

What is the Future of Alfalfa in a World of High Costs, High-Value Crops, and Globalization?

Steve Blank

Agricultural and Resource Economics Department

University of California, Davis

To forecast the future we first
need to understand the past
and present.

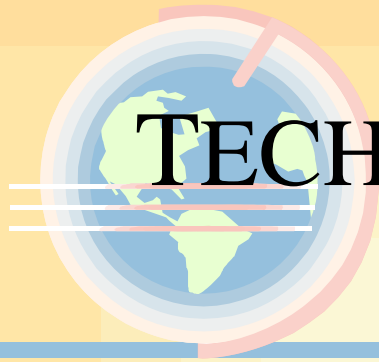
So, what is happening in
American agriculture?

Table 1. Census of Agriculture Trends in the United States

	Land in farms (<i>Million ac</i>)	Farms (<i>1,000s</i>)	Full-time farms (<i>1,000s</i>)	Farms of 1,000 acres or more (<i>number</i>)	Average farm size (<i>ac/farm</i>)	Vegetable acreage (<i>Million ac</i>)	Orchard acreage (<i>Million ac</i>)
1959	1,123.5	3,710.5	2,046.7	136,427	303	3.491	4.120
1964	1,110.2	3,157.9	1,695.7	145,292	352	3.334	4.251
1969	1,062.9	2,730.3	1,248.0	150,946	389	3.352	4.234
1974	1,017.0	2,314.0	1,302.6	154,937	439	3.124	4.190
1978	1,014.8	2,257.8	1,054.5	161,101	449	3.534	4.464
1982	986.8	2,241.0	1,053.6	161,972	440	3.331	4.751
1987	964.5	2,087.8	972.2	168,864	462	3.468	4.560
1992	945.5	1,925.3	932.5	172,912	491	3.782	4.771
1997	931.8	1,911.9	869.7	176,080	487	3.773	5.158
2002	938.3	2,129.0	962.2	176,990	441	3.433	5.330
2007	922.1	2,204.8	777.7	173,049	418	4.357	5.039

Table 2. Census, Alfalfa Trends in California and the United States

	CA Land in farms (<i>Million ac</i>)	CA Farms (<i>number</i>)	CA Land in alfalfa (<i>1,000 ac</i>)	CA Farms in alfalfa (<i>number</i>)	U.S. Land in alfalfa (<i>Million ac</i>)	U.S. Farms in alfalfa (<i>number</i>)
2002	27.6	79,631	1,176.0	4,391	22.6	344,197
2007	25.4	81,033	987.0	3,587	20.2	290,726



TECHNOLOGY *is the* CATALYST

Advances in . . .

- * **production** create the need for global markets
- * **storage** expand the amount of time before spoilage
- * **transportation** expand the geographic size of a market



GLOBALIZATION *and* COMMODITY MARKET PRICES

Globalization of markets affects the profitability of commodity production, which affects the composition of those markets



COMPETITIVE FORCES THAT WILL SHAPE AGRICULTURE

1. Ag profits are being squeezed:

*Commodity price is **global***

*Production cost is **local***




COMPETITIVE FORCES THAT WILL SHAPE AGRICULTURE

2. Local costs are rising:

Land, labor, inputs

3. World commodity prices have been relatively stable or falling, ignoring seasonality, until recent years



AGRICULTURE'S PROFITABILITY

- * Gross profit margin has been 2 to 3% on average over the last 30 years.
- * 90% of U.S. farm operators households' income comes from off-farm sources.



AMERICAN AGRICULTURE...

... is “moving up the Farming Food Chain”

... thus becoming **more risky** and needing more \$/acre for higher value crops.

