

The Regional Impacts of EGMs

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Study Outline

While many profess to know, very little is known about the impact of EGMs on regional economies. For this reason an attempt was made to better understand this phenomenon through the use of a regional input-output model. This approach was selected because of its usefulness in being able to map patterns of transactional flows and to gauge the impact of an industry in terms of a series of multipliers for output, income and employment.

The gaming industry in the Greater Bendigo region has an estimated total revenue (losses to gamblers) of \$32.35 million per annum. the sector employs an estimated 110 equivalent full-time workers comprising 45 full-time and 150 part-time workers.

A “top down” approach was used to construct a regional model beginning with national tables and adapting these to the region via sectoral employment figures. It was recognised that multipliers extracted from such a model would most likely overstate rather than understate the overall impact of this industry.

To obtain details of total revenue and the allocation of expenditure on inputs, a survey of gaming establishments was distributed. Of the nine establishments operating at that time only three responded with many expressing concern about the release of such information despite the assurance of confidentiality regarding individual establishments. In view of the fairly standard expenditures in the industry, it was felt that the sample size was adequate in unearthing expenditure patterns. Similarly there was a very close relationship amongst the three firms regarding revenue earned per gaming machine which, in turn, was close to state averages.

Expenditures were reduced to a per machine level, averaged for hotels and clubs, and multiplied by the present number of machines – 507. Venues had been asked to estimate the proportion of business going to local player as opposed to visitors and based on this information, 90% of revenue was allocated to local consumption. Information was also obtained on the number of full and part-time employees and equivalent full time numbers. These figures were also reduced to employment per machine, averaged for hotels and clubs and multiplied by the total number of machines in the region.

Figures for revenue (local and visitor), expenditure per industry sector, employment, taxes, imports and employment were then fed into the 17-sector regional model.

Results

In examining patterns of transactional flows via direct coefficients, the most prominent observation was on just how little the gaming industry impacted on other sectors. Regional imports accounted for sixty-seven percent of total inputs and payments for the gaming sector. Putting this in another way the backward linkages with the regional economy could be described as weak with a third of revenue going to the owners of the gaming machines (Tabcorp and Tattersalls) and another third payable to the State government. Given these large leakages, relatively little of the total revenue is left for local expenditure. The same can be said in terms of forward linkages where the output of this industry is not really used as an input for other regional industries. Similarly, the employment coefficient for gaming was lower than that for any of the other seventeen sectors.

In terms of revenue earned (gross output) the gaming sector accounts for 1.1% or \$32.35million of regional output. Yet it only attracts 0.5% of exports, generates 0.3% of wages and salaries, only 0.5% of value added and a disproportionate 5.1% of regional imports.

Following the above, it is not surprising to find that multipliers for output, income and employment for the gaming sector are, in general, lower than those for most other sectors. These are set out in Figures 1, 2, and 3. The Type I multiplier for output suggests that for every \$1 of increased output in gaming, only \$0.10 will be generated in direct and indirect industry support) effects. Table 1 shows that a figure of 1.1 is equal lowest in the sectoral output multipliers which is again emphasises the weak linkages (forward and backward) with the rest of the region. When households are factored into the equation, income earned is assumed to follow previous spending patterns and generate a further final demand, namely induced spending. This is reflected in the Type II multiplier results. Induced spending in this sector is the lowest for any other sector of the regional economy, again reflecting weak linkages and the large level of leakages out of the region.

Income multipliers measure the effect of output changes on household income. The Type I and Type II income multipliers for gaming fare a little better than output and rank tenth out of a total of 18 sectors. These are set out in Table 2. Higher than regular levels of sales per worker (productivity) are not enough to overcome the low level of flow-on effects of this sector. The Type I employment multiplier ranks fourteenth out of the total of seventeen) while the Type II employment multiplier is second lowest.

From the above we can conclude that if money spent on EGM's was spent in any other sector of the region, then output, income and employment would be better off. Gaming, as an industry is in effect having a negative regional economic impact by redirecting economic activity out of the region.

Careful thought will need to be given to any further expansion in the number of EGM's in regional economies who in turn, should be given control in this matter. If their use is to continue at present levels, thought needs to be given to re-define the present sharing of revenue (e.g. part of the taxes going to local government, Community Support Funds remaining in the region, higher margins left with community-run clubs).

Ian Pinge is a lecturer in Economics at La Trobe University, Bendigo. He is currently writing up this study with the intention of publication in an international or national journal.

