

THE DRIVERS OF WESTERN HAY AND FORAGE EXPORTS

CALIFORNIA ALFALFA & FORAGE SYMPOSIUM

November 30, 2017

Reno, Nevada

William A. Matthews and Daniel A. Sumner
University of California Agricultural Issues Center
www.aic.ucdavis.edu



Motivation, Orientation and Overview

- **The export of Western-produced forage crops has increased over the past decade, with volume of exports increasing by 86 percent from 2007 to 2017.**
- **Continued growth in Western exports depends on:**
 - **Western production of hay and other forage**
 - **Domestic demand for hay and other forage**
- **Export growth also depends on:**
 - **Forage demand in foreign markets.**
 - **Forage supply from foreign suppliers**
- **This presentation reviews the available data and economic factors driving the export markets.**

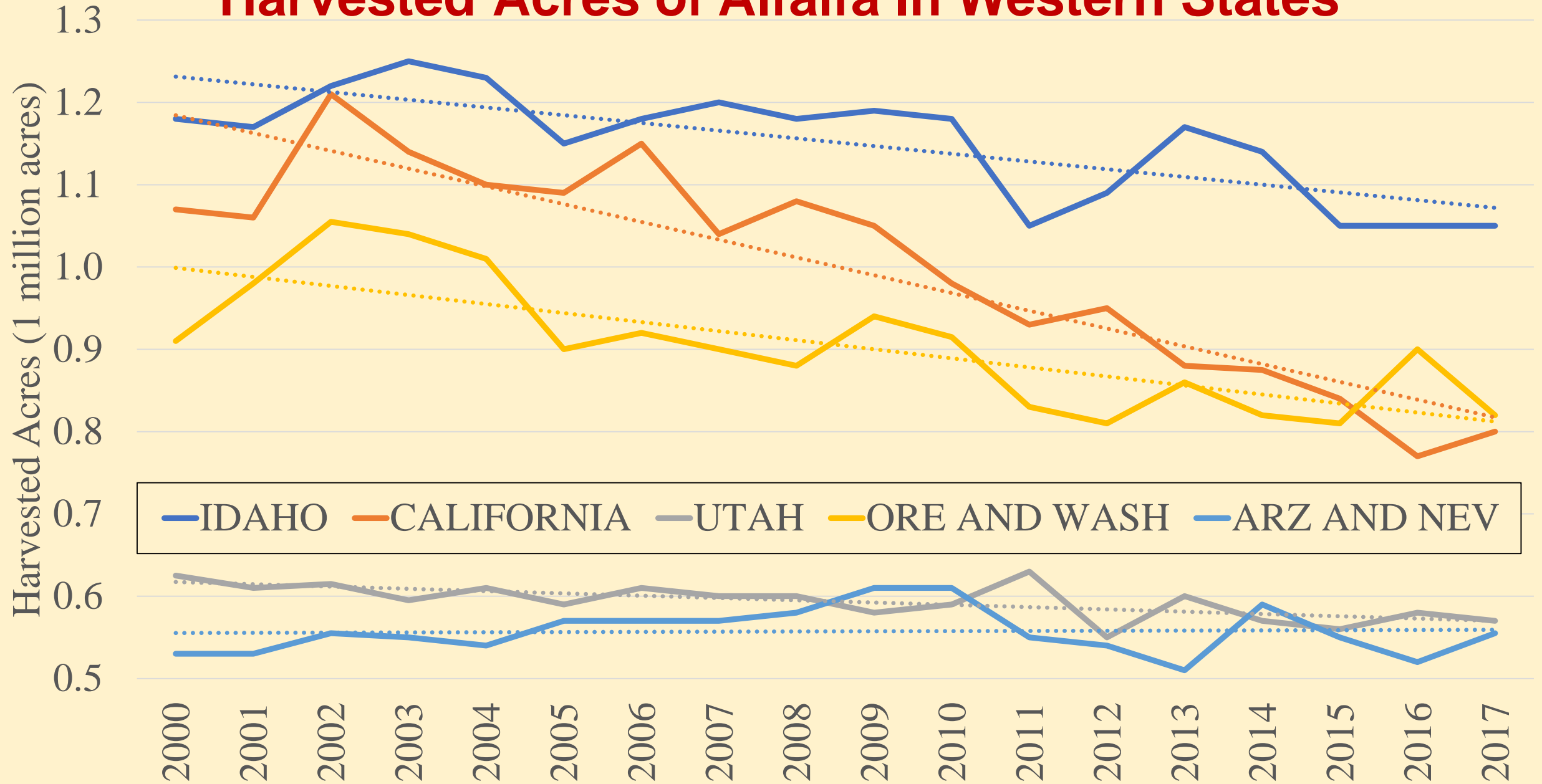
Production of Forage by Western Growers

Farm production of forage competes with other crops for scarce resources:

