

## **Supporting a Business Strategy for the California Lottery:**

How Payout Rates Drive Sales and Profits

Prepared by:

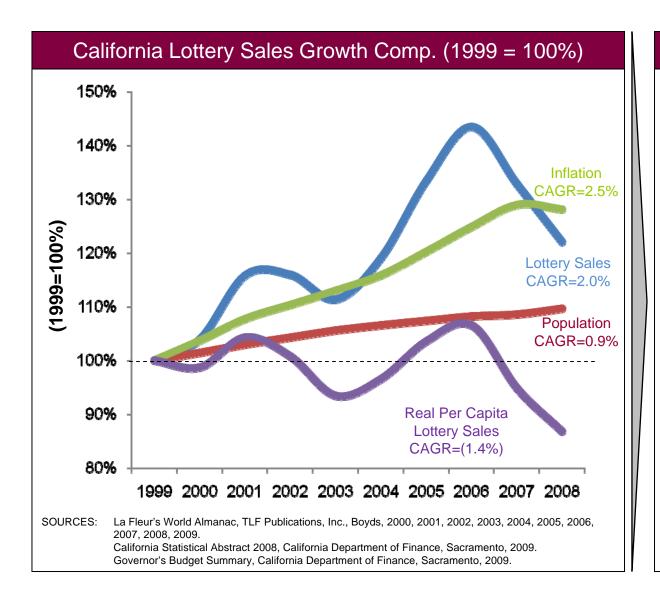
Chang & Adams Consulting

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## **Key Findings**

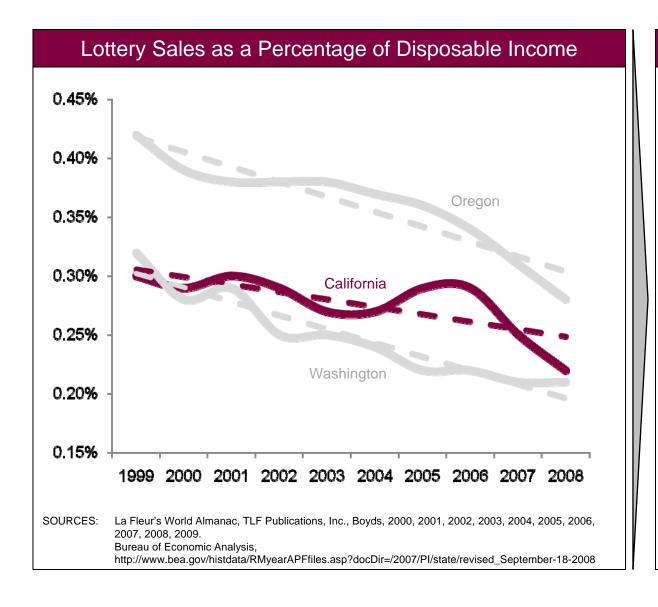
- The California State Lottery's (CSL) sales, currently at about \$3.0 billion annually, are currently projected to decline by 3.7 percent every year between now and FY 2013-14. Similarly, CSL profits for education are projected to decline 3.6 percent every year.
- Under current code, the CSL faces an effective prize payout limit of about 53 percent of sales. This payout rate is low compared with the rest of the United States – the national average payout is about 7 percentage points higher than California's, and the other states in the Far West (Washington and Oregon) have payouts ranging from 7 to 12 percentage points higher.
- Based on a statistical analysis of sales and payout data from lotteries across the United States, the CSL's payout restrictions unnecessarily dampen its potential sales and the total dollar amount for education. With CSL administrative costs at 13.5 percent of sales as they are now, our analysis suggests that education contributions are maximized at a payout level of 61.9 percent.
- The CSL could achieve this 62 percent composite payout rate by increasing Scratcher payout rates to about 67 percent and by leaving payout rates for Draw games untouched.
- It could take about three years to fully phase in higher prize payouts into Scratcher games. Consequently, increasing the payout rate would leave FY 2009-10 sales unchanged from current projections of \$2.950 billion. But in FY 2013-14, assuming that higher payouts were fully implemented that year, then sales would measure \$5.035 billion a 106 percent increase over the \$2.441 billion expected in FY 2013-14 if the status quo policies remain. These results are consistent with the estimates of the Legislative Analyst's Office that higher payouts would increase sales between 30 and 80 percent.
- With higher prize payouts, CSL profits would decline from 34.0 percent of total sales in FY 2009-10 to approximately 24.5 percent of total sales in 2013-14. But with CSL sales expected to more than double by FY 2013-14 with higher payouts, net profits for education would be approximately 42 percent higher in FY 2013-14 than would otherwise be the case. This means that profits in FY 2013-14 would be \$1.229 billion rather than the \$863 million projected for that year under the status quo.

