



Regulatory and Subsidy Responses to Variability in North American Agriculture

**Prepared for the Conference on
Growing Forward in a Volatile Environment
January 11-13, 2012
Ottawa, Ontario**

Daniel A. Sumner

**University of California Agricultural Issues Center and
Department of Agricultural and Resource Economics, UC Davis**

Overview of the presentation

- 1. Some useful principles about variability and the role of government in agriculture**
- 2. Trends in variability of production, prices, and revenue for major commodities**
- 3. Current U.S. farm “safety net” programs**
- 4. Trends in overall costs and participation rates for insurance in the U.S.**
- 5. Recent U.S. policy proposals to deal with variability**
- 6. Final Remarks**

Variability is inherent in agriculture

- **Certain principles are well known and long studied**
 - **Farm production varies with weather which is hard to forecast much in advance**
 - **Demand facing a production region for a particular commodity varies with incomes and exchange rates of other economic drivers, especially supply conditions for substitutable commodities from other regions**
 - **Prices vary with these underlying shifters, with the amount of price variability dependent on the availability of substitutes for buyers (for example, from production in other regions) and flexibility in production over the relevant horizon**
- **And, remember that revenue variability is lower than price variability when price and production are negatively correlated**

Economic variability from outside of agriculture

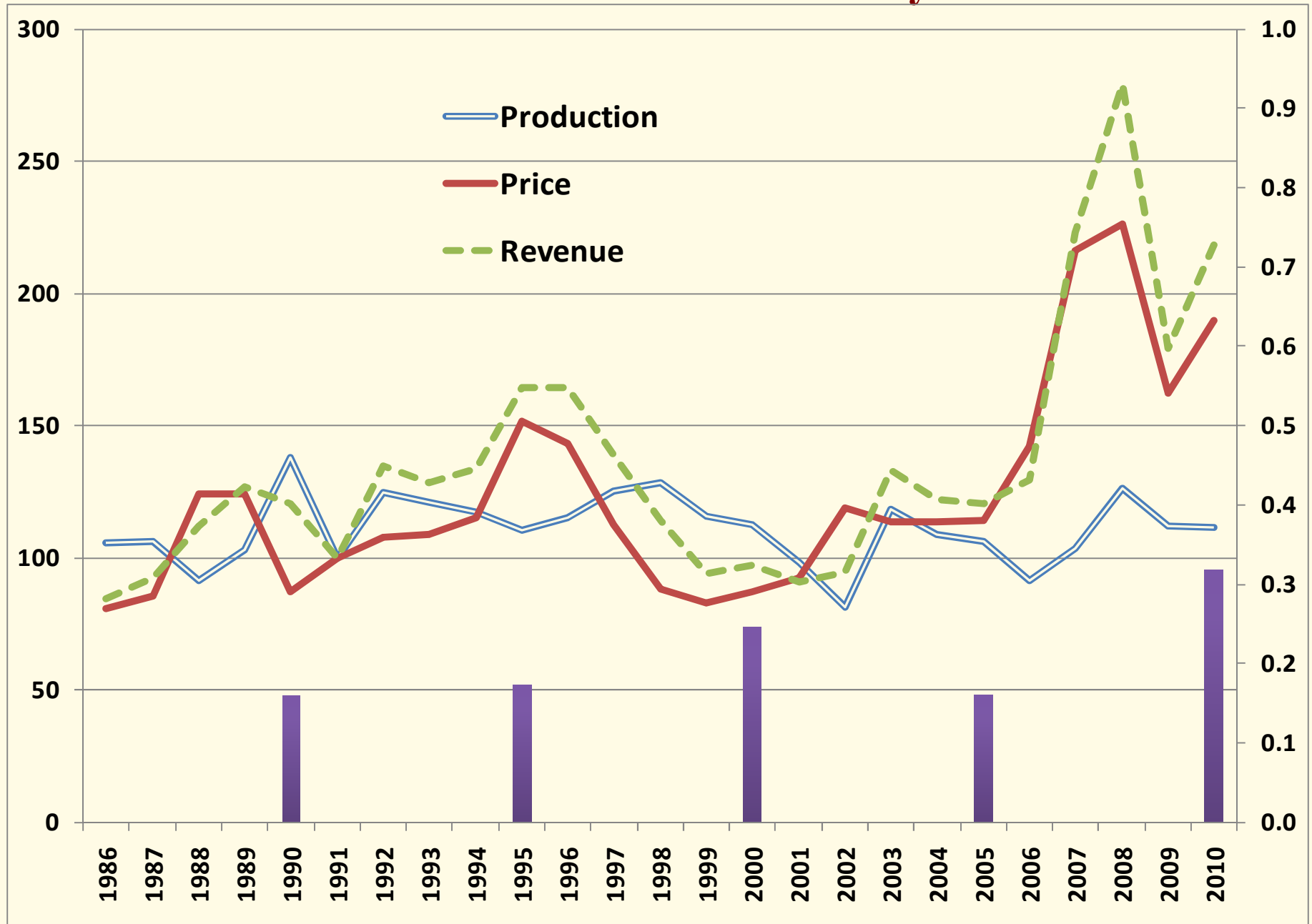
For example,

- **Farm input prices are affected by non-farm economic conditions such as the price of fossil fuels or other raw materials**
- **Non-farm recessions can lower the demand for farm commodities, but for most food commodities linkage is weak**
- **Variations in exchange rates affect demand for tradable commodities, so that a weak dollar relative to currencies of competitors and customers increases demand and therefore prices**

