



Let's get physical: The economic contribution of fitness centres in Australia

July 2009

Report by Access Economics Pty Limited for
Fitness Australia



FITNESS AUSTRALIA PROUDLY PRESENTS A REPORT ON THE ECONOMIC CONTRIBUTION OF FITNESS CENTRES IN AUSTRALIA

There is a great deal of anecdotal evidence to support the notion that the fitness industry plays a key role in improving the health of the nation. However, what we have not known, until now, is how it contributes, in economic terms, to improving the health and fitness of Australians, reducing health care costs and improving workforce productivity.

To find the answers to these, and other important questions, Fitness Australia commissioned Access Economics to undertake a study that quantified the economic contribution made by fitness centres to the Australian economy and the preventative health impacts of the fitness industry.

Fitness Australia is proud to present this landmark economic study which forms part of our comprehensive fitness industry research program, designed to inform and guide the fitness industry into the future. This study will also be used to increase the profile of the fitness industry at all levels of government and to support Fitness Australia's role as an advocate for the industry, particularly within the current preventative health agenda.

The study was developed by Access Economics using information from the recent fitness industry profile report commissioned by Fitness Australia and supplemented by a range of other information sources including ABS data. This information was then subjected to economic modeling and scenario analysis to quantify direct economic impacts and wider economic implications, such as avoided health care costs.

The results provide a wealth of valuable economic and statistical data that provides quantifiable evidence about the positive impact that the fitness industry has on the economic and social fabric of Australia.

Access Economics is Australia's premier economic consulting firm. They provide expert economic advice for business, government, industry groups and not-for-profit organisations. Their expertise in analysis, modeling and forecasting is unrivalled and they have developed an international reputation for integrity, quality and independence.

I trust that you will find this report both informative and stimulating.

Laretta Stace
Chief Executive Officer
Fitness Australia

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Executive Summary

The fitness industry is a dynamic and important part of the Australian economy. The industry has expanded significantly over the last decade, with several fitness centre chains securing a key market foothold across the country. Around 1.73 million Australians are now estimated to use fitness centre services.

The impact of the fitness industry extends beyond its direct contribution to the economy. The industry also plays a key role in improving the health and fitness of Australians. As such, it helps deliver a range of longer term social and economic benefits across the community.

An economic profile of Australia's fitness centres

The fitness centre industry forms part of Australia's broader services sector. There are relatively low barriers to entry for new businesses and the industry is dominated by a large number of private small to medium sized businesses.

Similar to the services sector as a whole, the fitness industry is characterised by a high proportion of part-time employment. Over 80 per cent of staff at fitness centres are employed on a casual or part-time basis.

Over the last 10 years or so, there has been strong growth in the industry. Real industry growth is estimated at approximately 7 per cent year-on-year between 2004-05 and 2007-08. This is higher than the overall growth rate in the Australian economy over the same period.

Solid industry growth has also been associated with a considerable expansion in the number of fitness centres. In 2007-08, it is estimated there were approximately 1570 fitness centres Australia wide. This compares to about 974 fitness centres in 2004-05.

The industry, however, remains highly exposed to domestic economic conditions and there are indications that industry growth has moderated somewhat over the past 12 months.

Economic contribution

Australia's fitness centres contributed a total of \$872.9 million to the Australian economy in 2007-08. This comprises a direct value added contribution of \$486.5 million, with \$374.2 million being paid in wages and \$112.3 million returned to capital owners as operational profits. The industry's overall economic contribution is outlined in Table 1.

The indirect component of the industry's value added in 2007-08 was \$386.4 million. This represents the additional economic activity generated by the fitness industry across the broader economy.

The industry's total employment contribution in 2007-08 is estimated to be 17,081 on a full time equivalence basis. This comprises around 13,021 direct employees and 4060 in indirect employment.

Table 1: Total, direct and indirect economic contribution, 2007-08

	Direct	Indirect	Total
Value added (\$ million)	486.5	386.4	872.9
Labour income (\$ million)	374.2	209.6	583.7
Employment (FTE)	13,021	4060	17,081

Source: Access Economics estimates.

Contributing to a healthier Australia

A key benefit of the Australian fitness industry is its contribution to improving the health of the community.

Better community health provides a range of economic benefits. Importantly, it can provide Australians with the opportunities and freedom to lead more active, healthy and productive lives. Improvements in community health radiate out to the rest of the economy by reducing health care costs, enhancing workforce productivity and increasing the amount of labour available (for example, through lifting the number of people participating in the workforce).

While the health of Australians is good by developed country standards, Australia still rates poorly in some health indicators. For example, Australia has the fifth highest adult obesity rate among OECD countries, with around 22 per cent of Australians considered obese.

In 2006-07, Australia's total spending on health reached \$94 billion, equivalent to \$4507 per person and accounting for around 9 per cent of GDP (AIHW 2008b). This is an increase from 7.7 per cent of GDP from 10 years earlier. Such expenditure underlines the potential for preventative health measures such as the services provided through Australia's fitness centres to reduce the direct burden of avoidable illness.

Preventative health impacts of fitness centres

Access Economics has modelled three scenarios to measure the health-related economic benefits provided by Australia's fitness centres.

The modelling has accounted for the strong likelihood that not all people who currently use fitness centres would cease exercising altogether in the absence of those centres. Some users would be expected to shift to alternative forms of exercise that also provide sufficient health benefits. However, this 'shifting' effect — from active to inactive — is expected to be significant given the particular not-easily-replicated services provided by fitness centres and a clearly expressed user preference for those services.

Under a central case, the proportion of fitness centre members who are not expected to take up other forms of exercise at levels sufficient to improve health is taken to be 50 per cent. A low case of 25 per cent exercise drop-out and a high case of 75 per cent drop-out are also examined. A summary of the economic impacts under these scenarios is provided in Table 2.

Table 2: Preventative health benefits of fitness centres

	Scenarios*		
	Low case	Central case	High case
Avoided health care costs (\$ million)	36.0	71.9	107.9
Workforce participation (FTEs)	331	662	992
Workforce productivity (FTEs)	127	255	382

* Scenarios relate to the proportion of fitness centre users who are not expected to take up other forms of sufficiently intense exercise. The following exercise drop-out rates are applied: Low case (25%), Central case (50 per cent and High case (75%).

Source: Access Economics estimates.

In the central case, the estimated savings in direct health care costs from Australia's fitness centres is \$71.9 million. The industry also generates an estimated increase in Australia's overall workforce of 916 full time equivalent employees (FTEs) through greater workforce participation and higher productivity.

These labour supply impacts have further flow-on effects across the economy and lead to additional economic activity and national income. Australia's GDP is estimated to be around \$28.7 million greater in 2007-08 than if the preventative health benefits generated by fitness centres were not produced.

The benefits from improved health are sensitive to how many fitness centre participants would effectively drop-out from regular exercise in the absence of fitness centres. Where exercise drop-out is especially high (taken to be 75 per cent under the high case), health care savings from fitness centres could be in the order of \$107.9 million and around 1375 full time employees could be added to the economy.

Effect of higher fitness centre utilisation

Access Economics has modelled the potential health-related impacts if the number of fitness centre users increased to around 10 per cent of the Australian adult population. Under this achievable level of utilisation, the benefits flowing from health care savings, increased workforce participation and higher labour productivity would be considerably greater than those currently being generated by the fitness industry. For example, this uptake has the potential to deliver additional health care savings in the order of \$204.8 million and lead to around 2609 extra full time employees in the workforce. The estimated workforce benefits could also increase GDP by approximately \$82.0 million in real terms.

Indeed, the results suggest that greater emphasis on preventative health care — in which Australia's fitness centres would be expected to play a critical role — could yield considerable economic and social benefits.

While a 10 per cent level of overall fitness centre utilisation across the community is considered realistic, given current rates of participation, it is intended to highlight the benefits that could be achieved in reaching a possible future level of market penetration relevant to the industry. The level itself has not been determined on the basis of rigorous analysis and any prospective goal or target should be set according to firm industry priorities.

It is important to note that the evaluation of the health-related economic impacts of fitness centres has been undertaken at a high level and in a static framework, and has not involved many of the detailed assessments typically adopted to measure the costs and efficacy of particular interventions. As such, the health-related results of this study should be considered indicative and representing the scale of potential health benefits generated by Australia's fitness industry.

Some challenges ahead

Immediate economic pressures

Perhaps the most pressing challenge for the fitness industry concerns the current economic downturn. Australia's significant momentum leading into the global recession has so far enabled it to avoid a 'technical' recession. However — and although the outlook remains more positive than in many other countries — conditions are still weak. The timing of recovery in Australia's major trading partners — particularly in developing Asia — will help determine the magnitude of Australia's downturn.

While stimulus payments to households and cuts in interest rates have helped to support retail spending over the last six months, Access Economics expects consumer spending to fall from here, with households pulling back on spending for the remainder of 2009 and through 2010. These conditions are likely to present significant operating challenges for the fitness industry over the next 12 months.

