



Economic Health & Societal Well-being: Quantifying the Impact of the Global Health & Fitness Sector – Canada

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Foreword from Deloitte



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In 2021 the Global Health & Fitness Alliance (GHFA), supported by IHRSA, commissioned Deloitte to examine the economic and socioeconomic impacts of the Health and Fitness Industry across the globe. We are thus pleased to present our latest report: **Economic Health & Societal Well-being: Quantifying the Impact of the Global Health & Fitness Sector – Canada.**

Deloitte and IHRSA have worked together in the past to produce a number of reports providing market insights into the Health and Fitness Industry in Europe, the Asia-Pacific and across the globe. These past reports have been market studies aimed mostly at an audience within the industry.

However, across the globe governments and organisations outside the industry face rising healthcare costs and the increasing prevalence of lifestyle diseases. This raises questions as to how best improve the health of the world's populations, while keeping healthcare costs under control. We at Deloitte believe the Health and Fitness Industry is an important and indispensable part of the solution.

The Health and Fitness Industry is a major contributor to GDP and jobs throughout the globe. Each year the industry directly contributes to billions of value added to GDP and creates millions of jobs. In addition, the industry supports indirect jobs and value added to GDP through its demand for goods and services, especially in the service sector.

In addition to direct and indirect economic impacts, we have also examined in detail the societal well-being and health impacts of the fitness industry. Regular physical activity has an incredible range of benefits, such as better sleep, improved concentration, reduced disease risks and overall reduced all-cause mortality. What's more, there is solid evidence that access to fitness centres increases rates of physical exercise.

The corollary of this the Health and Fitness Industry helps improve the overall population's health, reducing healthcare costs, absenteeism and presenteeism.

This report thus aims to outline the full economic and social impacts of the Health and Fitness Industry to help policy makers make better decisions and improve people's health and productivity across the globe.

Foreword from GHFA and IHRSA



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The Global Health & Fitness Alliance in collaboration with IHRSA and the fitness industry are dedicated to increasing access to physical activity across the world.

There are many ways in which we strive to achieve this goal: we advocate for a universally inclusive fitness industry, one in which people of all races, backgrounds, ages, orientations, and abilities feel intentionally welcomed and included; we actively partner with multiple national, international, and global organizations working to help more people get active, such as the World Health Organization (WHO), Organisation for Economic Co-operation & Development (OECD), UNESCO, other UN and Government and non-Governmental agencies and associations across the globe. Together, we can make the world a healthier place and create a better future for our industry.

To this end, we are pleased to release our first ever global report on the economic and socioeconomic impact of the Health and Fitness Industry covering 46 countries and regions, accounting for roughly 90% of global GDP. This is in addition to the MENA region report already released by IHRSA with Ken Research covering 9 countries in the Middle East and North Africa (MENA).

This report begins to paint a picture of the industry's impact on population health and the economic impact of the industry. Not only does the industry employ millions of people around the world and generates billions of

value added to GDP, it also has an incredibly positive influence of health outcomes. In doing so the industry collectively saves us billions in healthcare costs and productivity benefits.

We would like to sincerely thank all of our financial contributors who made this report happen (as listed on page 56), most especially to the following Platinum Cornerstone and Gold Contributors who provided the bulk of the funding, in addition, of course, to all our wonderful Industry leaders who provided insightful interviews and assisted with the research for this report.

Platinum Cornerstone Contributor:



ABC Fitness
Solutions

Gold Contributors:



Fitness & Lifestyle
Group



World Gym Taiwan



Johnson Health
Tech



Technogym

Executive Summary

The Health and Fitness Industry has a noticeable economic and social impact

This report thus aims to outline the full economic and social impacts of the Health and Fitness Industry across the world. By doing so we can help policy makers make better decisions and improve people's health and productivity.

Throughout the globe the Health and Fitness industry directly generates billions of value added to GDP and creates millions of jobs. What's more, the industry helps indirectly sustain value added and employment throughout its supply chain, contributing especially to industries such as real estate services, professional services, and marketing.

Beyond its economic contribution, exercise and fitness has an incredibly important impact on our health. Regular moderate-to-vigorous physical activity reduces the risk of:

- heart disease, stroke, hypertension, type 2 diabetes and dementia,
- clinical depression and anxiety, as well as
- a range of cancers, including breast, colon, bladder, kidney, lung, and stomach.

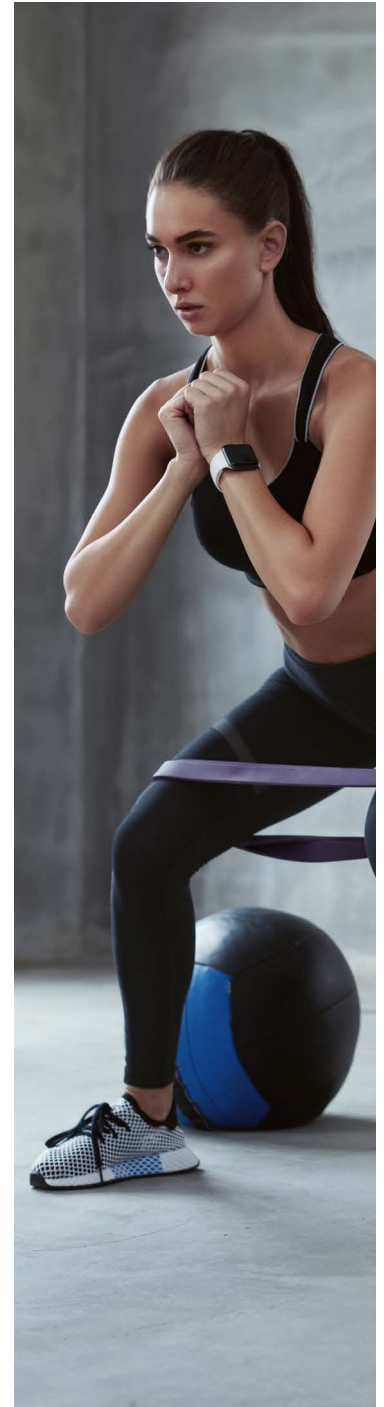
Given this, encouraging increased fitness can lead to significant healthcare savings and improved workers' productivity.

There is strong evidence that fitness centres can get people to exercise more than they otherwise would if they did not have access to these centres. In this manner the Health and Fitness Industry has an important health impact by improving the population's overall fitness levels.

Canadian impact

This report finds that:

- Economically, in 2021 the fitness industry in Canada had a direct value added of US\$1.7 billion and supported an indirect value added of \$1.4 billion.
- The industry directly supports 83.2 thousand jobs and indirectly supported an additional 20.8 thousand jobs.
- Inactivity costs the healthcare system in Canada US\$3.9 billion, of which \$2.7 billion is borne by the public health system. At the same time productivity loss due to a lack of sufficient activity was valued at \$7.9 billion per year.
- Each insufficiently active worker costs the nation's economy approximately \$2,069 in healthcare costs and lost productivity.
- **Conversely, investing \$2,000 in successfully helping an inactive person become active results in a payback period of less than 1 year, on average, in terms of benefit to the overall economy and society.**
- **It is important to note that, how and where to invest this dollar amount is entirely dependent on the circumstances surrounding the country/region, city, and community. We recommend that local government, industry leaders, fitness operators, as well as companies work together to find the best and most logical solution for their community.**



Chapter 1

Introduction



Global Health and Fitness Industry

The global Health and Fitness Industry has experienced steady growth over the past decade

Steady Growth of Market

Market size reached **US\$96.7 billion** in 2019

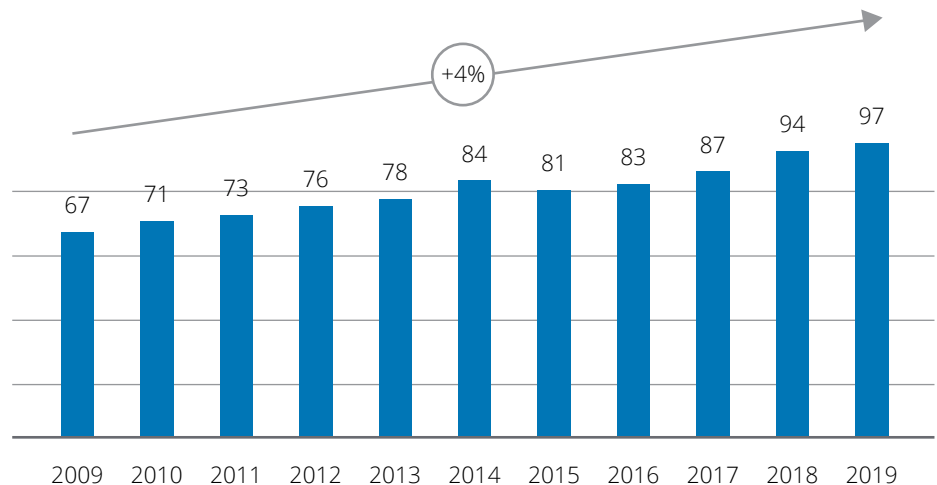
Globally, the fitness industry has had a profound impact in economies around the world, and has been growing steadily over the past few decades. Before the impact of COVID-19, the industry reported just short of US\$100 billion in revenue, and had over 180 million members globally (IHRSA 2020).

While the word ‘gym’ traces its roots back to ancient Greece, modern gyms began to emerge in the 19th century connected to schools or groups like the YMCA. Big box chain gyms as we know them today first started in the 1960s and 70s in America, with pioneers such as Gold’s Gym in California.

Since the 80s, Health and Fitness centres have become increasingly mainstream in the West. As the industry matures, it has diversified its offering from large, one-size-fits-all gyms to small boutique studios and high-tech new model gyms.

Figure 1.1: Market size of global Health and Fitness Industry (2009-2019)

Unit: billion USD



Across the world incomes have been rising. As living standards have improved, people are placing increasing importance on personal health and lifestyle balance. At the same time, there has been a reaction against the rise of sedentary lifestyles, fueling industry growth.

Recently, however, the industry has had a tumultuous time, due to COVID-19-related social distancing. This disruption has accelerated trends in the industry, such as digitization and online-offline integration. Nevertheless, with rising health awareness, especially after COVID-19, the Health and Fitness Industry is expected to rebound and resume its long-run growth trajectory.

Growth has been strongest in Asia Pacific and Latin America

Asia Pacific & Latin America

Prior to the disruption of COVID-19, the two fastest growing regions have been Asia Pacific and Latin America.

Asia Pacific has enjoyed relatively steadier growth, while Latin America's growth has been faster but more volatile.

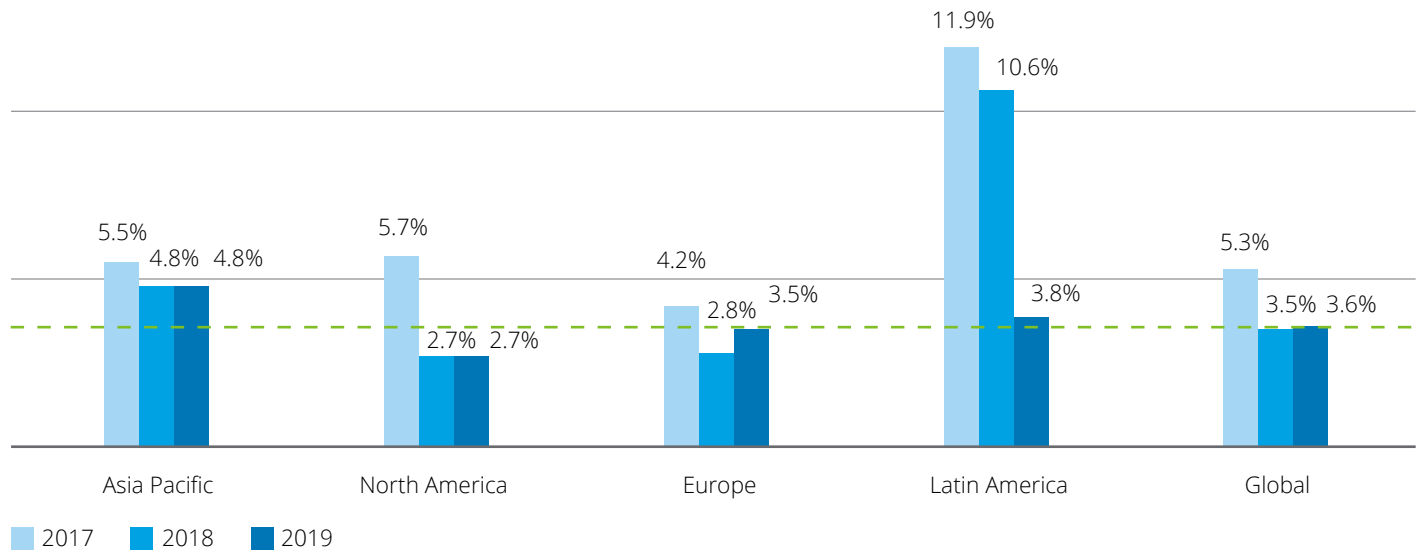
The faster growth in these regions is perhaps unsurprising. The Health and Fitness Industry is overall less mature in these two areas compared to North America or Europe, giving more room for growth.

At the same time, as countries in these regions develop and incomes rise, citizens have increasingly adopted western lifestyles – for better or for

worse. We have seen an increasing prevalence of sedentary jobs and diets high in processed food. As a result, rates of obesity in both Asia and Latin America are on the rise. Many people – especially the younger generation – have reacted against these trends by embracing fitness, fueling growth in the industry.

