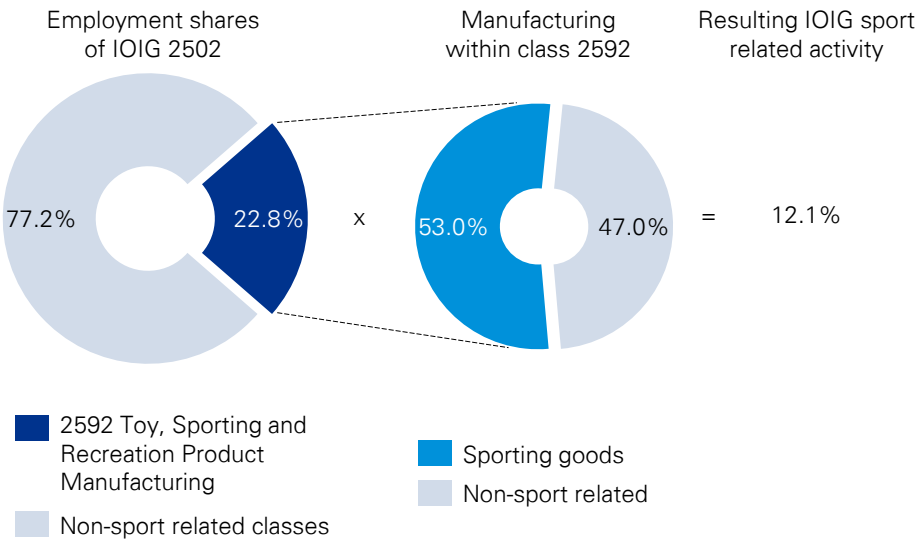
Industry report insights (cont.)

IR 12: C2592 - Toy and Sporting Goods Mfg.

This industry report was used to further disaggregate the 2592 Toy, Sporting and Recreational Product Manufacturing class which sits within the 2502 Other Manufactured Products IOIG. The 2592 Toy, Sporting and Recreational Product Manufacturing class required further disaggregation as not all of the manufacturing activity could be classified as sport. The industry report provided insight into specific sport related services provided within the class. These services include:

- Manufacturing of sporting goods

which represented 53% of all revenue generated within the class. Through the income-weighted employment shares, it was estimated that the 2592 class represented 22.8% of employment in IOIG 2502. Therefore it is estimated that 53% of the 22.8% employed in IOIG 2502 are associated with sport related activity. This results in 12.1% of the activity in the 2502 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process.

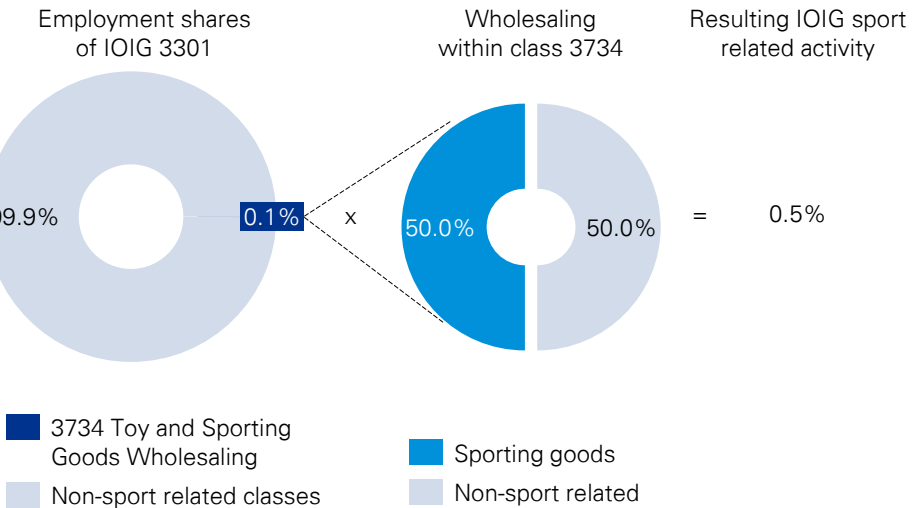


IR 13: F3734 - Toy and Sporting Goods Whl.

