Effects of Agricultural Policies on Human Nutrition and Obesity

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Overview

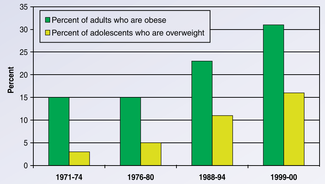
Issue: Obesity is on the rise with high social costs
Do federal agricultural policies contribute?

Study Objectives: Quantify the nature and extent of the effects of selected agricultural policies on human nutrition and obesity

Agricultural Policies of Primary Interest:
- commodity price & income supports
- trade policies
- public agricultural R&D
- food assistance programs (WIC, Food Stamps)

Some Proposed Policy Solutions: Eliminate commodity programs, tax fat and sweet foods, regulate food industry, change food programs

Obesity has risen rapidly since the mid-1970s



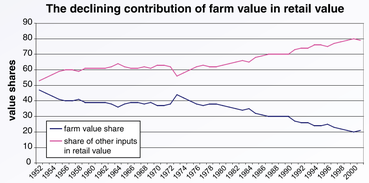
USDA program funding

USDA Programs	Expenditure in 2004	Percent of Total
	billions of dollars	*percent*
Food, Nutrition, and Consumer Services	45.4	40.2
Farm Service Agency (mainly farm commodity programs)	27.4	24.3
Research, Education and Economics (mainly agricultural R&D)	2.5	2.2

Issues in Today's Markets

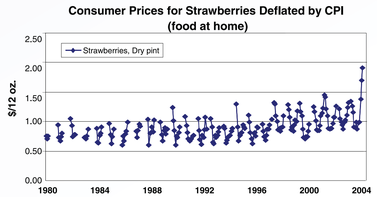
Increasing "disconnect" between commodity prices and food prices

The declining contribution of farm value in retail value



Apparent increases in the prices of some fresh fruits and vegetables. . .

Consumer Prices for Strawberries Deflated by CPI (food at home)



. . .may be due to changes in availability, seasonal availability or new product characteristics

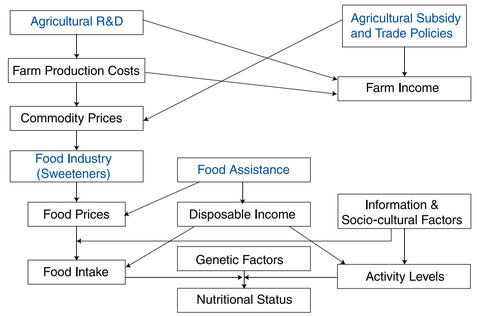
Monthly Retail Strawberry Prices, deflated (1983=100) and seasonally adjusted

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
				Dollars per Pound								
1980				0.76	0.70	0.76						
1981			0.94	0.73	0.68	0.74	0.81					
1982			1.04	0.94	0.74	0.78	0.78					
1983				0.73	0.71	0.76	0.87					
1984			0.89	0.64	0.63	0.76	0.80	0.91				
1985			0.97	0.77	0.62	0.74	0.88					
1986			0.60	0.75	0.68	0.79	0.84	1.00				
1987				0.84	0.74	0.85	0.96	0.92				
1988			1.04	0.60	0.80	0.81	0.90	0.82	1.02			
1989			0.99	0.78	0.67	0.85	0.90	0.79	0.87			
1990		1.24	1.01	0.85	0.60	0.75	0.73	0.81	0.91			
1991		1.08	0.93	0.81	0.71	0.67	0.70	0.71	0.75	0.77		
1992		1.05	0.85	0.70	0.61	0.77	0.73	0.87	1.07	0.87		
1993		1.05	0.90	0.65	0.62	0.77	0.73	0.77	0.82	0.90		
1994		0.92	0.88	0.64	0.69	0.73	0.75	0.77	0.83	0.89		
1995		1.30	0.91	0.67	0.77	0.80	0.82	0.94	0.91	0.88		
1996	1.11	0.99	0.81	0.71	0.63	0.80	0.81	0.75	0.91	0.90		
1997		0.96	0.84	0.75	0.68	0.77	0.88	0.87	0.94		1.04	
1998	1.33	1.30	1.09	1.01	0.86	0.88	0.84	0.90	0.91	1.09		
1999		1.28	1.20	1.07	0.87	0.91	0.84	0.95	1.02	1.01	1.18	
2000	1.30	1.16	1.10	0.87	0.73	0.71	0.74	0.75	0.84	0.96		
2001		1.25	1.17	1.01	0.86	0.85	0.85	0.93	1.10	1.14	1.22	1.45
2002	1.42	1.21	1.10	0.88	0.87	0.89	0.88	0.97	1.07	1.08	1.27	
2003		1.21	1.05	0.99	0.94	0.88	0.99	1.02	1.10	1.24	1.32	
2004	1.35	1.27	1.15	0.90	0.90	0.99	0.87	0.97	0.99	1.38	1.69	1.91
2005	1.71	1.25	1.00	0.80	0.91	0.93	0.95	0.95	1.13	1.15	1.17	1.39