Longer term factors

There are several longer term socioeconomic and demographic factors that are likely to provide significant opportunities for the fitness industry. These principally relate to trends in the population incidence of obesity and Australia's changing age profile.

Both an increased prevalence of obesity related health problems and Australia's ageing population are expected to add considerable pressures on government finances, requiring substantial outlays for pensions and health related expenditure. Such pressures make preventative health measures such as the services provided through Australia's fitness centres even more imperative.

Consistent with sustained growth in the industry over the last decade, it is expected that the industry will continue to play an important role in improving the health and wellbeing of the Australian community and contributing to Australia's longer term growth prospects.

Access Economics
July 2009

1 Introduction

Access Economics was commissioned by Fitness Australia to assess the economic contribution of Australia's fitness centres.

The industry comprises a wide range of businesses, from small gyms and personal training studios to large, multi-national fitness chains and franchises. The services offered by the industry are similarly diverse and include a broad range of exercise and physical activity services across age groups, as well as the more traditional gym-type activities.

In some sense, the increasing diversity can sometimes blur the lines between traditional fitness centres and facilities offering a broader suite of 'wellness' services.

Recent industry developments

There are relatively low barriers to entry for new businesses and the industry is dominated by a large number of private small to medium sized businesses. Over the last 10 years or so, there has been strong growth in the industry and a considerable expansion in the number of fitness centres. While industry growth has remained solid, evidence suggests it has moderated more recently — due largely perhaps to deepening market penetration. There has also been some industry consolidation, mainly as a result of the expansion of fitness centre chains. A number of independent centres have been purchased by chains or have exited the industry due to increased competition.

Similar to Australia's broader services sector, the industry is characterised by a high proportion of casual or part-time employment. Over 80 per cent of staff at fitness centres are employed on a casual or part-time basis.

An increasing range of services are being offered by fitness centres. These include fitness-related services such as boot camp, yoga and pilates, as well as non-fitness services like massage and allied health services.

Framework for the analysis

The approach taken in this study measures both the direct economic impacts of Australia's fitness centres as well as the broader flow-on benefits provided by the industry. The direct economic impacts concern economic measures such as the industry's size and employment, its value added and contribution to national income (GDP).

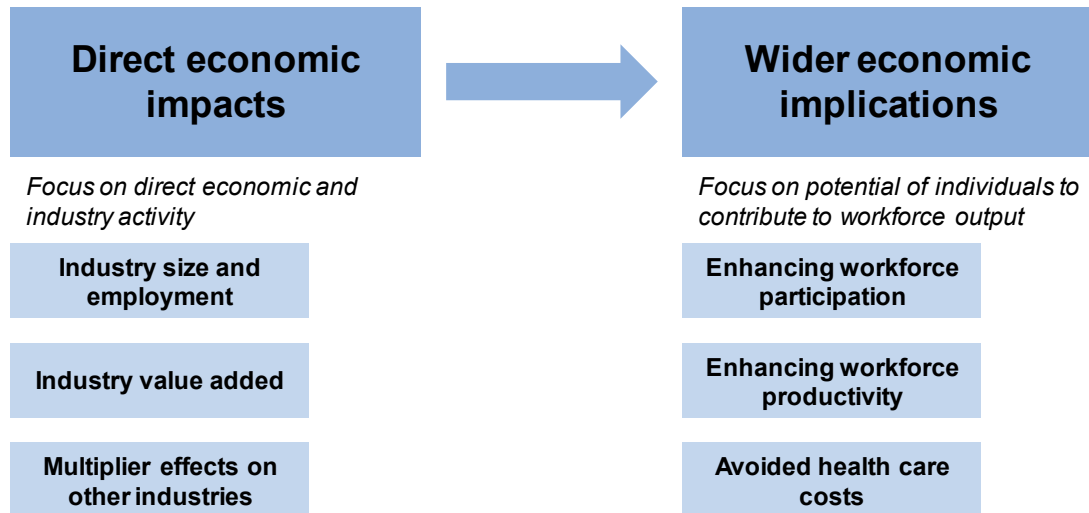
The broader economic effects of the industry primarily concern its role in improving the health and wellbeing of the community. The main channels in which these benefits operate is through reducing health care costs and enhancing the potential of individuals to contribute to workforce output — that is, greater workforce participation and higher productivity.

This general framework is shown in Figure 1.

In January 2009, Sweeney Research undertook a comprehensive survey of Australia's fitness centres for Fitness Australia (the survey sample was taken from Fitness Australia's membership base). These survey results have been used by Access Economics to garner information

regarding the services offered and commercial profile of the industry. They have also been supplemented by publically available information and in-house estimates.

Figure 1: Framework for the analysis



2 An economic profile of the fitness centre industry in Australia

In this section, an economic profile of Australia's fitness centre industry is provided. As part of this assessment, Access Economics has determined the direct contribution of fitness centres to the Australian economy by estimating the industry's direct value added. The indirect contribution of the industry is also measured by examining the nature and extent of its linkages with suppliers.

Further detail on the approach used to measure the economic contribution of industries is provided in Appendix A.

Number, type and location of centres

At the end of June 2005, there were 824 businesses and organisations operating health and fitness centres and gymnasia (ABS Cat no. 8686). Small businesses dominate the sector, with 76 per cent of fitness centres employing fewer than 20 people in 2005. Only 2 per cent of fitness centres employ greater than 100 people.

Table 3 shows the number of fitness centres across States and Territories at June 2005.

Table 3: Health and fitness centres and gymnasia by State, end June 2005

NSW ^a	Vic	Qld	SA ^a	WA ^a	Tas ^b	NT ^a	ACT	Australia ^{a,c}
306	171	185	54	63	20	9	17	824

^a Estimate has a relative standard error between 10 and 25 per cent and should be used with caution. ^b Estimate has a relative standard error between 25 and 50 per cent and should be used with caution. ^c Row may not sum due to rounding.

Source: ABS Cat. no. 8686.

Table 4 outlines the business demographics of the health and fitness centres using Sweeney Research survey information to update those outlined above. This table adjusts for businesses that are 'out-of-scope' of the ABS survey (businesses excluded from the ABS survey are those which are non-employed and with small relative turnover). Making this adjustment increases the non-employed sector from 19 to 168 businesses — an increase of 149 businesses.

Table 4: Health and fitness centres and gymnasia, end June 2008

	Non- employing units	0-19 persons	20-49 persons	50-99 persons	100 persons or more	Total
2004-05	168	624	142	24	16	974
2007-08	389	951	186	29	17	1572

Source: Access Economics estimates.

In total, the number of fitness centres has increased from 974 in 2004-05 to 1572 in 2007-08. The highest growth came in the non-employed component of the fitness industry with about

30 per cent year-on-year growth. Industry wide growth is based on a year-on-year real growth rate of about 7 per cent, as suggested by Sweeney Research survey results.

Sales revenue

In 2004-05, health and fitness centres and gymnasia generated a total income of \$679.4 million. The primary source of income comprised membership and competition fees of \$535.1 million which represented 79 per cent of total income. Other key sources of income included: casual fees (\$46.4 million); rent, leasing and hiring income (\$16.5 million); and food sales (\$9 million).

The total expenditure for health and fitness centres and gymnasia was \$649.4 million during 2004-05. Major expense items included labour costs (\$270.5 million) and rent, leasing and hiring (\$110.6 million) — which represented 41.7 per cent and 17 per cent respectively of total expenditure (ABS Cat. no. 8686).

Updated 2007-08 sales revenue is outlined in Table 5. The largest revenue source is membership and other fees of \$741.3 million, followed by casual fees of \$64.2 million.

Table 5: Revenue health and fitness centres, 2007-08

Revenue	\$ million
Membership and other fees	741.3
Casual playing fees	64.2
Rent, leasing and hiring	22.8
Other income	111.5
Total revenue	939.8

Source: Access Economics.

Employment — Persons

In 2006, there were 18,869 people employed in the fitness sector, either as instructors or as managers of fitness and sports centres (ABS Cat. no. 4156). This represents a 16 per cent increase from 2001 when around 16,300 people were employed in the sector.

Table 6 shows industry employment in 2006 across States and Territories.

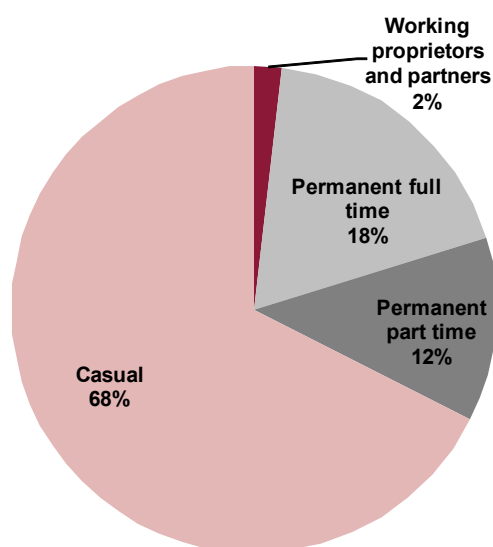
Table 6: Fitness industry employment by State, 2006

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
Fitness centre manager	538	436	321	116	176	27	8	43	1665
Sports centre manager	974	905	631	220	499	74	38	64	3405
Fitness instructor	4329	3780	2792	914	1395	193	67	326	^a 13,799
Total	5841	5121	3744	1250	2070	294	113	433	18,869

^a Total also includes three people employed in other Australian Territories.