## After inflation and population growth are factored, lottery sales have decreased by 1.4 percent per year during the past ten years



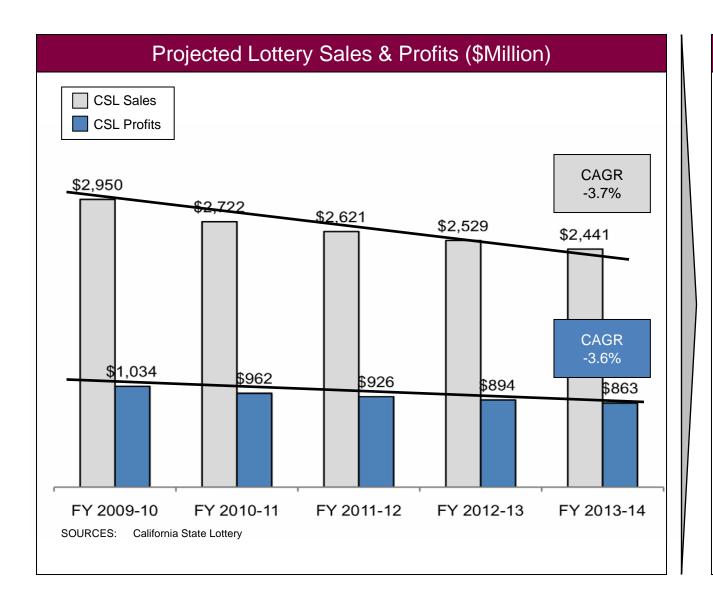
- Total lottery sales have grown twice as fast as population during the past ten years
- Total lottery sales have grown roughly 20 percent slower than inflation
- As a whole, when inflation and population are factored, lottery sales have decreased at a CAGR of NEGATIVE 1.4 percent during the past ten years. In real terms, real per capita lottery growth is only 87 percent of its value in FY 1998-99

## Lottery sales as a percentage of disposable income has shown a steady decline in all three states in the Far West



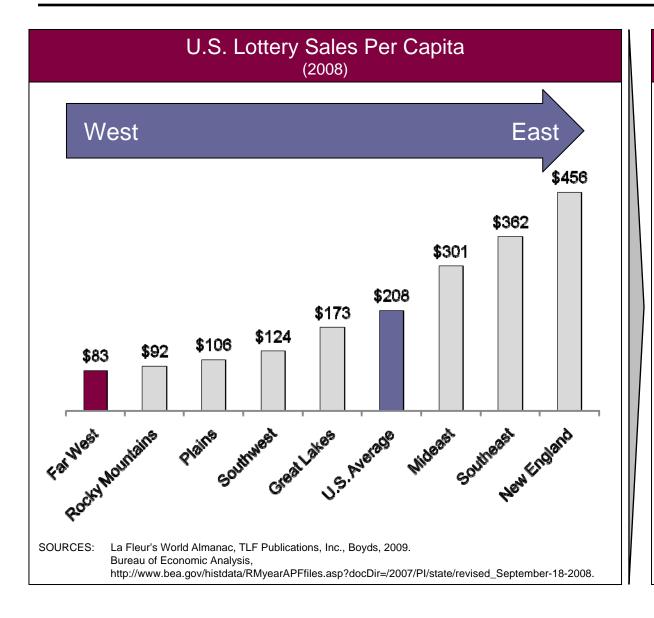
- Lottery sales as percentage of disposable income demonstrates a clear pattern of erosion during the past ten years
- California dropped from 0.30 percent to 0.22 percent, representing a drop of 27 percent. Regardless of the significant drop, California performed better than other states in the Far West.
- In Washington, sales dropped from 0.32 percent of disposable income to 0.21 percent of disposable income – this represents a 34 percent drop in real terms.
- Oregon dropped from 0.42 percent to 0.28 percent representing a drop of 33 percent in real terms.

