Worldwide Changes in Food Marketing Affect Fresh Fruits and Vegetables: Implications for Plasticulture

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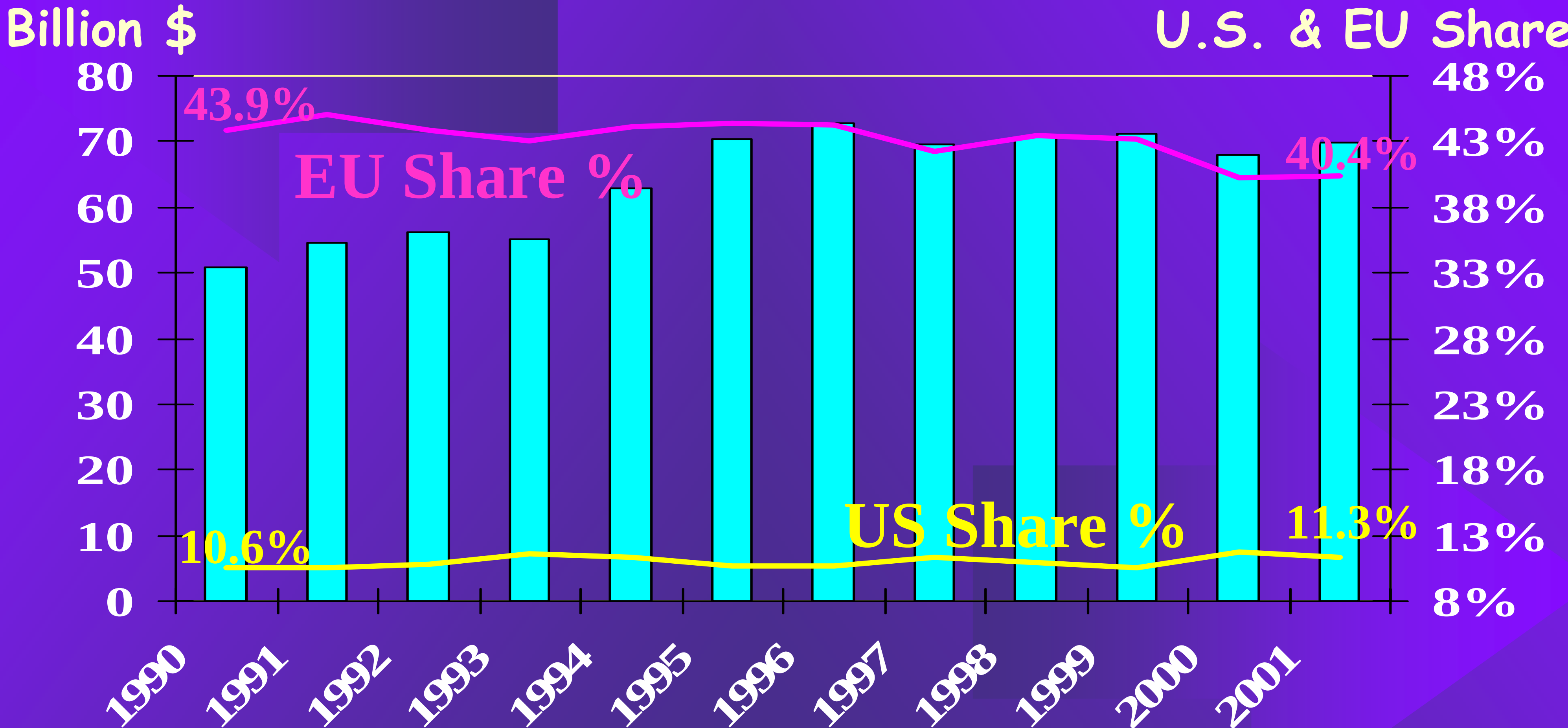
Bottom Line

- Changes in the food industry – globalization, consolidation, technology-driven innovation, consumer demand, shifting buyer-seller relationships – require new business models to seize competitive advantage.
- Trends favor plasticulture

Overview of Presentation

- Horticultural trade
- Fruit and vegetable area and production trends
- Globalization of retailing
- Fresh produce specifics
- US food industry size and structure
- Channel blurring and store format trends
- Retail consolidation and changing procurement patterns
- Greenhouse tomatoes

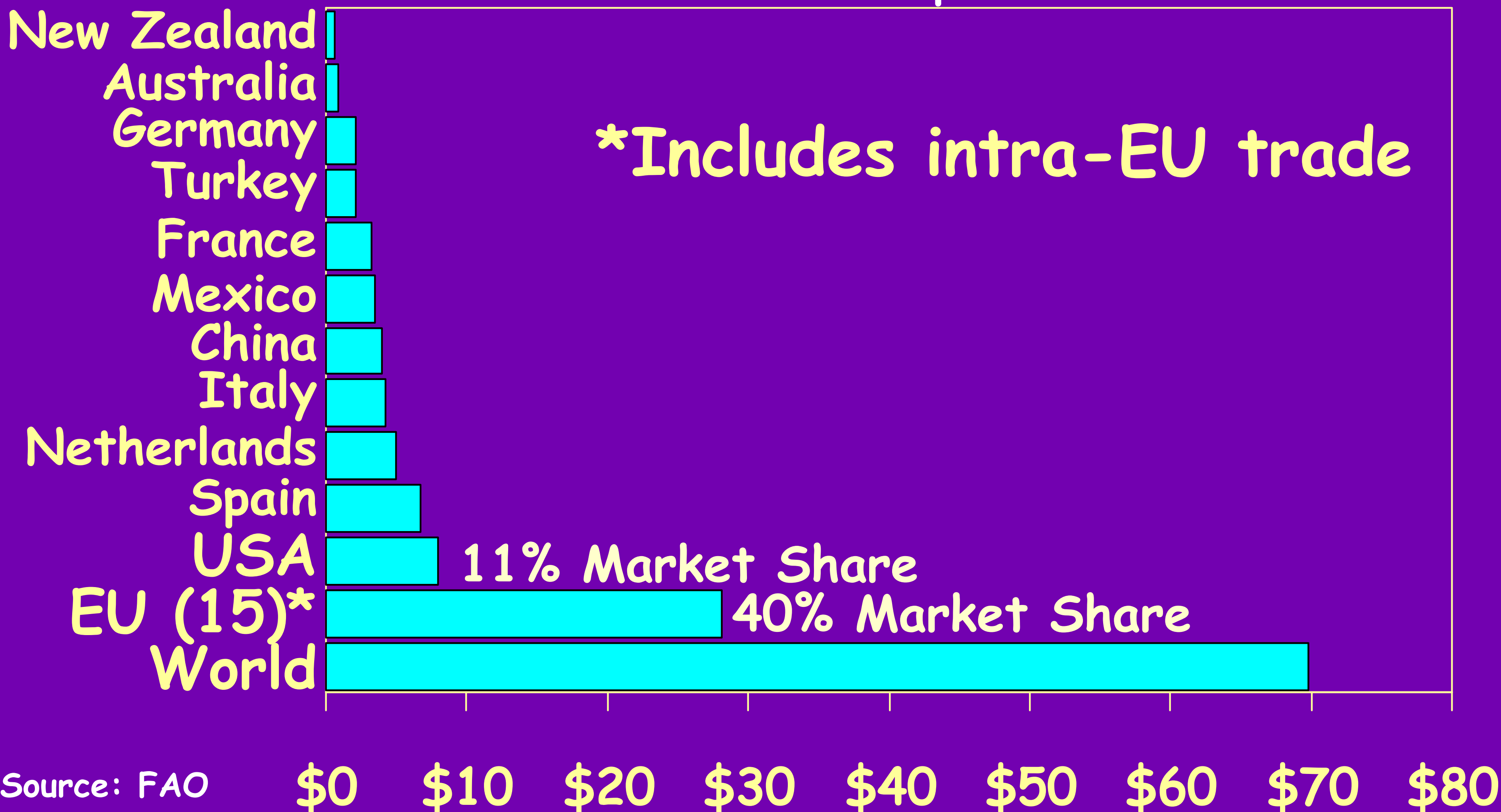
World Exports of Fruits & Vegetables* and U.S. and EU Market Shares: Shares are Changing but Value is Flat as Markets Saturate



*Excluding Wine and nuts

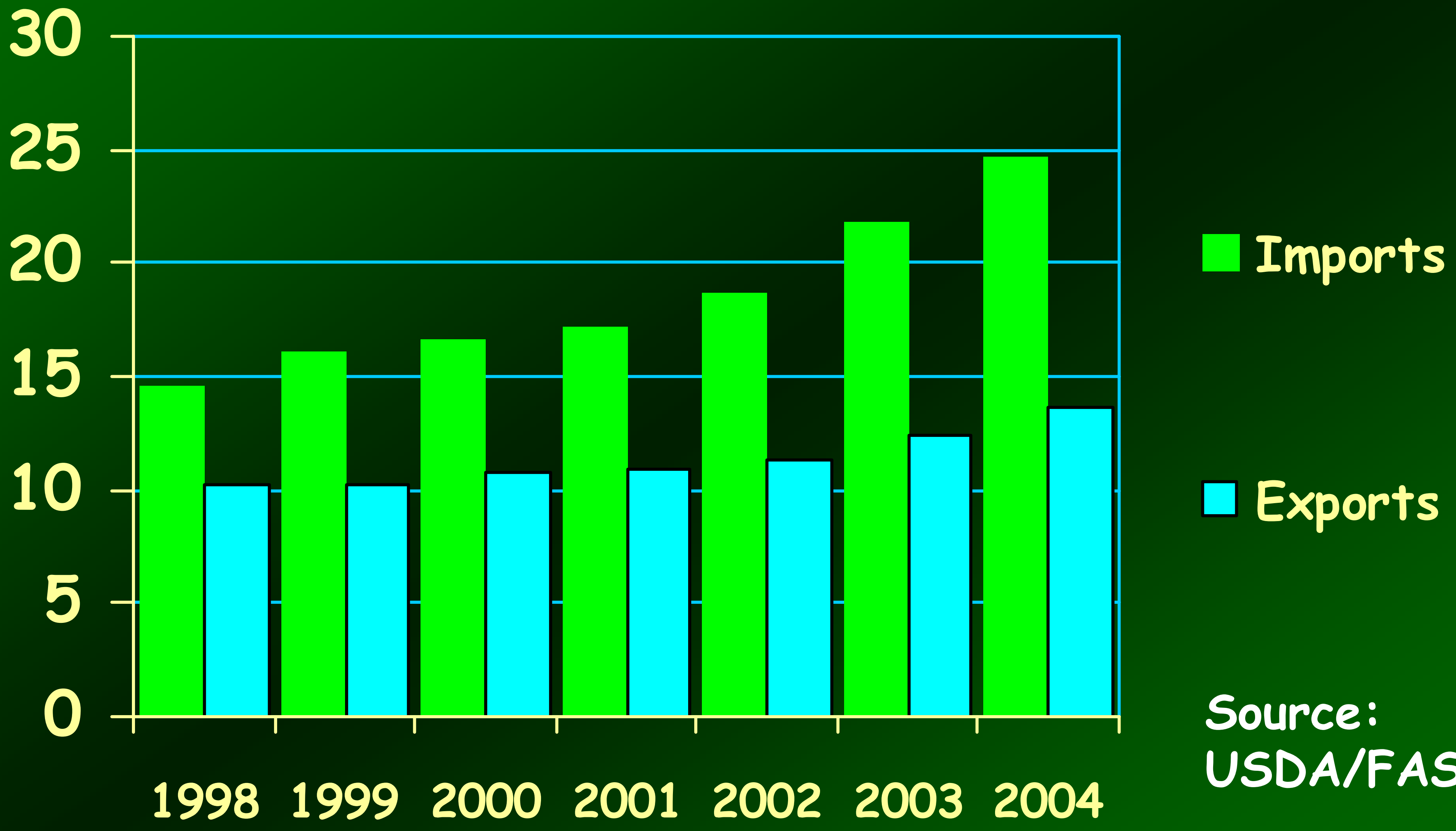
Source: FAO

Key Selected Fruit & Vegetable Exporting Countries, Excluding Wine and Nuts, 2001, Billion $