Figure 1.2: Annual growth of Health and Fitness Industry prior to COVID-19 lockdowns by region

Unit: %



Source: Marketline industry profile reports, Deloitte Research

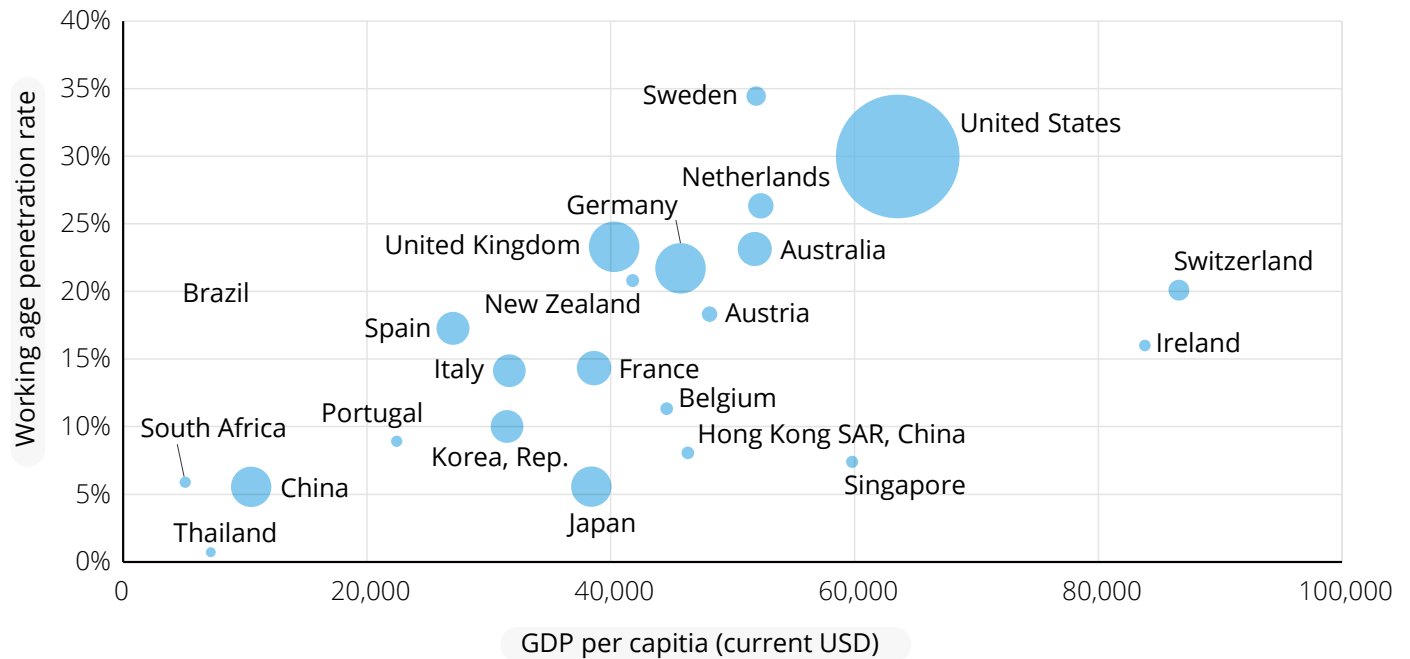
The USA is still the largest fitness industry market in the world, with major European countries also achieving high fitness penetration

Stratified Regional Markets

- Established Markets:** Looking globally, Sweden (34%), the USA (30%), the UK (23%), Australia (23%) and Germany (22%) have the highest penetration rates among the adult population¹. However, these mature and professionalized markets face higher labor and real estate costs, restricting growth potential compared to faster growing markets.
- Fast-growing Markets:** Hong Kong (8%), Singapore (7%), Japan (6%) and China² (6%) are in the second tier, with gradual professionalization of services, expanding consumer bases, and increasing competition.
- Underdeveloped Markets:** due to undeveloped infrastructure, low purchasing power and low awareness of personal health, regions such as Malaysia (1.5%), Thailand (0.7%), Vietnam (0.7%) and India (0.2%) currently have low levels of penetration – though this gives them a large potential.

Figure 1.3: Health and Fitness market penetration rate and market size (bubble size) of selected countries and regions¹

Penetration rate (working age)



Source: Deloitte Research, GDP figures from World Bank GDP per capita (current US\$) (2020)

Notes: 1) Penetration rates is defined based as estimated memberships as a percentage of working age population (aged 15 to 64). Penetration rates and market size are based on latest available year of data. 2) China rate is based on top 18 cities, rather than the whole population

As the industry has matured, it has evolved from the traditional gyms to a more specialized, diversified, and digitalized business models

1



Traditional Gyms

Traditional gyms were the mainstay for a long period of time

Traditional gyms are simple but effective fitness spaces, with a focus on providing access to sports equipment. They are often equipped with aerobic zones, equipment zones, free weight zones, rest area, etc.

Demand for customized exercise has given rise to small, specialized gyms

These fitness spaces focus on providing high quality **personal training** services. They can be equipped with aerobic zones, equipment zones, free weight zones, rest areas, etc., but mainly compete based on the quality of their personal trainers.

Personal Training Studios



3



Boutique Studios

Boutique studio aim to cater to diversified consumer needs

Boutique studio generally concentrate on specific group exercises; they are often equipped with group exercise rooms but also provide personal training as well. Typical groups exercises include **yoga, Pilates, spinning, boxing**, etc.

The industry is trending towards digitalization and more flexible business

Globally there has been a rise in online-to-offline (O2O) fitness spaces, combining online fitness platforms with offline equipment spaces. While they are often equipped with the same type of training equipment as traditional gyms, they utilise smart online/offline management focusing on **internet fitness, 24h self-service, and pay-per-visit**.

New Model Gyms



4

Why Value Health and Fitness Industry?

The economic importance of the Health and Fitness Industry

Deloitte and IHRSA have worked together over the past decade to produce a number of reports providing market insights into the Health and Fitness Industry, including IHRSA International reports, IHRSA Asia-Pacific Health Club reports, European Health & Fitness Market reports and the China Health and Fitness Market White Paper. These past reports have been market studies aimed at players within the industry.

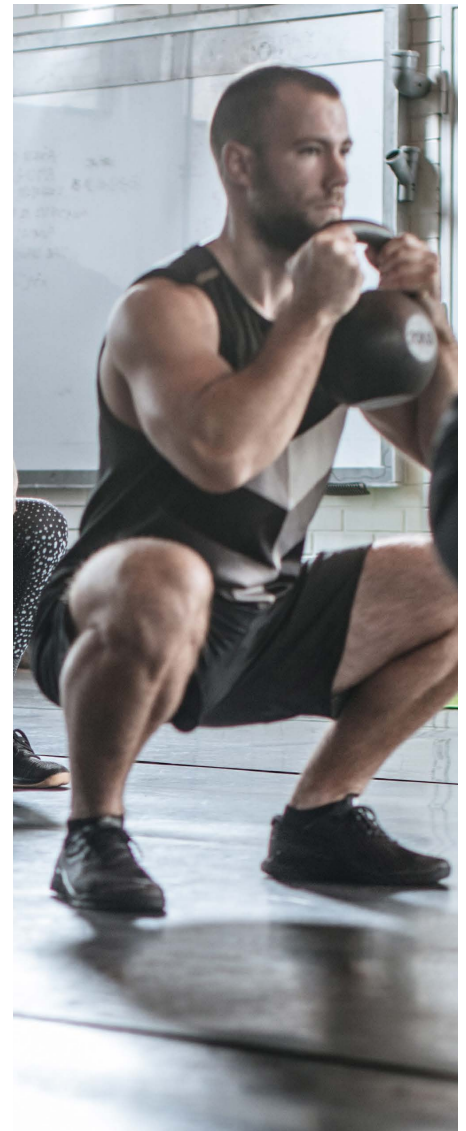
However, with rising healthcare costs globally and mounting prevalence of lifestyle diseases, government and NGOs around the world are increasingly wrestling with how to improve the health of the world's populations.

To this end they have increasingly turned their attention to the Health and Fitness Industry. Ultimately, the industry and governments have the same aim: get people moving to improve their health.

In their goal to improve individual's health and fitness, the industry generates billions of value added to GDP, employs millions and has a wide-reaching impact on health and

productivity at a population level. This impact is pertinent not just to industry insiders, but to us all.

This report thus aims to outline the full economic and social impacts of the Health and Fitness Industry to help policy makers make better decisions and improve people's health and productivity across the globe.



The importance of fitness to health

Fitness is perhaps the closest thing to a panacea humans have found yet

It is almost difficult to overstate the health benefits of exercise and fitness. Regular moderate-to-vigorous physical activity has a dizzying array of benefits, including:

- Reduced risk of heart disease, stroke, hypertension, type 2 diabetes and dementia,
- improved sleep,
- reduced risk of clinical and postpartum depression and reduced

depressive symptoms and anxiety, as well as

- reduced risk of a range of cancers, such as breast, colon, bladder, kidney, lung, and stomach (Physical Activity Guidelines Advisory Committee, 2018).

It is not surprising, then, that fitness is linked to reduced risk of dying in general. The seminal 2008 Physical Activity Guidelines Advisory Committee (PAGAC) Report, after systematically reviewing scientific literature on physical activity, concluded that active

individuals had an approximately 30% reduced risk of dying during follow-up studies, compared to the inactive (PAGAC, 2008).

What's more physical activity has been linked to improved cognitive functioning, including improved memory, concentration, problem-solving skills and academic performance, while protecting against cognitive decline with dementia.

Improving fitness, therefore, can have a positive impact on almost every aspects of one's life.



This means fitness is great not just for individuals, but for healthcare systems too

By improving individuals fitness levels, healthcare systems save money. In 2016, a landmark Lancet study (Ding et al., 2016) estimated the healthcare costs of physical activity across the globe. The results were striking. In 2013 insufficient exercise directly cost the global healthcare system US\$63 billion in today's terms – and the majority of these costs fell on the public sector. Many of the diseases associated with

lack of fitness – such as type 2 diabetes – are chronic in nature, and put stress on the healthcare system over the long term, further compounding the costs. In some ways these are conservative estimates too, as the study focused on just a subset diseases linked to insufficient fitness.

The results are in: inactivity is costly and exercise means big savings.

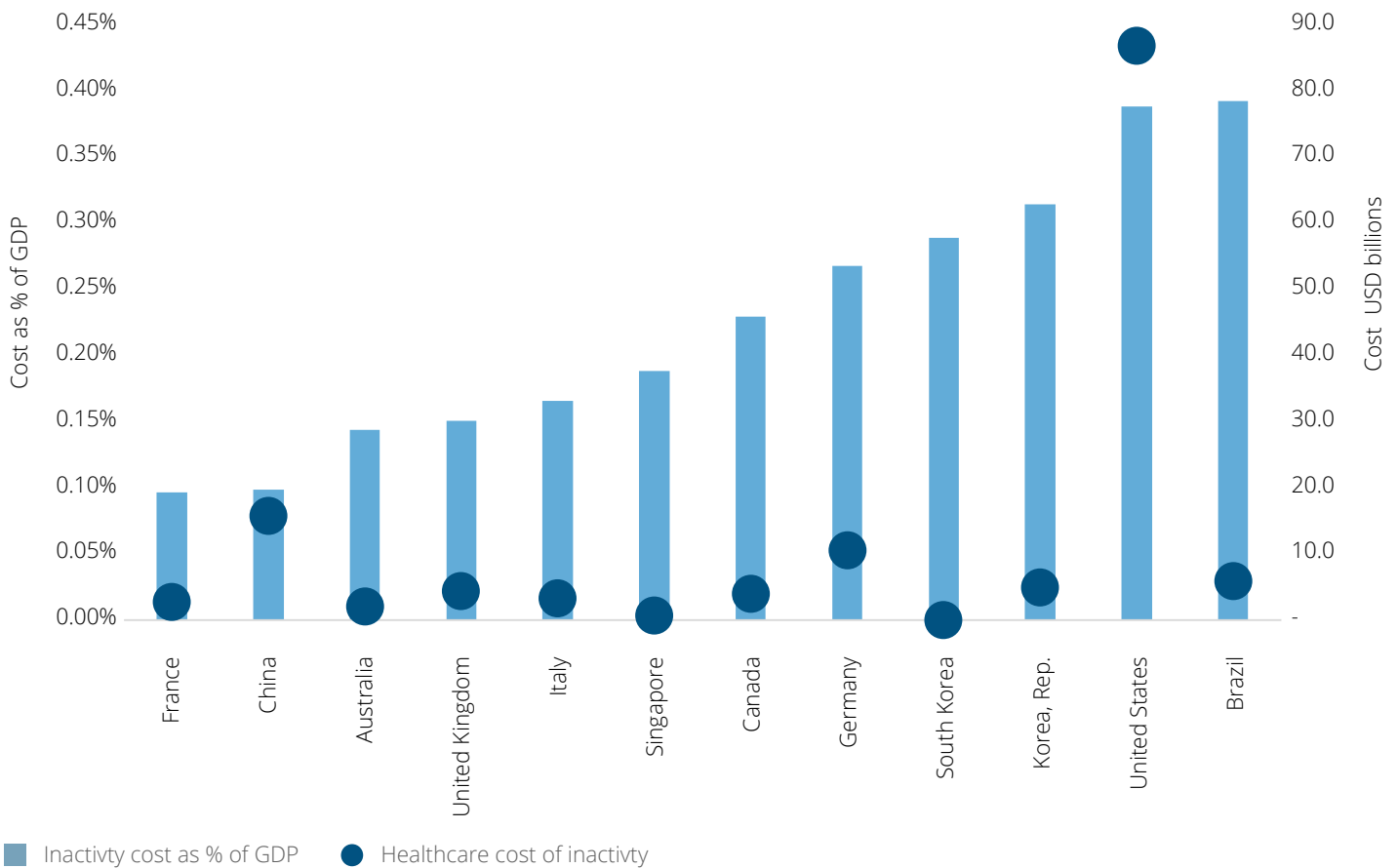
Despite this, in many countries a significant proportion of the

population do not meet the World Health Organization's (WHO) recommendation of at least 150 minutes of moderate-to-intense physical activity a week. Across the globe around 20% to 40% of adults do not even reach this baseline amount of recommend physical activity.

This has left governments and policy advisors around the world searching for better ways to get people moving. And here the Health and Fitness Industry has an important role to play.

Figure 1.4: Cost of inactivity as % of total GDP in selected countries

Unit: %



Source: Ding et al. (2016), Deloitte Research

How the fitness industry facilitates a healthier population

Do fitness centres increase the level of fitness?

With the benefits of exercise so clear, the question then becomes, what role does the fitness industry play in promoting fitness?

It seems intuitive that fitness centres and gyms encourage fitness. It's after all right there in the name. But perhaps people who go to these centres are naturally inclined to exercise more? Maybe people would exercise just as much in the absence of such facilities?

Thankfully there is a wealth of evidence that suggest fitness centres and gyms increase the quantity and quality of exercise people do compared to their absence¹.

Facilitating access to gyms and other fitness centres increases exercise rates.

A look at the evidence

An experiment was conducted where participants were paid to attend to attend a gym a number of times for a month. The study found that the experience was habit-forming – participants persisted exercising at double the rate of the control group even months after the payments had stopped (Charness & Gneezy, 2009). Another study (Kaufman et al., 2019) examined the density of gyms near residents in a city. They found that in neighborhoods with more gyms (i.e. easier access), people were both more likely to have gym membership and to exercise. Individuals living in areas with the highest quartile of commercial gyms had 3.77 higher odds of gym membership compared to those living in areas with the lowest density of fitness centres. Indeed people living in areas with more gyms exercised more even if do not have memberships. This hints towards a possible positive externality effect of fitness centres, where a culture of exercise cultivated by gym goers seeps into the wider community.

Looking at the bigger picture, a US Department of Health and Human Services systematic review found that creating or enhancing access to places for physical activity meant people exercised more. On average aerobic capacity increased by 5.1%, energy expenditure increased by 8.2%, leisure-time physical activity increase by 2.9% and exercise score increased by 13.7% (TFCPS, 2002).

The healthcare case for fitness centres and gyms is thus simple:

- 1. exercise improves health,**
- 2. improved health reduced global healthcare costs,**
- 3. fitness centres increase exercise rates, so**
- 4. we all save from access to fitness centres.**

So while all industries have some economic impact, the fitness industry can also boast positive externalities for individuals, their health and the wider healthcare system.



Notes: 1) For further details into the academic evidence presented in this chapter please see Appendix 3.



Chapter 2

Measuring Economic and Social Impact

Economic Impact Studies

An overview of valuing the economic contribution of an industry

Measuring contribution to GDP

Economic impact studies measure the value of an industry in terms of value added.

Value added is the difference between the revenue an industry generates and the cost of the inputs needed to generate that output. It thus shows the additional value that was added to the inputs by the industry.

For instance, gyms take utilities, equipment, facilities, professional services and other inputs and turn this into something worth more than the sum of its parts: this is value added.

The sum of value added of all industries in the economy plus net tax on products is GDP; value added can thus be considered the fitness industry's contribution to an economy's GDP.

