

# *Optimum Number of Gaming Machines at the Hollywood Casino in Perryville, MD*



Presentation to the Maryland  
Lottery and Gaming Control Commission

December 16, 2014

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*Cummings Associates*

*Questions Please!*  
*(at any time)*

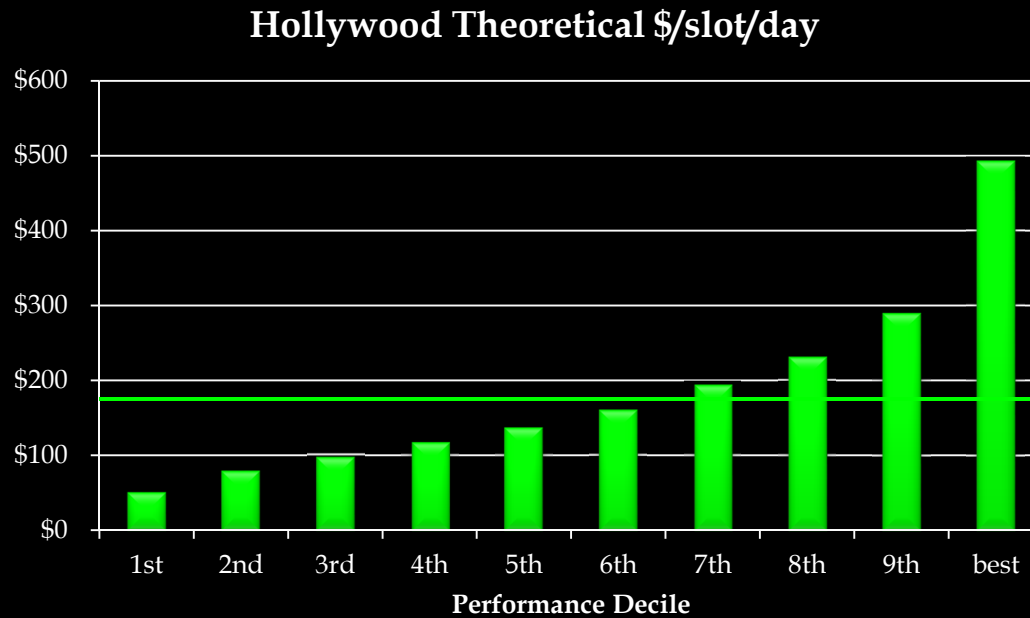
# Overview

- Approach: Top-Down
- Limitations and Caveats
- Gravity-Model Projections
  - Number of Machines → Gaming Revenues
- Marginal Revenues vs. Marginal Costs
  - Long Term vs. Short Term
- Results ( " " )

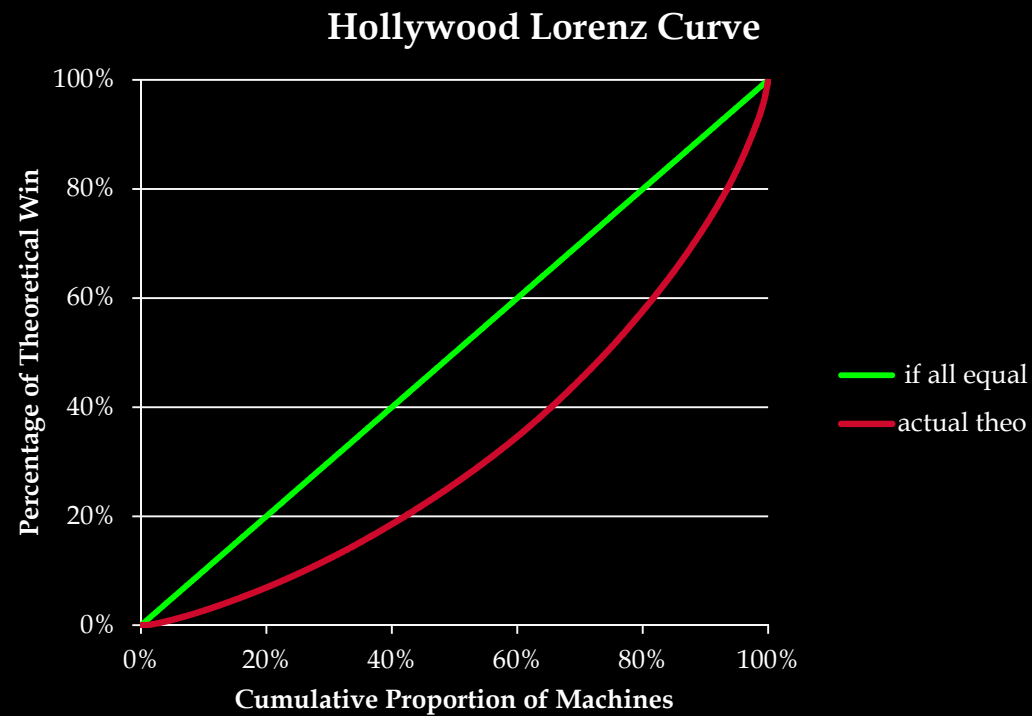
# *Top-Down Approach*

- Looks at (each) facility as a whole
- Amenable to practical calculations
- **HOWEVER**, treats slots (for the most part) as interchangeable generic units (and they're not!)
- Why not bottoms-up?
  - Complex interactions among the "trees"
  - Data??