Conceptual Framework

Agricultural policies affect food consumption
- direct effect on prices (up and down)
- indirect effects on food characteristics and composition

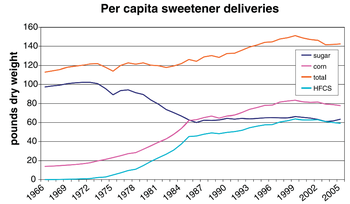
Food consumption and choices affect nutritional outcomes and obesity
- confounded by changes in income and food preferences
- affected by food assistance programs
- confounded by changes in the food industry and technology



Case Study: Sweeteners

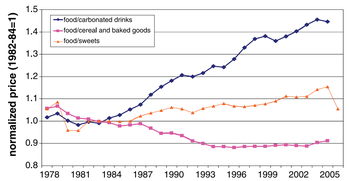
Per capita consumption of all sweeteners has increased and peaked in 1999. Today the composition of sweeteners consumed includes less sugar and more high fructose corn sweetener (HFCS).

Per capita sweetener deliveries



Aggregate food prices have risen much faster than the price of carbonated drinks, slightly more than the price of sweets and have fallen relative to the price of baked goods.

Relative retail food prices



Summary Findings:

- Historically the link between agricultural policies and sweetener consumption was stronger than today. Until 1980, R&D led to cheaper inputs and food, and emergence of cheaper HFCS.
- Falling farm value share at the retail level means using farm policy to influence food prices or ingredient inputs is a poorly targeted policy for sweeteners.
- Non-price approaches (limiting in-school access and food program regulations) are likely to be more effective for reducing sweetener consumption.

Research Program

1) Review changes in food consumption patterns, food prices, agricultural commodity prices, and food & agricultural policies
2) Analyze the effects of alternative farm subsidy policies and agricultural R&D policies on commodity prices
3) Analyze the consequences of alternative agricultural policies for food prices & consumption patterns, and their implications for nutrition and obesity
4) Case study: Role of corn and sugar policies on prices and consumption of sugar and other caloric sweeteners
5) Case study: WIC program in the Sacramento, CA area, with special focus on Latina mothers and their toddlers
6) Evaluate the effects of possible changes to food assistance programs on diet quality and obesity

Findings and Policy Implications

Agricultural Policy & Commodity Prices
- Commodity support programs have small, though varied, effects on commodity prices
- Past publicly sponsored agricultural research has led to productivity increases and commodity price declines

Commodity Prices & Food Prices
- Increasing "disconnect" between commodity and food prices

Food Prices & Caloric Intake
- Consumer responses to food price changes are generally small
- Food industries affect consumption through choice of food ingredient use, food preparation technologies and portion sizes