Source: FAO

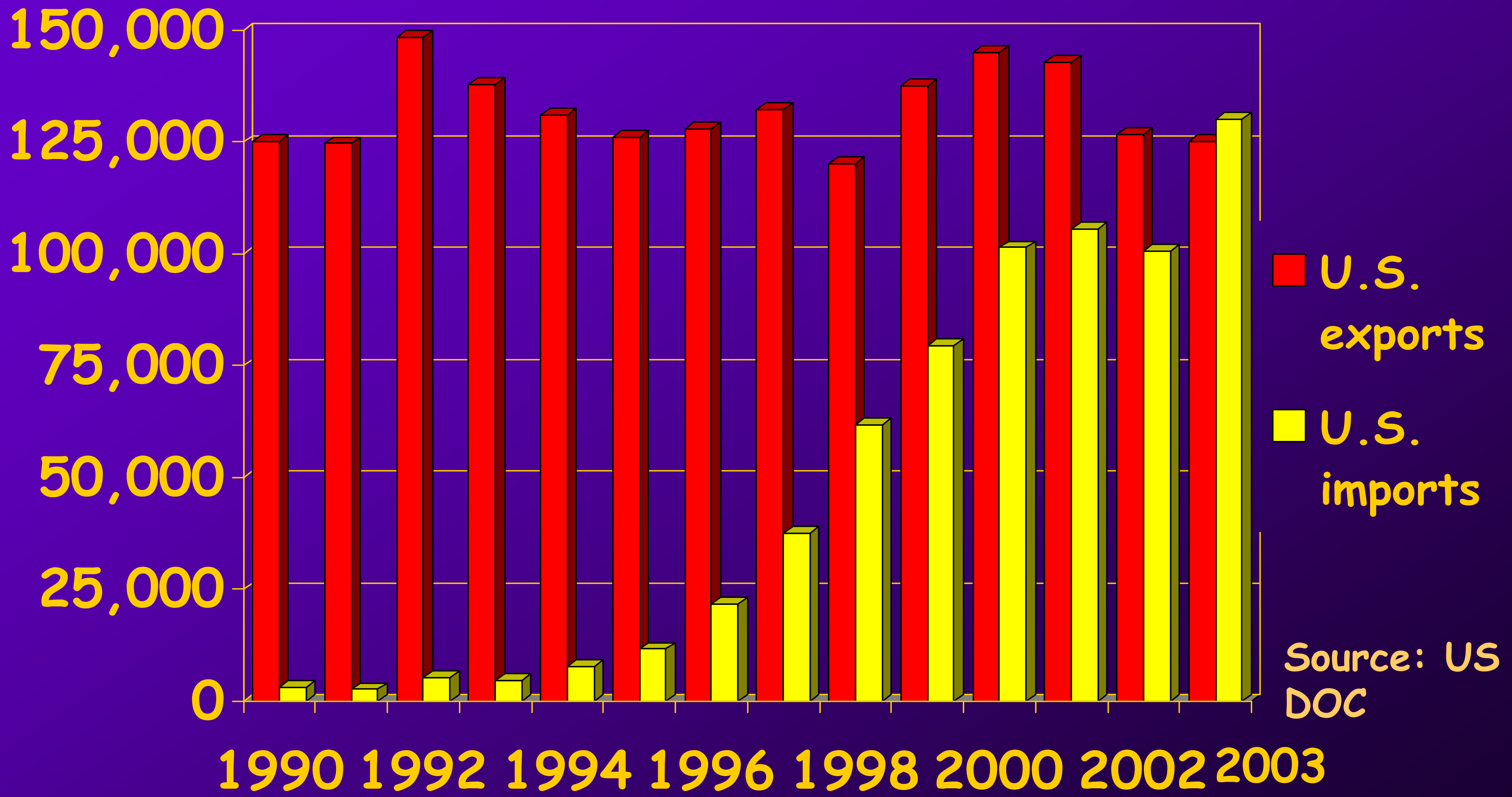
US Horticultural Trade, $Billion



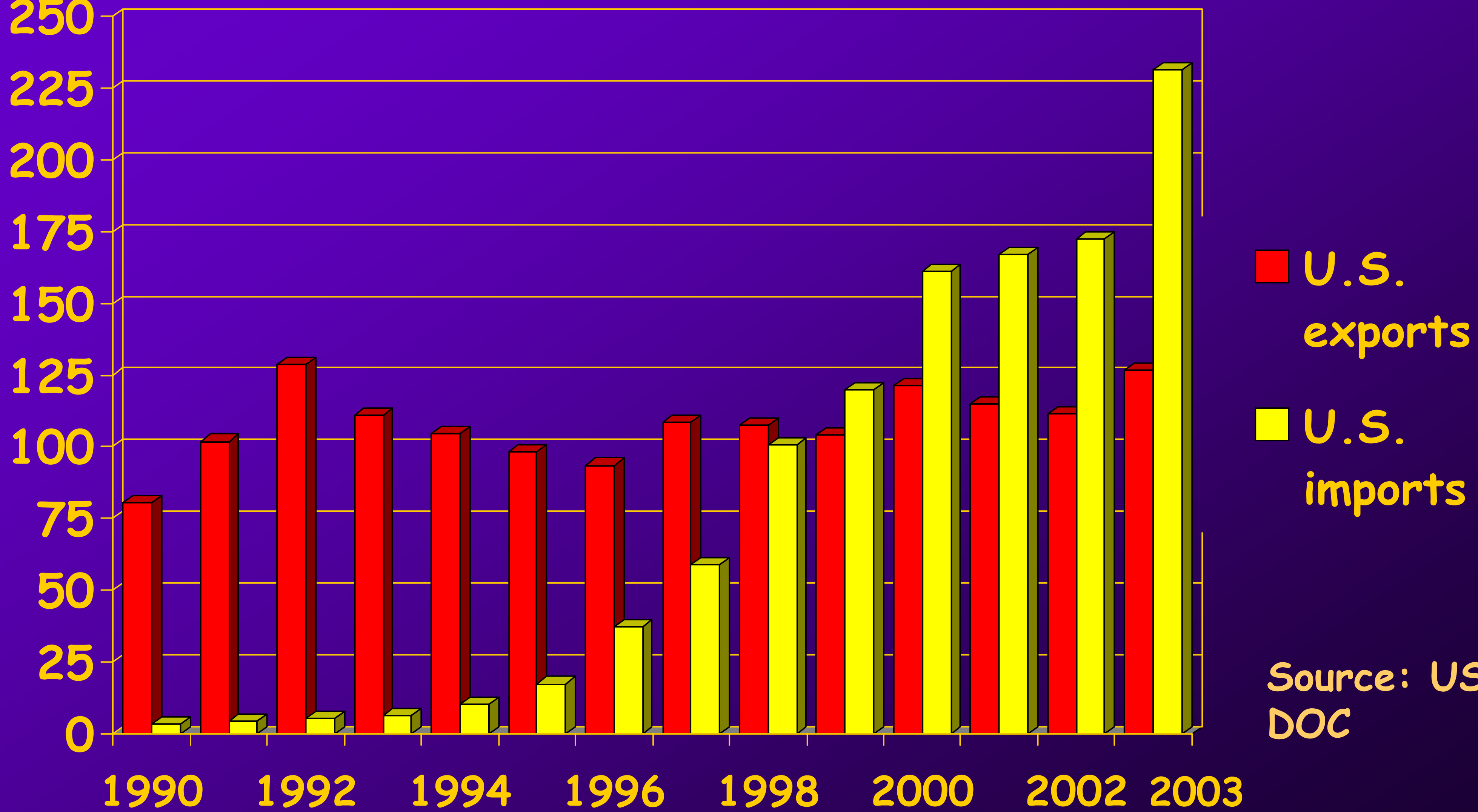
Source: USDA/FAS

Inc. $7.1 B fresh imports and $3.8 B fresh exports in ’04.

U.S.- Canadian fresh tomato trade, 1990-2003, Metric Tons



U.S.- Canadian fresh tomato trade, 1990-2003, Million US$



Source: US DOC

World Area and Production of Fruits and Vegetables, Million Metric Tons and Hectares

	2004	1990
Fruit Area	52.1	41.2
Fruit Production	497.4	351.6
Vegetable Area	51.3	31.0
Vegetable Production	855.1	462.1
Total Area	103.4	72.2
Total Production	1,352	813.7

Source: FAO

Food Demand Trends

- Global per capita availability of fruits and vegetables grew from 155 kg in 1990 to 212 in 2004
- Latin America and East/SE Asia are home to 3 billion consumers
- Roughly 700 million are middle class
- They are registering the fastest growth in food demand in the world – in the face of slow growth mature food markets in the EU and Japan

Sources: FAO and Tom Reardon, Peter Timmer and Julio Berdegue, 2002

Food Demand Trends

- Consumers in developing countries are shifting their diets away from grains toward more fruits and vegetables and animal protein
- Growing global importance of supermarket chains plays a key role in stimulating fresh produce trade – shelf space needs to be full year-round
- Year-round demand benefits plasticulture, aim is to target seasonal windows – earliness a key goal

Supermarkets lead to yr.-round demand for fresh produce and international trade to assure consistent supplies in the off-season.

Supermarket Share in National Food Retailing, The Americas

	Past	Current	Supermarket Share of Fruit/Veg Sales
United States	5-10 in 1930	83	80
Argentina	17 in 1985	57-60	30
Brazil	30 in 1990	75	50
Chile	NA	50	NA
Costa Rica	NA	50	NA
Guatemala	15 in 1994	35 in 2001	NA
Mexico	20 in 1970	45	21

Source: Reardon, Timmer and Berdegue 2002 and Cook

NA = Not Available

Supermarket Share in National Packaged/Processed Food Retail Markets - Asia

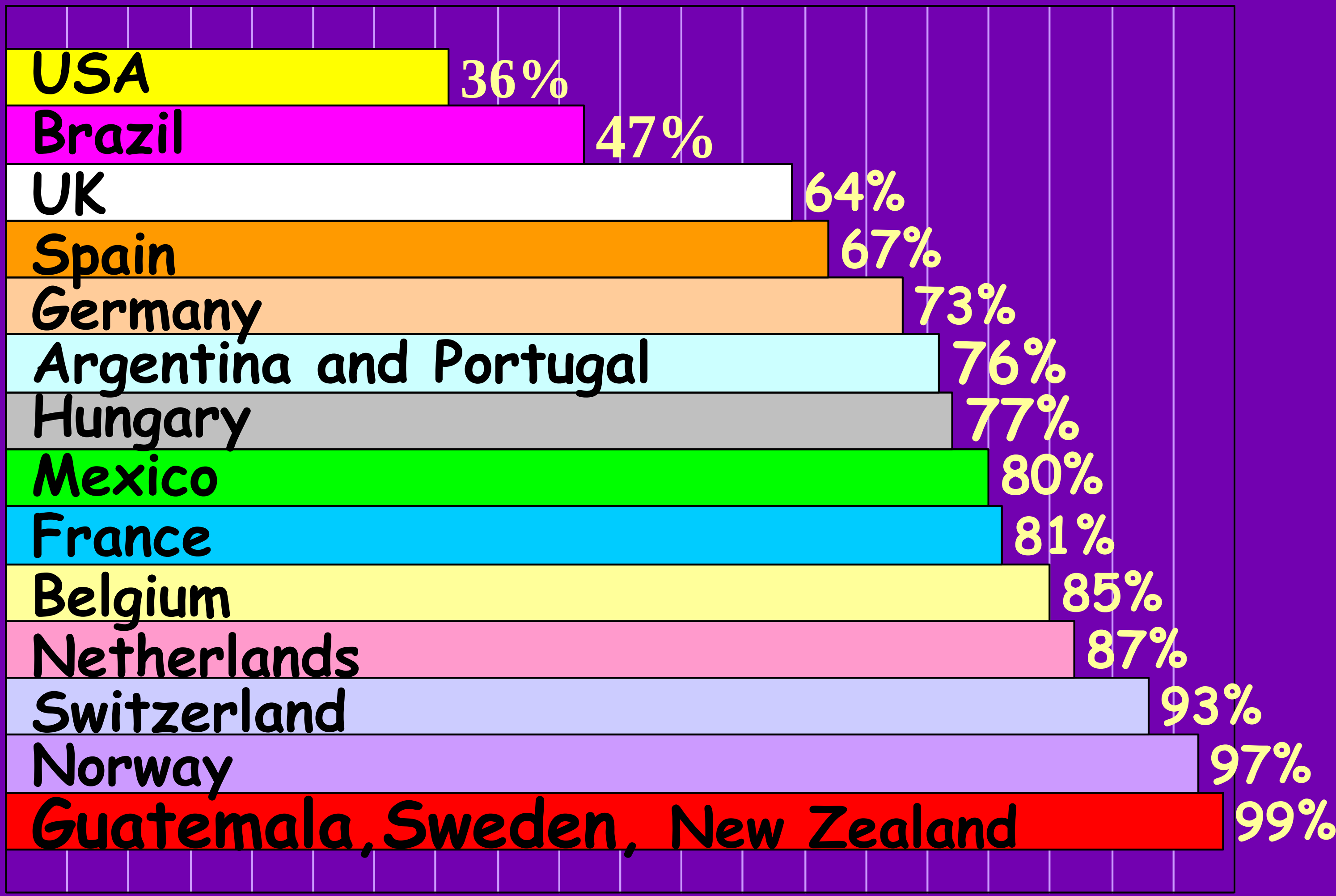
	1999	2001
China (urban)	30%	48%
Indonesia	20%	25%
Korea	61%	65%
Malaysia	27%	31%
Philippines	52%	57%
Thailand	35%	43%

Source: Reardon, Timmer and Berdegue 2002

- Chinese supermarket sales of fruits and vegetables are around $2 billion, compared with Chinese exports of $1.7 billion on average over 1995-2000.
- In Indonesia supermarkets sell roughly $500 million of fruits and vegetables while exports are about $286 million.
- In general, the gap in quality between fresh produce grown for the domestic market vs. exports is decreasing in the developing world.
- Growing demand for production using plasticulture, improving technology and capital investment in agriculture.