# *All Slots Not Created Equal*



# *“Income” Inequality Among Slots*

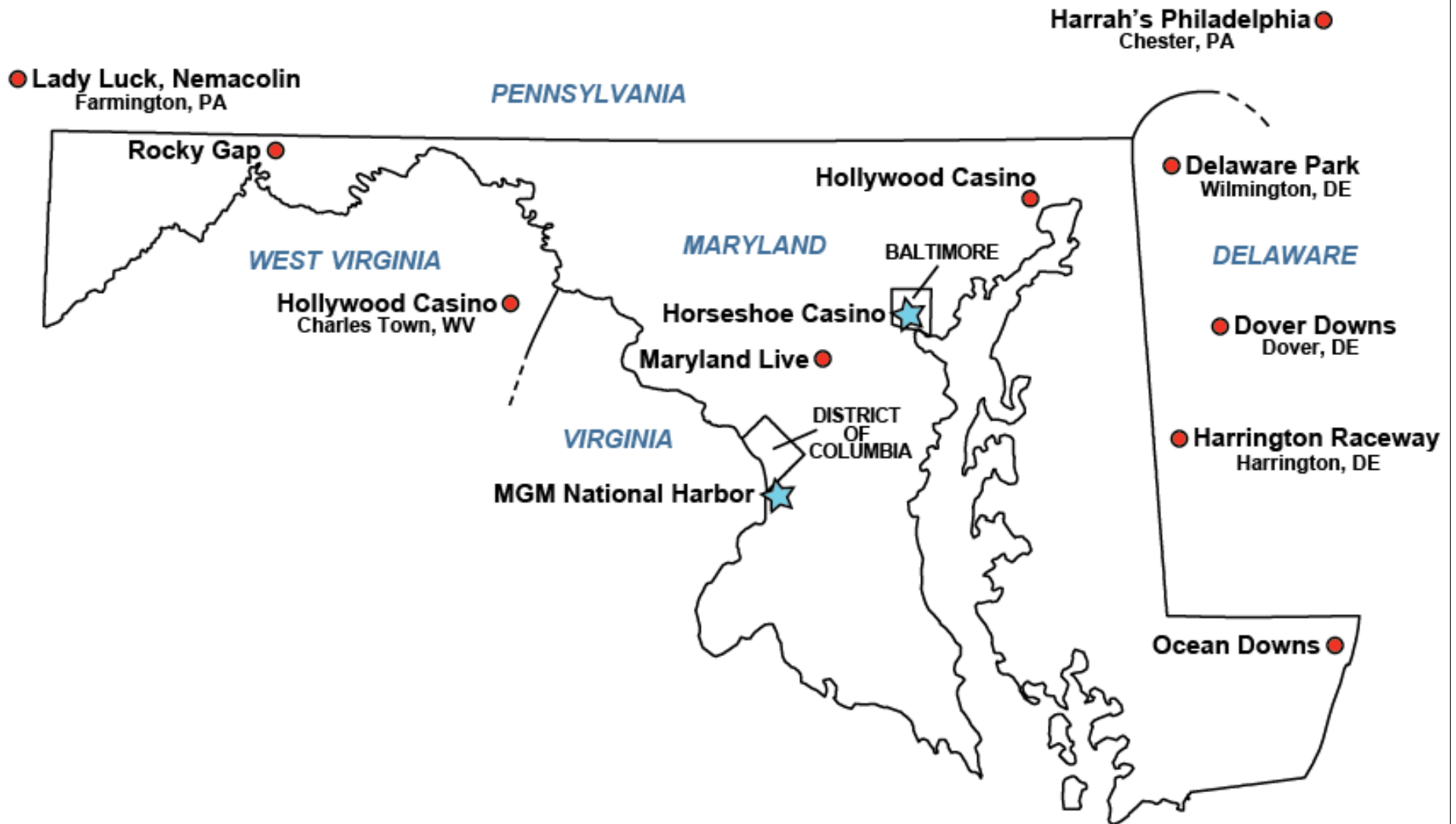


## *Other Caveats*

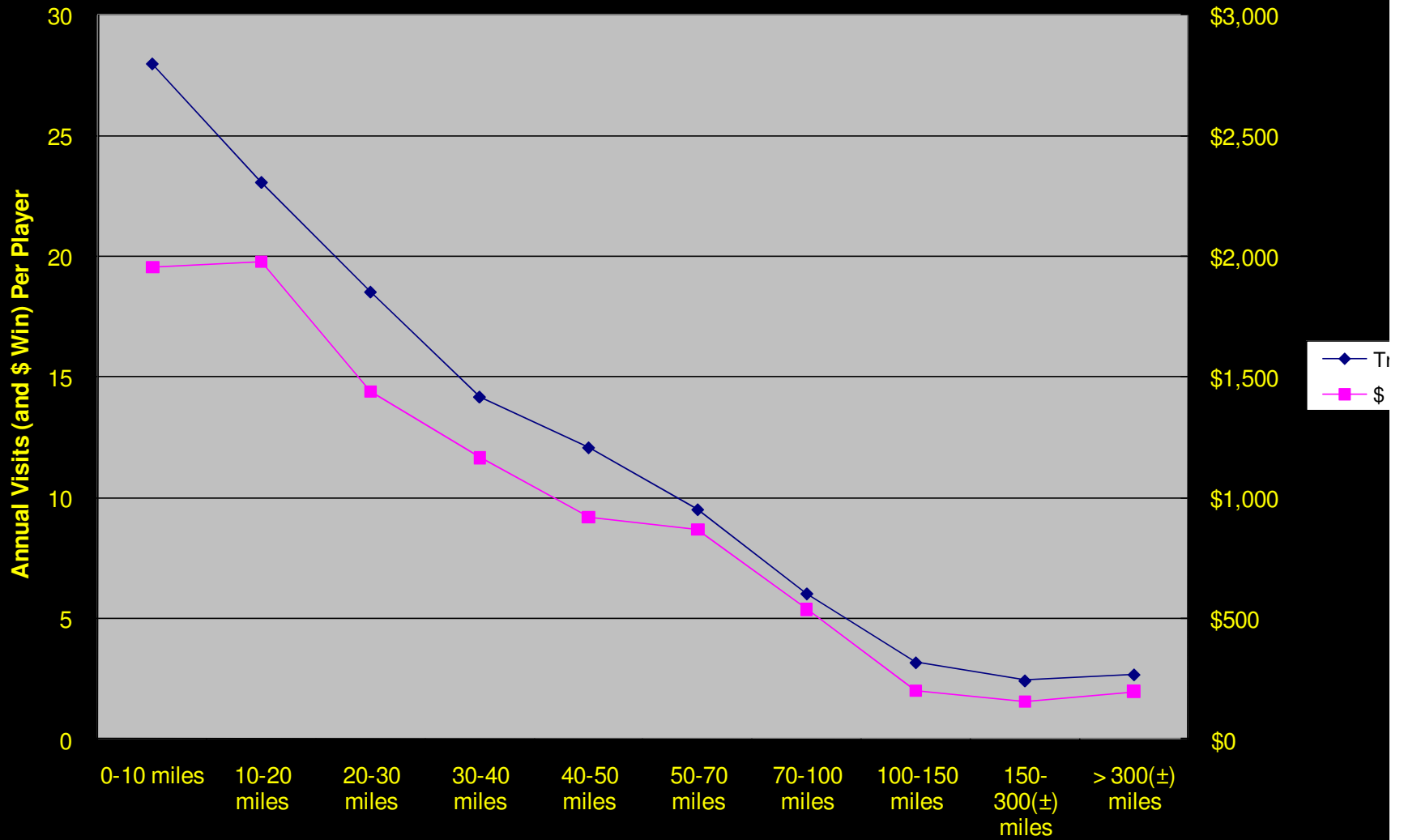
- “Maximum” = “Maximum Sustainable”
  - Financial viability of licensees
  - Appropriate incentives to maximize overall revenue performance
- “Size” relationships fuzzy
- Usual academic economic assumptions (rational actors, long-term self-interest, we can analyze things “at equilibrium” etc. )