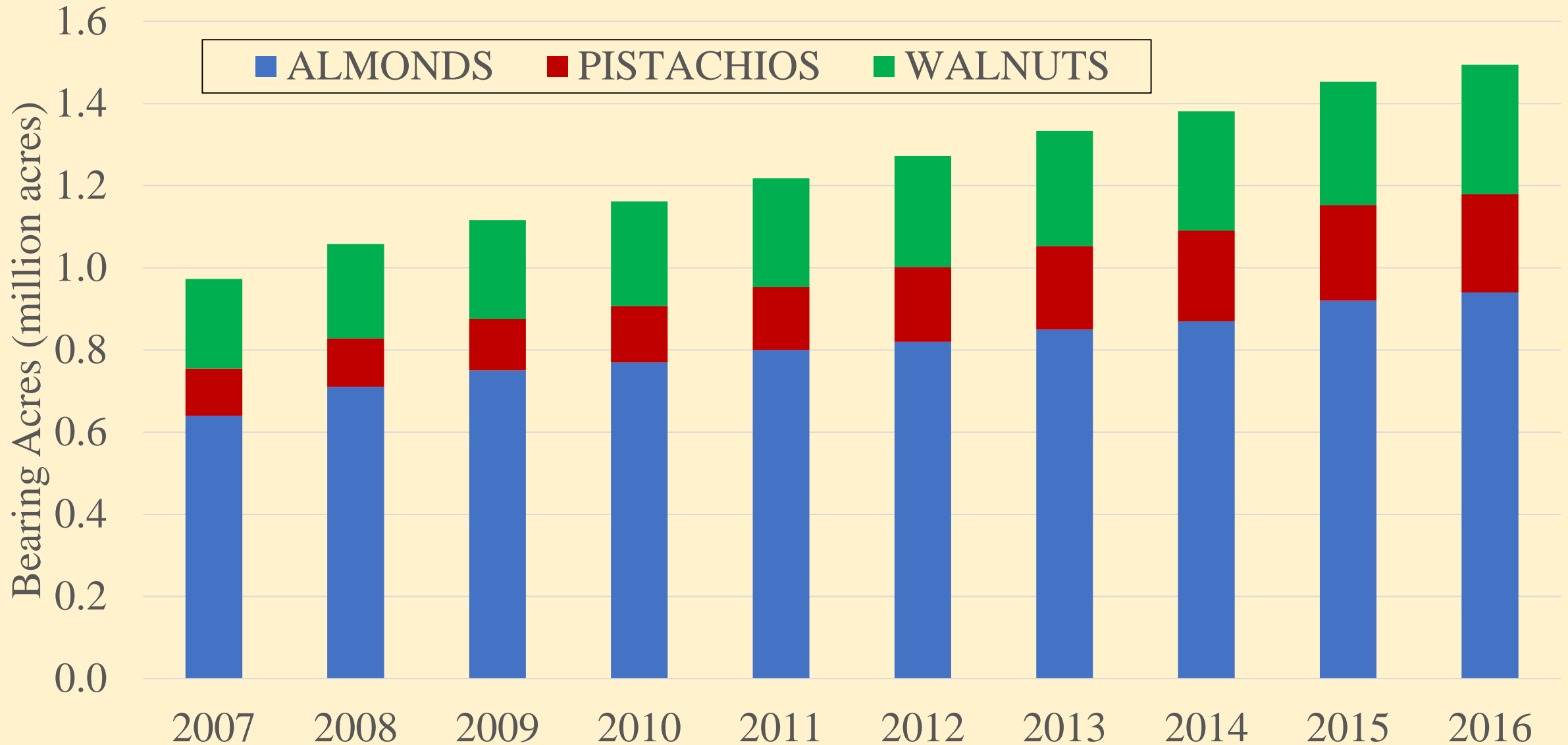
- Land
- Water
- Operator time, capital and management

The economics depend on the **expected profitability across crops**

Harvested Acres of Alfalfa In Western States



Bearing Acres of Tree Nuts In California



Net Returns Per Acre Above Total Costs for Almonds and Alfalfa in South San Joaquin Valley California in 2016

Price per Pound Almonds	2000 lbs/acre	3,000 lbs/acre	3,900 lbs/acre	Price per Ton Alfalfa	7.5 tons per acre	9.0 tons per acre	10.5 tons per acre
				\$190	-803	-555	-306
\$1.50	-3,185	-1,741	-441	\$210	-638	-345	-70
\$2.00	-2,185	-241	1,509	\$230	-472	-153	167
\$2.50	-1,185	1,259	3,459	\$250	-308	45	399
\$3.00	-185	2,759	5,409	\$270	-143	246	635
\$3.50	815	4,259	7,359	\$290	23	447	872

Source: UC AIC Cost and Return Studies (Don Stewart, Jeremy Murdock and Dan Sumner)