## Lottery sales and total profits are projected to fall at a Compounded Annual Growth Rate (CAGR) of 3.7% and 3.6% over the next five years



- The California State Lottery (CSL) projects that sales will fall from \$3.0 billion to \$2.4 billion between FY 2009-10 and FY 2013-14
- Sales will drop at a Compounded Annual Growth Rate of negative 3.7 percent. Over the five year period, sales will fall by 17.3 percent
- During the same period, profits will fall from \$1 billion to \$863 million representing a drop of 3.6 percent annually.
- Over the five year period, sales will fall by 16.5 percent

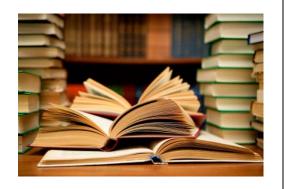
In the United States, there are significant differences in per capita lottery sales from one region to the next



- The Far West has the lowest per capita lottery sales in the U.S. at \$83. The Far West is more than 60 percent less than the national average and more than 80 percent less than the New England region
- Per capita lottery sales increases substantially from West to East. While it is difficult to explain this geographic phenomenon, it is certainly possible that gambling, especially lottery gambling, is more socially acceptable on the East than in the West. Assuming this to be the case, the per capita differences are more cultural than anything else.

## Of the three options for determining the relationship between payout and sales, analyzing national lottery data makes the most sense

### Literature Review



#### What:

 Review academic and industry studies documenting the relation between payout and sales

#### Pros:

- Many lottery studies already exist
- Developed by credible sources

#### Cons:

- Very few studies actually attempt to quantify the relationship between payout and sales
- These studies are not robust across different game and socioeconomic circumstances, so it is difficult to generalize their results to California

## California Focused Analysis



#### What:

 Analyze sales and payout data for draw games and scratchers from California State Lottery (CSL)

#### Pros:

- All states are different, so focusing on California alone is appropriate
- Can potentially estimate a Californiaspecific relationship using CSL data

#### Cons:

- California's low composite payout percentage – never higher than 54 percent – means little variation in payout data
- Can only speculate what would happen at high payout levels

### U.S. Focused Analysis



#### What:

 Analyze sales and composite payout data for lotteries across the United States

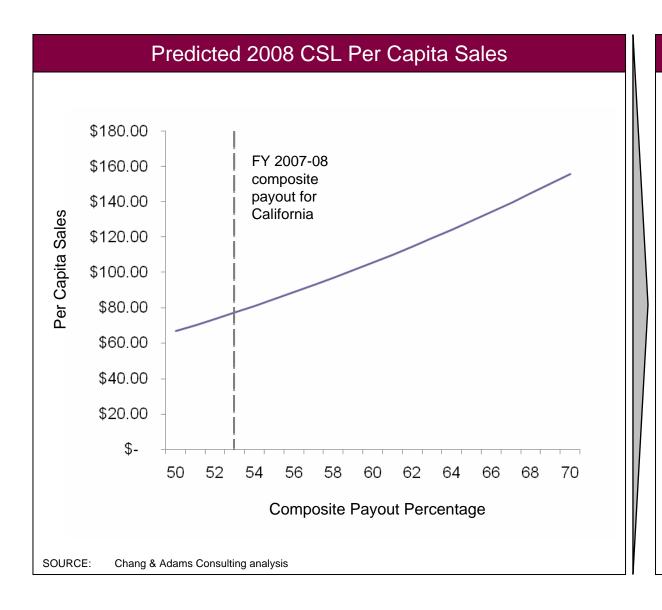
#### Pros:

