Economic Update: Financial Modeling Workshop

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Almond Board of California

Richard Waycott

President & CEO

Almond Board of California

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Workshop Agenda

- Dr. Karen Klonsky – Grower Costs
- John Talbot – Driving Demand means Better Grower Returns
- Bill Harp – Industry Profitability for a Sustainable Future

Cost of Production Increases in Almond Production

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Dr. Karen Klonsky

Specialist in Cooperative Extension

Dept. of Agricultural and Resource Economics

University of California - Davis

CA Almond Production Costs and US Agriculture Cost Trends

Various cost and return studies from UCCE

http://coststudies.ucdavis.edu

National Agricultural Statistic Service, USDA. *Agricultural Prices*

CA Chapter of the American Society of Farm Managers and Rural Appraisers. *Trends in Land and Lease Values*

Market Outlook

"The trend of almond production in California has been upward due to increased plantings. Imports of almonds and competition of other nuts are factors which influence CA almond prices. Present acreage appears to be sufficient to fulfill market needs. Therefore, caution should be exercised in making new plantings."

Guess the year?

Market Outlook 1950

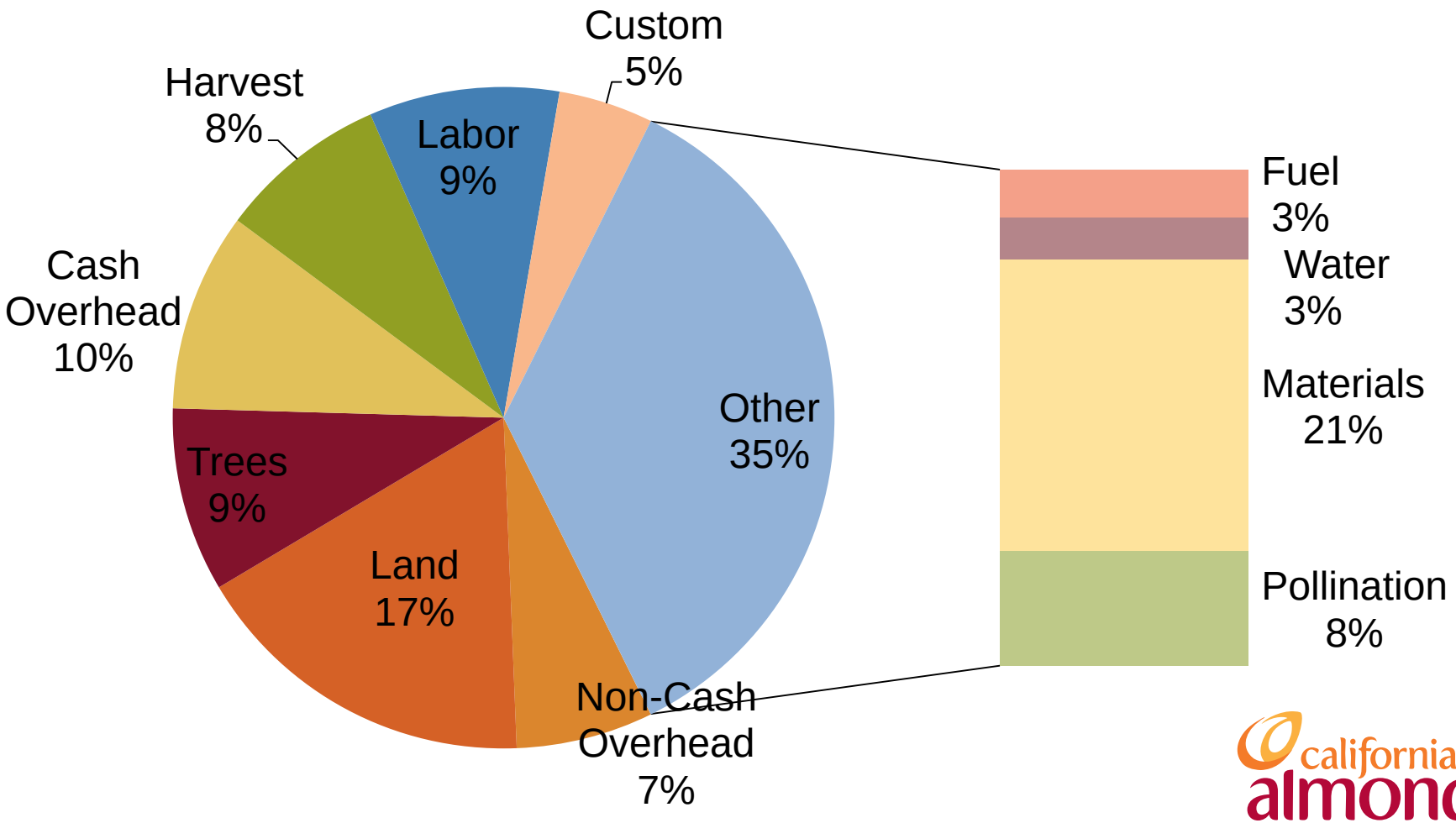
"The trend of almond production in California has been upward due to increased plantings. Imports of almonds and competition of other nuts are factors which influence CA almond prices. Present acreage appears to be sufficient to fulfill market needs. Therefore, caution should be exercised in making new plantings."

Historic Cost and Return Studies
San Joaquin Valley North

	1938	1950
Yield range (lbs./acre)	200 – 2,000	1,100 – 2,000
Expected yield	1,400	1,500
Labor rate ($/hour)	$.30	$.85
Labor cost ($/acre)	$54	$139
Water	$4.50 (18 inches)	$4.00 (30 inches)
Materials	$23	$34
Cash overhead	$9	$21
Depreciation and interest @5%	$39	$54
Total cost per acre	$127	$247
Land value per acre	$200	$350
Trees per acre value (30 yr. life)	$300	$150

Costs per Acre to Produce Almonds

San Joaquin Valley 2013- $4,195



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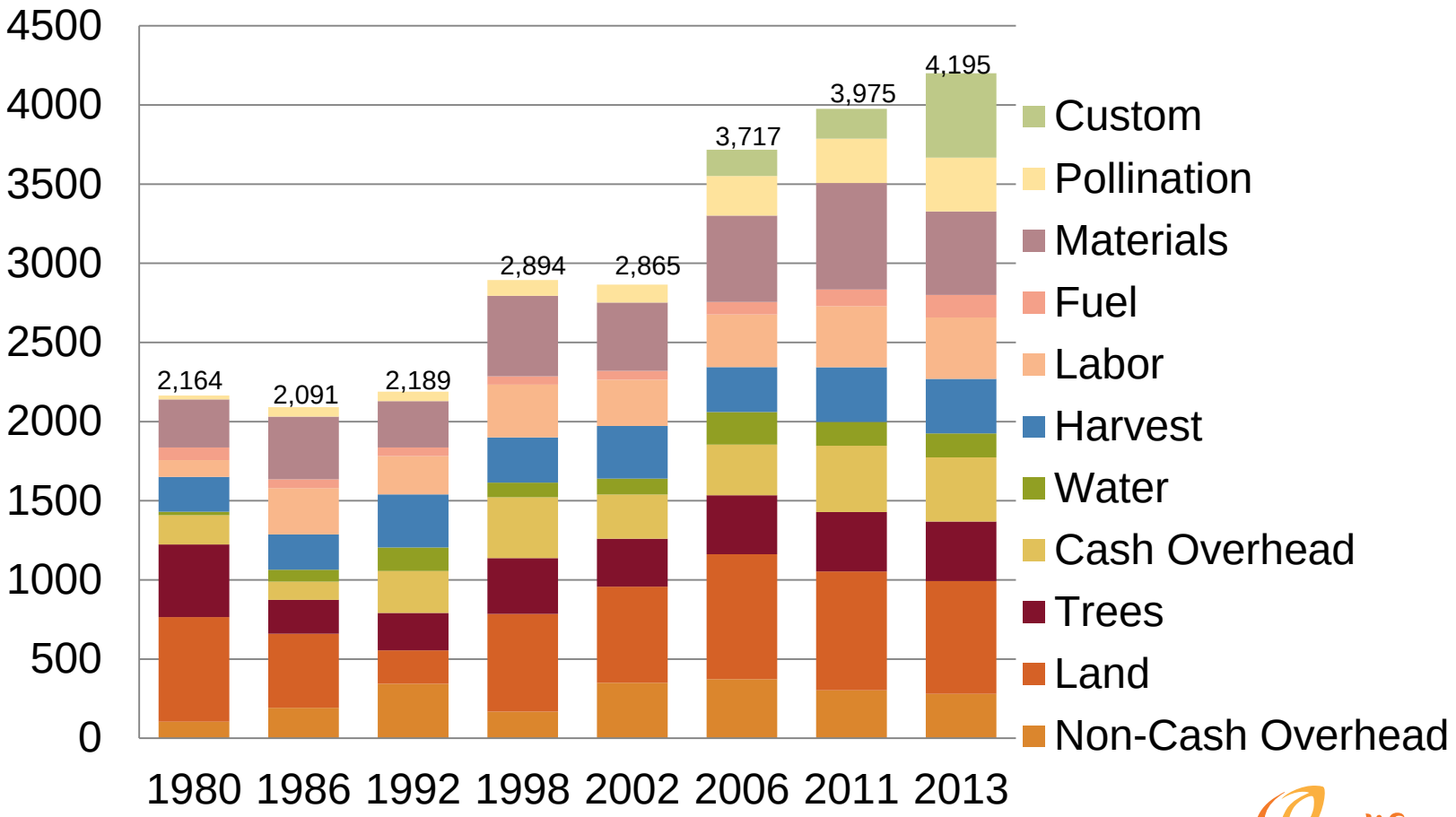
Cost per Acre to Produce Almonds



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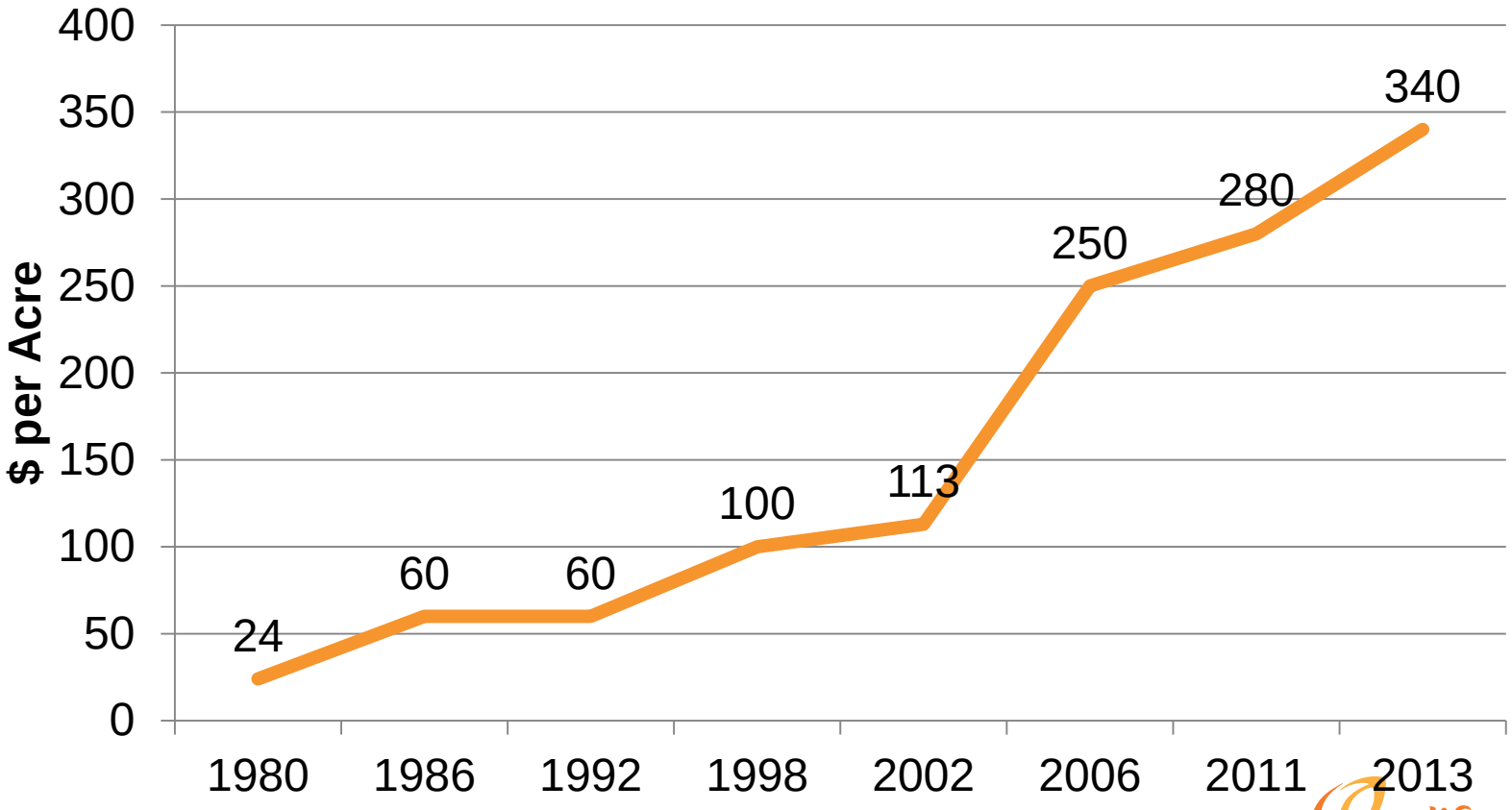
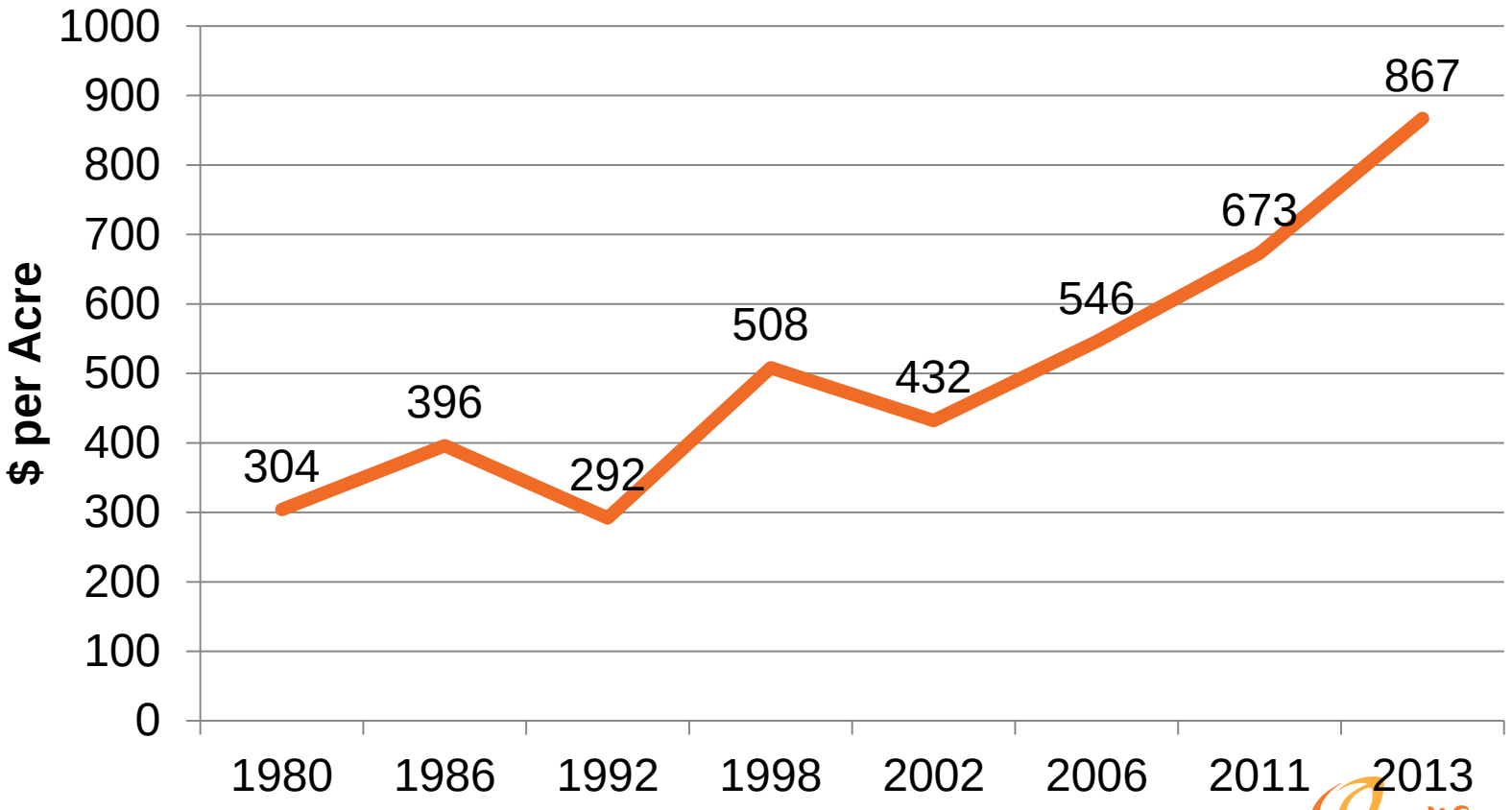
Pollination Per Acre



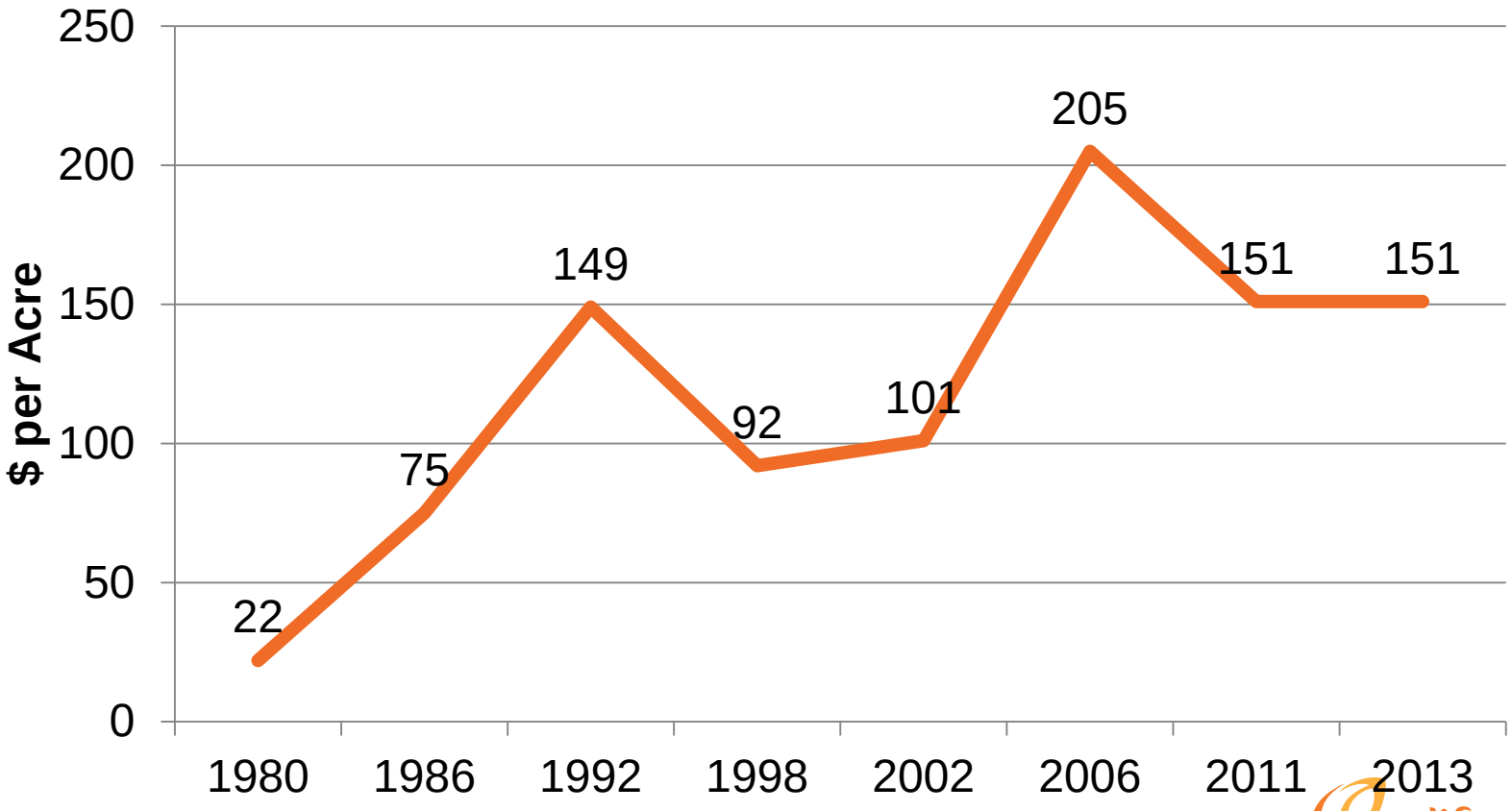
Quantity of Hives/Cost

YEAR	# Of Hives	COST PER HIVE	TOTAL COST
2013	2	170	340
2011	2	140	280
2006	2	125	250
2002	2.5	45.2	113
1998	2.5	40	100
1992	2	30	60
1989	2	25	50
1986	2	25	50
1980	2	12	24