Modelling in this report estimates the value added in terms of direct and indirect impact.



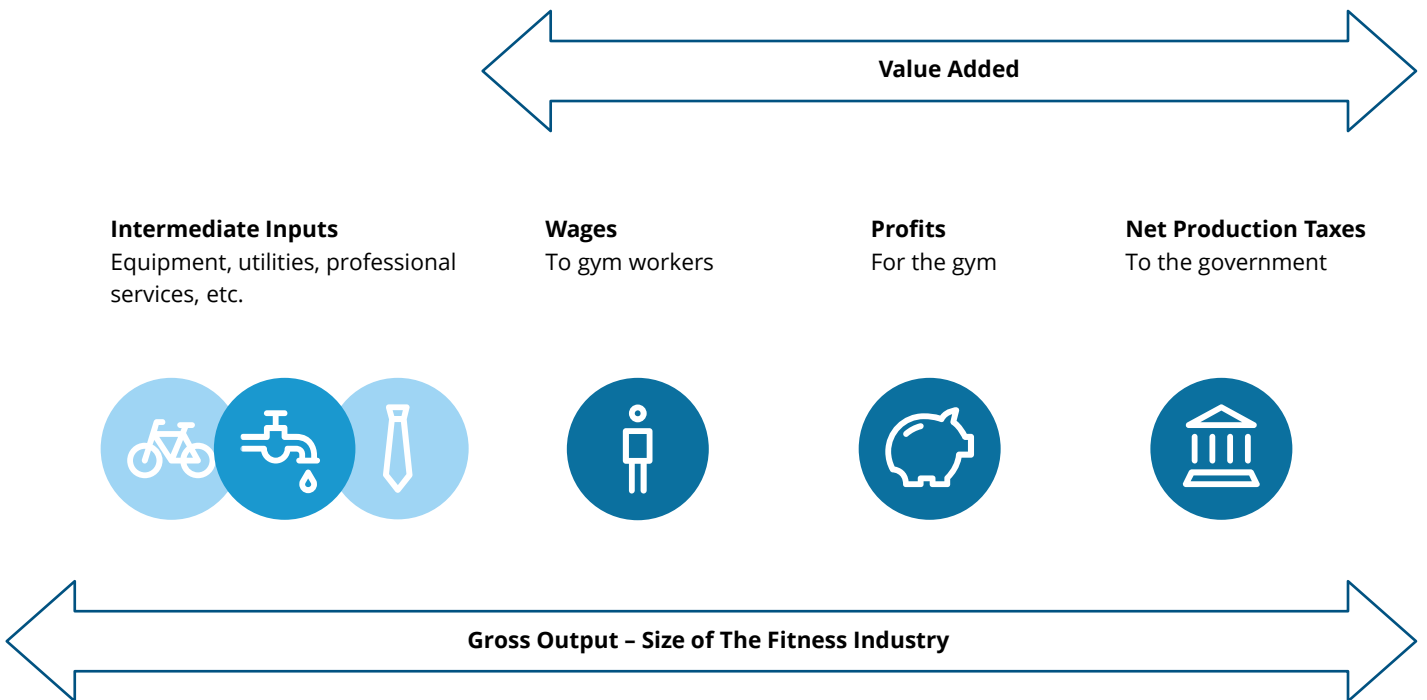
Direct and Indirect impact

Direct value added is the contribution to GDP that is would be directly attributable to the fitness industry under the System of National Accounts – the internationally agreed standard to measuring GDP.

However, as a result of economic activity, the fitness industry generates demanded for goods and services in its supply chain. For instance, it creates demand for equipment manufacturers, who themselves will create demand for inputs to make equipment, such as raw materials and so on so forth.

Indirect value added measures the value added imbedded in the supply chain that is generated as a result of the fitness industry’s demand for the goods and services necessary to operate its business.

Indirect value added is estimated using a country’s/region’s Input-Output (IO) tables, a set of standardised tables that model of the flow of goods and services across the entire economy. These tables allow us to see how the fitness industry’s economic activity influences the rest of a country’s/ region’s economy.



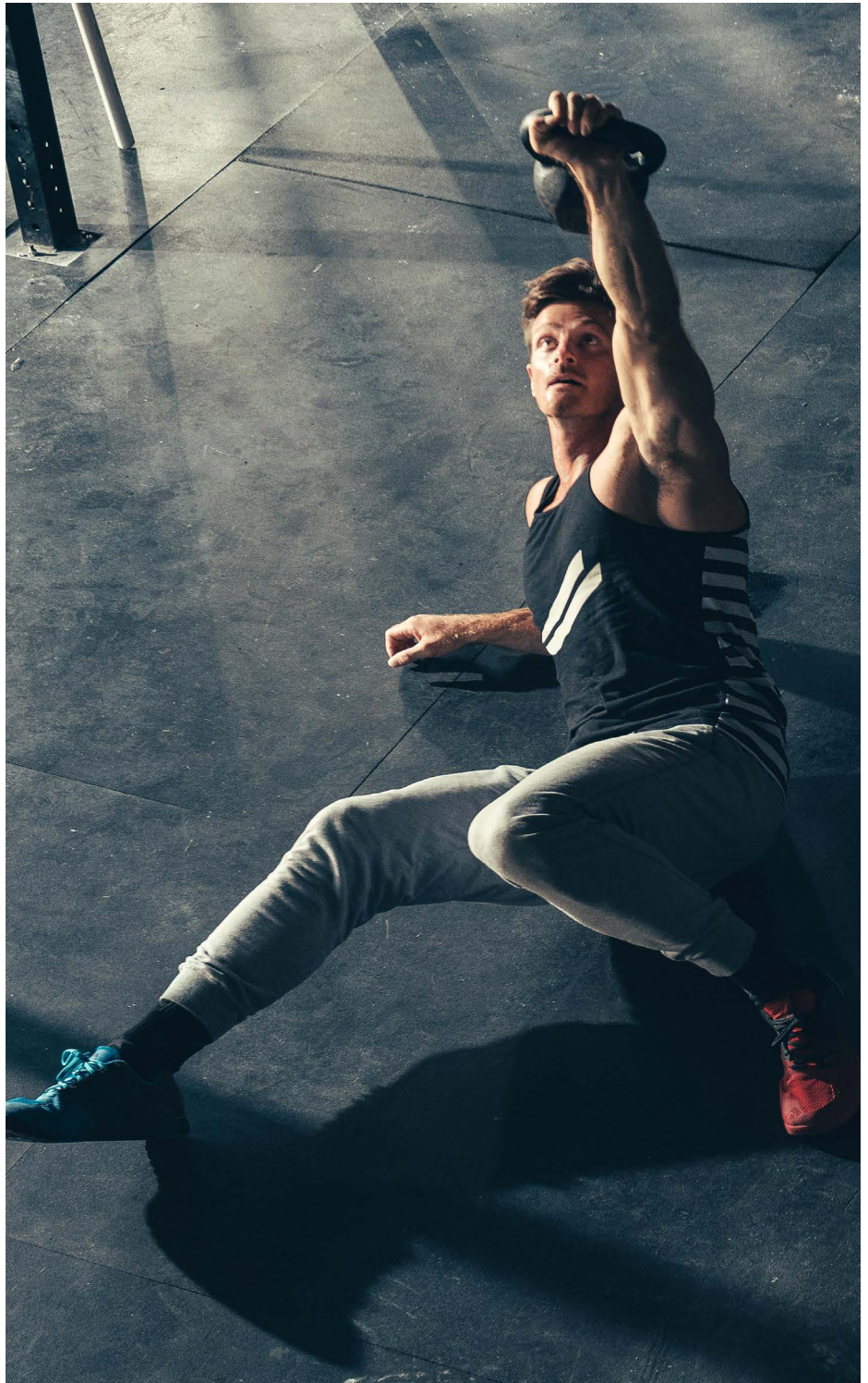
A brief overview of Input-Output (IO) modelling

Broadly speaking, any good or service created in an economy is either going to be used as an intermediate input by another business, exported, directly consumed or used for capital formation.

IO tables are a set of standardised tables that show the flow of final and intermediary goods and services according to industry – that is, what inputs are needed to produce a final unit of any given output. These detailed intermediate flows can thus be used to derive the total change in economic activity associated with a given direct change in activity for a given sector. Using these tables, we estimated the total gross output of intermediate goods generated as a result of the Health and Fitness Industry's operating activity. From here we used the ratio of value added to gross output of each industry to estimate the total indirect value added.

For each country or region, we also estimated the employment per unit of value added, allowing us to calculate the indirect employment effects as a result of the Health and Fitness Industry's demand.

For a more detailed overview of input-output modelling, its uses and underlying assumptions, please see Appendix 2.



Socioeconomic Impact Studies

An overview of potential savings from facilitating activity

Socio-economic analysis

While all industries will have some economic impact, a unique feature of the Health and Fitness Industry is its contribution to people's health and fitness levels. Lack of fitness comes with serious costs to individuals, society and the government. To understand the broader socio-economic benefit fitness can provide, this report looks at the cost of insufficient fitness and the role the Health and Fitness Industry can play

in combating this issue. To this end, this report:

1. estimates the total healthcare costs inactivity,
2. estimates the cost of reduced productivity from worker absenteeism and presenteeism caused by inactivity, then
3. using 1. and 2., estimates the benefits to the economy of incentivizing an inactive individual to become more active and highlights how the Health and Fitness Industry can assist in this aim.

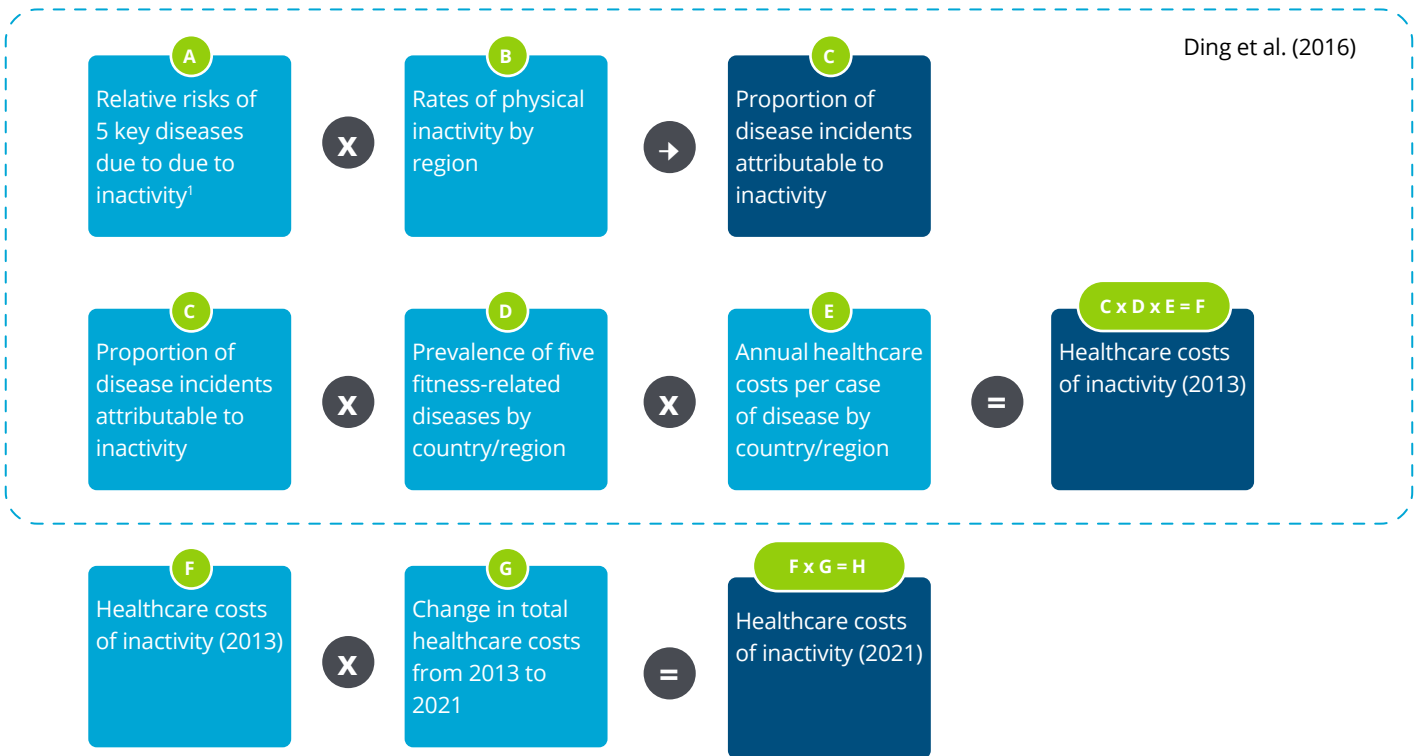
This report thus underscores the important role the Health and Fitness Industry plays in encouraging physical activity and its associated benefits.

This report focuses on these two areas (healthcare and productivity) as they have a notable impact on the wider economy and, by extension, government. However, it is also worth noting the profound personal gains and quality of life improvements that regular physical activity can provide.



An overview of potential healthcare savings from facilitating fitness

Figure 2.1: Approach to valuing healthcare costs of insufficient exercise



Healthcare savings

The basis of the healthcare savings from fitness centres was a landmark 2016 Lancet study looking at general healthcare cost of inactivity in terms of coronary heart disease, type 2 diabetes, breast cancer, colon cancer and stroke (Ding et al., 2016). The study examined the relative risks of these diseases from inactive lifestyles, then multiplied them by rates of physical inactivity by country/region to arrive at the proportion of

these disease incidents that can be attributed to inactivity.

This data was then combined with data on the prevalence of these disease to estimate the healthcare costs per case for each specific disease by country/region.

The results of the Lancet study were updated based on growth in healthcare costs since the time of the study.

This provided an estimate of the overall healthcare cost to each country/region as a result of inactivity. Note that this only captures a number of key diseases linked to inactivity – and in this sense is a conservative estimate. For more details on the assumptions and limitations of the approach see Appendix 4.

Notes: 1) The healthcare cost of inactivity is based on the cost of just five key diseases (coronary heart disease, type 2 diabetes, breast cancer, colon cancer and stroke), and so is not an exhaustive analysis of all potential healthcare costs. It does not, for instance, include the cost of mental health, which is a notable and rising healthcare cost in much of the developed world and is exacerbated by lack of fitness.

An overview of potential productivity savings from facilitating fitness

Productivity savings

In addition to costing the healthcare system, insufficient exercise has wide-ranging impact on workers' productivity.

The productivity cost of insufficient fitness been measured in terms of reduced working days lost to absenteeism and presenteeism.

Absenteeism is when a worker does not come into work because of a fitness-related disease, while presenteeism is when a worker comes to work but underperforms due to a fitness-related issue.

There is strong evidence that exercise improves executive function, planning, processing speed and concentration.

The corollary of this is that lack of exercise harms your cognitive capacities to excel at your job, leading to presenteeism. The worker may be physically clocked in, but they're mentally clocked out.

We used a four step approach to measuring the cost of lost productivity as a result of insufficient fitness – outlined in Figure 2.2 on the next page.

First we estimated the average amount of GDP generated per worker per working day using World Bank data. Next we estimated the number of workers who do not meet the WHO guidelines for weekly physical activity¹. We assumed workers are inactive at the same rate as the general population.