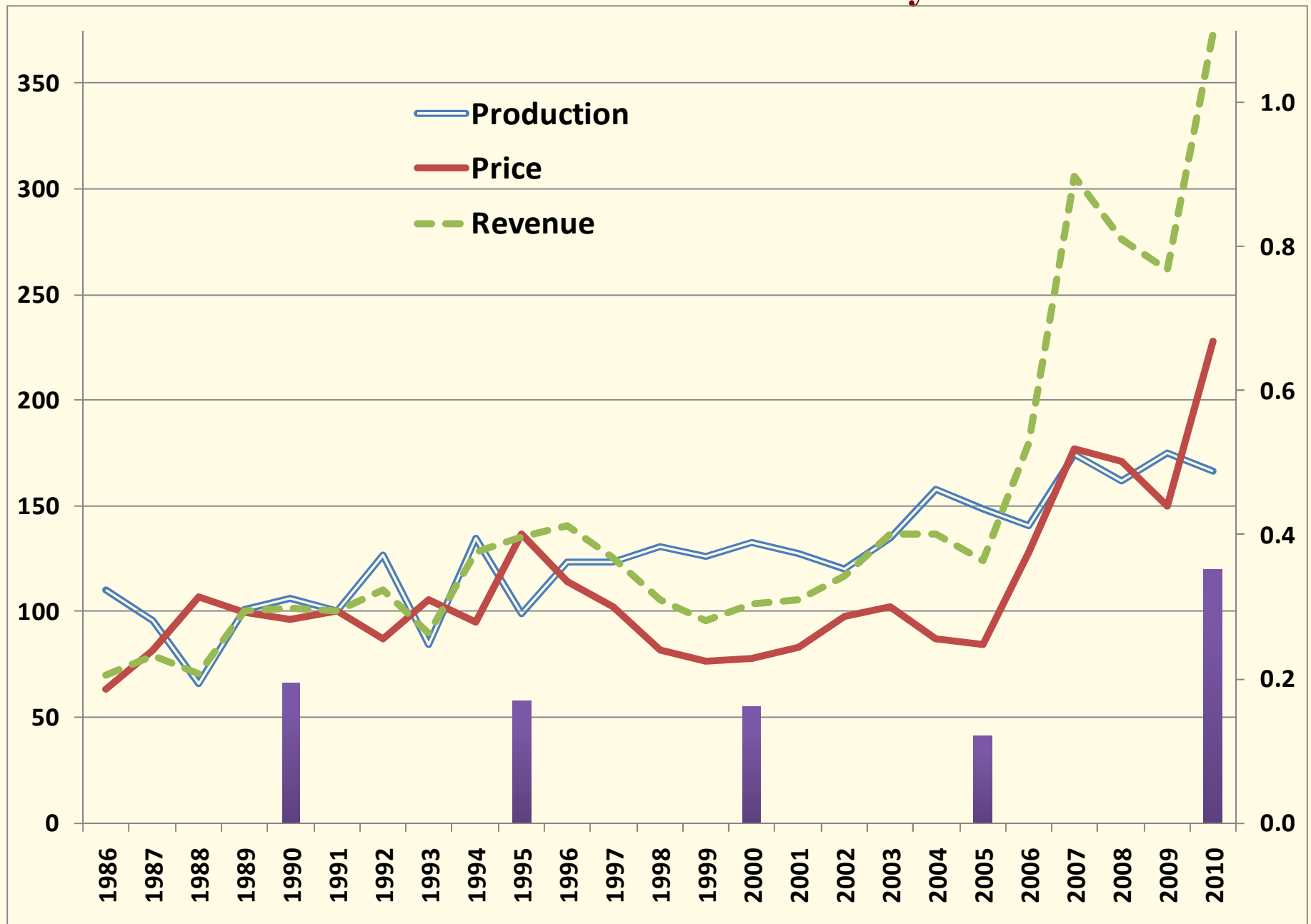
Government attempts to manage agricultural variability have had limited success and troublesome side-effects

- **Managing variability has often meant simply raising the low prices not smoothing the highs and the lows**
 - **That leads to side effects such as high budget costs, excessive stocks, supply management, reduced innovation and competitiveness, curtailed exports or other concerns**
 - **Smoothing low prices or revenues without changing underlying problems can create big one-time farm losses (as in the Australian wool fiasco) or massive bailout costs (as in the U.S. tobacco quota buyout)**
- **But, the demand for the government to “do something” when revenues decline can be politically irresistible**

