

Recession Effect on Consumer Spend Allocation and Integrated Resorts' Profits

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Introduction

- Discretionary income effected by a recession
 - For travellers and local customers
- Consumers must split their discretionary income
 - Most say that we are back at or even above prerecession levels on discretionary income
- Nevada
 - Recession effected 2008 & 2009 fiscal years
 - Visitor volumes in 2012 rebounded to above 2007 levels but average spend per visitor has not and is still at 2004 levels even though it has increased last couple years
 - Gaming revenue & total revenue are still at 2004/05 levels and not fully rebounded to highs in 2007
 - Split appears to have changed, but not tested

Purpose

- To investigate if casino customers in different Nevada markets change how they spend in integrated resorts during a recession
- To investigate if profit margins in varying departments within Nevada integrated resorts changed during a recession

Literature Review

- Economic theory of consumer behavior
 - Consumers attempt to maximize the utility they receive from goods and services based on their income, tastes, and market prices (Michael & Becker, 1973)
- Change in consumer spending
 - Most previous studies looked for variables that explain why there are changes in total discretionary spend
 - A few looked at main categories such as “travel”
- Allocation of discretionary spend
 - Consumer motivations and preferences are different and preferences are preferable to study since these indicate the consumer’s optimal allocation and can be thought of as “money well spent” (Crouch et al., 2007; Pearce, 1998)
 - No known study on how an external shock effects how allocation of spend changed or how consumers preferences changed due to this shock

Data/Methodology

- Nevada Gaming Control Board's *Nevada Gaming Abstract*
 - \$1 million or more in annual gaming revenue
 - 1998 – 2013
 - 5 gross revenue categories: casino, rooms, food, beverage, other
 - LV Strip, Downtown/Reno/Laughlin, Boulder Strip, remainder
 - Recession: 2002-2003, 2008-2013
- Panel data analysis of entropy calculated for each observation, using the gross revenue categories: casino, rooms, food, beverage, and other

How consumers allocate discretionary funds on different segments (casino, rooms, food, beverage, and other) can be measured by computing entropy (Golan, 2008) E_i for each row of data ($i = 1, 2, \dots, n$)

$$E_i = -\sum_{j=1}^5 p_i \log(p_i)$$

where p_i = proportion of spending on segment i .

Note that minimum of E is 0 when $p_{i_0} = 1$ for some i_0 in $1, \dots, 5$,

and maximum is $\ln(5) = 1.609$ if $p_i = \frac{1}{5}$ for all $i = 1, \dots, 5$.

The data file consists of annual spending % on casino, rooms, food, beverage, and other for 5 markets (LV Strip, Downtown/Reno/Laughlin, Boulder Strip, Local) for the years 1990 through 2013 (as shown on the next slide); this is a panel data and will be analyzed using panel data analysis methods (Frees, 2004).

Market	Year	REC	POST_REC	gamPer	RoomPer	FoodPer	BevPer	OtherPer
Local	1990	0	0	65.79	5.89	13.48	6.04	8.80
Local ...	...	...	...	...	...	...	...	...
Local	2013	0	1	66.54	7.86	13.36	5.18	7.06
Strip	1990	0	0	57.84	16.81	11.20	6.04	8.10
Strip ...	...	...	...	...	...	...	...	...
Strip	2013	0	1	37.02	25.28	15.54	7.69	14.48
Reno	1990	0	0	60.11	13.22	13.18	6.37	7.12
Reno ...	...	...	...	...	...	...	...	...
Reno	2013	0	1	52.16	18.14	16.76	7.29	5.64
Laughlin	1990	0	0	69.77	9.96	10.43	5.25	4.59
Laughlin ...	...	...	...	...	...	...	...	...
Laughlin	2013	0	1	64.25	12.85	11.05	5.65	6.20
Doug_Tahoe	1990	0	0	63.88	11.79	13.48	7.35	3.50
Doug_Tahoe ...	...	...	...	...	...	...	...	...
Doug_Tahoe	2013	0	1	58.68	13.19	12.26	8.44	7.43
LV_Downtown	1990	0	0	67.63	11.32	10.76	5.06	5.23
LV_Downtown ...	...	...	...	...	...	...	...	...
LV_Downtown	2013	0	1	53.74	16.58	14.99	8.38	6.32
Washoe	1990	0	0	58.52	10.79	13.87	6.43	10.39
Washoe ...	...	...	...	...	...	...	...	...
Washoe	2013	0	1	55.19	4.40	11.68	4.64	24.09