We then estimated the average number of additional working days lost due to both absenteeism and presenteeism caused by insufficient exercise based on a 2019 global RAND study (RAND, 2019).

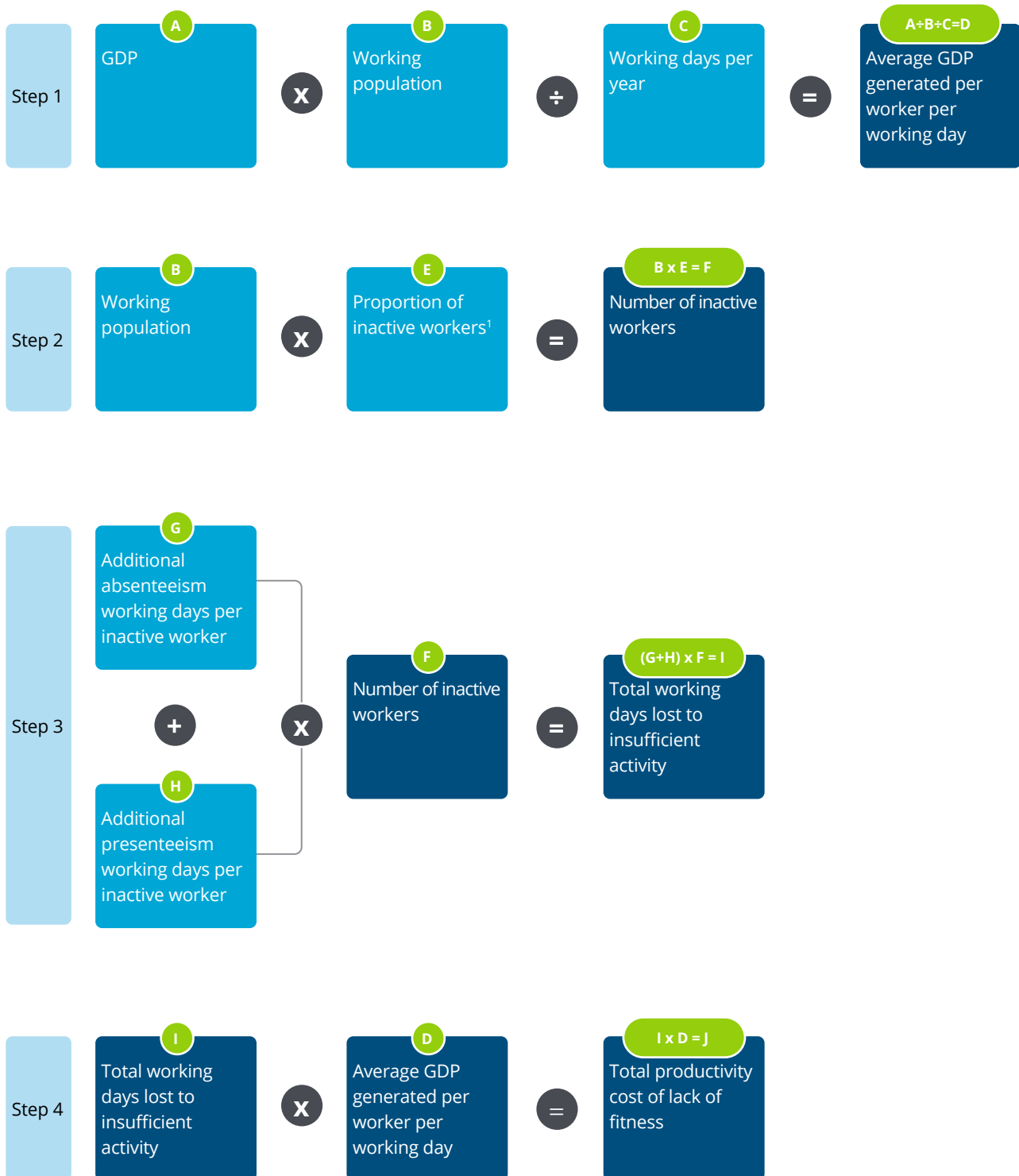
This provided us with an estimate of the total working days lost to insufficient fitness by country/region, which, multiplied by the average GDP generated per worker per working day, provided an estimate of the total productivity cost of insufficient fitness.

For more details on the underlying assumptions and limitations of the modelling, see Appendix 4.



Notes: 1) Defined as at least 150 minutes of moderate-intensity aerobic physical activity per week or 75 minutes of vigorous-intensity aerobic activity per week.

Figure 2.2: Approach to valuing productivity costs of insufficient exercise



Notes: 1) We assumed workers are inactive at the same rate as the general population

Benefit to government of transforming an inactive worker into an active one

After calculating the total cost to the healthcare system of insufficient activity, we then isolated the cost that fall on the public sector based on the public healthcare spending as a proportion of total healthcare expenditure. Dividing this figure by the total number of inactive adults provides an estimate of the cost to the government of each individual inactive adult in healthcare terms.

Similarly, we looked at the total productivity lost to absenteeism and presenteeism and divided by the total number of inactive workers to estimate the productivity loss in terms of GDP from each inactive worker. We then took the average tax revenue per unit of GDP to estimate average tax revenue foregone due to underproductivity per inactive worker. For more details of the underlying assumptions of this calculation, please see Appendix 4.

Together this provides an estimate to the government of the potential benefit from shifting an inactive worker to an active worker in terms of healthcare costs and productivity loss avoided per year in NPV terms. **Given the benefit that transforming an inactive worker to an active one provides, this report then provides a qualitative discussion of the role the Health and Fitness Industry can play in helping facilitating this shift,** based on the weight of academic evidence.





Chapter 3

Economic and Socioeconomic Impact – Canada

Canada

Country overview

Economy

Canada is a sophisticated, services-oriented economy, with a GDP per capita (PPP) of US\$48,073.

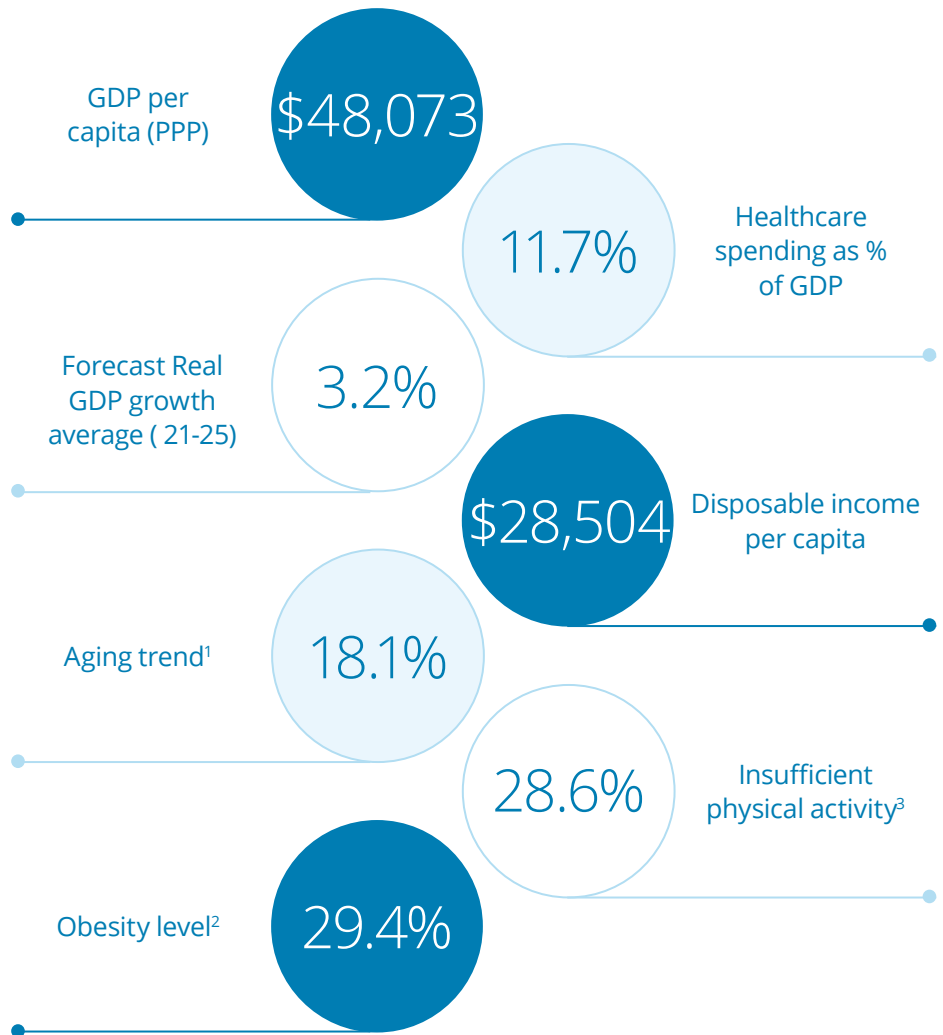
The Canadian economy is highly integrated with the USA, with whom it shares the world's longest boarder. Like many develop economies, the majority of the nation's GDP comes from its services industry, but the country also has a major commodities sector. In fact, Canada is the world's fourth largest oil producer.

Normal economic activity is likely to resume in 2022 thanks to the country's vaccine rollout. The country is expected to grow at an annual real rate of 3.2% from 2021 to 2025, slightly outpacing the neighboring USA.

Health Trends

Canadians enjoy a high quality of life, with average life expectancy of 82.2 years.

However, obesity is a serious and growing problem. Almost 30% of



Notes: 1) Measured using share of population aged over 65; 2) Measured as % of population aged 15+ using latest available data; 3) Measured as % of population aged 18+ who fail to meet WHO guidelines of 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity activity per week
Source: World Bank, OECD, WHO, EIU, Banco de España

Canadian adults are obese, making Canada one of the heavier countries in the OECD. In 2013, over 40% of children were either overweight or obese. The percentage of adults living with overweight or obesity has been trending up over time. Canada has one of the highest rate of processed meat intake in the Americas, second only to the USA. At the same time, 28.6% of adults do not meet the WHO physical activity guidelines.

Obesity and lack of exercise are risk factors for the leading cause of death in the country, ischaemic heart disease.

Government Initiatives

Canada has a universal, publically funded single-payer healthcare system with the majority of healthcare provided by Medicare. Healthcare spending makes up 11.7% of the nation's GDP; only a handful of countries have a higher rate (notably USA and Germany). Roughly 70% of healthcare spending is government-funded and spending on healthcare is the single largest budget item for every province. Keeping cost growth under control is thus a key concern.

The availability of coverage to deal with obesity varies with provinces. Multi-

disciplinary teams for obesity are rare, resulting in inconsistent treatment. To combat this, in 2020 Obesity Canada and the Canadian Association of Bariatric Physicians and Surgeons released the Canadian Adult Obesity Clinical Practice Guidelines aiming to assist healthcare professionals with this challenge (World Obesity Federation, 2021).



Source: World Bank, OECD, WHO, EIU, International Diabetes Federation

Economic impact

In 2021, the Health and Fitness Industry in Canada had a direct value added of US\$1.7 billion. In addition to its direct contribution to GDP, **the industry supported an additional \$1.4 billion in value added** in its supply chain.

The biggest source of indirect value added was *Other business services* which include services such as legal services, marketing and building security. As is common, a major supplier is its own industry: *Arts, entertainment and recreation*.

At the same time, the Health and Fitness Industry **directly supported 83.2 thousand jobs**. The industry is a notably strong employer relative to its size, reflecting the high ratio of part-time employment.

The industry indirectly supported an additional 20.8 thousand jobs through its purchase of inputs.

The basis of the economic impact analysis were the OECD Canadian Input-Output tables.

Market size input data used in this analysis was sourced from a range of industry body and secondary research sources (such as IHRSA Global Reports, IHRSA Asia-Pacific Health Club reports, MarketLine Gyms, Health & Fitness Clubs Industry profiles, etc.).

2021 Economic Contribution of the Health and Fitness Industry (in Canada)

Total Economic Contribution	US\$3,155m
Direct Value Added to GDP	US\$1,747m
Indirect Value Added to GDP ¹	US\$1,408m
Other business services	US\$281m
Arts, entertainment, recreation	US\$158m
Real estate activities	US\$154m
Total Employment Contribution	103,987
Direct Impact ²	83,195
Indirect Impact ¹	20,792
Other business services	7,078
Arts, entertainment, recreation	4,287
Wholesale and retail trade	1,336

Note: 1) This represents the total indirect effect, listed below are key industries significantly affected; 2) Estimation based on weighted average of ratio of employment to value added of wider industry sector and average employment per club in developed countries

Socio-economic impact

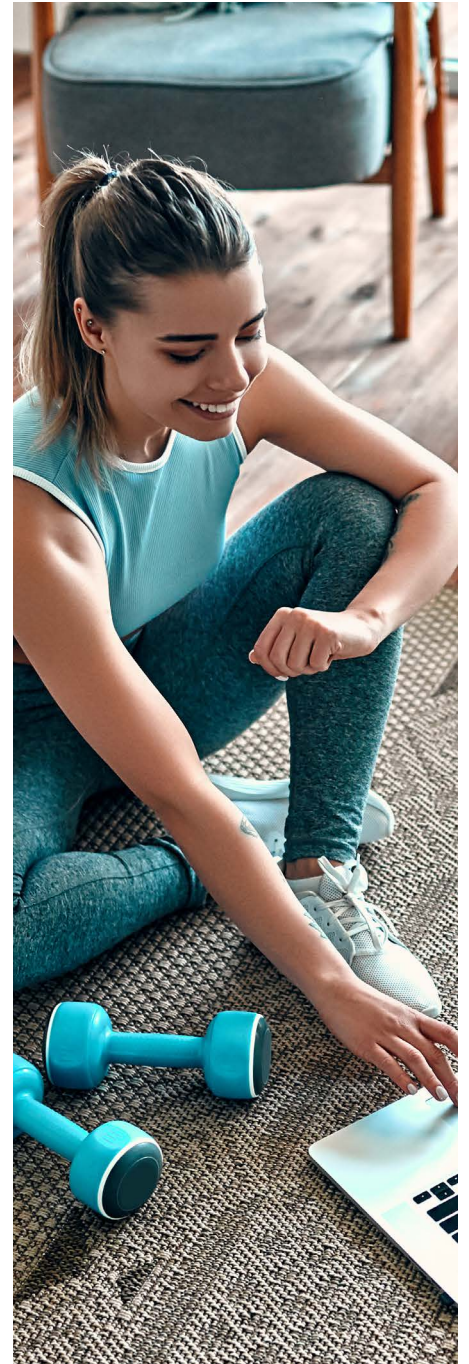
As outlined in the Chapter 2, regular moderate-to-intense fitness has a plethora of positive health benefits. This includes reduced risks of a range of diseases, including heart disease, stroke, hypertension, type 2 diabetes and dementia as well as a wide range of cancers. These diseases carry with them a significant costs to both individuals as well as wider society. When an individual is burdened by a preventable lifestyle disease the negative effect ripples throughout society – families and friends may need to take time off to help care for them, or worse suffer the painful loss of a loved one, healthcare systems must allocate scarce resources to treat these diseases, while the economy itself loses a positive contributor.

