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Presentation for Hort 421/521

Marketing and Consumer Demand

Vicki McCracken

Professor, School of Economic Sciences

Who am I talking with in Hort 421/521?

- Undergraduate vs. Graduate?
- Horticulture Major vs. Other?
- Area(s) of Interest?
- Economics Background?
- Marketing Background?
- What else?

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Focus of my talk today …

- Present very brief <u>economic motivation</u> for demand
- Utilize a <u>conceptual framework</u> to discuss factors that affect demand at an individual consumer level
- Look at <u>food consumption changes</u> over time …
- Provide you with some <u>resources</u> (research, data, websites) that might be useful in understanding demand/markets for fruit and vegetables, including wine!

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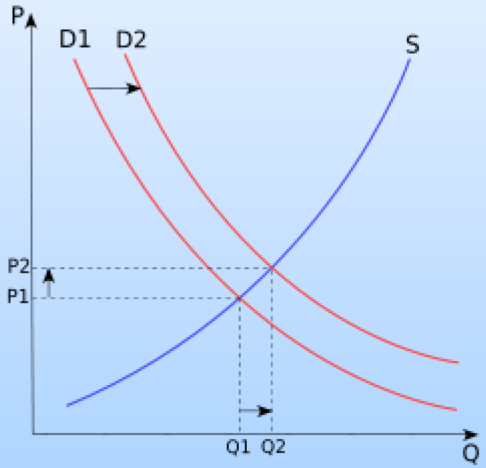
Basic Concept of Economics

Supply=Demand



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The <u>supply schedule</u> is the relationship between the quantity of goods supplied by the producers of a good and the current market price.

The <u>demand schedule</u> represents the amount of goods that buyers are willing and able to purchase at various prices, assuming all other non-price factors remain the same.

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The laws of supply and demand state that the *equilibrium* market price and quantity of a commodity is at the intersection of consumer demand and producer supply.

Considerations

- Global vs. Domestic – Supply and Demand
- Macro vs Micro Level – Supply and Demand
- Static vs. Dynamic – Supply and Demand
- Level of Aggregation (eg., all Fruits and Vegetables vs. Specific Item) – Supply and Demand
- Generic vs. Differentiated Commodity
- Traditional Market vs. Niche Market
- Etc.

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Conceptual Framework of Factors that Affect Organic Consumer Attitudes and Purchase Decisions (Adapted here to characterize consumer demand/marketing issues for fruits and vegetables)

Reference: Renewable Agriculture and Food Systems: 20(4); 193-205

Consumers - Economic Factors

- Household income
- Product price
- Price of related products

Consumers - Social and Demographic Variables

- Gender
- Occupation
- Age
- Education
- Family size (and children)

Product Characteristics

- Nutrition
- Sensory characteristics
- Value

Product related factors – Perceived Attributes

- **Health benefits**
- **Animal welfare**
- **Food safety**
- **Impact on environment**
- **Production process**

Exogenous Factors (affecting how product and consumer related factors impact preferences/attitudes and purchase decisions)

- **Certification**
- **Packaging and labeling**
- **Product availability**

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Knowledge and Awareness **(affecting how product and consumer related factors impact preferences/attitudes and purchase decisions)**

- **What is organic (or any other characteristic that isn't easily observable)?**
- **What makes organic (or any other characteristic that isn't easily observable) unique?**

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Selected quality or value attributes of food products, organic and conventionally grown (Source: Caswell):

- Food Safety
- Nutrition
- Value
- Packaging
- Production Process

Food Safety Attribute Examples (Caswell)

- Food-borne pathogens
- Heavy metals
- Pesticide residues
- Food additives
- Naturally occurring toxins
- Veterinary residues

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Nutrition Attribute Examples (Caswell)

- Fat
- Calories
- Fiber
- Sodium
- Vitamins
- Minerals

Value Attribute Examples (Caswell)

- Purity
- Compositional integrity
- Size
- Appearance
- Taste
- Convenience of preparation

Package Attribute Examples (Caswell)

- Package materials
- Labeling
- Other information provided

Production Process Attribute Examples (Caswell)

- Animal welfare
- Genetic modification
- Environmental impact
- Pesticide use
- Worker safety

Previous factors focused on decision making/consumption at <u>individual consumer</u> level.

**All of the previous PLUS size of population, location of residence of the population, demographic composition of the population (eg. age composition of the population – baby boomers are aging …), …
impact <u>MARKET DEMAND for/TOTAL CONSUMPTION</u> of a commodity!**

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US Consumption Changes in Recent Years: What have we eaten in the past and what are we currently eating?

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ERS annually calculates the amounts of several hundred foods available for human consumption in the United States; also called "food supply" or "food disappearance" data.

Refer to Per Capita Food Consumption Power Point for Specific Slides for Major Food Groups and Fruits and Vegetables

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CREATE in minutes all of the previous graphs using USDA Economic Research Service (ERS) Data Sets and Custom Queries:

http://www.ers.usda.gov/Data/FoodConsumption/FoodAvailIndex.htm

_ **Custom Queries**

allow the user to make tailored tables and charts, download data, and save and print images. This option does not offer the complete coverage available in the spreadsheets, but rather focuses on per capita estimates.

Follow the steps below to build custom tables and charts from ERS per capita food supply data:

- Select a food group or individual food(s) and year(s);

- Select a table or chart output type (and choose a report style for tables); and

- Modify tables and charts, print and download data and graphics.

_ **Custom Queries**

allow the user to make tailored tables and charts, download data, and save and print images. This option does not offer the complete coverage available in the spreadsheets, but rather focuses on per capita estimates.

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Various Resources-Research, Data and Outlook publications, websites, etc.

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I. Illustration of Wine Market Analysis: Consumer-Focused

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California wine industry evolving to compete in 21st century *by* Rachael Goodhue, Richard Green, Dale Heien *and* Philip Martin

http://californiaagriculture.ucop.edu

US Wine Consumption Facts

- **Average annual per US adult wine consumption <u>increasing</u> – from 2.1gallons (10 bottles) in 1995 to 2.5 gallons (15 bottles) in 2005**
- **US wine consumption <u>only about 1/7</u> of that in France or Italy**
- **US wine consumption <u>concentrated</u> among regular wine users**

Important changes in US wine consumption over last 2 decades:

- **Drinking more red wines for health reasons**
- **Upgraded palates – drinking more, and more expensive wines**
- **Increasingly prefer consistent tastes of fruity wines produced in "New World" areas like California, Argentina, … as opposed to "Old World" Europe**

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US Wine Consumption by retail price

Source: CA Agriculture 62(1), 12-18, taken from Gomberg-Fredrickson Report.