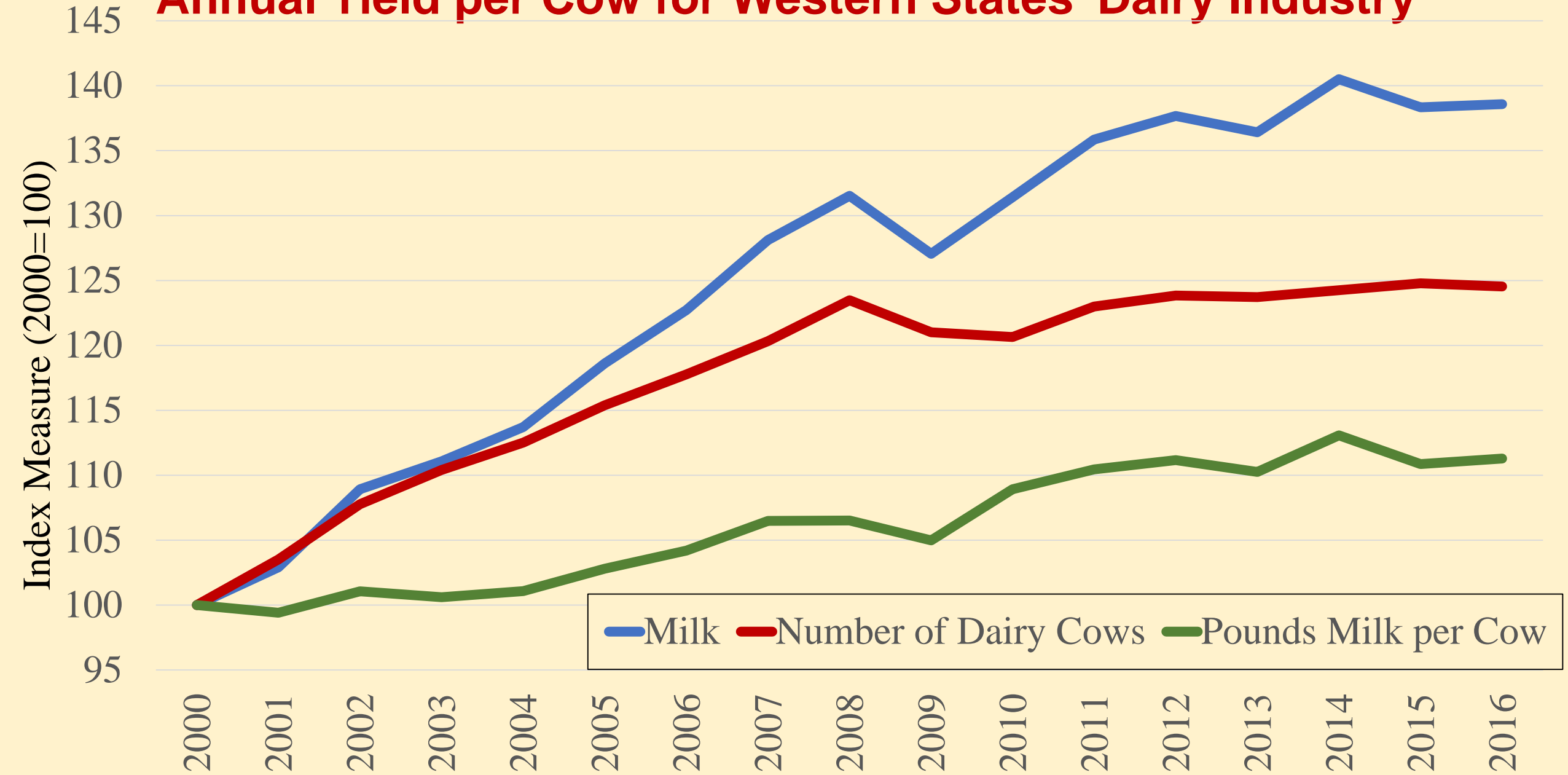
Western Demand for Forage IT'S ALL ABOUT THE COWS!

Drivers in Western U.S. dairy industry

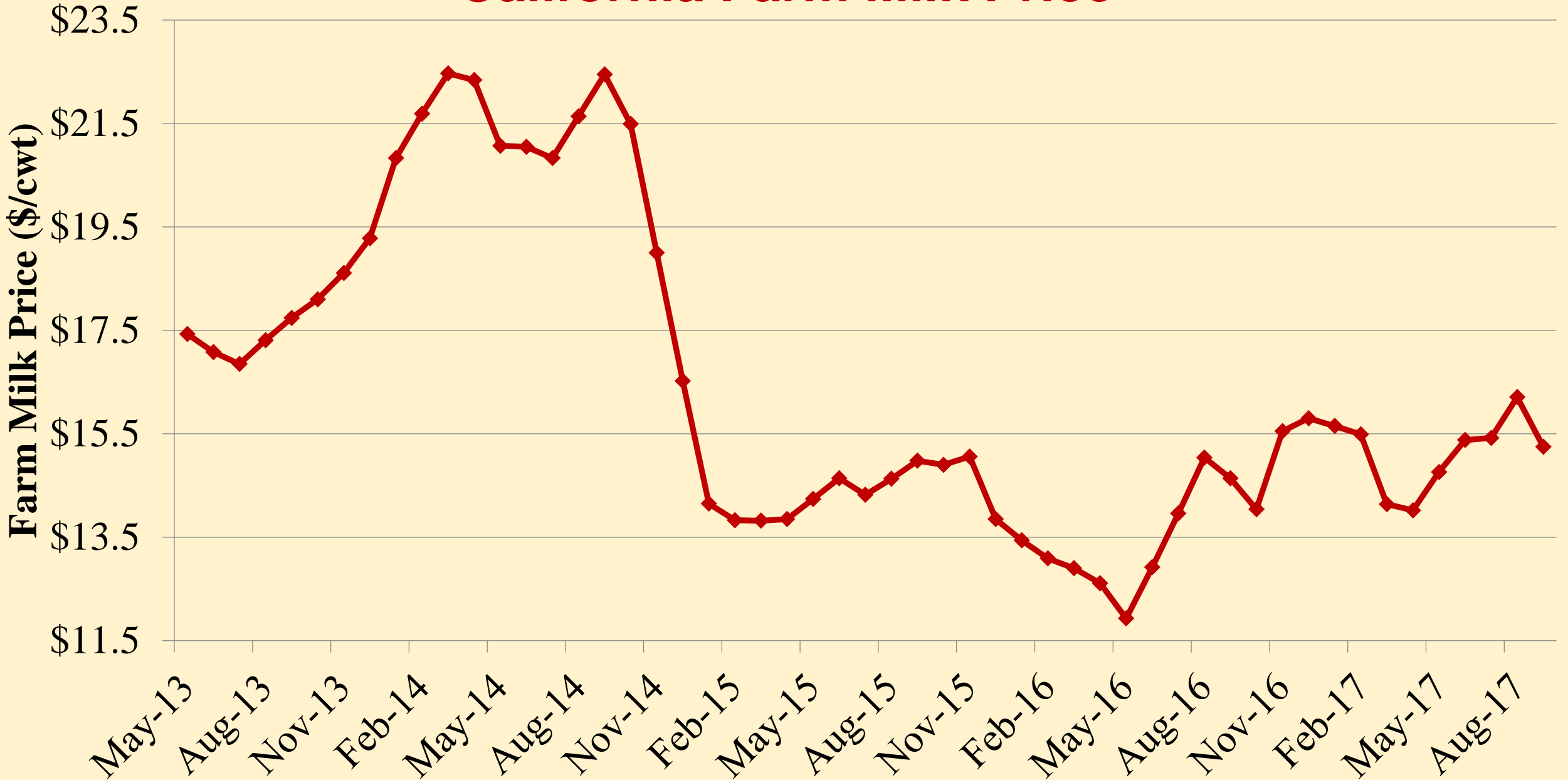
- **Milk prices**
- **Other dairy feed prices (the price of corn, silage and protein meals)**