Source: ABS Cat. no. 4148.

A large proportion of sectoral employment is casual, with casual employees accounting for 67 per cent of total employment in June 2005 (see Figure 2). The sector is also heavily represented by female employees. In 2005, around 67.3 per cent of employment in the sector was female (ABS Cat no. 8686).

Figure 2: Employment in the fitness industry, end June 2005

Source: ABS Cat. no. 8686.0.

Employment — Full time equivalent employees (FTEs)

Table 7 outlines the full time equivalent employment (FTE) for health and fitness centres. The FTE measure of employment adjusts part time and casual workers to a full time equivalent.

Between 2004-05 and 2007-08, FTE employment increased by over 30 per cent from 9997 FTEs in 2004-05 to 13,021 FTEs in 2007-08. This equates to over 21,000 people employed in the

sector under current levels of casual and part time employment. All employers (based on business size) experienced growth over the period.

Table 7: FTE employment, by business size, in health and fitness centres, 2004-05 and 2007-08

	Non-employed businesses	0-19 persons	20-49 persons	50-99 persons	100 persons or more	Total
2004-05	168	2881	2491	942	3515	9997
2007-08	389	4389	3270	1129	3844	13,021

Source: Access Economics.

The largest overall employers across the industry in 2004-05 were businesses employing 100 persons or more, followed by businesses employing between 0-19 persons. In 2007-08, these sectors remained the two largest employers with businesses employing between 0-19 people becoming the largest employing category — comprising around 34 per cent of overall industry employment.

The growth rates applied to the business sectors were attained from the Sweeney Research survey. These results indicated particularly strong growth in businesses employing between 0 to 19 people and slower relative growth for businesses employing greater than 50 people.

2.1 Direct economic contribution

Industry value added

Value added (output after deducting the value of intermediate inputs) is the most appropriate measure of an industry's economic contribution to gross domestic product (GDP). Industry value added can be calculated directly by summing the returns to the primary factors of production, labour and capital (GOS), as well as production taxes less subsidies. The value added of each industry in the value chain can be added without the risk of double counting across industries.

The ABS estimate that, in 2004-05, value added for health and fitness centres and gymnasia was around \$373.5 million (ABS Cat no. 8686).

Gross operating surplus (GOS)

GOS is a measure used in the national accounting framework to assess the returns to capital (a primary factor of production). It essentially represents the operational profits of the industry.

The GOS is similar to profits but is not necessarily the same because profits encompass financial aspects of the firm or industry which are not included in measuring GOS. Typical financial components excluded from GOS are: interest earned on loans provided by a business and depreciation of a businesses asset base.

In practice, GOS can be measured by estimating earnings before income tax, depreciation and amortisation (EBITDA).

The direct economic contribution of the industry

The economic and employment contribution of fitness centres in 2007-08 is outlined in Table 8. The contribution to GDP (value added) is \$486.5 million, with \$374.2 million being paid in wages and \$112.3 million being returned to capital owners as the gross operating surplus (GOS). GOS is based on just under \$937 million in operational revenue and around \$824.5 million in operational costs.

Employment in 2007-08 is estimated to be 13,021 full time equivalent employees.

Table 8: Direct economic contribution and employment, 2007-08

	\$ million
GOS	112.3
Operating revenue	936.9
Operating costs	824.5
Wages	374.2
Value added	486.5
Employment (FTE)	13,021

Source: Access Economics.

Table 9 outlines the income earned by fitness centres for 2007-08. The table outlines both the total revenue (used for profits) and the operating revenue (used for GOS).

Membership and other fees are the main component of income at \$741.3 million, with the next largest component being casual fees at \$64.2 million. Other income — that includes commissions, sales from beverages and food — totals \$111.5 million. Operating revenue is \$936.9 million, derived from netting out interest income of \$2.9 million from the total revenue.

Table 9: Fitness centre revenue, 2007-08

Revenue	\$ million
Membership and other fees	741.3
Casual playing fees	64.2
Rent, leasing and hiring	22.8
Other income	111.5
Total revenue	939.8
Interest	2.9
Operating revenue	936.9

Sources: ABS Cat. No. 8686.0 and Access Economics estimates.

Table 10 outlines the operational costs for fitness centres. Total industry costs for 2007-08 are \$898.3 million. The two highest cost components are labour costs at \$374.2 million and rent, leasing and hiring at \$153.0 million. Other costs, that include repairs and maintenance, advertising, utilities, account for \$250.9 million.

Non-operational costs are \$73.7 million, and include interest expenses, depreciation and amortisation.

Table 10: Fitness centre costs, 2007-08

Costs	\$ million
Labour costs	374.2
Purchases	32.2
Rent, leasing and hiring	153.0
Insurance premiums	14.2
Other	250.9
Non-operating	73.7
Total	898.3
Non-operating	73.7
Operating costs	824.5

Sources: ABS Cat. No. 8686.0 and Access Economics estimates.

2.2 Indirect economic contribution

The indirect contribution of the fitness industry is generated by the demand created by fitness centres in their commercial dealings with suppliers. For example, when a fitness centre undertakes repairs and maintenance, the business completing the work earns income, its employees earn wages and the inputs used generate income for further suppliers. The ABS National Accounts input-output tables provide a framework to assess the indirect contribution of industries.

outlines various multipliers estimated within the input-output table framework. The first panel outlines the gross output multipliers, and the second outlines the ratio of the total to direct effect. The latter are used in this report — because value added, labour income and employment were known.

(Note: Gross output is a definitional term and is often referred to as operating revenue — like in this report — or turnover.)

Table 11: Fitness centre multipliers

Gross output multipliers	
Gross output	1.92
Value added	0.93
Labour income	0.62
Ratio of total to direct contribution	
Gross output	1.92
Value added	1.79
Labour income	1.56
Employment	1.31

Sources: ABS Cat. No. 5209.0 and Access Economics estimates.

The gross output multipliers use direct gross output to estimate the total value added, labour income and gross output (these concepts are discussed in Appendix A). For instance, if the direct gross output in the fitness industry was \$100, the total value added is \$93 with labour income being \$62.

The ratio of total to direct contribution uses a known direct value added quantity to assess the total industry contribution. For example, a total direct industry contribution of \$100 gives a value added of \$179. In this case, the direct value added contribution is \$100 and the indirect value added is \$79. In terms of employment, if there were 100 FTEs directly employed, the ratio suggests 31 indirect FTEs would be employed on the basis of the flow on demand generated by the fitness industry.

Table 12 outlines the total, direct and indirect economic contribution of fitness centres. The total fitness centre value added is estimated at \$872.9 million, which comprises \$486.5 million in direct value added and \$386.4 million in indirect value added.

Table 12: Total, direct and indirect economic contribution

	Direct	Indirect	Total
Value added (\$ million)	486.5	386.4	872.9
Labour income (\$ million)	374.2	209.6	583.7
Employment (FTE)	13,021	4060	17,081

Source: Access Economics estimates.

The \$872.9 million in value added generated by the fitness industry represents around 0.08 per cent of GDP (based on GDP of \$1.132 trillion in 2007-08).

Total labour income is estimated at \$583.7 million, with direct wages of \$374.2 million and indirect wages of \$209.6 million. Total FTE employment is 17,081 with 13,021 direct and 4060 indirect FTE employees. As expected, these figures suggest higher average wages in the industries supplying fitness centres than in the fitness industry itself.

3 Broader economic impacts of the fitness industry

This section provides an assessment of the broader economic impacts provided by Australia's fitness centres. The primary channel for these impacts occurs through the industry's important contribution in improving the health of the community.

Better community health provides a range of economic benefits. Importantly, it can provide Australians with the opportunities and freedom to lead more active, healthy and productive lives.

In 2006-07, Australia's total spending on health reached \$94 billion, equivalent to \$4507 per person and accounting for around 9 per cent of GDP (AIHW 2008b). This is an increase from 7.7 per cent of GDP from 10 years earlier. Such expenditure underlines the potential for preventative health measures such as the services provided through Australia's fitness centres to reduce direct the burden of avoidable illness.

In addition to lowering direct health care costs, illness prevention and health promotion can also have considerable benefits to the workforce by enhancing participation and productivity. These impacts are discussed below.