While the effects of diseases such as strokes or cancer are quite visible, the destructive effects of insufficient fitness can be more subtle. Lack of fitness has been linked to poor sleep, negative mental health outcomes (including exacerbating depression and anxiety), poorer concentration and worse high-level cognitive functioning.

All of this has a huge effect on every aspect of people's lives, personally, socially and economically. Someone suffering from a poor night's sleep might still be able to go about their day, but they might underperform at their job for example. Fully quantifying the

entire cost of lack of exercise – and the benefit of exercise facilitated by fitness centres – is impossible. The effects are too widespread and subtle.

This report instead looks to quantify the socio-economic impact of Health and Fitness Industry by taking a two-pronged approach. First by looking at the direct cost to healthcare systems of a number of fitness-related diseases, namely heart disease, type 2 diabetes, breast cancer, colon cancer and stroke (using Ding et al., 2016 as the basis) and secondly by quantifying the wider benefit in terms of working days saved due to reduced absenteeism and presenteeism as a result of access to fitness. Note that this report does not quantify the cost of the pain and suffering or loss of quality of life of individuals as a result of fitness-related diseases, as the focus is on the effects on the economy. While looking at working days will not fully capture the deep personal benefits of fitness and the costs of lack thereof – which are very real and extensive – it helps capture a picture of the impact to the wider economy, which is pertinent to policy-makers.





Annual potential economic benefit (in healthcare savings and increased productivity) for each inactive worker that becomes active:

\$2,069



Healthcare cost of inactivity

Based on the methodology outlined in Chapter 2, **inactivity directly costs the Canadian healthcare system US\$3.9 billion** to treat and care for key diseases linked to lack of fitness. Of this, **\$2.7 billion is borne by the public health system.**



Public healthcare cost of inactivity

Furthermore, looking at productivity effects, **each year Canada loses roughly 19.7 million working days in absenteeism and presenteeism** from insufficiently active workers, due to days off for physical or mental illness or reduced productivity due to lack of concentration or tiredness.



GDP lost to reduced productivity from lack of fitness

Based on the average GDP generated per worker per working day, **this costs the Canadian economy \$7.9 billion per year.** Given the average tax revenue as a proportion of GDP in Canada, **this represents \$1.0 billion in potential revenue** lost due to an insufficiently active workforce.



Government revenue lost from reduced productivity due to lack of fitness

Zooming into an individual level, each insufficiently active worker costs \$540 in healthcare costs and \$1,528 in potential GDP lost to absenteeism and presenteeism. **Every inactive worker thus costs the economy \$2,069 per year, representing 7% of average disposable income per capita.** Of these costs, \$377 falls on the public healthcare system and \$203 is potential government revenue, respectively. Together, this represents a potential annual government benefit of \$580 for every insufficiently active worker that can be made active.



Payback period to investing \$2,000 to convert inactive working adult to active

Investing \$2,000 in successfully helping an inactive person become active results in a payback period of less than 1 year, on average, in terms of benefit to the overall economy and society.

It is important to note that, how and where to invest this dollar amount is entirely dependent on the circumstances surrounding the country/region, city, and community. We recommend that local government, industry leaders, fitness operators, as well as companies work together to find the best and most logical solution for their community.

The good news is that, if implemented correctly, programs to increase exercise can be habit-forming (Kaushal & Rhodes, 2015). An initial investment in one year can have a pay-off that lasts for years if a habit is built. To illustrate, using a 7% discount rate, a young inactive worker who is successfully motivated to jump from an inactive to active to lifestyle would benefit the government \$7,700 over 30 years in healthcare savings and additional tax revenue in NPV terms. The **NPV overall economic and societal benefit** over the same period in terms of productivity and healthcare savings would be an even larger **\$27,467**. There is extraordinary lifetime benefits in getting people to make the switch from inactive to active lifestyles.

The Health and Fitness Industry can play an important role in facilitating lifetime physical activity. While it is certainly possible to be active without a gym, the presence of such fitness centres helps boost and encourage exercise more than would otherwise occur without them – especially when used in conjunction with personal trainers. Such centres facilitate fitness through a number of means:

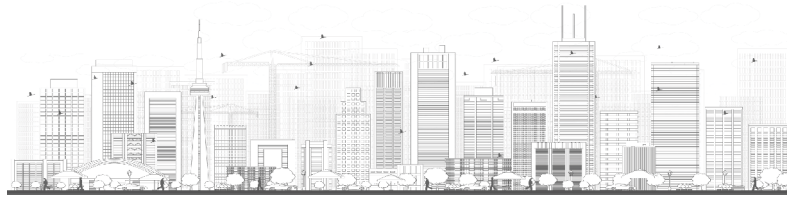
- 1. They provide information, expertise and infrastructure:** while it is easy to want to get fit in the abstract, how to do so is not always intuitively obvious. Gyms and fitness centres are a place where individuals can learn exercise techniques, whole-body routines and nutritional advice and can take advantage of specialised fitness-enhancing tools that for many people would be too costly or inconvenient to personally own.
- 2. They provide discipline via personal trainers or regular group sessions:** by having regularly scheduled appointments at the fitness centres, gyms can help build and enforce an exercise habit. Personal trainers in particular can encourage regular visits: individuals may be more inclined to keep an appointment when there is a human face on the other side. Personal trainers and fellow gymgoers can act as companions that encourage and reward improved fitness (through social praise), further strengthening motivation.
- 3. Provide a social setting and place to exercise:** as the name suggests fitness centres are dedicated to fitness. We might be inclined to exercise at home, but





when we get home from work we often find ourselves watching TV or some other easier distraction. As a space primarily for fitness, gyms help people get into the right headspace for exercising. By sectioning off a dedicated place for exercise they can become part of the ritual of our lives, like the office or school.

- 4. They provide guidance on how to exercise safely at the appropriate level:** fitness centres can offer professional guidance on how to exercise safely and in control. While exercise and physical activity is undoubtedly beneficial to our health, it is not without risks. Fitness Centres are a controlled environment where individuals can be monitored and have access to professionals to teach proper exercise techniques that minimise risk of injury. Gyms and fitness centres can thus act as a safe space for exercise.
- 5. Standardisation and certification:** by ensuring trainers are appropriately certificated, fitness centres can provide the aforementioned controlled guidance and expertise. Health and Fitness centres can host a wide variety of certified professionals to provide a holistic approach, offering not just certified personal trainers, but registered dietitians too, for example. Individuals who supplement exercise programs with improved nutrition enjoy better exercise results (King et al. 2013). Certification and standardisation can make fitness centres a hub for spreading the latest best practice advice in exercise and nutrition.

It is no wonder then that the weight of evidence shows that access to gyms and other fitness centres increase rates of physical activity and aerobic capacity. Notably fitness centres encourage habit formation. For instance, Charness & Gneezy (2009) paid participants in a study to go to the gym eight times in a month. They found that participants paid to exercise just eight times continued to go to the gym at twice the rate of the control group five months after the payments had stopped – a habit had been formed. Kaushal & Rhodes (2015) found that exercising for at least four bouts per week for 6 weeks was enough to establish an exercise habit mindset. Personal trainers appear to be particularly effective (McClaran, 2003). For a more detailed overview of the academic evidence linking fitness centres to increased fitness see Appendix 3.

Canada



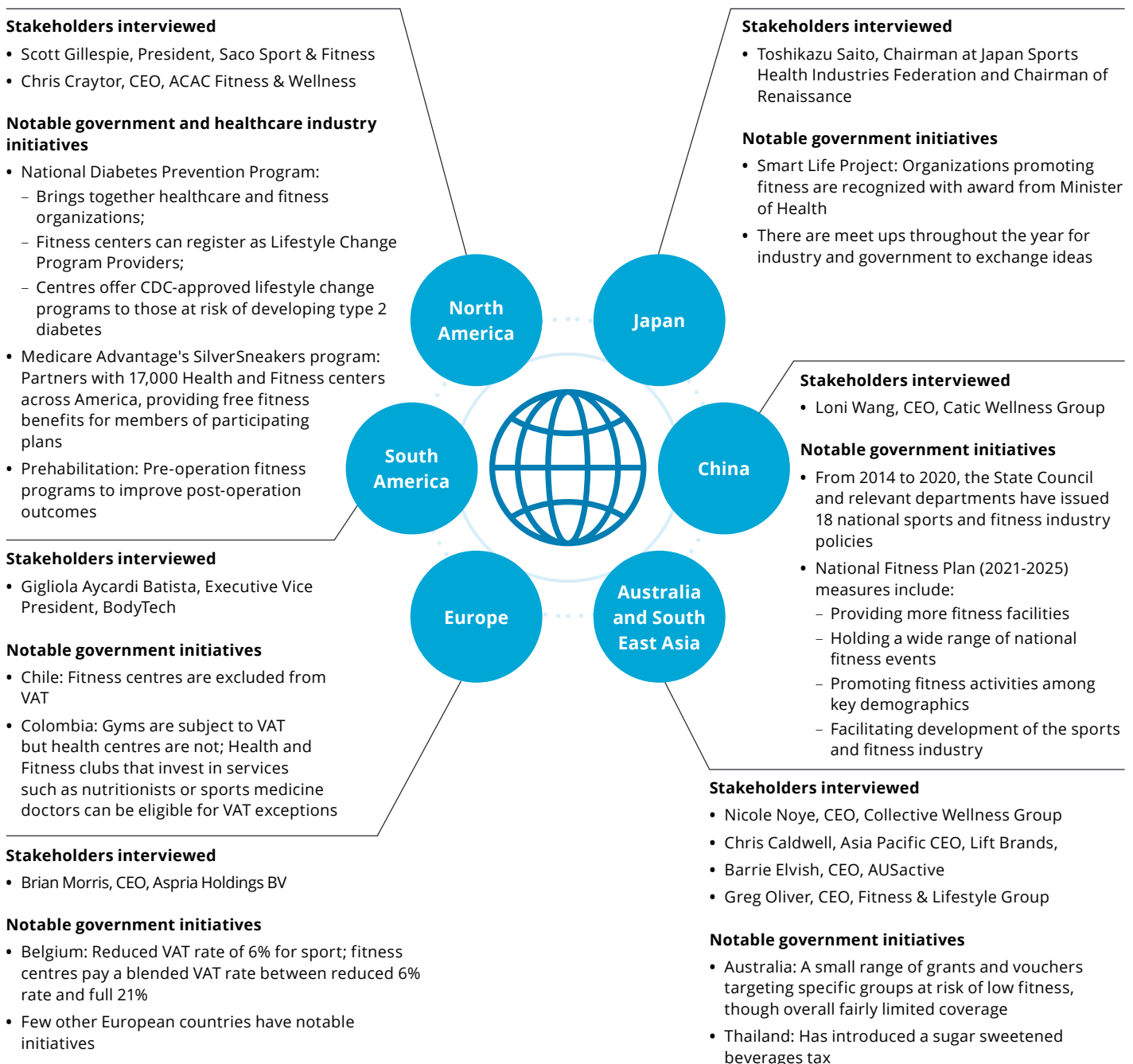
		2020
	GDP per capita (PPP)	US\$48,073
	GDP per capita (PPP) growth forecast (CAGR 21-25)	4.1%
	Healthcare spending as % of GDP	11.7%
	Disposable income per capita	US\$28,504
	Unemployment Rate	9.5%
	65+ Population as % of total population	18.1%
	Obesity levels (<i>in 2016</i>)	29.4%
	Insufficient Physical Rate (<i>in 2018</i>)	28.6%
	Direct contribution to GDP of the Health and Fitness Industry	US\$1,747m
	Indirect contribution to GDP of the Health and Fitness Industry	US\$1,408m
	Impact on employment	103,987
	Health and Fitness Industry	83,195
	Total indirect employment	20,792
	Annual economic benefit of making an inactive worker active	US\$2,069
	Time taken for economic payback from investing \$2,000 to successfully shift an inactive worker to an active worker	<1 year

A photograph of a gym interior with several people running on treadmills. The scene is captured from a low angle, focusing on the runners' legs and feet. The runners are wearing athletic gear, including leggings and sneakers. A semi-transparent teal rectangular overlay is positioned in the center of the image, containing white text. The background is slightly blurred, showing other gym equipment and bright lighting from windows.

Chapter 4

The Health and Fitness Industry and Government Policies

Deloitte interviewed industry stakeholders in North America, South America, Europe, Australia and Asia, to better understand the extent to which the Health and Fitness Industry works together with governments and policy-makers to facilitate and encourage fitness across the globe.



The Industry and Government Policies

An international look at how the industry and governments work together to advance preventative health

Deloitte conducted ten interviews with Health and Fitness Industry stakeholders covering North America, South America, Europe, Australia and Asia, looking at how the industry works with governments and other institutions to promote physical fitness. Across this diverse range of markets, a number of common themes emerged:

1. Stakeholders across the globe often felt that, although many governments have laid out formal goals to increase physical activity, policies to achieve these goals were often sporadic and lacked a holistic approach.
2. Many stakeholders emphasized the wide range of parties that benefit from improved fitness, from individuals to businesses to governments, noting that investment in one's health via fitness has long-run preventative health benefits and cost savings.
3. Related to this, there was a common view that the industry needs to be more proactive in engaging with other parties (such as the healthcare industry) to demonstrate the important role the industry can play in advancing physical fitness and facilitating collaborative efforts.
4. Many stakeholders commented that participation at Health and Fitness centres has often been perceived as a recreation activity, rather than an investment in long-term health, which may understate its public benefits.

Across much of the developed world public healthcare provision is the norm. The public health systems, however, broadly focus on general healthcare support, emergencies and reactive care. There is some preventative care, such as vaccine programs, but a focus on general programs to encourage the long term health of citizens – through fitness, healthy eating, health advice and other means – is limited. As governments face fiscal constraints in funding the health of their population, budget for non-emergency, non-reactive care often seems to be pushed aside. This is short-sighted, as early investment in prevention pays for itself many times over in the long run and improves the lives of the population. There is enormous potential for the Health and Fitness Industry to better work with healthcare systems to make positive contributions to improving preventative health. Note, however, we have refrained from making any

specific policy recommendations in this chapter. Rather we hope this international overview will help provide inspiration to local governments, industry leaders, fitness operators, as well as the corporate sector to work together to find the best and most logical solution for their community.

What are countries around the globe doing?

China

In 2019 the Chinese State Council released its "Opinions on Promoting Mass Sports, Sports Consumption and High Quality Development of Sports Industry" to guide the development of the country. Amongst other policies, sports enterprises identified as "high-tech enterprises" are eligible to a reduced corporate tax rate of 15% to encourage technology innovation in the sector. Certain eligible advertising expenses and business promotion expenses incurred by sports enterprises can be deducted before tax if they meet the appropriate legal requirements to promote the take up of fitness-enhancing activities. Sports enterprises are also subject to reduced sales tax rates. The policy document also calls for local government to ensure there is a sufficient supply of land for sports- and fitness-related

facilities. Going even further, fuelled by concerns that school-aged youth lack time to rest and exercise, the Chinese government has put in place new policies to reduce intensive afterschool tutoring and excessive online gaming.