TABLE 2. U.S. wine consumption by retail price (750 ml bottle), 1995–2006

Wine category	Retail price	Cases sold 1995	1998	1999	2000	2001	2002	2003	2004	2005	2006
		millions (% total volume)									
Ultra-premium	Over $14	3 (3)	6 (4)	10 (7)	14 (10)	15 (10)	16 (11)	17 (11)	19 (12)	21 (12)	22 (13)
Super-premium	$7 to $14	10 (9)	21 (15)	25 (16)	25 (17)	26 (18)	29 (19)	30 (19)	33 (20)	38 (23)	42 (25)
Pop.-premium	$3 to $7	35 (29)	48 (34)	50 (33)	53 (36)	51 (36)	53 (35)	53 (34)	53 (33)	55 (33)	57 (33)
Jug wine	Below $3	69 (59)	68 (47)	66 (44)	55 (36)	53 (38)	53 (35)	56 (36)	56 (35)	53 (32)	50 (29)
Total		117	143	150	147	145	150	156	160	165	171

Source: Gomberg-Fredrikson Report.

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Share of wine entering US distribution channels

Source: CA Agriculture 62(1), 12-18, taken from Gomberg-Fredrickson

TABLE 3. Share of wine entering U.S. distribution channels by source

Year	California	Other U.S.	Imports
	%		
1970	73	16	11
1980	69	10	21
1990	73	14	13
2000	69	10	21
2005	63	10	27

Source: Gomberg-Fredrikson Report.

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Top 5 sellers for US wine imports

Source: CA Agriculture 62(1), 12-18, taken from FAO, 2007.

TABLE 4. Top five sellers for U.S. wine imports, 1995 and 2006

Country	1995 Volume	1995 Total imports	1995 Rank	2006 Volume	2006 Total imports	2006 Rank
	1,000 liters	%		*1,000 liters*	%	
Italy	113,517	40.4	1	236,160	29.3	1
France	71,089	25.3	2	119,461	14.8	3
Chile	23,660	8.4	3	52,966	6.6	4
Spain	19,675	7.0	4	45,409	5.6	5
Australia	13,904	4.9	5	214,660	26.7	2
Total (top five)	241,845	86		668,656	83	
Total (all countries)	281,119	100		805,215	100	

Source: FAS 2007.

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Top 5 destinations for US wine exports

Source: CA Agriculture 62(1), 12-18, taken from FAO, 2007.

TABLE 5. Top five destinations for U.S. wine exports, 1995 and 2006

Country	Volume 1995	Volume 2006	Percent of total 1995	Percent of total 2006
	- - - 1,000 liters - - -		- - - % - - -	
United Kingdom	32,573	119,547	23	30
Canada	29,622	71,496	21	18
Japan	19,347	27,803	14	7
Switzerland	8,268	5,343	6	1
Netherlands	4,796	15,815	4	4
Top five	94,606	240,004	66	60
All countries	143,831	398,076	100	100

Source: FAS 2007.

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Future???

- Prospects of more countries consuming more wine. Implications could be good for the US?
- Local (within the US) produced – hot!
- But new competitors, particularly China is possible!

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II. Illustration of Direct Marketing Research and Resources

http://agalternatives.aers.psu.edu/farmmanagement/fruit_veggie/MarketingFruitAndVeggie.pdf

Evaluating Market Demand

Larger growers, particularly those located in major production areas, can pursue either of the two traditional marketing alternatives: wholesale fresh marketing or processing. Small-scale growers who find these marketing avenues closed to them will need to take a direct-to-consumer approach. This requires thorough research of the market and customer behavior before planning crop production.

Direct Marketing of Fresh Produce: Understanding Consumer Purchasing Decisions

by Jennifer Keeling Bond, Dawn Thilmany, and Craig A. Bond

http://www.choicesmagazine.org/2006-4/produce/2006-4-06.htm

Direct Marketing

- Farmers markets
- Roadside stands
- Community Supported Agriculture (CSA) programs
- Other

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Measures of Growth during the 1990's and 2000's

- **Number of** farmers' markets **doubled to over 3700 (1996-2006)**
- **Value of** agricultural products sold **direct, increased from $593m to $812m (1997-2002)**
- **Number of** farmers using direct marketing channels **increased from 110,639 to 116,733 (1997-2002)**

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This study utilizes a national survey of consumers fresh purchasing habits . . .

Consumption trends likely contributing to the direct marketing growth!

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Findings/Conclusions

- important to understand the attributes of purchase decisions of targeted consumers to enhance direct sales profitability
- direct consumers value superior produce and support local producers when making purchase location choices.
- production practices and locally grown attributes are more important when selecting produce (than when selecting other food items)

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III. Illustration of a National Carrot Market and Demand Analysis

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Factors Affecting Carrot Consumption in the United States

Gary Lucier and Biing-Hwan Lin

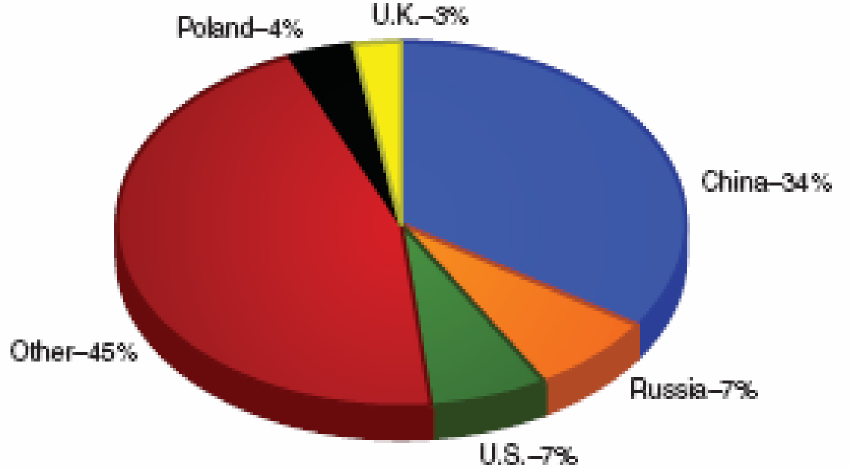
http://www.ers.usda.gov/publications/vgs/2007/03Mar/VGS31901/VGS31901.pdf

Article examines **where and how much** fresh and processed carrots are eaten and **links this consumption** to various economic, social, and demographic characteristics of consumers.

U.S. is a Leading Carrot Producer

Figure 1

World carrots: Share of production, average 2003-05



Source: Prepared by ERS from FAOStat, Food and Agriculture Organization, United Nations.

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Industry changed from a supplier of a low-value <u>bulk product</u> to a marketer of an upscale <u>value-added product</u>.

