

Economic Justification of Weights and Measures Programs

Programs

- Device Inspection
- Package Inspection
 - Price Accuracy
 - Weighmaster
 - Petroleum

Traditional Value Measure

Program Cost/Population =

Cost per person to provide the service

Assumes benefit > cost

San Bernardino Traditional Measure

- 1,971,000 people
- \$2,014,000 program cost

\$1.02/person

Who benefits from short measures

- Businesses selling
- Government when not the consumer
 - Dieters

Who benefits from excess measures

- Businesses buying
 - Consumers

Quantifying the impacts

- Population Involved
- Amount of Goods Purchased
 - Value of goods
 - Per Capita Income
 - % Spent on Goods
 - Size of Error

Our Focus: Common Items

- Gasoline
- Produce
- Meat
- General Merchandise

Assumptions

- Overall market place error should be zero
 - Consumption patterns are uniform
 - No change in use from inaccuracies

Gasoline 1cu inch short/gallon

- County Population 1,971,000
- Gasoline sold in California 14,400,000,000 gal.
 - Per Capita Consumption 450 gallons
 - Price per gallon \$3.75
 - Error $1/231=0.004329$

$$1971000 \times 450 \times \$3.75 \times .004329 = \mathbf{\$14,398,525}$$

Additional Gasoline Required

- $1,971,000 \times 450 \times .004329 = 3,839,607$ gallons
- Additional Gas Tax paid = \$691,129
- Additional Sales Tax paid = \$1,187,878
- Government benefits by \$1,879,000 when consumers shorted by 1 cu. in./gal.

1 oz/gal shortage

- $1971,000 \times 450 \times \$3.75 \times .0078125 =$
 - \$25,984,900

The general public identifies more with ounces than cubic inches!

FOOD: Produce

- 221 ounces of produce/person/week
 - 1,971,000 population
- \$0.80/lb average price (5 cents/ounce)
 - 1/8 ounce per lb. error (0.0078125)