Cow numbers and forage per cow

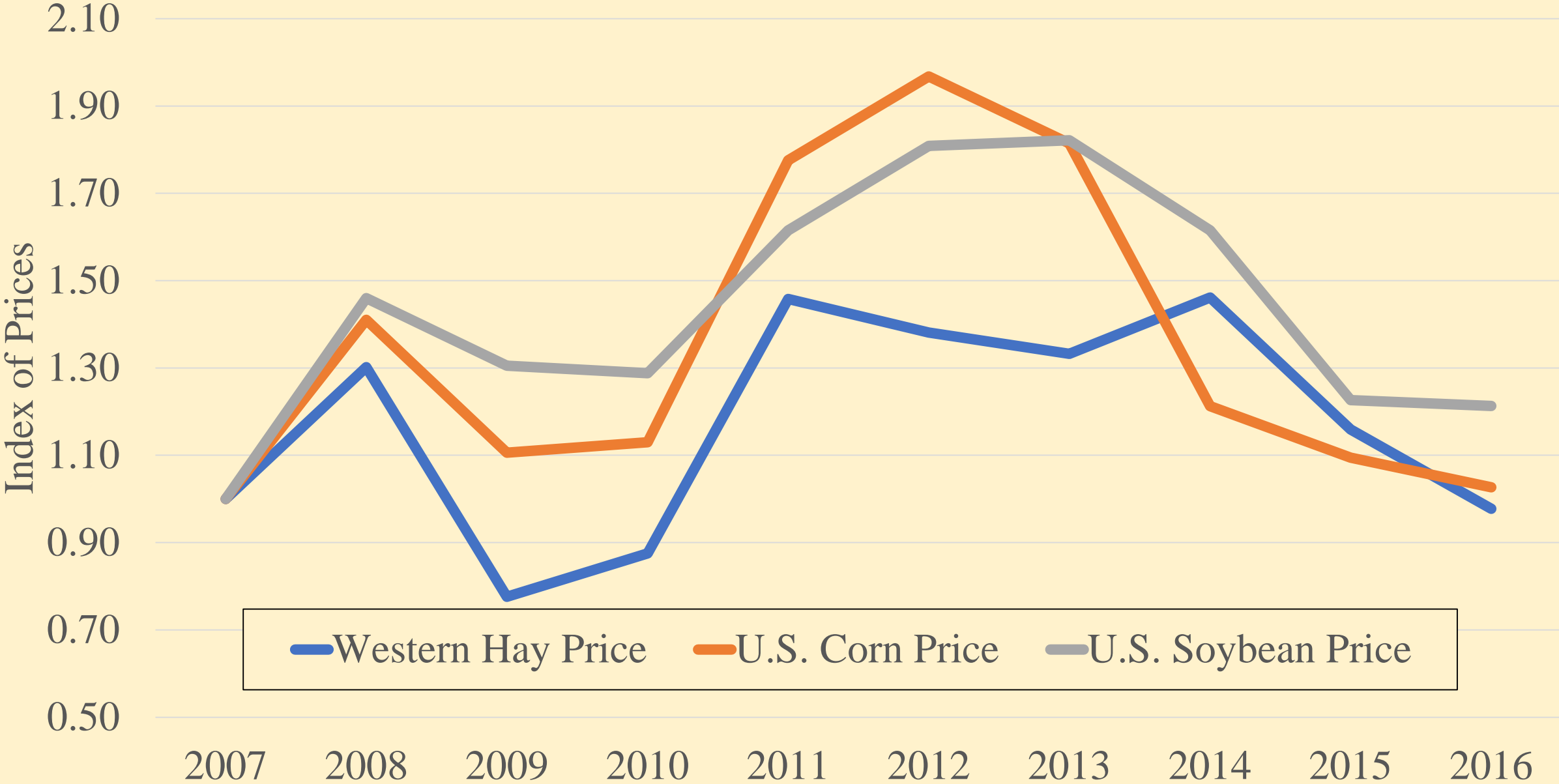
Index of Total Milk Production, Number of Cows and Annual Yield per Cow for Western States' Dairy Industry



