



FINAL REPORT

Economic contribution of the Australian gaming machine industry

Value added, Exports, Employment and Tax Revenue

*Prepared for
Gaming Technologies Association
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Executive summary

The CIE has been commissioned by the Gaming Technologies Association to estimate the economic contribution of electronic gaming machines to the Australian economy. There are two broad areas where the impacts of electronic gaming machines (EGMs) have been quantified:

- 1 recreational — use of machines in hotels, clubs and casinos (wagers) by customers
- 2 manufacturing — the servicing and maintenance of machines, and production for domestic and international sale.

The outcomes were estimated using a bottom-up analysis of the industry. Data was collected from publicly available sources as well as a survey distributed to domestic manufacturers. This analysis finds that, in 2016-17:

- gaming machines contributed \$8.32 billion to the Australian economy in value added
- direct employment across all industries (including manufacturing) is 46 660 people, which is equivalent to 24 150 full time jobs
- exports were \$284 million from the use of gaming machines by international visitors and the sale of machines overseas
- tax revenue for state and commonwealth governments is \$5.5 billion.

These estimates are based on EGM expenditure in 2016-17 of \$12.3 billion in clubs and hotels, and \$1.4 billion in casinos.

These results are direct estimates of the impact of EGMs in Australia and do not include any of the economy wide economic impacts such as indirect employment, social costs associated with problem gambling, or consumer surplus benefits.

Estimates made for the manufacturing industry were provided directly by industry through a survey developed by the CIE. All results were received as commercial-in-confidence and have been reported only in aggregate. Furthermore, outcomes for manufacturing have not been reported on a jurisdictional basis.

1 Introduction and approach

Introduction

The term ‘gaming’ in Australia refers to all forms of legal gambling other than racing and sports betting. This includes poker and gaming machines, casino gaming, raffles, bingo, and lotteries.

The Gaming Technologies Association (GTA) commissioned the CIE to estimate tax revenue, employment, value added and exports associated with electronic gaming machines in Australia. This analysis extends to the operation of EGMs in hotels, clubs, and casinos, as well as manufacturing of EGMs for the domestic and international markets.

We have used a bottom up approach in this analysis using a range of publicly available data and the CIE survey distributed to local manufacturers. Further details on the methodology can be found in Appendix A, and information about the survey including distribution, response rate, and questions is in Appendix B.

Electronic Gaming Machines

Electronic gaming machines are located in pubs/taverns, clubs and casinos across all jurisdictions in Australia except for Western Australia, where they are only permitted in the casino.

State and territory governments regulate the number of EGMs that operate in each jurisdiction through licencing schemes (see table 1.1). In most jurisdictions, limits on the number of machines are on a per-venue basis, while some jurisdictions (QLD for example) also have state caps in place. The number of EGMs allowed in casinos is established in the agreements with the casino as they are not subject to the same caps as clubs and pubs. Licensing schemes generally extend to technicians who service and install machines also.

1.1 Caps on gaming machine numbers, by venue type and by jurisdiction

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Clubs	No limit by venue	No limit by venue	55	300	40	40	105	-
Hotels	No limit by venue	30	20	45 ^a	40	30	- ^c	-
Statewide cap in place	-	✓ ^b	-	✓	✓	✓	✓ ^d	-

^a Caps in Queensland are based on whether the venue is a category 1 or 2 venue and whether the licence relates to two or more premises. Category 1 venues are hotels with a liquor licence and category 2 refers to all other venues that are not in category 1. Category 1 venues may have up to 45 EGMs for one premise, or if there are two or more premises, they may have up to 450 EGMs across all premises. Similarly, Category 2 venues (clubs) may have 300 EGMs at one premise, or up to 500 across multiple premises, ^b in NSW, entitlements are capped based on local statistical areas, ^c there is a statewide cap on hotels of 13 686 EGMs, and no individual or organisation may have an interest in more than 35 per cent of hotel gaming machine entitlements ^d In Victoria, municipal and regional caps are in place. Limits are also in place based on ownership structure of machines in venues too.

Note: The ACT is currently working to reduce the number of EGMs across all venues by introducing a trading scheme.

Source: South Australia *Gaming Machines Act 1992* s36B(7), NSW Government, *Gaming Machines Act 2001*, s11, Victorian Commission for Gaming and Liquor Regulation website, *Gaming machine caps and limits*, available at:

<https://www.vcglr.vic.gov.au/gambling/gaming-venue-operator/understand-your-gaming-licence/caps-and-limits>, Tasmanian

Government Department of Treasury and Finance website, *Gaming and Wagering Industry Data*, available at:

<http://www.treasury.tas.gov.au/liquor-and-gaming/legislation-and-data/gambling-industry-data/gaming-and-wagering-industry-data> ,

Queensland Government Business Queensland website, *Electronic gaming machine reallocation scheme*, available at:

[https://www.business.qld.gov.au/industries/hospitality-tourism-sport/liquor-gaming/gaming/electronic-gaming-](https://www.business.qld.gov.au/industries/hospitality-tourism-sport/liquor-gaming/gaming/electronic-gaming-machines/licensing/reallocation-scheme)

[machines/licensing/reallocation-scheme](https://www.business.qld.gov.au/industries/hospitality-tourism-sport/liquor-gaming/gaming/electronic-gaming-machines/licensing/reallocation-scheme), *Gaming Machine Act 1991*, s60 (4)(b) and s (5)(b)(ii), available at:

<https://www.legislation.qld.gov.au/view/whole/pdf/inforce/current/act-1991-007>, *Gaming Machine Regulation 2002*, Part 3, s 8-9,

