

The Dynamic US Fresh Produce Industry

DR. ROBERTA COOK
Dept. of Ag and Resource Economics

University of California, Davis

for

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Agenda

- **Some global food demand and retailing trends**
- **Location of production and fresh produce basics**
- **Fresh produce value chain**
- **International trade**
- **Select food industry trends**
- **Conclusions**

Key Global Demand Trends

- Important shifts are underway in the share of global population accounted for by key regions with profound implications for food demand in upcoming decades.
- Rising incomes in developing economies should cause fresh produce demand growth to outpace demand in developed economies.
- Since the 80s: Improved market access (reduction in tariff and non-tariff barriers), facilitating international trade, and increasing competition between exporters.
- Since the 80s: FDI was liberalized, privatization, general market liberalization, and emergence of middle classes.
- Result: supermarket "revolution" in the developing world!
- Key role of FDI: Much of the growth was driven by European and Japanese chains facing saturated markets at home.

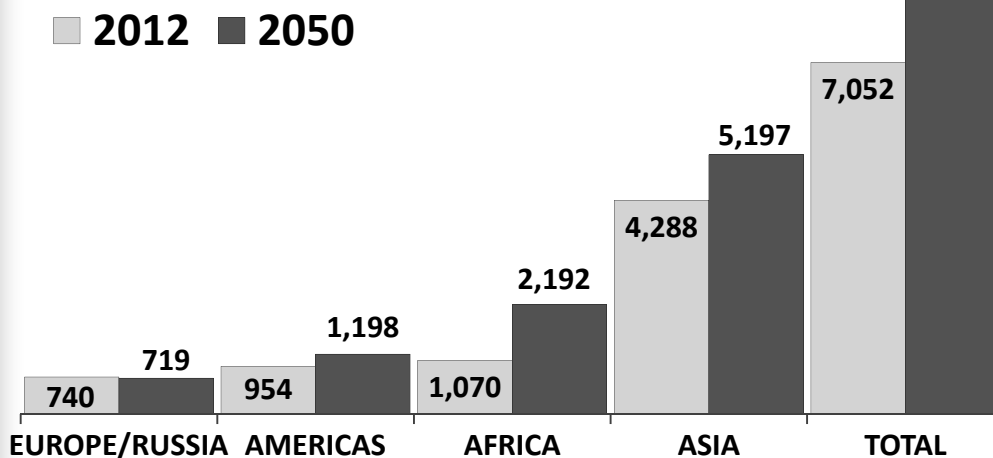
Key Global Retail Trends

- Much more rapid emergence of supermarkets in L. America and Asia than occurred in the USA and Europe. (Reardon, Thomas and Timmer, C. Peter, "The Economics of the Food System Revolution," www.annualreviews.org.)
- Supermarkets stimulate produce imports – shelf-space must be full yr-round.
- Fragmented supply chains pose big challenges.
- Supermarkets stimulate supply chain modernization, and eventually contribute to the emergence of larger and more professional farmers and intermediaries. Need for scale!
- The drive to reduce transaction costs contributes to a gradual process of streamlining the supply chain, improving quality, safety and reducing food waste and margins.
- Competition means these gains translate into lower prices, benefiting consumers and increasing demand. Virtuous circle! Note: Walmart model, the world's largest retailer.

Key Retail Trends

- In W. Europe and the USA/Canada, smaller store formats are growing at the highest rates, cannibalizing sales of big box stores. These formats are targeting specific convenience and/or value segments.
- This will contribute to changing market shares among leading players and more intense competition for all.
- The proliferation of store formats and e-commerce means that consumers have more choice in where they purchase produce.
- Greater competition at the buying end of the supply chain pressures upstream margins (back to growers).
- International trade gives consumers more fresh produce options every month of the year.
- Understanding consumer preferences is vital to the fight for distribution and share of stomach. Information technology!

World Population by Region in 2012 and Projections for 2050 (in millions)



Sources: United Nations/World Bank's official series for 1990-2012 (October 2012), and UN official projections for 2012-2100 (UN Population Prospects, April 2011 version) (central/mid-range scenario)

Projected population change: 2012-2050 (millions)

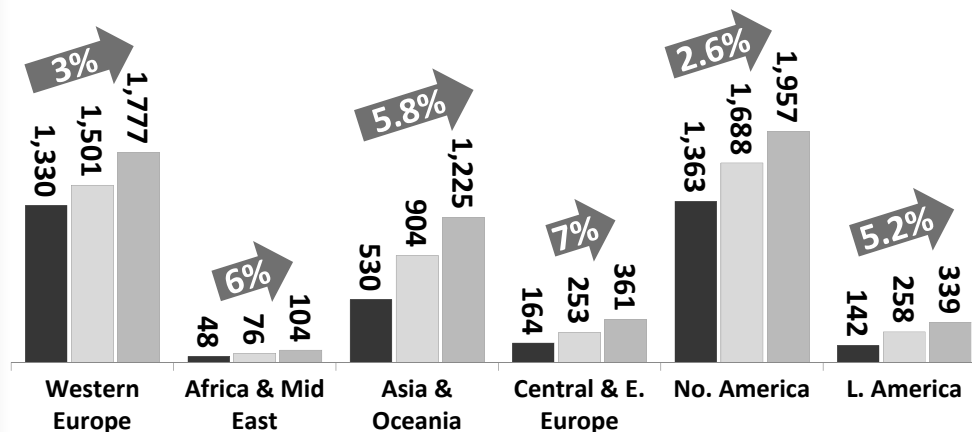
REGION	SUB-REGION	Change (Millions)	% Share of the pop gain
EUROPE	Western Europe	20	0.9%
	Eastern Europe/Russia	-41	-1.8%
AMERICAS	N. America (USA/Canada)	96	4.3%
	Latin America	148	6.6%
AFRICA	Northern Africa	61	2.7%
	Sub-Saharan Africa	1,061	47.1%
ASIA	China	-58	-2.6%
	India	434	19.2%
	Japan	-18	-0.8%
	Other Asian countries	552	24.5%
WORLD		2,254	100.0%

Sources: United Nations/World Bank's official series for 1990-2012 (October 2012), and UN official projections for 2012-2100 (UN Population Prospects, April 2011 version) (central scenario)

Global: Total Banner Sales and CAGR by Region, 2008-2018 (percent)

2008
 2013
 2018f
 2013-18f CAGR

Sales (EUR bn)



Source: Planet Retail

Global Top 10 Grocery Retail Sales (billion USD) and Outlets, 2014 vs. 2019

	2014			2019 ^f	
	Sales	Outlets		Sales	Outlets
Walmart	531	11,574	Walmart	648	14,885
Carrefour	138	10,965	Amazon*	239	?
Tesco	119	8,022	Carrefour	172	14,176
Costco	118	663	Costco	164	794
Schwarz Group	118	11,264	Schwarz Group	154	12,886
Seven & I	117	36,290	Seven & I	144	44,830
Kroger	112	3,747	Tesco	139	10,842
AEON	103	18,347	Kroger	135	3,754
Metro Group	100	2,310	AEON	123	21,815
Amazon	98	--	Metro group	120	2,623

Source: Global Trend and Forecast 2015: Getting Closer to the Customer. *Not all grocery, this is total sales.