Fertilizer and Pesticide Cost Per Acre

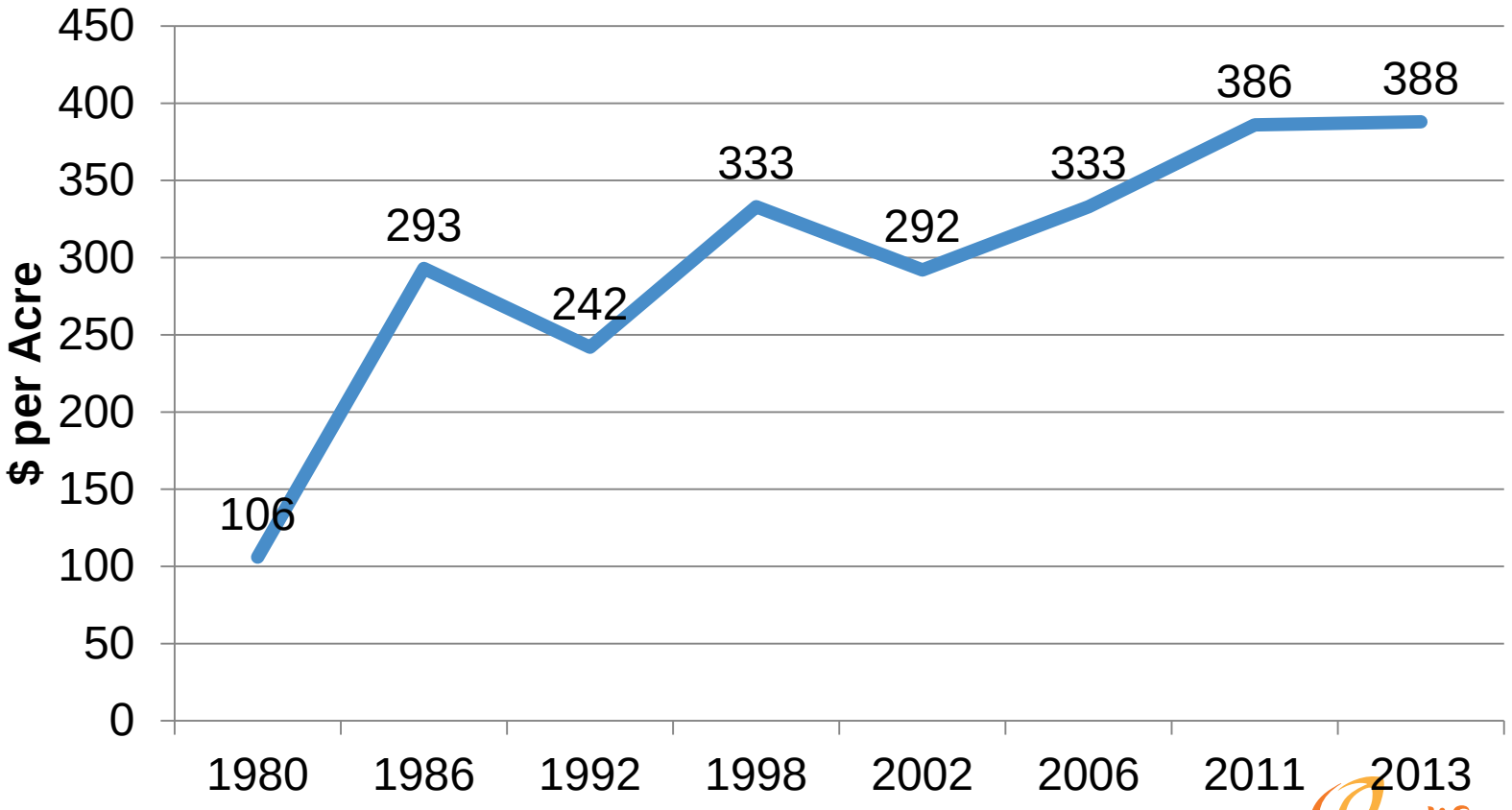


Water Cost Per Acre

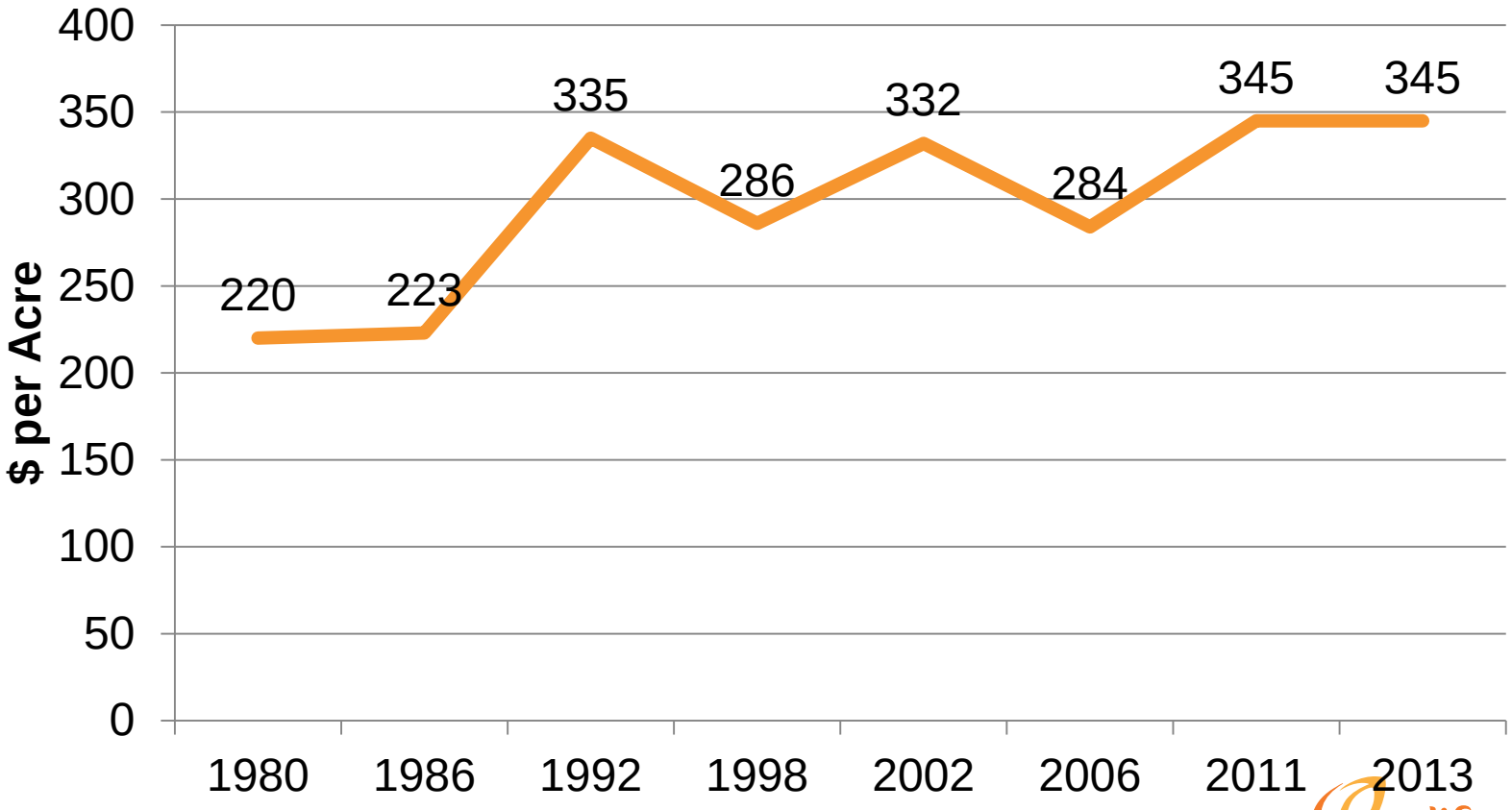


Fuel Cost per Acre

Labor Cost per Acre



Harvest Cost per Acre



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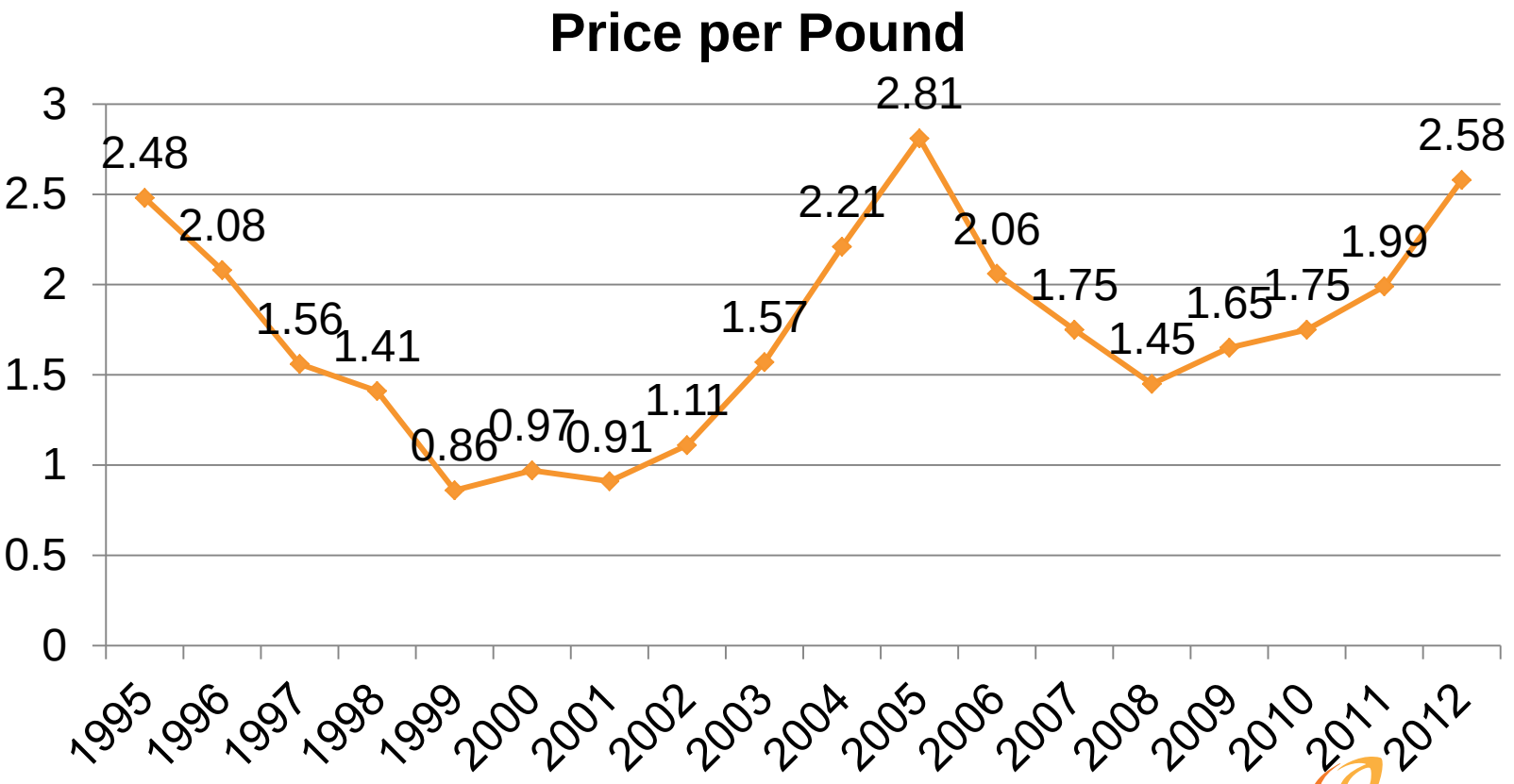
Almond Price per Pound



Source: NASS 2012 California Acreage Report

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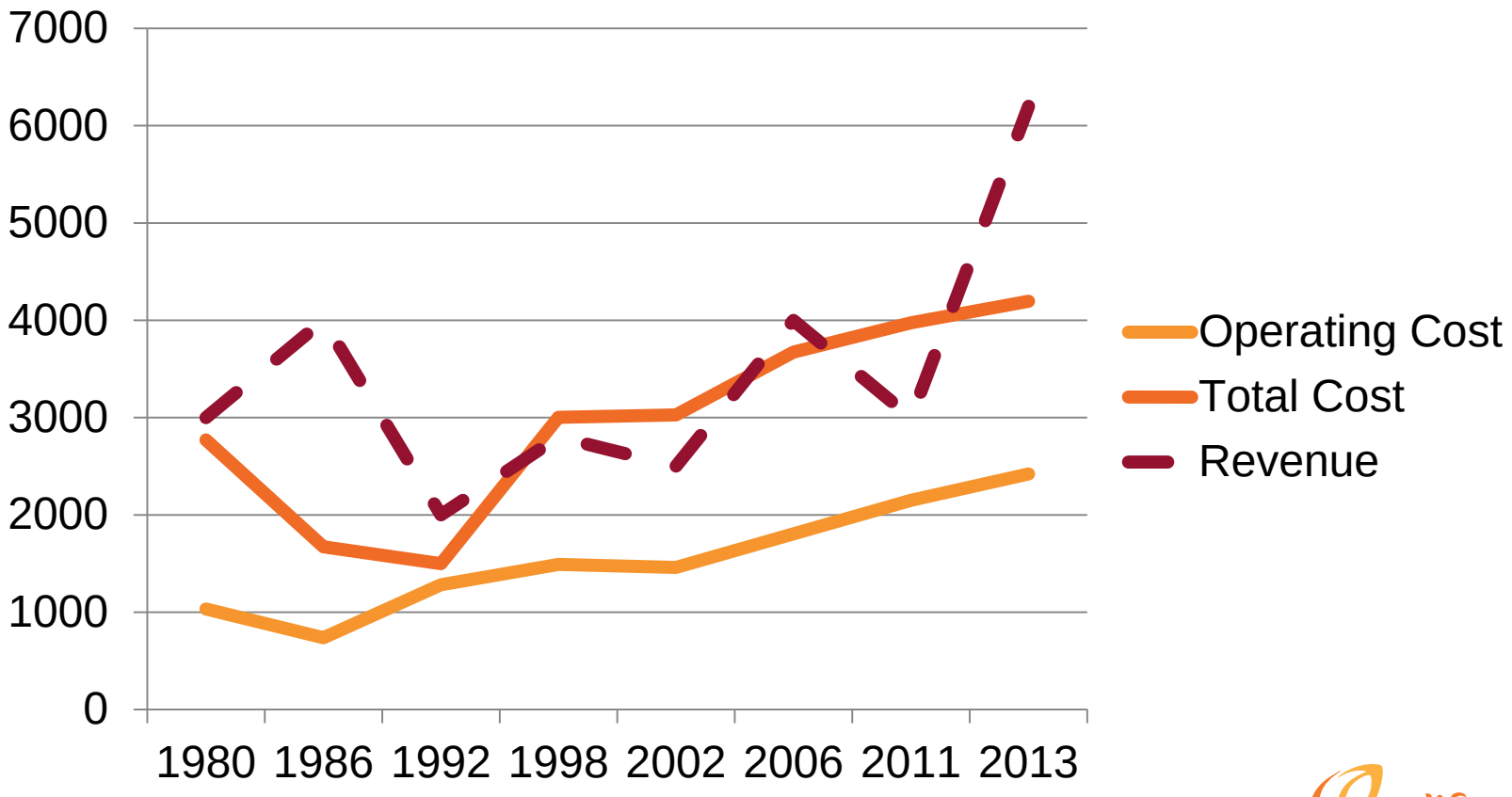
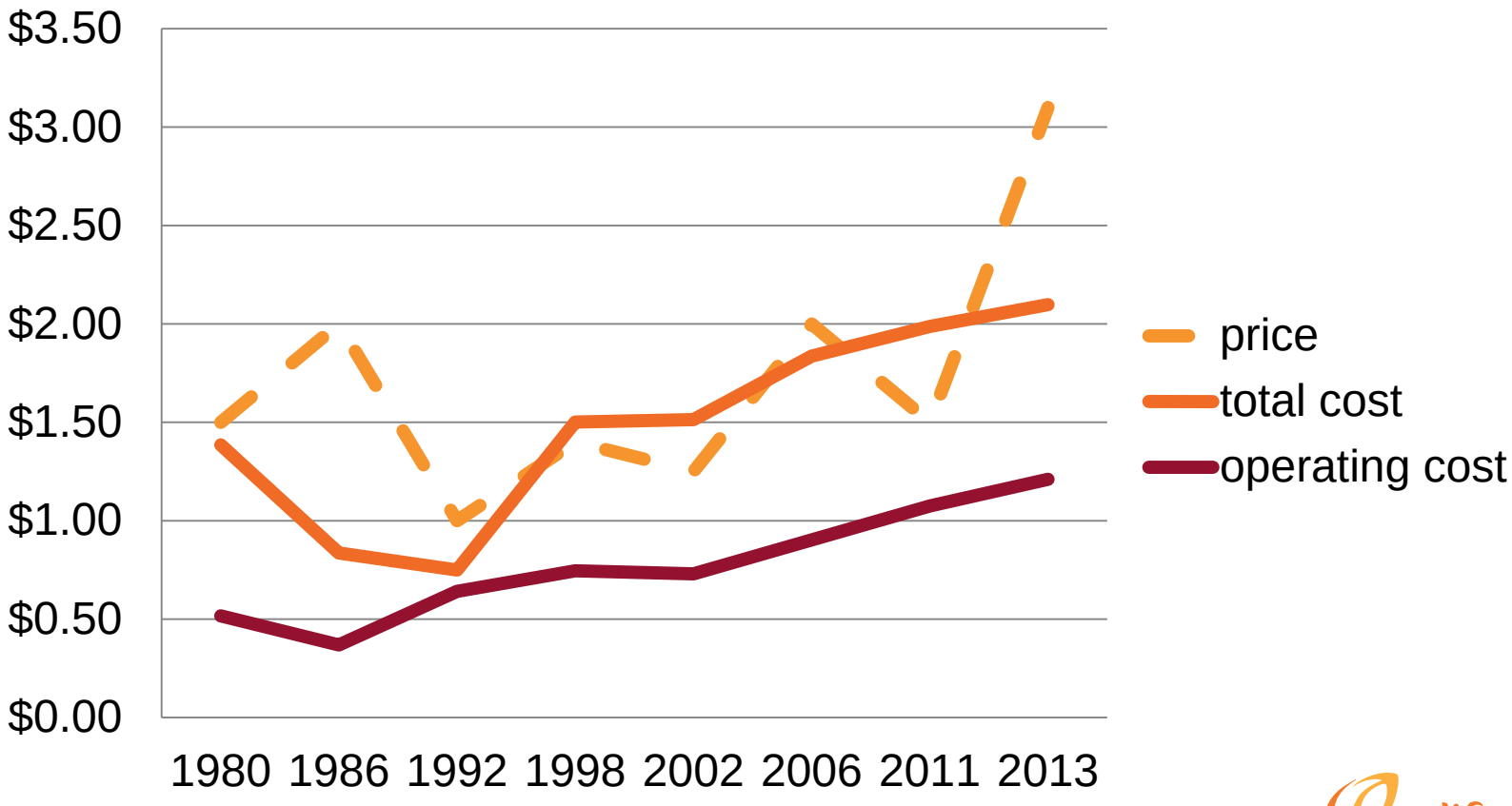
Revenue & Cost per Acre