California Farm Milk Price



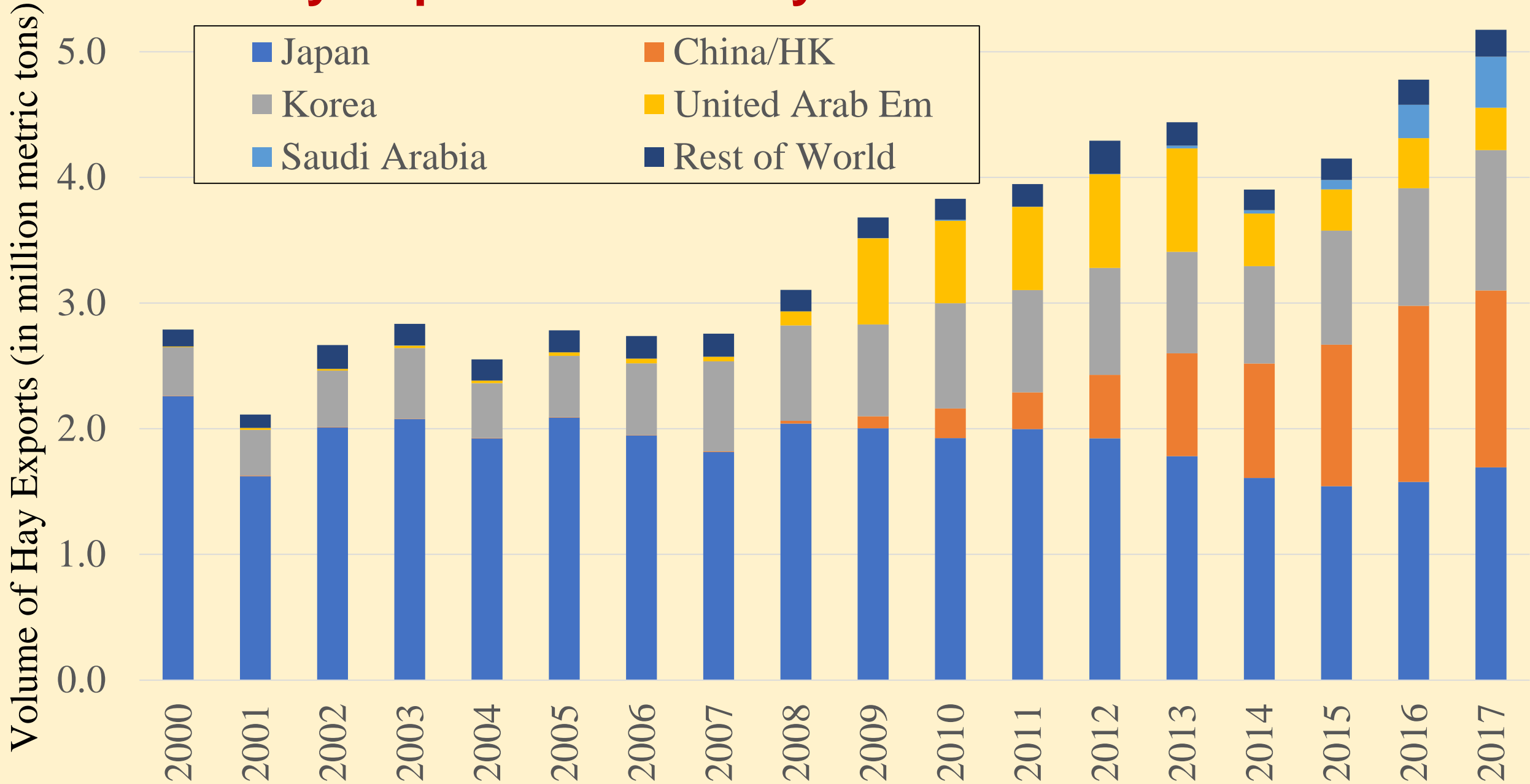
Other U.S. Dairy Feed Prices



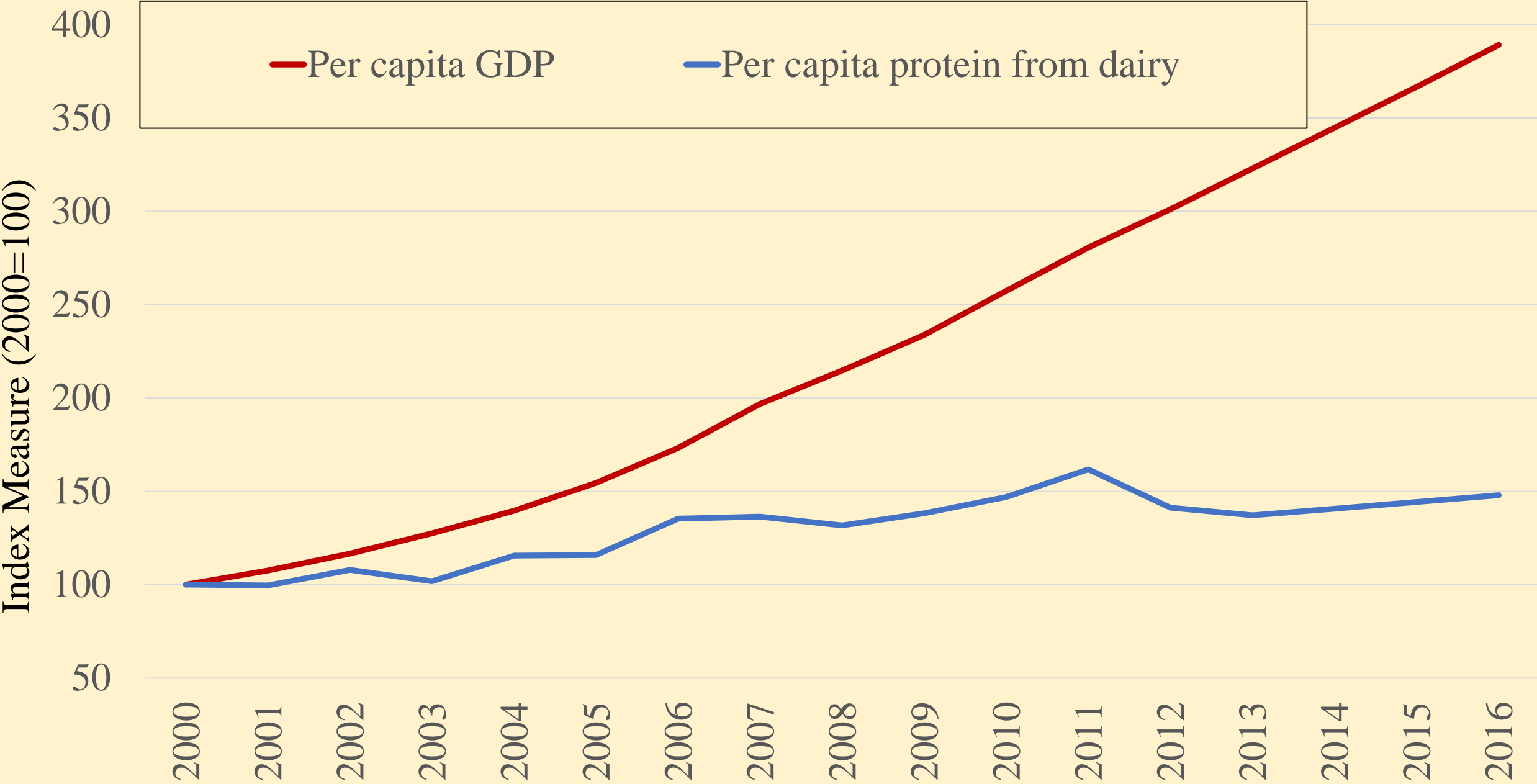
Foreign Demand for Western Forage Again, it's the cows and competitive feeds

- **Hay exports are dominated by a few Asian destinations.**
- **China has been the growing hay export market in recent years.**