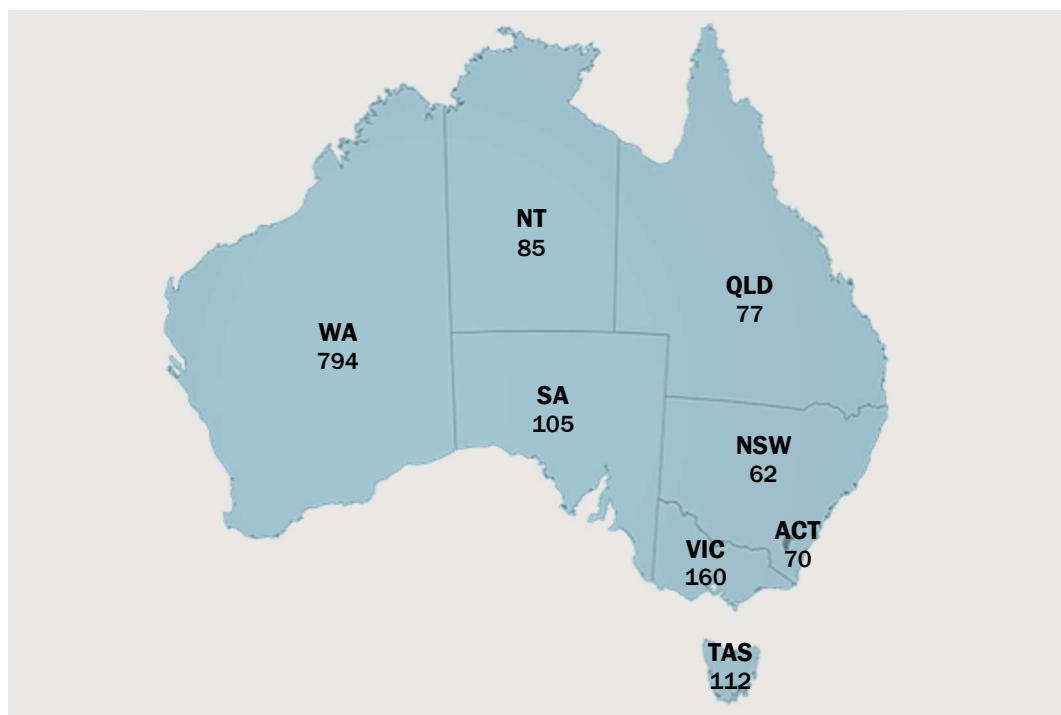
available at: <https://www.legislation.qld.gov.au/view/whole/html/inforce/current/sl-2002-0301>, Northern Territory Government

website, *Gaming machines in clubs and pubs*, available at: <https://nt.gov.au/industry/gambling/gaming-machines-in-clubs-pubs>, all

websites accessed 25 May 2018.

NSW has the largest number of EGMs of all jurisdictions, where there are approximately 62 people for each EGM. Western Australia has the lowest number of machines (based on those at the Crown Casino, Perth), with the ratio of 794 people for each EGM. Chart 1.2 shows the number of people for each EGM, by jurisdiction.

1.2 Number of people per EGM, by jurisdiction



Note: This includes EGMs in all venues (clubs, pubs, casino, and in Tasmania, the Spirit of Tasmania). Number of people refers to those 18 years of age and over.

Data source: ABS Census (2016), various state and territory government websites, CIE.

Table 1.3 reports the number of venues currently operating EGMs.

1.3 Number of venues, by jurisdiction, with operational EGMs

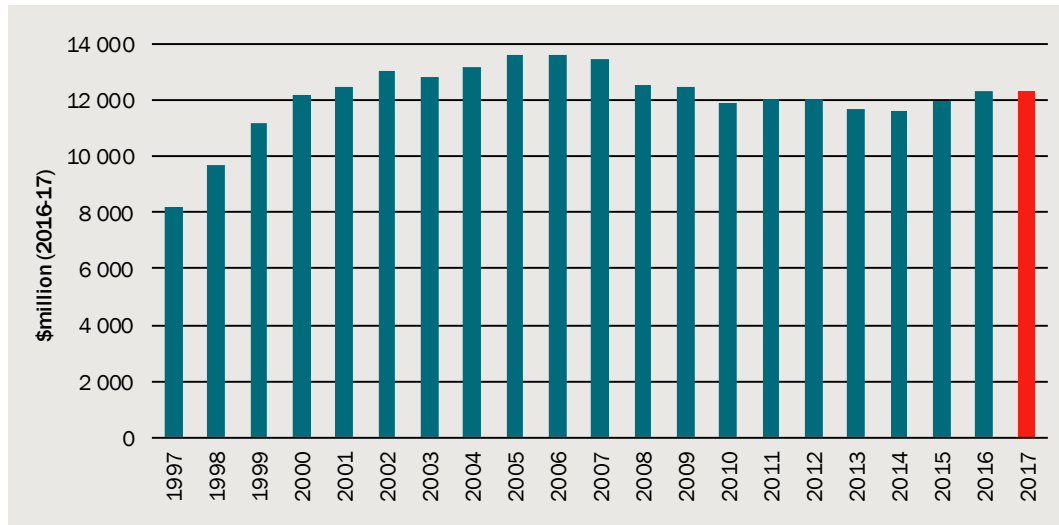
	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Australia
Clubs	40	1 119	28	431	48	25	237	0	1 928
Pubs/hotels/ taverns	5	1 493	54	730	427	140	261	0	3 110
Casino	1	1	2	4	1	2	1	1	13
Vessels						1			1
Total	46	2 613	84	1 165	476	168	499	0	5 052

Source: NSW Department of Industry Liquor and Gaming, *Gaming Machine Data Reports*, available at <https://www.liquorandgaming.nsw.gov.au/Pages/gaming/community-involvement/Gaming-machine-data-reports.aspx>, Queensland Government, *Gaming Statistics*, available at: <https://secure.olgr.qld.gov.au/dcm/Gaming>, ACT Department of Gambling and Racing (2018), *Trading Scheme Information*, available at: https://www.gamblingandracing.act.gov.au/__data/assets/pdf_file/0018/1212570/Trading-Scheme-Information-as-at-31-May-2018.pdf, Victorian Commission for Gambling and Liquor Regulation, *Venues Details*, available at: <https://www.vcgr.vic.gov.au/CA256F800017E8D4/VCGLR/DBB69322DE84ADA6CA257B320077C8D3?OpenDocument>, Department of Attorney-General and Justice Northern Territory Government, email communication with CIE, 27 June 2018, Government of South Australia Consumer and Business Services (2017), *Gaming Machine Licence Statistics Quarter 1 2017/2018*, available at: <https://www.cbs.sa.gov.au/assets/LAR/liquor-gambling/Statistics-2017-2018/Quarterly-Machine-Licence-Statistics-2017-2018-Q1.pdf>, ACIL Allen Consulting (2018) *Fourth Social and Economic Impact Study of gambling In Tasmania (2017)*, Commissioned by the Tasmanian Government Department of Treasury and Finance, p V, available at: <http://www.treasury.tas.gov.au/Documents/Volume%201%20-%20Industry%20Trends%20and%20Impacts.PDF>, all websites were accessed on 10 July 2018.

Gaming machines record the amount of wagers played on machines. All jurisdictions legislate the ‘return to player’ which, at a minimum, is 85 per cent. Player expenditure on EGMs, defined as the difference between wagers and player returns, has increased by more than 50 per cent over the last 20 years, from \$8.2 billion in 1996-97 to \$12.6 billion in 2016-17 for EGMs in hotels and clubs (see chart 1.4).¹

¹ Over the same period, gaming expenditure (for EGMs in hotels and clubs) as a proportion of household disposable income has declined from 1.346 per cent in 1996-97 to 1.064 per cent in 2016-17. See Queensland Government Statistician’s Office, *Australian Gambling Statistics 1990-91 to 2015-16*, ed. 33, Table Gaming Machines 9, p 152, available at: <http://www.qgso.qld.gov.au/products/reports/aus-gambling-stats/>, accessed 27 July 2018 and 2016-17 calculation based on ABS, *Australian National Accounts, State Accounts, 2016-17*, Cat. 5220.0, Table 20, available at: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/5220.02016-17?OpenDocument>, accessed 27 July 2018.