An earlier study: Pinge Ian, *The Impact of Electronic Gaming Machines on Retail Trade in Victoria – the first four years, 1992-96*, has been recently accepted for delivery and inclusion in the refereed papers section of the CAUTHE 2000 national conference to be held in February, 2000. (Council of Australian University Tourism and Hospitality Education).

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TOTAL OUTPUT MULTIPLIERS
TOTAL

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	ELAST	TYPE I	TYPE II
Gaming	1.0	0.1	0.0	0.2	1.3	0.1	1.1	1.3
1.AgForF	1.0	0.3	0.1	0.3	1.8	0.5	1.5	1.8
2.Mining	1.0	0.3	0.1	0.4	1.8	1.2	1.5	1.8
3.Manufa	1.0	0.4	0.2	0.5	2.1	0.6	1.6	2.1
4.ElecGW	1.0	0.1	0.0	0.3	1.5	0.2	1.2	1.5
5.Constr	1.0	0.4	0.2	0.6	2.2	2.1	1.6	2.2
6.WSaleT	1.0	0.3	0.1	0.6	2.1	0.7	1.5	2.1
7.Retail	1.0	0.3	0.1	0.6	2.1	0.9	1.5	2.1
8.AcmC&R	1.0	0.4	0.2	0.7	2.3	0.5	1.6	2.3
9.Tran&S	1.0	0.2	0.1	0.5	1.8	0.7	1.3	1.8
10.ComSer	1.0	0.2	0.1	0.6	1.9	0.6	1.3	1.9
11.Fin&In	1.0	0.2	0.1	0.6	1.9	0.2	1.3	1.9
12.Prop&B	1.0	0.3	0.1	0.4	1.8	0.2	1.4	1.8
13.GovAdD	1.0	0.4	0.2	0.8	2.4	2.0	1.6	2.4
14.Educat	1.0	0.1	0.0	1.3	2.4	2.0	1.1	2.4
15.Hlth&C	1.0	0.2	0.1	1.0	2.3	1.4	1.3	2.3
16.Cul&Re	1.0	0.4	0.2	0.6	2.1	0.8	1.5	2.1
17.Per&Ot	1.0	0.3	0.1	0.9	2.3	1.3	1.4	2.3

TOTAL INCOME MULTIPLIERS
TOTAL

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	ELAST	TYPE I	TYPE II
Gaming	0.1	0.0	0.0	0.0	0.2	0.2	1.3	1.8
1. AgForF	0.1	0.1	0.0	0.1	0.3	0.7	1.9	2.7
2. Mining	0.1	0.1	0.0	0.1	0.3	1.6	1.7	2.4
3. Manufa	0.2	0.1	0.0	0.1	0.4	0.7	1.7	2.4
4. ElecGW	0.2	0.0	0.0	0.1	0.3	0.2	1.2	1.7
5. Constr	0.2	0.1	0.0	0.1	0.5	2.1	1.5	2.1
6. WSaleT	0.3	0.1	0.0	0.2	0.5	0.7	1.4	2.0
7. Retail	0.3	0.1	0.0	0.2	0.6	0.8	1.4	1.9
8. AcnC&R	0.3	0.1	0.0	0.2	0.6	0.4	1.3	1.9
9. Tran&S	0.3	0.1	0.0	0.1	0.5	0.7	1.3	1.8
10. ComSer	0.3	0.1	0.0	0.1	0.5	0.6	1.3	1.8
11. Fin&In	0.3	0.1	0.0	0.2	0.5	0.2	1.2	1.7
12. Prop&B	0.2	0.1	0.0	0.1	0.4	0.2	1.5	2.1
13. GovAdD	0.4	0.1	0.0	0.2	0.7	1.7	1.4	1.9
14. Educat	0.8	0.0	0.0	0.4	1.2	1.2	1.0	1.5
15. Hlth&C	0.5	0.1	0.0	0.3	0.9	1.0	1.1	1.6
16. Cul&Re	0.3	0.1	0.0	0.2	0.5	0.8	1.5	2.1
17. Per&Ot	0.5	0.1	0.0	0.2	0.8	0.9	1.2	1.7