Price & Cost per Pound



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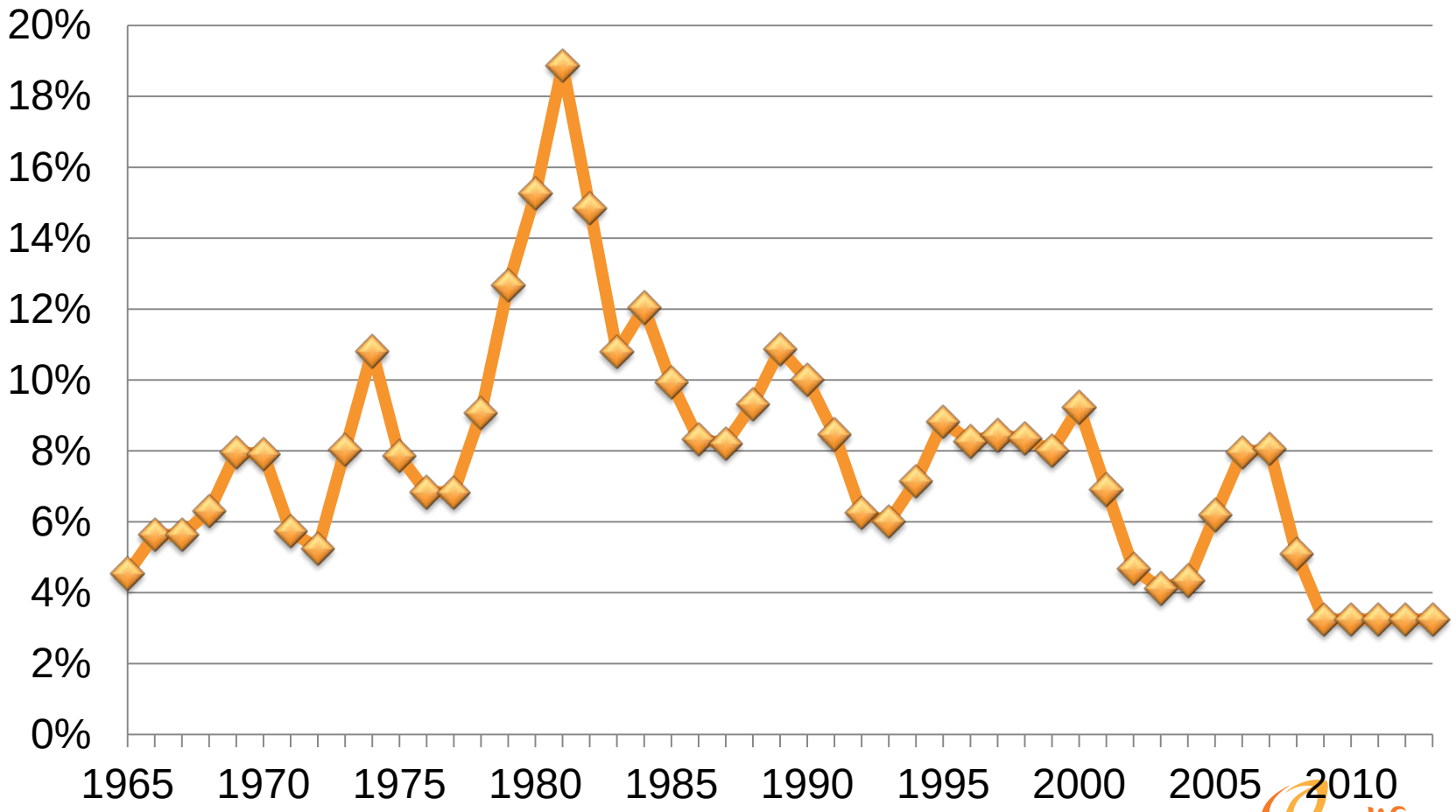
Prices Paid by US Farmers

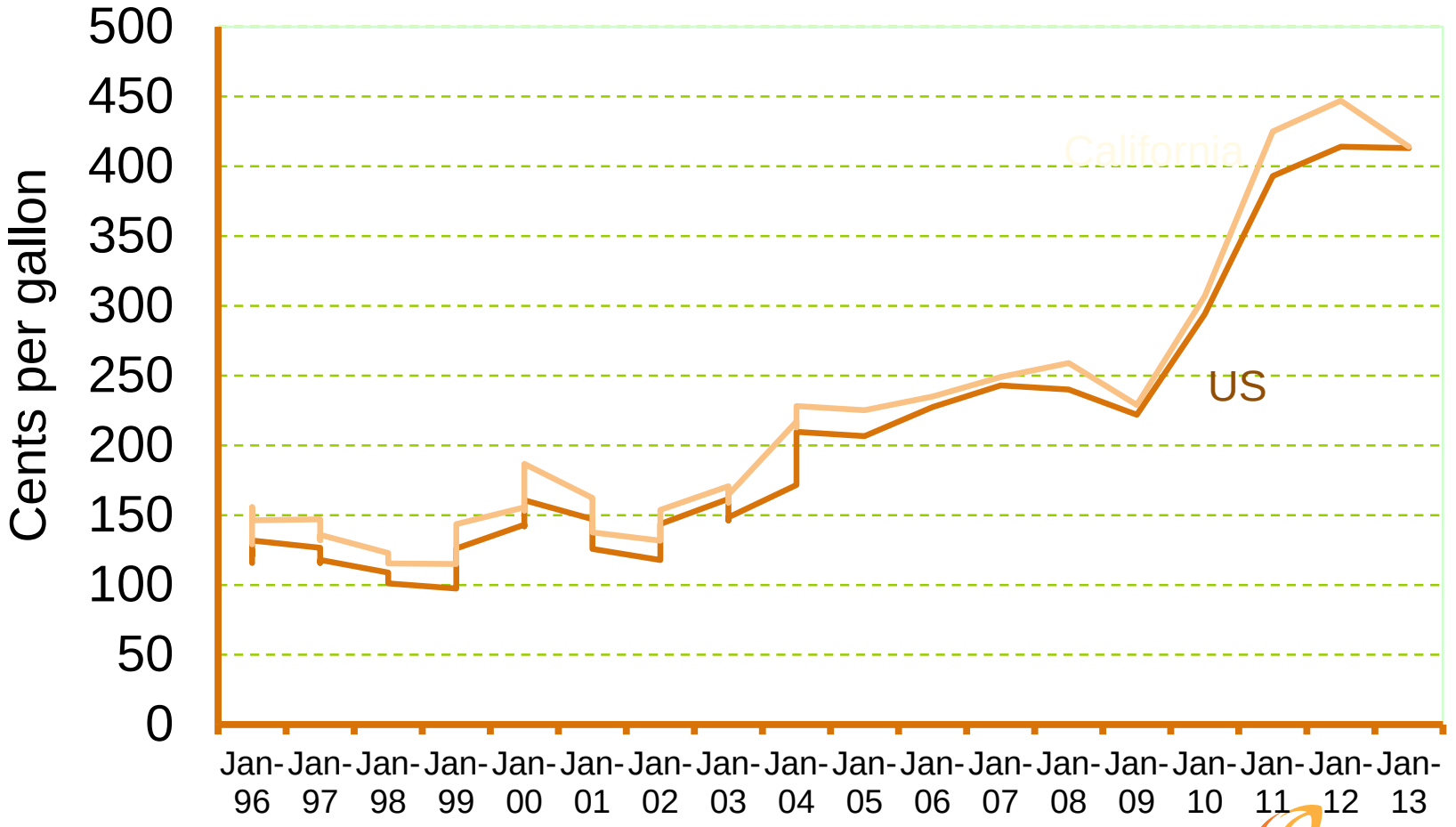
(various time periods)

Prime Interest Rate



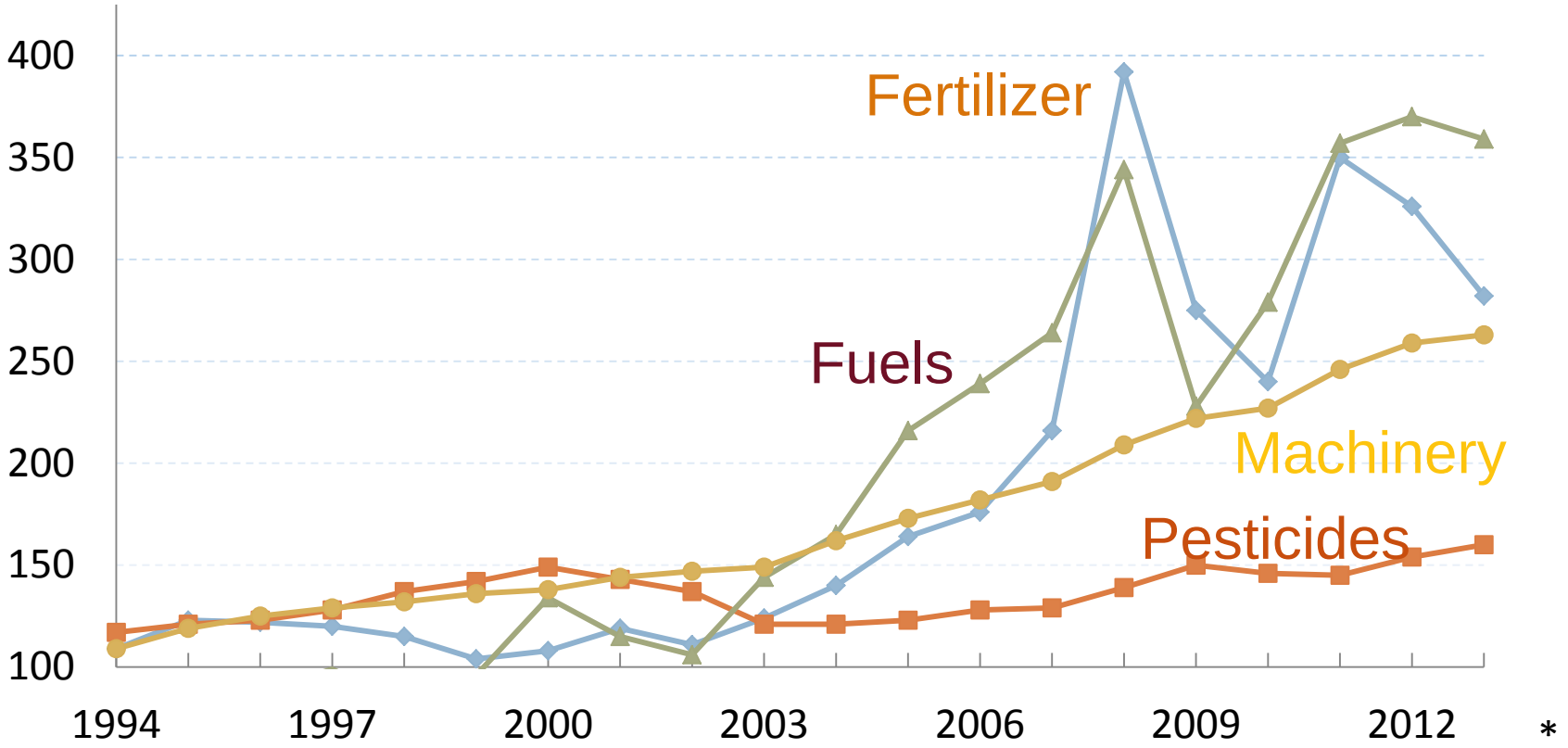
Source: Federal Reserve Board

Diesel Prices CA and US



Source: US Energy Information Administration. www.eia.gov

Indexes *of* prices paid *by* US farmers 1990-1992 = 100



Source: http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1002

Indexes *of* prices paid *by* US farmers
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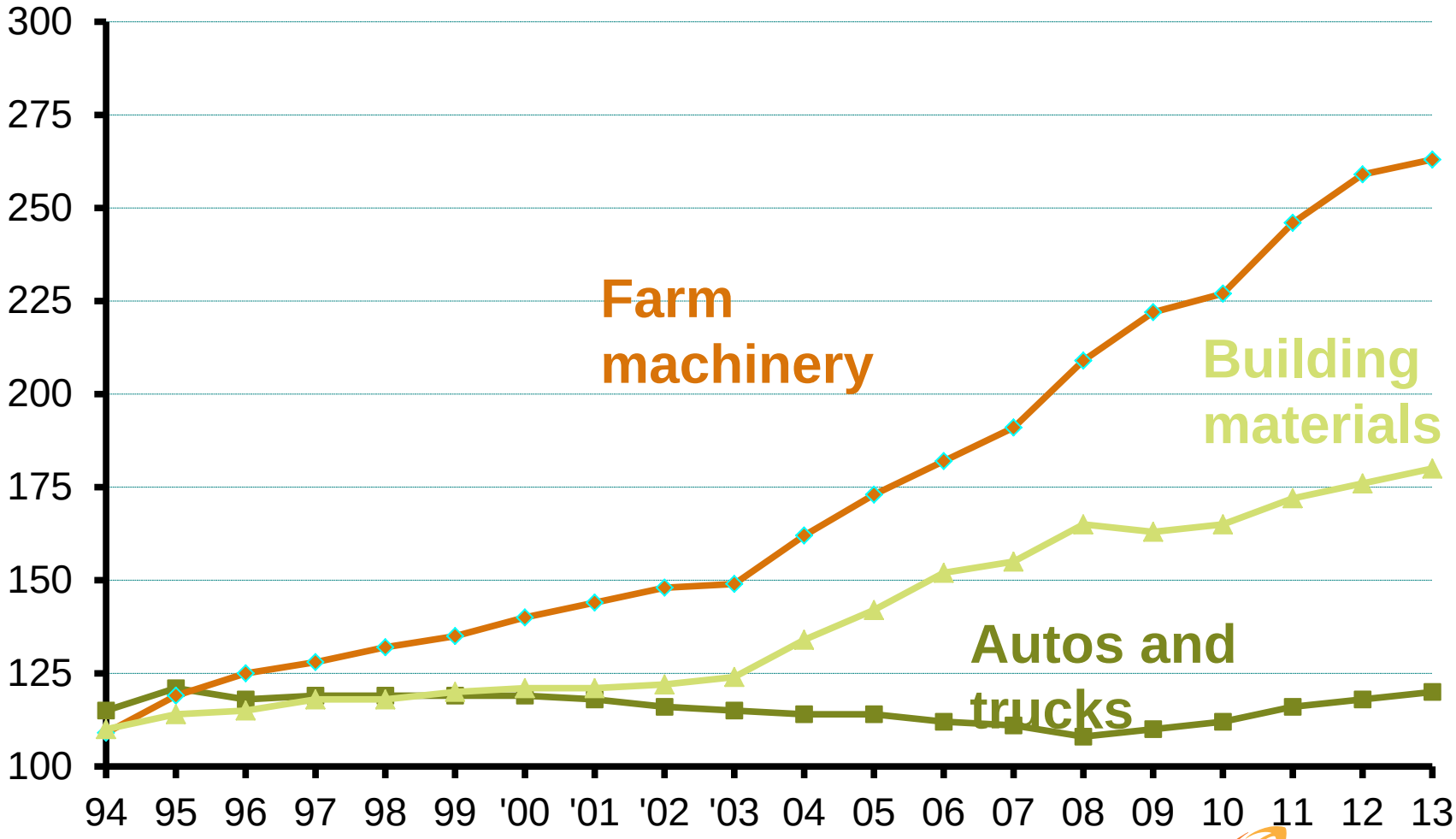

Source: National Agricultural Statistical Service, USDA

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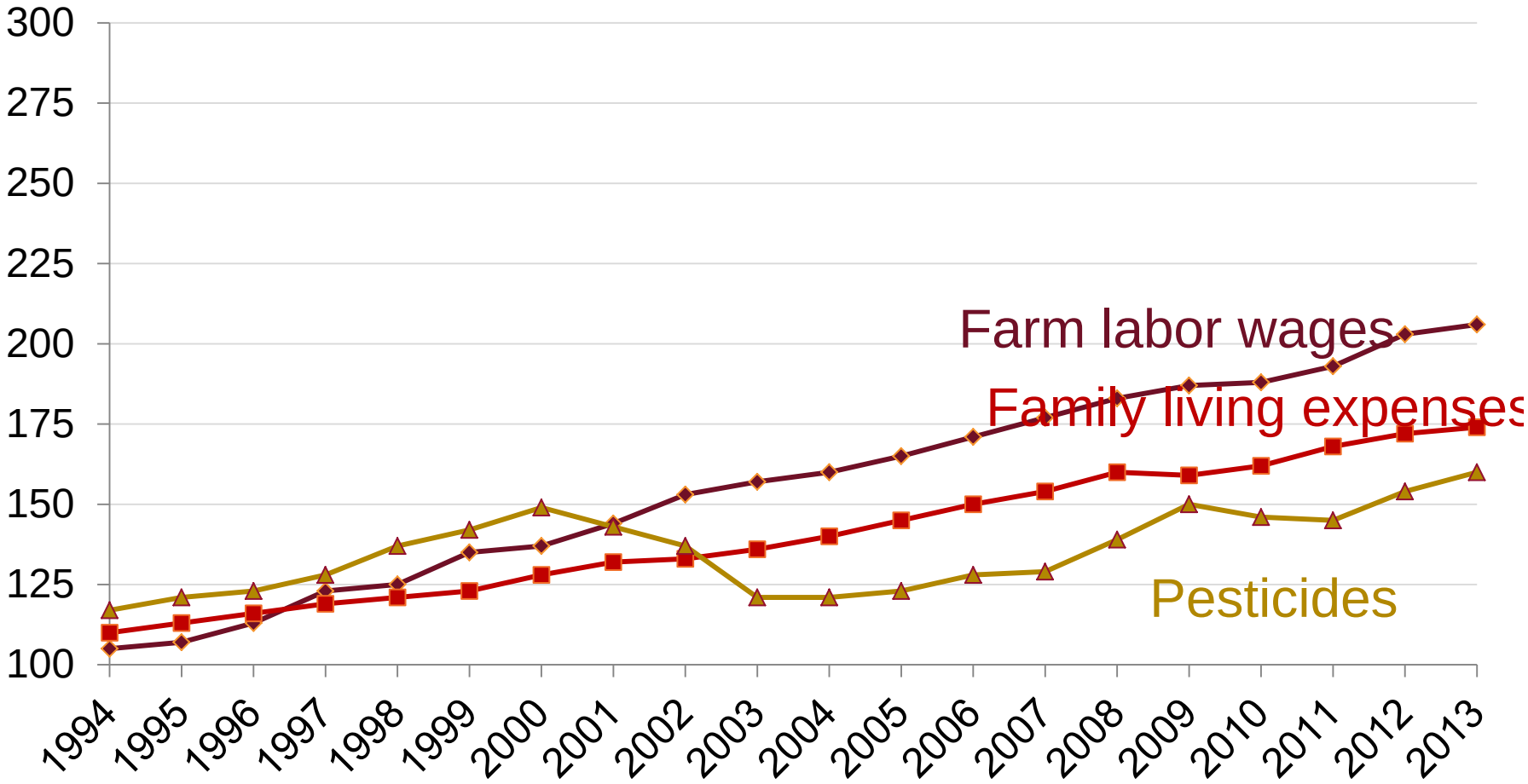
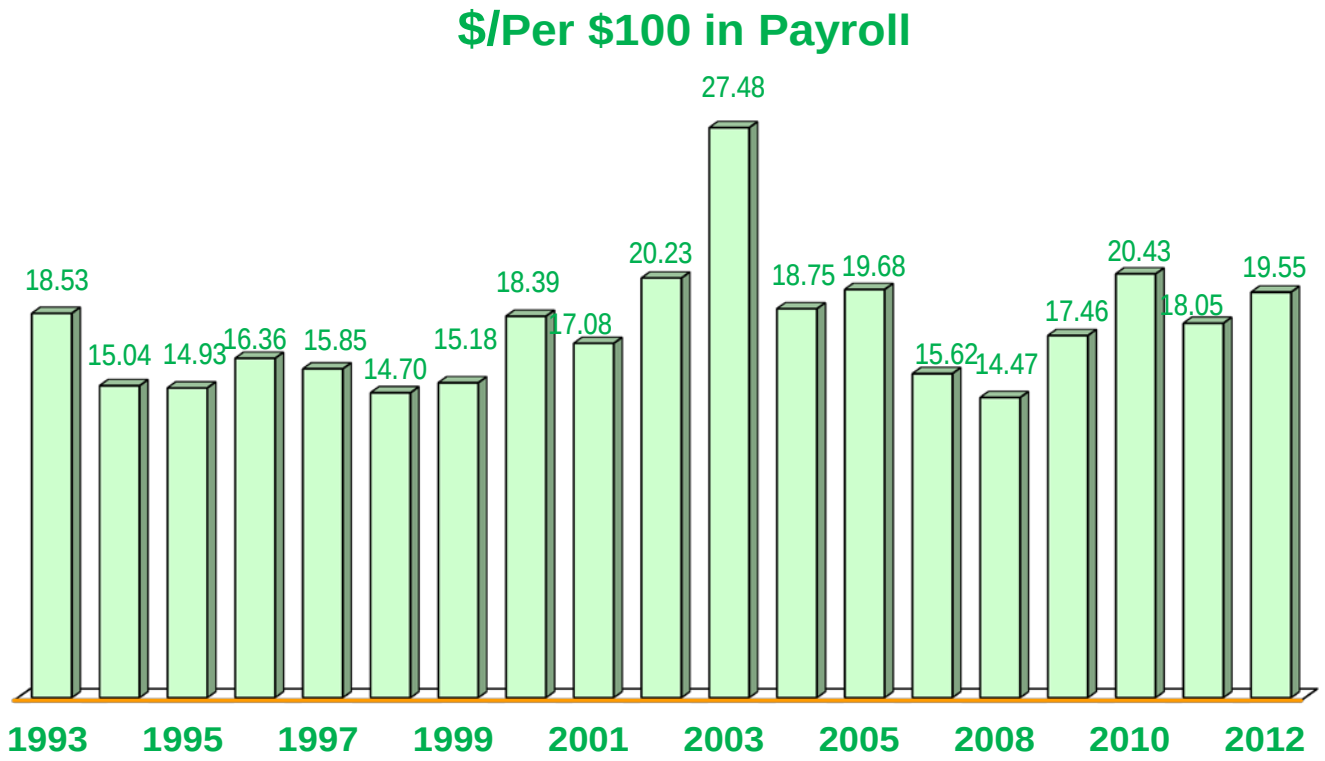