Supermarket Emergence in Developing Economies

- European food retailer investment in developing country markets has slowed as increasing competition and slower growth in home markets has caused firms like Tesco to retrench.
- Growth in local & regional chains throughout the developing world will likely reduce the *share (not total sales)* of the top European/US retailers there (homegrown chains will grow more rapidly). Locals benefit from infrastructure improvements introduced via FDIs.
- This trend is already underway. Between 2004 and 2014 the global combined share of the modern food retail market held by the top 30 grocery retailers declined from 28-23%, according to Planet Retail.

Leading Players Are Losing Share Globally

- **The big gainers will be strong local and regional players - positioned in fast-growing markets in Asia, Latin America, Eastern Europe, the Middle East and Africa.**
- **Players such as Saigon Co-op, A101, Dairy Farm and Lotte Shopping in Asia are ones to watch, A-101 in Turkey as is Magnit in Eastern Europe.**
- **A series of acquisitions and market entries has enabled the likes of Cencosud in L. America to transform themselves into strong regional players. Cencosud is now the largest local player in L. America.**

Source: Global Trend and Forecast 2015: Getting Closer to the Customer

Location of production and fresh produce basics

Location of production matters!

- **It's all about seasonality - which crop, where, when - whether imported or domestic.**
- **Imports, usually off-season, play important role for many, but not all crops.**
- **California biggest producer of most produce crops in the US.**
- **For many crops CA is the only US producer, over 200 crops grown.**

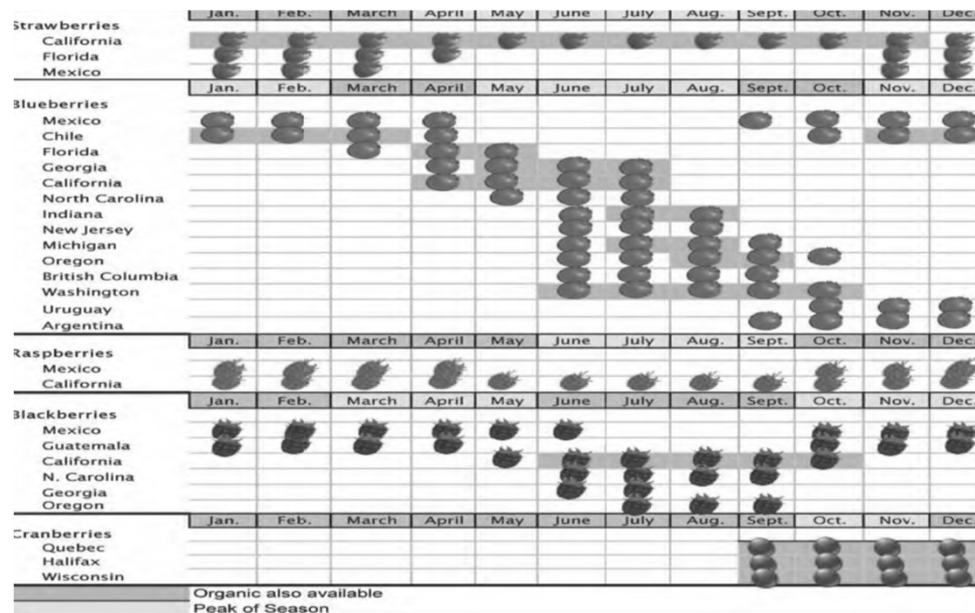
Location of production matters!

- **CA has Mediterranean climate, long shipping seasons, no rainfall during harvest seasons, helps quality. Depend on winter snowpack for irrigation water.**
- **Locations within CA vary by crop and season, desert vs coastal vs central valley. Generally production starts in south in winter/spring and moves northward.**
- **Each commodity has its own story to tell!**

Fresh Produce Marketing Basics

- Most growers do not market their own production, they have agreements with shippers or distributors to be their marketers. (price depends on the market)
- Most shippers are family-owned forward-integrated grower-shippers, supplementing their own production with that of other growers.
- Generally harvested and shipped daily; weather affects both supply and demand. Markets are risky and volatile!
- Shipping patterns are well established based on ideal growing locations in each season.

Seasonality of Naturipe Farms berry production locations



Top 5 US Fresh Market Vegetable States* in 2014:
Geographic concentration of production (due to climate) limits local sourcing potential, yet it is growing in the summer/fall

Area Harvested		Production		Value	
State	% of Total	State	% of Total	State	% of Total
CA	47	CA	52	CA	60
FL	10	AZ	8	FL	10
AZ	7	FL	7	AZ	6
GA	6	WA	4	GA	4
NY	4	GA	4	NY	3
Other	28	Other	25	Other	18

*Excludes potatoes Source: Vegetables 2014 Summary, USDA/NASS, January 2015

USA Vegetable/Melon Farm Structure, 2012

- 72,267 total vegetable, potato and melon farms, including 65,814 harvesting for fresh market and 13,072 for processing (so some harvest for both markets).
- \$16.8B total farmgate sales, including \$6.3B in California.
- 5,768 farms selling >\$1M account for 8% of farms and 87% of total value, including 1,086 farms selling >\$1M (2%) in CA, contributing 36% of total value.

Sources: 2012 Census of Ag, USDA, Tables 65, p. 92 and 29 p 464.

Market Shares of Top 5 USA Fresh Fruit Producing States,* 2009

State	Percent U.S. Total
California	53%
Washington - leads in apples, pears, cherries	21%
Florida	8%
Oregon	2%
Michigan	2%
Other	10%
All U.S. fresh fruit	100%

*Excludes tree nuts. Source: USDA/ERS, Gary Lucier.

USA Fruit, Berry and Nut Farm Structure, 2012

- Total of 105,737 fruit, berry, nut farms of all sizes.
- Farmgate sales of \$25.9B, incl \$17.6B in CA.
- 5,874 farms selling >\$1million account for 6% of total fruit/berry/nut farms and contribute 76% of total value, including:
- 3,541 California farms selling >\$1M which account for 3% of US fruit, berry and nut farms and contribute 54% of US total value.