Following this, in 2021, China's State Council issued its National Fitness Plan (2021-2025), introducing a number of measures to increase participation in sports and other physical activity. Amongst other initiatives, the plan called for: providing more fitness facilities, holding a range of national fitness events, promoting fitness among key demographics (especially preschoolers, teens and senior citizens) and facilitating the development of the sports and fitness industry. In general, implementation of such high-level plans will fall on the numerous provincial governments. In Beijing, for instance, the local Bureau of Sports, in line with the National Fitness Plan, announced that it was partnering with the China's e-commerce giant JD.com to offer 100 million yuan in vouchers for sporting and fitness-related purchases.

USA

In the United States there are a limited number of programs that bring together the Health and Fitness Industry and the healthcare sector to encourage preventative healthcare, notable the National Diabetes Prevention Program. The program aims to prompt lifestyles changes in individuals at risk of developing type 2 diabetes. Health and fitness centers can register as Lifestyle Change Program Providers, offering evidence-based lifestyle change programs that

can reduce the risk of developing type 2 diabetes by 58% (CDC, 2021). Industry stakeholders interviewed by Deloitte were positive about the program and its benefits, highlighting it as a model for how the industry can work with the healthcare system in the preventative health space. However, wider industry participation has been restricted by bureaucratic barriers – registering as a Lifestyle Change Program Provider is difficult and brings with it large upfront costs as there is substantial time before providers are reimbursed.

Japan

In Japan, in response to the rising rate of lifestyle-related diseases, the Japanese government launched its "Smart Life Project". As part of the project, the "Let's Extend Healthy Life! Award" was established. Each year, companies, organizations, and local governments that have made significant achievements to fitness are awarded by the Minister of Health. The award is accompanied by industry meet ups three to four times a year. Around 100 different companies, organizations and local governments participating in the "Smart Life Project" attend to exchange opinions and network. The events are a good opportunity for fitness companies to market their products and services to corporate members and be recognised by the Minister of Health, Labor and Welfare.

In 2015 Japan separated its sports agency from its Ministry of Education. This was part of a shift in perspective on sports from focusing on fostering athletes to seeing sports as a vehicle for

making the nation as a whole healthier. As part of this move there has been renewed private sector promotion of sports and fitness. Fitness is not just part of education, but a lifelong pursuit. Getting populations healthier and fitter requires a holistic approach. For instance, despite being a major sugar producer itself, Thailand introduced a sugar-sweetened beverage tax in 2017. Notably this coincided with non-tax measures to improve health and fitness, such as health awareness campaigns. Policies need to work in tandem to both discourage unhealthy behaviors while encouraging healthy ones.

What more can be done?

Industry stakeholders Deloitte interviewed suggested a range of ideas for how the Health and Fitness Industry can better work with governments, policy-makers, businesses and community organisations to advance physical fitness. Many Health and Fitness centres have a wealth of resources that can work in conjunction with the public healthcare system to improve outcomes for all parties. Some higher-tier centres have a wide range of professionals, beyond personal trainers, such as physiotherapists, nutritionist or registered dieticians. Looking at rehabilitation patients, for example, a question becomes how to encourage exercise and well-being after patients are discharged from formal clinical rehabilitation. Here gyms and fitness centres could play a role. Another possibility is utilising these in-house experts in off-peak times to go into the community and provide public health advice.

In general, though, it is fair to say that many governments around the world essentially view membership to fitness centres as a type of recreation or entertainment, rather than an investment in an individual's health. This can be seen in the tax systems, for instance, where employee purchases of gym memberships are treated as a fringe benefit and subject to relevant taxes, discouraging the practice (in contrast, in the US for example, health insurance benefits are generally untaxed). In the UK membership to for-profit gyms or fitness centres are subject to the full 20% VAT rate. Likewise, in Australia, while a range of health services and equipment are exempt from GST (including alternative medicine), fitness remains subject to the full GST rate.

Given that regular fitness has been scientifically proven to improve long term health outcomes, a number of stakeholders suggested that purchases of fitness-related products, such as gym memberships or fitness equipment should be encouraged by the tax system as a health purchase. In Belgium, for example, admission to, and use of, sport facilities is subject to reduced VAT rate of 6% rather than the standard rate of 21%. However, "value added" activities, such as offering personal training, is subject to the full VAT rate. As a result, fitness centres are effectively subject to a blended VAT rate that is, nevertheless, still substantially lower than the standard rate. This makes sports and fitness centres relatively more price competitive when comes to competing

for people's time and attention. Chile likewise provides an exemption to its standard 19% VAT rate to sporting events, which includes fitness centres.

As noted throughout the report, there is some evidence to suggest that exercise at a gym is habit forming (Charness & Gneezy, 2009). That is, if people are incentivized to go to the gym for a sufficient period of time, whether financially or by some other incentive, populations will continue even after the incentive stops. This suggests initial investments to get people to the gym can have a long term pay off.

Stakeholders commented that overcoming financial or time barriers to gym use amongst lower socio-economic populations may be of benefit, especially since this group is more likely to not exercise sufficiently in many developed countries. Programs could target individuals at risk of a lifetime of poor fitness and provide subsidies or other forms of incentives to utilise personal training for an initial period of time in order to develop an exercise habit. Given their health and productivity benefits, such programs could potentially pay for themselves in many cases, as highlighted in Chapter 3 of this report.

A wide range of parties – individuals, businesses, governments – benefit from improved fitness. So there are a multitude of opportunities for the Health and Fitness Industry to better collaborate with other intuitions to advance physical fitness.

Country highlight: USA



Adding healthy habits like regular exercise and proper eating is not easy. The Health & Fitness Industry, and the general population, would benefit greatly by applying the latest science on behavior change. The better we understand the science, the more we can help non-exercisers adopt habits leading to healthier, happier, more vital lives. By doing this well, we can also play a major role in reducing the massive financial burden on the healthcare system, decreasing lifestyle diseases including heart disease, diabetes and many cancers.



– Scott Gillespie, President, Saco Sport & Fitness

Reduce the proportion of adults who engage in no leisure-time physical activity to 21.2%

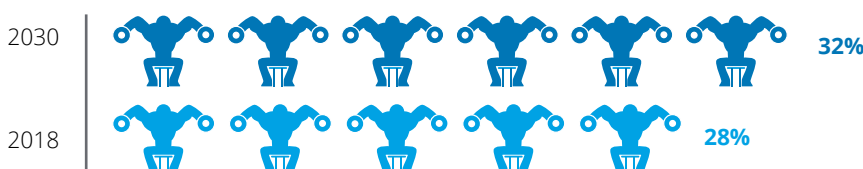
Healthy people 2030 physical activity goals



Increase the proportion of adults who do enough aerobic physical activity for extensive health benefits to 42.3%



Increase the proportion of adults who do enough muscle-strengthening activity to 32.1%





We are seeing a trend in the US healthcare system of moving certain treatment out of hospitals to where it can be delivered more quickly and economically. This frees up resources to allow hospitals to specialize in the more complex tasks they excel at. The Health and Fitness Industry can play an important role in this trend, in areas like prehabilitation, for example."



– Chris Craytor, CEO, ACAC Fitness & Wellness

The U.S. government has released a nation health plan known as Healthy People 2030. It consists of 355 core, measurable objectives, including a number of physical activity-related goals, highlighted on the previous page.

While Health and Fitness clubs could help in achieving these goals, in the U.S. the sector is largely considered a recreation industry and regulated and tax accordingly. Gym membership is treated as a fringe benefit and so must be included in an employee's gross income and subject to income tax withholding and employment taxes.

Regulation of the industry varies across the nation's many states. Regulation on automatic contract renewal impacts the industry, given that the vast majority of gyms rely on membership models. Of growing interest to the

industry is biometric data regulation. Many health clubs are embracing the technology, with the possibility of collecting biometric information from clients to offer more tailored workouts based on clients' biometrics. However, as the technology develops, states are considering how to best regulate legitimate privacy concerns around the collection of biometric data. This is an important job. Poorly considered, vague or overly restrictive regulation in this industry could hamper potential innovative service offerings from Health and Fitness centers.

Industry stakeholders highlighted the enormous potential for the Health and Fitness Industry to make positive contributions to improving preventative health

Thanks to its intricate mix of public and private healthcare provision, the U.S. has one of the largest and most

complex healthcare systems in the world. It is fair to say that, with the exception of a range of laudable public health measures, such as vaccines, the U.S. healthcare system is broadly designed to treat sick people rather than focus on disease prevention. Consequently, there is enormous potential for the Health and Fitness Industry to make positive contributions to improving preventative health in America. Deloitte conducted a number of meetings with key industry stakeholders to gauge the how well the industry worked with the policy makers around issues such as preventative health and fitness.

Stakeholders noted a number of program already that bring together fitness and healthcare, but their scope is limited

Recognizing the growing importance of preventative health in reducing

long-term disease burdens, the U.S. Centers for Disease Control and Prevention (CDC) champions a broad range of preventative health programs in America. One notable program from a Health and Fitness perspective is the National Diabetes Prevention Program (National DPP). The program brings together public and private organizations to provoke lifestyles changes in individuals at risk of developing type 2 diabetes. The program is eligible to overweight adults who have not yet been diagnosed with T1 or T2 diabetes but are at risk, or have been formally diagnosed with prediabetes. Organisation, including health and wellness fitness centers, can register as Lifestyle Change Program Providers, offering evidence-based, CDC-approved lifestyle change programs that can reduce the risk of developing type 2 diabetes by 58% (CDC, 2021).

Industry stakeholders Deloitte interviewed praised the program as an example of how the industry can work with the healthcare system in the preventative health space. However, there was feedback that wider industry participation was being limited by bureaucratic barriers – registering as a Lifestyle Change Program Provider was reportedly difficult and required large upfront costs as there was substantial time before providers could be reimbursed for their services.

Looking at the private healthcare sector, some private health insurance providers include gym memberships as part of their plan, with the level of coverage varying with the product. A

fundamental issue that limits wider promotion of such schemes, however, is the rate at which individuals change health insurance. Since Americans frequently receive their insurance via their employer, an individual's provider often changes if they move jobs or if their employer chooses to renegotiate with their current provider. As a result, the average American will change insurance provider every few years, which dis-incentivizes investments in long-term preventative care. It is likely that many insurers offer gym memberships as much for promotional reasons, as to reduce long-term healthcare costs.

For those older Americans eligible for Medicare, there is the SilverSneakers program, which is available through certain Medicare Advantage plans (under Medicare Advantage, a private, Medicare-approved insurer provides the coverage). The program partners with over 17,000 Health and Fitness centers across America, providing free fitness benefits for members of participating Medicare plans. In

general, individuals using Medicare Advantage do not change providers as frequently since insurance is not as closely tied to employment for older Americans, giving insurers a stronger economic incentive to invest in their members' long-term health.

The industry itself needs to constantly evolve and innovate to attract and captivate “non-exercisers”

Stakeholders note that if the Health and Fitness Industry wants to play a larger role working with the healthcare system in the preventative health space, the industry needs to be constantly improving and reforming its product lines. Some stakeholders observed that the industry at large is good at targeting active people (or those with a strong motivation to get active) but needs to consider how its products can respond to "non-exercisers". The industry needs to become leaders in adopting to the latest science of motivation and habit-formation to encourage individuals from a non-fitness track to a lifetime fitness track.



Moving from membership-based models to program-based ones can help attract more reluctant exercisers. Under a program model, prospectus exercisers sign up for a set program – say 90 days – with a clear beginning and end. Gyms can offer biometric health screening at the start and end of the programs. Individuals can then enjoy the satisfaction of seeing visible improvements over the life of the program. Such programs need to take a holistic approach – emphasizing not just exercise, but nutrition, group workouts and the social aspects of fitness.

There are many future opportunities for the Health and Fitness Industry and the healthcare sector

There is a rising trend of moving more health services out of inpatient hospital settings, driven by advances in technology, patients' preferences to avoid hospitals when possible, and the economic benefits of moving treatment to lower-cost settings where appropriate. In light of this trend, industry stakeholders observed that there are growing opportunities for better collaborations between Health and Fitness Centres and hospitals.

One promising area is prehab (prehabilitation). There is a strong positive relationship between physical fitness and outcomes following many different types of surgery; lack of fitness is a predictor of mortality and length of hospital stay after elective surgery in older people. For this reason, a number of hospitals around the country have begun experimenting with pre-operation fitness programs. Many such schemes are still in their early days and are being run as in-house pilot programs, but they provide an excellent opportunity in the future for hospitals to potentially work together with the Health and Fitness sector to improve patient outcomes.

Country highlight: Australia

“ Many people are surprised just how much Australians are using Health and Fitness centres to get active. Going to the gym is the second most popular physical activity in Australia after walking.”

– Barrie Elvish, CEO, AUSactive

Reduce inactivity amongst Australians by 15% by 2030

Key Sports 2030 physical activity goals



"Physical activity organisations" are connected into other sectors such as health, education and infrastructure to tackle challenges such as physical inactivity and leverage sport for social benefits



The Australian Government will partner with physical activity providers which have a national footprint to deliver programs that encourage inactive people to undertake more physical activity



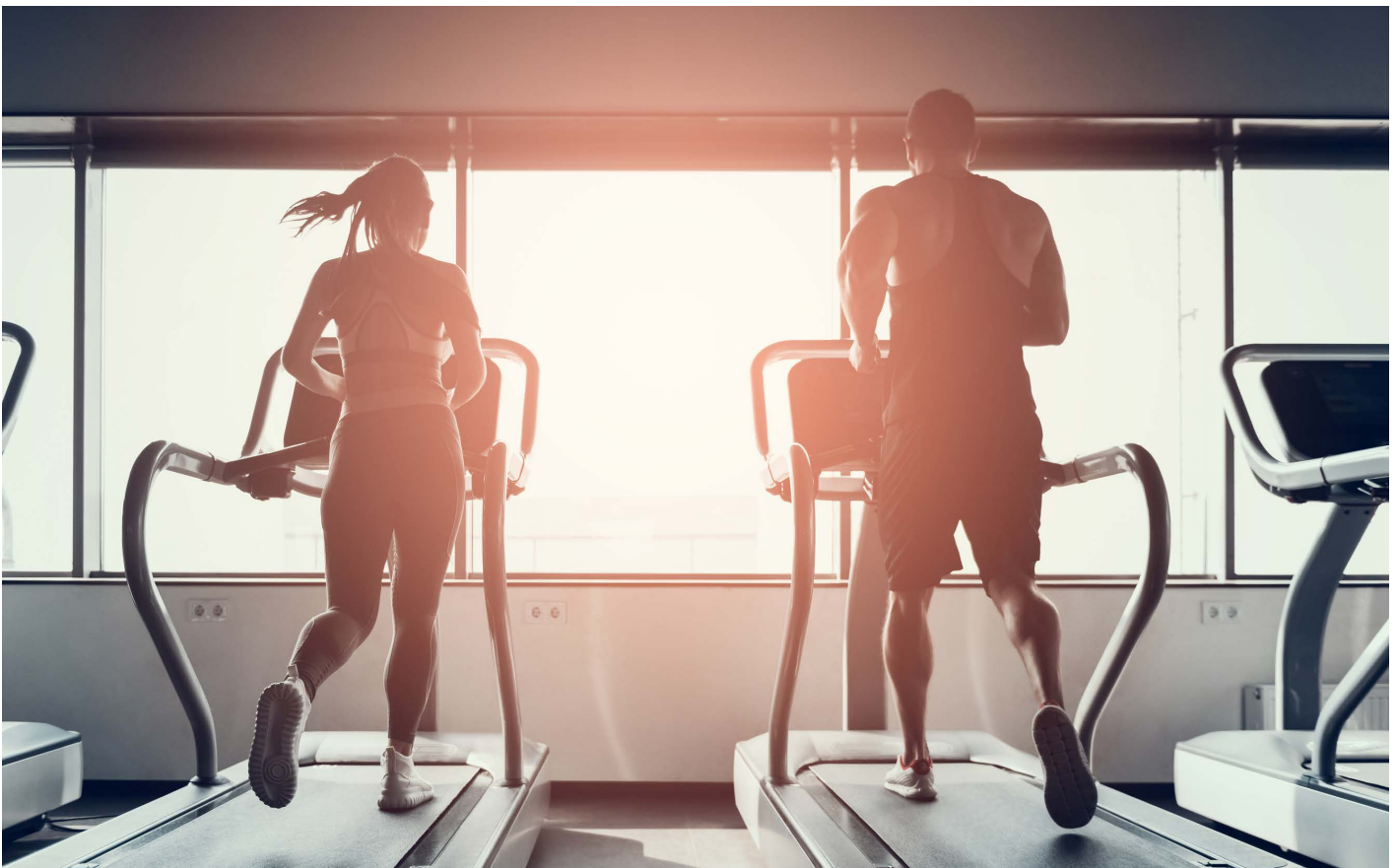
The Australian government wants to get people moving, but needs to broaden its focus

In 2018 the Australian Federal Government signed up to the Global Action Plan for Physical Activity (GAPPA), committing to reduce physical inactivity by 15% in adolescents and adults by 2030. This policy goal was then restated in its Sports 2030 plan. The report acknowledges that traditional sports now compete with less organised physical activities, such as going to the gym, when it comes to meeting the physical activity demands of Australians. The report promises that the Australian government will partner with sporting organisations and other physical activity providers (such as fitness centres) to encourage more physical activity.