# *Gravity Models – Recap*

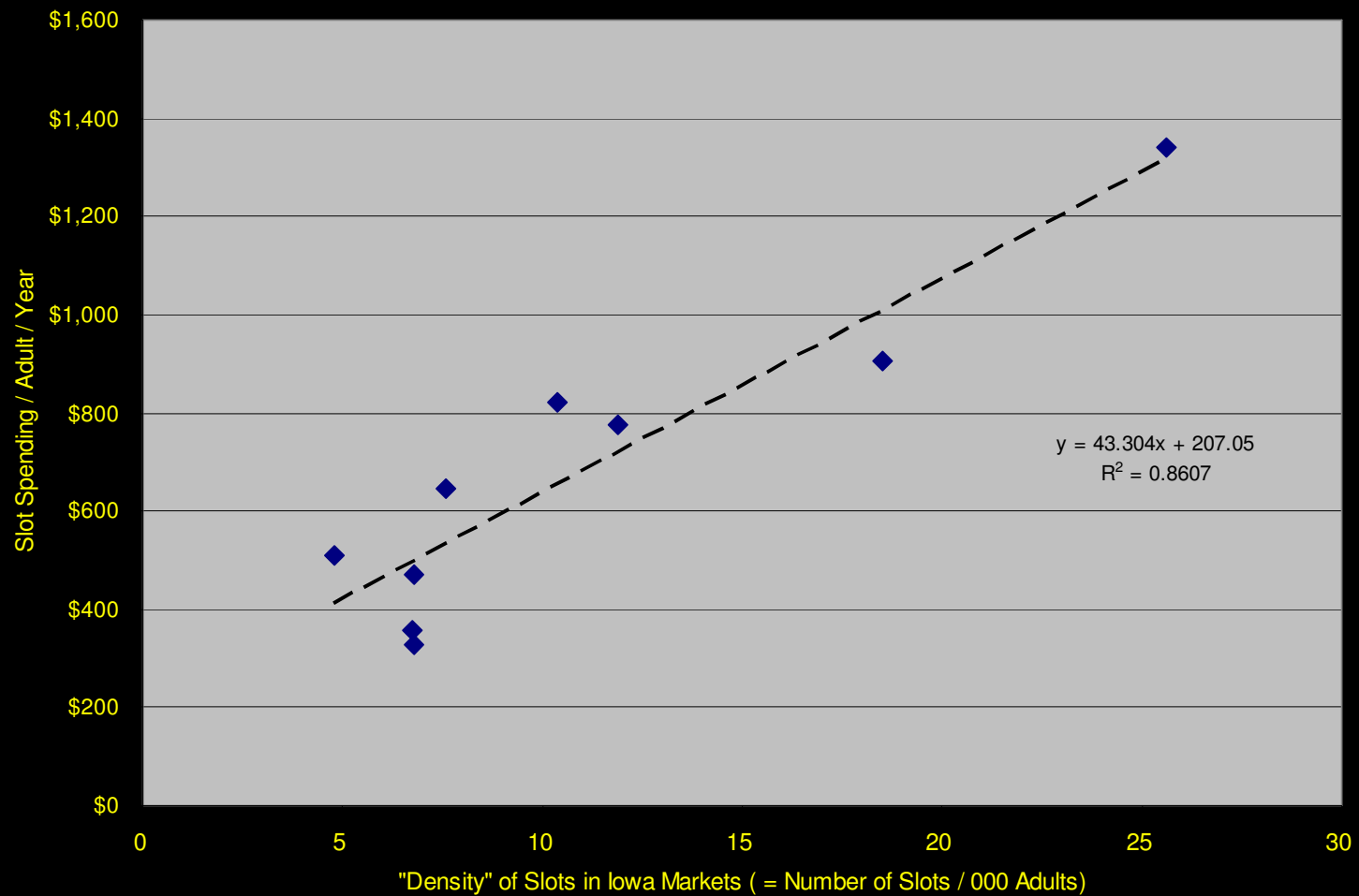
- Location
- Location
- Size
- Everything Else



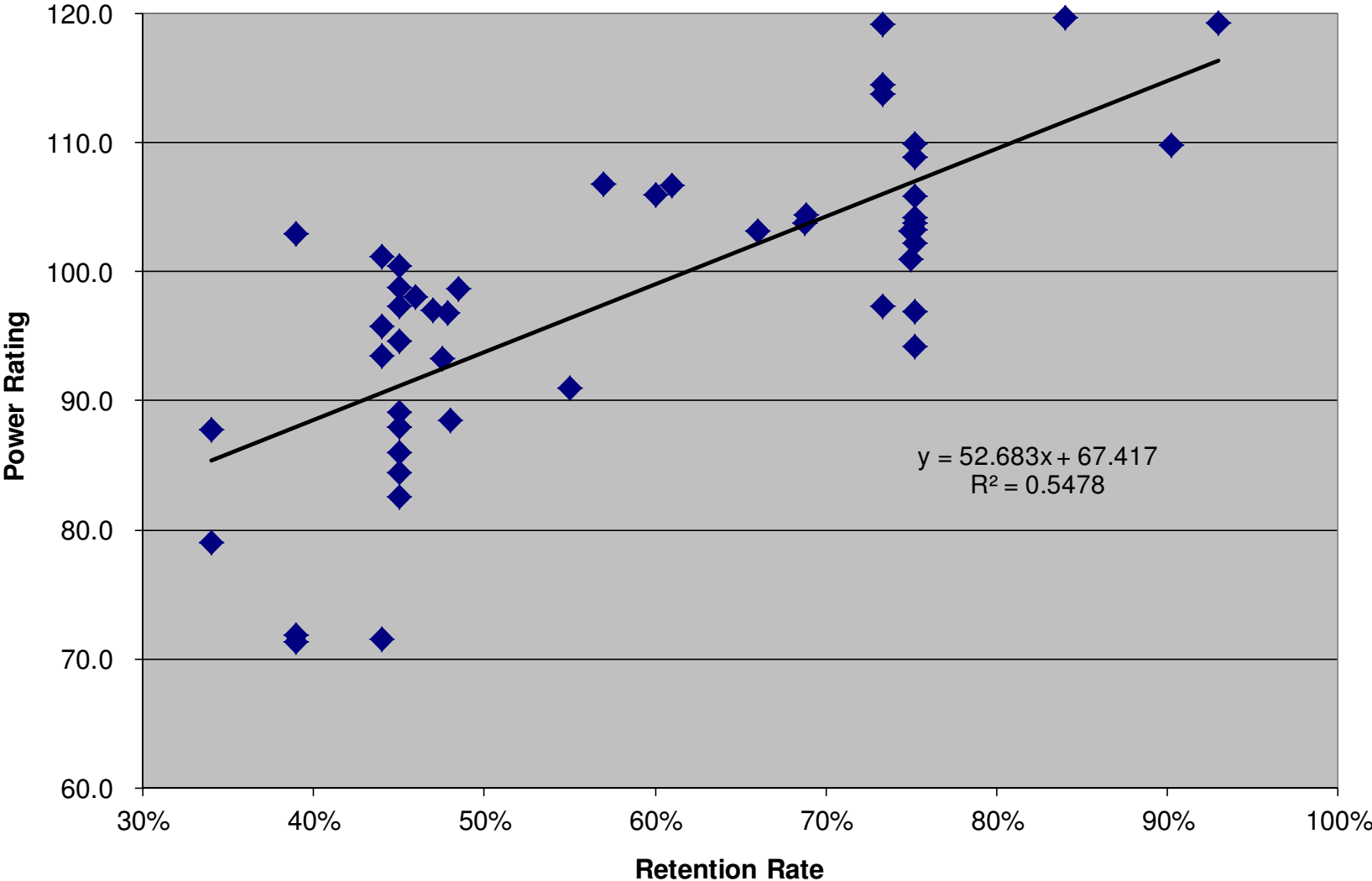
**Exhibit A-11: Rates of Visitation (and Win) vs. Distance at Casino Z**



