

Entry Thresholds for Regional Victoria

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Introduction

Motivation - regional societies are concerned about the provision of services in their town.

- How big a regional town has to be to support a number of important private and public services
- and to evaluate their competitive conduct

Entry Thresholds – are estimates of the market size required to support different number of firms within a competitive framework

- Cross-section: Census Data 2001
 - Static model
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- Competition is achieved very quickly with the entry of the second or third firm
 - Minimum market size - for example a second hospital requires a market size of 20943

Bresnahan and Reiss (1991)

- **Bresnahan, T.F. and Reiss, P.C. (1991), ‘Entry and competition in concentrated markets’, *Journal of Political Economy*, Vol. 99(5), 977-1009**
- **Industrial organisation**
 - Relationship between market structure and market outcomes
- **Close relationship** – “number of firms and the corresponding minimum market size”.

Estimation Model

Estimation – ordered probit to estimate the size of a market needed to support a certain number of firms and the impact of market characteristics on market structure

– Entry Threshold

- Expected profit function – Latent

$$\partial_k^N = (\text{Marginal Profit})_k * (\text{Market Size})_k - (\text{Entry Cost})_k$$

k – market

N – number of firms

1. Minimum market size – entry threshold

Hospital	1	2	3
Estimated population	708	20943	84624

2. Per-firm entry threshold

	2	3
Per-firm entry	10472	28208

3. Threshold ratio

	2	3
ratios	14.78	2.69

Market

1. Self contained
2. All firms in the geographical area are able to compete with each other

Exclusion criteria

1. Population over 100,000
 2. Towns within 100 kilometres of metropolitan Melbourne
 3. Towns within 20 kilometres of a settlement with over a population 1,500 persons
- 130 geographical markets (towns and localities)
 - Various markets sizes signify the different levels of demand

Industries

Homogenous products

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- | | |
|------------------------------------|---------------------|
| 1. Hospitals | 6. Pharmacies |
| 2. General Practitioners – Clinic | 7. Pre-School |
| 3. General Practitioners – Doctors | 8. Primary School |
| 4. Dentists | 9. Secondary School |
| 5. Optometrists | 10. Banks |
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- Monash University School of Rural Health - 2003

Market Counts by Industry

Industry	N = 0	N = 1	N = 2	N = 3	N=4	N = 5	N = 6	N = 7	N = 8	N >= 9
Hospital	47	76	6	1	0	0	0	0	0	0
General Practitioners - Clinic	27	55	28	5	4	3	3	0	0	5
General Practitioners - Doctors	27	29	11	7	9	6	4	4	4	29
Dentists	67	33	10	11	0	3	0	1	2	3
Optometrists	70	35	11	4	6	1	1	0	1	1
Pharmacies	43	51	12	9	5	4	1	1	2	2
Pre-School	23	79	8	4	4	3	2	2	1	4
Primary School	3	56	39	8	6	3	3	3	2	7
Secondary School	47	52	12	8	4	3	2	0	0	2
Banks	32	29	15	14	10	9	13	4	0	4

Table 8(a) Population, Pre-firm and Ratio Thresholds for Regional Victoria

	Number of firms								
	1	2	3	4	5	6	7	8	9
Hospitals									
Estimated population	708	20943	84624						
Per-firm entry threshold		10472	28208						
Threshold ratios		14.78	2.69						
GP clinic									
Estimated population	374	1913	5997	8981	13403	18863	30066		
Per-firm entry threshold		957	1999	2245	2681	3144	4381		
Threshold ratios		2.56	2.09	1.12	1.19	1.17	1.37		
GP Doctor									
Estimated population	391	921	1227	1439	1848	2310	2768	3377	4096
Per-firm entry threshold		461	409	360	370	385	395	422	455
Threshold ratios		1.18	.88	.87	1.02	1.04	1.02	1.06	1.07
Dentists									
Estimated population	1286	3382	5267	12080	18911	23320	37487		
Per-firm entry threshold		1691	1756	3020	3782	3887	5355		
Threshold ratios		1.31	1.04	1.72	1.25	1.03	1.38		
Optometrists									
Estimated population	1501	4267	7467	10083	20336	25406	34647	54635	
Per-firm entry threshold		2134	2489	2521	4067	4234	4950	6829	
Threshold ratios		1.42	1.17	1.01	1.61	1.04	1.17	1.38	

	Number of firms								
	1	2	3	4	5	6	7	8	9
Pharmacies									
Estimated population	636	2668	5082	9740	14191	20650	23989	29462	53061
Per-firm entry threshold		1334	1694	2435	2838	3442	3427	3683	5896
Threshold ratios		2.10	1.27	1.44	1.17	1.21	1	1.07	1.60
Pre-school									
Estimated population	350	3918	6980	9902	14273	19696	25392	34086	41151
Per-firm entry threshold		1959	2327	2476	2855	3283	3627	4261	4572
Threshold ratios		5.59	1.19	1.06	1.15	1.15	1.10	1.18	1.07
Primary school									
Estimated population	94	998	3294	5215	8061	9683	11858	14908	18181
Per-firm entry threshold		499	1098	1304	1612	1614	1694	1864	2020
Threshold ratios		5.30	2.20	1.19	1.24	1	1.05	1.10	1.08
Secondary School									
Estimated population	757	3110	5628	9345	13953	22570	38605		
Per-firm entry threshold		1555	1876	2336	2791	3762	5515		
Threshold ratios		2.05	1.21	1.24	1.19	1.34	1.46		
Banks									
Estimated population	459	1035	1549	2478	3648	5878	14434	24241	
Per-firm entry threshold		518	516	620	730	980	2062	3030	
Threshold ratios		1.13	1	1.20	1.18	1.34	2.10	1.47	

Town size

1000

5000

10000

	1000	5000	10000
Hospital	1	1	1
GP clinic	1	2	4
Dentists	0	2	3
optometrists	0	1	2
Pharmacies	1	2	4
Pre-school	1	2	4
Primary School	2	3	6
Secondary School	1	2	4
Banks	1	5	6

Conclusion

- Competition is achieved very quickly with the entry of the second or third firm
- Entry Thresholds:
 - Minimum market size
 - Per-firm market sizeto sustain a profitable firm