1.4 Gaming machine expenditure, clubs, pubs and hotels



Data source: Annual Reports of Australian State and Territories 2016-17, Queensland Government's Statistician's Office, ABS Consumer Price Index, Cat. 6401, CIE.

2 Employment

Employment directly attributable to EGMs is difficult to estimate given that:

- employees typically work across different areas such as the bar, restaurant and gaming room therefore relying on ‘gaming licences’ is not truly reflective of employment
- employment numbers will fluctuate based on the characteristics of the venue, such as opening hours and the size of the venue.

This analysis did not extend to any surveying industry participants in clubs, hotels or casinos nor was economywide economic modelling used to estimate indirect employment. Estimates of direct employment are derived using available studies, including from South Australia and Tasmania (see Appendix A for more detail). These results were extrapolated to other jurisdictions and adjusted for differences in venue characteristics (such as opening hours and caps on EGMs).

Direct employment² attributable to electronic gaming machines in clubs and pubs is estimated to be 42 724 and in casinos, is estimated to be 1 884 (see table 2.1). This equates to approximately 22 100 full time equivalent jobs due to the high levels of casual employment in the industry. Casino employment is derived using studies on employment in clubs and hotels therefore estimates should be considered indicative only. In the manufacturing sector, we estimate there to be approximately 2052 employees with almost 100 per cent of these jobs to be full time.

2.1 Employment, all tenure types, by jurisdiction

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Australia
Hotels, clubs,	862	21 892	409	9 875	3 044	819	5 822	0	42 724
Casinos	9	173	121	695	124	174	310	278	1 884
Manufacturing	-	-	-	-	-	-	-	-	2 052
Total	-	-	-	-	-	-	-	-	46 660

Note: Employee numbers for manufacturing were not estimated by jurisdiction.

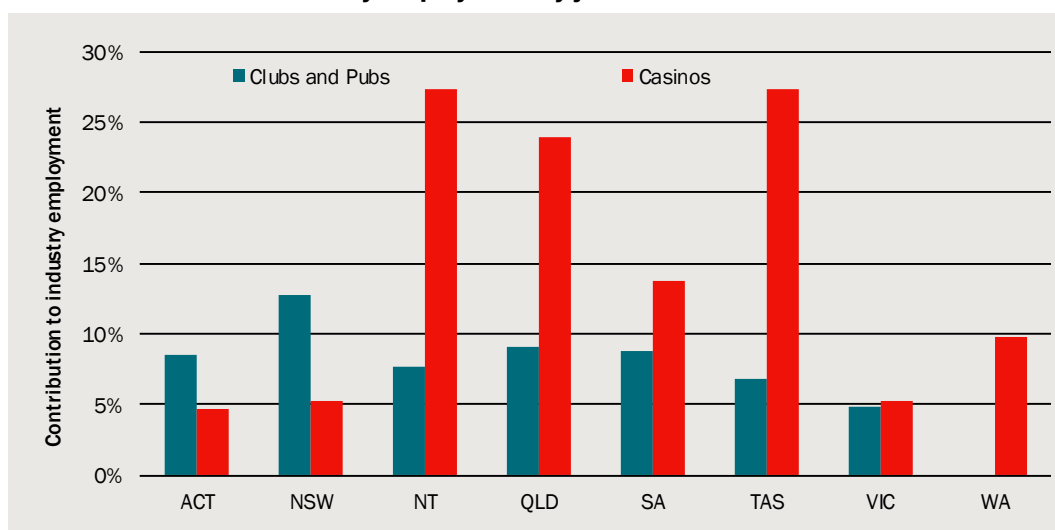
Source: CIE.

² Direct employment refers to jobs specific to EGMs, for example, licensed staff and those that service the machines. An additional measure of employment would be the indirect contribution, that being, the flow on jobs created by EGMs. For instance, if EGMs resulted in higher patronage numbers at a pub, which then had to engage more staff in the restaurant to serve these customers, the restaurant staff would be the indirect employment effect. Estimating indirect impacts is beyond the scope of the analysis.

Past studies estimated 3.2 jobs to every \$1 million of EGM expenditure³ based on ABS data from 2001. Recent commentary suggests that this figure (3.2 jobs) to every \$1 million of EGM expenditure may still accurately reflect employment in the industry.^{4,5} Using this estimate, this would mean employment of approximately 43 900 employees for clubs, hotels and pubs, which is close to the estimate generated in this analysis of 44 608 employees at clubs, hotels and pubs.

Chart 2.2 shows how employment related to EGMs contributes to industry employment based on 2016 Census data.

2.2 Contribution to industry employment by jurisdiction



Note: Industry employment for clubs and pubs is the sum of employment in: Accommodation, food and beverage, food and beverage not further defined, cafes and restaurants, restaurants and takeaway food services not further defined, and pubs, taverns and bars, clubs (hospitality). Employment in casinos is reported as a single category.

Data source: ABS 2016 Census, Counting employed persons, place of work, 4 digit level by state and labour force status, available at: <https://auth.censusdata.abs.gov.au/webapi/jsf/login.xhtml>, accessed 24 July 2018, CIE.

See Appendix A for a full explanation of the methodology used to estimate employment.

³ The SA Centre for Economic Studies (2006), *The South Australian Gambling Industry – Phase 1: Profile of the Gambling Industry*, p 53.

⁴ by Professor Fabrizio Carmignani, Dean of Griffith Business School

⁵ See ABC Fact Check article, available at: <http://mobile.abc.net.au/news/2018-07-09/fact-check-does-million-dollars-pokies-create-three-jobs/9666538>.

3 Value added

Value added reflects the contribution of an industry to the economy. It is measured by gross outputs at basic prices minus intermediate consumption at purchaser's prices, or by adding wages, gross operating surplus and taxes minus subsidies on production.

EGMs provide value added to the economy in two broad ways:

- 1 manufacturing: the production (including exports) and maintenance of machines
- 2 recreational: use of machines in hotels, clubs and casinos (wagers) by customers.

We estimate value added to be \$8.3 billion in 2016-17 which is mainly attributable to the recreational use of EGMs in hotels and clubs across Australia. Estimating consumer surplus (or costs associated with problem gambling) is beyond the scope of this analysis.