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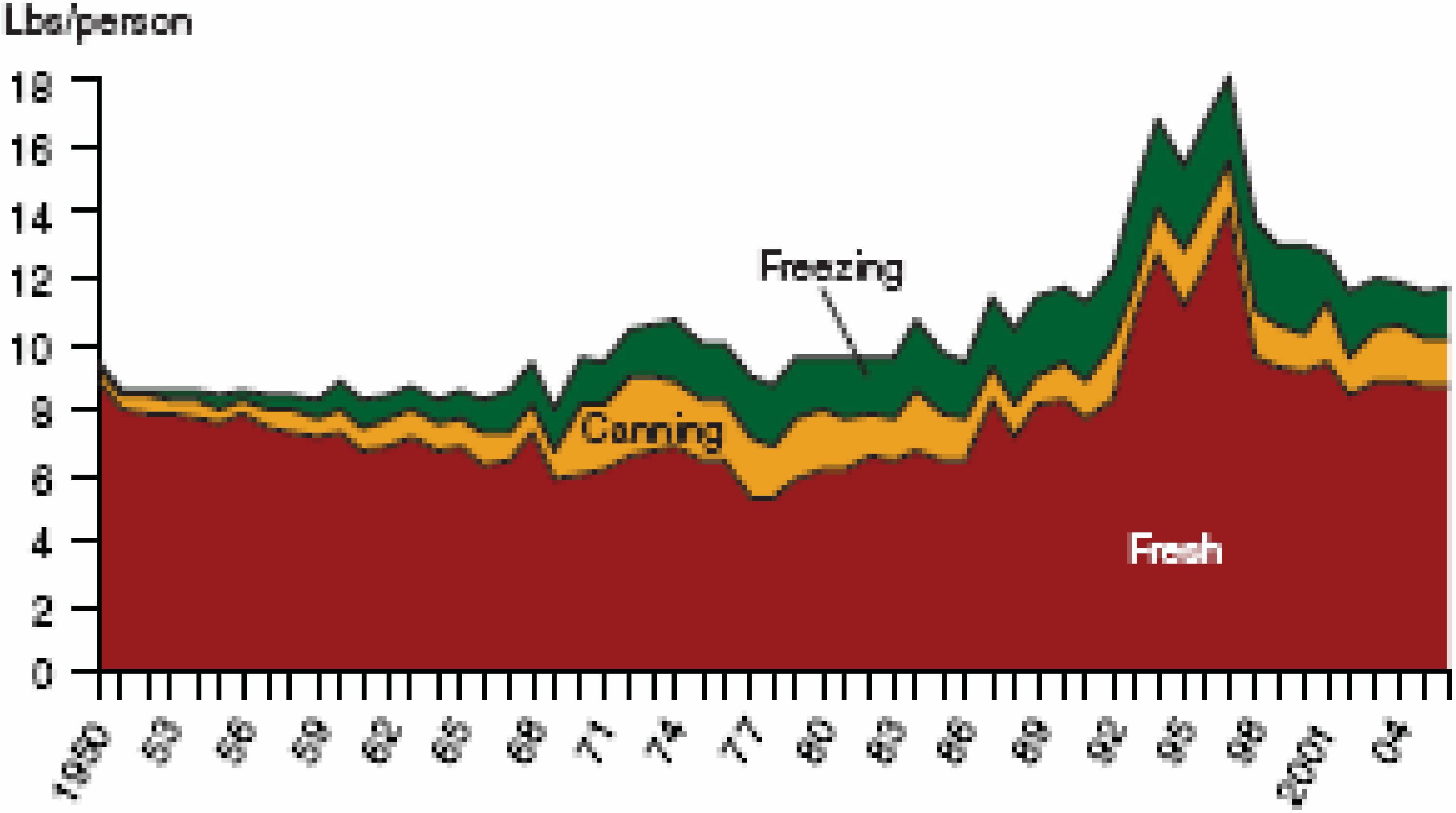
However, due to the capital-intensive nature of processing facilities, fresh production is now concentrated in California in two large firms.

Figure 2

U.S. carrots: Per capita disappearance, 1950-2006



Source: Computed by USDA, Economic Research Service.

These researchers used <u>USDA CSFII survey data</u> (an on-going national survey of food consumption) and <u>ACNielsen Homescan panel data</u> (an existing 52,000 household consumer panel) to analyze the demand side of the U.S. carrot market.

Findings

- Most carrots purchased at retail stores and considered at-home foods.
- Per capita consumption was greatest in the East and Central States, weakest in the South.
- Non-Hispanic Whites and Asians were the strongest consumers.

Findings (cont.)

- Per capita consumption is positively correlated with income.
- Fresh-cut per capita use is positively related to education level.
- Consumption increased with the age of the household head.

IV. Illustration of a Fresh Fruit and Vegetable Import Analysis

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Increased U.S. Imports of Fresh Fruits and Vegetables

Sophia Huang and Kuo Huang

http://hort.tfrec.wsu.edu/hort421-521/Increased%20Imports%20ERS%202007.pdf

U.S. imports of fresh fruit and vegetables have increased substantially, particularly since the 1990s.

Dominant Suppliers

- NAFTA Region for fresh vegetables
- Southern Hemisphere for off-season fresh fruit
- Equatorial countries for bananas

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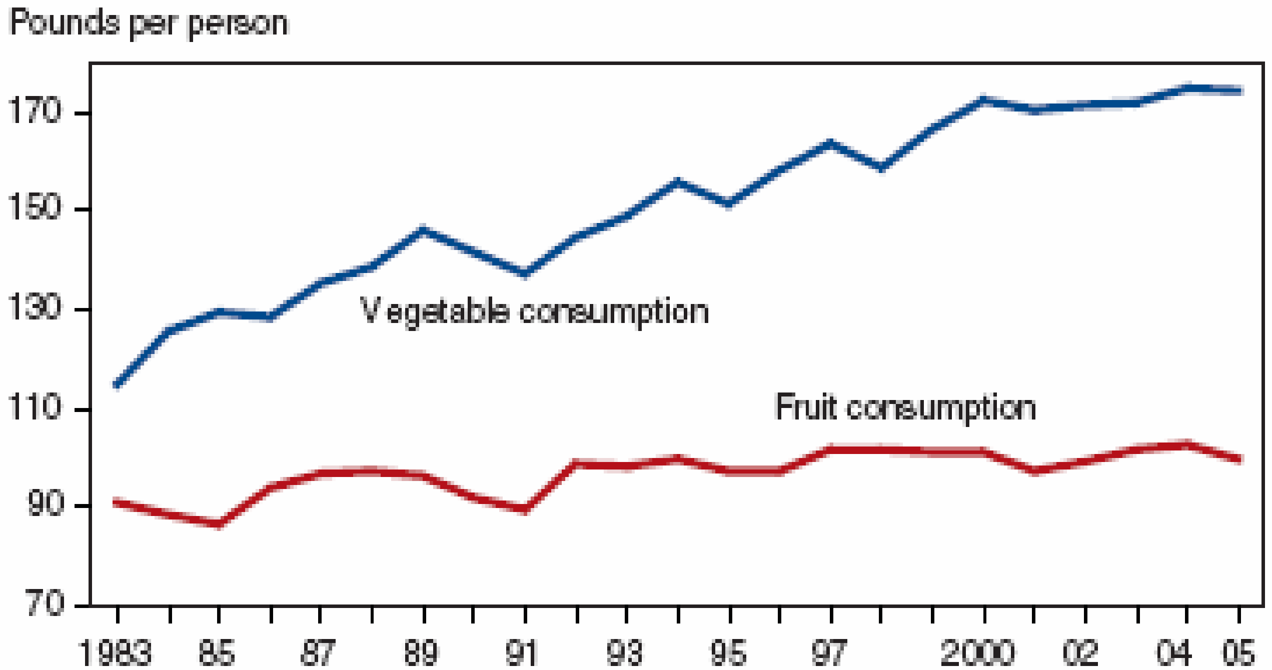
The Result