TOTAL EMPLOYMENT MULTIPLIERS
TOTAL

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	ELAST	TYPE I	TYPE II
Gaming	0.0	0.0	0.0	0.0	0.0	0.2	1.2	1.6
1. AgForF	0.0	0.0	0.0	0.0	0.0	0.6	1.6	2.1
2. Mining	0.0	0.0	0.0	0.0	0.0	1.4	1.5	2.1
3. Manufa	0.0	0.0	0.0	0.0	0.0	0.7	1.6	2.2
4. ElecGW	0.0	0.0	0.0	0.0	0.0	0.2	1.3	1.9
5. Constr	0.0	0.0	0.0	0.0	0.0	2.4	1.7	2.5
6. WSaleT	0.0	0.0	0.0	0.0	0.0	0.6	1.3	1.8
7. Retail	0.0	0.0	0.0	0.0	0.0	0.7	1.2	1.6
8. AcnC&R	0.0	0.0	0.0	0.0	0.0	0.4	1.3	1.8
9. Tran&S	0.0	0.0	0.0	0.0	0.0	0.8	1.4	2.0
10. ComSer	0.0	0.0	0.0	0.0	0.0	0.7	1.3	2.0
11. Fin&In	0.0	0.0	0.0	0.0	0.0	0.2	1.3	2.0
12. Prop&B	0.0	0.0	0.0	0.0	0.0	0.2	1.6	2.4
13. GovAdd	0.0	0.0	0.0	0.0	0.0	1.8	1.4	2.1
14. Educat	0.0	0.0	0.0	0.0	0.0	1.3	1.0	1.6
15. Hlth&C	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.7
16. Cul&Re	0.0	0.0	0.0	0.0	0.0	0.8	1.5	2.2
17. Per&Ot	0.0	0.0	0.0	0.0	0.0	1.0	1.2	1.7

TOTAL VALUE ADDED MULTIPLIERS
TOTAL

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	ELAST	TYPE I	TYPE II
Gaming	0.3	0.0	0.0	0.1	0.4	0.2	1.2	1.6
1. AgForF	0.5	0.2	0.1	0.2	1.0	0.5	1.5	1.8
2. Mining	0.4	0.2	0.1	0.2	0.9	1.4	1.6	2.1
3. Manufa	0.3	0.2	0.1	0.3	0.9	0.8	1.9	2.6
4. ElecGW	0.7	0.1	0.0	0.2	1.0	0.1	1.1	1.4
5. Constr	0.5	0.2	0.1	0.3	1.1	2.2	1.6	2.2
6. WSaleT	0.6	0.2	0.1	0.3	1.2	0.8	1.5	2.1
7. Retail	0.6	0.2	0.1	0.4	1.2	0.9	1.5	2.1
8. AcnC&R	0.5	0.2	0.1	0.4	1.2	0.5	1.6	2.5
9. Tran&S	0.6	0.1	0.1	0.3	1.1	0.7	1.3	1.7
10. ComSer	0.7	0.1	0.1	0.3	1.2	0.6	1.3	1.7
11. Fin&In	0.7	0.1	0.0	0.3	1.3	0.2	1.2	1.7
12. Prop&B	0.6	0.2	0.1	0.2	1.1	0.2	1.3	1.7
13. GovAdD	0.4	0.2	0.1	0.5	1.2	2.5	1.8	2.9
14. Educat	0.9	0.0	0.0	0.8	1.7	1.6	1.1	1.9
15. Hlth&C	0.7	0.1	0.0	0.6	1.4	1.3	1.3	2.1
16. Cul&Re	0.5	0.2	0.1	0.3	1.1	0.8	1.6	2.3
17. Per&Ot	0.6	0.2	0.1	0.5	1.3	1.2	1.4	2.2

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SECTORAL DISTRIBUTION
TOTAL

SECTOR	AMOUNT	%	WAGES AND SALARIES (\$T)
Gaming	2875.0	0.3	■
1. AgForF	9759.3	1.2	■
2. Mining	2375.8	0.3	■
3. Manufa	103694.1	12.3	■
4. ElecGW	10598.1	1.3	■
5. Constr	65728.9	7.8	■
6. WSaleT	31583.9	3.7	■
7. Retail	107332.3	12.7	■
8. AcmC&R	29380.7	3.5	■
9. Tran&S	26259.6	3.1	■
10. ComSer	28143.6	3.3	■
11. Fin&In	37966.7	4.5	■
12. Prop&B	74985.0	8.9	■
13. GovAdD	33815.7	4.0	■
14. Educat	101427.1	12.0	■
15. Hlth&C	120517.2	14.3	■
16. Cul&Re	20810.5	2.5	■
17. Per&Ot	36741.5	4.4	■
TOTAL	843995.0	100.0	
AVERAGE	46888.6		
MAXIMUM	120517.2		
MINIMUM	2375.8		
STD DEV	38642.9		