- Lots of variation in national payout and sales data
- More data means a stronger statistical relationship can be estimated
- Many states are increasing their payouts

#### Cons:

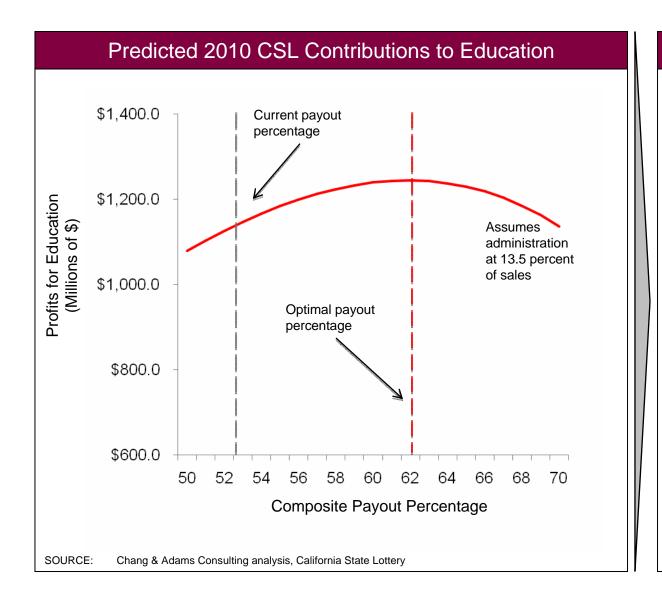
 Must assume that, after accounting for regional differences, the relationship is the same across all states

## The regression model shows that CSL's 2008 per capita sales would have been significantly higher with a larger composite payout percentage



- This model is tailored to the U.S. Bureau of Economic Analysis "Far West" region (encompassing California, Oregon, and Washington) for FY 2007-08. In the model, the payout percentage interacts with the level of advertising spending. Here, advertising is set at \$26.8 million, California's FY 2007-08 level.
- The model has strong predictive value. The inputs explain over 76 percent of the variation in per capita sales data. Estimates tend to be more precise for states with smaller predicted per capita spending (less than \$190 a year).
- At the CSL's FY 2007-08 composite payout percentage of 53.5 percent, the model predicts per capita sales of \$77.85, slightly less than the actual per capita sales of \$82.97.
- With a composite payout percentage of 65 percent, the model predicts per capita sales of \$129.41. These results are consistent with the estimates of the Legislative Analyst's Office that higher payouts would increase sales between 30 and 80 percent.

If higher payouts were fully in place today, the optimal composite payout percentage would be nearly 62 percent



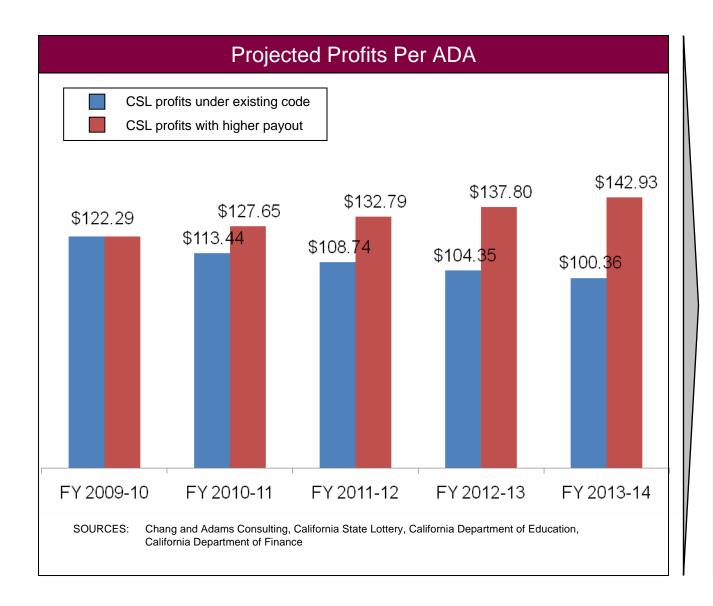
- The model's predicted profits for education assume administrative costs of 13.5 percent and advertising expenditures of \$46.1 million – consistent with FY 2009-10 levels.
- The CSL expects a composite payout of 52.5 percent for FY 2009-10. With administrative costs of 13.5 percent, the CSL projects that it will provide \$1.034 billion to education.
- Under administrative costs of 13.5
  percent, a 61.9 percent composite
  payout would have been optimal. It
  would have increased the total
  education contributions by 20.4 percent
  for the year to \$1.244 billion.