US Consumers have access to a larger volume and a greater variety of fresh fruits and vegetables year round.

Figure 8

Increasing U.S. per capita fresh produce consumption[1]



[1]Excludes potatoes, sweet potatoes, and mushrooms.
Source: Prepared by USDA, Economic Research Service.

Imports play critical role in the increased US fresh produce consumption

Fresh produce consumption increases

- 13 lb per capita increase in fresh fruit consumption (88.7 lbs in 1983-85 to 101.2 lbs in 2003-05)

- 50 lb per capita increase in fresh vegetable consumption (123.2 lbs in 1983-85 to 175.5 lbs in 2003-05)

Percent of Consumption from Imports

Fruits

- 44% in 2003-05
- 31% in 1983-85

Vegetables

- 16% in 2003-05
- 9% in 1983-85

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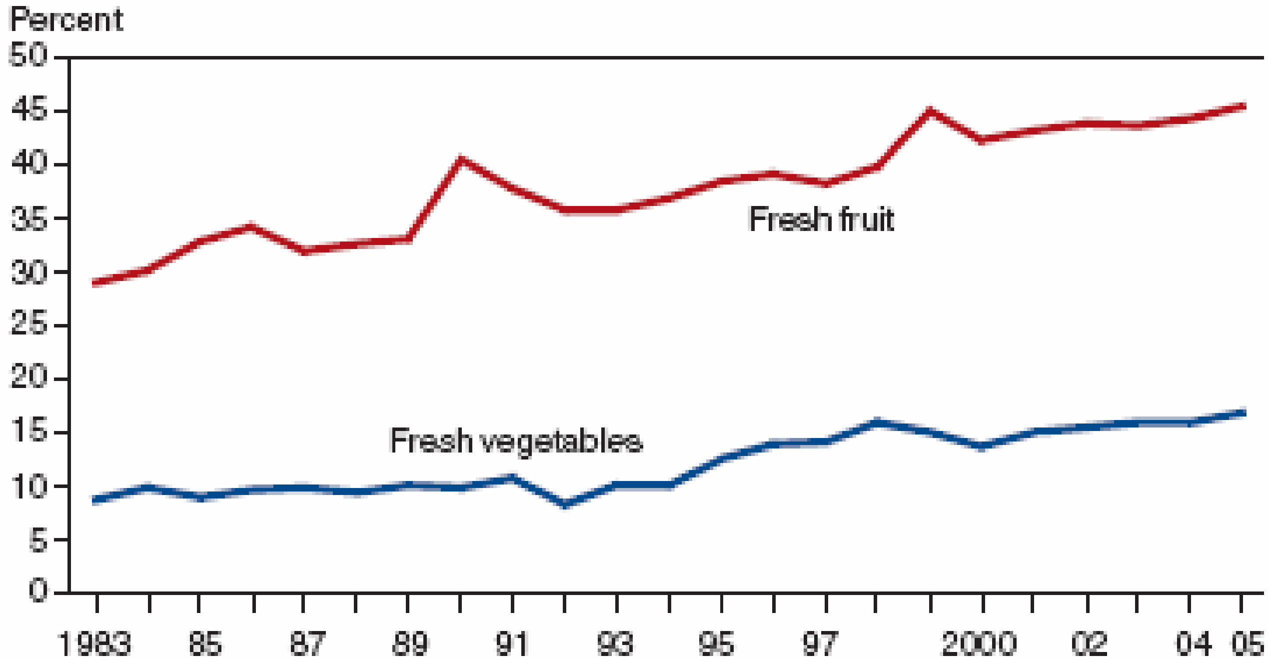
Figure 9

Increasing import presence in U.S. fresh produce consumption



Source: Prepared by USDA, Economic Research Service.

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Import Shares for Fresh Fruits

- Citrus – 15.5% in 2003-05 (2.3% in 1983-85)
- Non-Citrus – 53% in 2003-05 (41.2% in 1983-85)

Import Shares for top 3 Fresh Fruits Consumed (excluding Bananas)

- **Apples – 7.1 % in 2003-05 (6.2% in 1983-85)**
- **Oranges – 4.2% in 2003-05 (1.4% in 1983-85)**
- **Grapes – 54.8% in 2003-05 (38.5% in 1983-85)**

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Although most <u>fresh vegetables</u> are still domestically produced, import shares are up across the board, with onions being the one significant exception.

Factors for the Rapid Growth of US Produce Imports

- Demand (for year Round Supply of Fresh Produce)
- Greater Fresh Produce Trade within NAFTA
- Technology Developments Advance Perishable Produce Trade