Source: National Agricultural Statistical Service, USDA

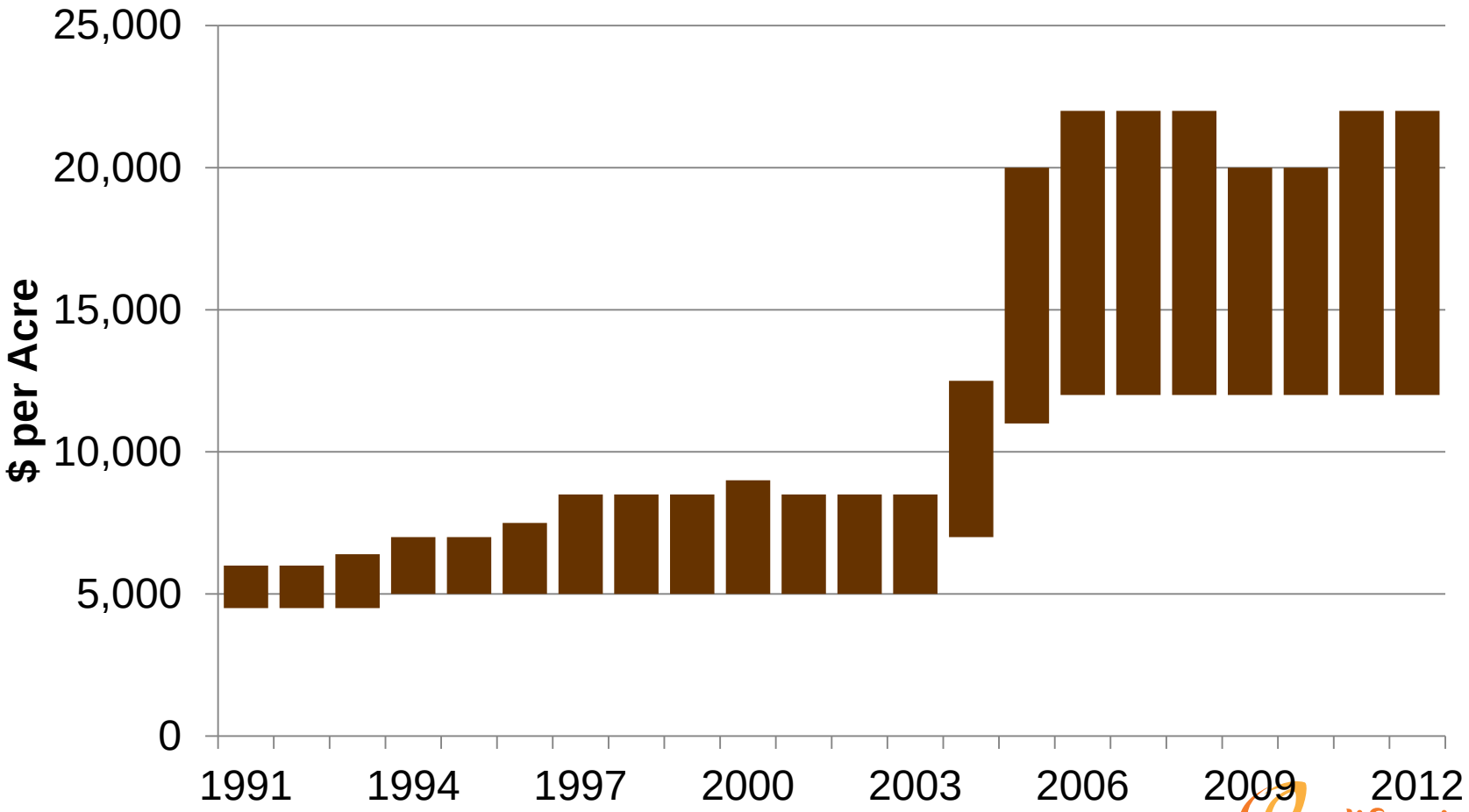
Workman's Compensation Rate

Fruit Orchards



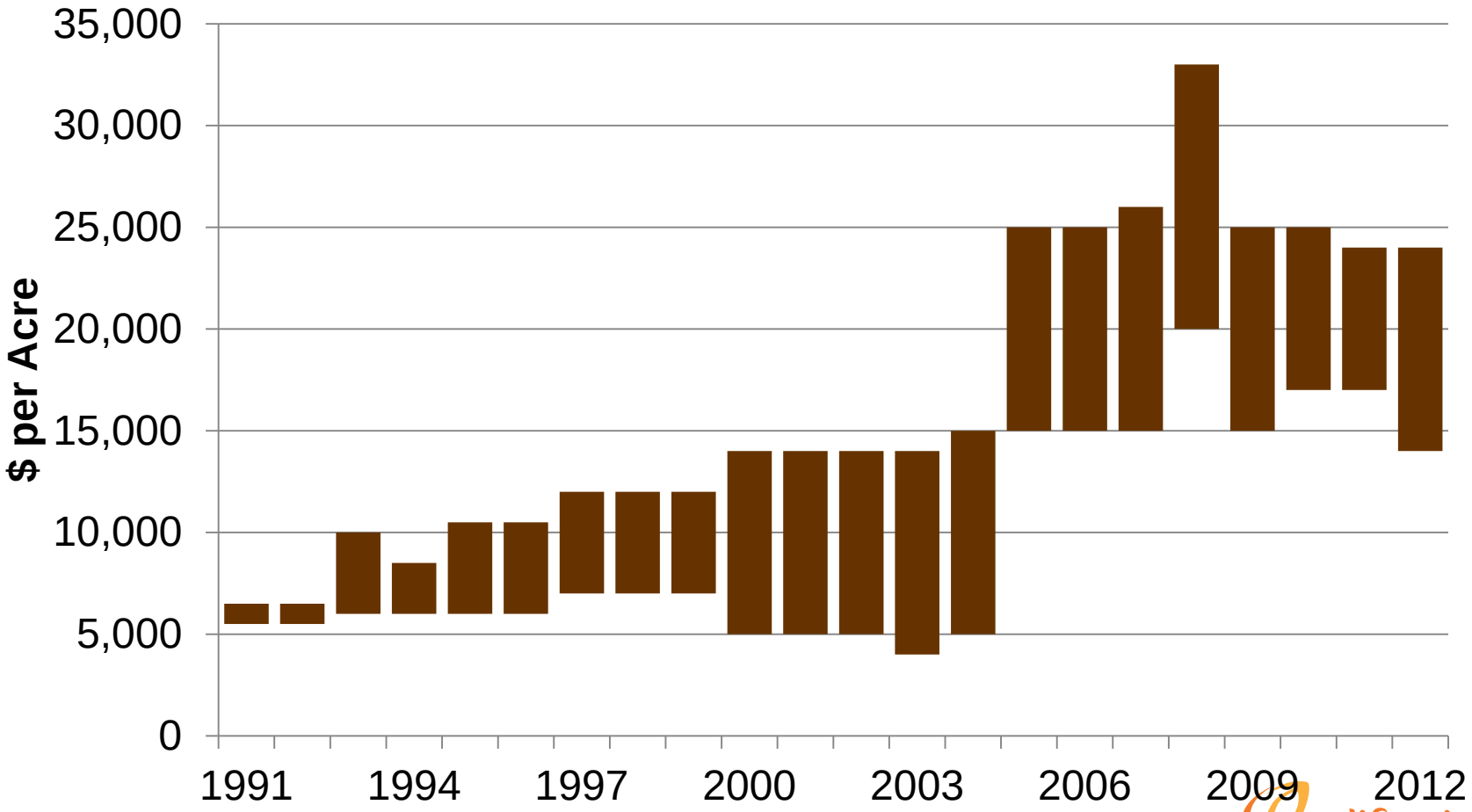
Source: State Fund Base Rate January 1

Almond Orchard Values- Merced



Source: “Trends in Agricultural Land & Lease Values” CA Chapter, American Society of Farm Managers & Rural Appraisers

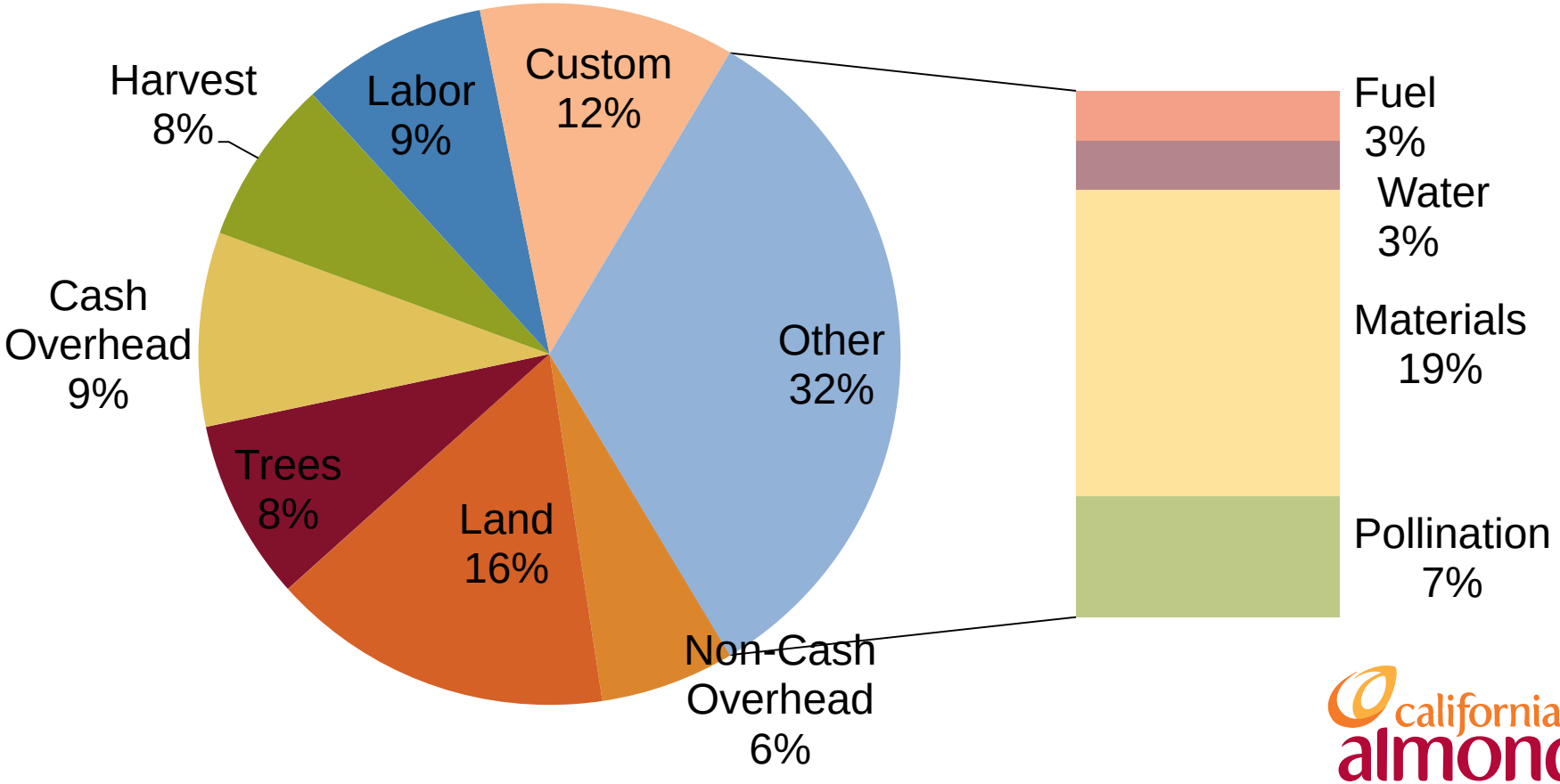
Almond Orchard Values- Stanislaus MID & TID



Source: “Trends in Agricultural Land & Lease Values” CA Chapter, American Society of Farm Managers & Rural Appraisers

Costs per Acre to Produce Almonds

San Joaquin Valley 2013- $4,540



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Cost and return studies for California commodities are available for downloading at :

http://coststudies.ucdavis.edu

Economic Update: Financial Modeling Workshop

John Talbot

Vice President,

Global Market Development (ABC)

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Factors That Influence Demand

- Historical Perspective
- Measuring Success
- Changing Market Dynamics

How Do We Measure Demand?

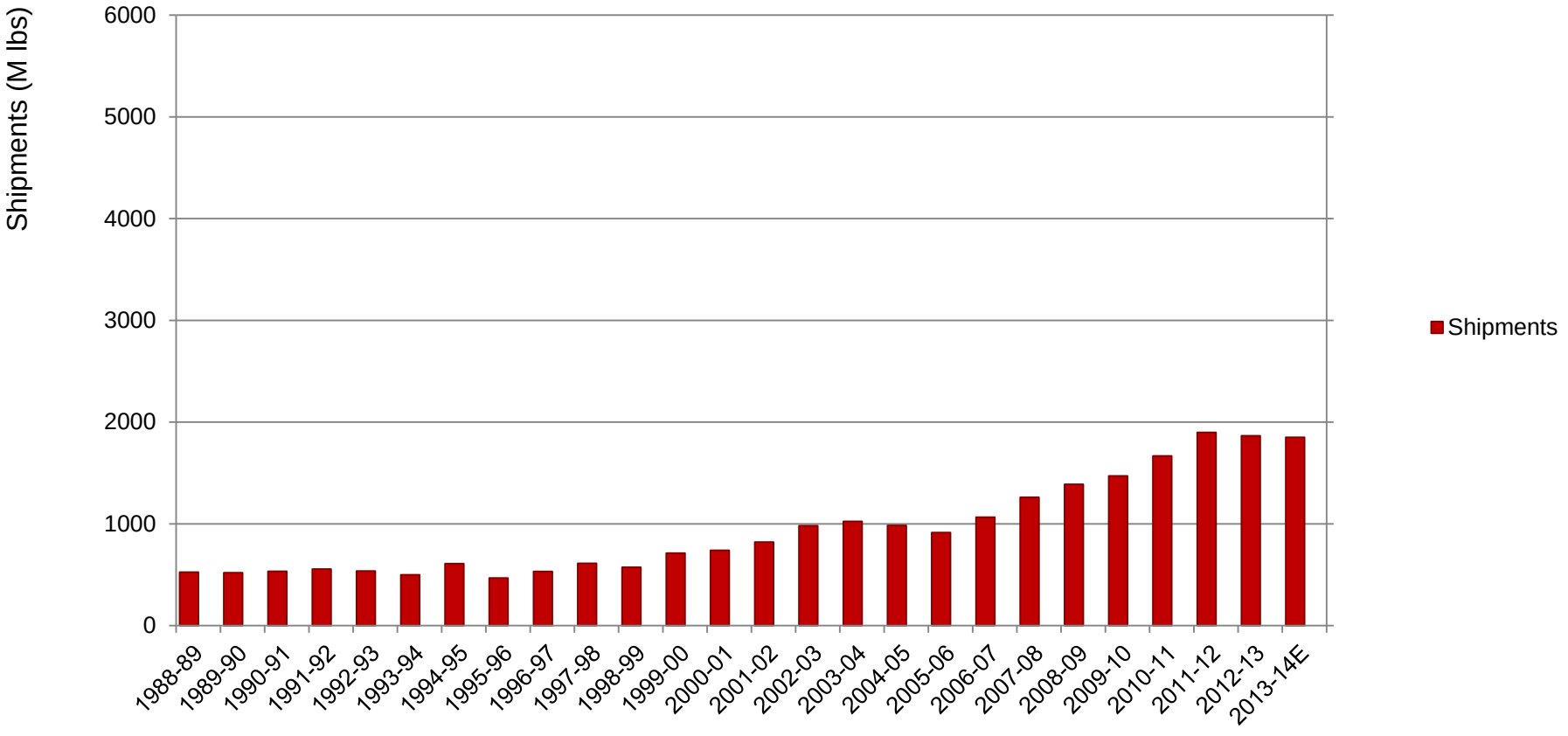
- Demand is not simply a function of shipments, or even consumption. Demand is a consumer's willingness and desire to pay a price for a specific product
- For our purposes, the best way to look at demand is as a function of selling a certain volume at a certain price
- Therefore:

Demand = Shipments X Farm Price = Grower Revenue

Note: This is more accurately a reflection of trade demand

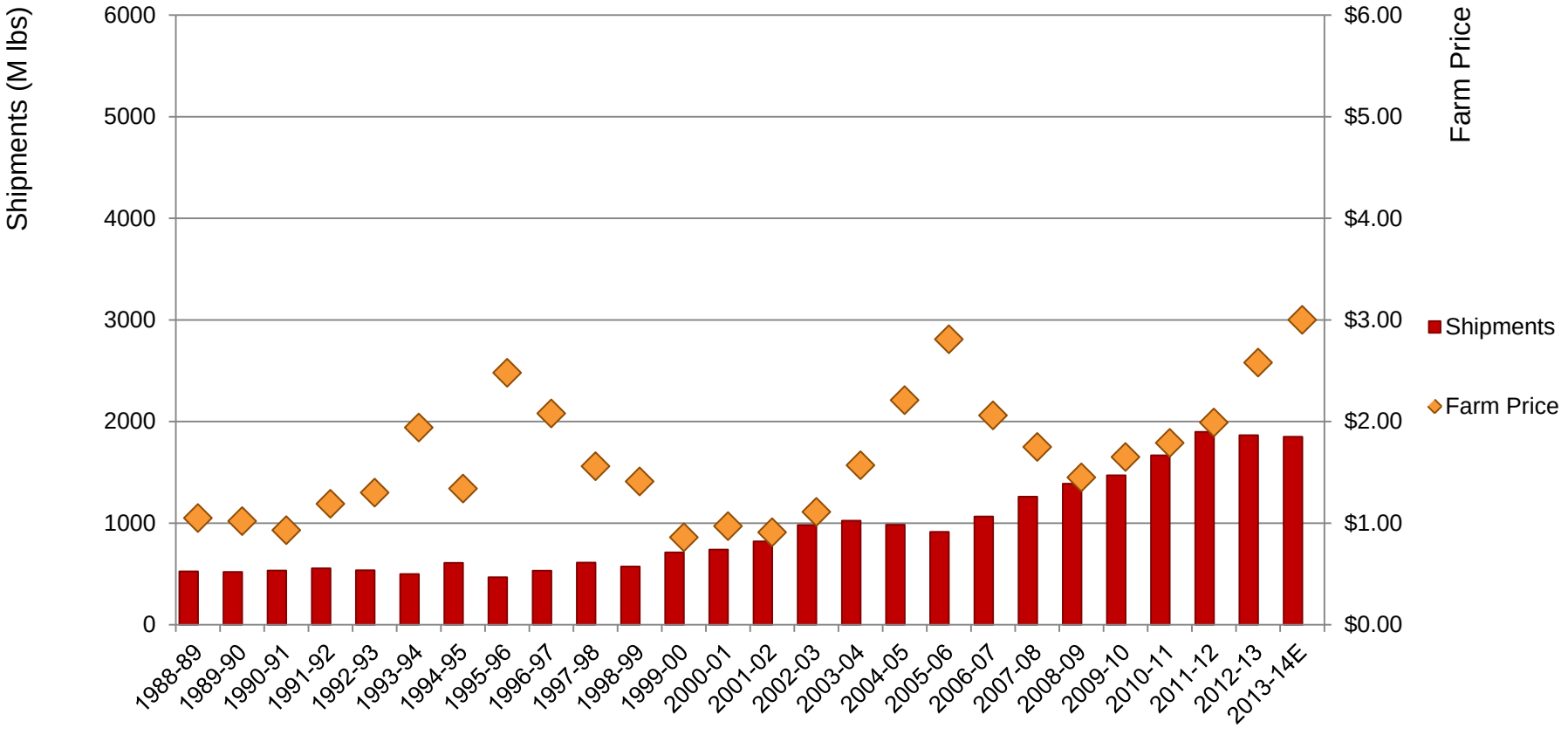
With Advent of Health Positioning Demand Growth Accelerates

- With awareness of health benefits, almond use as a snack grows
- As a snack, almonds have greater upside growth potential in volume and price