Descriptive Statistics of Data

	N	Min	Max	Mean	Std. Dev.
Casino	256	32.21	74.80	59.78	9.84
Room	256	1.73	27.97	11.48	6.15
Food	256	2.97	18.75	13.39	2.35
Beverage	256	2.20	29.37	6.40	2.88
Other	256	1.00	56.90	8.95	7.10

All are as a percentage of total revenue

Entropy vs Year



The package plm of the software environment R (R Core Team, 2015) was used for panel data analysis of Entropy.

The fixed-effects model for entropy is

	Term	Estimate	SE	t	P-value
FE	REC	0.054	0.011	5.024	0.000
Model	POST_REC	0.064	0.011	6.008	0.000

Market	Doug_Tahoe	Laughlin	Local	LVDowntown	Reno	Strip	Washoe
Mean Entropy	1.14	1.09	1.04	1.16	1.22	1.35	1.33

The random-effects model for entropy is

Term	Estimate	SE	t	P-value
Intercept	1.190	0.044	27.244	0.000
REC	0.054	0.011	5.025	0.000
POST_REC	0.064	0.011	6.008	0.000

Hausman test is used to test H_0 : unique errors are correlated with predictors (Random Effects) to select between fixed-effects and random-effect models; the p-value = 1, null is not rejected, i.e., the random effects model is the one to use.

Both Pesaran and Breusch-Pagan tests for cross-sectional independence yielded p-values of 0.000.

Breusch-Godfrey/Wooldridge test for serial correlation in panel models also resulted in p-value of 0.000. Hence we used the sandwich estimator (Zeileis A, 2006) to correct the p-values for both cross-sectional and serial correlations. The p-values for REC and POST_REC remained at 0.000, showing that REC and POST_REC have positive and significant effect on Entropy.

Results

- Las Vegas Strip
 - Gaming: sig. lower during recession (40.8% vs 45.1%)
 - Food: sig. higher during recession (14.2% vs 12.3%)
 - Beverage: sig. higher during recession (7.5% vs 6.1%)
- Downtown/Reno/Laughlin
 - Beverage: sig. higher during recession (8.2% vs 6.4%)
- Boulder Strip & Remainder
 - No significant changes