Source: 2012 Census of Ag, USDA, Table 65, p 92

Fresh Produce Marketing Basics

- **Growers and shippers are price takers.**
- **Growers receive the residual of the market price received by the shipper for their produce, less marketing charges, pick, pack and harvest, palletization, in some cases cooling, and other handling charges and mandated-marketing or other institutional fees.**
- **Shipping point prices may not always cover total costs; when they don't even cover variable costs (e.g. harvest/packing) product is left in field.**
- **The shipper has incentives to continue shipping if at least covering variable costs in order to meet commitments with buyers, to maintain labor and potentially earn profit margins on cooling, harvesting and marketing; sometimes there is no return to the grower (production costs are not recouped).**

Fresh Produce Marketing Basics

- **Shippers have big investments in facilities, technology, seed trials, research to improve efficiency, sustainability, precision farming.**
- **Growers/shippers require substantial capitalization to withstand low markets.**
- **About 20 retailers estimated to account for over 70% of US total retail food sales.**
- **Buyer consolidation has led to shipper consolidation - fewer, bigger firms.**

Fresh Produce Marketing Basics

- **Retail and foodservice buyers demand yr-round supply.**
- **Imports increasingly handled by U.S. grower-shippers that import during the off-season.**
- **Same requirements for foreign and domestic growers.**
- **Role of forward contracts is growing but challenging to manage across growers in different locations and seasons.**

Fresh Produce Marketing Basics

- **Foodservice leads in forward contracting.**
- **As forward contracting grows for retailers as well, the marketing system becomes less focused on transactions (daily spot market) and more on building marketing "programs," Costco and Walmart stand out.**
- **Firms attempting to differentiate their products to get out of the "commodity trap," but perishability will always make that challenging.**

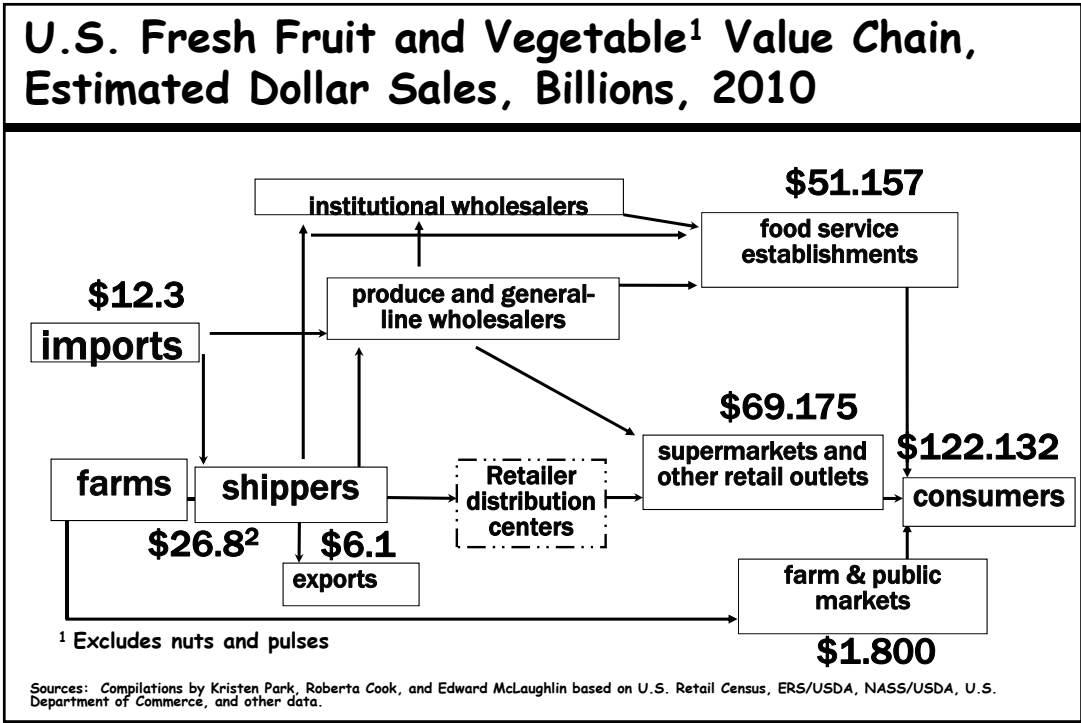
Fresh Produce Marketing Basics

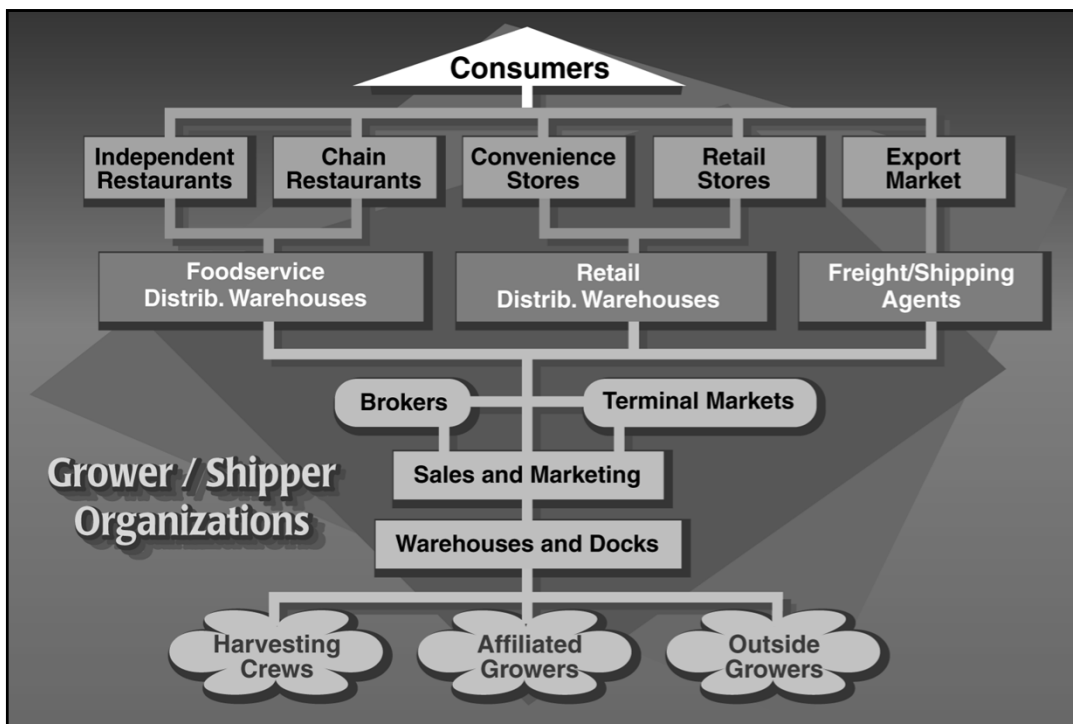
- **Quality, color, shape, flavor, as differentiators, growing role of proprietary seeds.**
- **Seed varieties more important in meeting buyer needs.**
- **Branding and private label are growing simultaneously.**
- **Sustainability goals are increasingly a factor in buyer-seller negotiations.**
- **Social responsibility practices becoming more important.**

Fresh Produce Marketing Trends

- **Major food safety requirements, higher cost structure. Large growers have big investments.**
- **Fewer, larger buyers have enabled shippers to reduce their customer lists and to focus more on understanding the needs of key accounts - becoming account-driven.**
- **Buyers expect suppliers to be much more data-driven in their selling/marketing approaches, requires IT investments.**
- **Shippers focuses more on understanding and communicating with consumers, attempting to stimulate consumer demand; social media facilitates.**

Fresh Produce Value Chain





- Wholesalers, brokers and other intermediaries are especially pressed to add value to remain relevant; traditionally focused on independent retailers, foodservice operators & fill-in orders for large chains.
- Foodservice industry is no longer expanding as it was for decades.
- Seed companies are striving to develop more output-specific consumer traits, in some cases in conjunction with growers and shippers in order to capture more of the value chain.