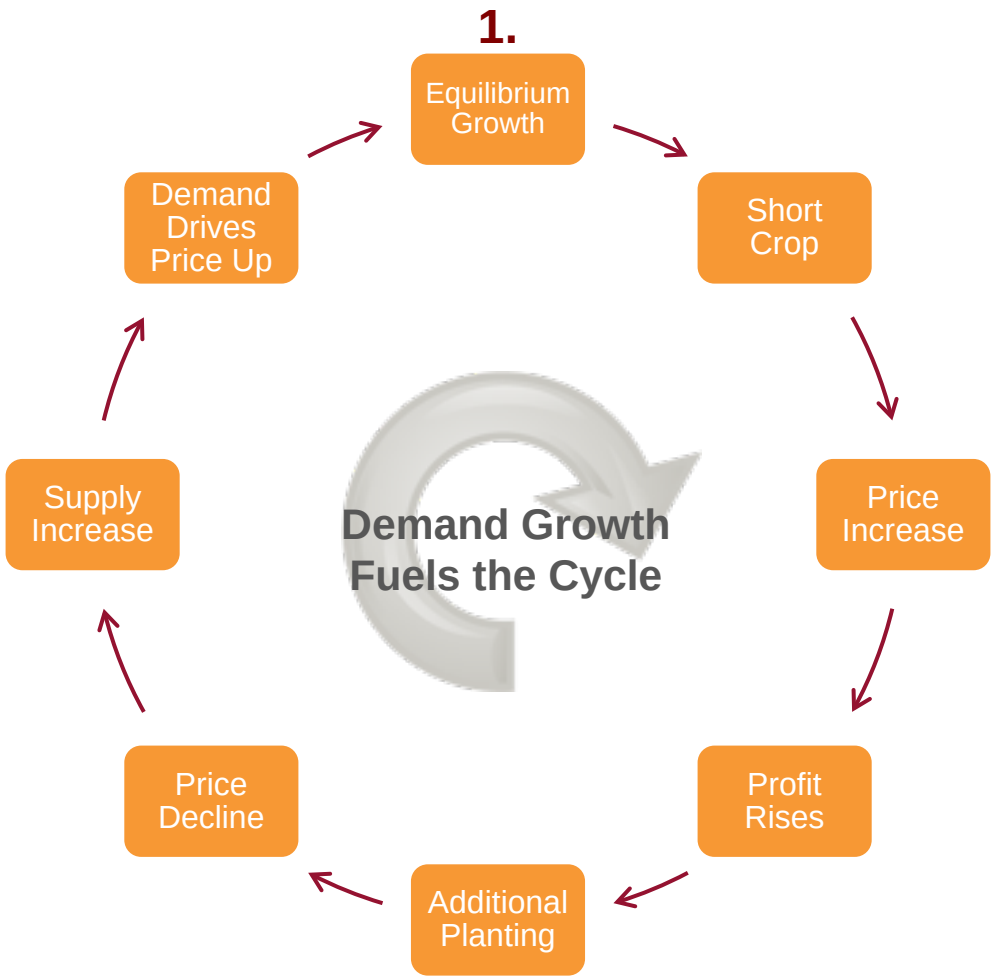
Rising Price Indicates Strong Demand

- Demand pulls us through short crop correction cycles
- Past 10 years are evidence of strong demand growth



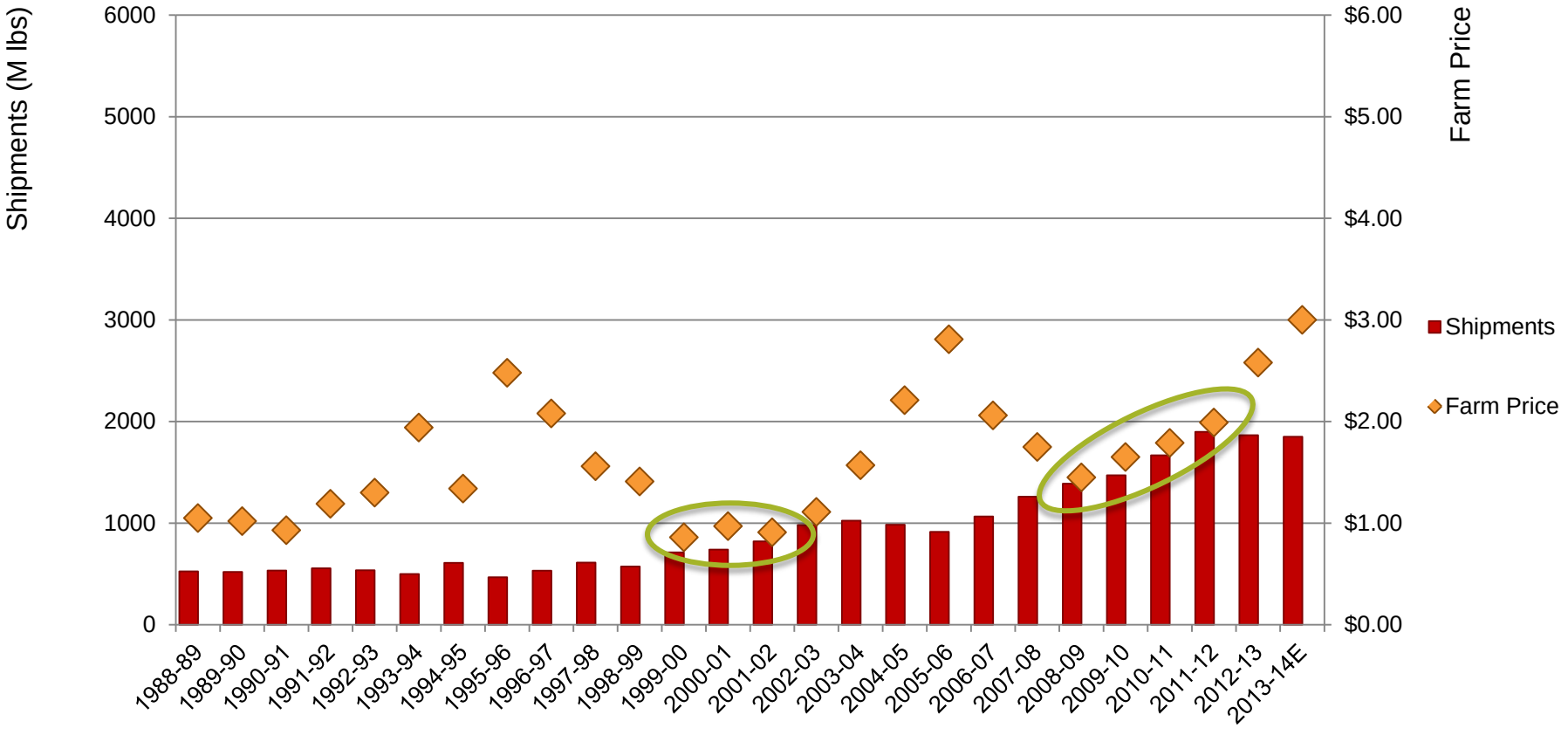
The Short Crop Correction Cycle

1. Equilibrium growth where supply, demand and pricing all gradually increase
2. One or more years of short crop
3. Market reacts (sometimes over-reacts) and price goes up
4. Profit goes up
5. Growers invest in additional planting
6. As crop rebounds price begins to decline
7. Supply increases further as new plantings mature
8. Ongoing demand growth enables price to begin rising



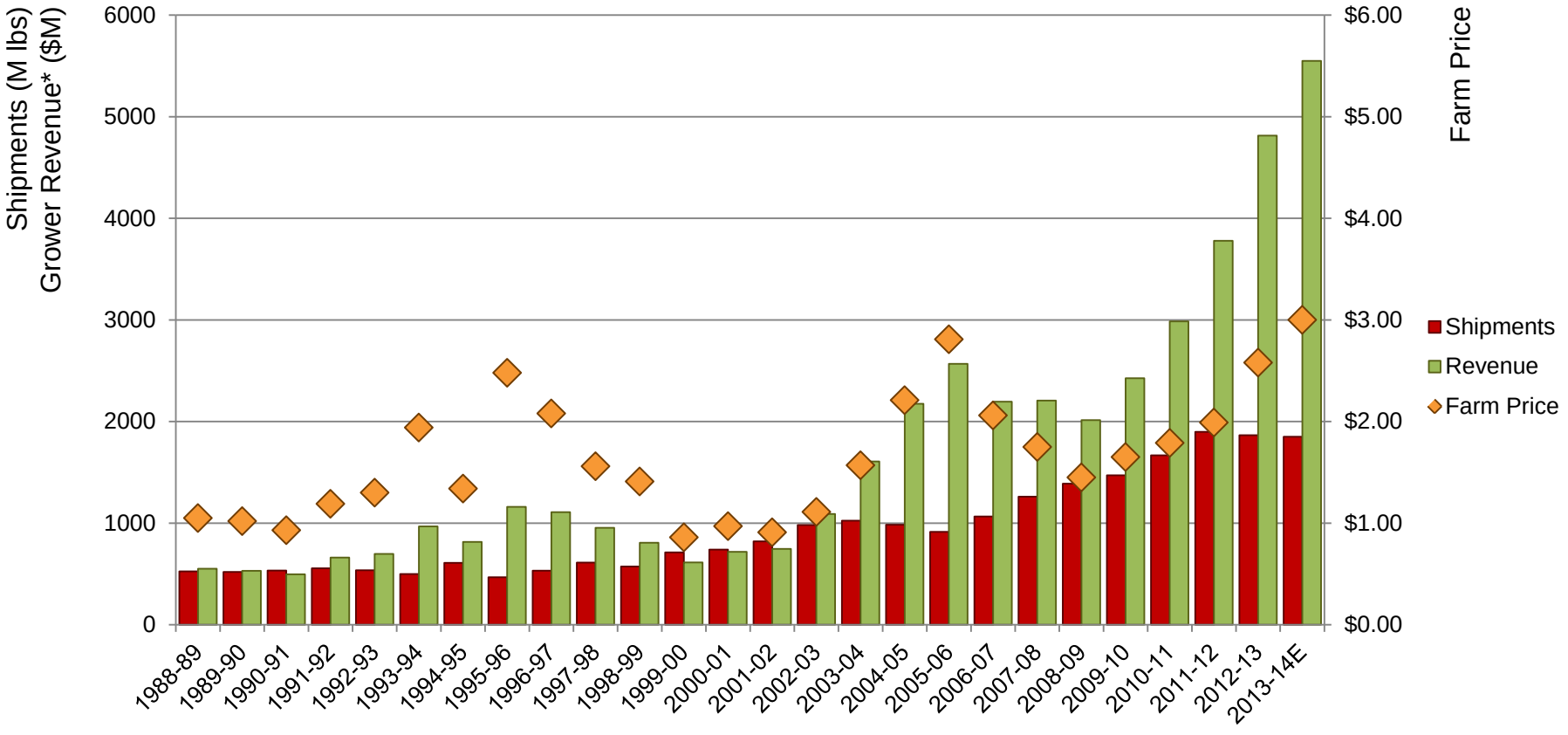
Rising Price + Increased Supply = Optimal Growth

- Demand pulls us through short crop correction cycles
- Past 10 years are evidence of strong demand growth



Grower Revenue Quadruples in Last 10 Years

- Increased supply + rising price = strong demand = record grower revenue



* Grower Revenue = Shipments X Farm Price

Measuring Success

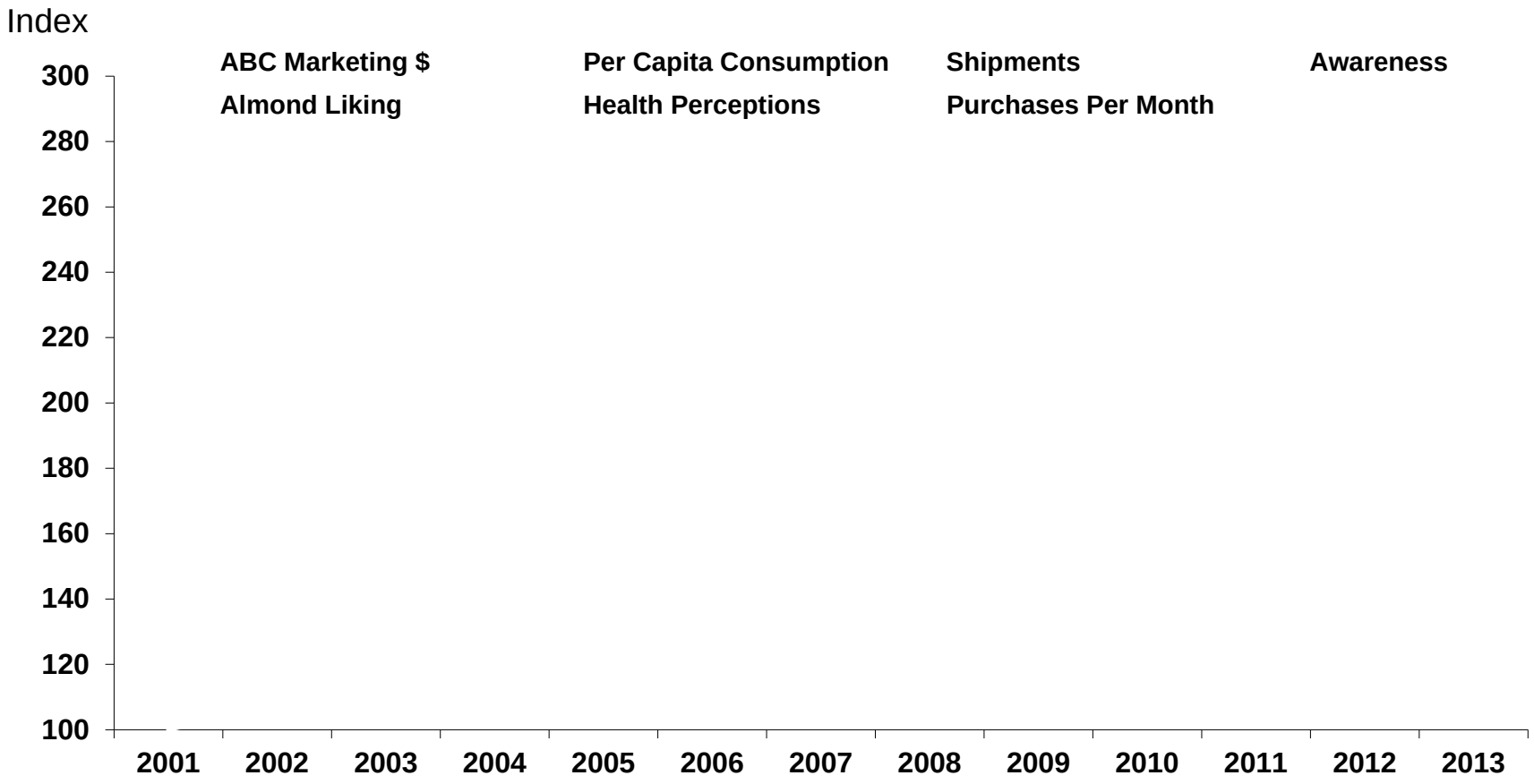
Historical ROI Analysis

Several significant econometric studies have been conducted on the Almond Industry in the past that **have shown strong returns on grower investment**:

- **ROI Analysis, Department of Agricultural Economics, Crespi and Sexton - 2001**
  - **Objective:** Evaluation of the economic impact of advertising and promotion spending in the US market
  - **Results:** Promoting almonds has **returned growers a 7:1 ratio for every dollar spent**

- **ROI Analysis, Naval Postgraduate School**, **Gates – June 2004**
  - **Objective:** Analyze links between marketing investments by ABC to Attitude, Awareness and Usage measurements and eventually to almond shipping and pricing data.
  - **Results:** The AAU factors of awareness, liking and health perceptions have a statistically significant relationship to almond usage

US Marketing Metrics



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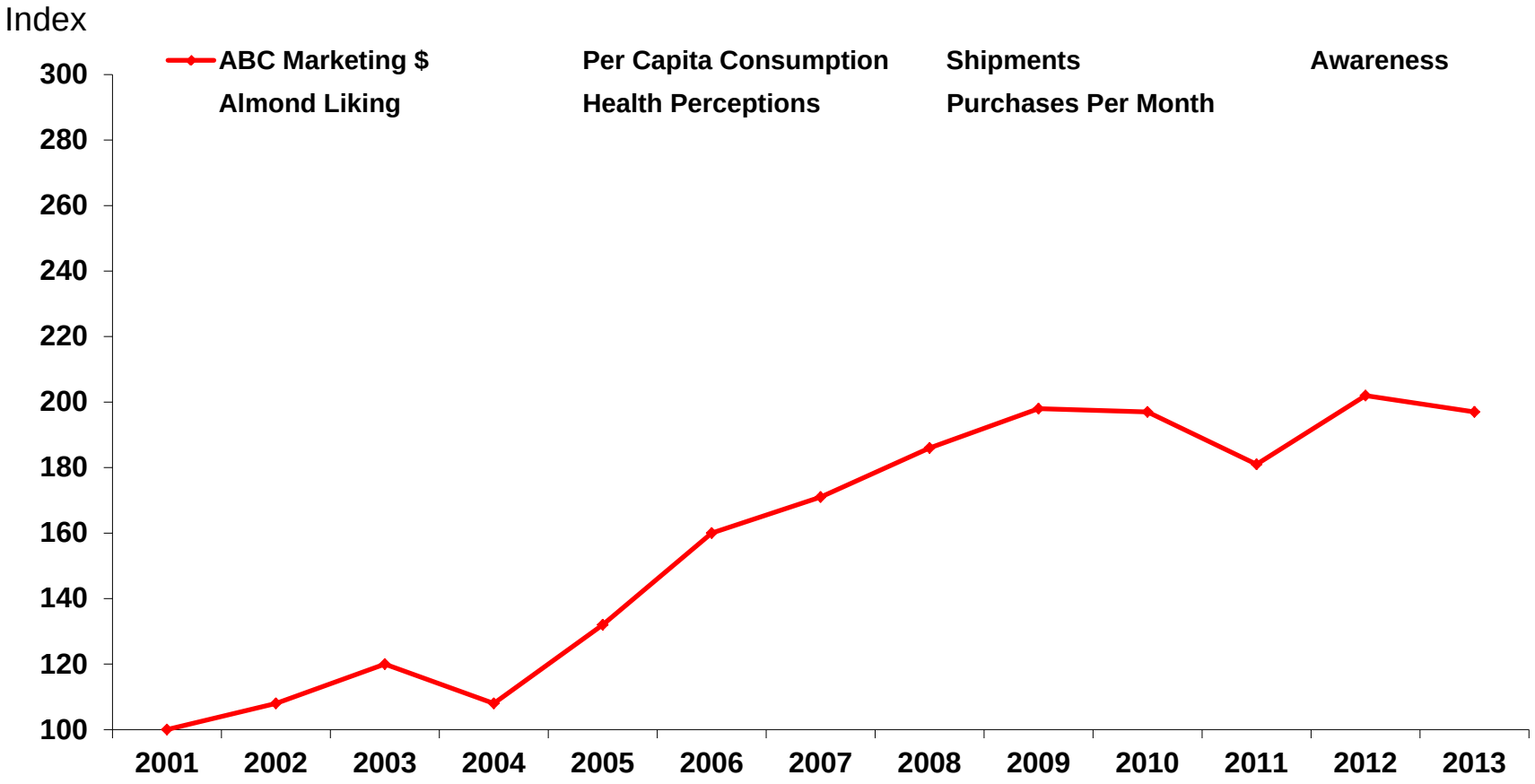
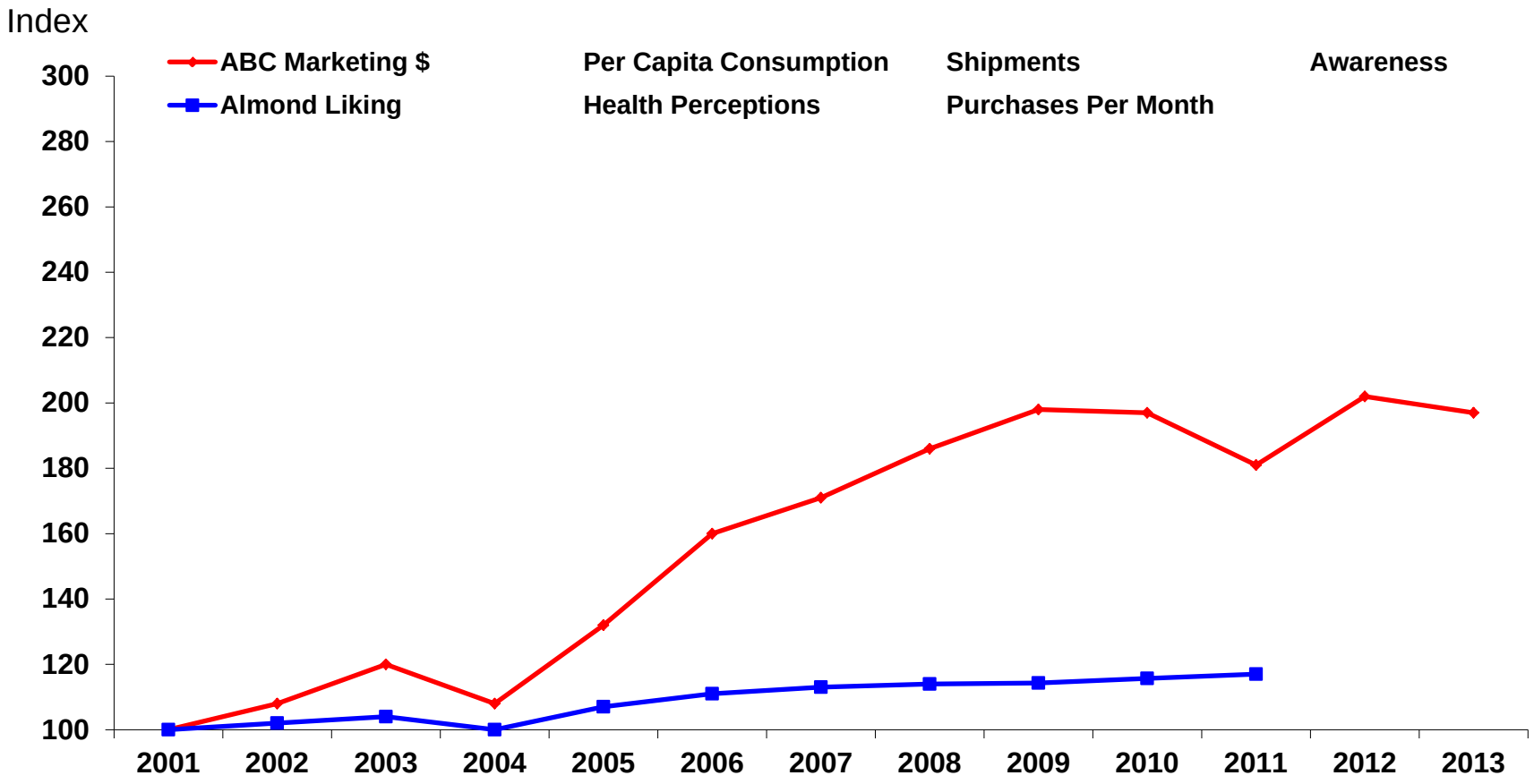