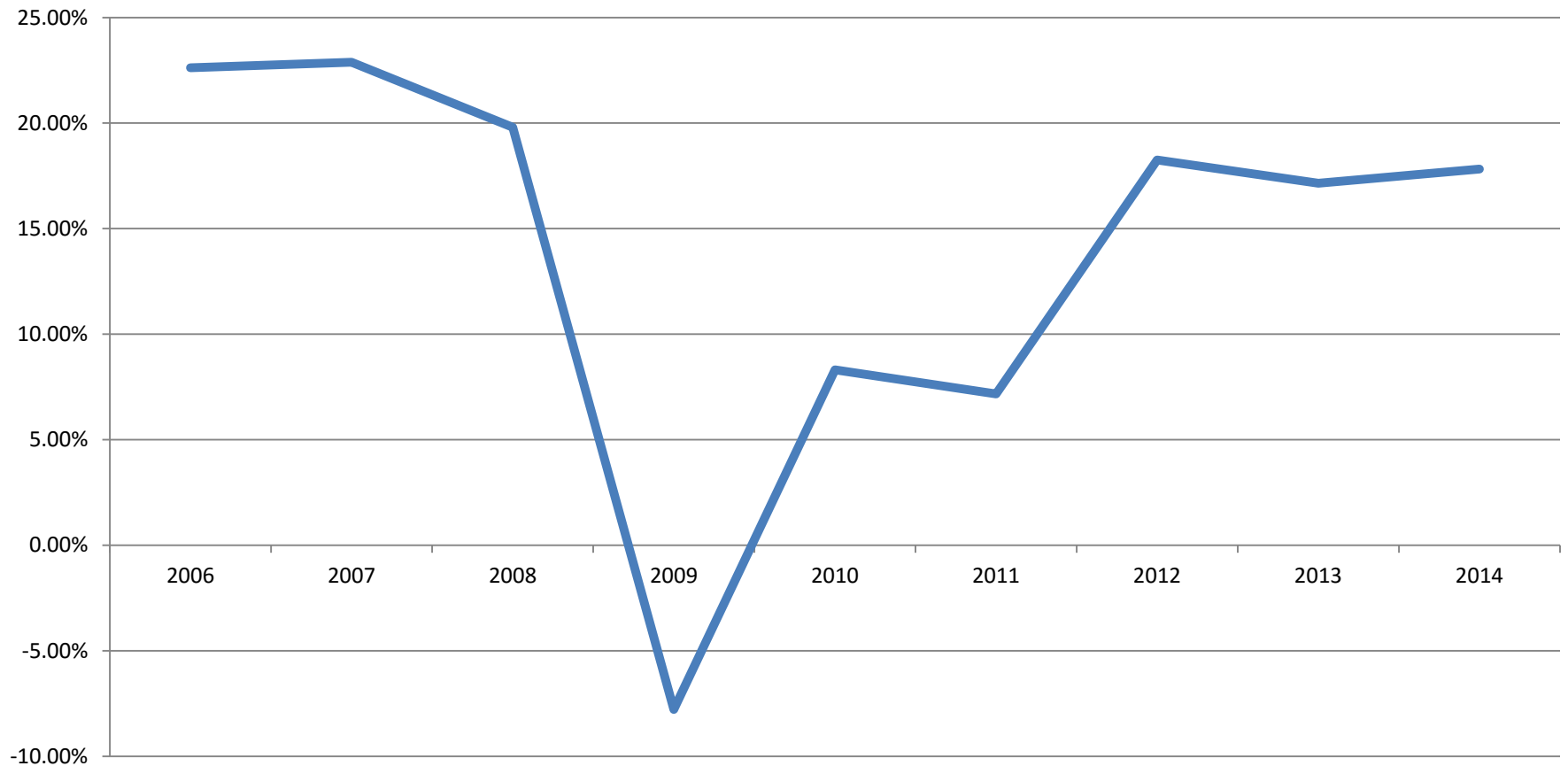
Discussion

- Strip
 - Destination markets mainly integrated resorts so more options for spend allocation
 - Gaming spend per customer and number of customers are back to 2007 levels per LVCVA survey but less customers are gambling when they come to LV
 - Demographics or preference changes
 - Younger, better educated, wealthier than 5 years ago