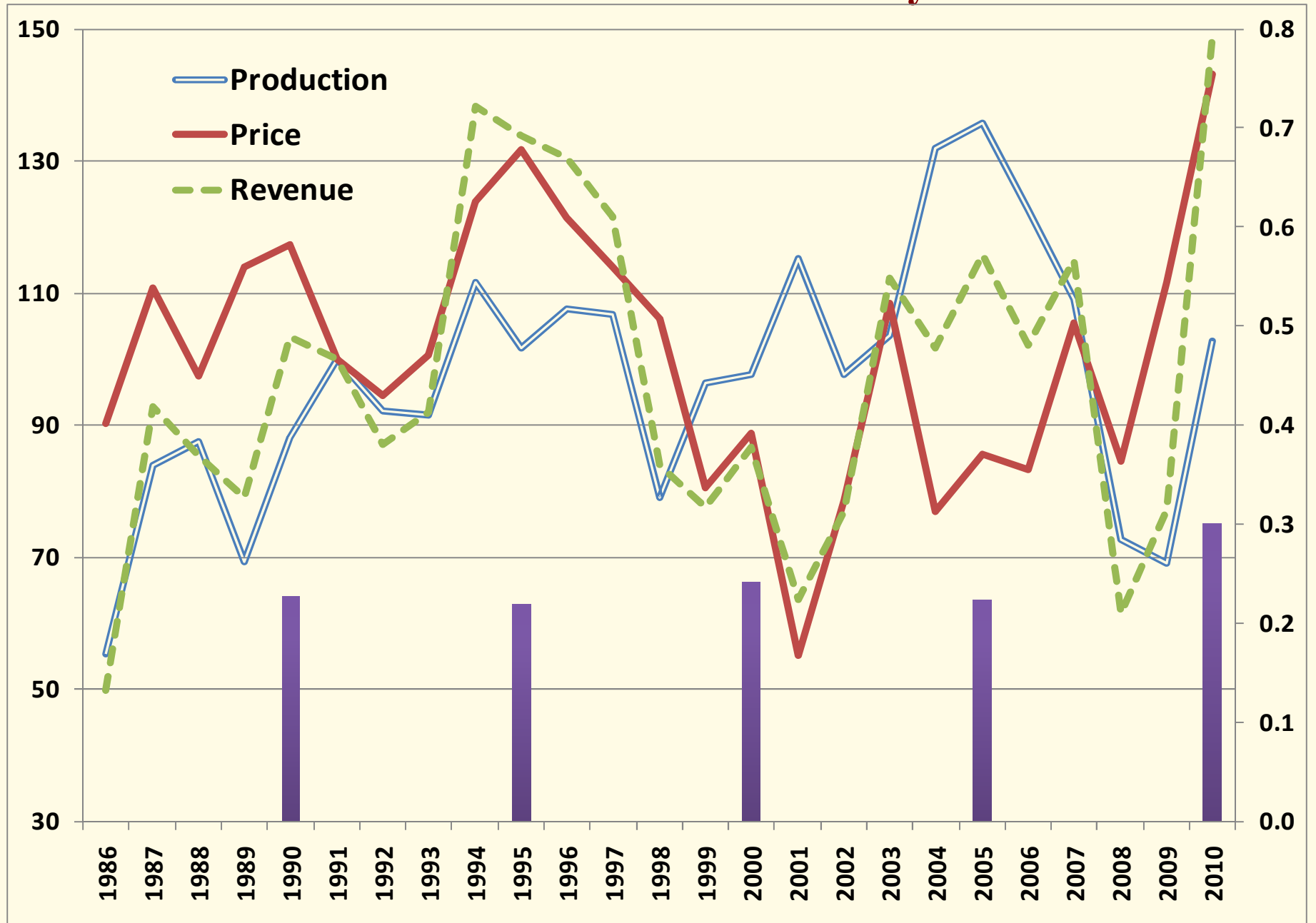
Index of U.S. wheat production, price and revenue (1991=100) with coefficient of variation for revenue at 5 year intervals



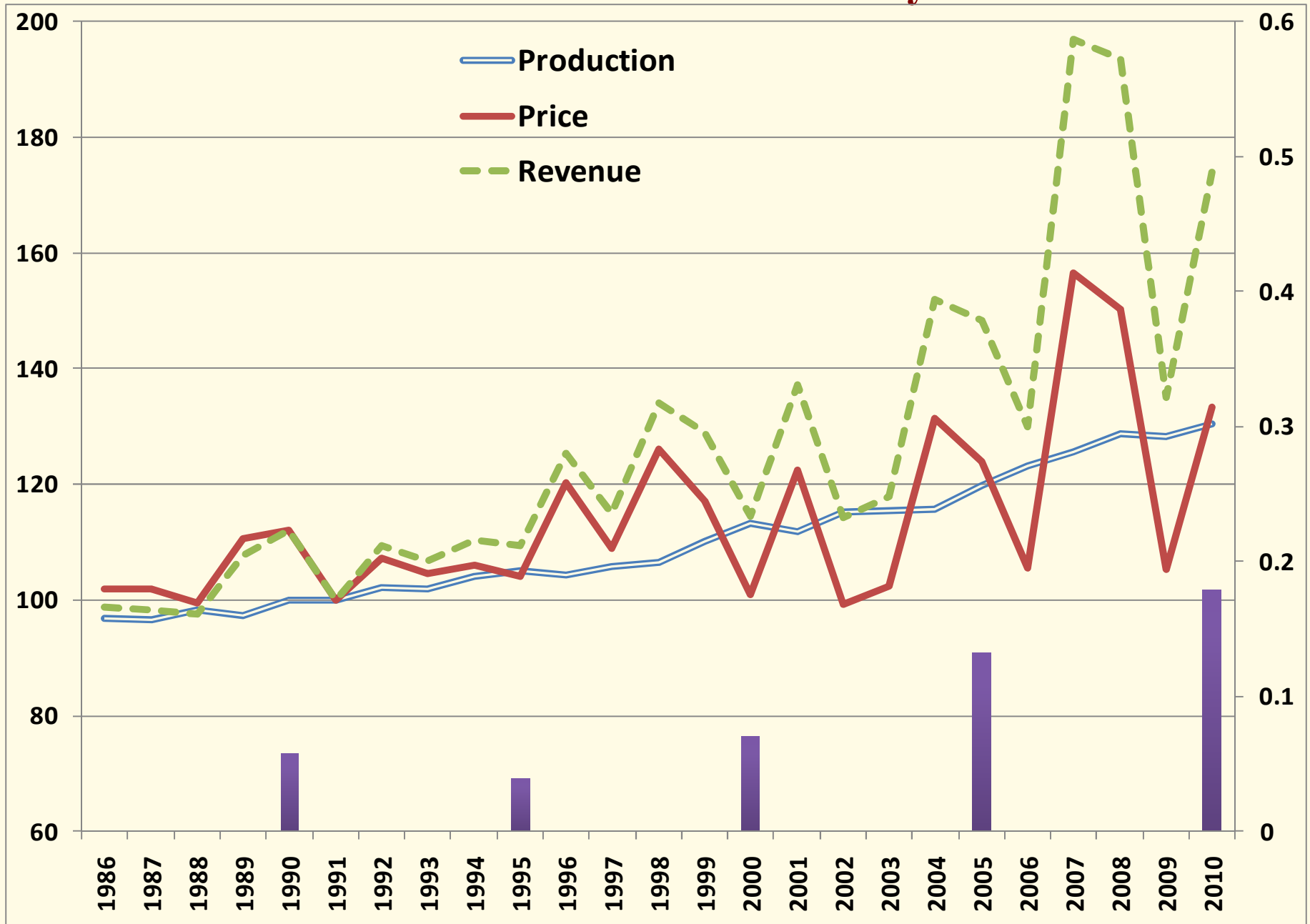
Index of U.S. corn production, price and revenue (1991=100) with coefficient of variation for revenue at 5 year intervals