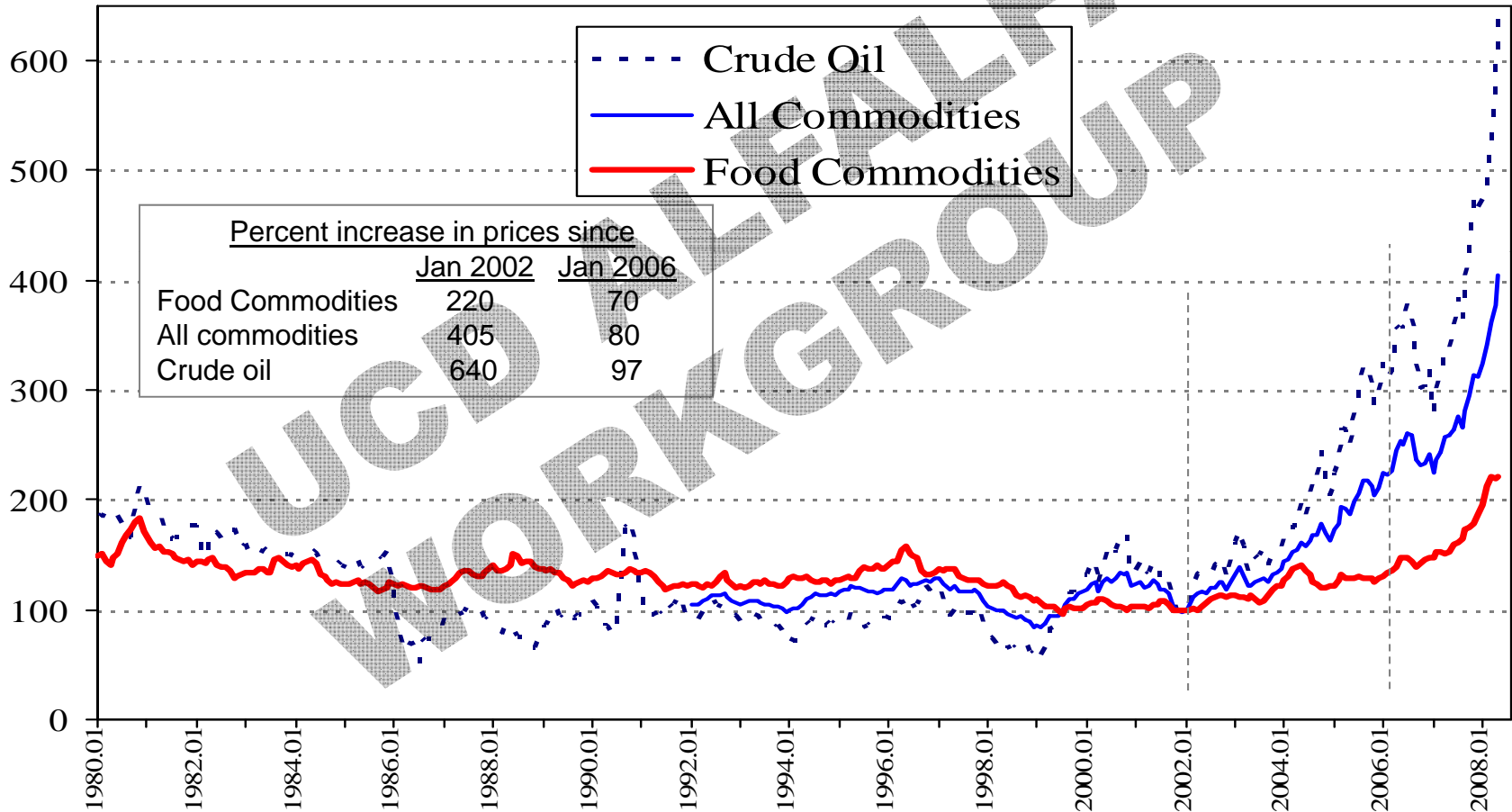


The FARMING FOOD CHAIN

<i>Development stage</i>	<i>Crop type</i>	<i>Investment asset fixity</i>
4th	High-value perennial	Very high, highly fixed
3rd	High-value annual	High, inflexible
2nd	Low-value perennial	Moderate, flexible
1st	Low-value annual	Low, very flexible

Prices of many commodities have spiked since 2002: Crude oil up 640% over 2002-2008