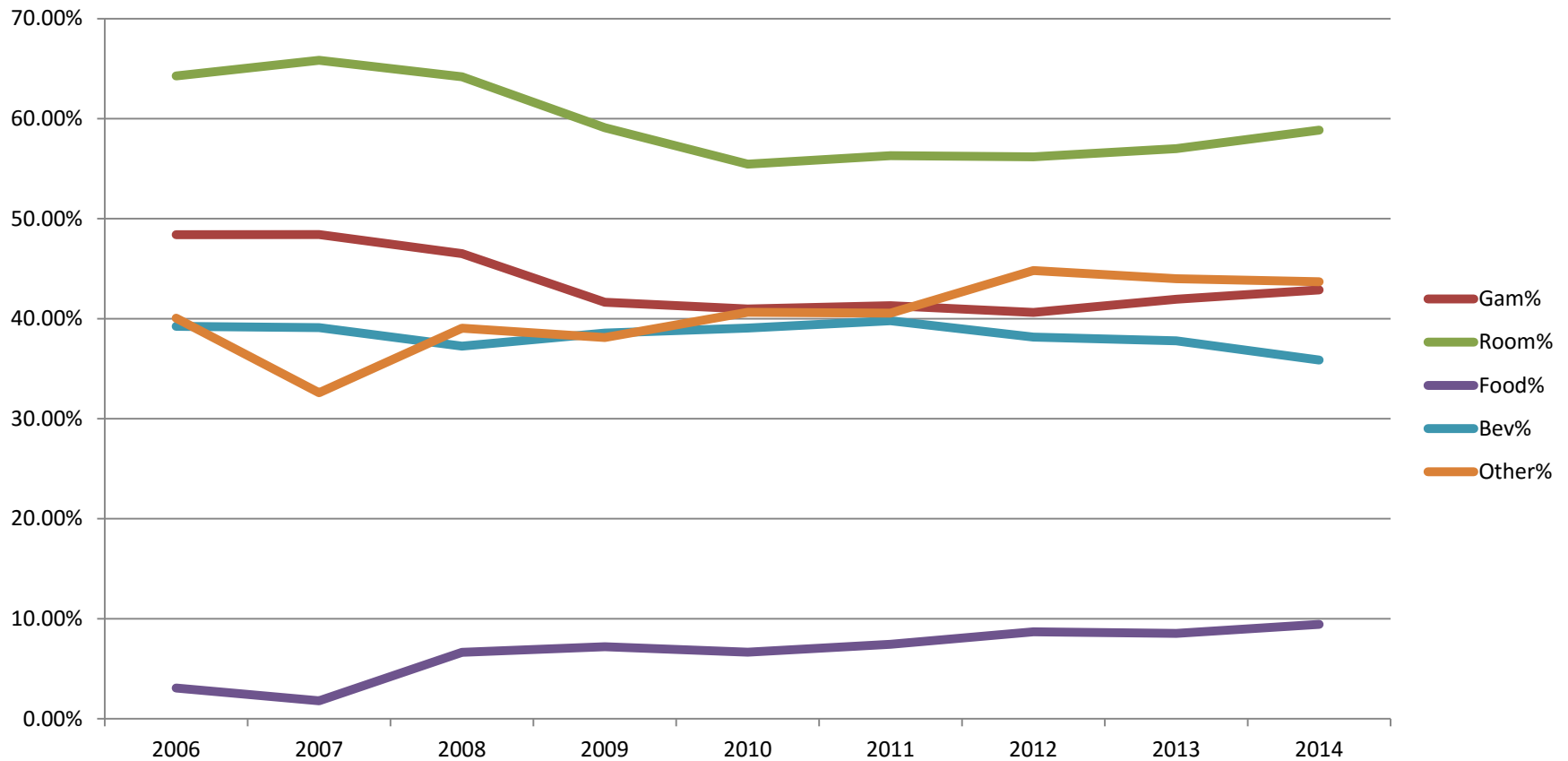
Discussion

- Boulder Strip & Remainder
 - Generally considered locals' markets
 - Locals are not changing their preferences on how they allocate their discretionary income during a recession even though total \$ decrease
 - Locals value the different categories the same in and out of recession