Estimated Ranges of Losses in the U.S. Fresh Produce Distribution System		
• Distribution Activity	Percent Losses	
• Transportation	2.80 - 5.00	Update: 2010 Guestimate by Roberta Cook, Preliminary: 9-12% or \$11-15 billion.
• Wholesaling	2.50 - 5.03	
• Retailing	2.74 - 6.58	
• System losses	7.04 - 16.61	
Source: Pierson, Thomas R., Allen, John R. and McLaughlin, Edward W., "Produce Losses in the U.S. Food Distribution System," <i>MSU Agricultural Economics Report</i> , 1983.		Percentage losses are based on dollar values of losses in each phase of distribution as a % of the wholesale value of products entering the distribution system.

Supply Chain Imperatives

- **Streamlining the supply chain involves identifying which activities add more value than cost.**
- **Eliminating non-value-adding activities.**
- **Decreasing internal operational inefficiencies.**
- **Mutually beneficial tactics - promotions, packaging, logistics.**

Fresh Produce Realities

- **Most fresh produce items are sold without UPC bar codes which has contributed to less-intensive use of data. Growth in packaging and scannable bar codes (even on bulk items) is changing this.**
- **With PLU codes there is no identification of the individual supplier.**
- **Most retailers not yet comparing the shelf-life and quality of suppliers' products to measure performance (sales and shrink). Without this it is harder to convince retailers to pay more for investments in quality. Incentives not aligned!**


Fresh Produce Realities

- **The global industry needs PTI not just for potential food safety incidents but for product identification and metrics.**
- **Slow implementation of PTI. Walmart announcement may be a balance tipper.**
- **Retailer focus on gross vs net profit is a problem as it doesn't take into account shrink.**

"Big Data"

- **Datasets whose size is beyond the ability of typical database software programs to analyze, store, and manage**
- **Volume, variety and velocity**
- **Making sense of the information inherent in these massive amounts of diverse data to make better decisions, analytics**