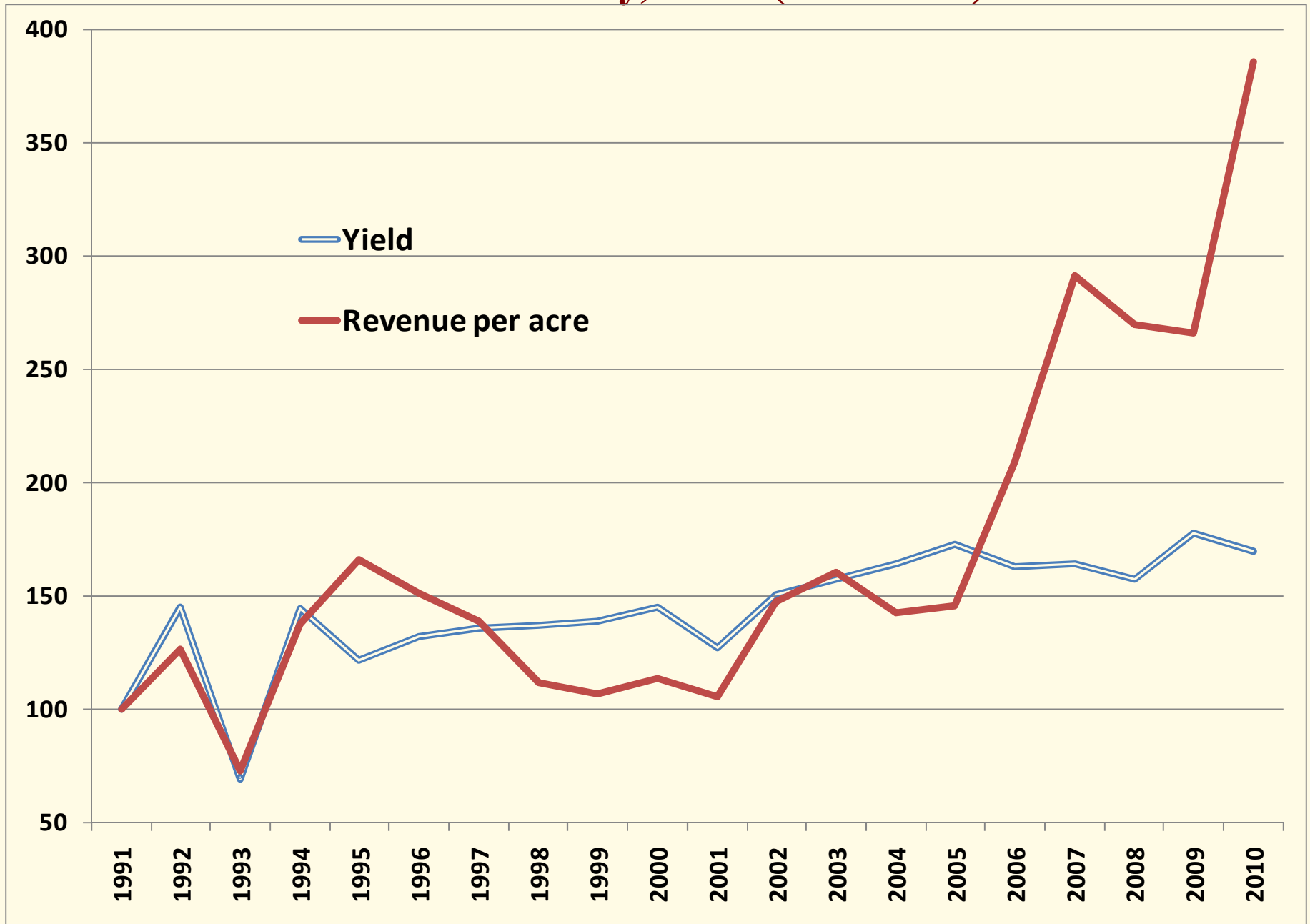
Index of U.S. cotton production, price and revenue (1991=100) with coefficient of variation for revenue at 5 year intervals