Source: Reardon, Timmer and Berdegue

2002 Market Share of the Top 5 Retail Chains Per Selected Country, % of Supermarket Sales



Source: M+M PlanetRetail, Cook and Reardon

Top 20 Europe-wide share about 60% in 2002

Top 2003 Global Grocery Retailers

Company and Origin		Sales ($ billion)	Net Grocery Sales ($ billion)	Net Grocery Rank
Walmart	*U.S.*	256.33	112.02	1
Carrefour/Promodès	*France*	79.61	61.62	2
Ahold	*Holland*	63.32	53.19	3
METRO AG	Germany/Switz	60.53	30.57	8
Kroger	*U.S.*	53.79	37.76	4
TESCO	U.K.	50.32	37.54	5
Target	*U.S.*	48.16	8.57	26
REWE	Germany	44.25	33.45	7

30 grocery retailers account for over 10% of global food retail sales.

Top 2003 Global Grocery Retailers

Company and Origin	Sales ($ billion)	Net Grocery Sales ($ billion)	Net Grocery Rank
Costco *U.S.*	41.69	25.43	12
Aldi *Germany*	41.01	34.28	6
ITM (Intermarch) *France*	37.72	29.16	9
Safeway *U.S.*	35.55	26.84	11
Albertsons U.S	34.43	24.09	14
Schwarz Group (Lidl) *Germany*	33.35	27.68	10
Walgreens *U.S.*	32.50	12.35	24
Auchan *France*	32.42	18.54	19

Source: M+M PlanetRetail, May 2004

Top 2003 Global Grocery Retailers

Company and Origin	Sales ($ billion)	Net Grocery Sales ($ billion)	Net Grocery Rank
Aeon/Jusco *Japan*	30.57	14.43	22
Ito-Yokado *Japan*	30.54	19.08	17
Edeka/AVA *Germany*	29.67	24.86	13
J. Sainsbury *U.K.*	27.99	20.52	15
Tengelmann *Germany*	27.72	19.32	16
E.LECLERC *France*	27.33	16.37	21
CVS *U.S.*	26.58	8.29	27
Casino *France*	25.95	19.07	18

Source: M+M PlanetRetail, May 2004

Top 2003 Global Grocery Retailers

Company and Origin	Sales ($ billion)	Net Grocery Sales ($ billion)	Net Grocery Rank
Kmart U.S.	23.25	3.25	29
Delhaize "Le Lion" *Belgium*	21.25	16.38	20
Loblaw Canada	18.00	13.95	23
JC Penney *U.S.*	17.78	3.00	30
Coles Myer Australia	17.52	10.25	25
Daiei *Japan*	17.15	7.49	28

Total Top 30[e]	1,287.38
Others	2,612.62
Total Worldwide	3,900.00

e=Estimate

Source: M+M PlanetRetail, May 2004

Key Drivers

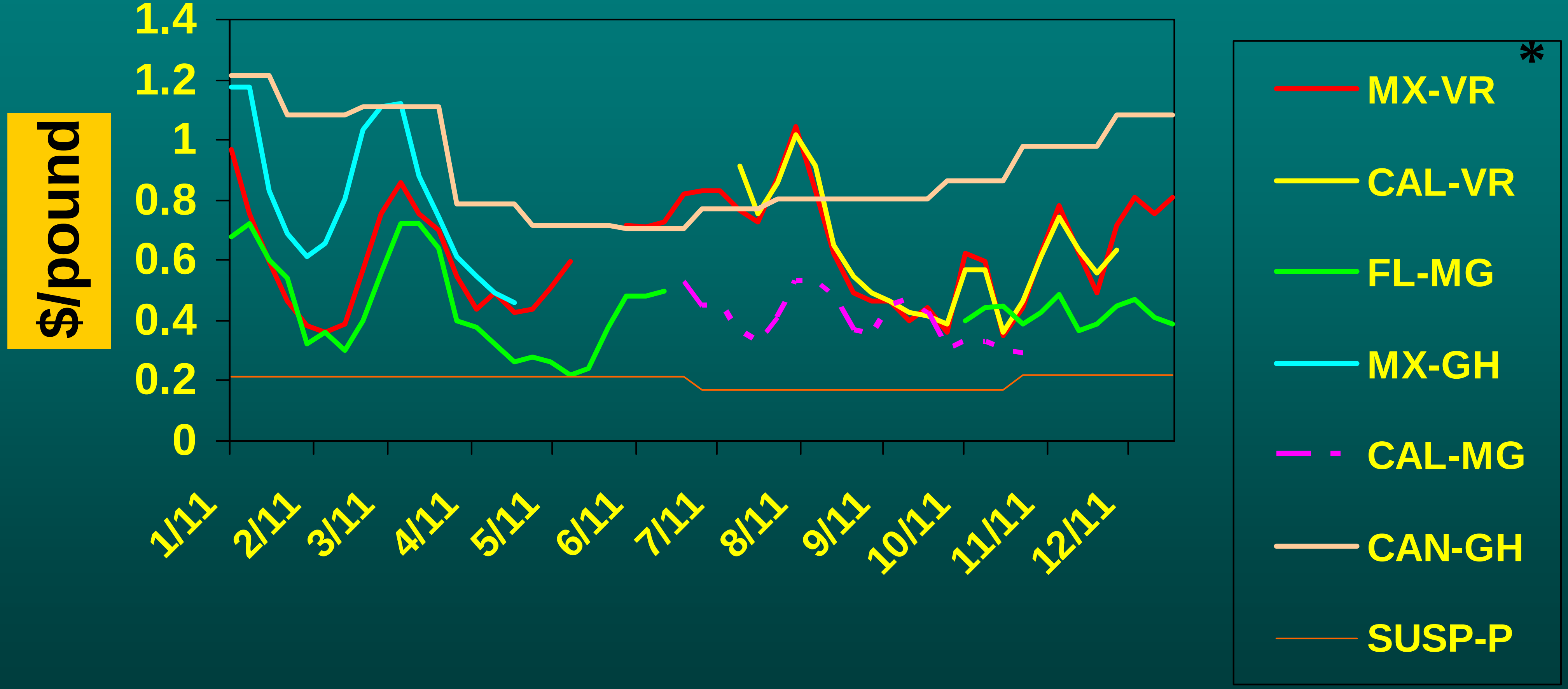
- global retail players
- global retail brands?
- growing role of private labels
- retailer–supplier contracts/partnerships, interest in large year-round suppliers
- declining role of spot market

The existence of global retailers has not yet meant true global sourcing (joint ordering of stores belonging to the same chain). This is changing—especially for key products with more consolidated supply. Expect moves in bananas, citrus and melons by Ahold, maybe Carrefour-Promodes and others. Ahold has already done global promotions for mangoes and some other items, using shippers in one country as a source for all of its stores around the world. Greenhouse growers have also been approached.

Key Characteristics of the Fresh Produce Industry

- Perishability, limited storability, harvested and shipped daily, production regions shift seasonally.
- Constantly subject to weather shocks affecting supply and demand.
- Price volatility made firms very reliant on the spot market (vs. list price sales) without futures markets and few risk management tools beyond geographic and product diversification.

Weekly Fresh Tomato Prices: Florida Mature Green; Calif. Mature Green and Vine-Ripe; Mexican Vine-Ripe and GH; Canada GH Jan. 11, 2003 – Dec. 27, 2003



Source: AMS/USDA; US Customs *VRs, 4x5; Mx-GH 22's; MGs US 1s, extra large or 5x6.

Special characteristics of the fresh produce sector meant it was traditionally exempt from many trade practices common to CPGs, like slotting, branding

- Intra- and inter-seasonal quality/quantity variation, unbranded, bulk, undifferentiated commodity orientation meant that shippers didn't seek dedicated shelf-space yr.-round.
- Perverse reality of fresh produce is that prices tend to be highest when quality is worst – impeding branding – *not true for greenhouse*.
- CHANGING DUE TO FRESH-CUT – branded marketers competing for shelf-space and willing to pay slotting fees.

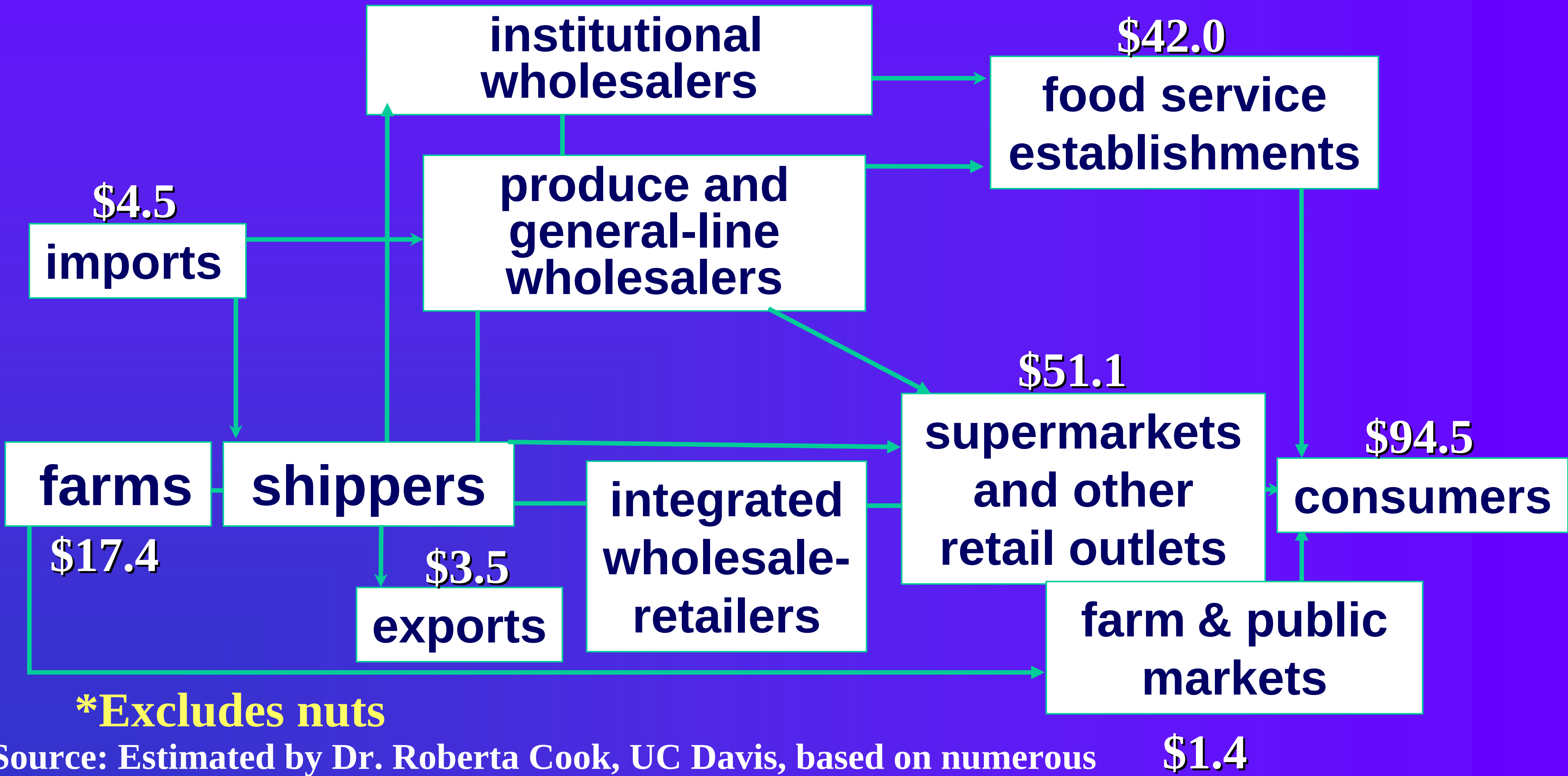
Key Characteristics of the Fresh Produce Industry

- Primarily sold in bulk so unscanned.
- PLU codes come to the rescue – sort of! – but data quality is improving and beginning to influence the balance of power – lagging CPGs by 30 years.
- More pressure on shippers to assist in category management and other services – *a differentiation tool* – and to be year-round partners.