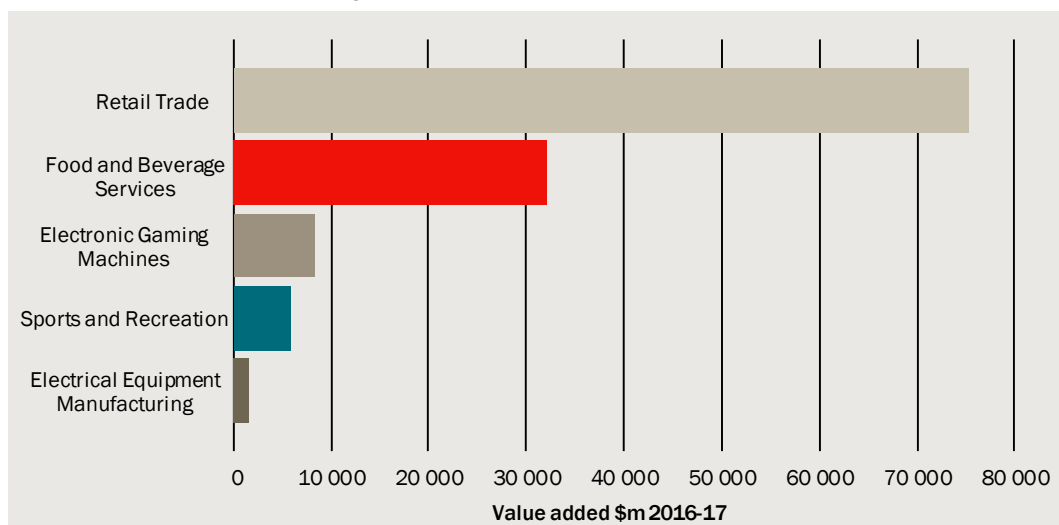
3.1 Value added

Sector	Value added
Millions (\$2017)	
Hotels & Clubs	7 097
Casinos	870
Manufacturing	356
Total	8 324

Source: CIE.

Chart 3.2 provides a comparison of value added across various sectors, including EGMs.

3.2 Value added – industry comparison



Data source: ABS (2018), Australian National Accounts Input/ Output 2015-16 Cat. 5209, Table 2, CIE.

4 Tax revenue

Tax revenue attributable to recreational use and production of EGMs in Australia is estimated to be \$5.5 billion in 2016-17 (see table 4.1). Around 70 per cent of tax revenue is generated from state-based gaming machine taxation.

4.1 Tax revenue, 2016-17

Total tax	Hotels and Clubs	Casinos	Manufacturing	Total
	\$m	\$m	\$m	\$m
2016-17	4 702	548	269	5 518

Source: CIE.

Tax revenue from EGMs is estimated by adding together various state and commonwealth taxes. Some smaller taxes were not quantified in this analysis due to data limitations, as identified in table 4.2.

4.2 Taxes estimated in this analysis

	Hotels	Clubs	Casinos	Manufacturing
State taxes				
Gaming tax	✓	✓	✓	NA
Problem gambling levies and community contributions	✗	✗	✗	NA
Payroll tax	✓	✓	✓	✓
Fringe benefits tax	✗	✗	✗	✗
Rates and land tax	✗	✗	✗	✗
Commonwealth taxes				
Company tax	✗	✗	✓	✓
GST	✓	✓	✓	✓

Source: CIE.

State taxes

Taxation revenue from state taxes in 2016-17 is estimated at \$3.94 billion. This includes the upper bound of GST as it does not deduct amounts that would be treated as GST credits for intermediate inputs used for production.

Gaming tax and licensing

Taxes are applied to player loss (that being, any wager that a customer has played into a machine minus mandatory player returns as legislated by each jurisdiction). EGM tax is typically applied as a flat rate, although some jurisdictions use an EGM-income based tax rate, (for example, NSW). Gaming tax received by state governments in 2016-17 totalled \$3.89 billion.

4.3 Tax revenue – gaming tax

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Australia
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Hotels and Clubs	33.44	1 553.86	12.96	683.77	264.87	28.55	977.10	0.00	3 554.55
Casinos	0.35	43.25	8.91	91.71	6.40	18.49	139.88	33.04	342.02
Manufacturing	-	-	-	-	-	-	-	-	-
Total	33.8	1 597.1	21.9	775.5	271.3	47.0	1 117.0	33.0	3 896.6

Source: CIE.

State and Territory Governments also charge licensing fees for EGMs based on the type of venue. Due to data limitations and inconsistencies in reporting across jurisdictions, licensing fees have not been included in gaming tax revenue.

Payroll tax

Payroll tax is paid by businesses that have a wage bill in excess of the payroll tax threshold. The rate and threshold are different in each jurisdiction (see table 4.4).

4.4 Payroll tax rates and thresholds, by jurisdiction

		ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Rate	%	6.85	5.45	5.50	4.75	4.95	6.10	4.85	5.50
Threshold	\$m	2.00	0.75	1.50	1.10	0.60	1.25	0.58	0.80

Source: ACT Revenue Office website, *Payroll tax*, available at: <https://www.revenue.act.gov.au/payroll-tax>, NSW Government Revenue website, *Rates and Thresholds*, available at: <https://www.revenue.nsw.gov.au/taxes/payroll/rates>, Business Queensland website, *Payroll tax thresholds*, available at: <https://www.business.qld.gov.au/running-business/employing/payroll-tax/calculating/thresholds>, Northern Territory Government Department of Finance website, *Payroll tax rates and thresholds*, available at: <https://treasury.nt.gov.au/df/revenue/payroll-tax/payroll-tax-rates-and-thresholds>, RevenueSA website, *Payroll tax*, available at: <https://www.revenuesa.sa.gov.au/taxes-and-duties/payroll-tax>, State Revenue Office of Tasmania, *Payroll tax rates and thresholds*, available at: <http://www.sro.tas.gov.au/payroll-tax/rates-and-thresholds>, State Revenue Office Victoria, *Historical rates of payroll tax*, available at: <https://www.sro.vic.gov.au/node/1439>, Government of Western Australia Department of Finance, *About payroll tax*, available at: https://www.finance.wa.gov.au/cms/State_Revenue/Payroll_Tax/About_Payroll_Tax.aspx#Thresholds, all websites accessed 28 June 2018.

Payroll tax in 2016-17 is estimated at \$46.73 million (see table 4.5).

4.5 Tax revenue – payroll tax

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Australia
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Hotels and Clubs	0.65	20.16	0.59	0.78	2.91	0.00	2.48	0.00	27.58
Casinos	0.03	0.51	0.36	1.77	0.33	0.57	0.80	0.82	5.19
Manufacturing	-	-	-	-	-	-	-	-	13.97
Total	0.68	20.66	0.95	2.55	3.24	0.57	3.29	0.82	46.73

Source: CIE.

Problem gambling levies and community contributions

Most jurisdictions have some type of arrangement for licensees to make mandatory (or voluntary) contributions to social programs, including problem gambling. For example, the Northern Territory Government's Community Benefit Fund receives 10 per cent of player loss from electronic gaming machines in casinos and licensed hotels. In the ACT, licensees are required to pay 0.75 per cent to the Problem Gambling Assistance Fund, and clubs are required to pay 8 per cent of net revenue as in-kind community contributions. In QLD, the Health Services Levy is payable by hotels based on their metered win and is used to fund Queensland's health services.