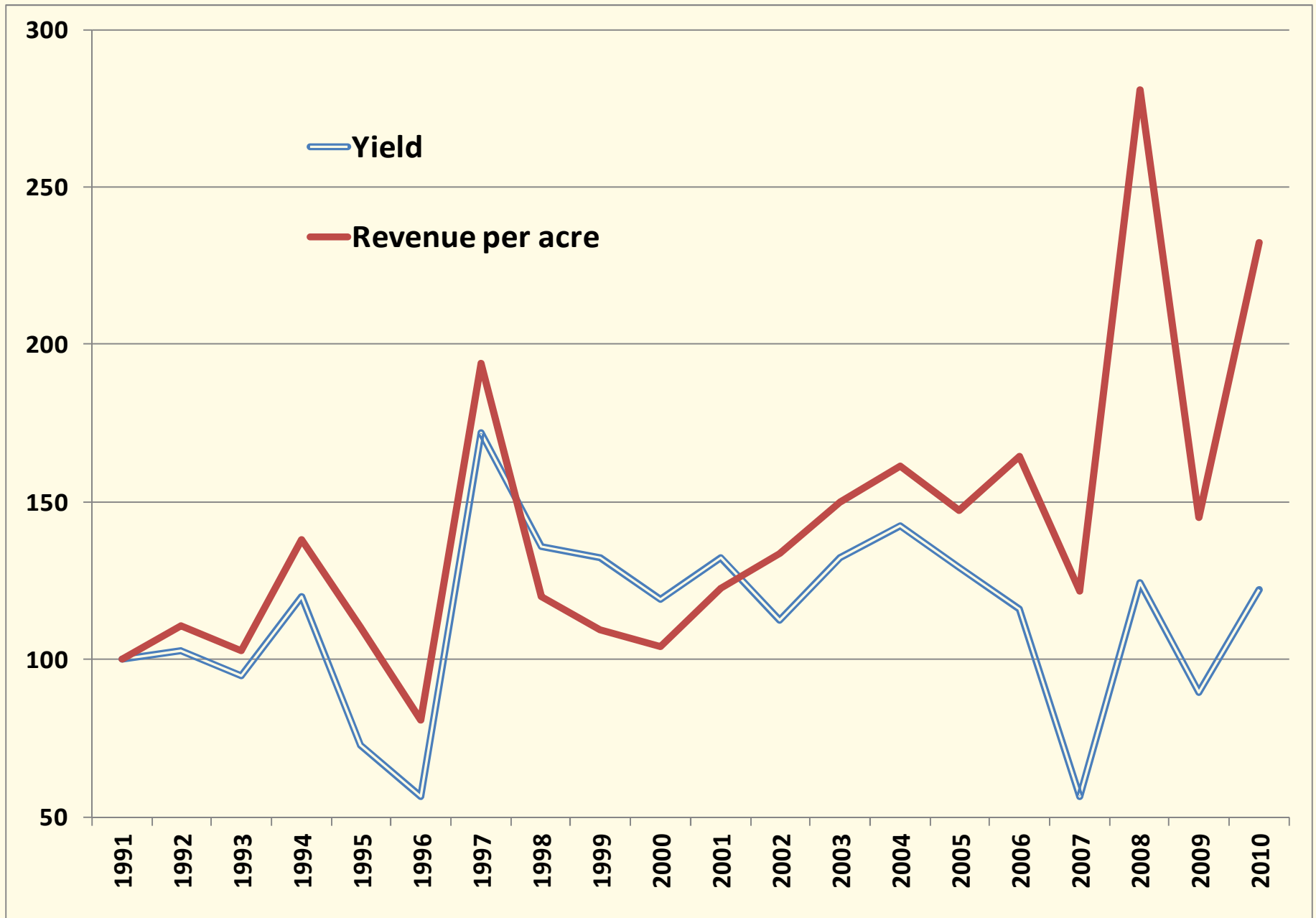
Index of U.S. milk production, price and revenue (1991=100) with coefficient of variation for revenue at 5 year intervals



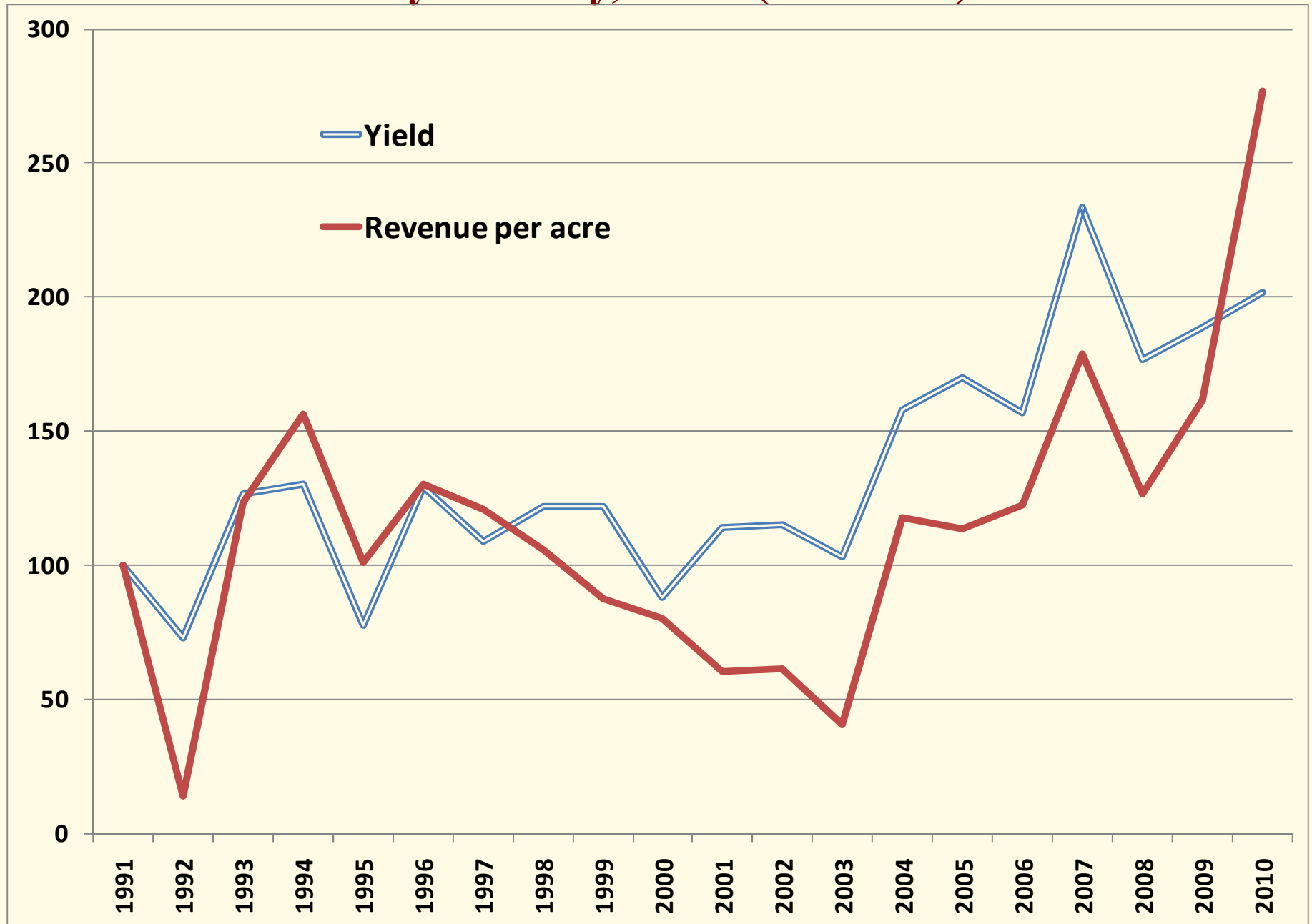
Index of yield and revenue per acre for corn in Kossuth County, Iowa (1991=100)