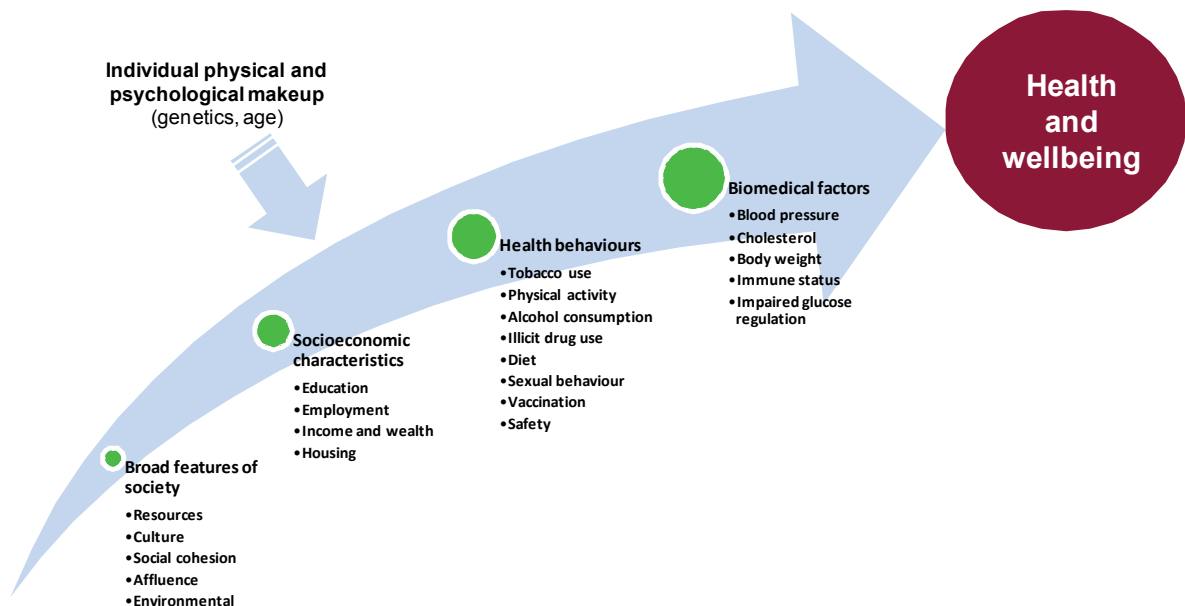
3.1 The nature of Australia's health

Australia's broad health outcomes continue to improve and, overall, compare favourably with other developed countries. For example, Australian life expectancy in 2006 was among the highest in the world at 81.4 years — second only to Japan at 82.6 years (WHO 2008).

The level of community health and wellbeing is influenced by a range of determinants including socioeconomic, behavioural and biomedical factors. Many of these are highly interdependent. A conceptual framework for the key determinants of health is set out in Figure 3.

Importantly, some of these determinants such as 'lifestyle' factors like smoking, diet, alcohol consumption or level of physical activity can be readily modified. Others, such as genetic structure, age and ethnicity are not modifiable.

Figure 3: Conceptual framework for determinants of health



Source: Adapted from AIHW 2008a.

At a general level, the health determinants shown in Figure 3 become more direct moving from left to right. They also interact with each other. For example, people’s level of education and employment affects their health behaviours which can in turn influence key biomedical factors like blood pressure and body weight. The factors within each determinant can also be closely interdependent.

Notably, the general pattern of influence can also work in the opposite direction. That is, a person’s health can affect their level of physical activity and employment prospects.

The central message from this picture is that there is a complex interplay of factors at work in determining health outcomes and, accordingly, assessing the potential impact of health promotion is difficult.

Prevalence and trends in obesity

While the health of Australians is good by developed country standards, Australia still rates poorly in some health indicators. A particular health issue is the rate of obesity which represents a significant risk factor for poor health and wellbeing (see Box 1). There has been some improvement in Australia’s ranking for adult obesity rates over the last twenty years but Australia remains in the bottom third of OECD countries on this measure (OECD 2007).

As shown in Figure 4, Australia has the fifth highest adult obesity rate (21.7%), behind the United States (32.2%), Mexico (30.2%), the United Kingdom (23.0%) and Greece (21.9%).

Box 1: Measuring overweight and obesity

Overweight and obesity are defined as excessive weight presenting health risks because of the high proportion of body fat. The most common population-level measure of overweight and obesity is the body mass index (BMI), which evaluates an individual's weight status in relation to height.

$$\text{BMI} = \frac{\text{weight(kg)}}{\text{height}^2(\text{m}^2)}$$

The World Health Organization uses the following BMI classifications:

- **Underweight** — BMI less than 18.5
- **Normal** — BMI 18.5 to 25
- **Overweight** — BMI 25 to 30
- **Obese** — BMI greater than 30

There are some limitations with the BMI measure. For instance, the current classification may not be suitable for all ethnic groups, who may have equivalent levels of risk at lower BMI (for example, Asians) or higher BMI (for example, Polynesians). Also, the thresholds for adults are also not suitable to measure overweight and obesity among children. BMI measures for children are calculated in the same way as for adults but are compared to values for other children of the same age.

Source: AIHW 2004.

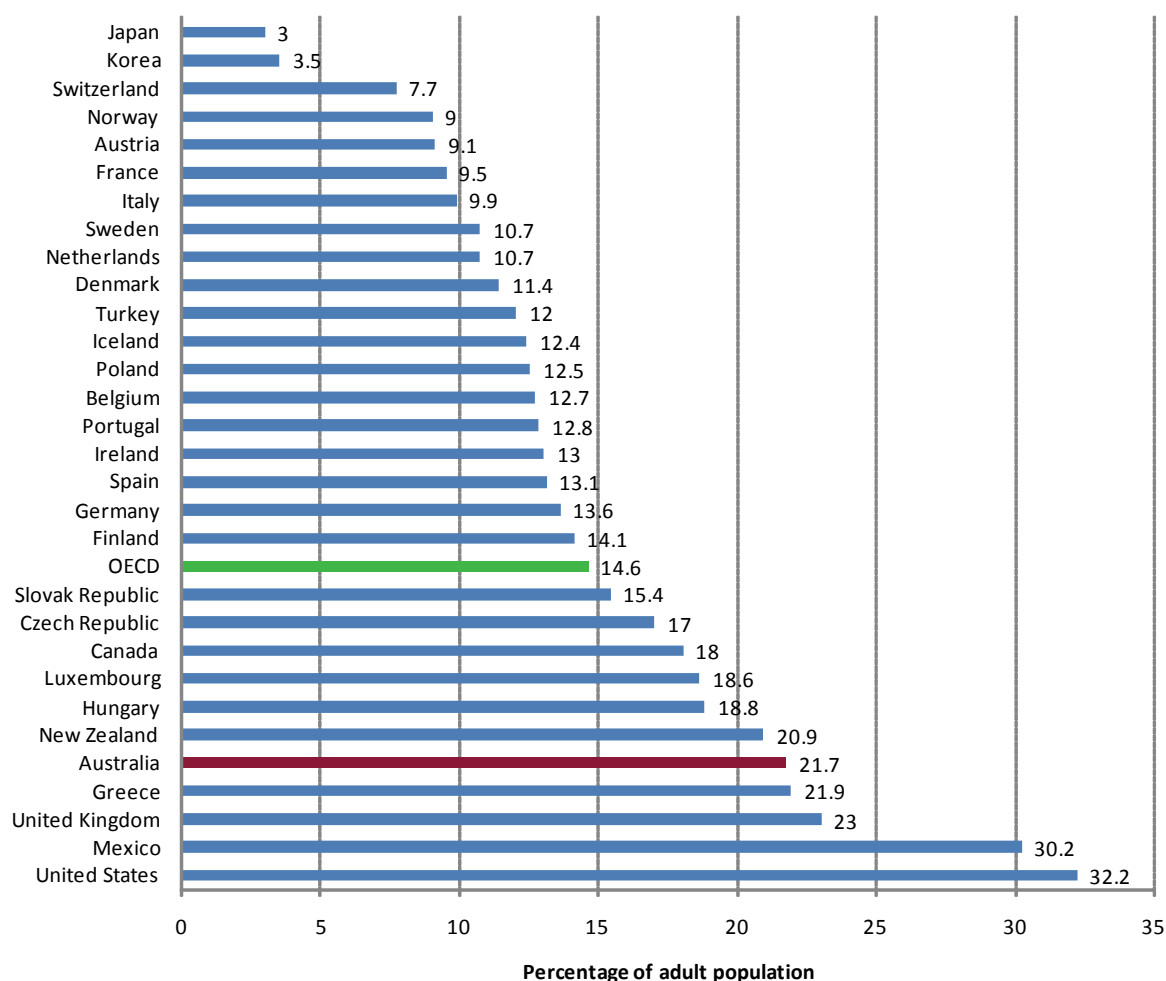
Obesity is a known risk factor for numerous health problems, including hypertension, high cholesterol, diabetes, cardiovascular diseases, respiratory problems (asthma), musculoskeletal diseases (arthritis) and some forms of cancer. Because of this, obesity is linked to significant health care costs.