# More Slots, More Spending



**Exhibit 13: Slot Power Rating vs. Casino Retention % (Detail)**



# *Application to Maryland*

## Northeast Slot Estimates

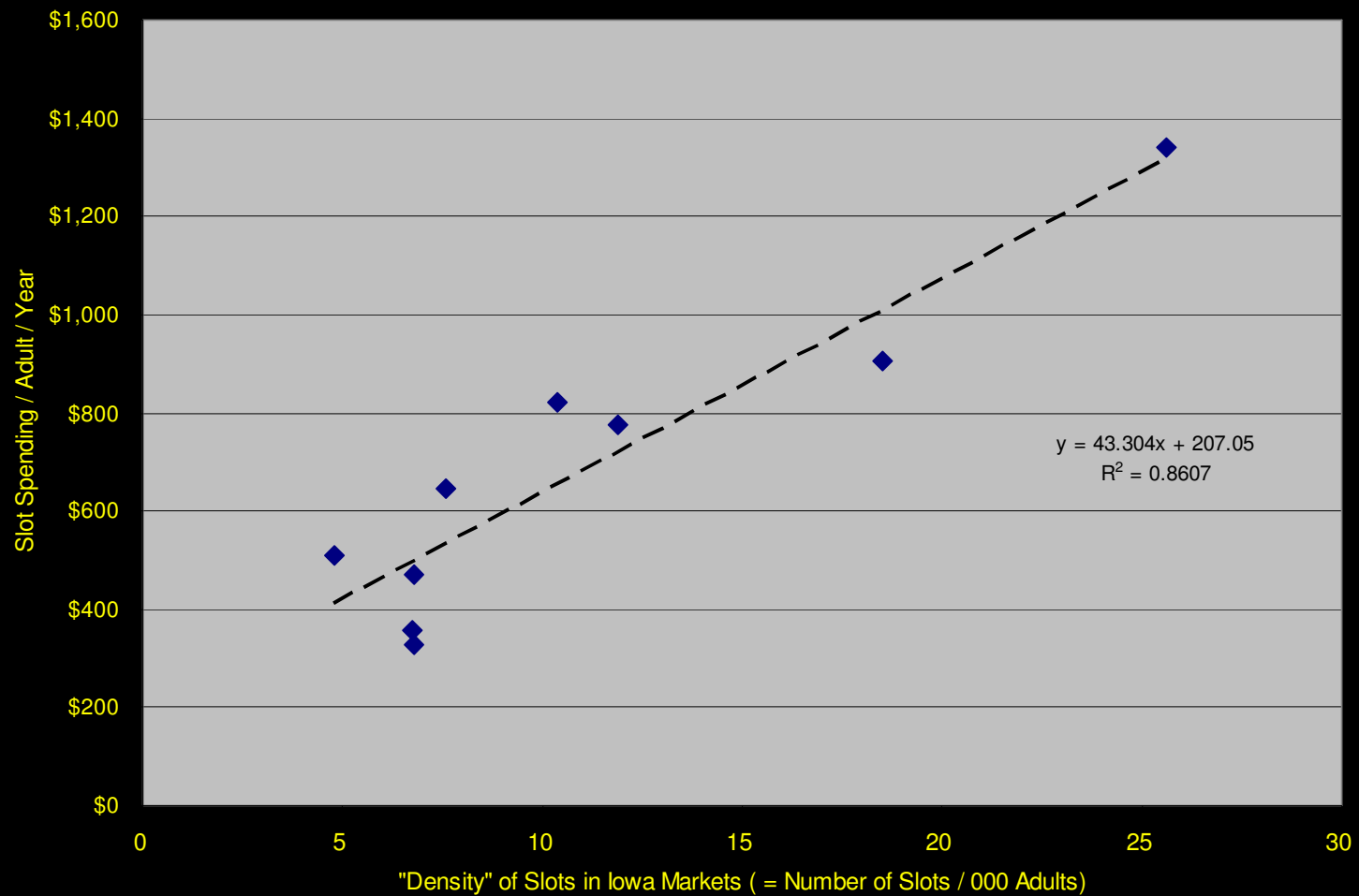
Travel Time (in minutes):

State	County	ZIP Code	Baltim.	MD Live	H'woodP	RockyG	OceanD	MTR	Wheeling	M Gras	CharlesT
MD	Allegany	21502	132.0	133.0	168.7	22.2	302.4	167.1	138.4	208.5	96.4
MD	Allegany	21504	123.1	124.1	159.8	13.3	293.5	169.9	136.9	207.0	87.5
MD	Allegany	21521	162.7	163.7	199.4	52.9	333.1	174.4	144.0	214.1	127.1
MD	Allegany	21529	137.1	138.1	173.8	27.3	307.5	162.5	146.8	216.9	101.5
MD	Allegany	21530	124.2	125.3	161.0	13.8	294.6	179.1	146.1	216.2	88.7
MD	Allegany	21532	137.5	138.5	174.2	27.7	307.9	159.7	131.2	201.4	102.0
MD	Allegany	21539	150.0	151.0	186.7	40.2	320.4	167.9	137.6	207.7	114.4
MD	Allegany	21540	159.4	160.5	196.2	49.6	329.8	186.1	157.5	235.8	116.6
MD	Allegany	21543	132.5	133.5	169.2	22.7	302.9	155.9	127.2	197.3	96.9
MD	Allegany	21545	141.5	142.6	178.3	31.7	311.9	159.6	141.1	218.1	106.0
MD	Allegany	21555	140.9	142.0	177.7	41.0	311.3	203.2	170.2	240.4	105.4
MD	Allegany	21557	143.2	144.2	179.9	33.4	313.6	181.1	152.5	222.6	107.6
MD	Allegany	21560	131.8	132.8	168.5	22.0	302.2	179.4	146.4	216.5	96.2
MD	Allegany	21562	149.1	150.1	185.8	39.3	319.5	187.1	158.4	223.0	103.8
MD	Allegany	21766	114.9	115.9	151.6	26.9	285.3	198.0	165.0	235.1	79.3
MD	Anne Arundel	20711	44.8	43.4	80.0	144.1	134.3	303.7	282.2	352.3	96.5
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MD	Worcester	21851	147.0	145.2	145.2	257.6	38.2	417.2	395.7	465.8	209.9
MD	Worcester	21862	131.5	129.6	129.6	242.0	12.0	397.3	380.1	450.2	194.4
MD	Worcester	21863	137.8	136.0	136.0	248.3	25.0	403.6	386.5	456.6	200.7
MD	Worcester	21864	153.4	151.6	151.6	263.9	38.3	419.2	402.1	472.2	216.3
MD	Worcester	21872	132.2	130.3	130.3	242.7	16.0	398.0	380.8	451.0	195.1