Index: January 2002 = 100

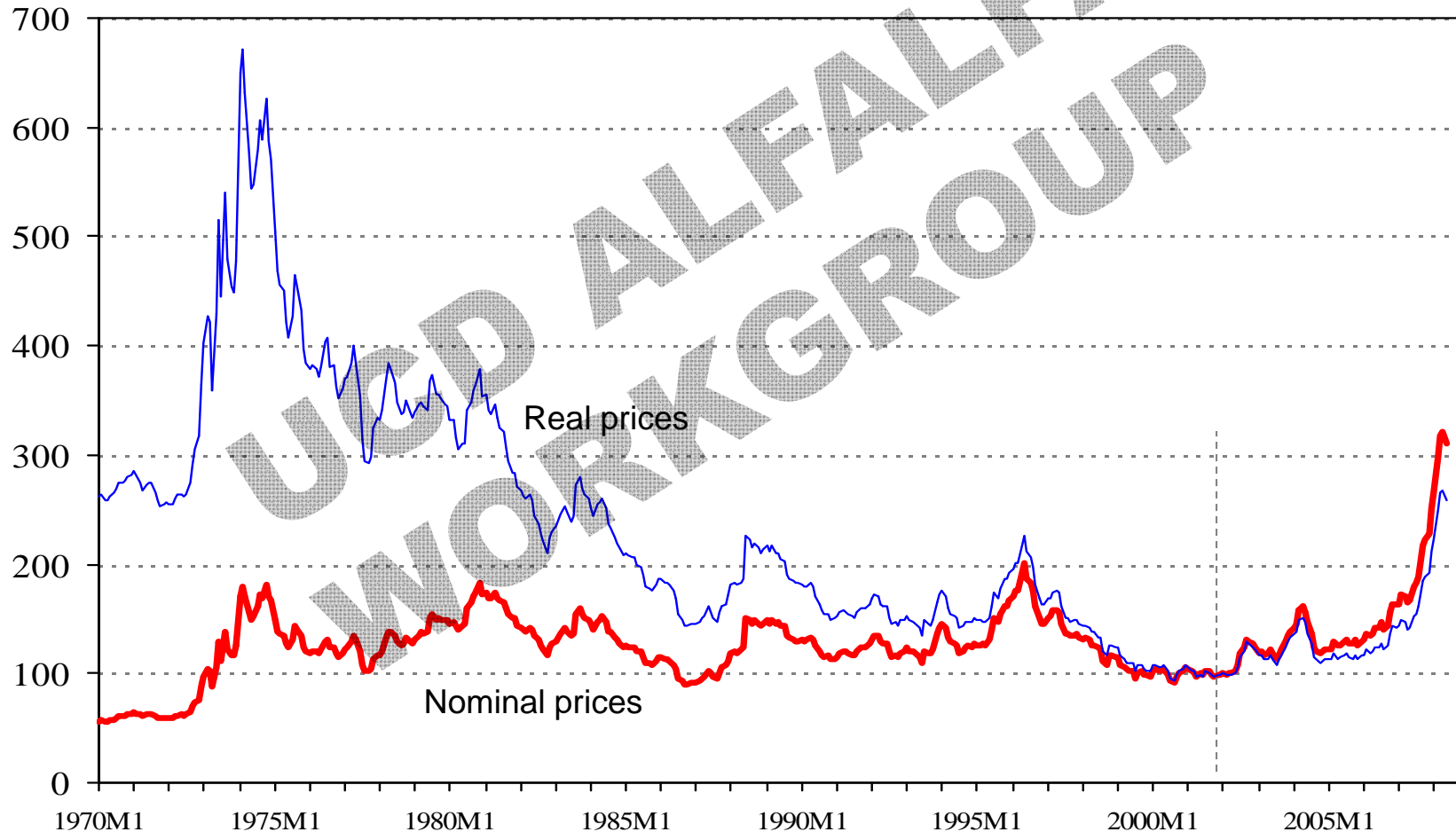


1/ Food Commodities include grains, vegetable oils, meats, sugar, and other basic food commodities.

Crop price increases: real vs. nominal

Average of 4 crops (wheat, soybeans, corn & rice)

Index: January 2002 = 100



Some contributing factors

- Higher energy prices
- Weaker U.S. dollar
- Increasing foreign exchange reserves held by importers
- Adverse weather reduced crop production
- Role of hedge funds, index funds, & sovereign wealth funds:
 - (affect demand and/or volatility?)

What do these changes in
agricultural markets mean to
alfalfa producers?

Income risks are increasing

So, the profit squeeze is pushing producers to change the composition of their crop “portfolio.”

This means alfalfa producers will continue to leave.

The profitability of alfalfa is determined mostly by the economic performance of the industry which consumes most hay: local dairy producers.

The linkage between hay profits and the dairy market may make alfalfa **less risky** than many other crops.

Supply & Demand

- If alfalfa acreage & yields don't swing widely as farms exit the industry, hay prices will generally track milk price trends.
- If hay supply does not swing widely, causing wide hay price swings, demand for hay will be relatively stable.

In conclusion ...

... the future of alfalfa is in the hands of farmers that can produce and harvest hay cost-efficiently.