Despite the differences between fresh produce and CPG's, produce is increasingly being asked to conform to the protocols of CPG's:

- **Channel captains**
- **Consistent year-round availability**
- **Contract pricing between shippers and buyers (both foodservice and retail)**
- **Fees and rebates**
- **Services (incl. food safety) and data-based sales and marketing support**

U.S. Fresh Fruit and Vegetable* Value Chain, 2003 Estimated Billions of Dollars



*Excludes nuts

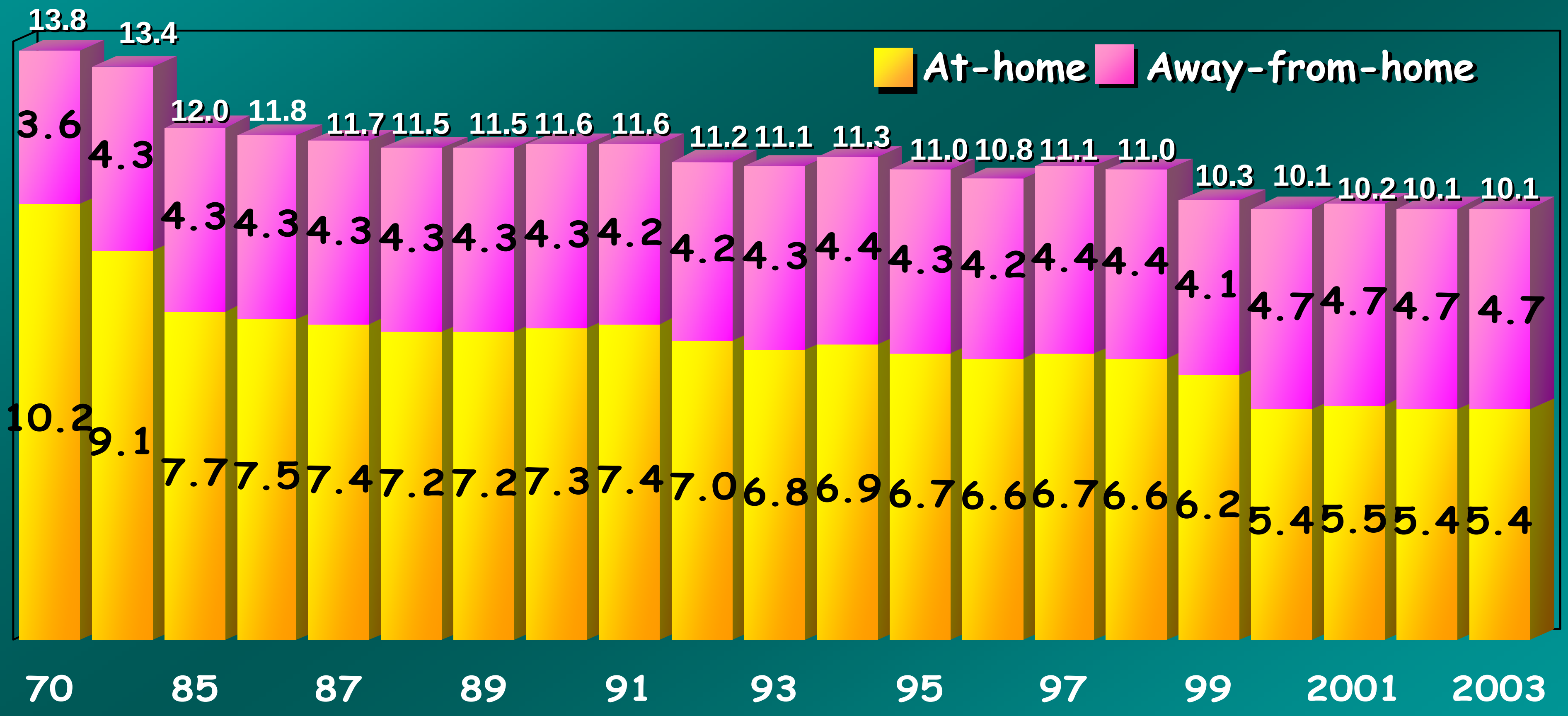
Source: Estimated by Dr. Roberta Cook, UC Davis, based on numerous public sources, incl. USDA, DOC, and the 2002 US Economic Census

TOTAL 2003 U.S. *FOOD** SYSTEM: $943.3 BILLION

- ***$498.3 billion food retailing (excluding non-food grocery store sales)***
  - **53% of total**
- ***$445 billion food service (including $17.8B foodservice sales made by food retailers)***
  - **47% of total**
  - **around 844,000 outlets**

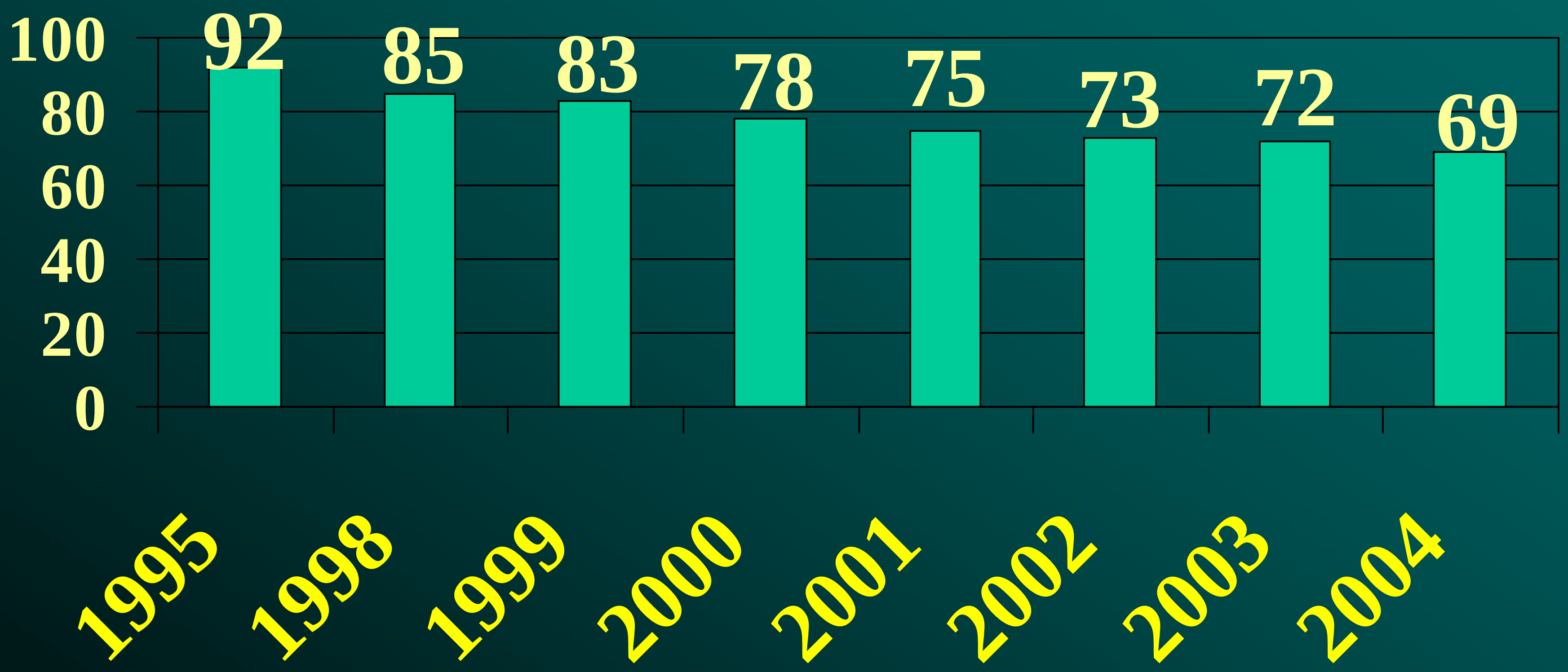
***Excludes alcoholic beverages and other grocery**
Sources: ERS/USDA and The Food Institute