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SECTORAL DISTRIBUTION
TOTAL

SECTOR	AMOUNT	%	EMPLOYMENT (U)
Gaming	110.0	0.4	
1.AgForF	522.0	2.0	
2.Mining	98.0	0.4	
3.Manufa	3896.0	14.6	
4.ElecGW	278.0	1.0	
5.Constr	1699.0	6.4	
6.WSaleT	1266.0	4.8	
7.Retail	4965.0	18.7	
8.AcmC&R	1154.0	4.3	
9.Tran&S	738.0	2.8	
10.ComSer	737.0	2.8	
11.Fin&In	892.0	3.4	
12.Prop&B	1758.0	6.6	
13.GovAdD	928.0	3.5	
14.Educat	2426.0	9.1	
15.Hlth&C	3360.0	12.6	
16.Cul&Re	619.0	2.3	
17.Per&Ot	1149.0	4.3	
TOTAL	26595.0	100.0	
AVERAGE	1477.5		
MAXIMUM	4965.0		
MINIMUM	98.0		
STD DEV	1360.0		

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FINAL DEMAND OUTPUT EFFECTS (\$t)
TOTAL

SECTOR	F.DEMAND	INDUST	CONS'M	TOTAL	(%)	FLOW-ON	(%)
Gaming	32000.0	0.0	137.1	32137.1	78.6	137.1	1.5
1.AgForF	0.0	17.2	148.9	166.1	0.4	166.1	1.9
2.Mining	0.0	1.8	7.8	9.7	0.0	9.7	0.1
3.Manufa	0.0	184.6	1057.0	1241.6	3.0	1241.6	13.9
4.ElecGW	0.0	99.1	159.8	258.9	0.6	258.9	2.9
5.Constr	0.0	121.6	23.7	145.3	0.4	145.3	1.6
6.WSaleT	0.0	349.0	191.7	540.8	1.3	540.8	6.1
7.Retail	0.0	239.2	893.9	1133.2	2.8	1133.2	12.7
8.AcmC&R	0.0	12.2	287.0	299.2	0.7	299.2	3.4
9.Tran&S	0.0	36.4	176.7	213.2	0.5	213.2	2.4
10.ComSer	0.0	80.2	192.1	272.2	0.7	272.2	3.1
11.Fin&In	0.0	194.9	308.4	503.3	1.2	503.3	5.7
12.Prop&B	0.0	1805.7	1249.8	3055.4	7.5	3055.4	34.3
13.GovAdD	0.0	16.4	17.0	33.4	0.1	33.4	0.4
14.Educat	0.0	14.7	101.7	116.4	0.3	116.4	1.3
15.Hlth&C	0.0	37.7	375.1	412.8	1.0	412.8	4.6
16.Cul&Re	0.0	27.1	198.6	225.7	0.6	225.7	2.5
17.Per&Ot	0.0	12.2	131.0	143.2	0.3	143.2	1.6
TOTAL	32000.0	3250.3	5657.2	40907.5	100.0	8907.5	100.0
MULTIPLIER	1.0	0.1	0.2	1.3		0.3	

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FINAL DEMAND INCOME EFFECTS (\$t)
TOTAL

SECTOR	F.DEMAND	INDUST	CONS'M	TOTAL	(%)	FLOW-ON	(%)
Gaming	2843.9	0.0	12.2	2856.1	56.6	12.2	0.6
1.AgForF	0.0	1.8	15.5	17.3	0.3	17.3	0.8
2.Mining	0.0	0.3	1.1	1.4	0.0	1.4	0.1
3.Manufa	0.0	31.9	182.7	214.6	4.3	214.6	9.8
4.ElecGW	0.0	17.1	27.5	44.5	0.9	44.5	2.0
5.Constr	0.0	28.1	5.5	33.6	0.7	33.6	1.5
6.WSaleT	0.0	94.2	51.7	145.9	2.9	145.9	6.6
7.Retail	0.0	70.1	262.0	332.1	6.6	332.1	15.1
8.AcmC&R	0.0	4.2	97.7	101.8	2.0	101.8	4.6
9.Tran&S	0.0	9.1	44.2	53.3	1.1	53.3	2.4
10.ComSer	0.0	22.0	52.7	74.7	1.5	74.7	3.4
11.Fin&In	0.0	60.3	95.4	155.7	3.1	155.7	7.1
12.Prop&B	0.0	326.9	226.3	553.2	11.0	553.2	25.1
13.GovAdD	0.0	6.1	6.3	12.4	0.2	12.4	0.6
14.Educat	0.0	12.0	83.2	95.2	1.9	95.2	4.3
15.Hlth&C	0.0	20.7	205.8	226.5	4.5	226.5	10.3
16.Cul&Re	0.0	6.9	50.6	57.5	1.1	57.5	2.6
17.Per&Ot	0.0	5.8	62.2	68.0	1.3	68.0	3.1
TOTAL	2843.9	717.5	1482.4	5043.8	100.0	2199.9	100.0
MULTIPLIER	1.0	0.3	0.5	1.8		0.8	