Gambling levies and community contributions have not been included in tax revenue in this section.

Commonwealth taxes

Taxation revenue from the commonwealth taxes of GST and company tax is estimated to be \$1.58 billion in 2016-17.

Goods and Services Tax

GST is payable on gaming revenue (the difference between amount played and the amount returned to player). According to the Productivity Commission's 2010 Report⁶ the introduction of the GST effectively reduced EGM tax rates as the states forego revenue to allow for the GST. There is no discussion in this paper on GST amounts

⁶ The Productivity Commission in their 2010 report notes that:

Gambling tax rates were effectively reduced from 1 July 2000 with the introduction of the GST. Under the Intergovernmental Agreement on the Reform of Commonwealth – State Financial Relations it was agreed that GST revenue would be distributed to the States and in return, the States would forego revenue and accept additional expenditure responsibilities. Essentially, the reduction in State gambling tax rates were to 'make room' for the Australian Government's 10 per cent GST on gambling.

Source: Productivity Commission (2010), p 10.6, available at:

<https://www.pc.gov.au/inquiries/completed/ageing/technicalpapers/technicalpaper10.pdf>

returned to the states. The GST figure reported is the upper bound as GST paid for intermediate inputs will be credited towards the entity paying the GST on gaming expenditure.

4.6 Tax revenue – GST

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Australia
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Hotels and Clubs	15.3	584.7	3.2	207.2	61.8	10.0	237.2	0.0	1 119.6
Casinos	0.3	17.3	5.9	36.7	5.9	8.4	42.9	26.6	144.1
Manufacturing	-	-	-	-	-	-	-	-	51.3
Total									1 315.0

Source: CIE.

Company tax

Company tax is estimated at \$260.2 million in 2016-17 for casinos and manufacturers in this analysis (see table 4.7). No estimate has been made for company tax paid for hotels and clubs based on data limitations.

4.7 Tax revenue – company tax

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Australia
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Hotels and Clubs	-	-	-	-	-	-	-	-	-
Casinos	-0.7 ^a	8.6	2.1	16.9	3.4	3.6	14.2	8.8	56.8
Manufacturing	-	-	-	-	-	-	-	-	203.3
Total									260.2

^a In the ACT, Canberra casino has no tax payable due to years of prior tax losses. The prima facie income tax amount on the loss from ordinary activities would have been \$2.494 million according to the Aquis Annual Report 2016-17, p 28.

Note: Company tax was not estimated for hotels and clubs due to data limitations.

Source: CIE.

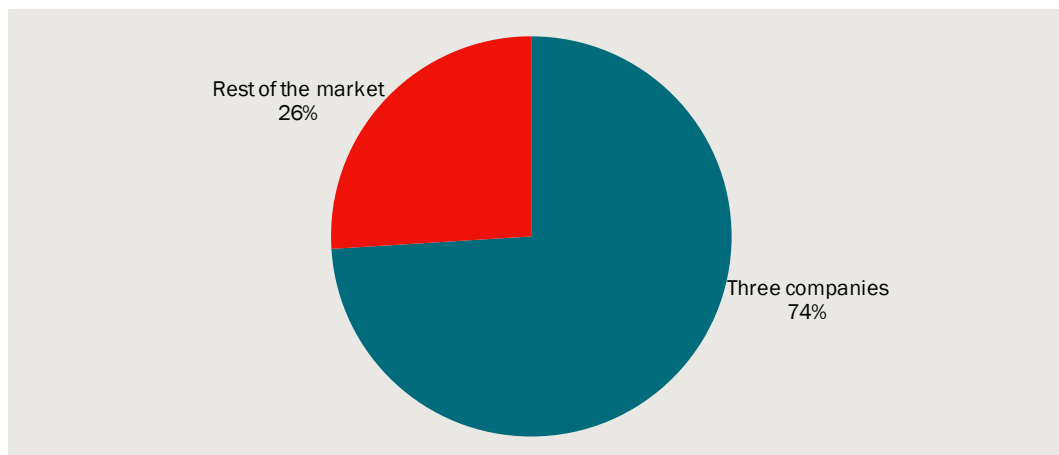
5 Exports

Exports for gaming include:

- the manufacture of machines for export
- the use of EGMs in hotels, clubs or casinos, by international travellers.

Exports attributable to the manufacture of machines is estimated to be \$199 million in 2016-17. Three companies are responsible for almost 75 per cent of exports.

5.1 Market share of EGM exports



Data source: CIE based on survey responses.

Exports attributable to international visitors using EGMs at casinos, clubs, and hotels is estimated at \$85 million in 2016-17.

A Methodology

Scope

The scope of this analysis was to estimate, using a combination of publicly available data and a survey of manufacturers, the value added, employment, tax revenue and exports attributable to electronic gaming machines in hotels, clubs and casinos.

All data reported from the manufacturer survey was treated as commercial in confidence, therefore results are reported in aggregate only.

The analysis did not extend to additional surveying of hotels, clubs or casinos, nor did it include any economywide economic modelling. Therefore, all results in this analysis are attributable to the direct effect of electronic gaming, and do not consider the broader flow on effects (or indirect impacts), which means that results should be interpreted as conservative.

Employment

Two key resources were used to estimate direct employment related to electronic gaming.

- 1 *The South Australian Gambling Industry* (2006) commissioned by the South Australian Independent Gambling Authority, prepared by the SA Centre for Economic Studies. This study concluded that the introduction of EGMs into South Australia resulted in an increase of 5000–6000 jobs although these jobs came at the expense of approximately 4000 jobs in the café and restaurant sector.
- 2 *Fourth Social and Economic Impact study of Gambling in Tasmania* (2017), Volume 1, commissioned by Tasmanian Government Department of Treasury and Finance, prepared by ACIL Allen Consulting. This study concluded gaming related employment in Tasmania was made up of 371 full time equivalents (FTE) in hotels and clubs⁷ and 547 FTEs in casino operation based on 33.6 hours per week (adjusting for four weeks of annual leave and 10 state wide public holidays).⁸

⁷ The roles of gaming employees in hotels and clubs include staffing EGM rooms, providing keno and offering sports betting services. Keno staff were estimated to be 54 FTEs and these staff have been removed from the calculations in our analysis.

⁸ The ACIL report defines one FTE as 38 hours of employment per week before any adjustments for leave and public holidays. See the report at: <http://www.treasury.tas.gov.au/Documents/Volume%201%20-%20Industry%20Trends%20and%20Impacts.PDF>, p 49.

From these studies, we were able to estimate the ratio between jobs and the number of EGMs, the number of venues, and introduce a scale up factor to recognise longer trading hours at the casino (relative to clubs and hotels) and higher numbers of EGMs at venues.