However, insofar as the government seeks to partner with Health and Fitness providers to encourage more physical activity, specific government support for the industry is fairly limited. The Australian government offers some grants for sporting and exercise programs that target certain communities, such as Aboriginal and Torres Strait Islander communities, newly arrived migrants, women and people with disabilities. However, grant recipients are usually community groups (including some non-for-profit fitness clubs such as YMCA) rather than regular fitness centres.

While acknowledging the growing role of gyms, yoga and similar activities as a means of keeping fit, overreaching policy in Australia at all levels of

government – local, state and federal – generally focuses on sports and sporting infrastructure rather than fitness as a whole. There is a particular emphasis on elite sports (e.g. Australian Institute of Sport), which, while venerable, serve only a small proportion of the population. Sports are an excellent source of fitness and Australia has a proud nation history of punching above its weight in international sporting completion. However, sporting participation rates in the country drop quite dramatically once young people start moving out of structured schooling environments. Here non-sporting forms of fitness (such as rock climbing, gyms or yoga) can help pick up some of the slack as people move into more unstructured parts of their lives, keeping them on a lifetime "fitness track".



“Fitness clubs are not just about physical health but also mental health. There is tremendous social value to physically seeing people, creating a local community and even just saying ‘hello’ to our ‘members’.”

– Nicole Noye, CEO, Collective Wellness Group

New generations are embracing the flexibility of unstructured activity. The latest AusPlay survey of participation in sport and physical recreation in Australia found that going to the gym or general fitness was the second most popular type of physical activity, second only to walking and outranking any individual sport (AusPlay 2021). A recent survey commissioned by AUSactive found that, prior to COVID-19 lockdowns, over 50% of exercise-based energy expenditure in Australia came from physical activity in fitness centres or personal trainers.

The growth of gyms and other fitness centres benefits all parties. Individuals benefit from improved physical, mental and social health, the industry generates employment and value added to the economy, and wider society benefits from reduced healthcare costs (much of which falls on government) and improved productivity.

The industry needs to be better at communicating with policy-makers

Given the high proportion of Australians choosing to get their physical activity via Health and Fitness centres and the extent to which the industry and governments' interest align, there is a surprisingly limited working relationship between the Health and Fitness Industry and governments in Australia.

Deloitte conducted a number of meetings with key industry stakeholders to gauge how well the industry worked with the policy makers around issues such as preventative health and fitness. Industry stakeholders in Australia comment that the Health and Fitness Industry has historically not been proactive in engaging with the government. Within government there is uncertainty how the industry should be viewed and if the industry should fall under the purview of sports or health.

Traditionally it has been seen as simply recreation, which stakeholders thought downplays the important role the industry can play in improving health and preventing a range of long-term health issues.

Many stakeholders in the industry indicated a desire to work closer with government than in the past. A particular focus is the transition to opening up as COVID-19 vaccine rollout nears completion. The pandemic was a source of heightened psychological distress and there was increased usage of mental health services (AIHW 2021a). Lifeline, for instance, saw record high daily call volumes. There is a wealth of evidence that physical exercise can play an important role in reducing anxiety, depression and negative moods. Health and Fitness centres, along with other sources of physical activity, such as sports, can help fight against these negative trends.



Fitness is not just about elite athletes, most club members are normal people. We need a positive message out there: all exercise is good exercise.



– Chris Caldwell, APAC CEO, Lift Brands

What more do stakeholders think should be done?

Industry stakeholders report that public campaigns to encourage fitness in recent decades have been fairly forgettable. The latest "Move it AUS" program has been accompanied by a physical activity awareness campaign but it appears to have had limited reach (e.g. the campaign seemingly lacks a main website). A recent survey commissioned by AUSactive found that only roughly a tenth of Australians were confident that they knew what the government recommended levels of exercise were. A contrast was drawn between current campaigns and the "Life. Be in it", starting the cartoon Norm from the late 70s, who has since become a well-remembered figure in Australian popular culture (NAA, 2002). A report from the 1979 found that 20% of respondents said they were more active because of "Life. Be in it" (Australasian Leisure Management, 2021).

Changing habits is hard. But community-wide programs with long-term support and buy-in from

relevant parties can succeed. Smoking rates in Australia, for instance, have roughly halved since the early 1990s (AIHW, 2021b), in part due to widespread awareness of the risks of smoking. Importantly awareness campaigns around smoking have been accompanied by practical incentives (e.g. tobacco excise and plain packaging); mass media needs to be accompanied by on-the-ground support.

Industry stakeholders mentioned the possibility of an expanded voucher system for sport and physical activities that could be targeted at populations or groups with low physical activity rates. Some states in Australia already have such voucher systems, such as the NSW Active Kids program or the Victorian Get Active Kids Voucher; however, as the names suggest, they are currently limited only to children.

The corporate sector, which stands to benefit from a healthier, fitter workforce needs to be playing a bigger role in encouraging fitness. They can secure membership discounts for

employees by bulk buying, while at the same time provide encouragement and peer support to engage in fitness. From a tax perspective, however, gym membership is treated as entertainment or recreation. Purchasing gym memberships for employees is thus considered an employee fringe benefit and accordingly subjected to Fringe Benefits Tax, providing no tax incentive for investment in gym memberships.

Overall, stakeholders emphasised that the Health and Fitness Industry needs to work closer with governments at all levels and communicate how to best make full use of resources that the industry has to encourage fitness. The right approach has the ability to develop a win-win-win situation: individuals win by enjoying healthier and fitter lifestyles, governments win by reducing healthcare costs, and the industry can win by improving continuing to thrive and grow, supporting employment and generating value added.

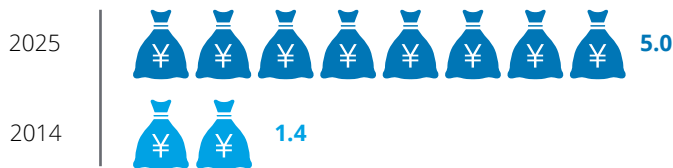
Country highlight: China

Over the past decade, the Chinese government has introduced a number of broad, overarching policies to encourage physical fitness by supporting sporting and fitness-related industries.

The Chinese government has always attached great importance to exercise and citizens' physical health. From 2014 to 2020, the State Council and relevant departments issued a total of 18 national exercise industry policies, shepherding the development of the sports and fitness industry from multiple angles.

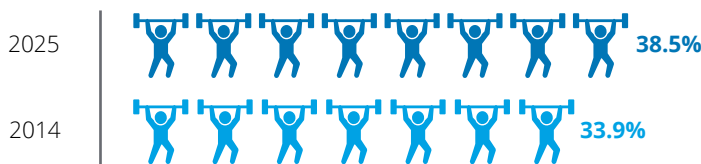
- Loni Wang, CEO, Catic Wellness Group

Expand market size of sports industry to 5 trillion yuan by 2025

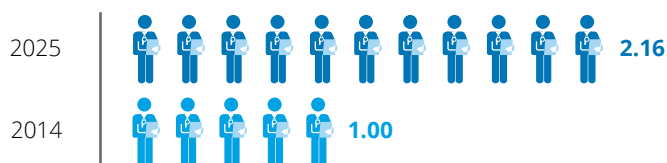


Three goals of China's national fitness in 2025

Increase the rate of regularly physical activity¹ to 38.5%



Raise the number of social sports instructors² per 1,000 people to 2.16

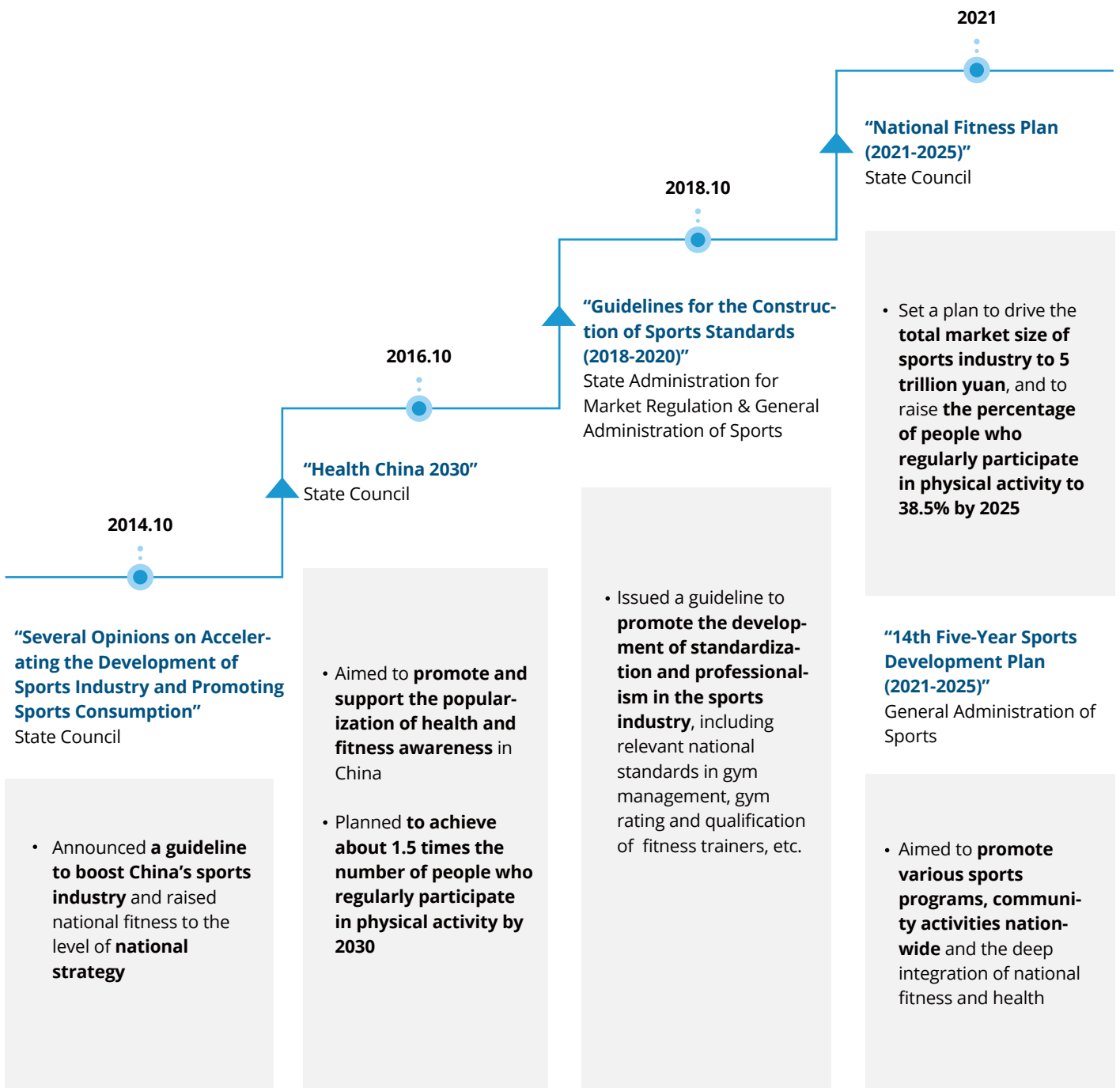


Notes: 1) Measured as % of total population exercising at least 3 times/week, 30 minutes/time with moderate-intensity; 2) An occupation defined as personnel engaged in the coaching of sports skills, providing scientific fitness guidance and management in mass sports activities

Stakeholders in China emphasized the current high-level policy support for sports and physical fitness, such as the "National Fitness Plan 2021-2025". Looking at what more can be done, industry insiders called for stronger emphasis on physical education in schools, which helps develop a lifetime culture of sports and exercise

participation. Stakeholders also highlighted international programs that rewarded institutions that promote fitness. For instance, Singapore has the Singapore HEALTH (Helping Employees Achieve Lifetime Health) Award for companies that promote health at the workplace; as a result, many corporations in the city-state

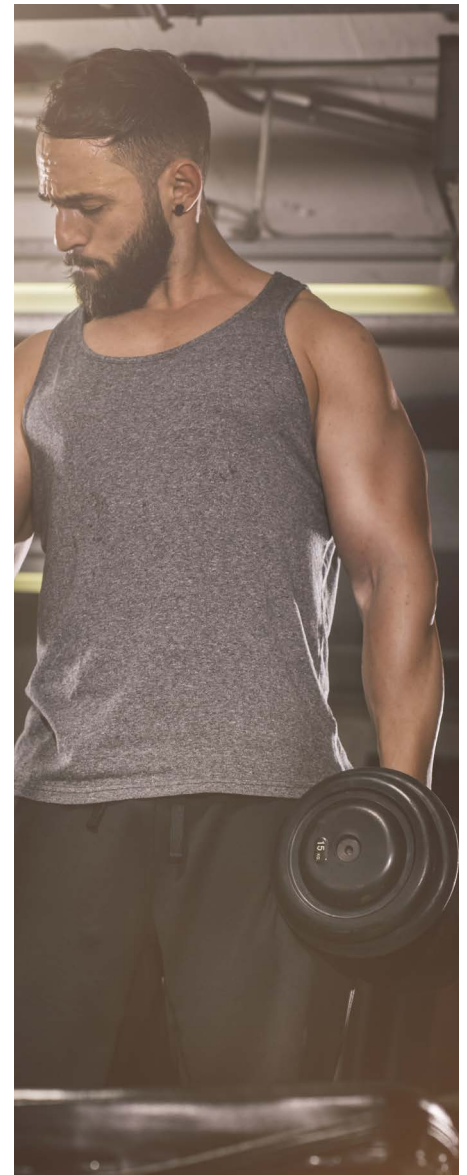
regularly organise sports or physical activities for their employees. Looking inwards at the industry, stakeholders stressed that the Health and Fitness Industry in China is still developing and growing; clubs need to pay attention to developing professional, personalised services for members to increase the attractiveness of their offerings.