The OECD (2007) notes that a number of behavioural and environmental factors have contributed to the rise in overweight and obesity rates in industrialised countries, including falling real prices of food and higher levels of physical inactivity. The greater use of passive entertainment like television and computers as well as lifestyle effects from increased urbanisation are considered to be significant factors leading to lower rates of physical activity (AIHW 2008a).

Due to the clear linkages between physical inactivity and obesity-related health problems, the promotion of exercise and active lifestyles can be an important primary intervention. The AIHW (2008a) notes:

... regular physical activity reduces cardiovascular risk in its own right, reduces cardiovascular risk factors such as overweight and high blood pressure, and improves the levels of HDL (the 'good' cholesterol). Regular exercise also helps protect against Type 2 diabetes and some forms of cancer, and strengthens the musculoskeletal system, helping to reduce the likelihood of osteoporosis (low bone-mineral density) and the risk of falls and fractures. (p. 135)

Figure 4: Prevalence of adult obesity (Body Mass Index over 30)



Source: OECD Health Data 2007.

Major health determinants

The health impact of specific risk factors is dependant on their prevalence across the community as well as their relative effect in contributing to disease and death. The effects of health determinants — how they contribute to the burden of disease — can be measured and compared using the disability adjusted life year (DALY) which treats disability and death on the same terms. One DALY is equivalent to one year of healthy life lost, including both fatal and non-fatal disease.

A key study by Begg et al (2007) on the attributable burden of disease for 14 risk factors in Australia concluded that overweight and obesity was the third highest cause of disease in 2003, and was responsible for around 7.5 per cent of the total disease burden (see Table 13). Physical inactivity was the fourth greatest risk factor, accounting for about 6.6 per cent of the disease burden. In terms of the health risk they represent to the community, these factors are comparable to tobacco smoking.

It should be noted that the total contribution of the assessed determinants is not the sum of individual contributions. As noted above, there is a complex interaction between health

determinants and they can occur together in the same person and in various combinations. The joint effects of the risk factors were therefore assessed and it was estimated that around 32 per cent of the total burden of disease was due to the studied determinants (Begg et al 2007).

Table 13: Proportion of disease burden attributed to determinants of health, 2003

Determinant	Males	Females	Persons
	%	%	%
Tobacco smoking	9.6	5.8	7.8
High blood pressure	7.8	7.3	7.6
Overweight/obesity	7.7	7.3	7.5
Physical inactivity	6.4	6.8	6.6
High blood cholesterol	6.6	5.8	6.2
Alcohol			
Harmful effects	4.9	1.6	3.3
Beneficial effects	-1.1	-0.9	-1.0
Net effects	3.8	0.7	2.3
Low fruit/vegetable consumption	2.7	1.5	2.1
Illicit drugs	2.7	1.2	2.0
Occupational exposures	2.6	1.3	2.0
Intimate partner violence	n.a.	2.3	1.1
Child sexual abuse	0.3	1.5	0.9
Urban air pollution ^a	0.7	0.7	0.7
Unsafe sex	0.5	0.7	0.6
Osteoporosis	<0.1	0.3	0.2
Joint effect ^b	35.1	29.1	32.2

n.a. Not available. ^a Estimate for long term exposure; an additional 0.3 per cent is attributable to short term exposure. ^b Estimate of the joint effect of all studied determinants, taking into account the overlapping effect among determinants on causal pathways.

Source: Begg et al 2007.

Promoting better health

At a fundamental level, health promotion and disease prevention focus on modifying and reducing risk factors that influence the development or progression of chronic disease. There are a number of different aspects to preventative measures (National Public Health Partnership 2001):

- **Primary prevention** — Essentially aims at promoting healthy lifestyles and reducing the key risk factors contributing to chronic disease (for example, public health awareness campaigns on the risks of tobacco smoking or excessive sun exposure).
- **Secondary prevention** — Targets early detection and more effective precautionary treatment of chronic disease (for example, breast cancer screening). Secondary measures may lower the rate of established cases in the community.

- **Tertiary prevention** — Focuses on treatment of established conditions to improve or maintain functional status and minimise suffering.

The services provided through Australia's fitness centres chiefly deliver primary preventative health benefits. In this way, they contribute to a reduced incidence of chronic diseases attributable to physical inactivity and obesity. This effect is discussed below.

Estimating the health benefits of fitness centres

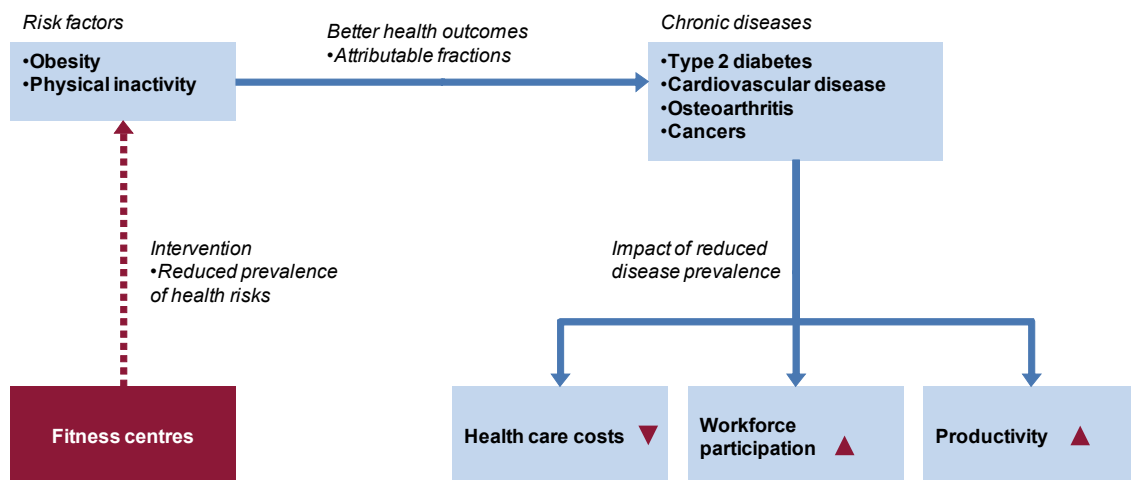
Access Economics has adopted the following key stages in evaluating the health benefits attributable to fitness centres:

- Identify the major diseases and conditions related to physical inactivity.
- Quantify the linkage between the prevalence of physical inactivity and associated risk factors and diseases. The parameters for the flow-through effects are based on literature on population-attributable fractions (AFs) and burden of disease linkages estimated by the Australian Institute for Health and Welfare (Begg et al 2007).
- Identify the groups of people at risk of developing a chronic disease — the prevalence of relevant diseases among target populations (for example, working age and non-working age cohorts).
- Estimate the major impacts of disease prevalence:
 - **Health care costs** — Examine relevant health care costs of episodes of care for each of the key diseases.
 - **Workforce participation** — Identify the impacts on workforce participation for each of the key diseases.
 - **Productivity** — Identify the labour productivity impacts for each of the key diseases.
- Apportion the share of the above impacts directly attributed to physical inactivity using AFs.
- Quantify the link between levels of fitness centre usage and reduced physical inactivity in the community.

A sensitivity analysis is also undertaken to provide a range of possible outcomes regarding the linkage between patronage at fitness centres and reduced health risks from physical inactivity. A conservative and more optimistic value for this key parameter is examined along with a central case.

The assessment framework is outlined in Figure 5.

Figure 5: Framework for evaluating the health benefits of fitness centres



3.2 Health benefits of fitness centres

Fitness centres promote more active lifestyles by providing the necessary facilities, equipment and expertise to achieve greater levels of fitness. The exercise services provided through fitness centres provide preventative health benefits to customers, essentially reducing the incidence of chronic diseases attributable to physical inactivity.

Approximately 1,732,000 Australians are now estimated to use fitness centre services, of which around 77 per cent are estimated to be regular participants. There are some industry views of higher rates of community participation at fitness centres, with overall estimates of around 2 million users.

While there is substantial research in the medical literature on the effectiveness of exercise interventions on particular chronic diseases, there is limited empirical evidence on the impact that use of exercise facilities such as fitness centres can have on general community health. However, there is recent literature that suggests that fitness centre membership is associated with increased health responsibility and broader health promoting behaviours. For example, Ready et al (2005) state that fitness centre members may constitute a large part of the population who are sufficiently active to achieve optimal health. Further, Giles-Corti and Donovan (2002) assert that membership in a sports and recreation club increased the likelihood of achieving the recommended level of activity by 2.5 times.

As noted above, a key aspect of the analysis is estimating the quantifiable link between fitness centre usage and reduced physical inactivity in the community. That is, how much of the current incidence of related chronic disease has been avoided by patronage at Australia’s fitness centres; and what are the impacts of this. These issues are far from straightforward.