V. Illustration of a Study Comparing US and International Food Consumption Trends

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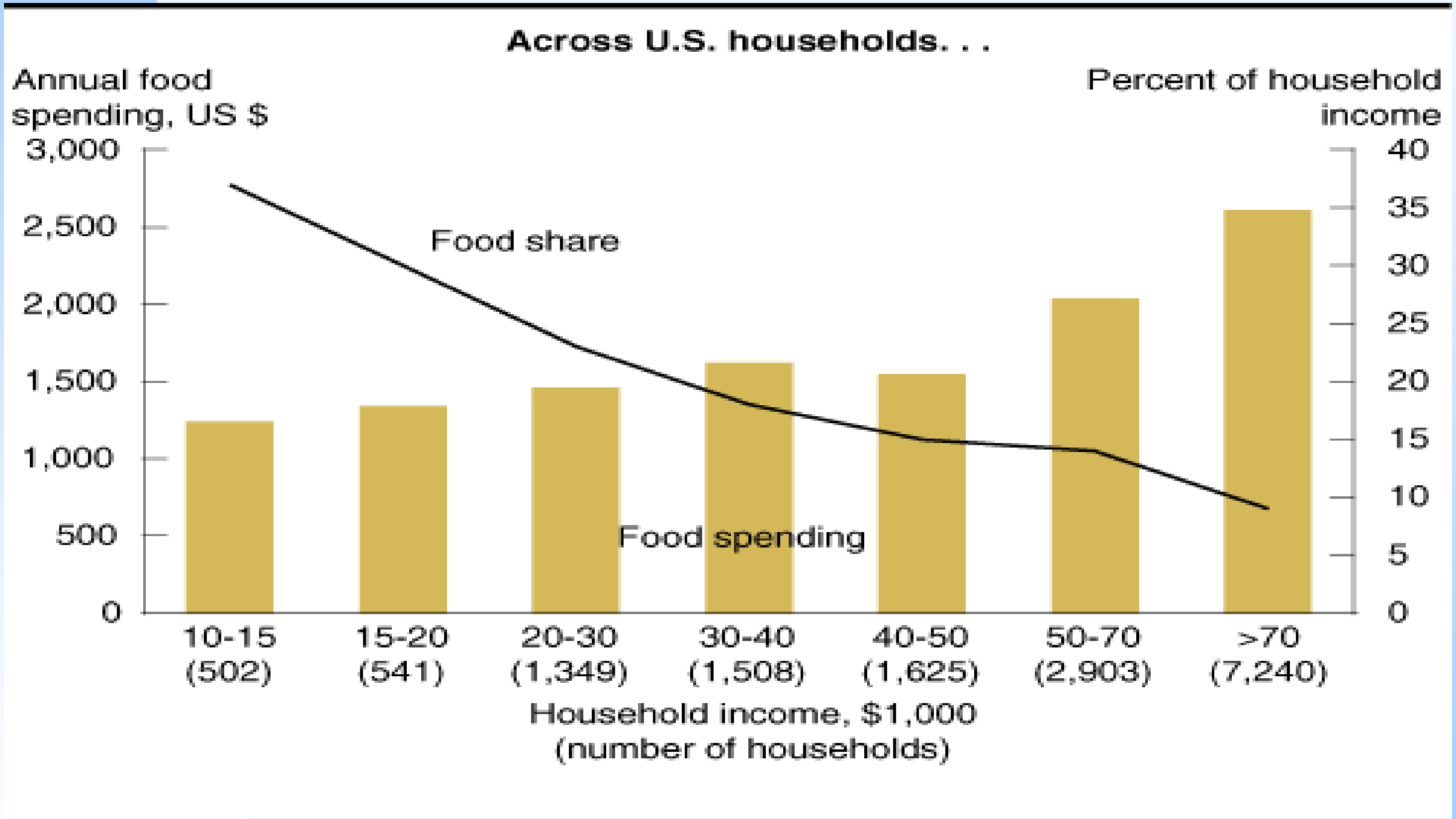
Converging Patterns in Global Food Consumption and Food Delivery Systems

Elizabeth Frazao , Birgit Meade, and Anita Regmi

http://www.ers.usda.gov/AmberWaves/February08/Features/CovergingPatterns.htm

“Globalization and worldwide income growth are increasing similarities across countries in what consumers eat and where they shop and dine. “

Food Expenditure Share of Income … Across US Income Levels (Source: BLS, CES data)



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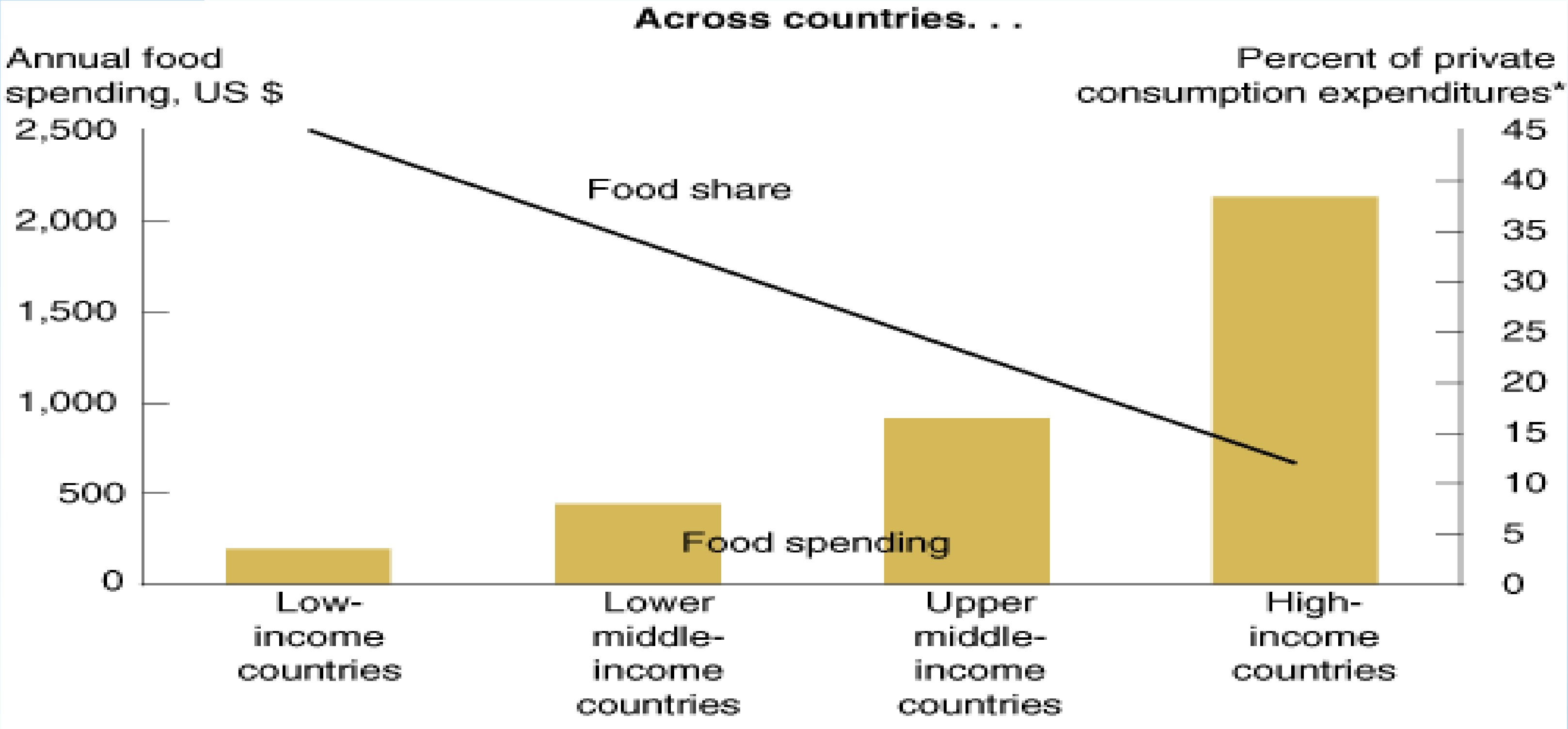
Food Expenditure Share of Income … Across Countries



Note: * a proxy for income.
Source: Country-level data from Euromonitor International (2006) and country grouping based on 2005 World Development Indicators from the World Bank. U.S. data from U.S. Bureau of Labor Statistics, Consumer Expenditure Survey (2004-2005) for four-person households.