UTILIZING TECHNOLOGY TO SUPPORT THE SUPPLY CHAIN



TRACEABILITY




**COOLER &
DC INSIGHTS**



**RETAIL
INSIGHTS**



CONNECT



**SHOPPER
INSIGHTS**

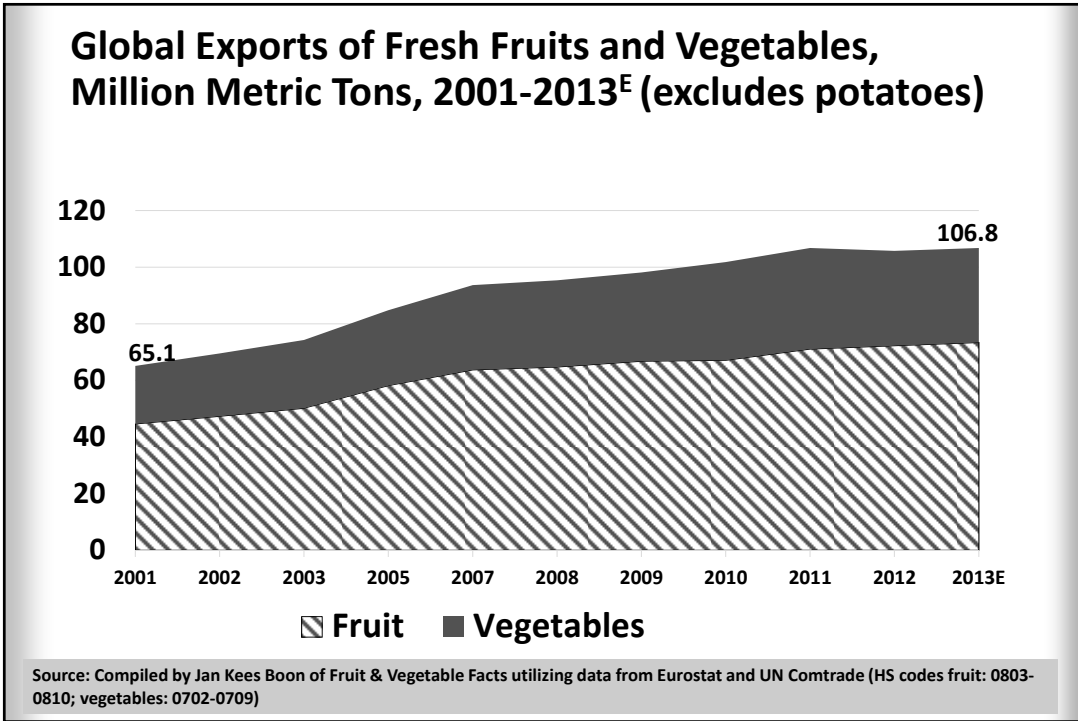
HarvestMark
a YottaMark solution

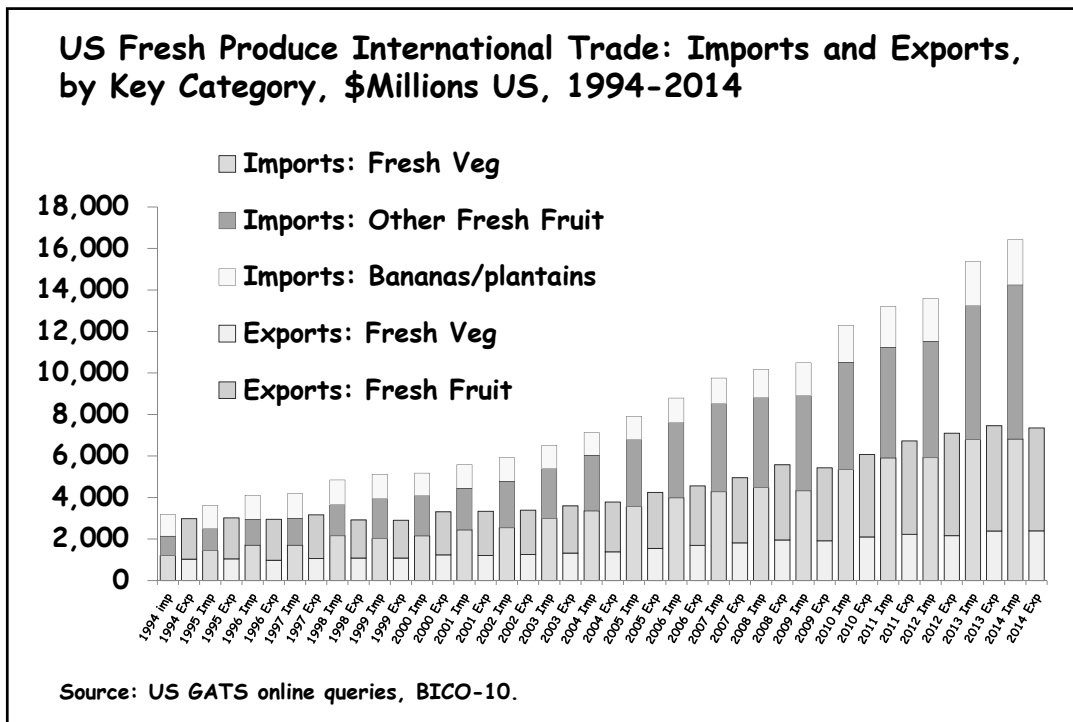
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The Produce Industry Challenge

- Getting the right product to the right consumer at the right place and price, with reasonable remaining days of shelf-life.
- Requires collaboration between suppliers and retailers, including loyalty card data and promotional efficiency.
- Shippers increasingly involved in category development but most not assisting with individual store shelf-set recommendations, unlike CPG firms, great opportunity.
- We can increase efficiency and reduce shrink through better coordination of supply and demand. This will make produce more affordable to more consumers, expand demand.

International Trade in Fresh Produce





Fresh fruit and vegetable imports as a share of US fresh utilization/consumption, 2013/14* (despite rising imports most of US consumption is still produced here)

Item	%
Vegetables, excl. melons and potatoes	28
Melons	33
Potatoes	9
Fruit, all	52
Excluding Bananas	35

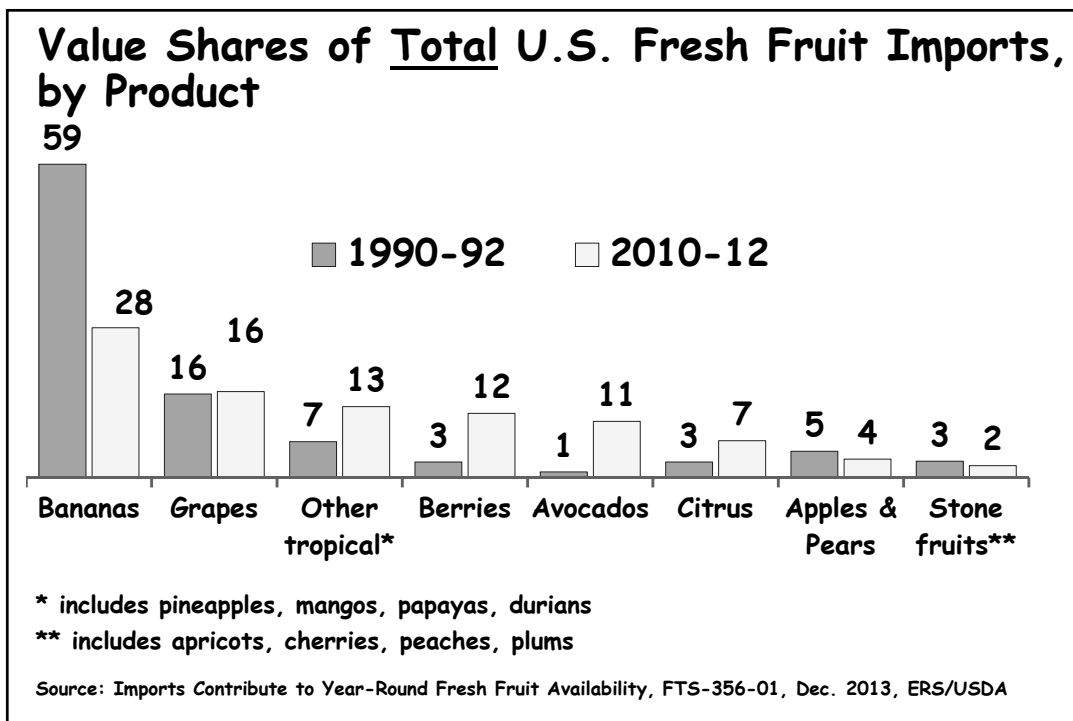
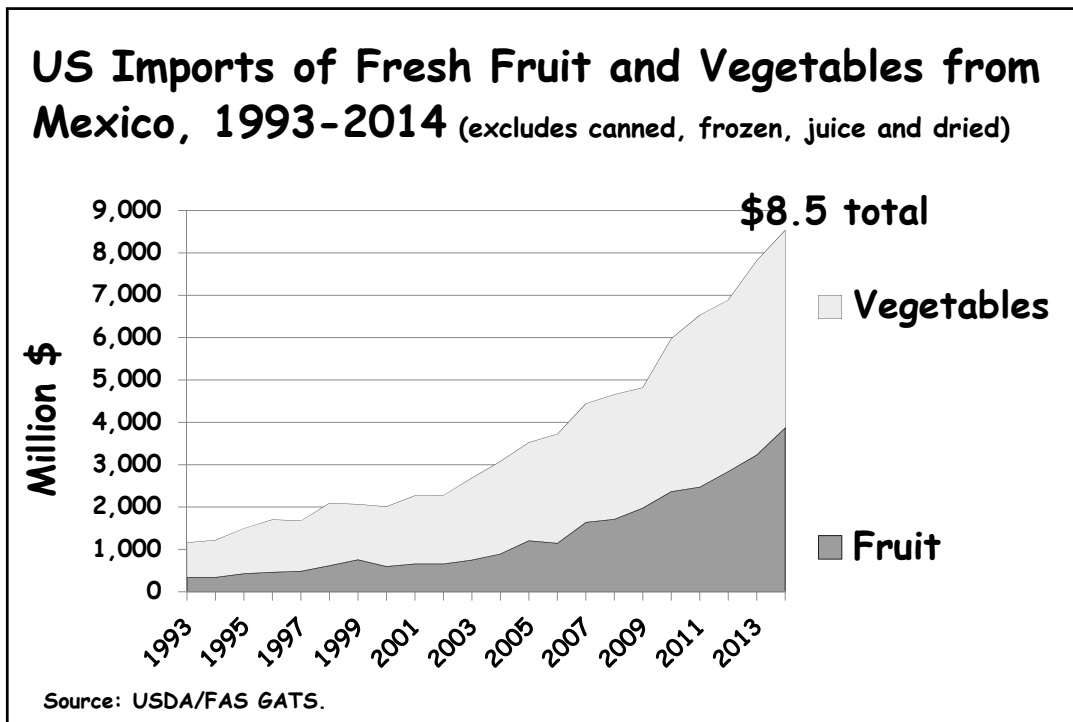
*2014 for vegetables and potatoes; 2013 for melons and fruit.
 Source: Economic Research Service, USDA.