U.S. FOOD EXPENDITURES *as a* SHARE *of* DISPOSABLE PERSONAL INCOME, 1970-2003



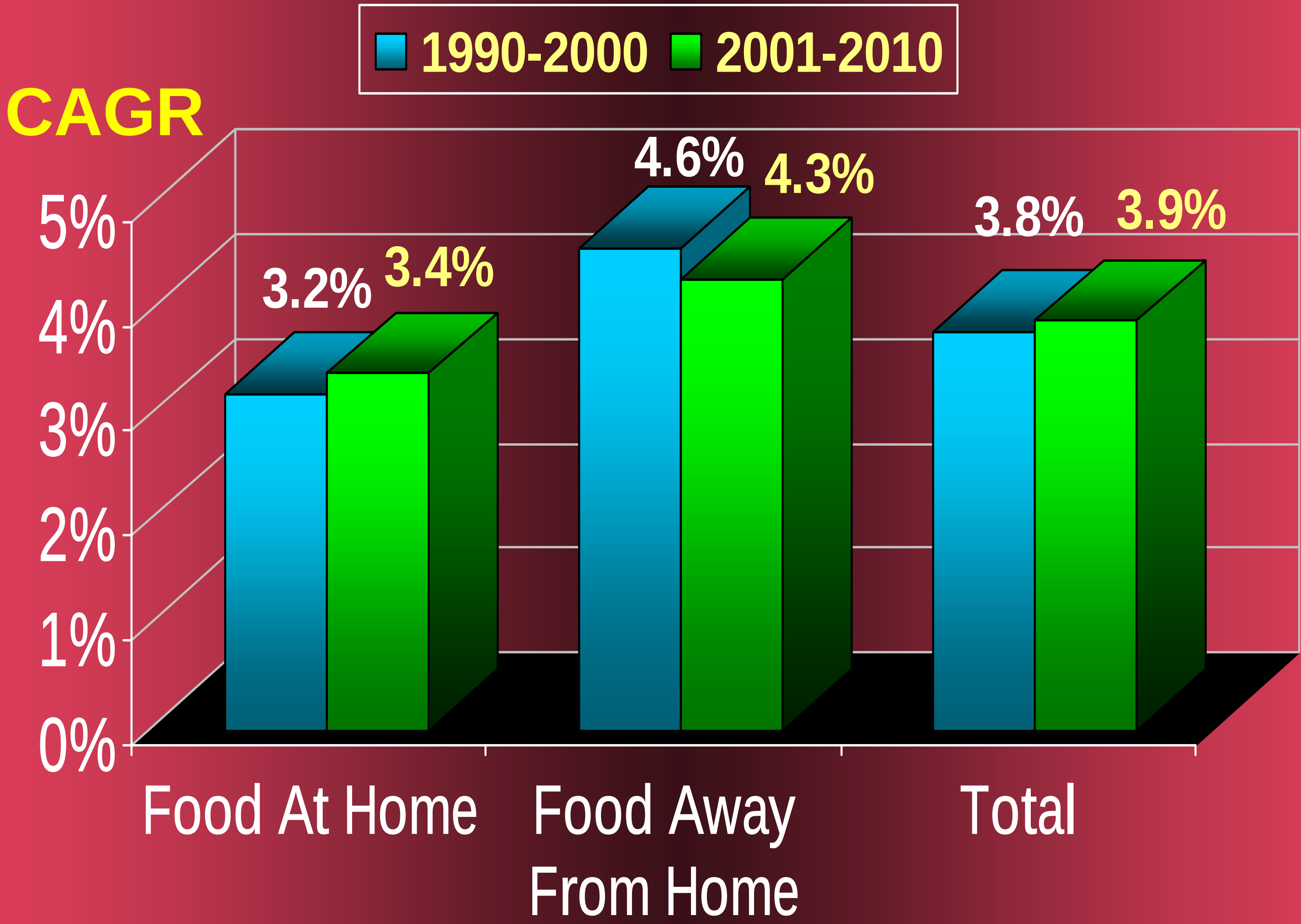
Source: ERS/USDA

Supermarket Trips Per US Household Per Year

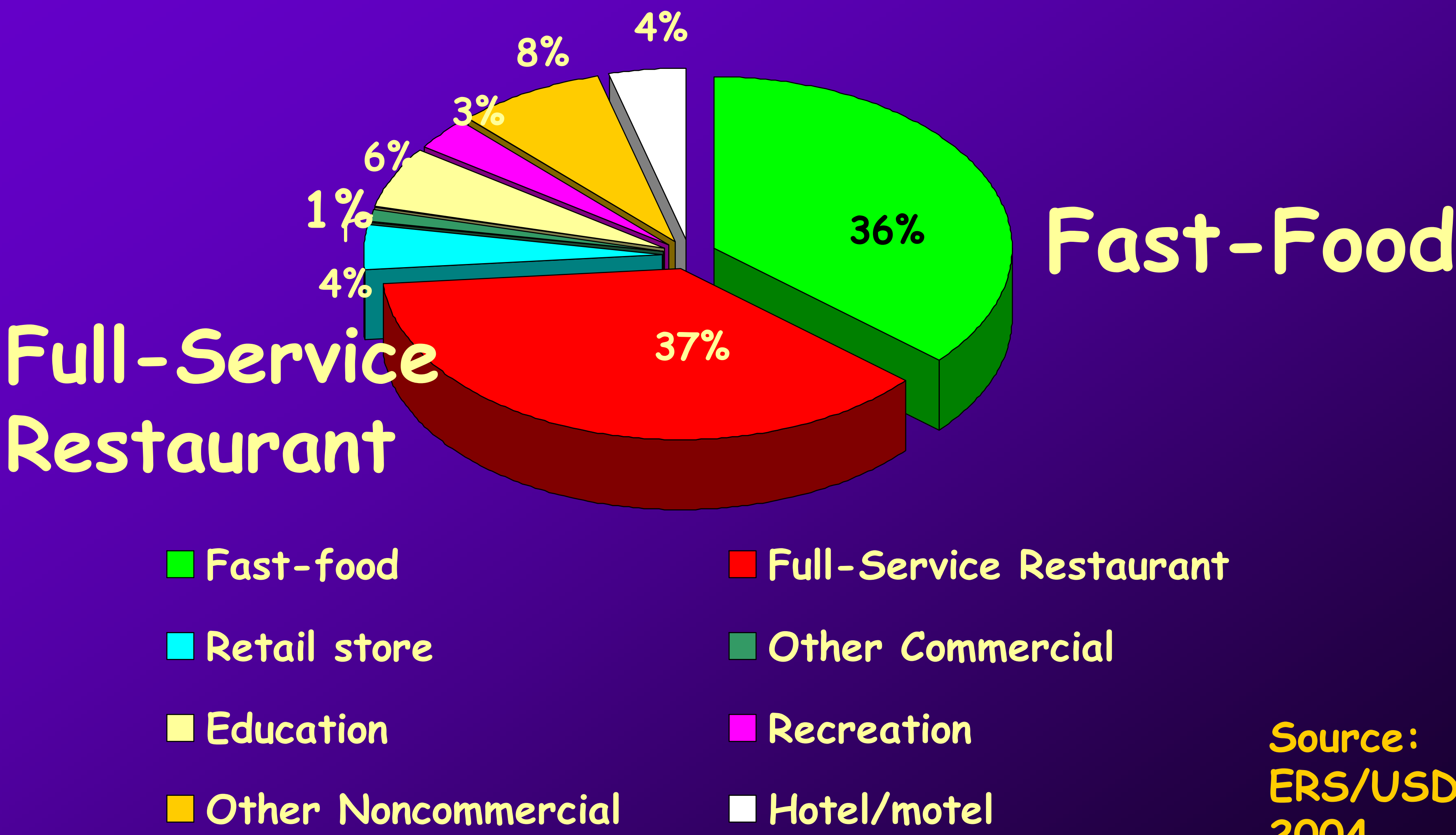


Source: ACNielsen

Trends in US Food Expenditures



US Foodservice Segment Shares, 2003

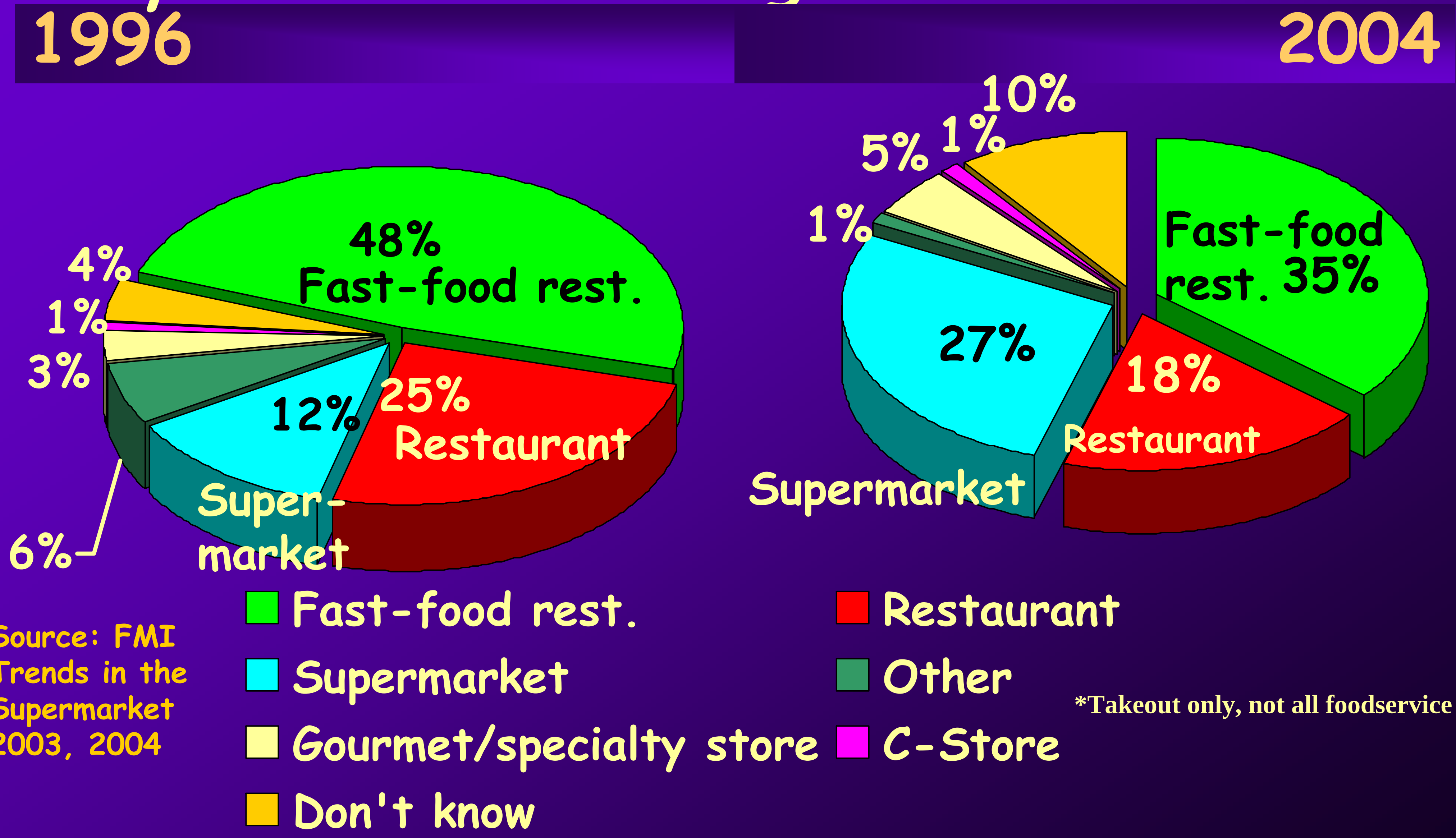


Source: ERS/USDA 2004

FOODSERVICE OPPORTUNITIES FOR FRESH PRODUCE

- **Consumers are trading up, contributing to higher sales in full service restaurants and fast casual (like Baja Fresh, Chipotle, Panera)**
- **Consumers search for *VALUE, 62% say they are "willing to spend more time and money for better quality food."***
- **Foodservice fresh produce and fresh-cut demand rising. Subway's is the #1 buyer of fresh tomatoes, McDonald's now the top foodservice apple buyer and a top 5 foodservice buyer of spring salad mix and grape tomatoes.**

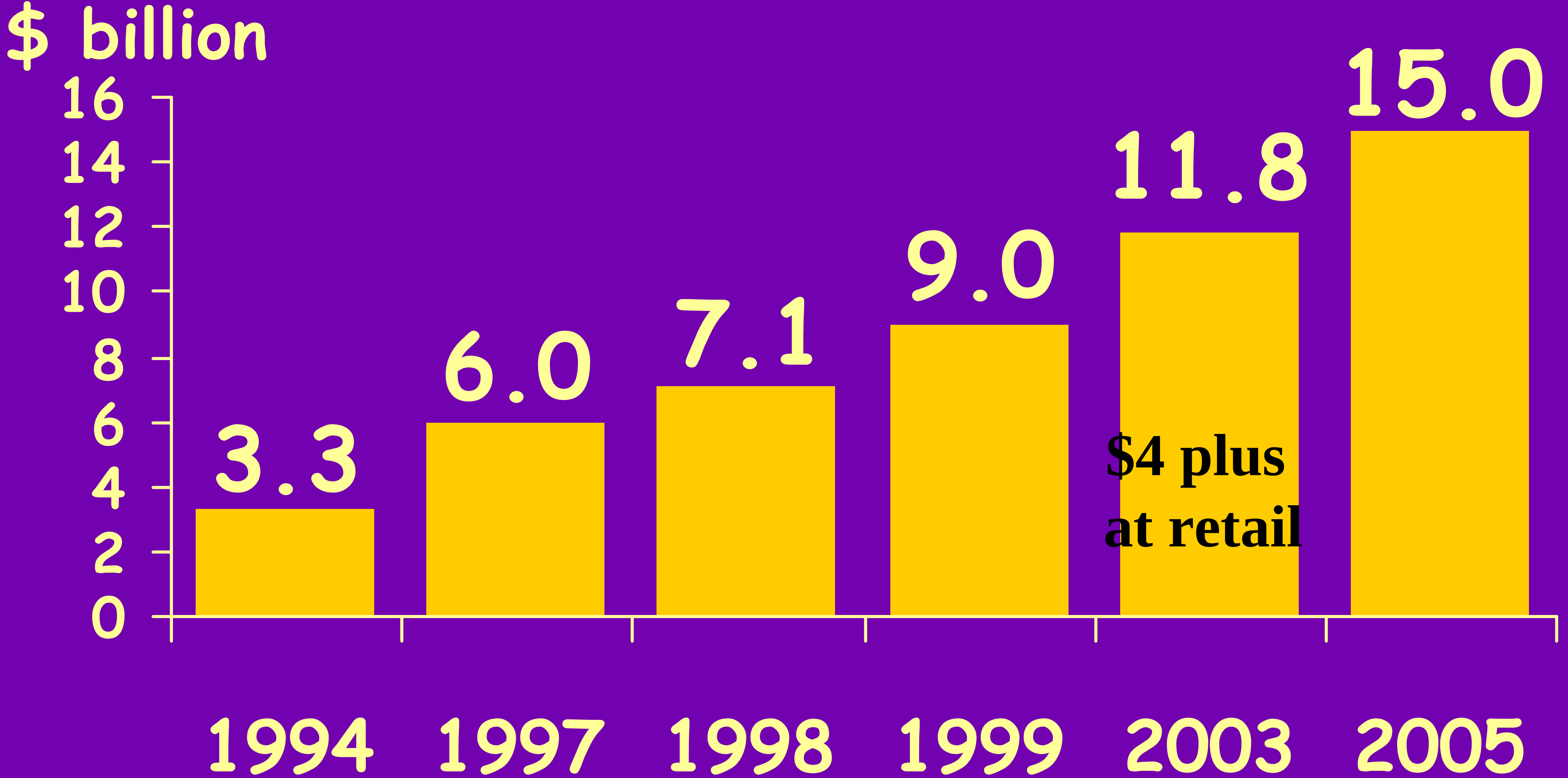
Sources of *Takeout** Food in the US, *Supermarkets Gaining!*



Source: FMI Trends in the Supermarket 2003, 2004

*Takeout only, not all foodservice

US Estimated Fresh-cut Produce Sales, All Marketing Channels, $ Billion



Over 60% estimated to be sold via foodservice channels

Sources: IFPA and IRI

US Store Format Growth Trends and 2003 Sales*

	2003 Sales $Million	*2003 # Stores*	*2003 $ % Share*	*2008 $ % Share*
Traditional	**$422,791**	**41,530**	**56.3**	**48.3**
Nontraditional	**$235,100**	**40,721**	**31.3**	**39.7**
Total C-Stores	**$93,518**	**129,000**	**12.4**	**12.0**
GRAND TOTAL	**$754,408**	**213,981**	**100.0**	**100.0**

•Grocery sales only, excludes electronics, prescription drugs, toys, jewelry, sporting goods, gas, clothing, footwear, knickknacks, and hardlines

Source: Competitive Edge, June 2004

US Store Format Growth Trends and 2003 Sales*
Traditional Grocery Channel

	2003 Sales $Million	*2003 # Stores*	*2003 $ % Share*	*2008 $ % Share*
Total Traditional	**$422,791**	**41,530**	**56.3**	**48.3**
Conventional	**$97,110**	**12,450**	**12.9**	**11.7**
Superstore	**$164,268**	**8,100**	**21.9**	**18.5**
Food/Drug Combo	**$114,400**	**5,000**	**15.2**	**13.1**
Limited Assortment	**$16,107**	**3,150**	**2.1**	**2.1**
Super Warehouse	**$14,331**	**530**	**1.9**	**1.6**
Other (Small Grocery)	**$16,575**	**12,500**	**2.2**	**1.5**