This industry report was used to further disaggregate the 3734 Toy and Sporting Goods Wholesaling class which sits within the 3301 Wholesale Trade IOIG. The 3734 Toy and Sporting Goods Wholesaling class required further disaggregation as not all of the wholesaling activity could be classified as sport. The industry report provided insight into specific sport related services provided within the class. These services include:

- Wholesaling of sporting goods

which represented 50% of all revenue generated within the class. Through the income-weighted employment shares, it was estimated that the 3734 class represented 0.1% of employment in IOIG 3301. Therefore it is estimated that 50% of the 0.1% employed in IOIG 3301 are associated with sport related activity. This results in 0.5% of the activity in the 3301 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process.



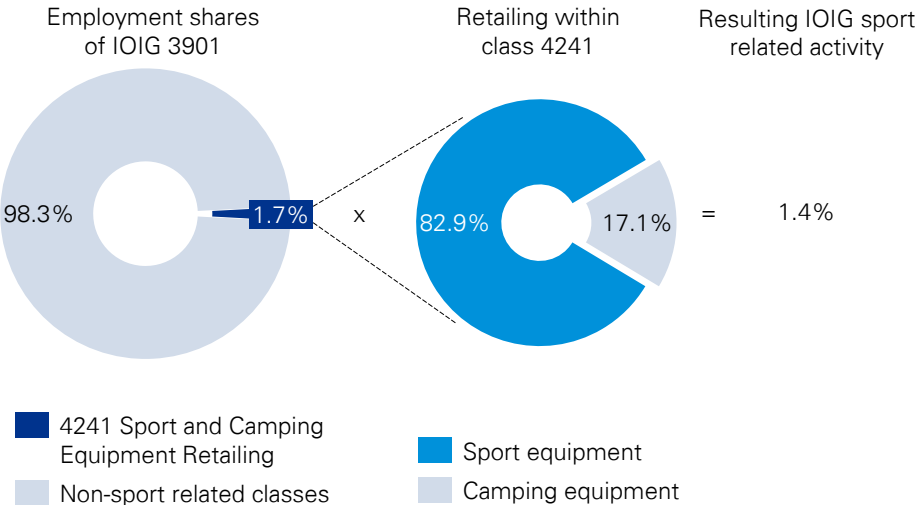
Industry report insights (cont.)

IR 14: G4241 - Sport and Camping Equipment Retailing

This industry report was used to further disaggregate the 4241 Sport and Camping Equipment Retailing class which sits within the 3901 Retail Trade IOIG. The 4241 Sport and Camping Equipment Retailing class required further disaggregation as not all of the class could be classified as sport. The industry report provided insight into specific related services provided within the class. These services include:

- Retailing of sport equipment (excluding camping equipment)

which represents 82.9% of all revenue generated within the class. Through the income-weighted employment shares, it was estimated that the 4241 Sport and Camping Equipment Retailing class represented 1.7% of employment in IOIG 3901. Therefore it is estimated that 82.9% of the 1.7% employed in IOIG 3901 are associated with sport related activity. This results in 1.4% of the activity in the 3901 IOIG being associated with sport. The diagrams below demonstrate the disaggregation process.



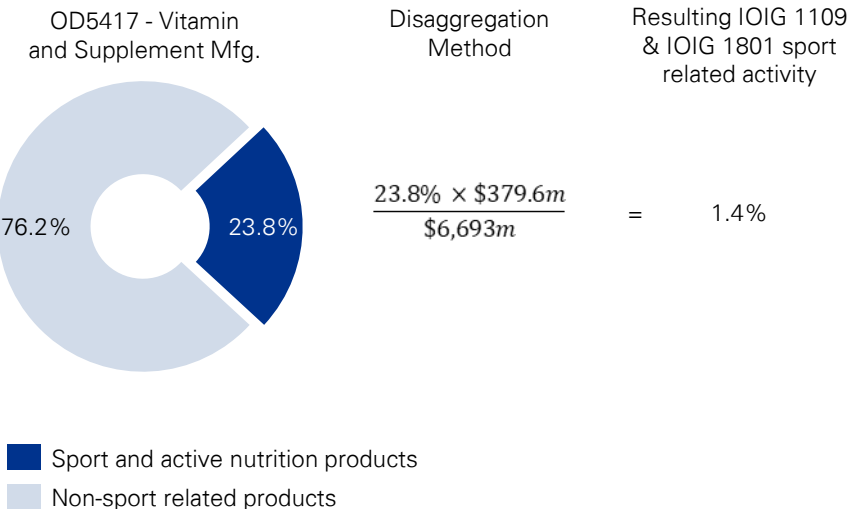
IR 15: OD5417 - Vitamin and Supplement Mfg.