Without fitness centres, it is expected there would be lower levels of exercise and health in the community. Crucially, however, this would not equate to all people who currently use fitness centres ceasing to exercise altogether. Some of these people would be expected to shift to alternative forms of exercise that also provide sufficient health benefits (for example, jogging, swimming or team sports).

That said, fitness centres provide services that are not readily replicated by other forms of exercise. For example, they typically provide exercise services that offer protection from weather and extreme climates, allow individual participation, flexible hours (including night and early morning) and a safe, supportive and instructional environment. Indeed, given the costs of fitness centre membership or participation, it can be concluded that clientele have expressed a clear preference for the types of services provided by fitness centres well above those provided by alternative (often much cheaper) forms of exercise.

In this regard, a substantial segment of fitness centre clientele would, in the absence of those centres, be expected to reduce their exercise levels below that necessary to provide health benefits.

Determining the ‘fitness factor’

In order to estimate the broader health benefits provided by fitness centres, Access Economics has assumed that *regular* fitness centre participants remove the risks associated with physical inactivity. In a state of the world where fitness centres did not exist, these health benefits would also diminish. Three related scenarios for this variable are modelled (see Table 14).

Under the central case, the proportion of fitness centre members who are not expected to take up other forms of exercise at levels sufficient to improve health is taken to be 50 per cent. A low case of 25 per cent exercise drop-out and a high case of 75 per cent drop-out are also adopted.

A sensitivity analysis is important for addressing the inherent uncertainty of this parameter. Such analysis is also imperative for framing the range of possible outcomes and highlighting any particular risks associated with estimating the parameter.

A number of necessary generalisations underpin this variable. The key ones include that the proportion of regular fitness centre patrons in the general population also applies over the workforce population, as well as for disease sufferers. In the context of this study, this is considered an appropriate assumption for indicating the magnitude of potential health-related benefits.

Table 14: Fitness factor scenarios

Scenario	Proportion of fitness centre participants that cease regular exercise
	%
Low case	25
Central case	50
High case	75

3.2.1 Avoided health care costs

As noted above, there are a range of chronic diseases that are directly associated with physical inactivity and obesity. The key diseases include type 2 diabetes, cardiovascular disease, osteoarthritis and various types of cancer (such as colorectal, breast, uterine and kidney

cancer). These diseases together account for the large majority of the disease burden directly related to physical inactivity (see Box 2).

A certain amount of these chronic diseases can be avoided through modifiable risk factors such as increasing levels of physical activity. The proportion of avoidable chronic disease varies across the four main diseases.

However, there are some important limitations. Because of non-modifiable risk components like age, sex and family history, not all chronic disease can be avoided. Further, risk exposures earlier in life can have detrimental legacy effects for people. This essentially means that becoming sufficiently physically active in mid-life can not eliminate all the health risks of leading a sedentary lifestyle until that time. This 'footprint effect' reduces the scope for primary preventative measures to lower the prevalence of chronic diseases in the community and is especially pertinent when examining the effect on the working age population.

Reductions in the incidence of chronic disease will reduce future health care costs for the community, much of which falls on the public health system. Chronic diseases currently place considerable costs on Australia's health care system. For example, direct health care expenditure across the four diseases most associated with physical inactivity was estimated at \$14.6 billion in 2004-05 (AIHW 2008a). This represented around 27.8 per cent of total health care expenditures for chronic diseases during that year.

The benefits from avoided health care costs derived from fitness centres can be estimated by considering the average direct health care costs per patient for each of the key diseases. Potential gross savings can then be determined by estimating the reduced incidence of obesity-related chronic disease. These avoided costs are detailed in Tables 15-17.

In the central case, a counterfactual is taken that 50 per cent of regular fitness centre participants cease exercising at sufficient levels to remove the health risks associated with physical inactivity. The existence of fitness centres therefore saves or avoids this component of direct health care expenditure.

Box 2: Key diseases associated with physical inactivity and obesity

- **Type 2 diabetes** — Diabetes is the sixth leading cause of death in Australia. Type 2 diabetes accounts for 85 to 90 per cent of Australians diagnosed with diabetes. Diabetes can result in many secondary long term health conditions, especially if it is undetected or poorly controlled. Around one third of people with diabetes experience complications such as eye problems, kidney damage, foot ulcers, heart attack, stroke and amputation. Overall, the disease burden attributable to diabetes is 8.3 per cent.
- **Cardiovascular disease** — This disease is also known as ‘circulatory disease’ or ‘heart, stroke and vascular disease’ and refers to all diseases and conditions of the heart and blood vessels. It is one of the main sources of mortality (and morbidity) due to obesity, particularly in the longer term. Cardiovascular disease is Australia’s second leading cause of disease burden overall (18%), mainly because of the deaths it causes. It accounted for 35 per cent of all deaths in Australia in 2005 and heart disease and stroke are the most common causes of sudden death in Australia.
- **Osteoarthritis** — One of the most preventable risk factors for osteoarthritis is obesity due to extra weight placing pressure on joints, particularly knee and hip joints. Osteoarthritis does not account for many deaths but is a common cause of long-term disability. About 32 per cent of Australians aged 75 years or older had osteoarthritis in 2005. While arthritis has a higher prevalence in older age groups, over 52 per cent of all people with osteoarthritis were of working age.
- **Cancers** — Obesity is associated with higher risk of four types of cancer — colorectal, kidney, breast and uterine cancers. On an incidence basis, colorectal cancer (14%) and breast cancer (13%) are two of the most common cancers, while kidney cancer and uterine cancer make up 3 per cent and 4 per cent respectively of new cancer cases. Together these account for about one third of all incident cancers. Overall, cancer is Australia’s leading cause of disease burden (19%) and is a major cause of death, accounting for 30 per cent of all deaths in 2005.

Source: Access Economics 2006; AIHW 2008a; Begg et al 2007.

Under this scenario, the estimated savings in direct health care costs from Australia’s fitness centres is \$71.9 million. The largest component of this saving arises from the avoided costs of cardiovascular disease, which provides a saving of around \$49.8 million.

The benefits from avoided health care are sensitive to how many fitness centre users would effectively drop-out from regular exercise in the absence of fitness centres. Where exercise drop-out is quite low (taken to be 25 per cent under the low case), avoided health care costs are \$36.0 million. However, where exercise drop-out is high (taken to be 75 per cent under the high case), health care savings from fitness centres are estimated to be approximately \$107.9 million.

Table 15: Avoided health care costs — Central case

Disease	Average cost per patient	Attributable fractions (AFs)	Avoided cases due to fitness centres	Gross avoided costs
	\$	%	No.	\$ million
Type 2 diabetes	1242	23.7	11,150	13.9
Cardiovascular	1516	23.7	32,880	49.8
Osteoarthritis	1162	6.6	5113	5.9
Cancer	6305	5.6	365	2.3
Total				71.9

Sources: Access Economics (2008) and estimates; AIHW (2008a); Begg et al (2007).

Table 16: Avoided health care costs — Low case

Disease	Average cost per patient	Attributable fractions (AFs)	Avoided cases due to fitness centres	Gross avoided costs
	\$	%	No.	\$ million
Type 2 diabetes	1242	23.7	5575	6.9
Cardiovascular	1516	23.7	16,440	24.9
Osteoarthritis	1162	6.6	2556	3.0
Cancer	6305	5.6	182	1.2
Total				36.0

Sources: Access Economics (2008) and estimates; AIHW (2008a); Begg et al (2007).

Table 17: Avoided health care costs — High case

Disease	Average cost per patient	Attributable fractions (AFs)	Avoided cases due to fitness centres	Gross avoided costs
	\$	%	No.	\$ million
Type 2 diabetes	1242	23.7	16,725	20.8
Cardiovascular	1516	23.7	49,319	74.8
Osteoarthritis	1162	6.6	7669	8.9
Cancer	6305	5.6	547	3.5
Total				107.9

Sources: Access Economics (2008) and estimates; AIHW (2008a); Begg et al (2007).

3.2.2 Workforce participation

The link between better health outcomes from improved disease prevention and workforce participation is made through the potential for fitness centre services to reduce the incidence of specific diseases.

People with chronic illness are less likely to participate in the workforce than the population generally. In terms of this, the various chronic diseases being examined also have different effects on a person’s ability to participate in the workforce.

Participation losses attributable to the various obesity-related chronic diseases can be determined using the differences in the workforce participation of people suffering from the diseases to that of the general population and applying this to the working age population (15-64 years) affected by the various diseases.

It should be noted that this approach does not account for mortality rates associated with specific diseases. These can be important for certain chronic diseases like cardiovascular disease and cancers which are significant causes of death in Australia. Because the approach focuses on the working age population, it does not factor in the potential benefits from increased future workforce participation from improving the health of children and mothers.

Participation losses for the various diseases are shown in Table 18.

In the central case, the estimated effect of increased labour force participation attributable to fitness centres is equivalent to 662 full time employees. The largest contributions to this benefit arise from reducing the incidence of type 2 diabetes and cardiovascular disease which both have significant numbers of disease sufferers in the working age population.