* Grocery sales only, excludes electronics, prescription drugs, toys, jewelry, sporting goods, etc.
Source: Competitive Edge, June 2004

US Store Format Growth Trends and 2003 Sales*

Nontraditional Grocery Channel

	2003 Sales $Million	2003 # Stores	2003 $ % Share	2008 $ % Share
Total Nontraditional	$235,100	40,721	31.3	39.7
Wholesale Club	$51,953	1,030	6.9	8.7
Supercenter	$85,155	1,840	11.3	17.0
Dollar Store	$10,686	15,000	1.4	2.9
Drug	$33,189	18,500	4.4	5.2
Mass Merchandise	$49,873	4,170	6.6	5.3
Military	$4,243	181	0.6	0.6

* Grocery sales only, excludes electronics, prescription drugs, toys, jewelry, sporting goods, etc.
Source: Competitive Edge, June 2004

Quality of Shopping Experience by Channel, TRI*M Index (Differences of 3 or more are signficant)

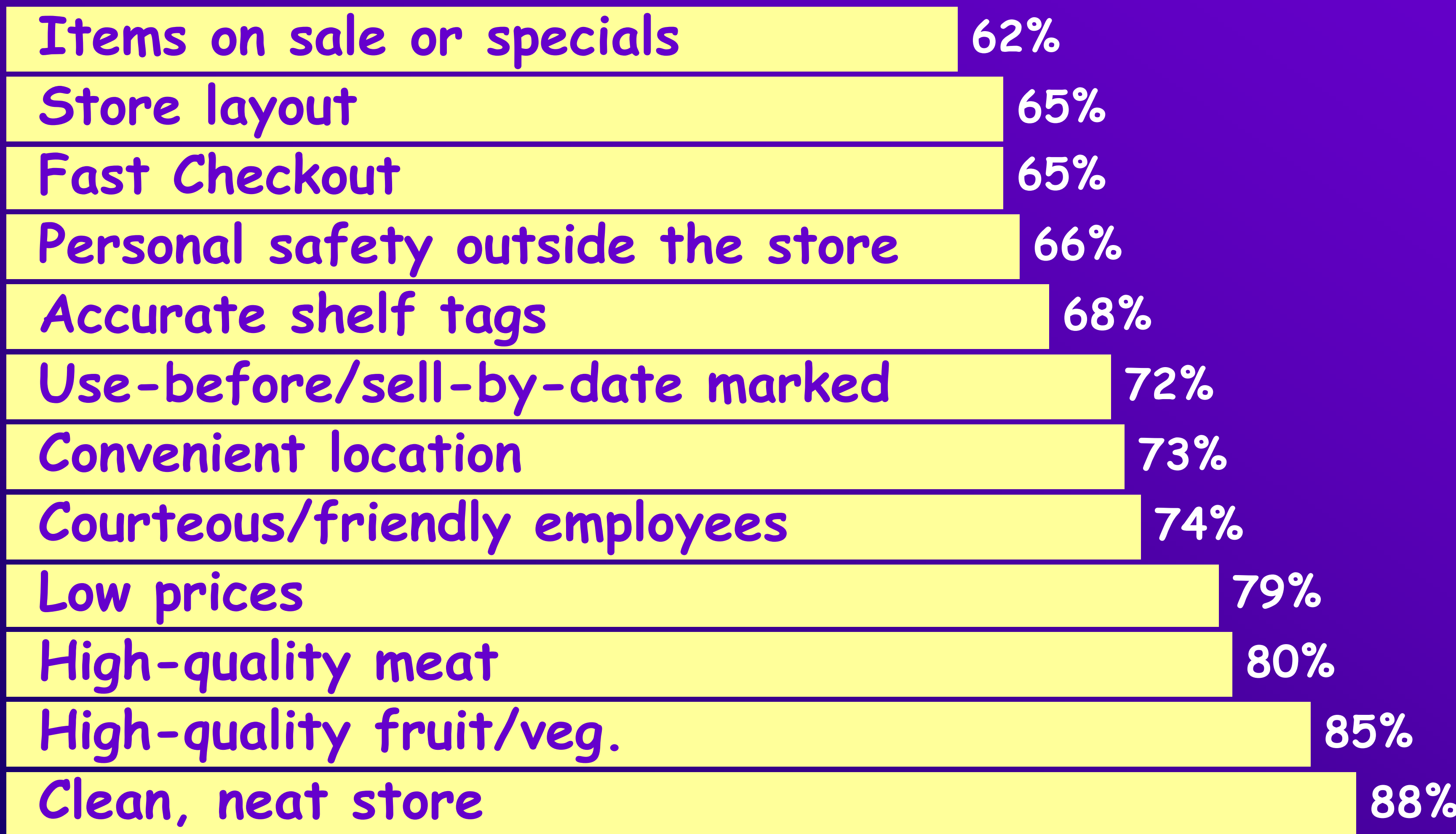
Source: Coca-Cola Retailing Research Council of N. America 2004

Quality of Shopping Experience by *SUPERMARKET TYPE*, TRI*M Index

(Differences of 3 or more are signficant)

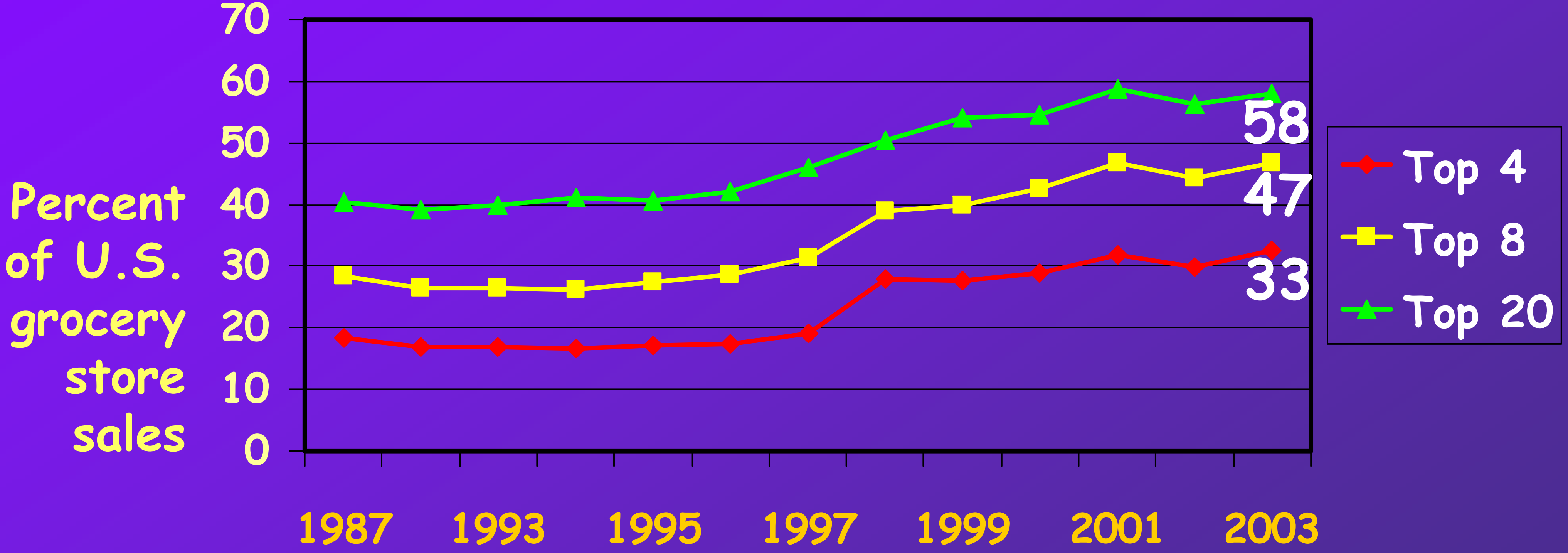
Source: Coca-Cola Retailing Research Council of N. America 2004

Top Factors in US Consumer Selection of Primary Supermarkets, 2004



Source: FMI Trends 2004

U.S. *Grocery* Retail Concentration*



Sources: ERS/USDA; US Retail Census, firm annual reports, provided by Roberta Cook, UCD

***Includes *grocery-equivalent* supercenter sales ONLY. Excludes sales of c-stores with gas. Excludes the portion of any grocery chain's sales corresponding to their drug store, jewelry store or other non-grocery store sales.**

Stock Price Performance, Top 5 US Grocery Retailers 1/1/99 – 2/28/05

Chain	% Change
Wal-Mart	+ 28%
Kroger	-38%
Safeway	-70%
Albertson’s	-57%
Ahold	-75%
Dow	+17%

Return on Asset Comparison, Top 4 US Grocery Retailers, 2004

	ROA	= Profit/Sales	X Sales/Assets
Wal-Mart	9.36%	3.65%	2.64
Kroger	1.02%	0.38%	2.68
Safeway	3.69%	1.56%	2.37
Albertson's	1.98%	0.92%	2.15

Conventional Retail Chains Reconsidering their Models

- The experience from the merger trend of the late 1990’s has shown that getting bigger wasn’t enough to meet the new competitive benchmark imposed by Wal-Mart’s success in logistics, data management and cost reduction: supply chain efficiencies and understanding and serving customers.

Conventional Retail Chains Reconsidering their Models

- The challenge for retailers is to effectively utilize scanner, customer loyalty card and other data in order to identify the right product mixes at the individual store level.
- Food retailing is inherently local, and as retailers get larger and consumers more diverse, intensive data management is critical!

The Future

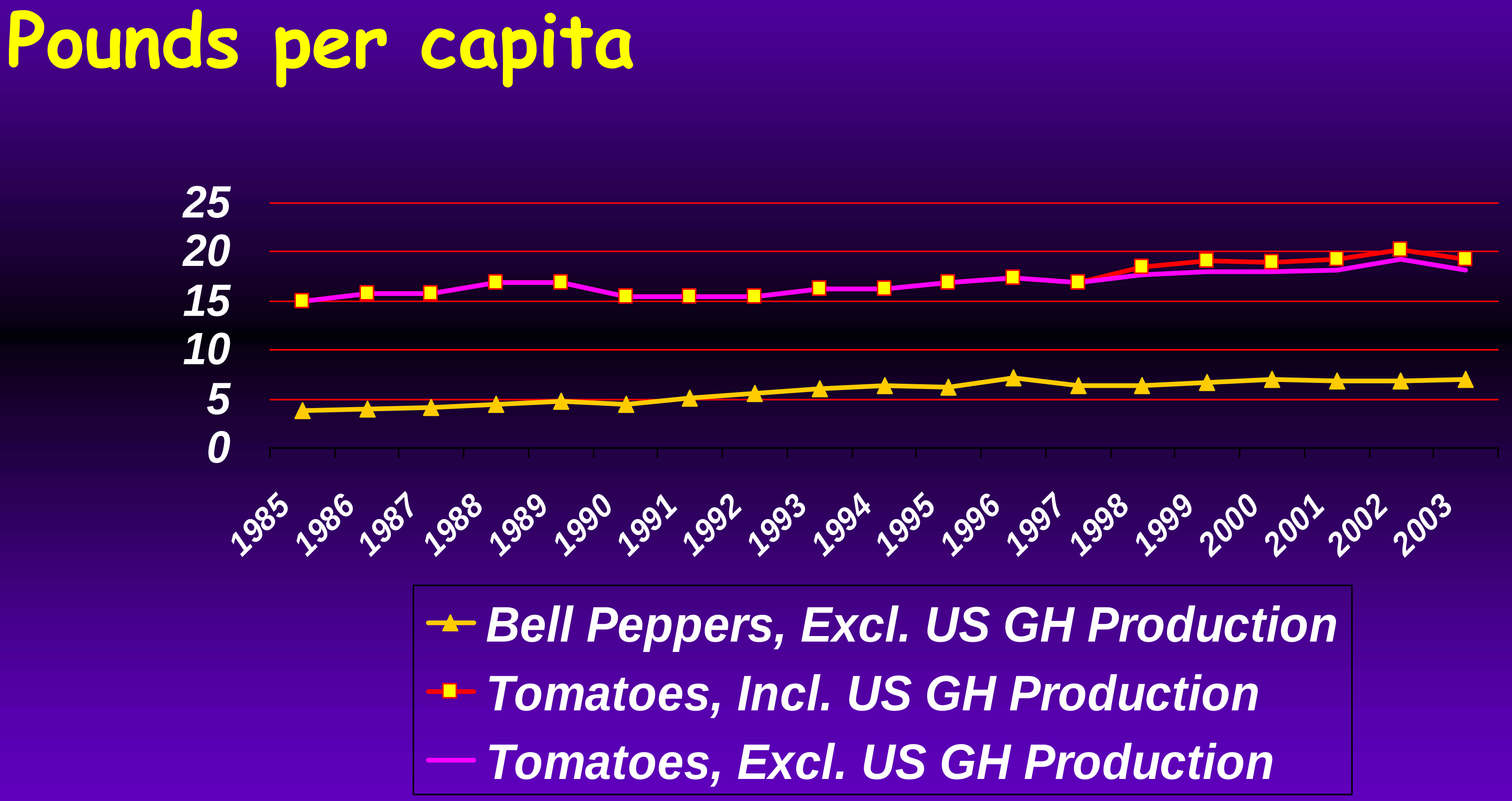
The winners will compete on various dimensions of *value*: price, product, service, and selection.