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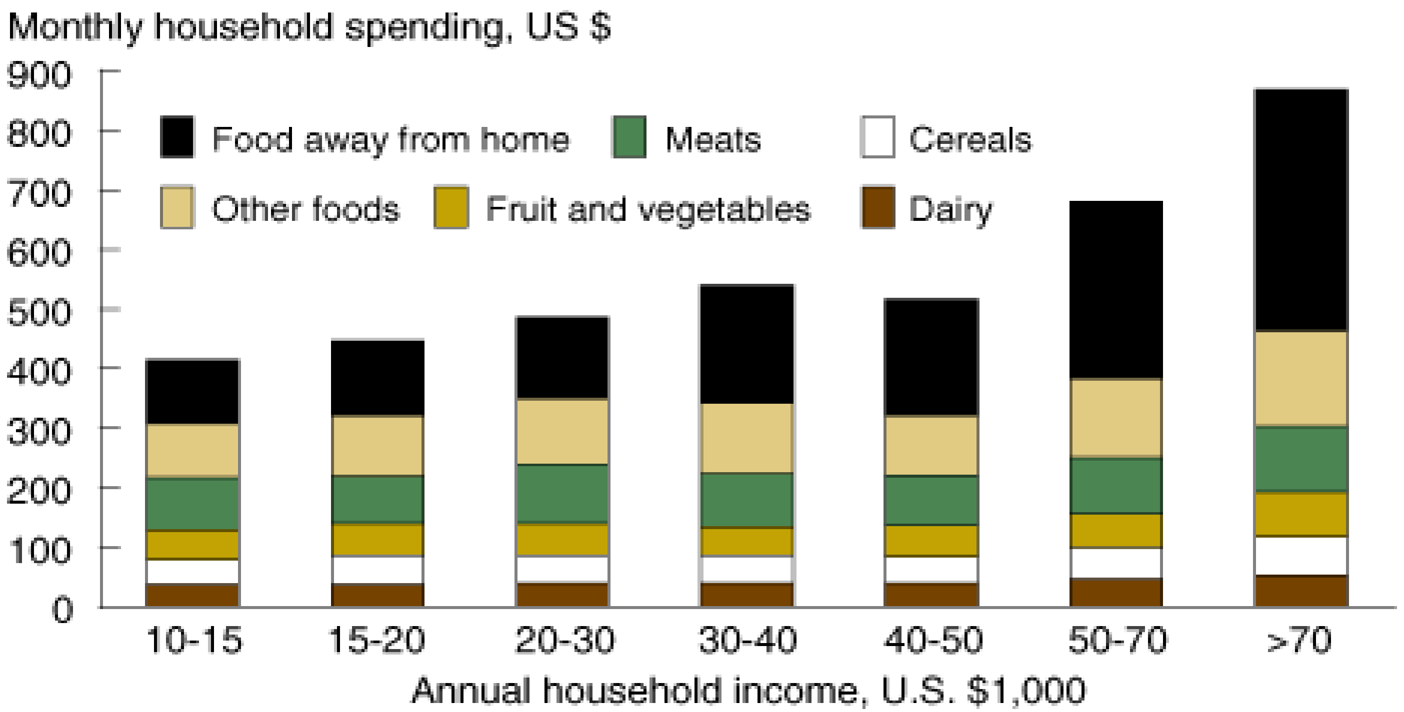
U.S. spending on food away from home and on "other foods" increases the most with income



Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Survey (2004-05) for four-person households.

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General Findings (direct from report)

- Across countries and income levels worldwide, consumers are choosing to spend their additional income on some combination of increased quality, convenience, and variety of foods.

- Food delivery systems and consumption patterns in middle-income countries like China and Thailand are converging, or "catching up" to countries with higher income levels.

- Income growth has been a primary force behind converging global consumption patterns, but globalization of the food industry is also contributing.

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VI. Various other USDA Sources of Information

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1. USDA AMS (Ag Marketing Service) Fruit and Vegetable Market News Portal

http://www.ams.usda.gov/fv/mktnews.html

Fruit and Vegetable Market News Portal

- gateway to customized Market News reports and related information
- users can view or download current and historical price and movement information.
- Also available - weather information, a currency conversion tool, …

- Fruit and Vegetable Market News Reports
- Office Addresses and Contacts at Shipping Point Locations
- Office Addresses and Contacts at Terminal Markets
- Types of Available Reports
- Access to text Archived Market News Price Reports
- Access to text Archived Market News Shipment, Trend and Truck Rate Reports
- Access to PDF Archive of Fruit and Vegetable Reports
- *Fruit and Vegetable Market News Users Guide* [PDF] (updated November 2006)

Subscribe to E-mail Delivery of Market News Reports

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2. Vegetables and Melons Situation and Outlook Yearbook

Gary Lucier and Alberto Jerardo

http://www.ers.usda.gov/Publications/VGS/2007/07JulYearbook/VGS2007.pdf

Contents

- Summary
- Glossary of Specialized Terms
- Selected Conversion Factors
- Vegetables at a Glance
- List of Tables
- Tables (almost 200 pages, with annual data from about 1980-2006 or 2007)