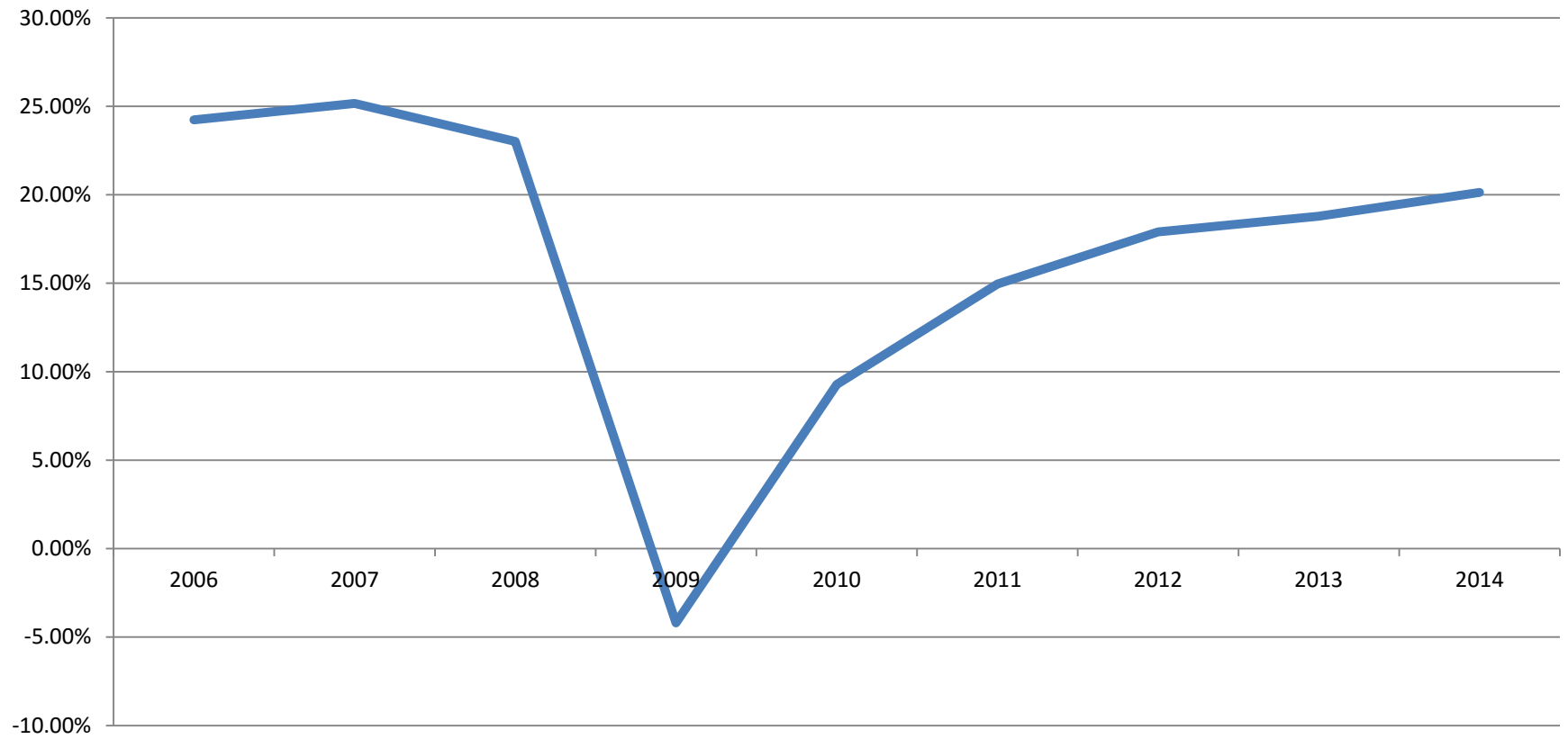
EBITDA% Statewide