$$221 \times 52 \times 1,971,000 \times .05 \times 0.0078125 =$$

\$8,847,900

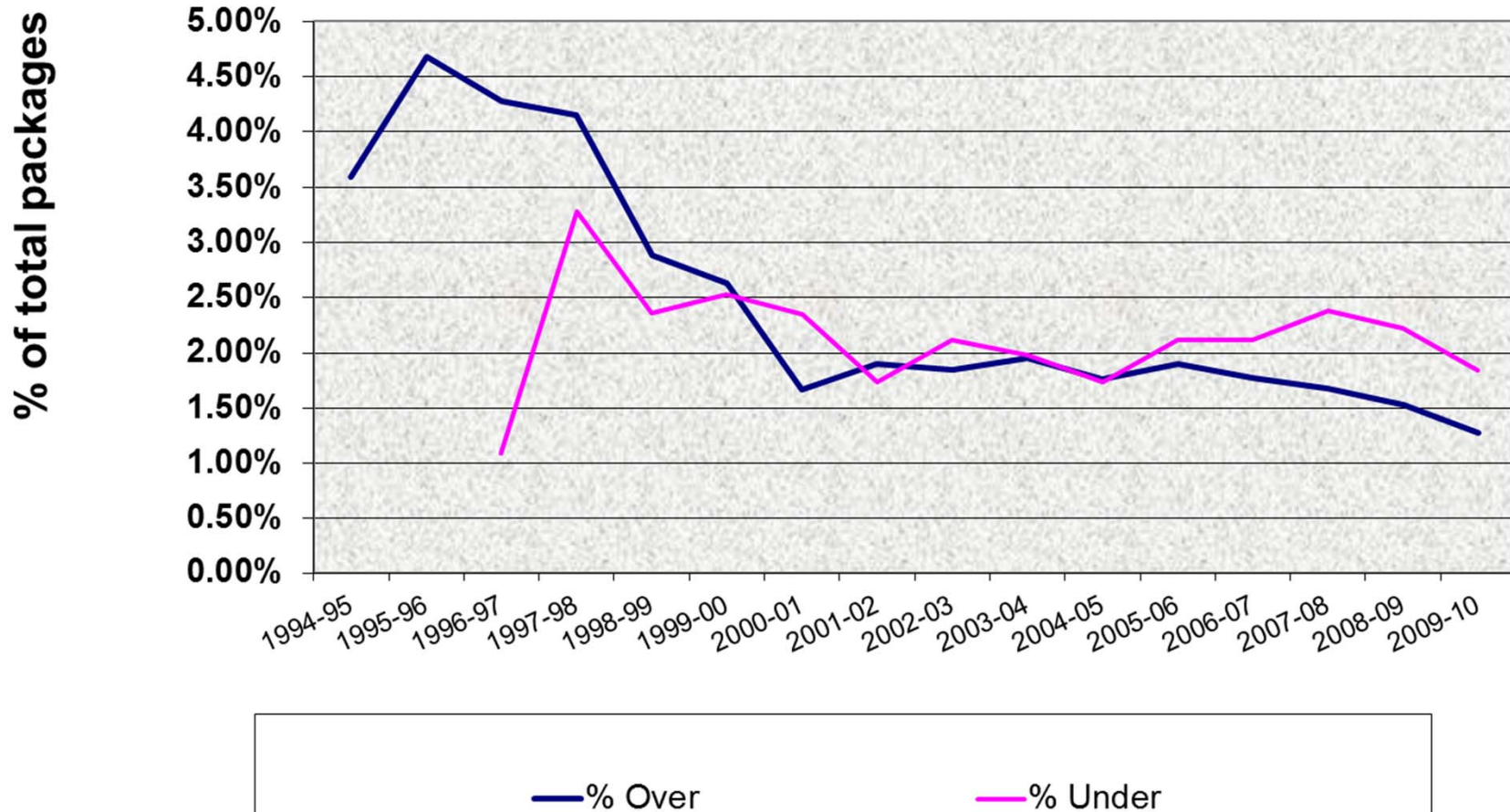
Food : Meat

- 56 ounces/person/week
 - 1/8 ounce error/lb.
- \$3.00/lb. (\$0.1875/ounce)

$$56 \times 52 \times 1,971,000 \times 0.1875 \times .0078125 =$$

\$8,407,500

Pricing Error Rates in San Bernardino County



General Merchandise

- \$24,262 per capita income
- 30.7 % spent on taxable goods
- 1 in 200 items overcharged (0.5%)
 - 10 % price overcharged

$$24262 \times .307 \times 1,971,000 = \$14,680,860,000$$

Less taxable gas sales = \$11,310,450,000 spent

$$\$11,310,450,000 \times .005 \times .1 = \mathbf{\$5,655,000}$$

Weighmaster

- Shipping costs
- Bulk Commodities
- Highway safety and repair

Petroleum

- Economic benefit of signage
 - Product Quality

Economic benefit of signage

- Consumer choice of purchase location based on price
- \$0.01 price differential for 10% of purchases

$$886,950,000 \text{ gallons} \times 10\% \times \$0.01 = \\ \$886,950 \text{ saved}$$

Petroleum Product Quality

Assumes one grade level difference

- Gallons Sold 886,950,000
- Price per gallon \$0.10/gallon
 - Error Rate 1%

Lost Value = $886,950,000 \times \$0.10 \times .01 =$

\$886,950

Program Benefits to Public

• Gasoline	=	\$25,984,900
• Meat	=	\$8,407,500
• Produce	=	\$8,847,900
• Taxable Sales	=	\$5,655,000
• Fuel Quality	=	\$886,950
• Signage	=	\$886,950
	Total	\$50,669,200

Economic Justification

- Program Cost \$1.02/person

vs

- Return \$25.71/person

This is an incomplete but
conservative estimate!

Additional Economic Justification

The amount of money saved from eliminating shortages in meat and produce, \$17,255,400, when spent on taxable goods generates \$1,337,300 in sales tax.

This is 66% of the program cost

Additional Economic Justification

- \$17,255,400 spent at businesses with 1/3 going for employees.
- Pay Levels \$20,000; \$25,000; \$35,000 and \$45,000.
 - Each level with a 1 to five ratio.
 - **Results in 268 jobs!**

Additional Economic Justification

- State income tax on these jobs would be approximately \$63,000
 - Sales tax from these people's spending generates \$135,100.

Additional Economic Justification

- Taxes on the amount saved by ensuring meat and produce isn't shortweight totals \$1,535,400
 - **This is all generated by changing expenditures from non-taxed to taxed!**

Economic Justification

- \$2,014,000 program cost
- Less \$1,535,400 in additional taxes

Net government expenditures = \$478,600

Program Cost = \$0.25/person

Program benefits = \$25.71

- **103/1 Benefit to Cost Ratio in San Bernardino**
 - **Plus 268 jobs !**