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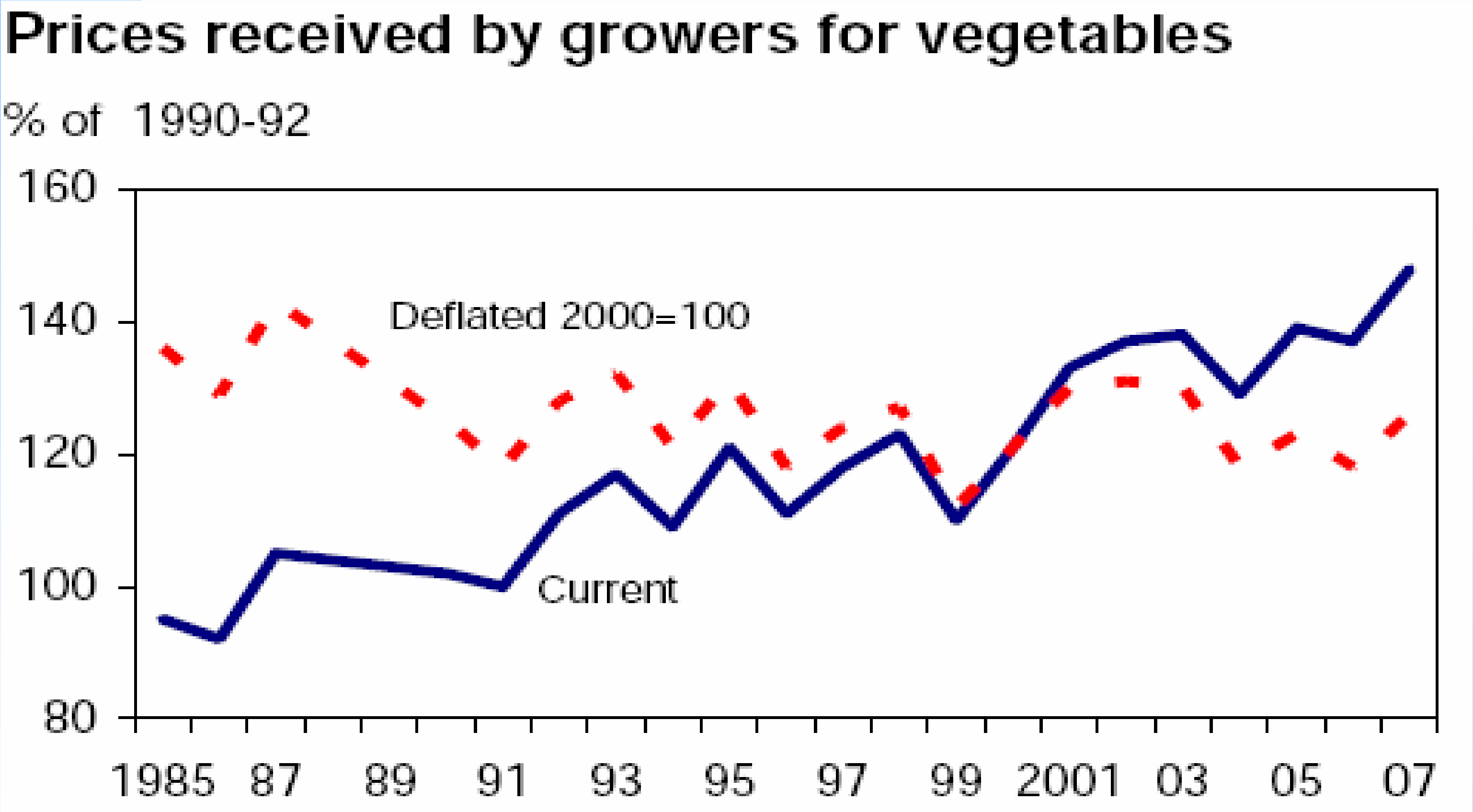