Baseline ABC Spending $8M

US Marketing Metrics



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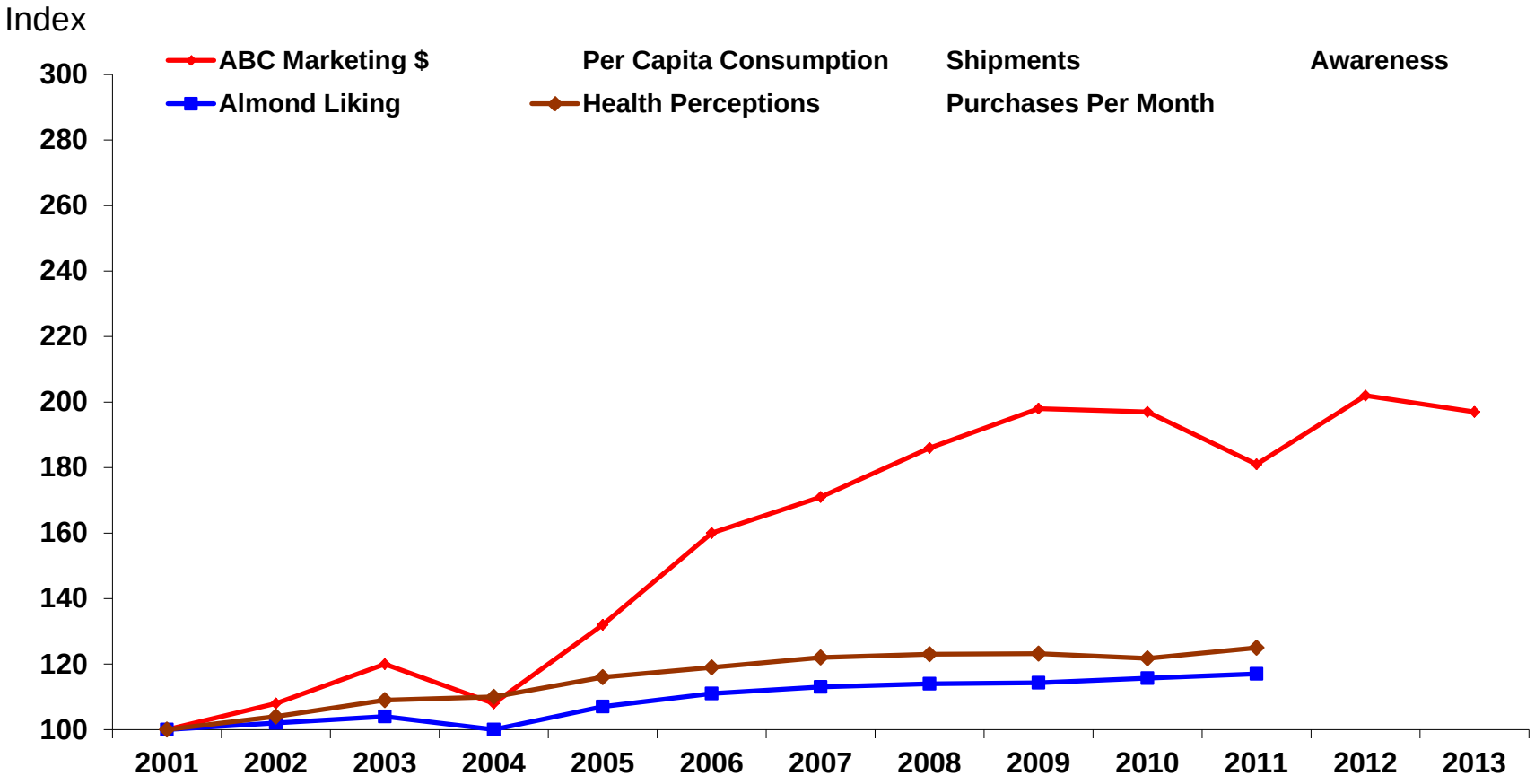

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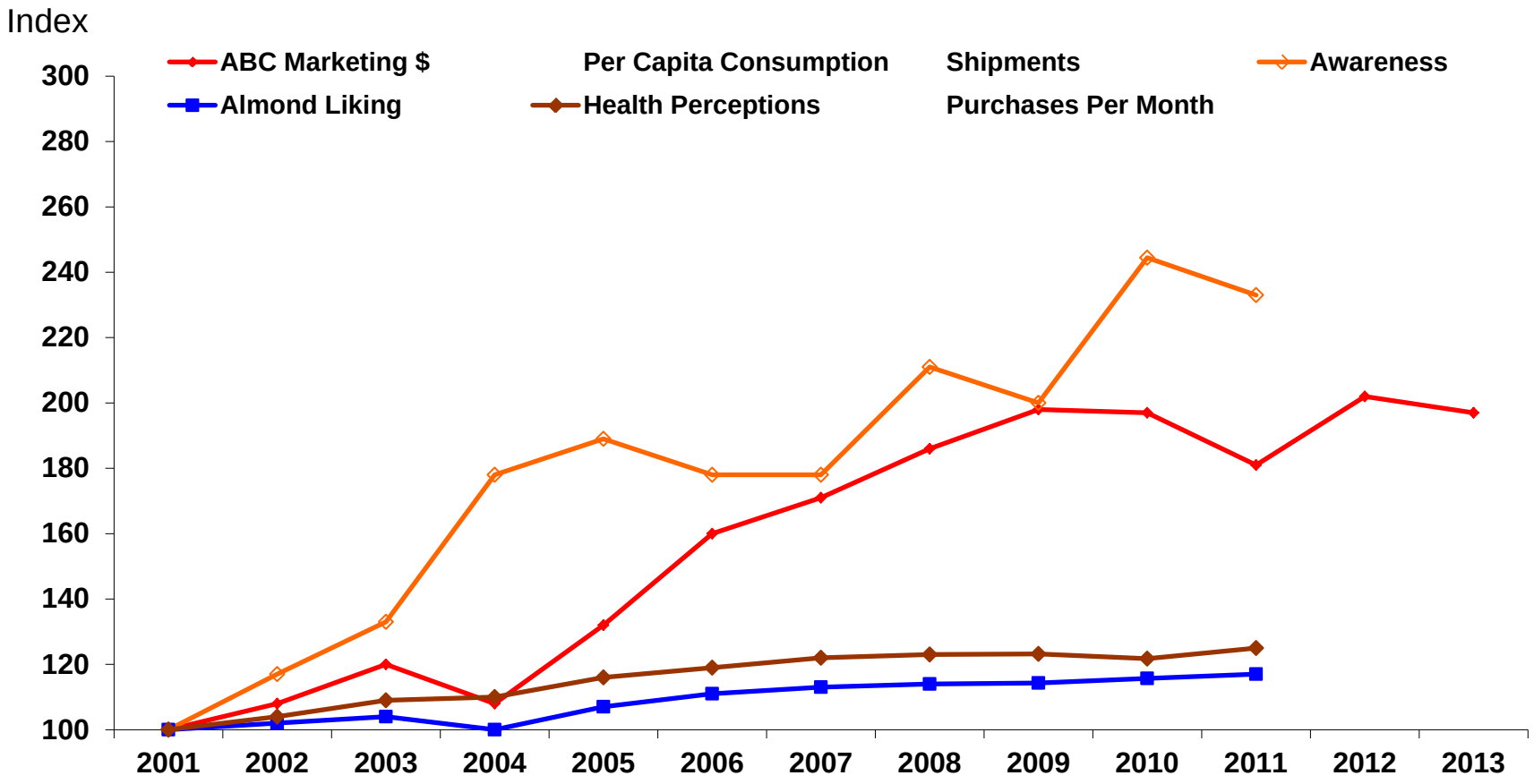

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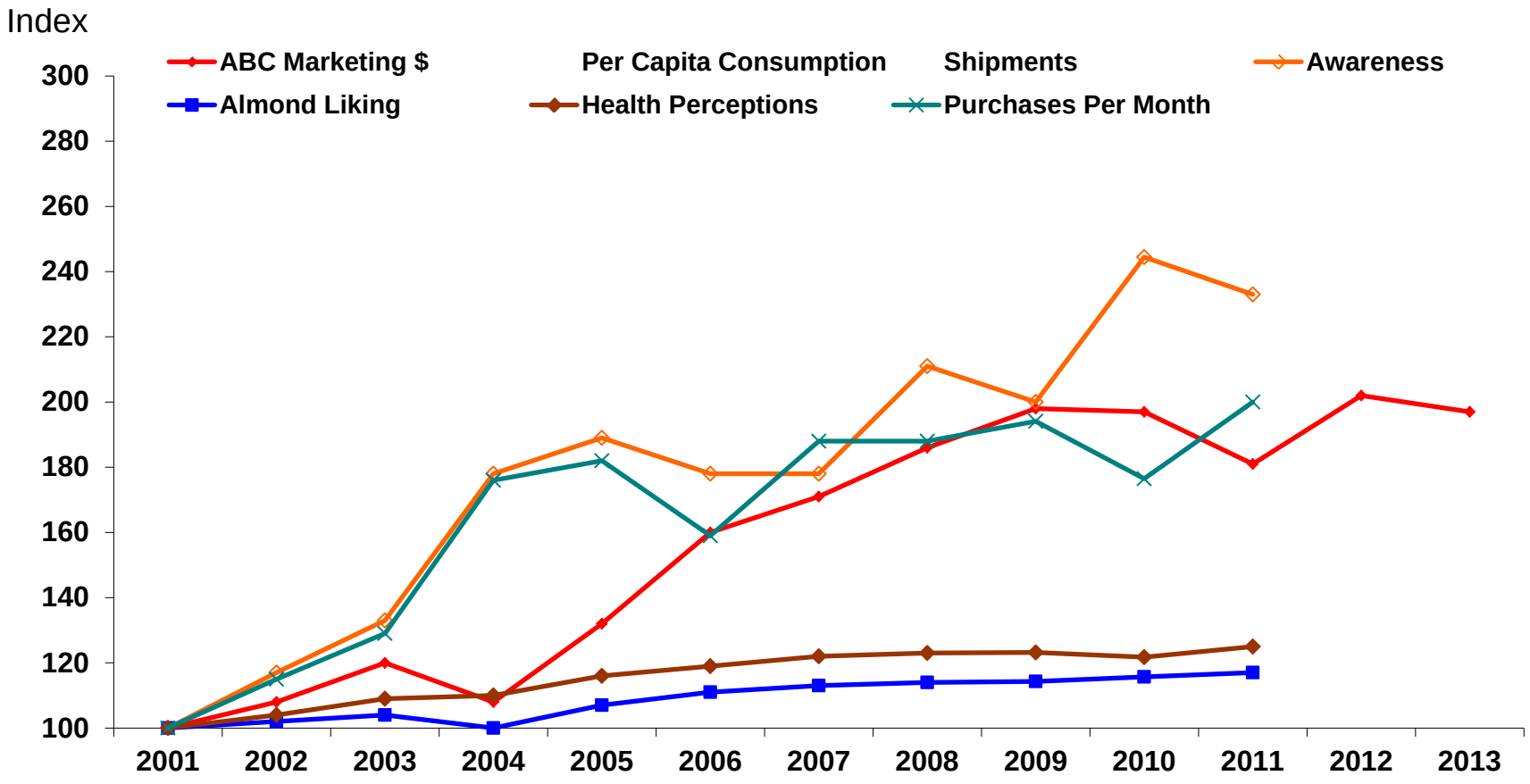

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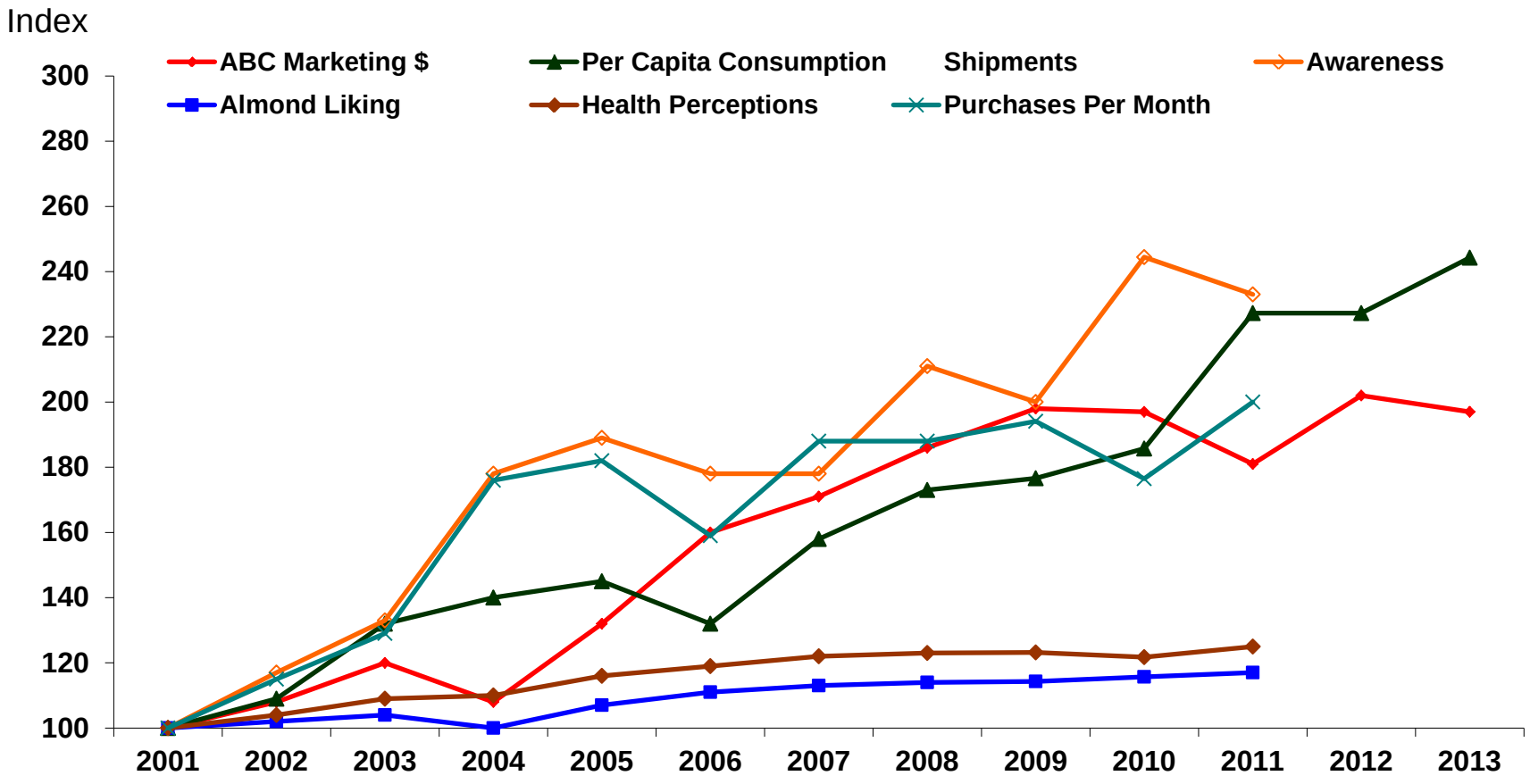

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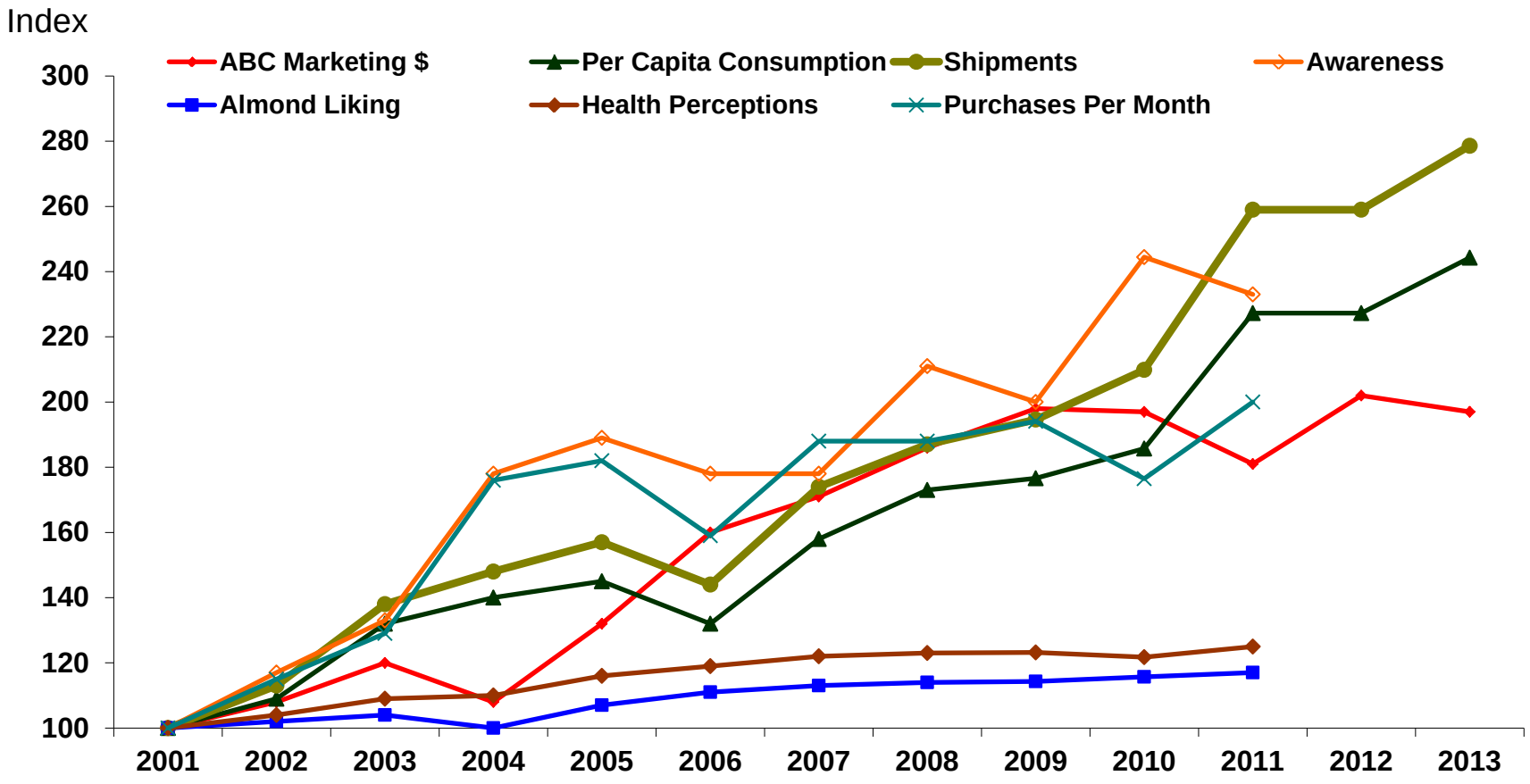
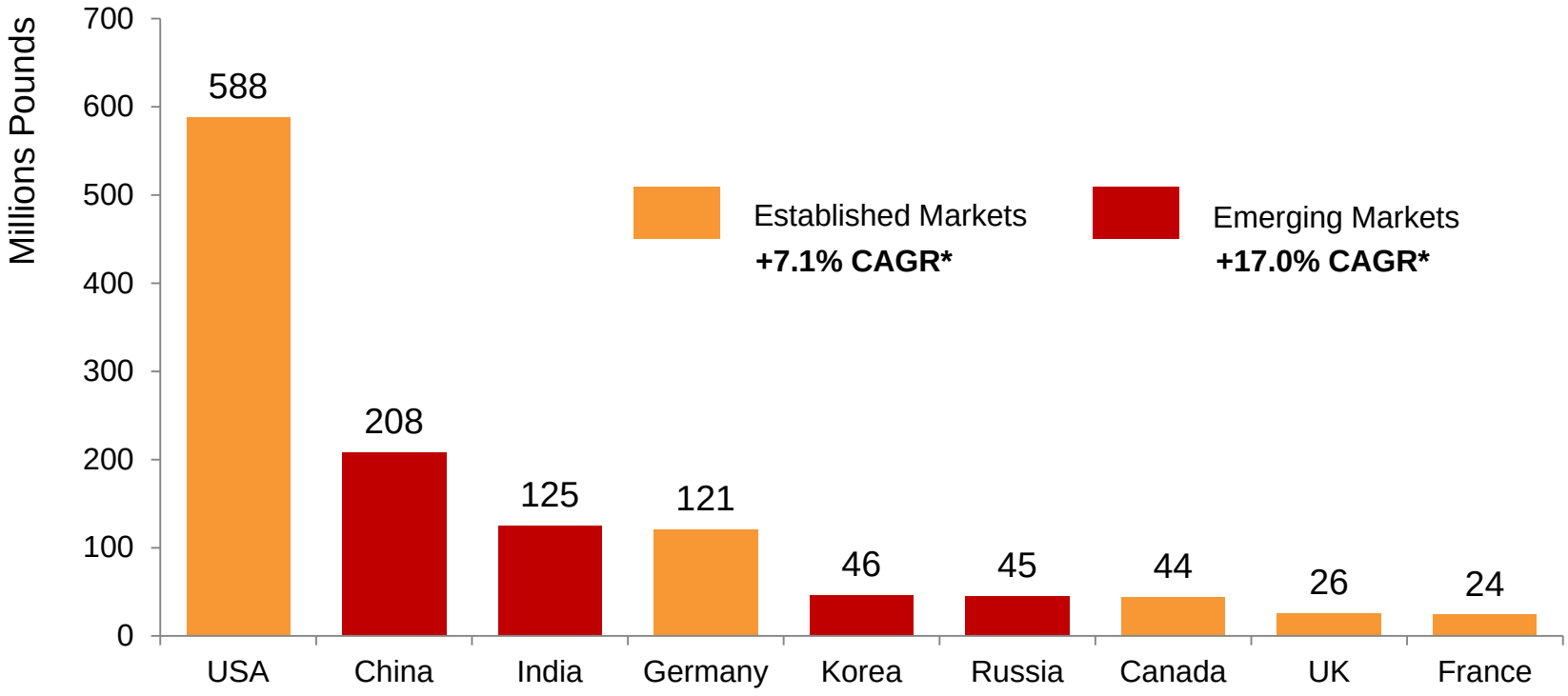


ABC Uses Rigorous Program Analysis Approach

ABC uses a **variety of analytical tools** to assess opportunities and barriers, measure program success, market performance, and consumer demand

	North America	EU3	China	India	S. Korea
Opportunity Assessment	X	X	X	X	X
Positioning/Segmentation analysis	X	X	X	X	X
Shipment and trans-shipment analysis	X	X	X	X	X
Per capita consumption	X	X	X	X	X
Attitudes, Awareness and Usage	X	X	X	X	X
Advertising Effectiveness	X	X	X	X	n/a
Retail Sales Volume and Value	X	X	Unavailable	Unavailable	In Consideration
New CPG Product Introductions	X	X	X	X	X
US menu trends	X	n/a	n/a	n/a	n/a

Size/Growth of Target Markets



Future Growth

- 80% expected to come from US, China and India
- 70% expected to be in Snacking category

* 2010 to 2013 compound average growth

New Market Dynamics – What is Changing?