Tasmanian clubs and hotels are limited to 40 and 30 EGMs per venue (respectively), therefore we assume that the number of staff estimated in the report is appropriate for up to 100 EGMs, with additional staff required for every 100 EGMs thereafter. The following employment assumptions have been used (see table A.1).

A.1 Estimates of employment for EGMs in hotels, clubs and casinos

Variable	Value used	Explanation
Tasmania study		
Number of staff per venue (operators and management)	2.8	All venues that have EGMs will require some staff to hold an EGM licence. Essentially, there is a fixed cost for employment at venues with EGMs.
Number of staff by EGM (technicians)	0.0165	Technicians require licences to carry out activities related to EGMs. Therefore, their employment is influenced by the number of EGMs in the market.
CIE assumptions to add to Tasmanian study to recognise larger venues (more EGMs) and longer trading hours		
Scale up factor for every 100 additional EGMs	2.8	This assumes that staff can only be responsible for up to 100 EGMs at any given time.
Scale up factor for longer trading hours at casinos	2	The Tasmanian study estimated employment based on an industry average of opening hours of venues at 84 hours per week. Casinos operate 24 hours a day, 7 days a week, therefore their operating hours are double (168 hours per week). would be double this, given that they operate 24 hours a day.
Average of numbers in South Australian study and Tasmanian study		
Number of FTE per EGM	0.1241	This method of employment estimation was used as a comparator.

Source: CIE.

FTE estimates were then extrapolated to total head count based on the distribution of casual, part time and full time employees for pubs⁹, clubs¹⁰, and casinos¹¹.

Employment for manufacturing (FTE and head count) was provided in the responses to the CIE survey of EGM manufacturers.

⁹ Using employment ratios from ABS (2006), *Clubs, Pubs, Taverns and Bars 2004-05*, Cat. 8687.0.

¹⁰ Using employment ratios from the KPMG (2016) *2015 National Clubs Census*.

¹¹ Using employment ratios from the Allen Consulting Group (2009), *Casinos and the Australian Economy*, report to the Australasian Casino Association.

Value-add

Value added is the sum of gross operating surplus, compensation of employees and other taxes (for example, payroll tax) less subsidies on production.

Gross operating surplus can be thought of as the return to 'entrepreneurial activity' and is the residual of output (player expenditure and value of equipment manufactured) minus the various expenditure categories (gaming tax, wages, taxes on production, and intermediate inputs).

Intermediate inputs were derived (for clubs, pubs and casinos) using the ABS Australian National Accounts (Category 5209.0.55.001), which reports inputs by industry and final use category at basic prices (that is, without margins and GST).

The cost categories used for intermediate inputs include: electrical equipment manufacturing; electricity generation; road transport; internet service providers, telecommunication services, finance, insurance and superannuation funds, auxiliary finance and insurance services, computer systems design and related services, and public administration and regulatory services.

Value added for manufacturing was estimated using the results of the survey which provided domestic and international sales, GST, wages, taxes on production and intermediate inputs, with the residual being attributed to gross operating surplus.

The methodology to estimate payroll tax is in the following section (Tax Revenue).

Tax revenue

Gaming machine tax

EGM tax revenue for hotels and clubs is drawn from the Regulator's reporting/statistics, or the 2016-17 Annual Report of state/territory governments. This is for all jurisdictions except for the Northern Territory, where gambling tax revenue is reported as a lump sum. In this case, the amount attributable to hotels/clubs, versus the casino and other types of gambling (for example, lotto), have been estimated by apportioning the tax due for the various activities in previous years.

For all jurisdictions except New South Wales, South Australia and the Northern Territory, gaming tax revenue from casinos is reported in the 2016-17 Annual Report of the state/territory governments' gaming regulator. Estimates for New South Wales, South Australia and the Northern Territory were delineated from other gaming tax revenue by apportioning the total tax amount between the different types of gambling (casinos, lotto, keno, etc.) based on previous reporting to the Queensland Statistician's office.¹² The annual reports of casinos were used to cross check the revenue attributable to gaming activities, although this provided no insight into the composition of gaming

¹² Queensland Government Statistician's Office (2017), *Australian Gambling Statistics 1990-91 to 2015-16*, ed. 33, available at: <http://www.qgso.qld.gov.au/products/reports/aus-gambling-stats/aus-gambling-stats-33rd-edn.pdf>.

revenue (that is, table games versus electronic gaming and other games). This cross check could only be done for a selection of casinos due to data limitations. Specifically, three casinos are privately owned therefore are not required to release their financial reporting, while other casinos were reported as a group, such as the Star Entertainment Group, which has three casinos (Sydney, Gold Coast and Brisbane).

The next step was to estimate the contribution of electronic gaming tax revenue to total casino tax revenue. This was required for all jurisdictions, except for Tasmania, which is the only jurisdiction to report tax revenue from EGMs in casinos separately to other casino revenue. Although, casino EGM revenue includes EGM revenue from the 36 EGMs onboard the Spirit of Tasmania (and we did not remove this for the purposes of this analysis).

The approach to estimate the EGM contribution of casino revenue was based on EGM player expenditure data at casinos in studies for South Australia¹³, Tasmania¹⁴, Western Australia¹⁵, Queensland¹⁶ and the Northern Territory¹⁷. The jurisdictional studies reported (or enabled us to calculate) average player expenditure per machine. This was then indexed to \$2016-17 (where necessary) using ABS CPI and compared to average player expenditure per machine for clubs and hotels to find the casino to hotel/club ratio. Based on these studies, consumers spent 65 per cent more on EGMs at the casino on average, compared to clubs and hotels¹⁸. This ratio was used to estimate the average player expenditure in casinos for EGMs, for jurisdictions where no reliable information could be sourced (such as in the ACT, New South Wales and Victoria). Where actual amounts were reported in the studies/annual reports, those values have been retained for the analysis.

EGM tax at casinos was then estimated by applying the EGM tax rate, by jurisdiction, to estimated EGM player expenditure at casinos. EGM tax rates at casinos are typically different to those at clubs and hotels. The following EGM tax rates were applied (see table A.2).

13 The SA Centre for Economic Studies (2006), *The South Australian Gambling Industry Final Report*, Commissioned by the South Australian Independent Gambling Authority, p 33.

14 Tasmanian Office of Liquor and Gaming (2017), *Annual Report 2016-17*, p 10.

15 Gaming and Wagering Commission of Western Australia (2017), *2016-17 Annual Report*, p 13.

16 Synergies Economic Consulting (2016), *Impact of new casinos on Queensland community clubs*, p 32.

17 Young, M., Tyler, W., Lamb, D., Stevens, M. (2008) *Expenditure on electronic gaming machines in the northern territory: a venues-based analysis*, School for Social and Policy Research Charles Darwin University, Commissioned by the Community Benefit Committee, Department of Justice, Northern Territory Government, p 14.