Under the low and high scenarios, the increase in labour force participation from fitness centres is estimated to be 331 and 992 full time employees respectively.

Table 18: Increases in workforce participation

Disease	Participation rate difference ^a	Attributable disease suffers in working age population	Full time equivalent employees (FTEs) due to fitness centres		
			Central	Low	High
	%	No.			No.
Type 2 diabetes	5.0	11,445	201	101	302
Cardiovascular	2.8	51,419	343	172	515
Osteoarthritis	5.1	5940	106	53	160
Cancer	6.6	468	11	5	16
Total			662	331	992

^a Differences between those reporting a particular disease and the general population from Access Economics (2005) and Productivity Commission (2006).

Sources: Access Economics (2005, 2008) and estimates; Productivity Commission (2006).

3.2.3 Productivity

Chronic disease lowers the productivity of sufferers who participate in the workforce. There are two key factors that lower workforce productivity in this context — increased employee absenteeism and ‘presenteeism’. The former involves employees not actually being at work,

while the latter relates to reduced productivity associated with attending work while ill and lacking the motivation or health to be fully productive.

Once again, productivity losses can vary widely with types of disease. Estimates of the productivity impacts for each of the key diseases and the number of employed people with the diseases are shown in Table 19.

In the central case, the estimated effect of increased workforce productivity due to fitness centres is equivalent to 255 full time employees. The largest productivity impact comes from lowering the incidence of cardiovascular disease and osteoarthritis which have the largest groups of disease sufferers in employment.

The estimated productivity benefit under the low scenario is 127 full time employees. Under the high scenario, around 382 additional full time employees are effectively added to Australia's workforce.

Table 19: Increases in workforce productivity

Disease	Days lost per month per employed person with disease	Disease sufferers in employment	Full time equivalent employees due to fitness centres		
			Central	Low	High
	Days	No.			
Type 2 diabetes	0.1	63,000	14	7	21
Cardiovascular	0.2	1,078,000	90	45	135
Osteoarthritis	1.6	638,000	118	59	178
Cancer	5.7	58,000	33	16	49
Total			255	127	382

Sources: Access Economics (2008) and estimates; Productivity Commission (2006).

3.2.4 Macroeconomic impacts from increased labour supply

The productivity and participation impacts from the improvements in community health generated by Australia's fitness centres have flow-on effects across the economy. The increase in effective labour supply leads to additional economic activity and national income.

Under the central case, Australia's GDP is around \$28.7 million greater in 2007-08 than if those preventative health benefits were not generated. Other key economic indicators are also expected to increase because of the impact of fitness centres on raising the labour supply. For instance, employment is higher by around 367 full time employees and household consumption greater by approximately \$15.9 million.

The flow-on economic impacts for the three scenarios are presented in Table 20.

These second-round impacts account for the increase in effective labour supply only. They do not include the direct healthcare savings discussed above and should be considered additional to those benefits.

Table 20: Flow-on macroeconomic impacts from increased labour supply, 2007-08

	Low	Central	High
GDP (\$ million)	14.2	28.7	43.1
Real household consumption (\$ million)	7.9	15.9	23.9
Employment (FTE)	183.6	367.2	551.7

Source: Access Economics estimates.

While these flow-on economic benefits are somewhat limited, they are not immaterial. They should be viewed in the context of the size of the economic ‘shock’ being examined. The direct labour force impact of Australia’s fitness centres — encompassing both productivity and participation effects — is an additional 916 full time employees under the central case. This represents around 1/100 of 1 per cent of Australia’s 9.23 million full time equivalent employees in June 2008.

3.2.5 Effect of higher fitness centre utilisation

The evaluation of the broader health benefits of fitness centres focused on three scenarios representing possible rates of exercise drop-out from current users of fitness centres. These drop-out scenarios were based on the current population of regular fitness centres participants, which was estimated to be around 1,334,000. This represents around 7.0 per cent of Australia’s total adult population (taken to be 15 yrs and older).

As an additional ‘what if’ scenario, Access Economics has modelled the potential health-related impacts if the number of fitness centre users increased to around 10 per cent of the Australian adult population. Under this achievable level of utilisation, the benefits flowing from health care savings, increased workforce participation and higher labour productivity would be considerably greater than those currently being generated by the fitness industry. For example, this uptake has the potential to deliver additional health care savings in the order of \$204.8 million and lead to around 2609 extra full time employees in the workforce. The estimated workforce benefits could also increase GDP by approximately \$82 million in real terms.

Indeed, the results suggest that greater emphasis on preventative health care — in which Australia’s fitness centres would be expected to play a critical role — could yield considerable economic and social benefits.

Table 21: Economic benefits if fitness centre usage was 10 per cent of adult population

Disease	Gross avoided health care costs	Workforce participation	Workforce productivity
	\$ million	FTEs	FTEs
Type 2 diabetes	39.4	572	41
Cardiovascular	141.9	977	256
Osteoarthritis	16.9	303	337
Cancer	6.5	31	93
Total	204.8	1884	726

Source: Access Economics estimates.

While a 10 per cent level of overall fitness centre utilisation across the community is considered realistic, given current rates of participation, it is intended to highlight the benefits that could be achieved in reaching a possible future level of market penetration relevant to the industry. The level itself has not been determined on the basis of rigorous analysis and any prospective goal or target should be set according to firm industry priorities.

It should also be noted that these projections are subject to similar uncertainties and limitations as the other parts of the broader economic assessment (see discussion below). In this regard, they should be considered as representing the scale of potential benefits that could be derived from increasing overall rates of regular fitness centre participation in the community.

3.2.6 Limitations and challenges

Assessing the broader benefits that fitness centres provide through helping to improve the health of the community is far from straightforward. Many of the attendant challenges relate to quantifying the precise linkages between health outcomes and specific initiatives to promote health and wellbeing.

The evaluation of the health-related economic impacts of fitness centres has been undertaken at a high level and has not involved many of the detailed assessments typically adopted to measure the costs and efficacy of particular interventions. These can involve, for example, consideration of a greater range of factors such as the age, gender and demographic characteristics of fitness centre members, as well as a substantial longitudinal analysis. The health-related results of this study should therefore be considered indicative and representing the scale of potential health benefits generated by Australia's fitness industry.

Some of the key limitations and challenges are noted below.

- **Linking behavioural changes and health outcomes.** The relationship between risk factors and health outcomes is often not straightforward. In many cases they may be non-linear and often interdependent. A particular complication of estimating these linkages is that counterfactual estimates of the behaviour that would have occurred without a particular intervention (such as fitness centres) are required.

In terms of this study, there is relatively limited information on the role that specific exercise programs or fitness centre activities can play in improving health outcomes

broadly. This study has accordingly relied on relatively conservative estimates in apportioning the role fitness centres play in increasing the level of physical activity in the community. A sensitivity analysis has also been conducted to test these estimates and their overall impacts.

- **Some health impacts are excluded.** While the major disease impacts from physical inactivity are covered in the analysis, some forms of health savings are not included. These include links to improved mental health and a reduced incidence in falls among the elderly. The assessment also excludes both the cost of formal and informal care provided by carers.

Conversely, the analysis does not account for some of the direct health costs of fitness activities. These include the increased incidence of musculoskeletal sports injuries such as sprains. However, these costs are commonly considered to be minor compared with the costs of inactivity.

- **A static approach is adopted.** The study examines the health impact in a single year and does not account for the dynamic aspect of interventions and health cost savings. There are often considerable lags between health promotion activities, changes in behaviours and subsequent health outcomes. The assessment's static approach also ignores any 'shifting' effect where the offset of health costs through primary prevention initiatives can shift expenditure through time. People who would have incurred costs due to specific illness will often incur new (and possibly greater) costs in future years due to old age.

- **Disease severity.** The analysis does not account for differences in the severity of particular diseases. These can often be highly variable and have a large bearing on cost and workforce impacts.

Estimates of the avoided health burden should also ideally take into account changes in the prevalence of specific diseases over time.

4 Conclusions and outlook

Australia's fitness centres are an important part of the Australian economy. In addition to the industry's direct economic impacts and level of employment, substantial benefits are also derived from its contribution to improved health and productivity in the community.

There are, however, a number of challenges facing the industry. Perhaps the most pressing relates to the current economic conditions, which are weak and could deteriorate further over the next 12 months. That said, there are several longer term influences that could present substantial opportunities for the industry. These issues are outlined below.

Immediate economic challenges

The global financial shock and subsequent economic slowdown is having a notable effect on the Australian economy. Australia's significant momentum leading into the global recession has so far enabled it to avoid a 'technical' recession. However — and although the outlook remains more positive than in many other countries — conditions are still weak.

The outlook for the global economy remains uncertain, though signs of improvement in recent months suggest that most major economies will return to economic growth in early 2010. The timing of recovery in Australia's major trading partners — particularly in developing Asia — will help determine the magnitude of Australia's downturn.