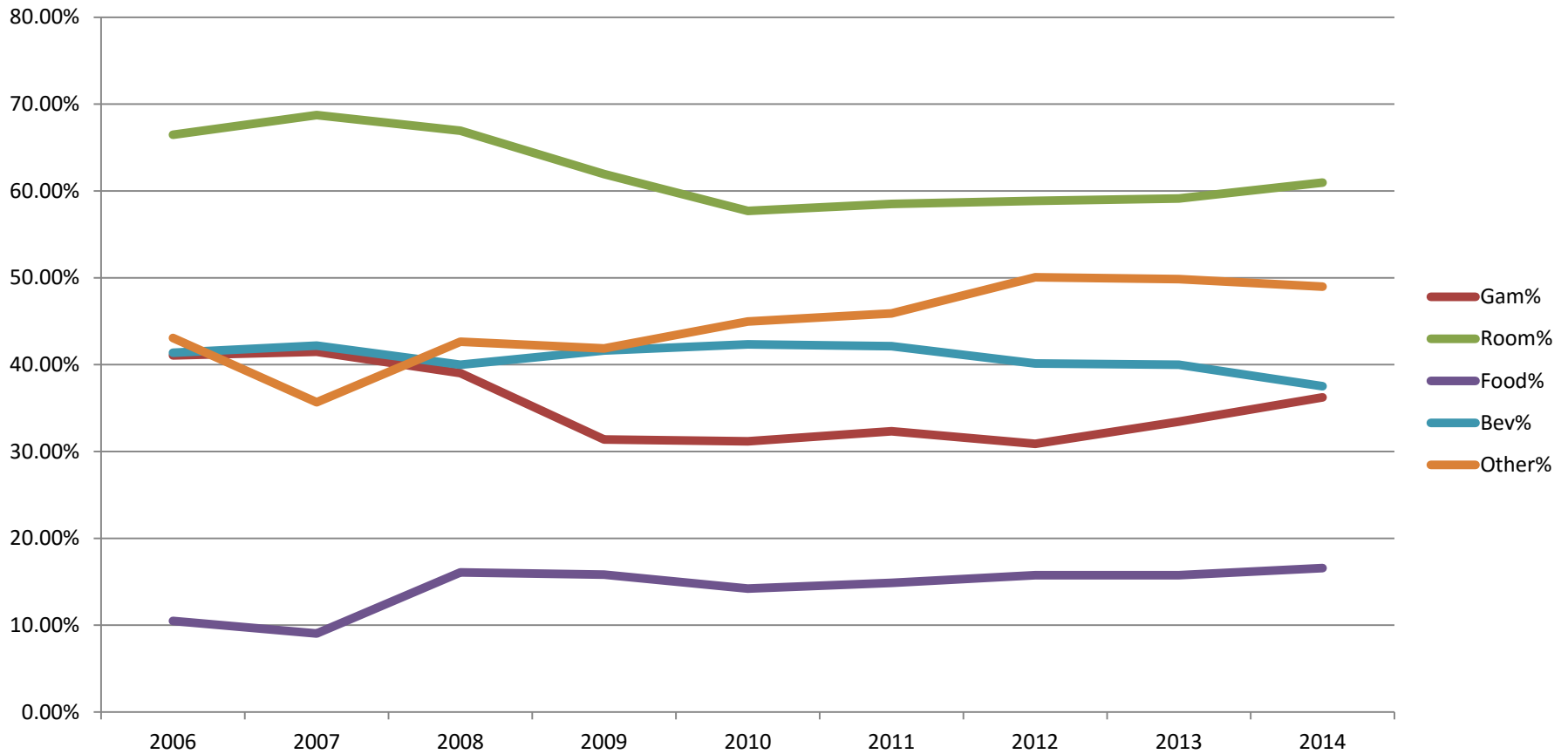
Profit Margin by Department State Averages