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FINAL DEMAND VALUE ADDED EFFECTS (\$t)
TOTAL

SECTOR	F.DEMAND	INDUST	CONS'M	TOTAL	(%)	FLOW-ON	(%)
Gaming	8211.2	0.0	35.2	8246.4	61.6	35.2	0.7
1.AgForF	0.0	9.2	79.3	88.5	0.7	88.5	1.7
2.Mining	0.0	0.8	3.2	4.0	0.0	4.0	0.1
3.Manufa	0.0	64.3	368.1	432.3	3.2	432.3	8.3
4.ElecGW	0.0	72.2	116.5	188.7	1.4	188.7	3.6
5.Constr	0.0	58.8	11.5	70.3	0.5	70.3	1.4
6.WSaleT	0.0	192.0	105.5	297.4	2.2	297.4	5.7
7.Retail	0.0	137.0	511.8	648.7	4.8	648.7	12.5
8.AcmC&R	0.0	5.9	139.3	145.2	1.1	145.2	2.8
9.Tran&S	0.0	23.2	112.5	135.7	1.0	135.7	2.6
10.ComSer	0.0	53.8	128.9	182.7	1.4	182.7	3.5
11.Fin&In	0.0	144.4	228.4	372.7	2.8	372.7	7.2
12.Prop&B	0.0	1169.1	809.2	1978.2	14.8	1978.2	38.2
13.GovAdD	0.0	6.7	6.9	13.7	0.1	13.7	0.3
14.Educat	0.0	13.2	91.3	104.5	0.8	104.5	2.0
15.Hlth&C	0.0	25.8	256.6	282.4	2.1	282.4	5.5
16.Cul&Re	0.0	13.5	99.1	112.7	0.8	112.7	2.2
17.Per&Ot	0.0	7.3	77.8	85.1	0.6	85.1	1.6
TOTAL	8211.2	1997.1	3180.9	13389.3	100.0	5178.1	100.0
MULTIPLIER	1.0	0.2	0.4	1.6		0.6	

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FINAL DEMAND EMPLOYMENT EFFECTS (u)
TOTAL

SECTOR	F.DEMAND	INDUST	CONS'M	TOTAL	(%)	FLOW-ON	(%)
Gaming	108.8	0.0	0.5	109.3	61.2	0.5	0.7
1.AgForF	0.0	0.1	0.8	0.9	0.5	0.9	1.3
2.Mining	0.0	0.0	0.0	0.1	0.0	0.1	0.1
3.Manufa	0.0	1.2	6.9	8.1	4.5	8.1	11.6
4.ElecGW	0.0	0.4	0.7	1.2	0.7	1.2	1.7
5.Constr	0.0	0.7	0.1	0.9	0.5	0.9	1.2
6.WSaleT	0.0	3.8	2.1	5.8	3.3	5.8	8.4
7.Retail	0.0	3.2	12.1	15.4	8.6	15.4	22.1
8.AcmC&R	0.0	0.2	3.8	4.0	2.2	4.0	5.7
9.Tran&S	0.0	0.3	1.2	1.5	0.8	1.5	2.2
10.ComSer	0.0	0.6	1.4	2.0	1.1	2.0	2.8
11.Fin&In	0.0	1.4	2.2	3.7	2.1	3.7	5.3
12.Prop&B	0.0	7.7	5.3	13.0	7.3	13.0	18.6
13.GovAdD	0.0	0.2	0.2	0.3	0.2	0.3	0.5
14.Educat	0.0	0.3	2.0	2.3	1.3	2.3	3.3
15.Hlth&C	0.0	0.6	5.7	6.3	3.5	6.3	9.1
16.Cul&Re	0.0	0.2	1.5	1.7	1.0	1.7	2.5
17.Per&Ot	0.0	0.2	1.9	2.1	1.2	2.1	3.1
TOTAL	108.8	21.0	48.6	178.4	100.0	69.6	100.0
MULTIPLIER	1.0	0.2	0.4	1.6		0.6	

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