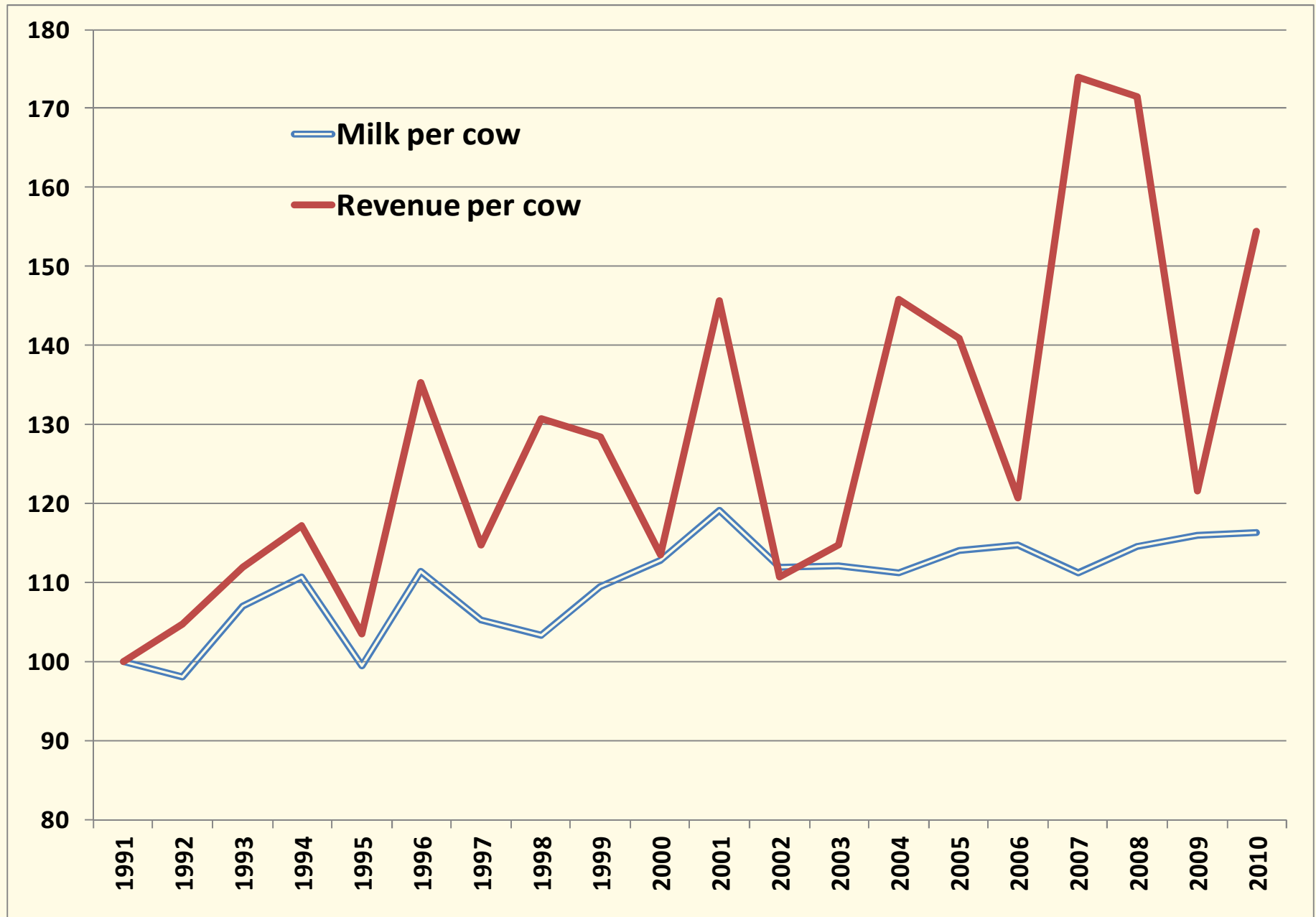
Index of yield and revenue per acre for wheat in Sumner County, Kansas (1991=100)



Index of yield and revenue per acre for cotton in Floyd County, Texas (1991=100)