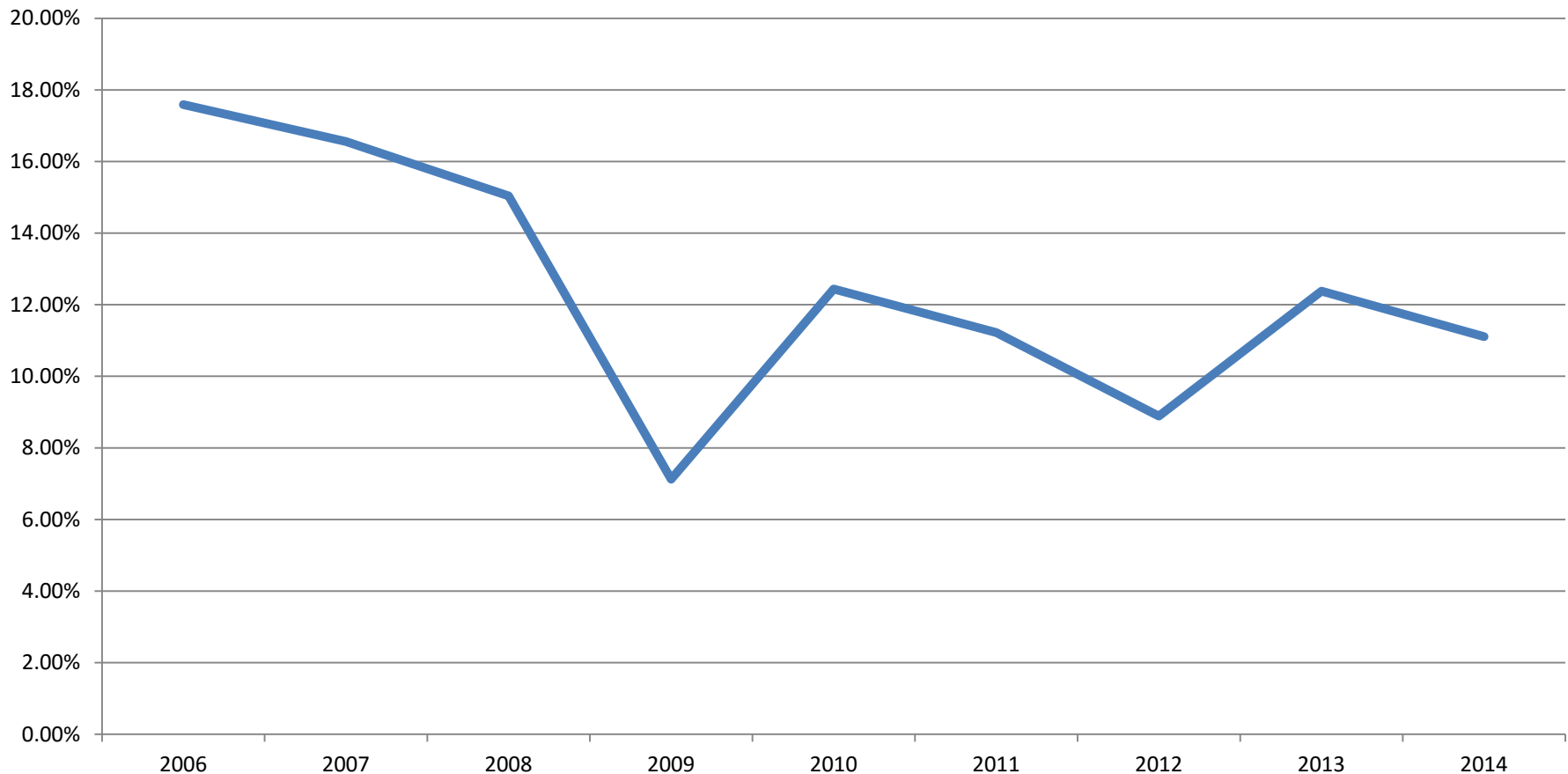
EBITDA% Las Vegas Strip



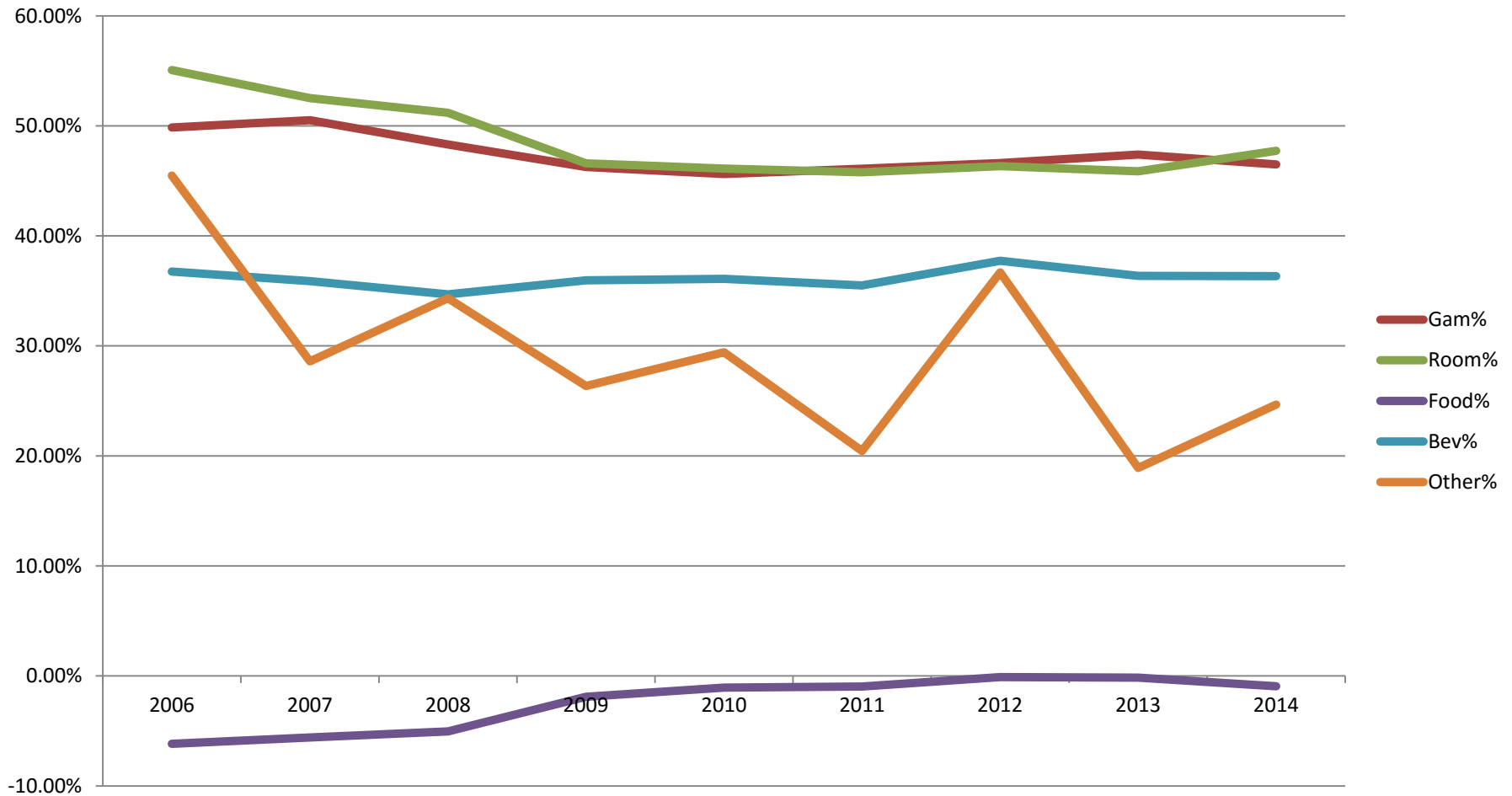
Profit Margin by Department Las Vegas Strip Average



EBITDA%
Average Downtown/Reno/Laughlin



Profit Margin by Department Average Downtown/Reno/Laughlin



Implications

- Academic
 - Only study on spend allocation in integrated resorts
 - Only study on discretionary spend allocation during a recession
- Managerial/Industry
 - Move to areas with a higher tax % and a tax that is consumer paid not company paid
 - Not all revenue is equal in margins
 - Savings in taxes allow more profit and \$ for growth or to owners
 - CVB use to assist in advertising different regions
 - Concentrate on spend areas rather than total \$