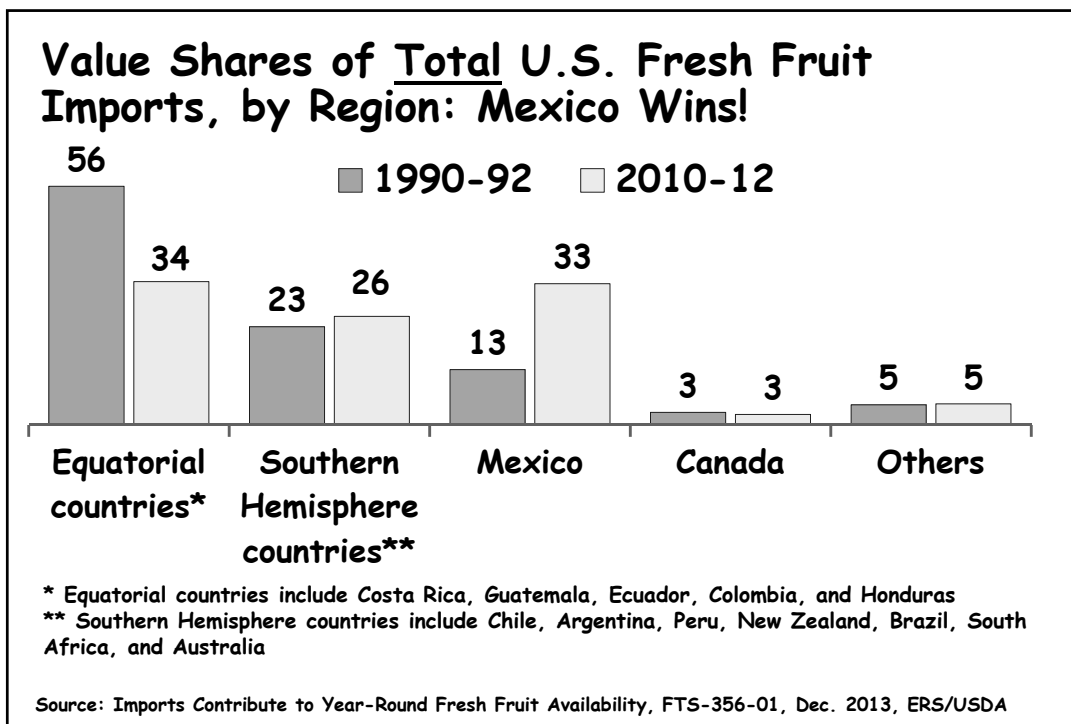
Relative Competitiveness of US Fresh Produce Industry

- The relatively strong competitiveness of the US industry is because more than being labor-intensive, fruit/veg are knowledge, technology, capital, and marketing-intensive. **LOCATION!**
- However, protected culture, which is technology and capital-intensive is emerging elsewhere.
- US growers face an ever more complex regulatory environment.
- Labor availability is increasingly problematic, everywhere.

NAFTA Fresh Produce Trade

- N. American fresh veg trade mainly intra-NAFTA!
- 77% of US fresh vegetable exports go to Canada, then 8% to Mexico.
- 2/3's of US fresh veg imports come from Mexico; most of the remainder from Canada.
- Fresh fruit trade is diverse - beyond NAFTA.
- Typically Mexico was much more of a veg than a fruit exporter. This is changing.