**Total MD**

*# Slots ≠ “Size”*

# More Slots, More Spending



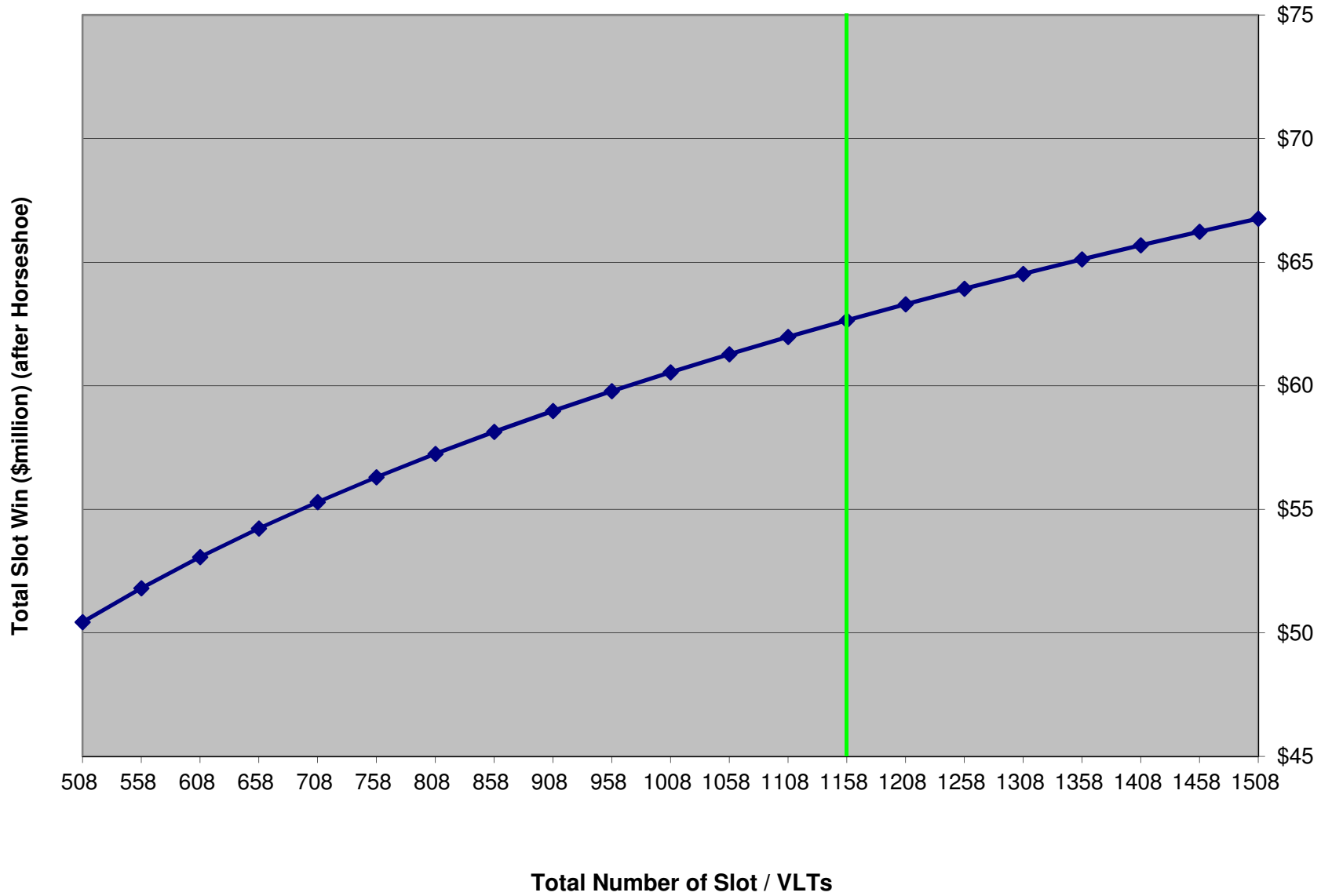
# *More Slots, More Spending*

Contribution to "Size" or "Mass"