Source: Government of China

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Appendix 1: Summary of Global Economic Impact

Country/Region	Direct (US\$m)	Indirect (US\$m)	Total	Total as % of GDP
Argentina	606	428	1,034	0.25%
Australia	1,058	1,782	2,840	0.20%
Austria	365	197	562	0.13%
Belgium	250	177	427	0.08%
Brazil	1,373	1,092	2,465	0.16%
Bulgaria	45	33	78	0.11%
Canada	1,747	1,408	3,155	0.18%
Chile	220	178	398	0.15%
China (PRC)	3,321	1,905	5,225	0.03%
Chinese Taipei (Taiwan)	261	197	459	0.06%
Colombia	103	54	157	0.05%
Costa Rica	52	42	94	0.15%
Cyprus	24	17	40	0.16%
Czech	161	121	282	0.11%
Denmark	259	186	445	0.12%
Finland	253	245	498	0.18%
France	1,693	1,097	2,790	0.10%
Germany	3,906	2,366	6,273	0.16%
Greece	132	103	235	0.12%
Hong Kong	213	155	368	0.10%
Hungary	132	91	223	0.14%
India	449	355	804	0.03%
Indonesia	113	209	322	0.03%
Ireland	256	57	313	0.10%
Italy	1,034	1,270	2,304	0.12%
Japan	2,708	1,006	3,715	0.07%
Korea, South	1,278	1,105	2,382	0.14%
Malaysia	99	90	190	0.06%

Country/Region	Direct (US\$m)	Indirect (US\$m)	Total	Total as % of GDP
Mexico	938	786	1,724	0.15%
Netherlands	720	730	1,450	0.15%
New Zealand	191	235	426	0.19%
Norway	338	224	562	0.15%
Peru	123	52	174	0.09%
Philippines	147	115	263	0.07%
Poland	469	620	1,089	0.18%
Portugal	151	148	299	0.12%
Russia	851	686	1,536	0.10%
Singapore	208	102	310	0.09%
South Africa	140	108	247	0.08%
Spain	1,697	856	2,553	0.19%
Sweden	460	439	899	0.16%
Switzerland	481	340	821	0.11%
Thailand	145	103	248	0.05%
United Kingdom	2,980	1,524	4,504	0.16%
USA	19,975	15,872	35,847	0.16%
Vietnam	116	75	192	0.07%

Appendix 2: Economic Impact 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 an historical reference year. The economic contribution is a measure of the value of production by a firm or industry.

Value added

Value added is the most appropriate measure of an industry's economic contribution to gross domestic product (GDP) at the national level. The value added of each industry in the value chain can be added without the risk of double counting across industries caused by including the value added by other industries earlier in the production chain. Other measures, such as total revenue or total exports, may be easier to estimate than value added but they 'double count'. That is, they overstate the contribution of a company to economic activity because they include, for example, the value added by external firms supplying inputs or the value added by other industries

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 (i.e. goods and services) generated by the entity's factors of production (i.e. 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 how 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 is an 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 from those above. It measures the number of workers employed by the entity, rather than the value of the workers' output.

Gross output is the sum of value added and the value of intermediate inputs. Value added can be calculated directly by adding the payments to the primary factors of production, labour (i.e. salaries) and capital (i.e. gross operating surplus (GOS), or profit), as well as production taxes less subsidies. The value of intermediate inputs can also be calculated directly by adding up expenses related to non-primary factor inputs.

Direct and indirect contributions

The direct economic contribution is a representation of the flow from labour and capital in the company. The indirect economic contribution is a measure of the demand for goods and services produced in other sectors as a result of demand generated by the Health and Fitness Industry. Estimation of the indirect economic contribution is undertaken in an input-output (IO) framework using OECD input-output tables that report the inputs and outputs of specific sectors of the economy.

The total economic contribution to the economy is the sum of the direct and indirect economic contributions.

Limitations of economic contribution studies

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 of the community. Indeed, the use of labour and capital by demand created from the industry comes at an opportunity cost as it may reduce the amount of resources available to spend on other economic activities.

This is not to say that the economic contribution, including employment, is not important. As stated by the Australian Productivity Commission in the context of Australia's gambling industries:

"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."

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 firm disappeared?' – should be drawn from them.

The analysis – as discussed in the report – relies on a national IO table modelling framework and there are some limitations in this modelling framework. The analysis assumes that goods and services provided to the sector are produced by factors of production that are located completely within the state or region defined and that income flows do not leak to other states.

The IO framework and the derivation of the multipliers also assume that the relevant economic activity takes place within an unconstrained environment. That is, an increase in economic activity in one area of the economy does not increase prices and subsequently crowd out economic activity in another area of the economy. As a result, the modelled total and indirect contribution can be regarded as an upper-bound estimate of the contribution made by the supply of intermediate inputs. Similarly, the IO framework does not account for further flow-on benefits as captured in a more dynamic modelling environment like a CGE model.

Input-output analysis

IO tables are required to account for the intermediate flows between sectors. These tables measure the direct economic activity of every sector in the economy at the national level. Importantly, these tables allow intermediate inputs to be further broken down by source. These detailed intermediate flows can be used to derive the total change in economic activity associated with a given direct change in activity for a given sector.

A widely used measure of the spill-over of activity from one sector to another is captured by the ratio of the total to direct change in economic activity. The resulting estimate is typically referred to as 'the multiplier'. A multiplier greater than one implies some indirect activity, with higher multipliers indicating relatively larger indirect and total activity flowing from a given level of direct activity.

The IO matrixes used for each country/region as part of this analysis are derived from OECD's IO tables.

Appendix 3: Literature Review

Report/paper	Nature of report	Key finding(s)
Benefit of Fitness		
Physical Activity Guidelines Advisory Committee (2018) 2018 Scientific Report	Summary of scientific evidence of effects of exercise and physical activity for US government based on metastudy of all relevant studies available.	<p>Overwhelming scientific evidence of health benefit of exercise:</p> <ul style="list-style-type: none"> • Reduction in all round mortality. • Improves the quality of sleep • Promote acute improvements in executive function • reduces the risk of clinical depression and depressive symptoms • Reduces symptoms of anxiety • Prevents or minimizes excessive weight gain in adults • Reduced risk of excessive increases in body weight in children • Less likely to develop gestational diabetes or develop postpartum depression • Reduce the risk of dementia • Reduced risk of breast, colon bladder, endometrium, esophagus, kidney, lung, and stomach cancer. • Reduce the risk of developing a new chronic conditions including osteoarthritis, hypertension, and type 2 diabetes.
Physical Activity Guidelines Advisory Committee (2008) Scientific Report	Summary of scientific evidence of effects of exercise and physical activity for US government based on metastudy of all relevant studies available.	<p>Among adults, strong evidence that physical activity reduces:</p> <ul style="list-style-type: none"> • rates of all-cause mortality, • coronary heart disease, • high blood pressure, • stroke, • type 2 diabetes, • metabolic syndrome, • colon cancer, breast cancer, and depression.

Report/paper	Nature of report	Key finding(s)
Benefit of Fitness		
RAND (2019), The economic benefits of a more physically active population	Public report on economic effects of physically active population	<ul style="list-style-type: none"> • If all individuals currently not reaching the recommended levels of physical activity per week will reach them – by 2025, global GDP would be between 0.15 and 0.22 per cent higher compared to the baseline scenario with current physical activity levels. • An individual who is not physically active reports between 0.44 and 0.86 days additional working time lost due to absenteeism • An individual who is not physically active reports between 2.6 and 3.71 days additional working time lost due to presenteeism
Ding D, Lawson KD, Kolbe-Alexander TL, Finkelstein EA, Katzmarzyk PT, van Mechelen W, Pratt M (2016), The economic burden of physical inactivity: a global analysis of major non-communicable diseases. Lancet.	Academic study on estimate of cost to healthcare system of inactivity in general	<ul style="list-style-type: none"> • Conservatively estimated, physical inactivity cost health-care systems international INT\$53.8 billion¹ worldwide in 2013, of which \$31.2 billion was paid by the public sector, \$12.9 billion by the private sector, and \$9.7 billion by households.

Notes: 1) An international dollar (INT\$) would buy in the cited country/region a comparable amount of goods and services a U.S. dollar would buy in the United States.

Report/paper	Nature of report	Key finding(s)
Benefit of fitness centres/gyms/personal trainers		
Task Force on Community Preventive Services (2002), The Effectiveness of Interventions to Increase Physical Activity	Systematic evidence review (10 studies) of creating or enhancing access to places for physical activity	<p>In all studies, creating or enhancing access to places for physical activity got people to exercise more:</p> <ul style="list-style-type: none"> • Aerobic capacity: median increase of 5.1% (8 study arms) • Energy expenditure: median increase of 8.2% (3 study arms) • Percentage of participants reporting some leisure-time physical activity: median increase of 2.9% (4 study arms) • Exercise score: median increase of 13.7% (6 study arms)
Kaufman, T.K., Rundle, A., Neckerman, K.M. et al. (2019). Neighborhood Recreation Facilities and Facility Membership Are Jointly Associated with Objectively Measured Physical Activity. J Urban Health	Academic study using proximity to fitness centres as proxy for ease of access	<ul style="list-style-type: none"> • Individuals living near more facilities were more likely to report membership (adjusted odds ratio for top versus bottom quartile of facility count: 3.77 (95% CI 1.54–9.20). • Membership in a sport, recreation or outdoor clubs was associated with over 2.5 times the odds of exercising as recommended
Charness, G & Gneezy, U (2009), Incentives to Exercise, Econometrica	Academic study looking at effects of paying people to attend a gym a number of times during one month	<ul style="list-style-type: none"> • Gym attendance is exercise is habit forming: participants paid to go to the gym for one month will continue even following payment • Post-intervention attendance is more than twice as high for the high-incentive group as for the no-incentive group. This difference does not decline at all during the time following payment, suggesting that the effects do have some degree of persistence.

Report/paper	Nature of report	Key finding(s)
Benefit of fitness centres/gyms/personal trainers		
Kaushal N, Rhodes RE (2015). Exercise habit formation in new gym members: a longitudinal study.	Academic study of time it takes for new gym members to form exercise habit	<ul style="list-style-type: none"> It was found that exercising for at least four bouts per week for 6 weeks was the minimum requirement to establish an exercise habit
McClaran S. R. (2003). The effectiveness of personal training on changing attitudes towards physical activity. <i>Journal of sports science & medicine</i>	Academic evaluation of effectiveness of personal trainers in motivating exercise	<ul style="list-style-type: none"> Utilized movement in the Stages of the Transtheoretical Model (STM) to determine the efficacy of personal training Volunteers assigned personal trainers Of the remaining 102 clients, there was significant ($p < 0.01$) upward movement [in motivation to exercise] at the conclusion of the program. The results suggest that one-on-one personal training is an effective method for changing attitudes and thereby increasing the amount of physical activity
Cranney L, Phongsavan P, Kariuki M, Stride V, Scott A, Hua M, Bauman A. (2016) Impact of an outdoor gym on park users' physical activity: A natural experiment. <i>Health Place</i> .	Academic study of impact of an new outdoor gym (as proxy for ease of access) on exercise rates	<ul style="list-style-type: none"> Examined impact of an outdoor gym installation on park users' physical activity levels. There was a small but significant increase in senior park users engaging in moderate to vigorous physical activity (MVPA) at follow-up (1.6 to 5.1%; $p < 0.001$). There were significant increases from baseline to follow-up in the outdoor gym area for: MVPA (6 to 40%; $p < 0.001$); and seniors' use (1.4 to 6%; $p < 0.001$).

Appendix 4: Assumptions and Limitations of Modelling

Insufficient activity is defined throughout the report as failing to meet the WHO guidelines for physical activity: a minimum of 150 minutes of moderate-to-vigorous physical activity per week.

Healthcare costs

The basis of the healthcare cost of inactivity is Ding et al. (2016), updated based on changes in healthcare costs since the time of the analysis. The key assumption or source of uncertainty in this analysis is the relationship between inactivity and risk of disease. Since this relationship is uncertain, the estimates are based on a probability range.

Furthermore, the costs only cover a subsets of diseases linked with insufficient exercise, namely coronary heart disease, type 2 diabetes, breast cancer, colon cancer and stroke. However, as noted in the 2008 and 2018 PAGAC scientific reports, lack of fitness is linked to a much wider range of diseases, making the estimations quite conservative. For instance healthcare costs of treating depression and anxiety – which can be substantial and are affected by fitness – are not covered. Based on this conservativeness, we have chosen to use the upper range of the estimations from the uncertainty range, given the healthcare costs have been limited to a subset of overall healthcare costs. There are undoubtedly further costs beyond these five diseases, so we are confident in using the higher range of the cost probability estimation of these five

specific diseases. The costs estimates arrived are in line, or below, other estimates of the cost of inactivity¹.

Productivity costs

The key assumption of the cost of inactivity in terms of working days lost is the estimated number of working days lost to absenteeism and presenteeism due specifically to lack of sufficient fitness. This estimate is based on a RAND report (2019), which undertook a look at the relationship between lack of fitness and loss of working days across a range of countries. The results come from a statistical model. The actual number of working days lost per inactive worker will vary on an individual level.

We have assumed working and nonworking individuals are inactive at same rate, as we do not have country by country or region by region level data of inactivity by labour force status. While some jobs (such as manual labour) may encourage physical activity, other more sedentary jobs may be a barrier to physical activity. The effects of work on exercise rates is thus not a priori clear.

Due to data limitations, we have likewise assumed that rates of inactivity is uniform amongst socio-economic distribution. We cost absenteeism and presenteeism using average GDP generated per worker. There is some evidence in western countries that SES is positively correlated with fitness². If lower-socio economic working

populations are disproportionately less active, and the cost of inactivity may be overestimated, as a greater proportion of working days lost to absenteeism and presenteeism are coming from lower workers who generate below average GDP per worker. On the other hand, lower socioeconomic status workers are more likely to have manual labour jobs which involve physical activity; so in some countries, insufficient fitness may disproportionately affect higher-income workers, in which case the costs of inactivity would be underestimated for that country or region.

Note that we cost presenteeism at the GDP per worker generated (which is broadly wages plus profit plus relevant taxes). An employee suffering from presenteeism is likely to still be paid for that's day work, so in the immediate term the cost is borne by the employer who pays for a day's work without getting a return. In this case the lost GDP would be in the form of lost potential profit. However, in the long run this cost may be pushed back onto the employee as employers will reduce the wages they are willing to offer to account for this lost productivity. The tax revenue forfeited from these lost working days was calculated based on average government revenue per unit of GDP. The actual potential revenue would depend on the how much of this cost falls on wage earners and how much falls on profit earners, and the respective tax rates on these two groups.

Notes: 1) e.g. The Cost of Physical Activity: Towards a regional full-cost accounting perspective; 2) see "Socio-economic determinants of physical activity across the life course: A "Determinants of Diet and Physical Activity" (DEDIPAC) umbrella literature review"

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