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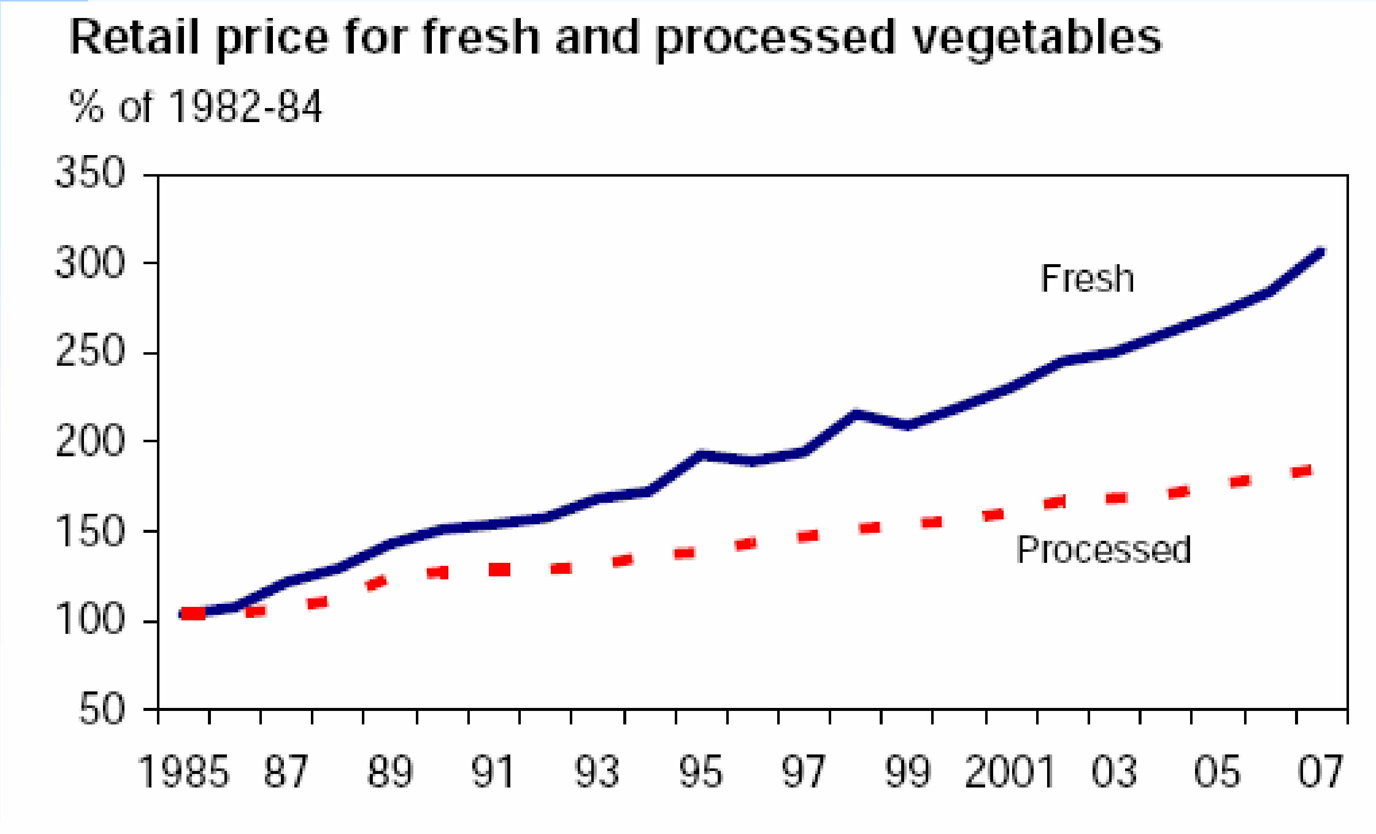
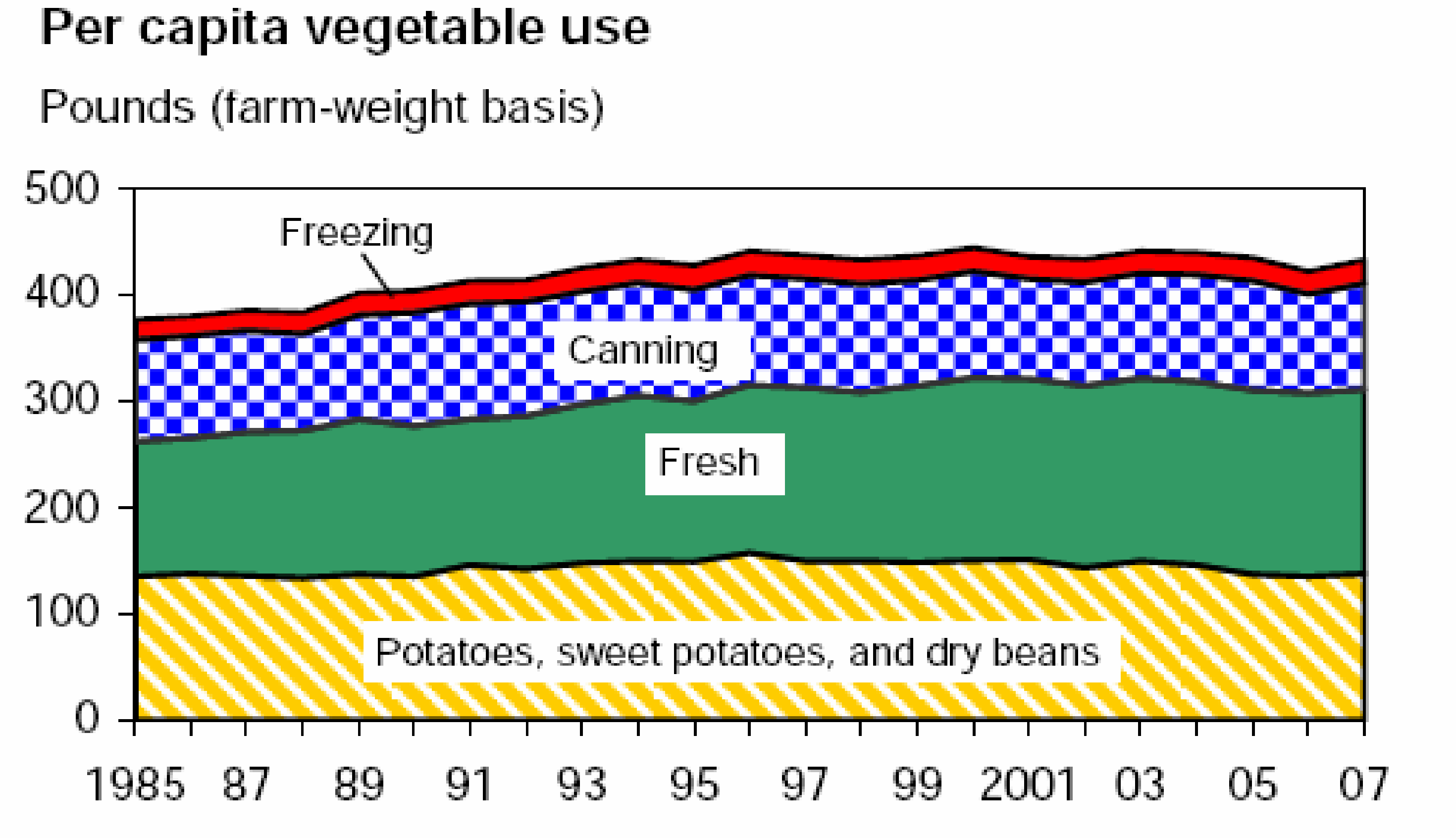
Retail Price Changes for Vegetables



Vegetable Use (per capita)



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3. Fruit and Tree Nuts Situation and Outlook Yearbook 2007

Susan Pollack and Agnes Perez

http://www.ers.usda.gov/publications/FTS/2007/Yearbook/FTS2007.pdf

Contents

- Summary
- Glossary of Terms
- List of Tables (includes about 200 pages of tables with data ranging from acreage to production to per capita utilization)

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4. Fruit and Vegetable Backgrounder

Gary Lucier, Susan Pollack, Mir Ali, and Agnes Perez

http://www.ers.usda.gov/publications/VGS/apr06/vgs31301/vgs31301.pdf

Contents

- Domestic Supply and Demand
- International Fruit and Vegetable Trade
- Prices, Price Variability, and Marketing Margins
- Characteristics of the Fruit, Tree Nut, and Vegetable Industries
- Present Farm Policy Affecting the Industries
- Coming Policy Issues

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Top Five Vegetables and Fruits (per capita, fresh-weight basis)

- **Potatoes**
- **Tomatoes**
- **Lettuce**
- **Sweet corn**
- **Onions**

- **Oranges**
- **Grapes (including wine grapes)**
- **Apples**
- **Bananas**
- **Pineapple**

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VII. Other Resources

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Horticultural Business Information Network

Fruits & Veggies

http://hbin.tamu.edu/HBIN-FruitsandVeggies.htm#situation

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Understanding the Produce Industry

Situation and Outlook Information

References on Produce Marketing

Fruit and Vegetable Crop Budgets

Containers and Packaging

Prices, on-line magazines and news sources

Credit Reporting Services

Risk Management for Specialty Crops

Commodity Specific Reports

The Organic Market

Greenhouse Vegetables

Fruit-specific Reports

International Trade Related

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The Hartman Group, Inc.

…provides a consumer-centric approach for insights & action, studying consumers in their natural environments — their homes. their stores. their lives...

Free and For Pay Services

http://www.hartman-group.com/about/

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HartBeat is The Hartman Group's FREE online newsletter, providing insight, analysis, information and strategy to give business leaders the knowledge and vision to build sustainable brands.

http://www.hartman-group.com/hartbeatpages/

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Most Recent FREE Newsletter - Consumer Understanding of Buying Local

http://www.hartman-group.com/hartbeat/2008-02-27

Key Points in Consumer Understanding of Buying Local

- Half of consumers define ‘local product’ to mean ‘made or produced within 100 miles’, while one-third understand it to mean ‘made or produced in my state’.

- Local products’ are likely to be described in terms of agricultural products grown/produced in their communities.

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Key Points in Consumer Understanding of Buying Local

- **Many embrace a holistic, civic understanding of buying local - … helps support small businesses such as farmers …**

- **"For big brands, local has to be real." … You can't fake authenticity!**

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