Increased Competition

With snacking comes **tremendous competition** as consumers have **more choices** in a broader competitive set

Lots of Interest in Healthy Snacking

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THE WALL STREET JOURNAL.

More Snacks Made From Brown Rice, Vegetables, Legumes Aim to Satisfy the Craving for 'Permissible Indulgence'

Triscuits, Green Giant Join Niche Brands Like Snapea Crisps and Annie Chun's

FINDING THE RIGHT BUSINESS

High-Tech Vending Machines That Serve Healthy Snacks See Rapid Growth

BY KATE TAYLOR | September 23, 2013 | 0 Comments | Clip it

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Unilever Launches Seductive Nutrition Approach to Menus

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Unilever Food Solutions' latest World Menu Report titled "Seductive Nutrition" finds that U.S. restaurant guests choice of eating healthier when dining out, but od intentions do not always translate into action.

percent of U.S. diners surveyed said they ly look for healthy menu options when eating out, nt prefer to treat themselves when they place their early 40 percent of diners say the healthy option ss tasty or may not be as filling.

liners overcome these barriers and change

July 23, 2013, 4:46pm EDT

Prepare for a snackdown as demand and funding for healthy snacks grow

Teresa Novellino
Upstart Business Journal Entrepreneurs & Enterprises Editor
Email | Twitter

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The UpTake: Schools are going to have to

Snack foods drive PepsiCo earnings in 3d quarter

Products With Healthy Positioning on the Rise

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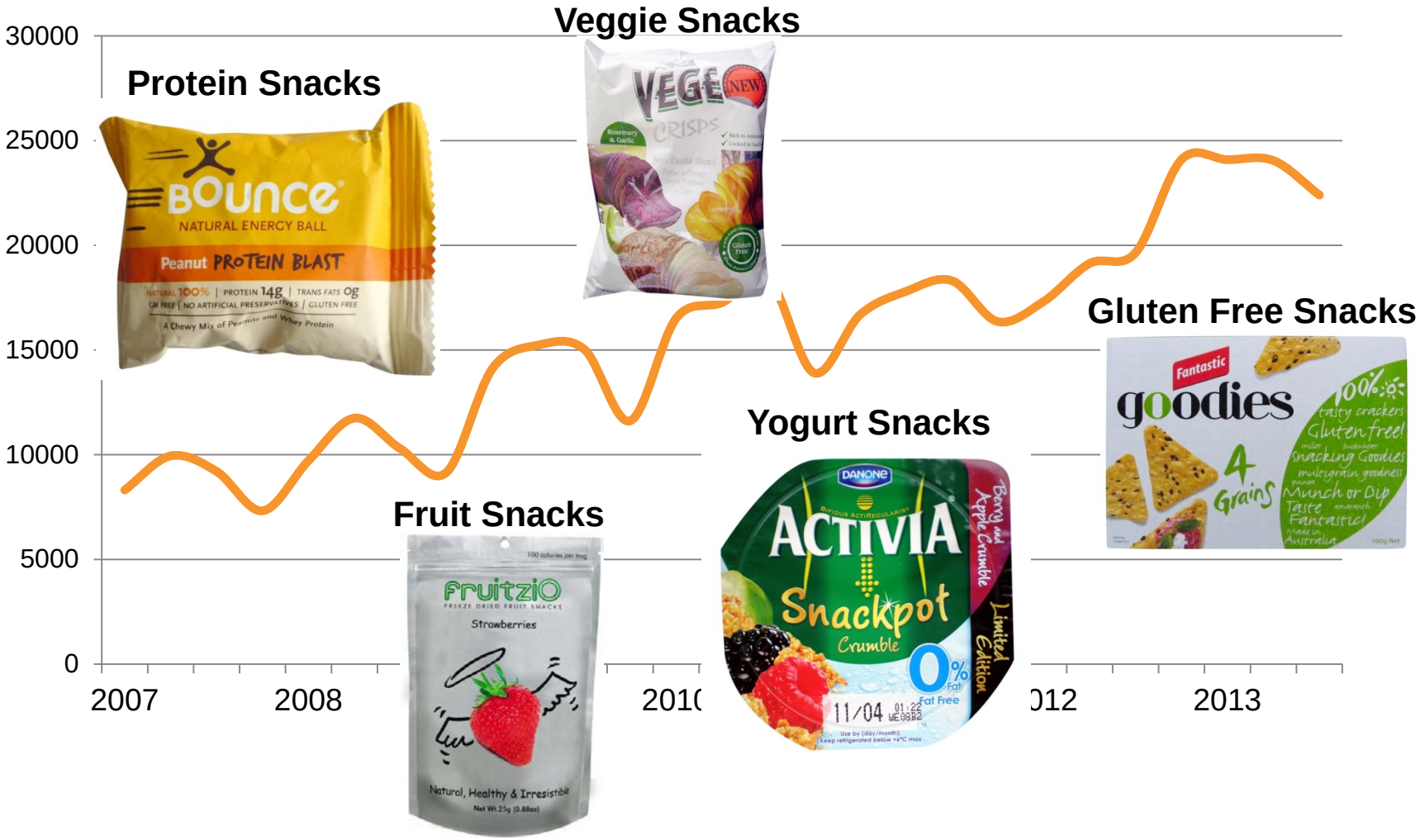
Global Product Launches with Healthy Positioning



Aggressive Spending Targeted at Our Consumers

The healthy snacking category is **highly competitive with heavy advertising spending** by large CPG brands

AdViews estimated advertising spend by brand/product	Total 2012 $USD
Chobani Yogurt and Chobani champions	$44 million
Sun Chips	$20 million
Chex Mix Snacks	$15 million
Kashi TLC granola bars	$27 million
Nature Valley bars – oat and dark chocolate	$20 million

Notes: Almond Board of California reported as Nielsen reported estimated spending for 2012.
Source: Nielsen AdViews 2012.

Case Study: Hummus

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The humble chickpea is having a heyday as demand for hummus sky rockets

- **Background:** Long a staple of Middle Eastern cuisine, hummus is earning a growing following among Americans seeking more-healthful snacks. The chickpea dip is low in fat and high in protein.

- **Investment:** Sabra who has increased revenue from $16 million to $800 million in just six years invests heavily in advertising, PR and innovation.

- **Results:** IRI Sales show "refrigerated flavored spreads"—a segment dominated by hummus—totaled $530 million at U.S. food retailers last year, up 11% from a year earlier and a 25% jump over 2010

- **Return to grower:** Growing demand for hummus has pushed up prices for chickpeas, spurring farmers in the heart of tobacco country to increase production. The average price that farmers received for chickpeas was 35 cents a pound last year, a 40% increase in the last 5 years.

Global Marketplace

Almonds are **developing a strong global presence** in an increasingly dynamic global marketplace with extensive cultural, trade and regulatory differences

Conclusions – The Approach is Working

- ABC's health positioning and consumer marketing efforts have had a significant impact on growing almond demand
- Not every detail of every market can be measured but overall there is a positive ROI for our marketing investment
- We have a model and approach to growing demand that is working

HOWEVER,

- Our market is becoming more competitive and the challenges more complex

Economic Update: Economics of Growing Almonds

Bill Harp

Almond Grower

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CYs 2010 – 2012: Grower Return all Regions by Bill Harp, an Almond Grower

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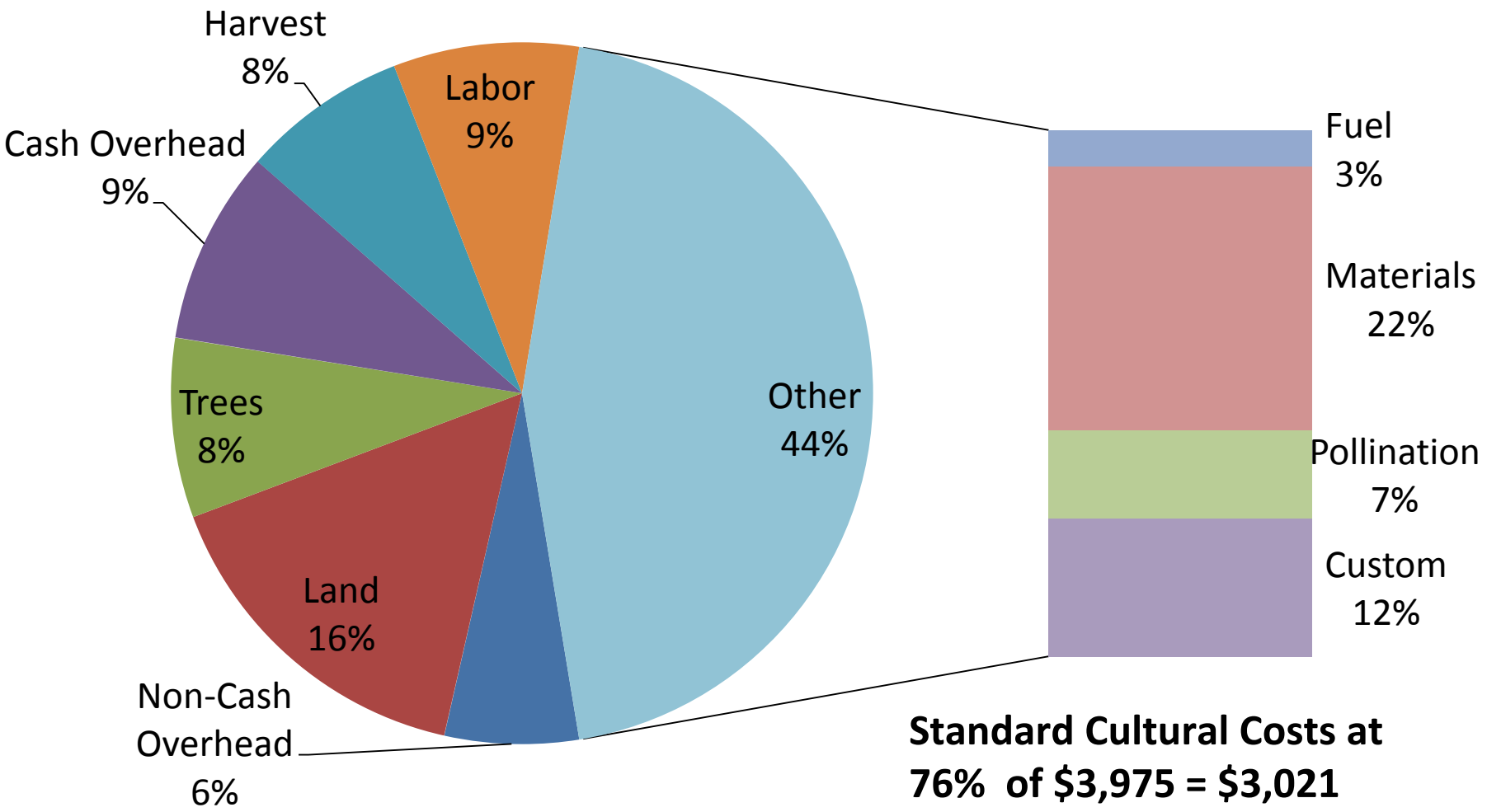
	Grower Return for Entire State			
	CY 2010	CY 2011	CY 2012	Average
Yield Per Acre	2,200	2,658	2,385	**2,414**
Bearing Acres	740,000	760,000	790,000	**763,333**
Total Reported Production	1,628,192,255	2,020,387,592	1,884,028,757	**1,844,202,868**
Total Paid Weight:	1,610,062,409	1,979,975,964	1,847,507,894	**1,812,515,422**
Total Paid Weight/Acre:	2,176	2,605	2,339	**2,373**
Grower Price/Lb:	$1.79	$1.99	$2.58	**$2.12**
Paid Grower Revenue/Acre:	$3,895	$5,184	$6,035	**$5,038**
Growing Costs/Acre per UC Davis Studies:	$2,543	$2,675	$3,021	**$2,746**
Net Estimated Grower Cost:	$2,543	$2,675	$3,021	**$2,746**
Net Grower Return/Acre:	$1,352	$2,509	$3,014	**$2,291**

Costs per Acre to Produce Almonds

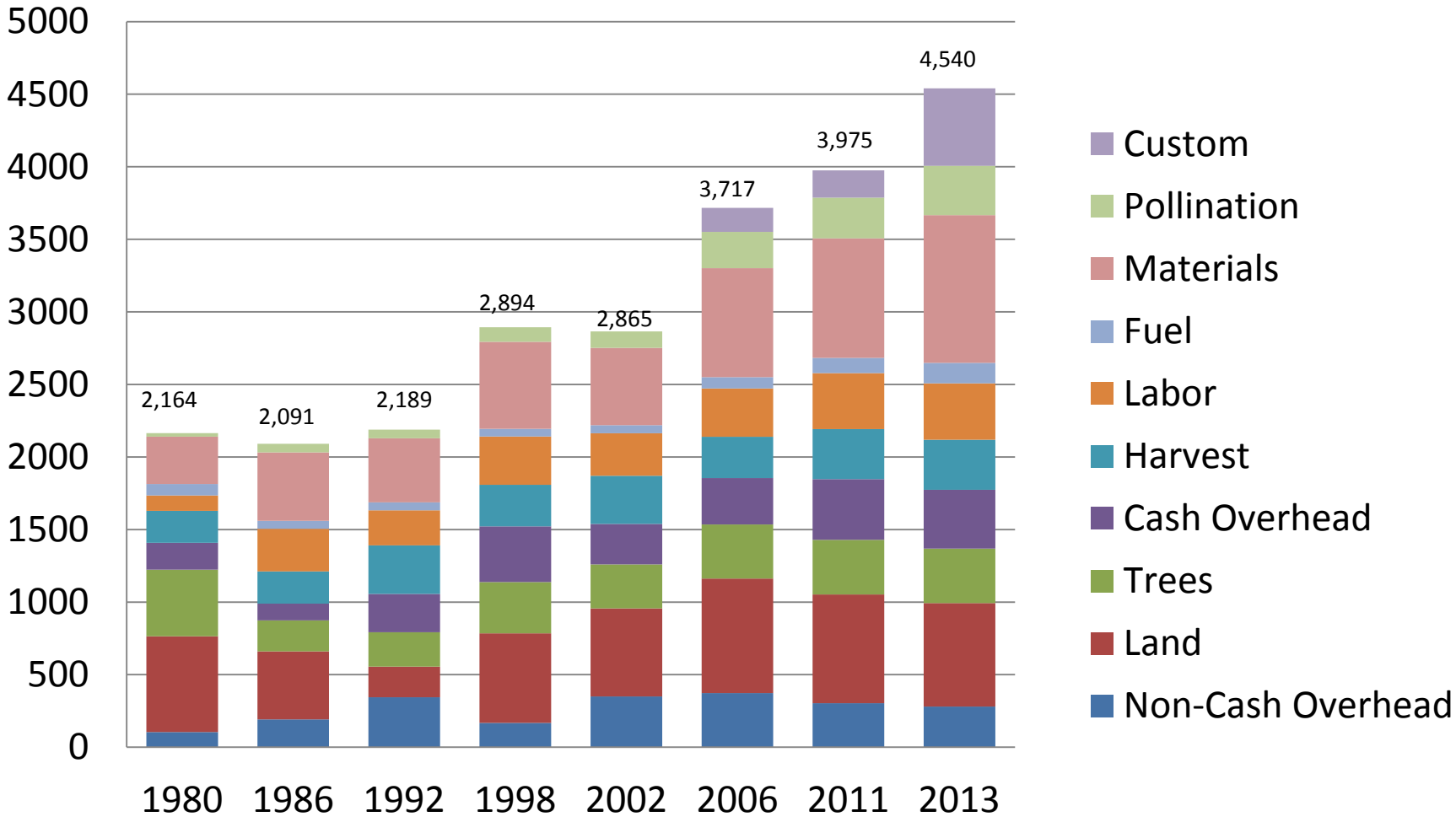
San Joaquin Valley 2012- $3,975



Standard Cultural Costs at 76% of $3,975 = $3,021

From Dr. Karen Klonsky's (of UC Davis) presentation on almond costs trends

Cost per Acre to Produce Almonds



From Dr. Karen Klonsky's (of UC Davis) presentation on almond costs trends

Almond Grower ROA Definition

- **The yearly return of one bearing acre divided by the market value of one bearing acre**

$$\frac{\text{Grower Return \$}}{\text{Market Value \$}} = \frac{\$2{,}291}{\$23{,}000} = 9.96\%$$

Average CY 2010-2012 ROA

Grower Return = Revenue - Cost

Almond Grower ROA Target Range

- Almond Grower ROA Target Range[1]
  - **10-20% Yearly Return on Assets (excluding asset appreciation)**
  - **Only 5-10% ROA after taxes, so reasonable**
  - Supported by the expectations of other growers' knowledge of the risks associated with Almonds Orchards **based on at least a 20-25 year life**

1. Grower's Perspective: As an independent California Almond Grower and Investor, my opinion of an acceptable ("fair and reasonable") Almond Grower ROA is as follows.

Projection of Bearing Acreage Increase based Known & Estimated Plantings and Removals

		Projected Bearing Acres 2012 - 2017					
	2011	2012	2013	2014	2015	2016	2017
	Actual	Already Reported Plantings			Estimated Plantings		
Forecasted Bearing Acres	**760,000**	**780,000**	**794,797**	**803,733**	**844,733**	**885,733**	**926,733**
Acres Planted 3 years prior: (as originally Reported)		22,832	18,623	14,960	35,000	35,000	35,000
Adj. Planted Acreage: 60% more than Orig. Reported		**36,696**	**29,797**	**23,936**	**56,000**	**56,000**	**56,000**
Expected Removals (average of 2004-2011)		16,696	15,000	15,000	15,000	15,000	15,000
Net Increase in Bearing Acres (estimated) vs prior year:		**20,000**	**14,797**	**8,936**	**41,000**	**41,000**	**41,000**

Acres Planted and are Standing as of 2011 that are more than 20 years old (1990 or earlier planting):	**110,337**
Acres Planted and are Standing as of 2011 that are more than 17 to 20 years old (1991-1993 plantings):	**38,584**

Average Net Increase in Bearing Acres 2004-2012: 26,250 acres

Largest Net Increase in Bearing Acres from one crop year to the next: 40,000 acres (In 2008 & 2009 Crop Years).