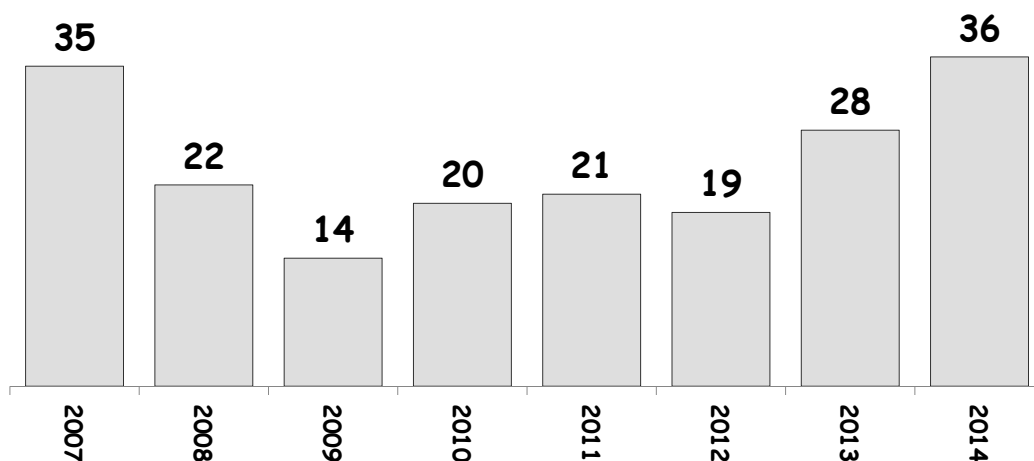


Select Food Industry Trends

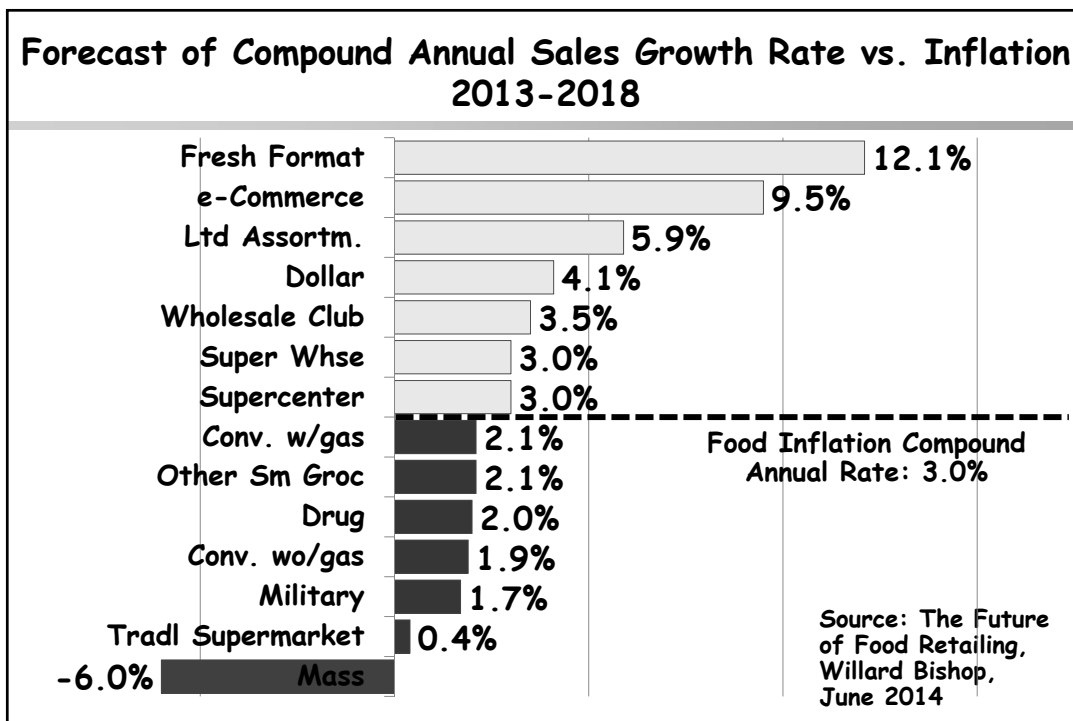
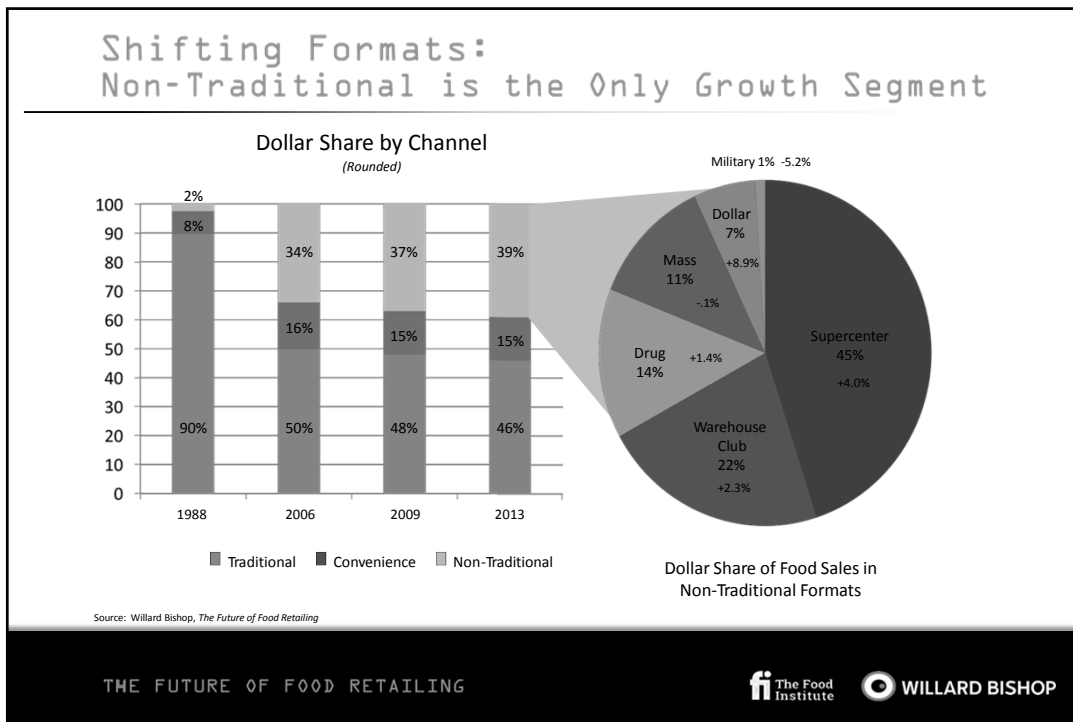
The economic downturn accelerates pace of change in the food marketing system

- More than originating new trends, it intensified pre-existing forces, such as channel blurring.
- Margin pressure at all levels of the food system!
- Many produce suppliers facing lower profits.
- Growing food safety, traceability and sustainability expectations all increase costs.
- Need for major investments in info tech systems.
- Foodservice took a huge hit.
- Mergers are up (retailers, foodservice, shippers).

US Supermarket Mergers & Acquisitions 2007-2014: Even Fewer, Larger Buyers!



Sources: The Food Institute Report, January 6, 2014; Food Industry Review 2014, The Food Institute; and The Food Institute Webinar *Who's Buying Whom and What to Expect in the Future*, March 3, 2015.



Conclusions

- **Fresh produce has faced challenges due to the economy.**
 - **Firms at all levels of the fresh produce supply chain must take management practices to a higher level**
 - **Better information technology is a necessary but not a sufficient condition for meeting today's/future standards for efficiency**
 - **Firms must develop cultures of continuous improvement and innovation**
 - **Understanding consumer segments as they relate to preferences for a product/retail format is vital**
 - **Competitive pressure on retailers means on-going margin pressure for suppliers as well.**

Conclusions: Becoming Marketing-Driven

- **Becoming customer-centric.**
- **Next level is to become consumer-centric.**
- **Consumer-centrism will increasingly be achieved via supplier-customer partnerships.**
- **Suppliers and customers must choose strategic partners - align with those who will succeed in the marketplace**

Supplemental Handout Material: More on the Food System and the Fresh Produce Value Chain

Total US Grocery Sales,* Store Numbers, and Market Share by Channel, 2013

	2013 Sales \$Million	2013 No. of Stores	2013 % of Sales
Traditional	\$522,827	40,292	46.0
Nontraditional	\$442,072	59,132	39.0
Total C-Stores**	\$169,905	157,662	15.0
GRAND TOTAL	\$1,134,804	257,086	100.0

*Grocery sales only (food and nonfood); excludes electronics, prescription drugs, toys, jewelry, sporting goods, gas, clothing, footwear, knickknacks, and hardlines. **Sales exclude gas.
 Source: The Future of Food Retailing, Willard Bishop, June 2014

US Grocery Sales, Store Numbers and Market Share of Total Grocery Sales, by Store Format, 2013, and Projected Share, 2018
Traditional Grocery Channel

	2013 Sales \$Million	2013 No. of Stores	2013 % of Sales	2018 % of Sales
Total Traditional	\$522,827	40,292	46.0	44.8
Conven. Supermkt	\$444,211	26,140	39.1	36.2
Fresh Format	\$14,023	1,063	1.2	2.1
Ltd Assortment	\$31,069	3,835	2.7	3.4
Super Warehouse	\$20,806	556	1.8	1.9
Other (small groc.)	\$12,718	8,698	1.1	1.1