# Using CSL assumptions regarding advertising and administrative expenses, a three-year phase in of higher payout rates can markedly the CSL's support for ADA

Profits Per ADA Under Current Law and Higher Payouts					
	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14
Advertising	\$46.1 M	\$35.4 M	\$34.1 M	\$32.9 M	\$31.7 M
Administration	n 13.5%	13.4%	13.7%	13.9%	14.1%
Current Law a	nd Low Payouts				
Payout	52.5%	52.6%	52.3%	52.1%	51.9%
Total Sales	\$2.950 B	\$2.722 B	\$2.621 B	\$2.529 B	\$2.441 B
CSL Profits	\$1.034 B	\$0.962 B	\$0.926 B	\$0.894 B	\$0.863 B
ADA Support	\$122.29	\$113.44	\$108.74	\$104.35	\$100.36
Impact of High	ner Payouts				
Payout	52.5%	55.4%	58.0%	60.0%	61.5%
Total Sales	\$2.950 B	\$3.471 B	\$3.993 B	\$4.514 B	\$5.035 B
CSL Profits	\$1.034 B	\$1.083 B	\$1.131 B	\$1.180 B	\$1.229 B
ADA Support	\$122.29	\$127.65	\$132.79	\$137.80	\$142.93

- Under current code, FY 2009-10 CSL profits are projected to be \$122 per Average Daily Attendance (ADA). Per ADA profits are expected to drop \$22 in real terms to \$100 per ADA by FY 2013-14
- CSL's assumptions about advertising expenses, ranging from \$31.7 million to \$46.1 million, were used as inputs into the model to determine the sales and profits that could be achieved from higher payouts.
- CSL's assumptions about administrative expenses, ranging from 13.5% to 14.1%, also affect the optimal payout level.
- We assume that higher composite payouts would be introduced over a three-year time period, from FY 2010-11 to FY 2012-13. Consequently, FY 2013-14 would be the first full year of higher payouts.
- With higher composite payouts, Lottery profits would steadily increase over time. By FY 2013-14, per ADA support would be over \$42 more than under the status quo scenario.

## Payout rates increased to near 62 percent can help improve the position of schools going forward



- Under current code, FY 2009-10 CSL profits are projected to be \$122.29 per Average Daily Attendance (ADA). Per ADA profits are expected to steadily decline over the next four fiscal years.
- By FY 2013-14, per ADA profits are expected to be \$100.36 under current code, which represents a \$22 drop in real terms.
- With composite payout levels increased over time to near 62 percent, CSL profits would steadily increase. By FY 2013-14, per ADA support would be \$142.93, or over \$42 more than that under existing code.
- As mentioned earlier, per ADA support is expected to decline by 3.9 percent annually under current law. Under higher composite payout levels, per ADA support would instead increase by 3.2 percent annually.

## **About Chang & Adams Consulting**

- We are Sacramento's premier management consulting firm, operating at the intersection of the public and private sectors. We specialize in applying cutting-edge quantitative analyses to help frame and solve issues pertaining to public policy and business strategy.
- We advise a range of clients, including government agencies, non-profit organizations, campaigns for initiatives and candidates, and Fortune 1000 companies.
- We provide them with the analytical insight to shape their strategic direction, improve their operations, and develop sound policies.