- **There are a number of formats successfully defining "white space" market opportunities. Examples include Trader Joe's, Whole Foods, Dollar Stores, and conventional chains like Wegman's and HEB, as well as independents.**
- **Retailers can deliver value to consumers at both the high and low ends of the price spectrum, depending on product selection and quality levels, and format design, by understanding the needs and wants of target segments for specific shopping occasions.**
- **The middle, unclearly defined ground – retailers with *no clear value proposition* – will be increasingly challenged.**

Key Steps to Becoming Market-Driven

- Develop means of coordinating producers and/or shippers to achieve the right product mixes year-round
- Marketing alliances between shippers can help cover the cost of developing services, including category management, which requires sizable investments in IT and human resources

U.S. Per Capita Utilization of Fresh Bell Peppers and Tomatoes, 1985-2003 (with and without estimated US GH tomato production added to field grown as of 1998)



Source: USDA/ERS, July 2004 Vegetable Yearbook; Cook and Calvin estimated '98-'03 tomato consumption to reflect unaccounted for US GH tomato production.

National Fresh Tomato Retail Shares of Quantity and Value by Tomato Type, 2003 vs. 2002

Type	Share of $Value		Share of Pounds	
	2003	2002	2003	2002
Greenhouse	39%	34%	36%	31%
Round field	26	29	31	36
Roma (field)	12	11	19	17
Cherry/grape (field)	22	17	14	11

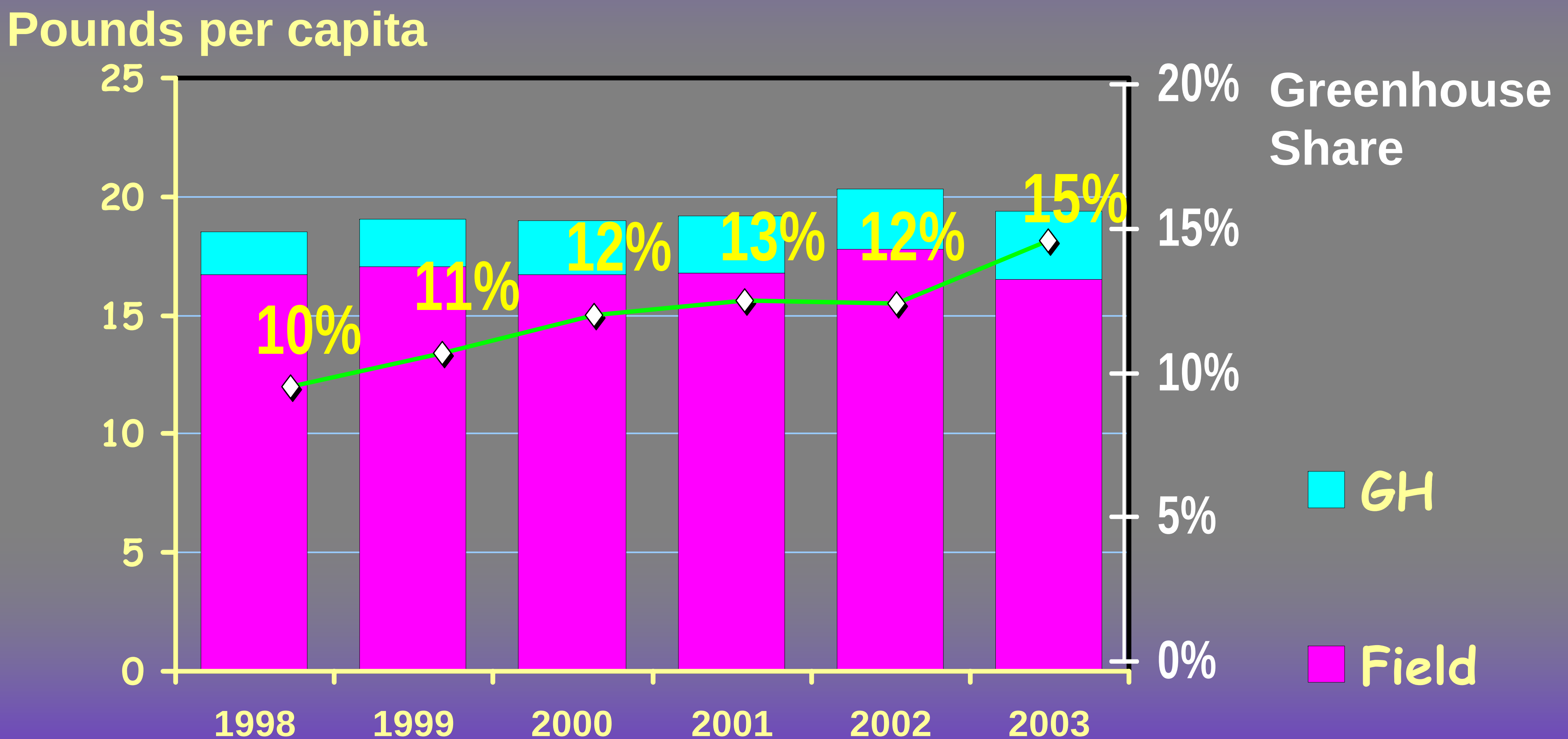
Sources: CTC, IRI, and The Perishables Group

North American Fresh Tomato Industry, Greenhouse and Field, 2003

	USA	CANADA	MEXICO	TOTAL
GH Prodn MT	159,664	220,114	148,300	528,078
Field Prodn *1,000* Mt	1,594.2	26,882	1,804.0	3,425.1
GH Share of Prodn	9%	89%	8%	13%
Average Yield MT/HA	484	494	156	378

Source: Roberta Cook and Linda Calvin

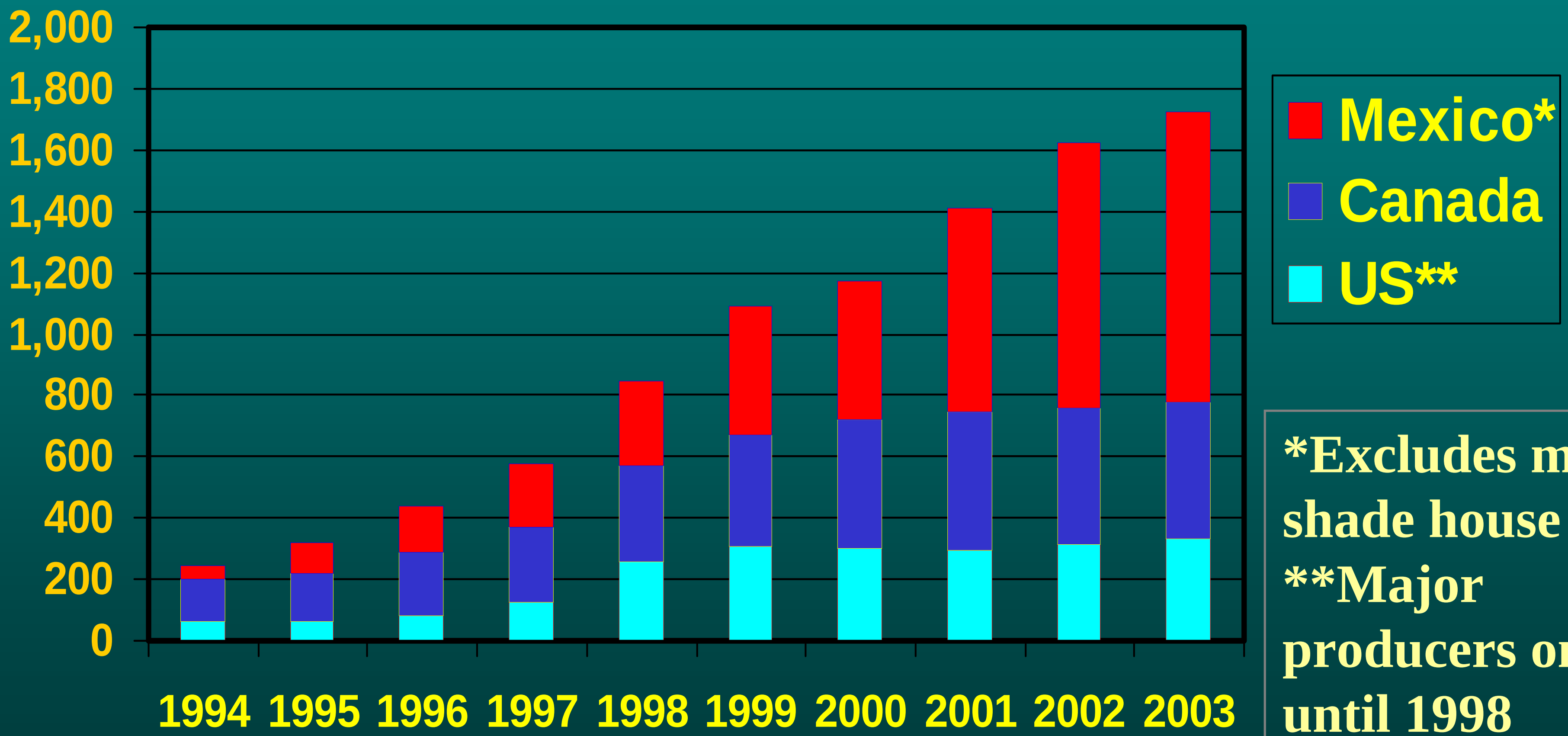
US Fresh Tomato Per Capita Consumption 1998-2003, Field and Greenhouse and Greenhouse Share*



*Share estimated to be 17% in 2003 if unreported Mexican GH volume were included.

Source: ERS/USDA and Cook and Calvin

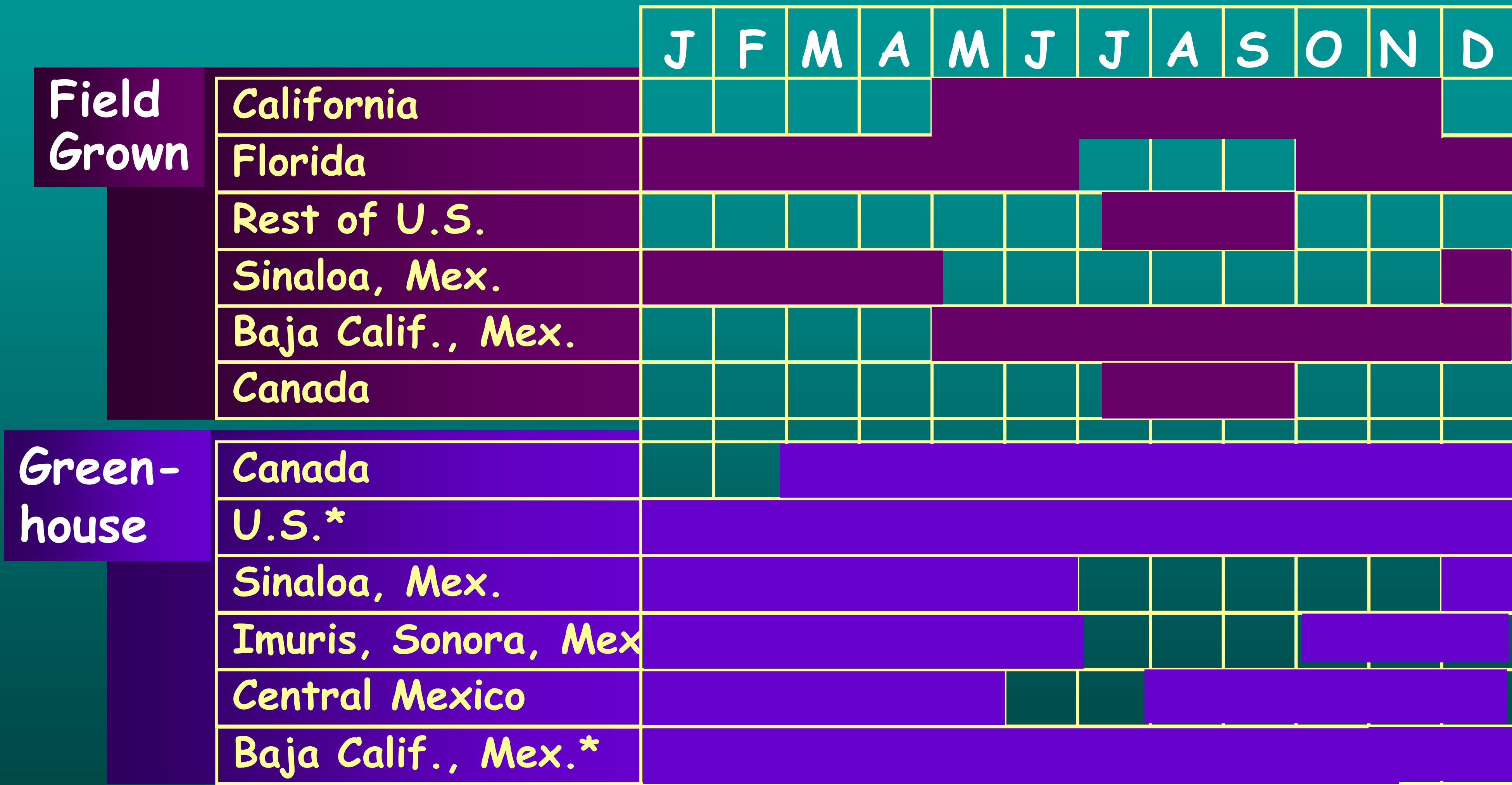
Estimated trends in N. American greenhouse <u>tomato</u> area, hectares