- **China is also a big market for milk exports...hay in liquid form**
- **Keeping markets open matters. For example our FTA with Korea.**
- **Local forage in export markets is limited but milk imports from EU, New Zealand and Australia competes with Western hay.**

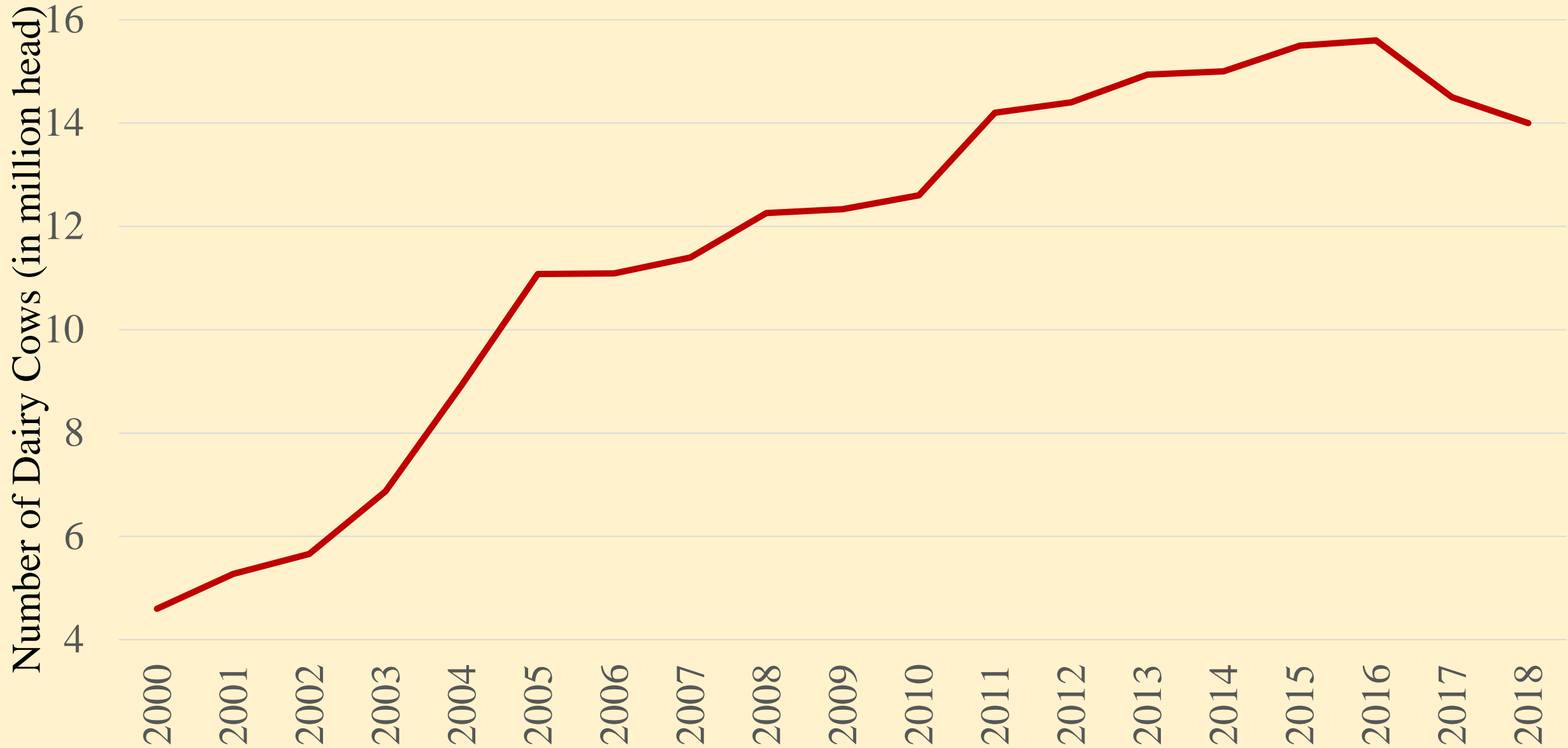
US Hay Export Volumes by Destination Countries