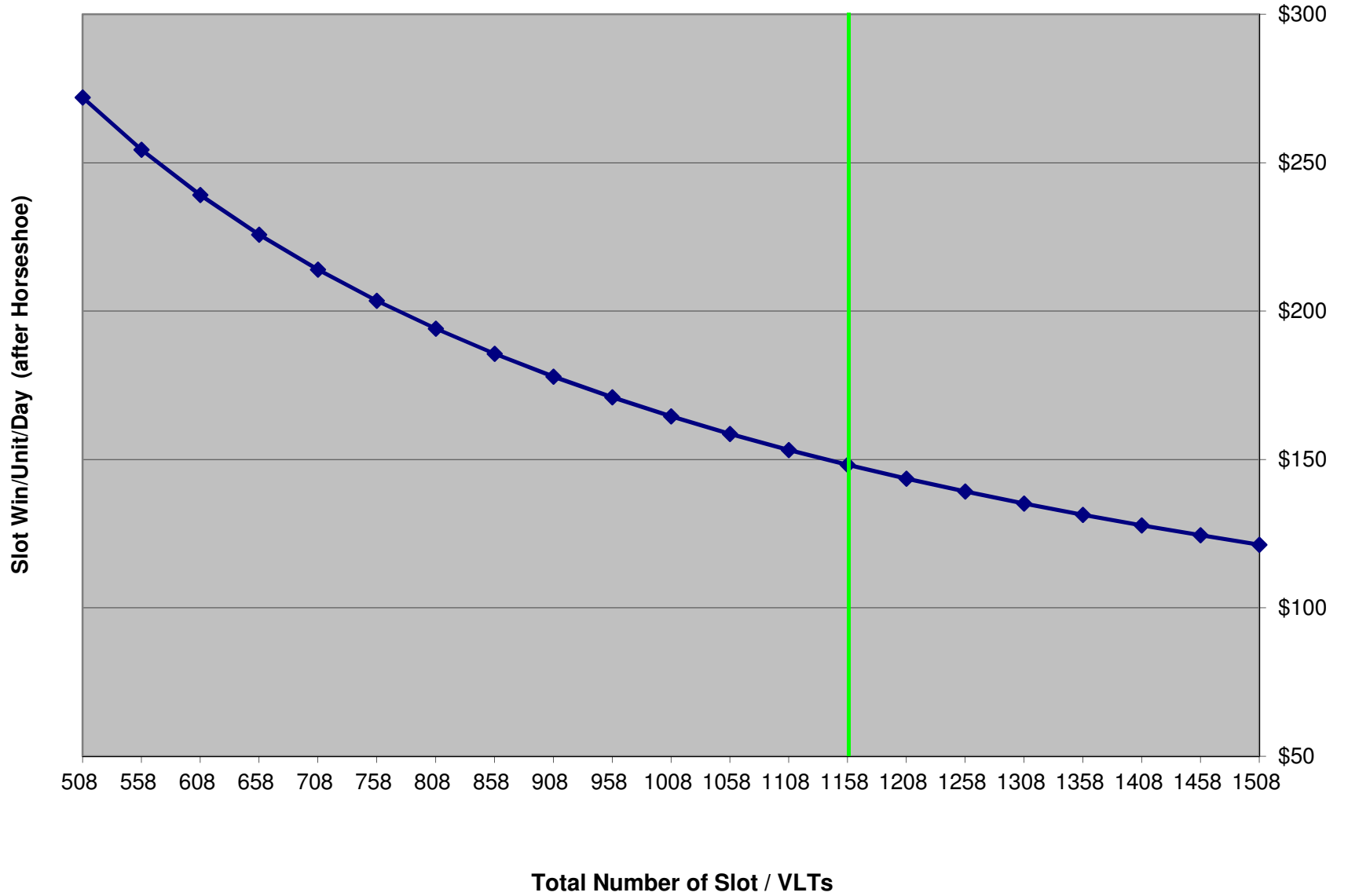


# *Projections for Hollywood*

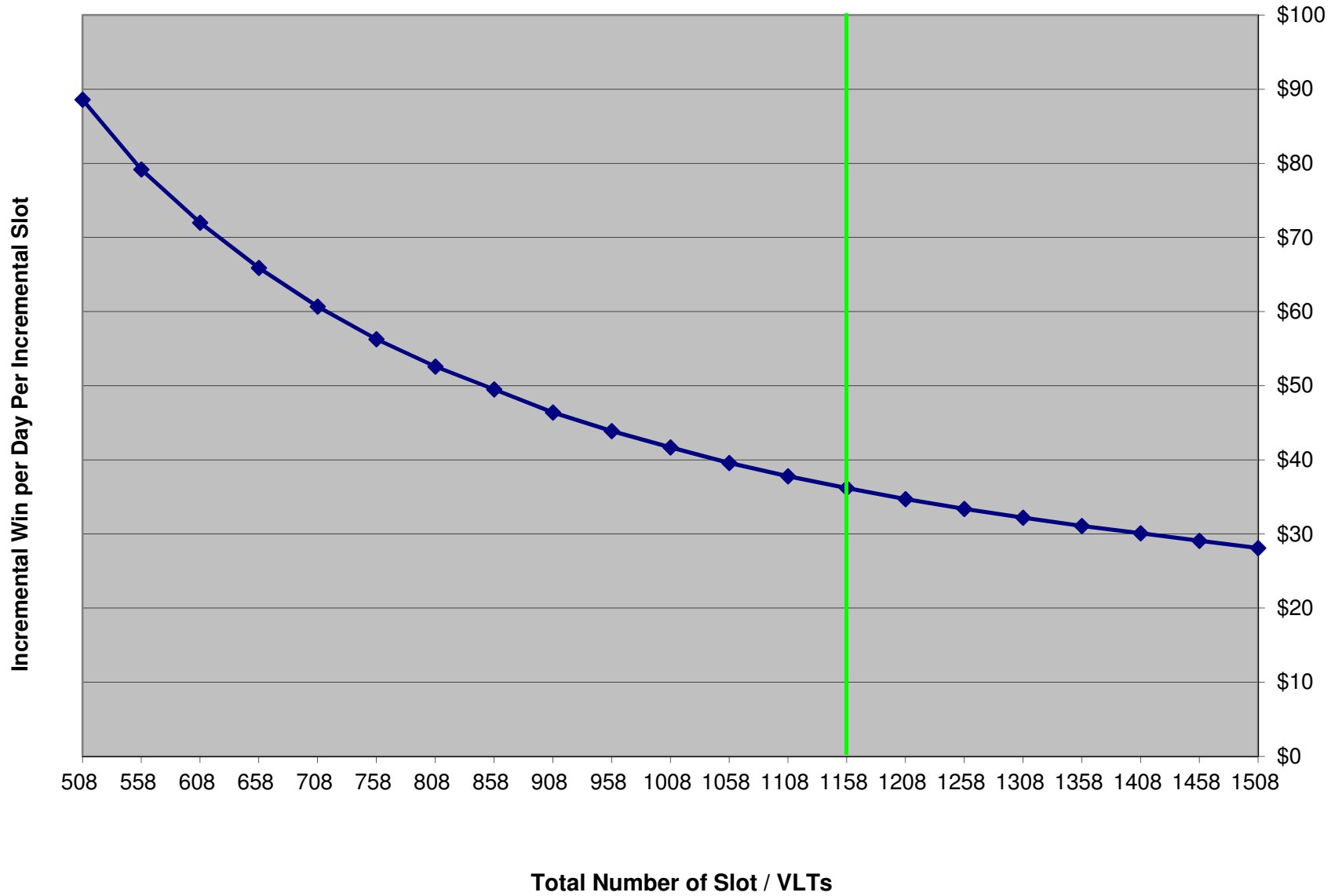
**Exhibit 8: Projected Total Slot Win at Hollywood (\$mn) vs. Number of Slots**



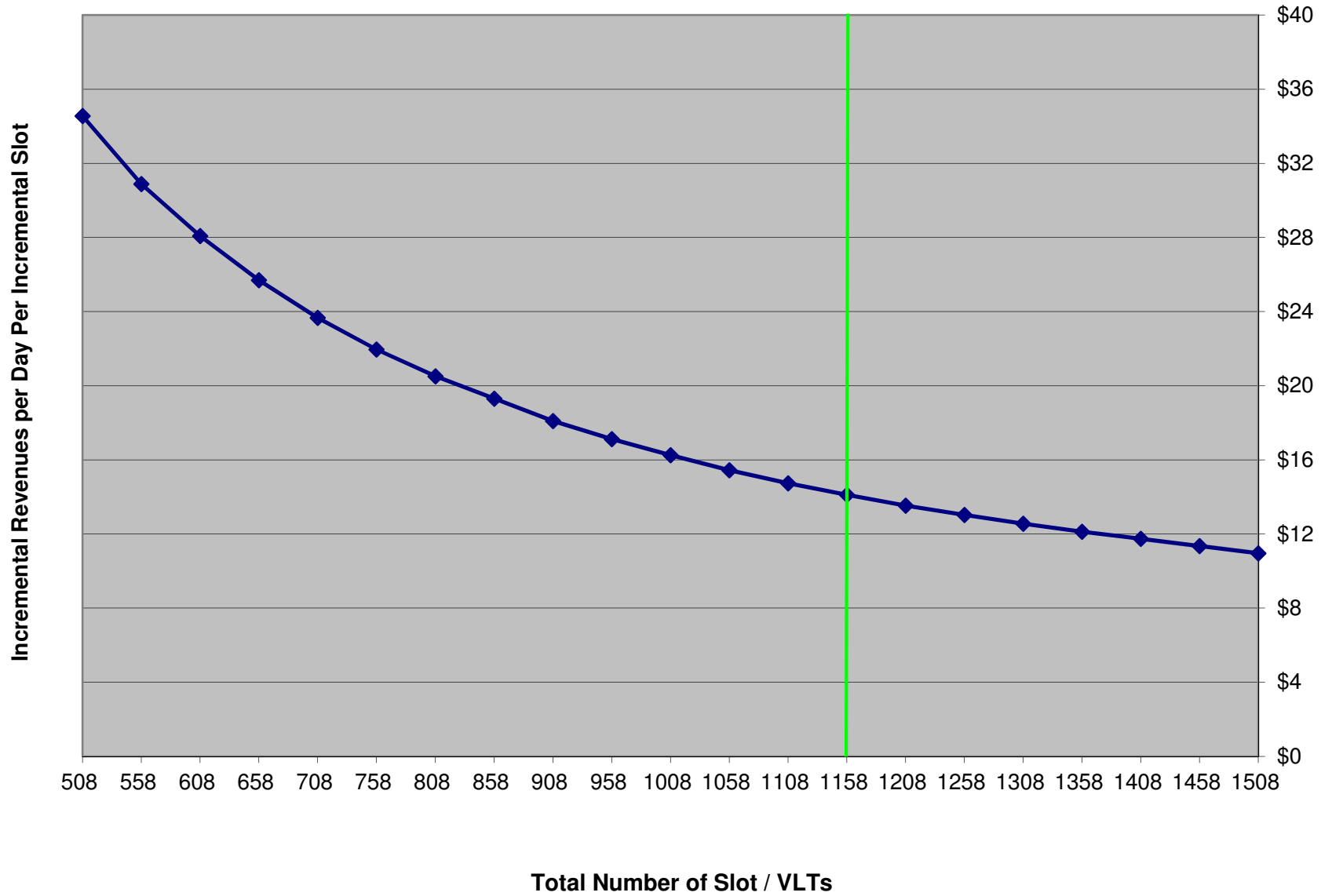
**Exhibit 9: Hollywood Average Win/Slot/Day vs. Number of Slots**