*Excludes most shade house
**Major producers only until 1998

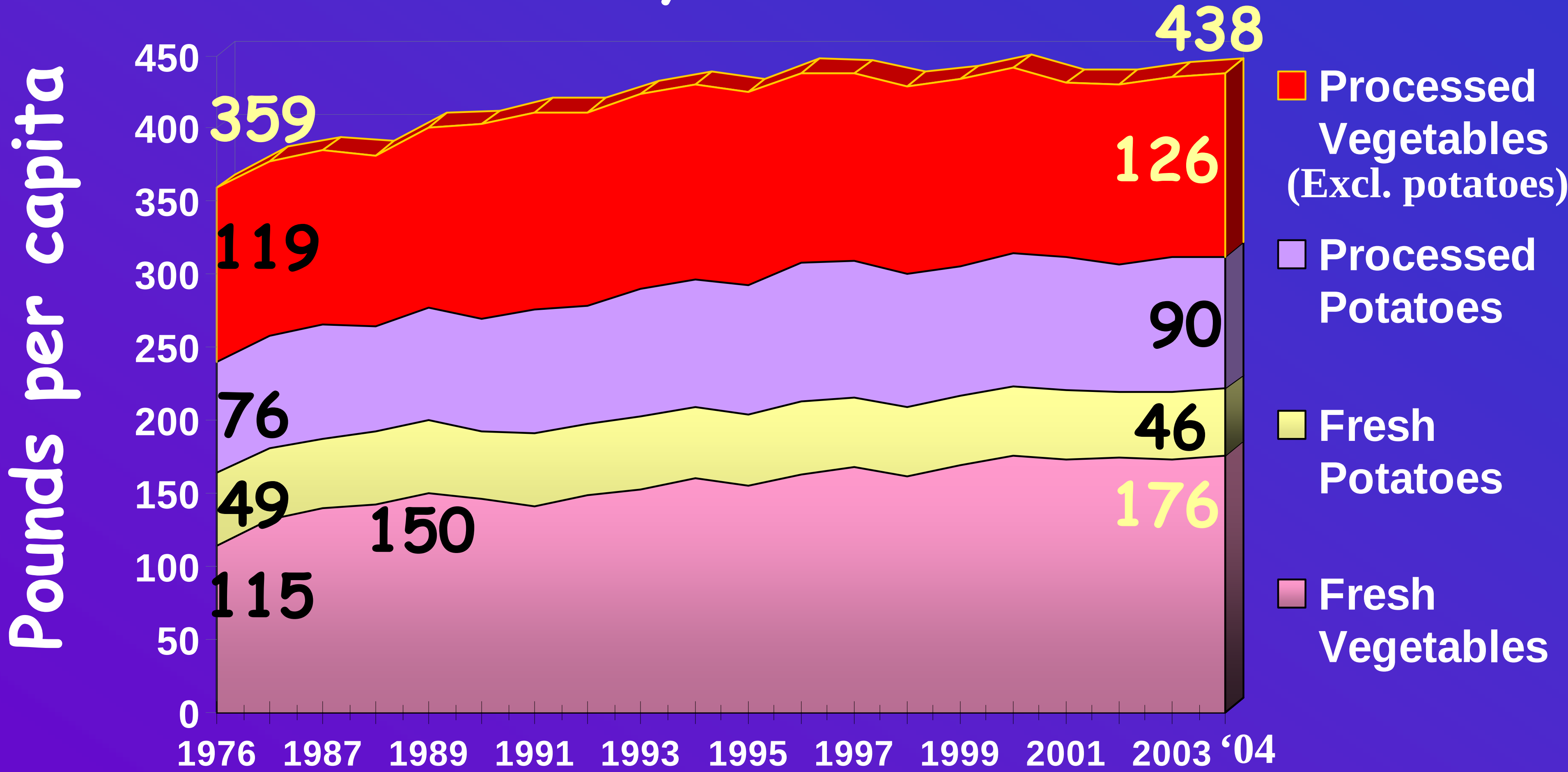
Sources: ITC, AMPHI, Stat Canada, and Calvin and Cook

North American fresh tomato shipping seasons (dark bars) by region - greenhouse versus field grown



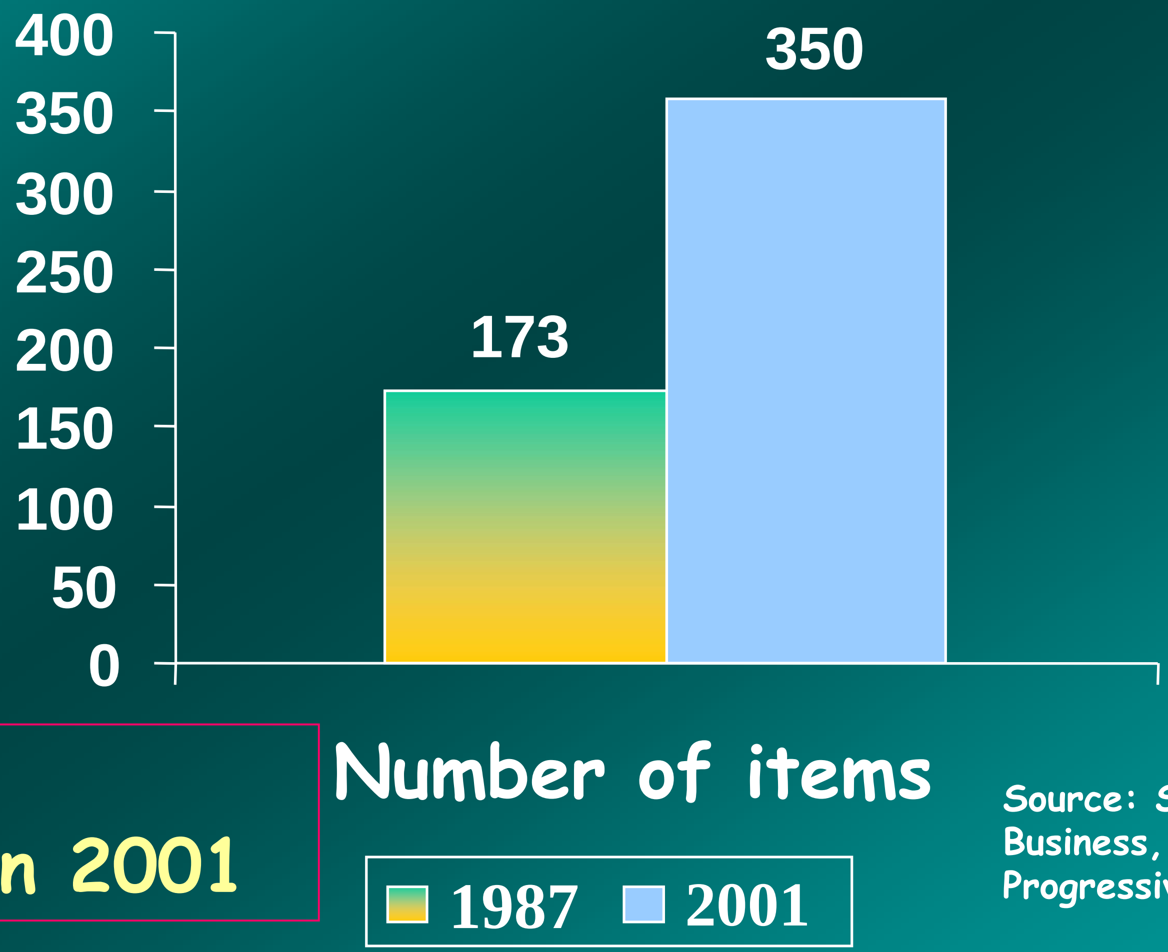
•Many U.S. and Baja greenhouse industry locations don't produce year-round, but there is
•year-round production in the aggregate.

US PER CAPITA VEGETABLE CONSUMPTION, POUNDS, 1976-2004F



Source: USDA/ERS, Vegetables and Specialties Outlook, July 2004

Ave. Item Number in the Ave. US Fresh Produce Department



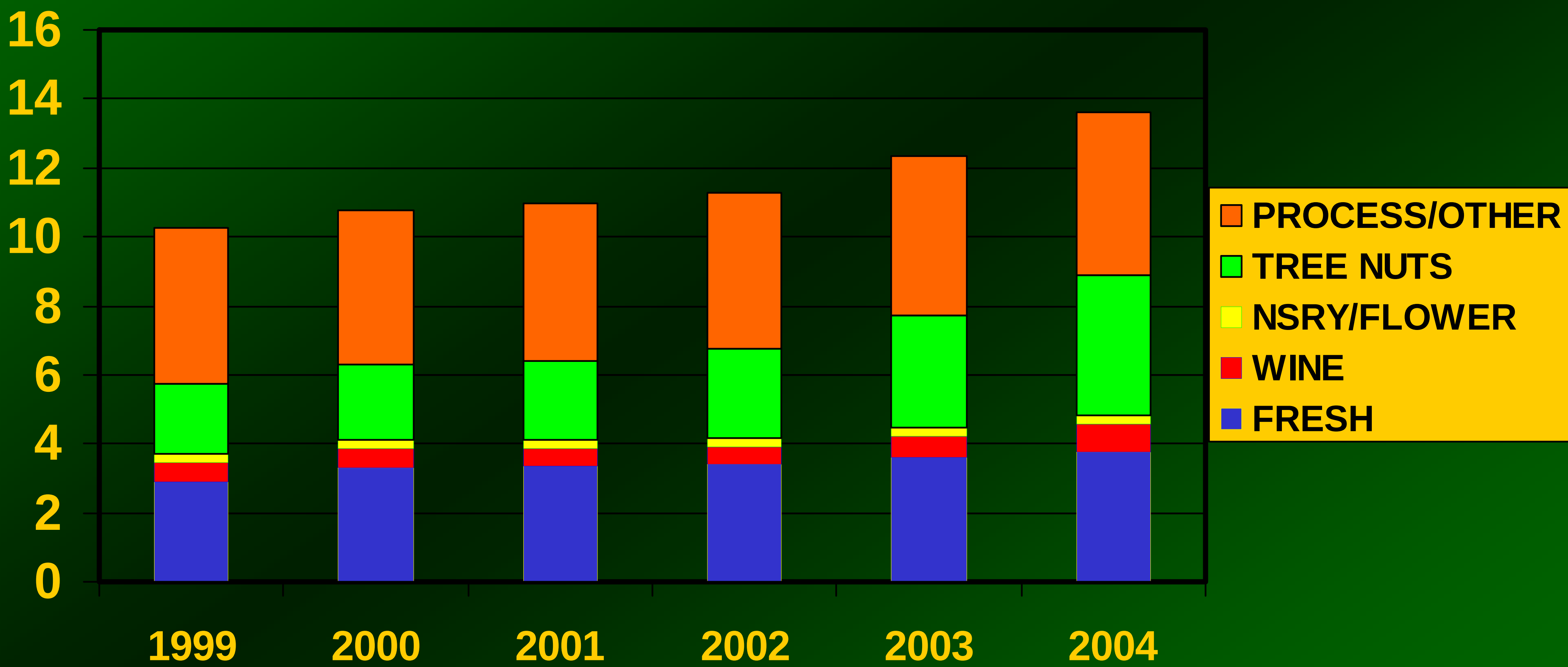
Pma study:
574 SKU's in 2001

Source: Supermarket Business, Oct. 1999 and Progressive Grocer Oct. 2002

Emerging Greenhouse Marketer Business Models Respond to Market Trends

- Handling perishable products, year-round, often requires marketing alliances
- Facilitates branding, close coordination with retailers, forward contracting and promos
- Forward distribution centers
- Strong service orientation
- Multiple shipping points and grower relationships
- Market leadership responsibilities – becoming market driven – including new product introductions

U.S. Horticultural Exports, by Key Product Category $Billion



Source: FAS/USDA