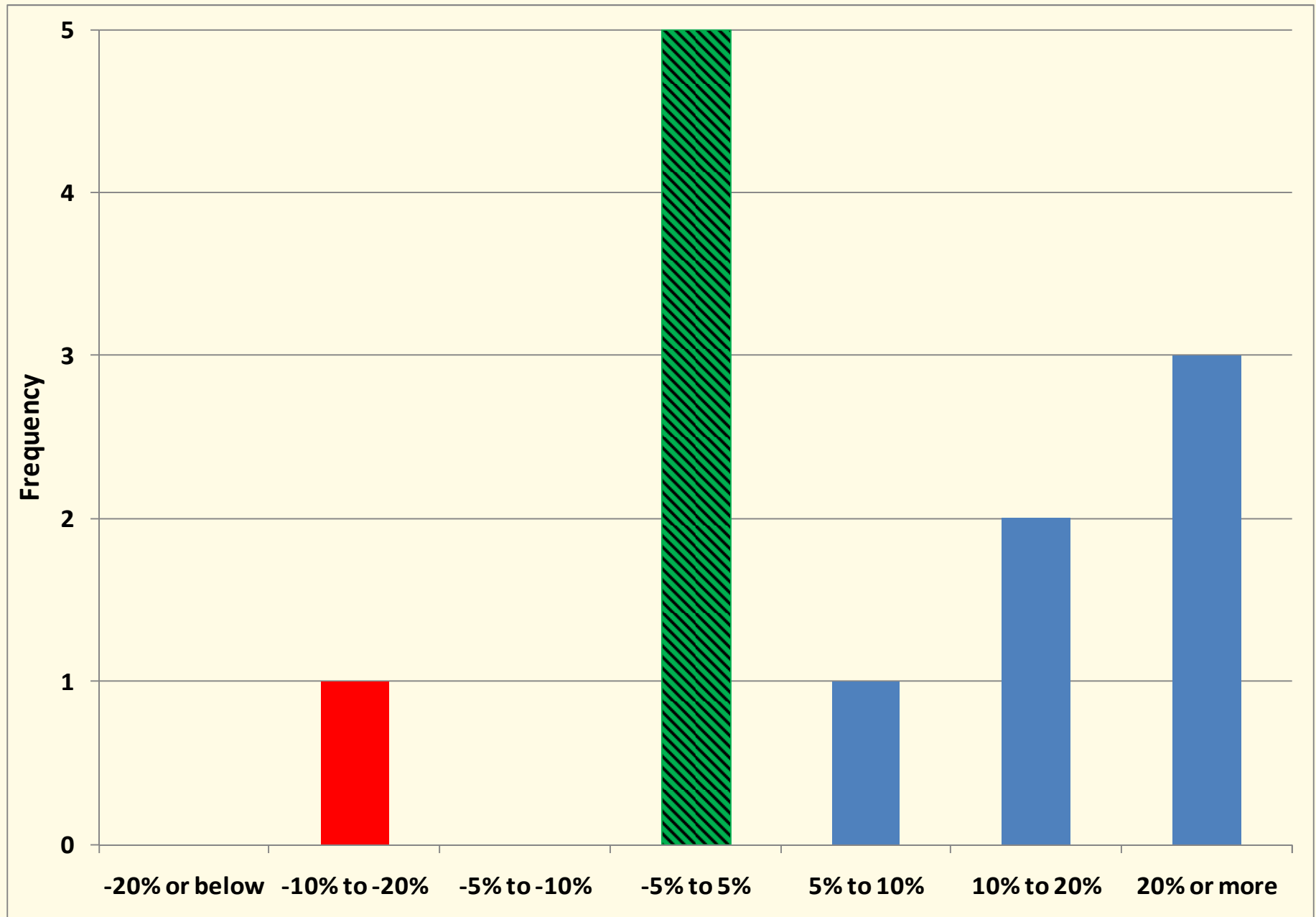
Index of milk and revenue per cow in Tulare County, California (1991=100)



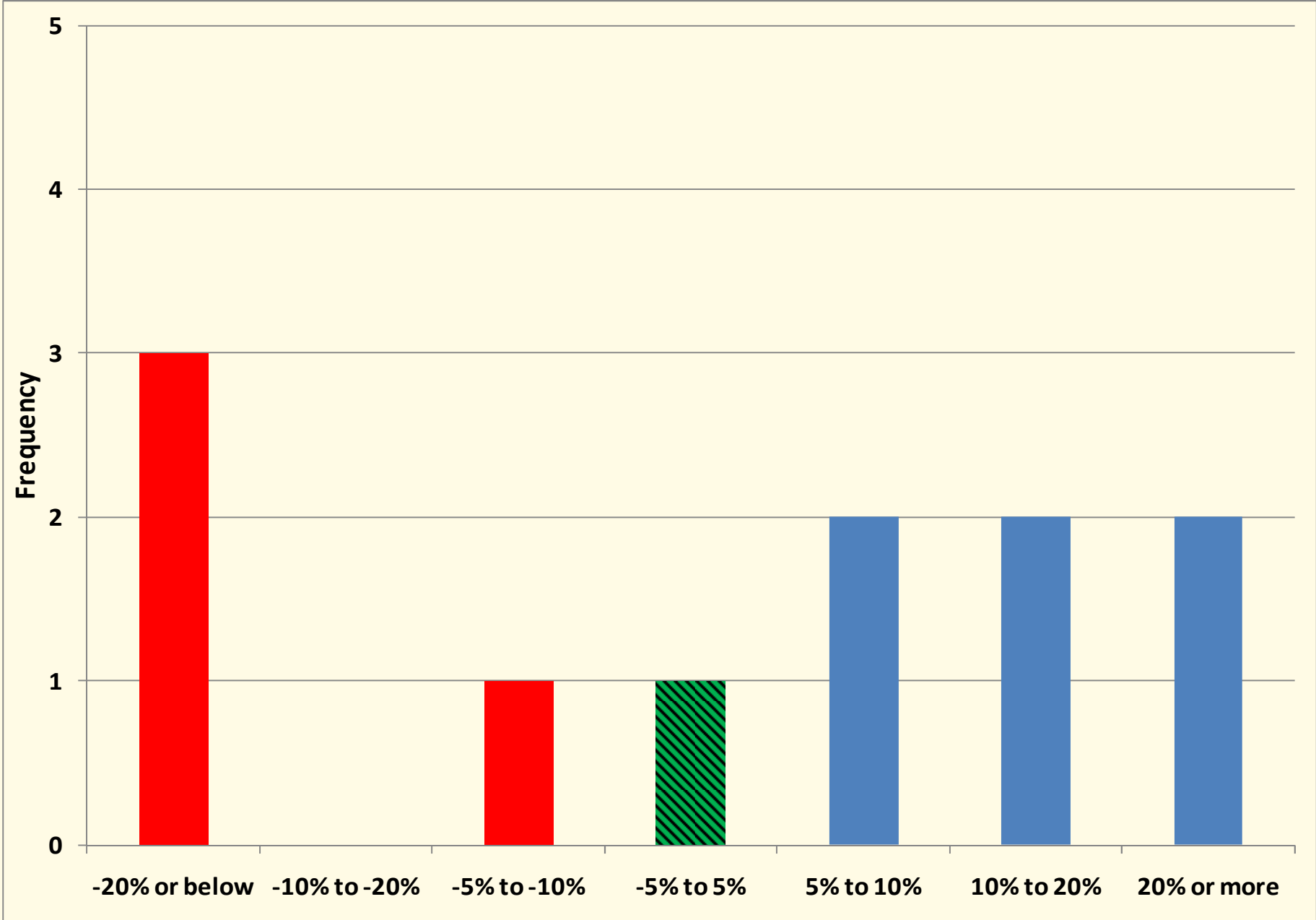
Agricultural price variations are hard to predict