**Exhibit 10: Hollywood Win/Day for Each Incremental Slot vs. Number of Slots**



**Exhibit 11: Hollywood's Marginal Revenues/Day for Each Incremental Slot**



### Exhibit 16: Estimated Direct Marginal Costs - Long Term

	Per Year Per Machine	Basis / Comment
Slot Machine	\$3,600	\$18,000 average -- some more, some less
Furnishings & Fixtures	\$800	\$3,000 bases, stools, signage, wiring
Surveillance etc.	\$400	\$2,000 cameras, wiring / wireless, radios
	-----	(all amortized over 5 years)
<b>Equipment Costs</b>	<b>\$4,600</b>	<b>\$23,000</b>
<b>Cost of Capital</b>	<b>\$1,150</b>	10% x net book value of the above (on average, 50%)
Updates / Conversions	\$1,000	\$2,000 roughly every 2nd year
Network etc.	\$800	includes slot data system
Machine-Related Payroll	\$820	roughly 3 FTE per 100 machines (slot tech, EVS, count)
Miscellaneous	\$100	electricity, paper, count, etc.
State License Fee	\$450	provides revenue to the State, of course
	-----	
<b>Direct Operating Costs</b>	<b>\$2,970</b>	
Customer-Service Payroll	\$232 *	1.0% x incremental GGR (beverage, tech & count)
Marketing & Promotion	\$348 *	1.5% x incremental GGR (out-of-pocket costs only)
	-----	
<b>Associated Direct Costs</b>	<b>\$581</b>	
Facility Expansion / Contraction		None Assumed
Facility Overhead		No Charge
Management Time & Attention		No Charge
	-----	
<b>Total Direct Costs</b>	<b>\$9,301</b>	per year per machine
	= \$25.48	per day *

\* actually varies in proportion to incremental GGR; figures shown are at the optimum number of slots and the average for both facilities

### Exhibit 17: Estimated Direct Marginal Costs - Near Term

	Per Year Per Machine	Basis / Comment
Slot Machine	\$2,000	\$8,000 average -- amortized over 3 years
Furnishings & Fixtures	\$0	bases, stools, signage, wiring
Surveillance etc.	\$0	cameras, wiring / wireless, radios
	-----	(sunk costs - no impact at margin)
<b>Equipment Costs</b>	<b>\$2,000</b>	<b>\$8,000</b>
<b>Cost of Capital</b>	<b>\$300</b>	10% x net book value of the above (on average, 50%)
Updates / Conversions	\$1,000	\$2,000 roughly every 2nd year
Network etc.	\$800	includes slot data system
Machine-Related Payroll	\$820	roughly 3 FTE per 100 machines (slot tech, EVS, count)
Miscellaneous	\$100	electricity, paper, count, etc.
State License Fee	\$450	provides revenue to the State
	-----	
<b>Direct Operating Costs</b>	<b>\$2,970</b>	
Customer-Service Payroll	\$232 *	1.0% x incremental GGR (beverage, tech & count)
Marketing & Promotion	\$348 *	1.5% x incremental GGR (out-of-pocket costs only)
	-----	
<b>Associated Direct Costs</b>	<b>\$581</b>	
Facility Expansion / Contraction		None Assumed
Facility Overhead		No Charge
Management Time & Attention		No Charge
	-----	
<b>Total Direct Costs</b>	<b>\$5,851</b>	per year per machine
	= \$16.03	per day *

\* actually varies in proportion to incremental GGR; figures shown are at the optimum number of slots and the average for both facilities

Exhibit 18: Hollywood's Marginal Revenues vs. Long-Term Marginal Costs

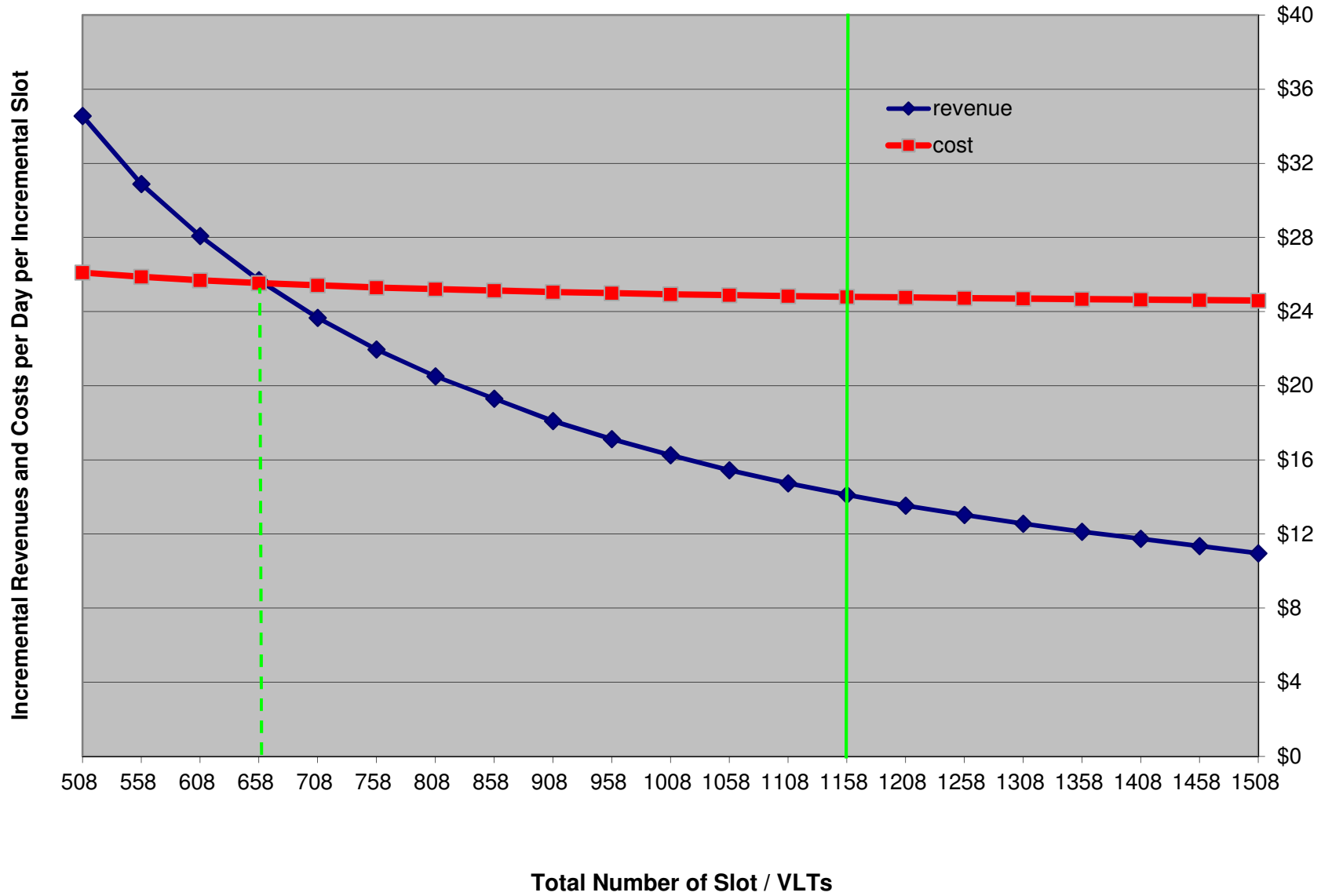
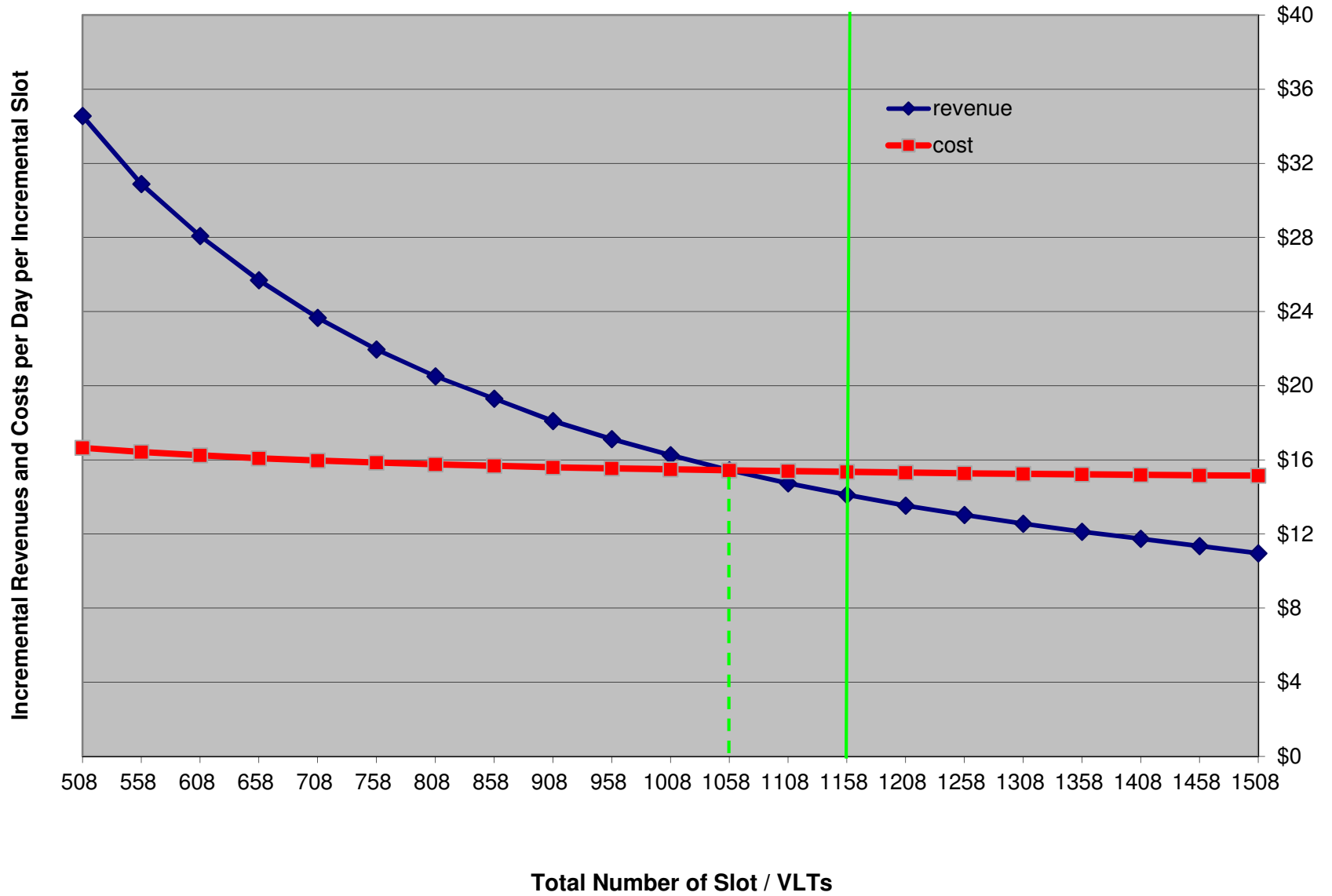