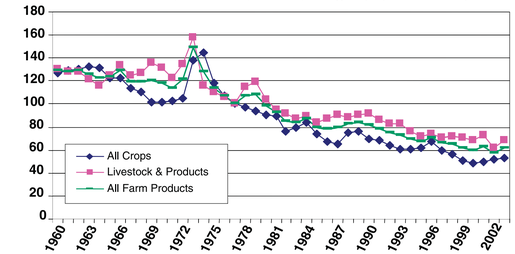
Can Agricultural Policy Help Reduce Obesity?
- Eliminating federal commodity subsidy policies or reversing agricultural policies pursued over the past 40 years would have little effect on today's nutritional outcomes and obesity.
- Some opportunities exist for change. Increased support to improve the yields, quality, and availability of fresh fruits and vegetables will widen consumer choices and enhance health benefits from consumption

Food Assistance Programs
- Restrictions on the use of Food Stamps to purchase 'unhealthy' foods would be difficult to implement and monitor and will reduce program participation. Moreover, while diet quality may improve for participants, changes in food prices may induce reductions in diet quality among eligible non-participants.

Results: Commodity & Food Prices

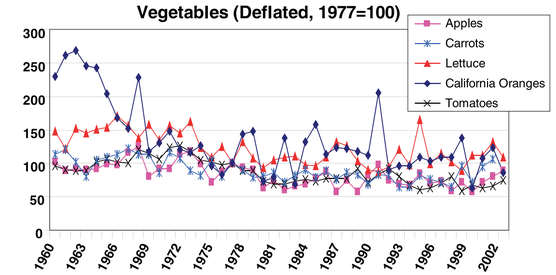
Farm prices for commodities decline

Prices Received Deflated with Prices Paid (commodities, services, interest, taxes, wages) (1977=100)

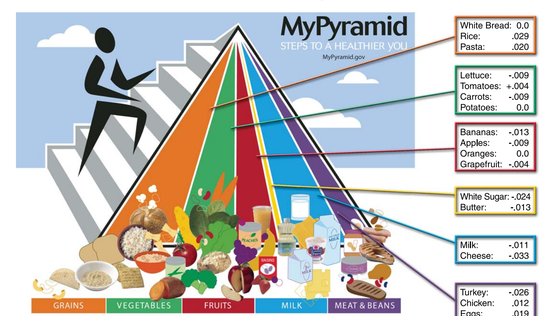


Mixed trends for fruits and vegetables prices

Prices Received by Farmers for Selected Fruits and Vegetables (Deflated, 1977=100)



General decline in real retail food prices



Statistics report proportional changes in real prices over 1980-2003 period
Alston, Sumner, Vosti (UCD/AIC/ARE)

Recent Research Products

Are Agricultural Policies Making Us Fat? Likely Links between Agricultural Policies and Human Nutrition and Obesity, and Their Policy Implications. J.M. Alston, D.A. Sumner & S.A. Vosti. Rev. of Agric. Econ., Fall 2006.

Are Healthy Alternatives Available for All? Some Insights from an Agricultural Economics Perspective. S.A. Vosti. Presentation at the Exploratory Center for Obesity Research (ECOR) Workshop on Poverty and Obesity, March 2007.

Proposed Modifications to the Food Stamp Program: Likely Effects and their Policy Implications, C.C. Mullally, J.M. Alston, D.A. Sumner, M. Townsend & S.A. Vosti. In E. Blass (ed.) Obesity: Causes, Mechanisms, and Prevention, Sunderland, MA: Sinauer Associates, Inc., forthcoming.

Public funding for research into specialty crops. J.M. Alston & P.G. Pardey, St. Paul, MN: University of Minnesota, Dept. of Applied Economics, Staff paper P07-09. InSTePP paper 07-03, 2007.

Sugar Policies and Added Sugars in US Diets. H.H. Jensen & J.C. Beghin. Presented at the Food Product Composition, Consumer Health and Public Policy Conference, Berkeley, CA, April 2007.

Acknowledgments

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For Further Information

See project website: *http://www.card.iastate.edu/food_nutrition/*
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