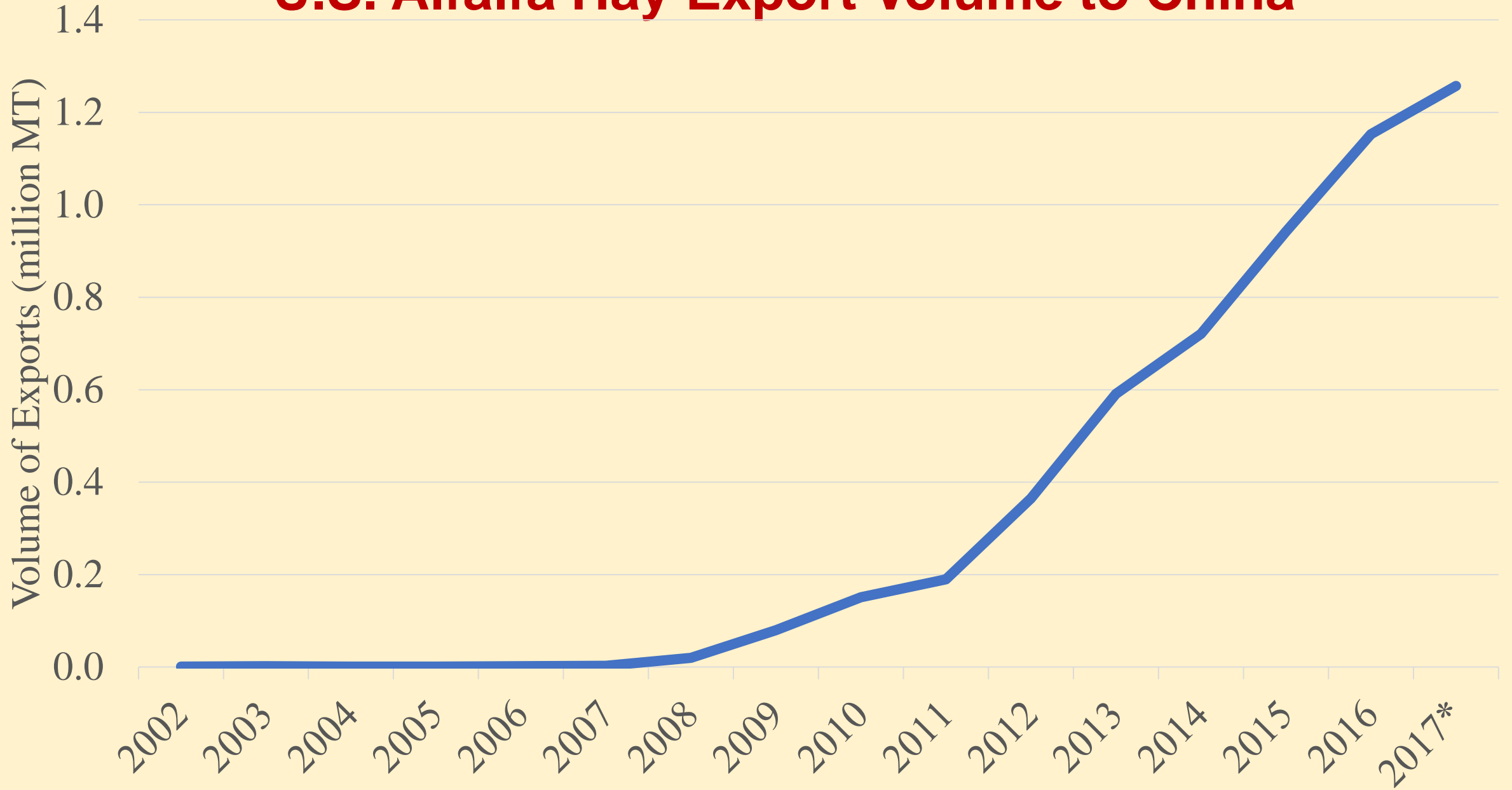
Index of Wealth and Dairy Consumption in China