Exhibit 20: Hollywood's Marginal Revenues vs. Near-Term Marginal Costs

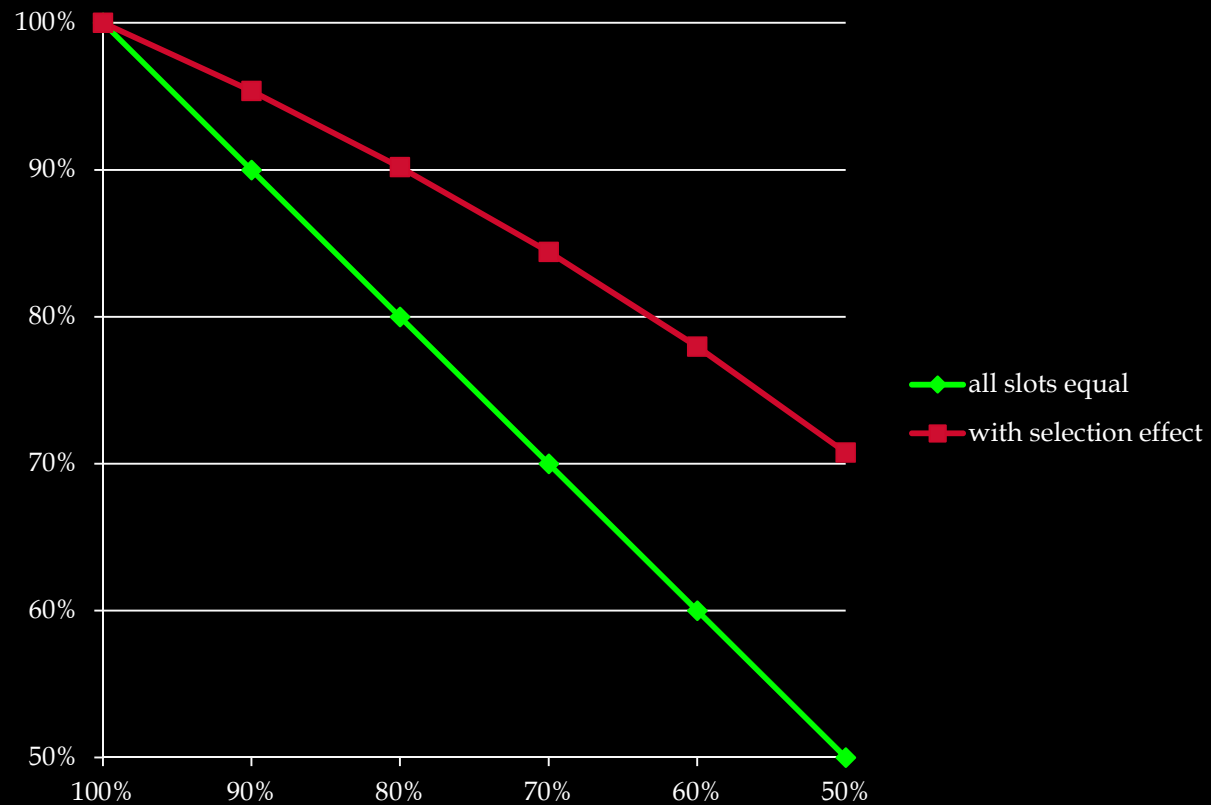


# *Impacts on State Revenues*

- 61% effective tax rate on GTR
- \$450/machine annual license fee
- Offset\* by small gains at other casinos
- Near Term: Offset\* by “selection” effects
  - these evaporate over the long term
- Long Term: Offset\* by improved economic efficiency + better “tuning” to the marketplace

\* To some extent

# Near-Term “Selection” Effects



## *Bottom Line*

	# Slots	Impact on State \$
Current	1,158	\$ 0
Near Term	1,058	- \$ 353,000 *
Assumed Next Year	900	- \$ 982,000 *
Long-Term	660	less?

\* Annual Rates for Next 12 Months

# *Sensitivity Analysis*

- Consequences of “wrong” number are not dire
- After selection effects, etc., near-term impacts of variation by 100 machines ( $\pm$  from 850)  $\approx$  \$527,000 in net State revenues
- Mitigated (if not totally offset) over the long term by changes in productivity

*Questions Please!*

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