Almond Bearing Acreage Projections
CY 2013/2014 – 2016/2017 - Almond Board Staff

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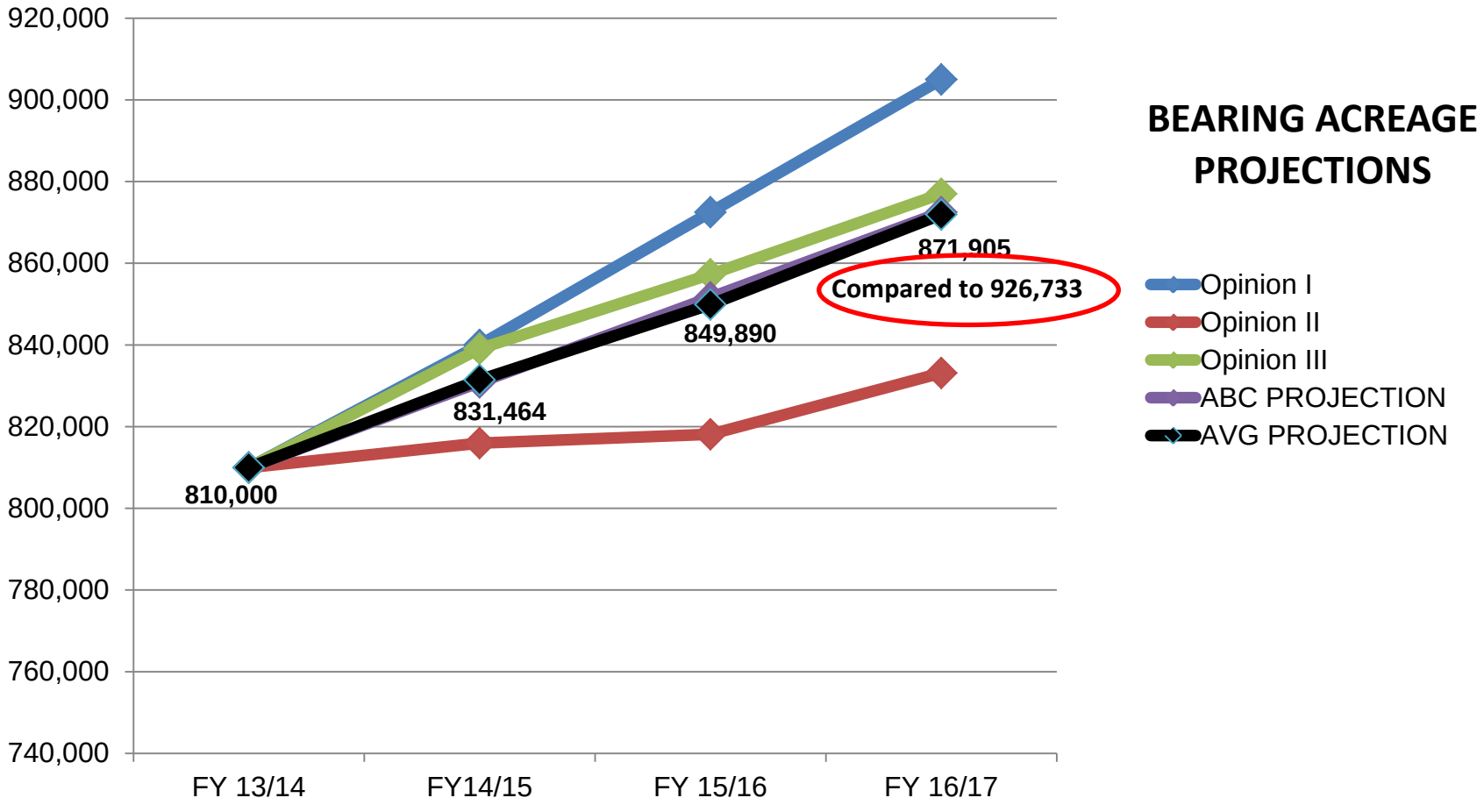
Comparison to previous Projections



California Almond Demand History

	Recent Crop Year Demand Growth Averages				
	3 Year	5 Year	10 Year	15 Year	Period when Target ROA Achieved
	'09-'11	'07-'11	'02 - '11	'97 - '11	'04 - '07
Actual Demand Growth					
Domestic	10.2%	8.4%	9.0%	10.0%	4.8%
Export	12.1%	14.7%	9.5%	9.2%	8.2%
Total	11.5%	12.7%	9.3%	9.3%	7.0%

Actual 2012 Crop Year Shipment Growth = -1.7%
Actual 2011 Crop Year Demand Growth = 13.9%

It Appears Future Demand/Shipment Growth will be Restricted by Acreage Growth

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2012 - 2017 Demand Growth based on Projected Bearing Acres

	Restricted Growth Based on Projected Bearing Acres @ Random Yield/Acre Averages 2012 - 2017				Unrestricted Conservative Demand Growth
	2,400	2,500	2,600	2,700	
Projected Demand Growth					
Domestic	1.8%	2.6%	3.3%	4.1%	6.5%
Export	2.5%	3.3%	4.1%	4.9%	6.3%
Total	2.0%	2.8%	3.6%	4.3%	6.3%

(6.3% CAGR)

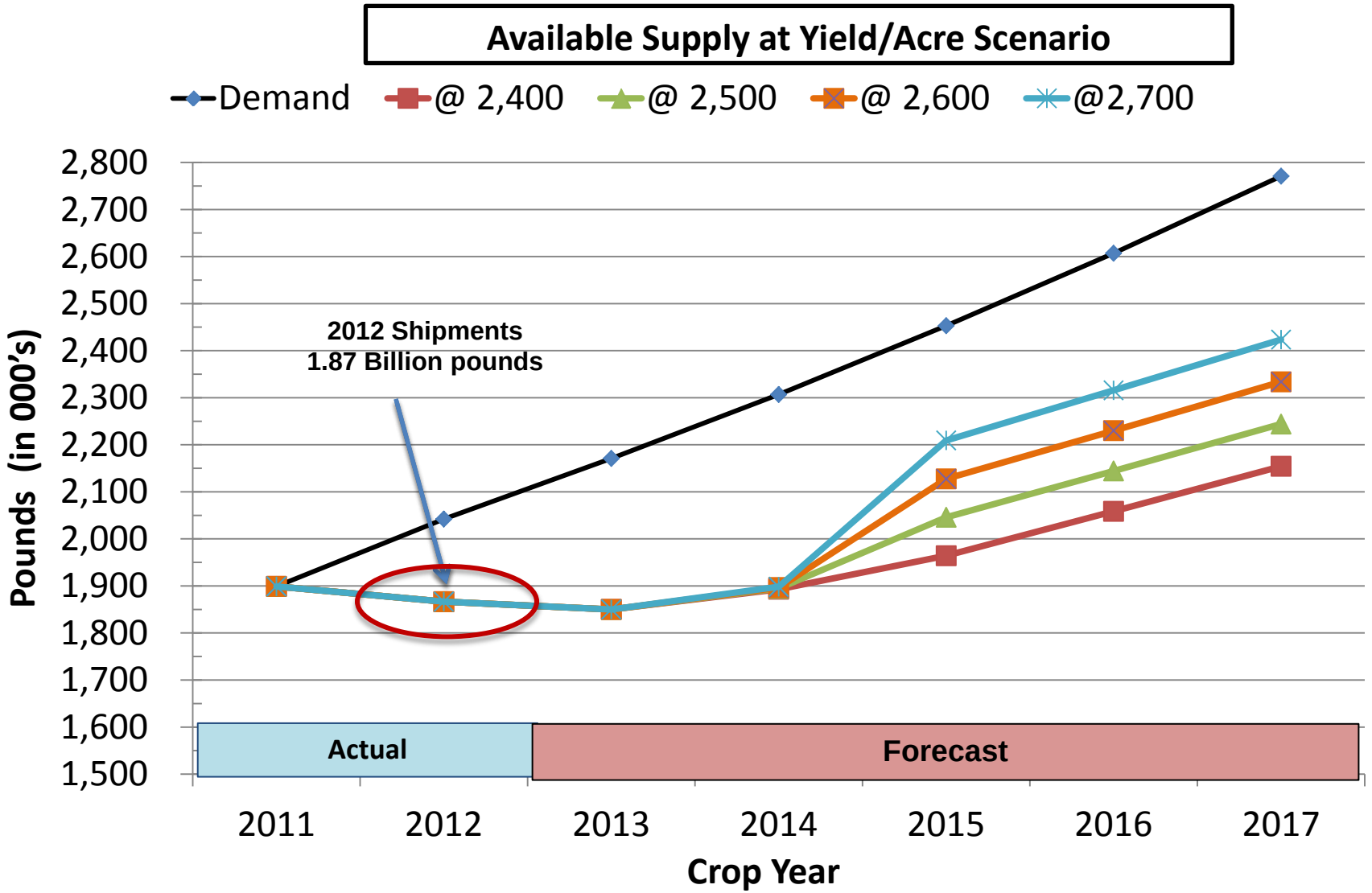
= Demand Growth Forecast based on Research & Recent History

= Actual Avg. 2008 - 2010

= Deloitte 2011 Study

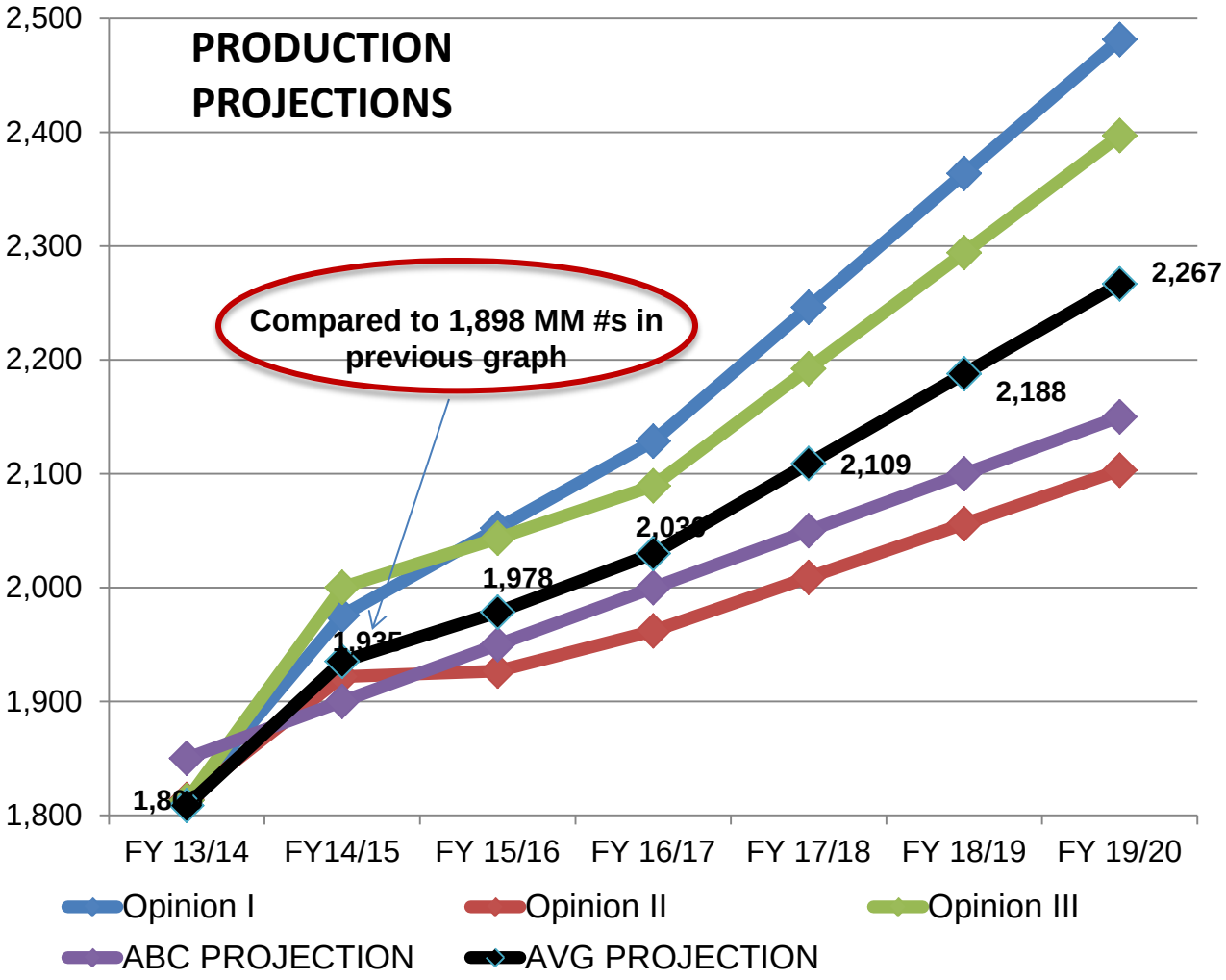
= Assumes Industry must carry-out 13% of Total Supply each year.

Acreage Restricted Supply (Available to Ship) vs. Conservative Unrestricted Demand Growth @ 6.3% CAGR

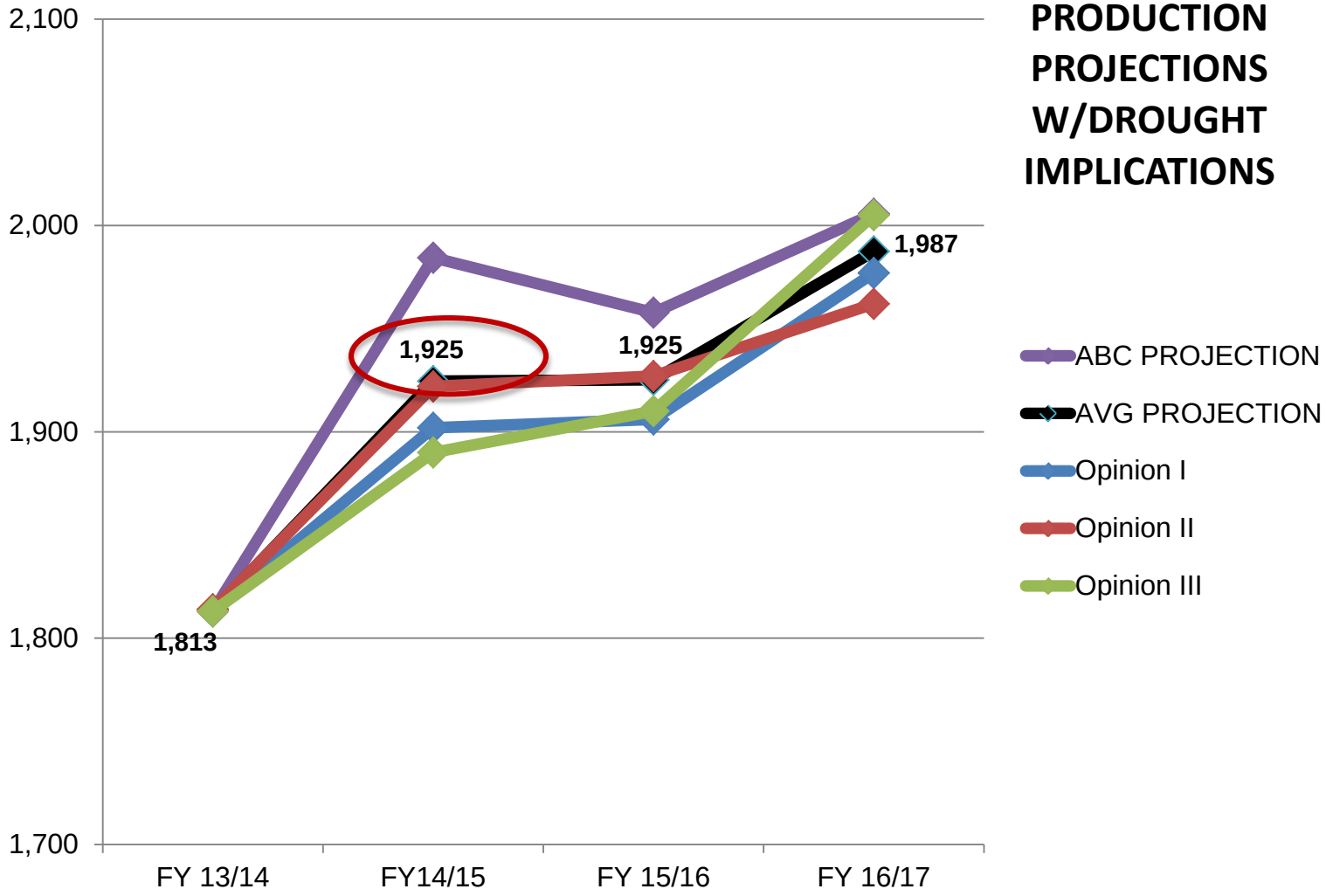


Acreage Restricted Supply = Net Edible Production + carry-in supply – (less: required carryout supply)
Required carryout = 13% of Total Supply for a given CY.

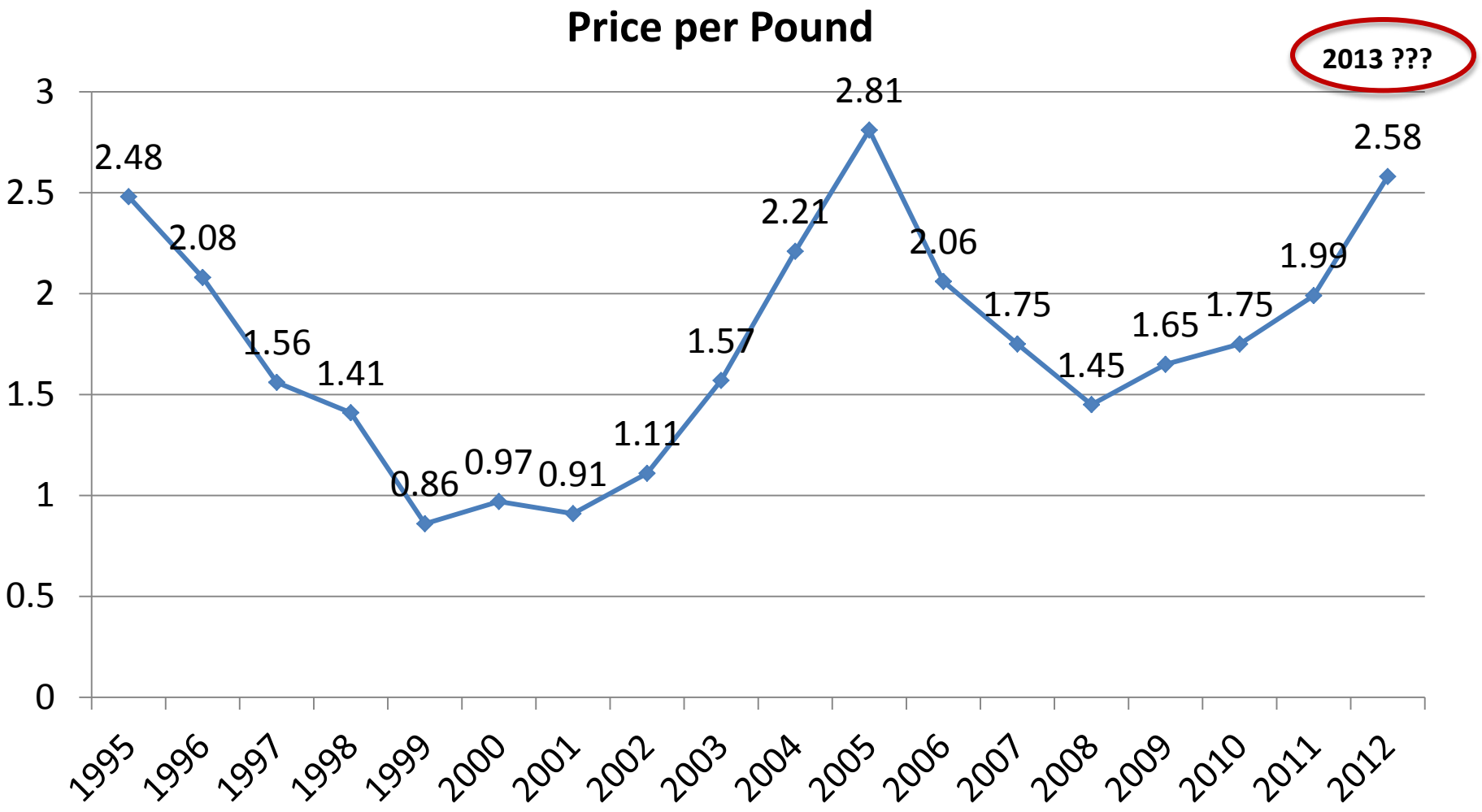
Almond Production Projections
(millions of net pounds)
CY 2013/2014 – 2019/2020



Almond Production Projections with Drought Implications (millions of net pounds) CY 2013/2014 – 2016/2017



Almond Price per Pound



Source: NASS 2010 California Acreage Report

Outlook for 2013-2017

- Optimism for Grower Returns for 2013-2017[1]:
  - 10-20% Grower ROAs are possible with projected almond supply and demand fundamentals, but costs are higher and "break-even" price per pound is higher
  - Growers need to stay informed, aware, and involved to support our capable Almond Handlers and they need to know their costs
  - Growers should review monthly information and reports from the Almond Board, they should understand how the Almond Board staff/marketing committee programs operate to ***build the type of demand that contributes to higher prices levels which are needed to achieve adequate ROA***
  - Growers should research and study Almond Market Dynamics and apply principles to practice on a regular basis
  - **Supply Management is the new "Reserve" as long as demand is strong**

1. Grower's Perspective: As an independent California Almond Grower and Investor,