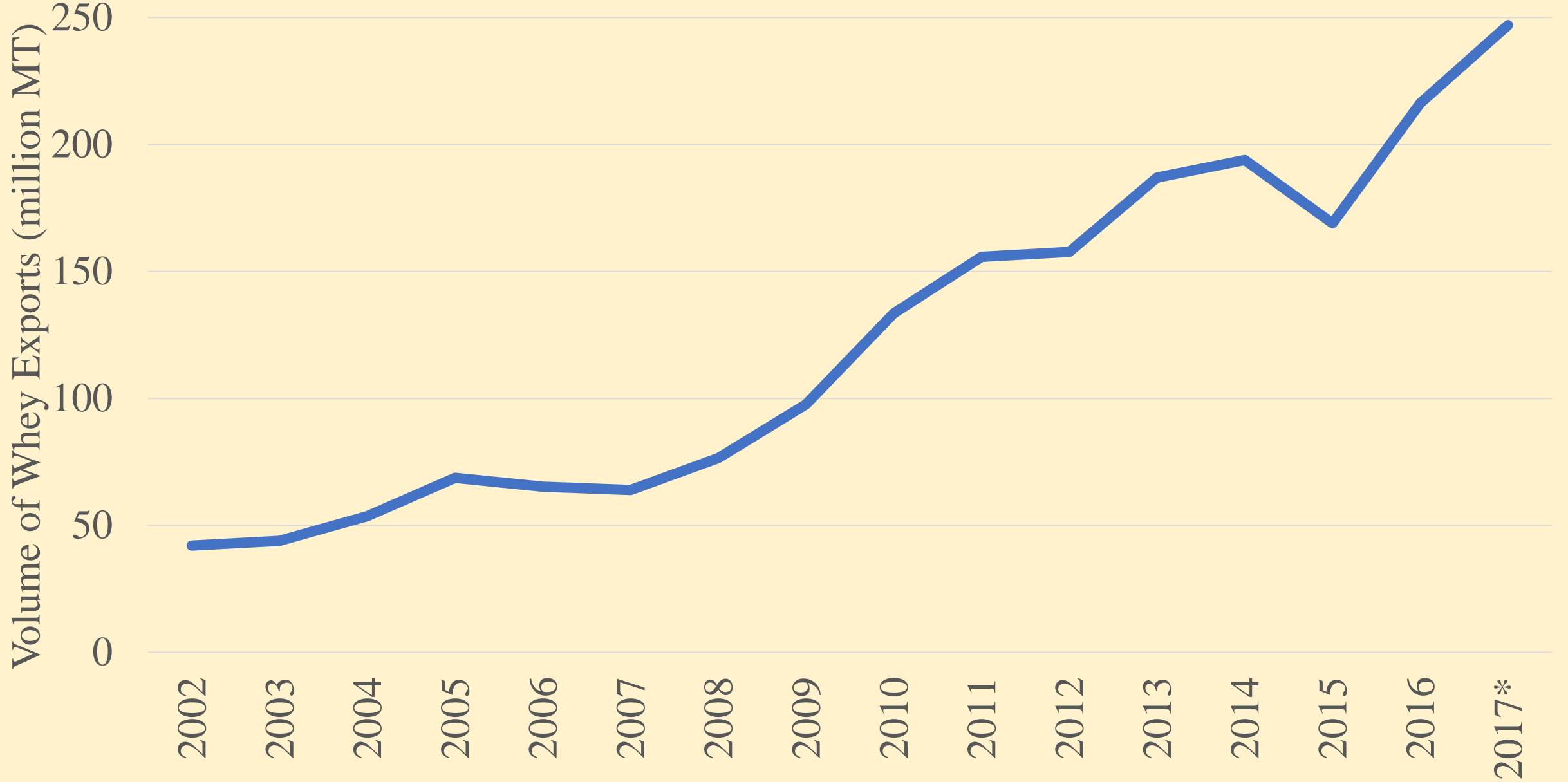
Dairy Cow Numbers in China



U.S. Alfalfa Hay Export Volume to China



U.S. Whey Product Export Volume to China



Trade Policy Also Matters

- Remember we can export hay directly or export hay in the form of milk. Both increase the demand for Western forage.
- To take advantage of growth in foreign markets U.S. exporters must have access to those markets.
- This means low tariffs or other access agreements.
- For example, consider the Korean-U.S. Free Trade Agreement.
- Implementation of KORUS FTA began in 2012.

KORUS Trade Terms for Forage and Dairy Products

Hay Product	Base Rate	FTA Terms
Alfalfa meal and pellets	10%	Duty free year 5 (Jan 1, 2017)
Alfalfa bales	18%	Duty free year 5 (Jan 1, 2017)
Fodder, other	100.5%	Straight line decline to duty free at year 15
Dry milk powder	176%	Quotas increased 3% annually
Whey products	49.5%	Straight line decline to duty free at year 10
Butter fat	89%	Straight line decline to duty free at year 10
Cheese	36%	Straight line decline to duty free at year 15

Summary and Conclusions

- Western forage crop production, especially in California, competes with high valued crops for land, water and management resources. What is the **expected** profitability?
- **Expected** profitability of forage crops is driven by the dairy industry, both in the Western U.S. and in foreign markets.
- Western U.S. dairy producers are driven by the market to increase efficiency of herd through improved genetics and farm management practices, which places challenges on hay relative to substitute feed ingredients.
- Growth in foreign export markets are influenced by changes in demand for dairy products, changes in foreign agricultural policy and changes in terms of trade with partners.

THANK YOU

**University of California
Agricultural Issues Center
www.aic.ucdavis.edu**

University of California Agriculture and Natural Resources



University of
California
Agricultural Issues
Center