18 Whilst the South Australian study was reviewed to estimate the ratio, the South Australian study was from 2004 and was dropped from the average calculations as it was considered to be too old relative to the other studies.

A.2 EGM tax rate for casinos

ACT	NSW	NT	QLD	SA	TAS	VIC	WA
10.90%	25%	15%	25%	11%	25.88%	32.57%	12.42%

Note: In Queensland, the tax rate on EGMs in Townsville and Cairns is 20 per cent, and in Brisbane and the Gold Coast, 30 per cent. The 25 per cent was used as the average rate. In NSW, there is a progressive tax rate from 16 per cent to 38 per cent. A flat rate of 25 per cent has been used in the analysis.

Source: NSW Government (2018), *Interstate Comparison of Taxes 2017-18*, Research and Information Paper, p 34-35, CIE.

Payroll tax

Payroll tax is calculated using employment estimates, average wages in the industry and estimating the number of businesses that meet the wage threshold for payroll tax liability.

All jurisdictions report the number of clubs and hotels where gaming machines are located, of which there are currently 5038 venues.

The ABS *Counts of Australian Businesses* (Category 8165.0) was used to estimate the number of clubs and hotels by size (1–19 employees, 20–199 employees and 200 or more employees). This was done by distributing the number of clubs and hotels with gaming machines consistently with the distribution of businesses in Australia (in terms of number of employees).

From this, the number of gaming employees at each venue was estimated using the proportion of licenced gaming employees.¹⁹ The number of venues that are estimated to meet the threshold by jurisdiction is reported below (see table A.3).

A.3 Estimated number of clubs and hotels with EGMs that will have a payroll tax liability

	ACT	NSW	NT	Qld	SA	TAS	VIC	WA	Australia
1–19 Employees	-	-	-	-	-	-	-	-	0
20–199 Employees	-	751	-	-	149	-	130	-	1030
200+ Employees	4	34	4	7	1	0	1	0	50

Source: ABS (2018), *Count of Australian Businesses*, Cat. 8165.0, NSW Department of Industry Liquor and Gaming, *Gaming Machine Data Reports*, available at <https://www.liquorandgaming.nsw.gov.au/Pages/gaming/community-involvement/Gaming-machine-data-reports.aspx>, Queensland Government, *Gaming Statistics*, available at: <https://secure.olgr.qld.gov.au/dcm/Gaming>, ACT Department of Gambling and Racing (2018), *Trading Scheme Information*, available at:

https://www.gamblingandracing.act.gov.au/__data/assets/pdf_file/0018/1212570/Trading-Scheme-Information-as-at-31-May-2018.pdf, Victorian Commission for Gambling and Liquor Regulation, *Venues Details*, available at:

<https://www.vcgr.vic.gov.au/CA256F800017E8D4/VCGLR/DBB69322DE84ADA6CA257B320077C8D3?OpenDocument>, Department of Attorney-General and Justice Northern Territory Government, email communication with CIE, 27 June 2018, Government of South Australia Consumer and Business Services (2017), *Gaming Machine Licence Statistics Quarter 1 2017/2018*, available at: <https://www.cbs.sa.gov.au/assets/LAR/liquor-gambling/Statistics-2017-2018/Quarterly-Machine-Licence-Statistics-2017-2018-Q1.pdf>, ACIL Allen Consulting (2018) *Fourth Social and Economic Impact Study of gambling In Tasmania (2017)*, Commissioned by the Tasmanian Government Department of Treasury and Finance, p V, available at:

<http://www.treasury.tas.gov.au/Documents/Volume%201%20-%20Industry%20Trends%20and%20Impacts.PDF>, all websites were accessed on 10 July 2018, CIE.

¹⁹ This was done using ABS (2006), *Clubs, Pubs, Taverns and Bars 2004-05*, Cat. 8687.0.

To estimate the number of employees that result in a payroll tax liability, a mid-point for the businesses (in terms of the number of employees) was required. Table A.4 provides the mid-point used for this analysis.

A.4 CIE assumptions for the number of employees per business

Variable	Value used	Explanation
Number of employees in business with 1–19 people	15	CIE assumption used to estimate the quantity of venues that are eligible for payroll tax
Number of employees in business with 20–199 people	25	CIE assumption used to estimate the quantity of venues that are eligible for payroll tax
Number of employees in business with 200+ people	200	CIE assumption used to estimate the quantity of venues that are eligible for payroll tax

Source: CIE.

From this, the wage bill was estimated by using industry wages (see table A.5) to determine eligibility based on the payroll tax threshold for each jurisdiction.

A.5 Wage assumptions used to estimate payroll tax liability

Variable	Value used	Explanation
Average wage — hotels and clubs	\$34 491	The average wage is the average cost of all employees, <i>regardless of tenure</i> . It was drawn from industry specific data (the 2015 Club Census) that reported the total wage bill and number of employees in clubs, in 2015. The 2015 wage was converted to 2017 dollars using the ABS wage price index. We have applied this wage to hotels also. This wage estimate is also consistent with the average wage of employees in the Accommodation and the Arts and Recreations sectors (ABS <i>Employee Earnings and Hours, Australia, 2016</i> Category 6306).
Average wage — casinos	\$53 587	This wage was drawn from the employment cost of Skycity casinos' 2016-17 Annual Report. It has been applied to all casino employees, regardless of tenure.
Average wage — manufacturing	\$124 238	This wage was provided through the survey distributed to manufacturers. It is used for manufacturing employees regardless of tenure.

Source: ABS (2018) *Wage Price Index Australia*, Cat. 6345.0, KPMG (2016) *2015 National Clubs Census*, available at: <https://portal.clubsns.w.com.au//docs/default-source/default-document-library/policy/2015-national-clubs-census-report--final.pdf?sfvrsn=2&cachebreak=1532498488>, accessed 10 June 2018, Skycity Entertainment Group, *Annual Report year ended 30 June 2017*, available at: https://www.skycityentertainmentgroup.com/media/1764/skycity-annual-report-2017_web.pdf, ABS (2017), *Employee Earnings and Hours, Australia, 2016*, Cat. 6306, available at: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6306.0May%202016?OpenDocument>, accessed 09 June 2018, CIE survey to manufacturers results, confidential dataset, CIE.

This equates to 14 978 employees at clubs and hotels being subjected to payroll tax based on a wage liability of \$516.6 million (table A.6).

Given the size of casinos, it was assumed that all venues pay payroll tax. This means that casinos are liable for payroll tax for 1389 employees based on a wage liability of \$101.0 million (table A.6).

For manufacturing, all firms that responded to the survey have payroll tax liability (table A.6).

A.6 Payroll tax outcomes

	Hotels and Clubs	Casinos	Manufacturing
	\$m	\$m	\$m
Payroll tax wage bill	516.6	101.0	254.9
Payroll tax	27.6	5.2	14.0
Number of employees for payroll tax liability	14 977.6	1884.0	2 052.0

Source: CIE.