The Australian retail sector has endured tough trading conditions throughout 2008 and 2009. During 2008, the high interest rate environment which preceded the Global Financial Crisis curtailed household disposable income. Since September, falling asset prices and a weaker economic outlook has seen consumer confidence fall away, while unemployment has also lifted sharply.

Despite those tough conditions, retail trade has performed surprising well in recent months. Retail trade jumped in May, rising by 1 per cent and building on gains seen since November. Retail sales are now up a healthy 5.8 per cent over the six months to May. The lift is likely to be a direct result of stimulus payments to households along with the notable falls in interest rates seen over recent months. That suggests that the spending boost may not be maintained going forward once the effects of stimulus payments subside.

Indeed, Access Economics expects consumer spending to fall from here. Although interest rates will remain low, unemployment will continue to climb and consumer confidence remains weak, dampening the retail sales outlook.

Households are likely to pull back on their spending for the remainder of 2009 and through 2010. A strong retail recovery may then emerge in 2011 as the unemployment rate peaks and starts to turn down, interest rates remain relatively low and a housing recovery emerges.

Health and demographic factors

Looking ahead of the current weak economic circumstances, there are several longer term socioeconomic and demographic factors that are likely to provide significant opportunities for the fitness industry. These principally relate to trends in the population incidence of obesity and Australia's changing age profile.

An increased prevalence of obesity related health problems is expected to place considerable demands on Australia's health system in future years (AIHW 2008a). Australia's ageing population will also add to fiscal pressures, requiring substantial outlays for pensions and health related expenditure. Indeed, the Intergenerational Report 2007 notes:

Demographic and other factors are projected to place significant pressure on government finances over the longer term and result in an unsustainable path for net debt towards the end of the projection period.

Australian Government spending is projected, in the absence of policy adjustments, to rise by around 4¾ per cent of GDP by 2046-47. By that time, a fiscal gap of around 3½ per cent of GDP is projected to develop. (p. xii)

Such pressures make preventative health measures such as the services provided through Australia's fitness centres even more imperative. Consistent with sustained growth in the industry over the last decade, it is expected that the industry will continue to play an important role in improving the health and wellbeing of the Australian community and contributing to Australia's longer term growth prospects.

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Appendix A: Economic contribution studies

Economic contribution studies are intended to quantify measures such as value added, exports, imports and employment associated with a given industry or firm, in a historical reference year. The economic contribution is a measure of the value of production by a firm or industry.

Value added (the difference between the value of services or goods sold and the cost of inputs) is the most appropriate measure of an industry's/company's economic contribution to gross domestic product (GDP) at the national level, or gross state product (GSP) at the state level.

The value added of each industry in the value chain can be added without the risk of double counting across industries. It can be calculated directly by summing the returns to the primary factors of production, labour and capital (the gross operating surplus, 'GOS', or profit), as well as production taxes less subsidies.

Measures such as total revenue or total exports double count — that is, overstate the contribution of an industry/company to economic activity — as they include the value added of other industries. For example fitness centres' sales revenue includes the value added of external firms supplying inputs to fitness centres.

While describing the geographic origin of production inputs may be a guide to a firm's linkages with the local economy, it should be recognised that these are the type of normal industry linkages that characterise all economic activities.

Unless there is significant unused capacity in the economy (such as unemployed labour) there is only a weak relationship between a firm's economic contribution as measured by value added (or other static aggregates) and the welfare or living standard. Indeed, the use of labour and capital in production is a cost to the economy. In simple terms, economic resources (land, labour, capital) are not for exclusive use by fitness centres (or any other business). That is, activity related to fitness centre production comes at an opportunity cost as it may reduce the amount of resources available to spend on other (possibly more worthwhile) activities than providing fitness centre facilities.

This is not to say that the economic contribution of fitness centres, including employment, is not important. The Productivity Commission (1999) notes:¹

... value-added, trade and job creation arguments need to be considered in the context of the economy as a whole. ... Income from trade uses real resources, which could have been employed to generate benefits elsewhere. ... These arguments do not mean that jobs, trade and activity are unimportant in an economy. To the contrary, they are critical to people's wellbeing. However, any particular industry's contribution to these benefits is much smaller than might at first be thought, because substitute industries could produce similar, though not equal, gains. (p. 4.19)

¹ Productivity Commission 1999, *Australia's Gambling Industries*, Report No. 10, Canberra.

In a fundamental sense, economic contribution studies are simply historical accounting exercises. No 'what-if', or counterfactual inferences, such as 'what would happen to living standards if the industry or firm disappeared' should be drawn from them.

Measuring the economic contribution

There are several commonly used measures of economic activity, each of which describes a different aspect of an industry's economic contribution:

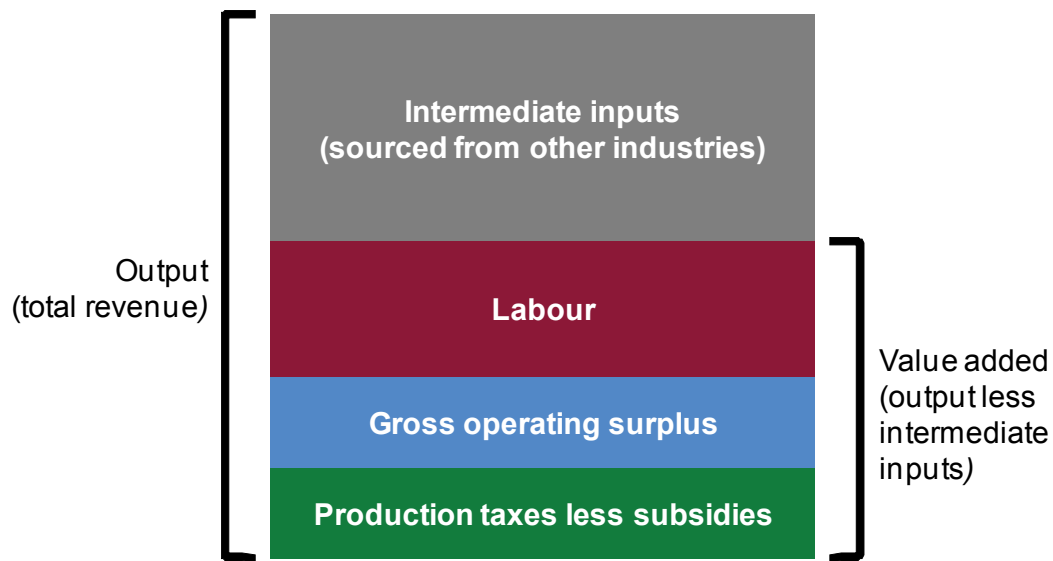
- **Value-added** measures the value of output (ie goods and services) generated by the entity's factors of production (ie labour and capital) as measured in the income to those factors of production. The sum of value-added across all entities in the economy equals gross domestic product. Given the relationship to GDP, the value-added measure can be thought of as the increased contribution to welfare.

Value-added is the sum of:

- Gross operating surplus (GOS). GOS represents the value of income generated by the entity's direct capital inputs, generally measured as the earnings before interest, tax, depreciation and amortisation (EBITDA).
 - Tax on production less subsidy provided for production. This generally includes company taxes and taxes on employment. Note: given the returns to capital before tax (EBITDA) are calculated, company tax is not included or this would double count that tax.
 - Labour income is a subcomponent of value added. It represents the value of output generated by the entity's direct labour inputs, as measured by the income to labour.
- **Gross output** measures the total value of the goods and services supplied by the entity. This is a broader measure than value-added because it in addition to the value-added generated by the entity, it also includes the value of intermediate inputs used by the entity that flow from value-added generated by other entities.
- **Employment** is a fundamentally different measure of activity to those above. It measures the number of workers that are employed by the entity, rather than the value of the workers' output.

Figure A.1 shows the accounting framework used to evaluate economic activity, along with the components that make up gross output. Gross output is the sum of value-added and the value of intermediate inputs. Value-added can be calculated directly by summing the payments to the primary factors of production, labour (ie salaries) and capital (ie gross operating surplus, 'GOS', or profit), as well as production taxes less subsidies. The value of intermediate inputs can also be calculated directly by summing up expenses related to non-primary factor inputs.

Figure A.1: Economic activity accounting framework



Source: Access Economics.

Economic impact studies

In contrast to economic contribution studies, the ultimate aim of economic impact studies (such as GE modelling) is to gauge the net benefit of an economic stimulus or contraction — whether living standards will increase and by how much, not how much expenditure is incurred.

Static analysis like contribution studies, while useful to gauge the size of firms or industries in the economy, are a poor guide to living standards — they do not take into account dynamic displacement or ‘crowding out’ effects on other sectors of the economy, such as increases in wages.

The economic contribution of the fitness centre operations as measured by value added indicates the value of activity in terms of **production** undertaken in Australia. The contribution of the fitness centre operations to Australia’s **income** is less than the value of production.