Specialised industry reports provide information on smaller and newer industries which are not captured at the ANZSIC level. This report was used to quantify sport related vitamin and supplement manufacturing under the robust assumption that all of the manufacturing would sit under 1109 Other Food Product Manufacturing IOIG and 1801 Pharmaceutical and Medicinal Product Manufacturing IOIG.

Method:

1. Obtain sport related component of vitamin and supplement manufacturing: 23.8%
2. Multiply the fraction by the value added stated in the specialised report: \$379.6m
3. Divide by the value added of IOIG 1109 and IOIG 1801: \$6,693m (\$3,560m + \$3,133m)

The diagrams below demonstrate the process:



Industry report insights (cont.)

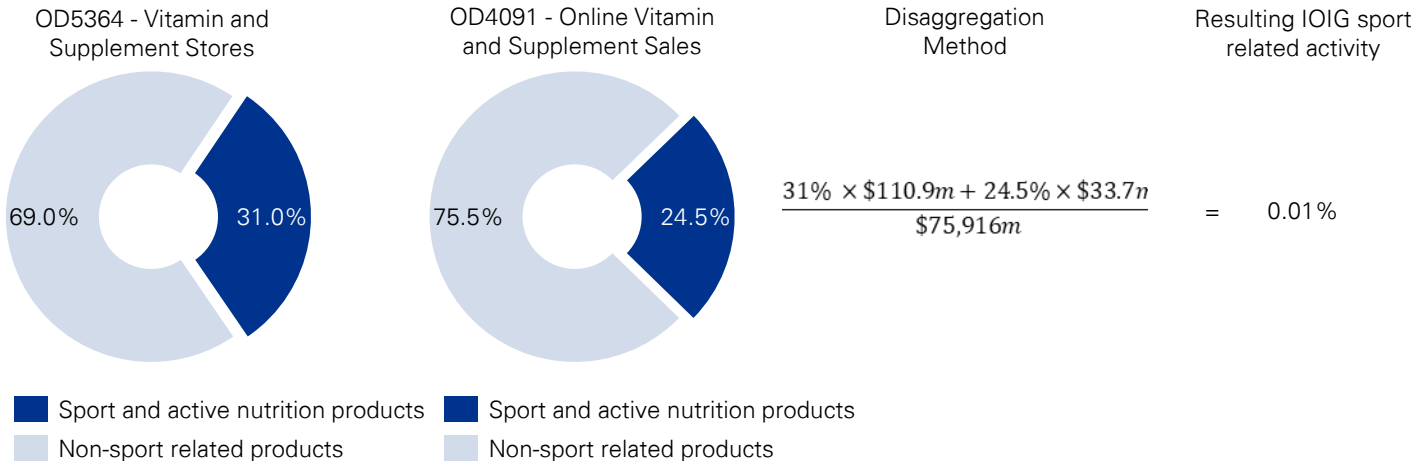
IR 16: OD5364 - Vitamin and Supplement Stores
IR 17: OD4091 - Online Vitamin and Supplement Sales

Specialised industry reports provide information on smaller and newer industries which are not captured at the ANZSIC level. These reports were used to quantify sport related vitamin and supplement retailing under the robust assumption that all of the retailing (including online sales) would sit under 3901 Retail Trade IOIG.

Method:

- 1. Obtain sport related component of vitamin and supplement retailing: 31% for in-store, 24.5% for online
- 2. Multiply the relative fraction by the value added stated in the specialised report: \$110.9m for in-store, \$33.7m for online
- 3. Divide by the value added of IOIG 3901: \$75,916m

The diagrams below demonstrate the process:





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