Goods and services tax

Goods and services tax is applied at 10 per cent of player loss. The GST liability will be reduced by the value of GST credits obtained from GST amounts paid on intermediate inputs.

Company tax

Larger organisations, casinos in this case, have the ability to offset profits in one arm of their business against losses in another. For example, losses in the accommodation segment of the business can be offset by gains in the gaming segment, therefore the overall tax burden is lower. Given this, we have calculated the 'effective tax rate' and applied this to gaming revenue to estimate company tax attributable to electronic gaming. This information was sourced from the financial data in the annual reports.

Company tax amounts for manufacturing were reported in the CIE survey released to manufacturers.

Due to data limitations, no attempt has been made to estimate company tax for clubs and hotels.

Exports

Exports of electronic gaming machines were taken directly from the CIE survey to manufactures. This was assumed to cover 94 per cent of the market²⁰ therefore results were grossed up by 6 per cent to estimate the missing market.

²⁰ One per cent of the missing market is attributable to the respondent who provided a partial response to the survey, and the remaining 5 per cent is attributable to non-responders.

Exports of electronic gaming services attributable to international tourists were derived using data from Austrade on expenditure by international tourists on gambling (see table A.7). Gaming expenditure on EGMs is approximately 57.3 per cent of all gaming expenditure in 2016-17. Assuming that international tourists allocate their gaming expenditure in the same manner as domestic consumers (that is, the split between EGMs and other games), this proportion was applied to the amount spent by international visitors on gambling. Consumer behaviour studies of international tourists were not examined therefore this estimate should be taken with caution. Whilst imperfect, it provides an indicative estimate of international tourist spending on EGMs.

A.7 Total trip expenditure by item of expenditure for international visitors to Australis, annual estimates, year ended June 2017

	CHINA	UNITED STATES OF AMERICA	UNITED KINGDOM	NEW ZEALAND	JAPAN	OTHER	TOTAL
	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Package tour	1 333	631	425	193	517	1 478	4 577
Pre-paid international airfares	811	1 345	1 053	684	307	3 893	8 093
Organised tours	121	127	112	52	58	345	814
International airfares bought in Australia	171	57	74	32	np	366	722
Domestic airfares	72	48	57	np	np	209	412
Taxi and local public transport	152	66	87	64	34	500	902
Rental vehicles	42	53	59	63	np	298	526
Petrol and oil for self-drive cars or other vehicles	57	27	43	34	np	255	421
Shopping - items for use in Australia	349	48	99	88	43	628	1 254
Shopping - items to take home	861	115	93	266	92	1 042	2 470
Total shopping	1 210	163	192	353	136	1 670	3 724
Food, drink and accommodation	2 602	967	1 230	858	425	6 258	12 340
Gambling	39	np	np	np	np	70	148
Entertainment	109	45	62	53	np	233	515
Motor vehicles	280	np	41	73	np	333	754
Education fees	2 546	157	np	94	176	2 761	5 755
Phone, internet, fax and/or postage	78	np	26	np	np	196	346

	CHINA	UNITED STATES OF AMERICA	UNITED KINGDOM	NEW ZEALAND	JAPAN	OTHER	TOTAL
	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Conference fees	np	np	np	38	np	56	128
Other	142	31	38	30	np	221	467
Total	9 780	3 776	3 531	2 666	1 752	19 139	40 644

Source: Austrade (2018), *International visitor survey results*, <https://www.ra.gov.au/research/view-all-publications/all-publications/international-visitor-survey-results/ivs-june-2017>, accessed 17 June 2018.

B Survey to manufacturers

Introduction

The survey was distributed to the following members of GTA on 10 April 2018:

- Scientific Games
- Aristocrat
- AGSlots
- Aruzegaming
- IGT
- Konami Gaming
- Interblock gaming
- Tabcorp
- Independent gaming
- Atlas gaming
- Wymac
- Banktech
- Paltronics
- Jcmglobal.

The CIE received 8 responses to the survey, one of which was a partial response. We estimated that the responses were responsible for 94 per cent of the market, and grossed up the results to make up for the missing six per cent.²¹

The survey asked the following questions in respect of each company's Australian operations for electronic gaming machines for the financial year ending June 2017.

Employment

These questions are designed to capture information on employment related to EGMs. This could include those employed to repair, assemble, service, sell or manufacture EGMs, as well as staff who support these activities such as management, sales, finance, administration, etc. If employees work across multiple areas, please attempt to apportion the time spent on EGM activities in your responses.

- 1 How many staff are employed *full time* in your EGM activities as at June 2017, in Australia?

²¹ 94 per cent was chosen as 1 per cent was allocated to a respondent who gave a partial response, and the non-responders were estimated to make up 5 per cent of the market.

- 2 How many staff are employed *part-time* in your EGM activities as at June 2017, in Australia?
- 3 How many staff are employed on a *casual basis* in your EGM activities as at June 2017, in Australia?
- 4 Based on your answers to questions 1-3, can you estimate how many staff you employ on a *full-time equivalent* (FTE) basis in your gaming activities as at June 2017, in Australia?

Compensation of employees

These questions relate to the FTE that you reported in the previous section.

- 5 What is your overall employment-related expense for EGM activities in Australia? This includes base salary and wages, leave payments (annual, sick, etc.), superannuation, workers' compensation, and other direct costs such as overtime, allowances, leave loading, fringe benefits (such as car loans, car parking, child care, stock options, etc.) and fringe benefit tax.
- 6 What is your total *payroll tax* for EGM related employment?

Output

These questions relate to sales of goods (e.g. machines or parts of) and services (e.g. servicing or repairs) related to EGMs.

- 7 What is the value of your total sales within Australia for 2016/17, excluding GST (e.g. machines assembled in Australia and sold in Australia).
- 8 What is the value of your total *international* sales for 2016/17? That being, the value of sales from your Australian activities to other parts of the world.

Intermediate Inputs

This section refers to the consumption of goods and services used in the (Australian) production process, including raw materials, maintenance of capital equipment, insurance, licence fees, electricity, and ancillary activities (purchasing, sales, marketing, accounting, data processing, transportation, storage and security) for your EGM related activities. Do not include depreciation or capital expenditure.

- 9 What is the cost of your *intermediate inputs* used in your business related to EGMs for 2016/17?

Profit

- 10 What is your earnings before interest, tax, depreciation and amortisation (EBITDA) related to your Australian EGM activities (sales revenue less all operating costs) for 2016/17? Do not include depreciation or interest expenses as an operating cost.

Taxation

- 11 What is your company tax paid in relation to your Australian EGM activities for 2016/17? Please apportion company tax for your business as a whole to EGM activities only on the basis of share of operating profit.

Investment

- 12 What is your capital expenditure (acquisition of new tangible assets (either on own account or under a finance lease), major improvements, alterations and additions) related to your Australian EGM activities for 2016/17?



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