Source: The Future of Food Retailing, Willard Bishop, June 2014

US Grocery Sales,* Store Numbers and Market Share of Total Grocery Sales, by Store Format, 2013, and Projected Share, 2018
Nontraditional Grocery Channel

	2013 Sales \$Million	2013 No. of Stores	2013 % of Sales	2018 % of Sales
Total Nontrad'l	\$442,072	59,132	39.0	40.1
Wholesale Club	\$98,521	1,383	8.7	9.2
Supercenter	\$200,282	3,829	17.6	19.4
Dollar Store	\$28,701	27,200	2.5	3.0
Drug	\$61,295	23,258	5.4	5.3
Mass	\$48,441	3,281	4.3	2.8
Military	\$4,832	180	0.4	0.4

*Grocery sales only (includes food and non-food); excludes electronics, prescription drugs, toys, jewelry, sporting goods, gas, clothing, footwear, knickknacks, and hardlines.
 Source: The Future of Food Retailing, Willard Bishop, June 2014

US Grocery Store Format Characteristics, 2013
Traditional Grocery Channel

	Total Store Area	Average Total SKUs	Average Weekly Sales \$	Groc. & Consum. % Sales
Total Traditional			\$247,379	
Conven. Supermkt	53,500	45,000	\$324,171	100
Fresh Format	34,000	21,000	\$253,180	100
Ltd Assortment	12,600	2,900	\$152,144	100
Super Warehouse	45,000	37,000	\$702,950	100
Other (small groc.)	9,000	3,000	\$27,452	100

Source: The Future of Food Retailing, Willard Bishop, June 2014

US Grocery Store Format Characteristics, 2013
Nontraditional Grocery Channel

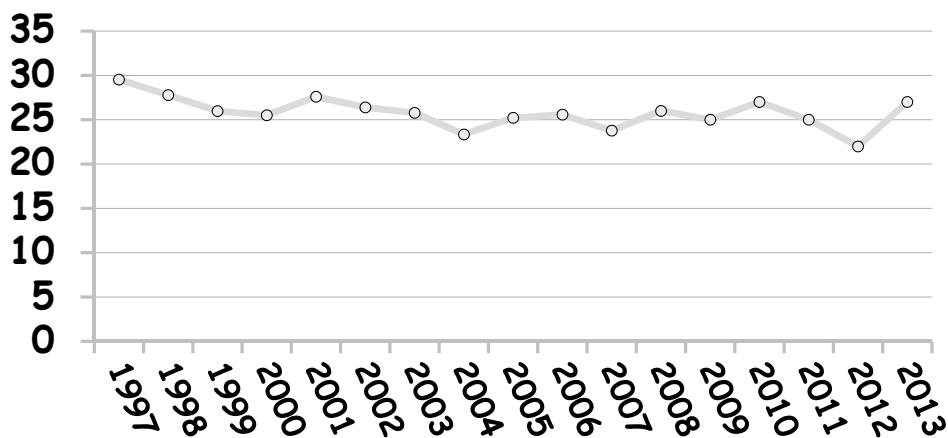
	Total Store Area	Average Total SKUs	Average Weekly Sales \$	Groc. & Consum. % Sales
Total Nontrad'l			\$143,852	
Wholesale Club	132,400	4,900	\$1,366,874	59
Supercenter	179,600	100,000	\$998,206	60
Dollar Store	8,100	9,400	\$19,594	66
Drug	11,100	19,000	\$50,759	34
Mass	62,400	95,000	\$275,885	23
Military	29,400	15,000	\$547,479	100

*Grocery sales only (includes food and non-food); excludes electronics, prescription drugs, toys, jewelry, sporting goods, gas, clothing, footwear, knickknacks, and hardlines.
 Source: The Future of Food Retailing, Willard Bishop, June 2014

Marketing Margins and Some Pricing Basics

US fresh vegetables, 1997-2013, FOB farmgate price share of retail price

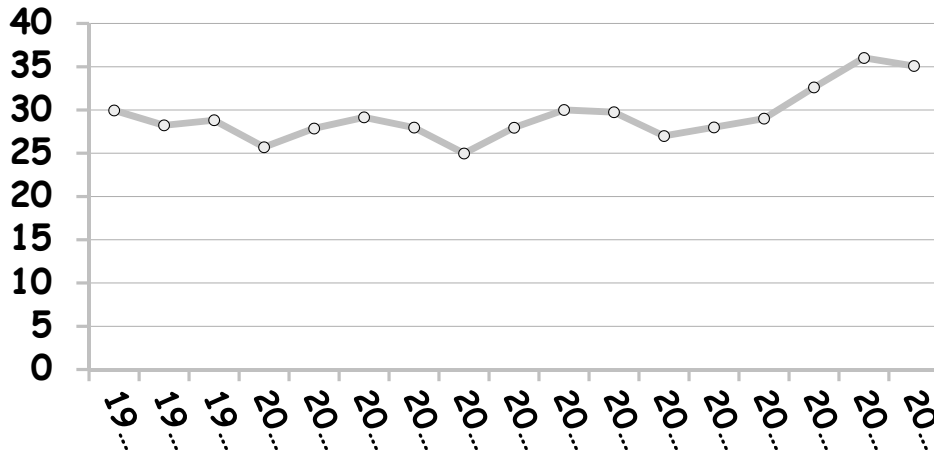
Percent



Source: <http://www.ers.usda.gov/data-products/price-spreads-from-farm-to-consumer.aspx#25667>, January 26, 2015.

US fresh fruit, 1997-2013, FOB farmgate price share of retail price

Percent



Source: <http://www.ers.usda.gov/data-products/price-spreads-from-farm-to-consumer.aspx#25667>, January 26, 2015.

Retail Pricing Strategies

- Every Day Low Pricing (EDLP) or High-Low pricing are the two most common strategies.
- EDLP is generally used by new model retailers - supercenters, club stores - and generally margins are lower than for conventional supermarket chains. Costco margins never exceed 14%.
- EDLP operators emphasize contract vs. spot market buying but conventional retailers are also increasingly operating more on a partnership basis with key preferred suppliers with a program focus.
- Recently some conventional retailers moving to EDLP.
- Successful grower-shippers are increasingly account-driven so they can respond to either EDLP or High-Low pricing retailers accordingly.

Retail Produce Department Pricing

- It takes a 7% change in a retail price for a consumer to "sense" there has been movement.
- It takes a 10% change in retail pricing for a consumer to "think" about a behavior change.
- It takes a 15% change in retail pricing for a consumer to "act" and change behavior.
- So if the f.o.b. price declines buyers will generally take it in margin and it won't negatively impact quantity sold.
- Buyers are generally not held accountable for net margins/profit as the expense side is typically viewed as beyond their control.

Source: Bruce Peterson