- **Growers may be naturally drawn to forward pricing either through contracts or organized markets**
- **Of course, with production also variable, fixing prices can cause risks in revenue**
- **But, economic forecasting is part of any business with long-term investments and so there are many attempts to provide some economic projections**
- **Government agencies, intergovernmental groups and universities all contribute projections**
- **These demonstrate convincingly that competent analysts are often wrong**

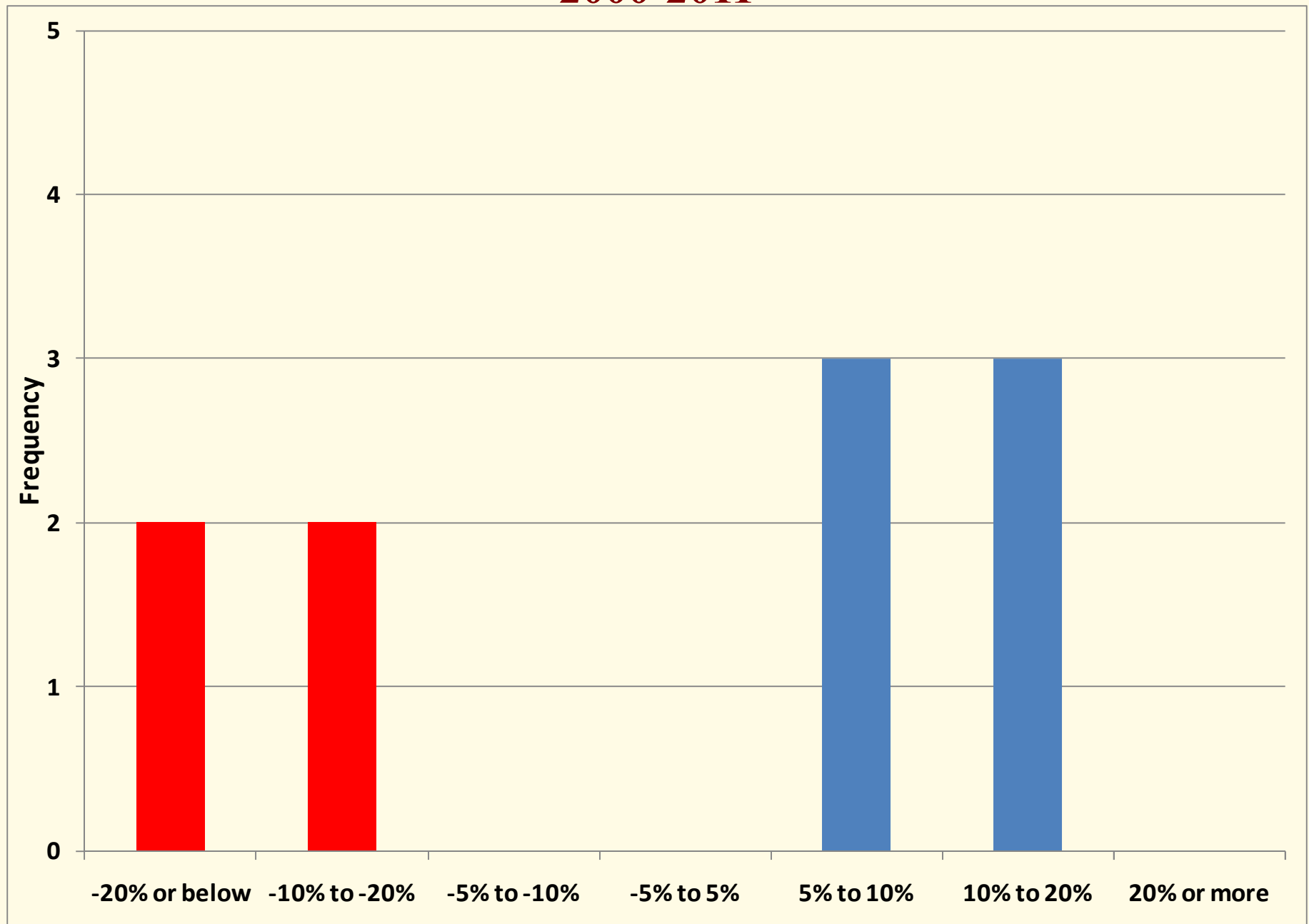
FAPRI wheat current year price forecasts – realized U.S. prices, 2000-2011



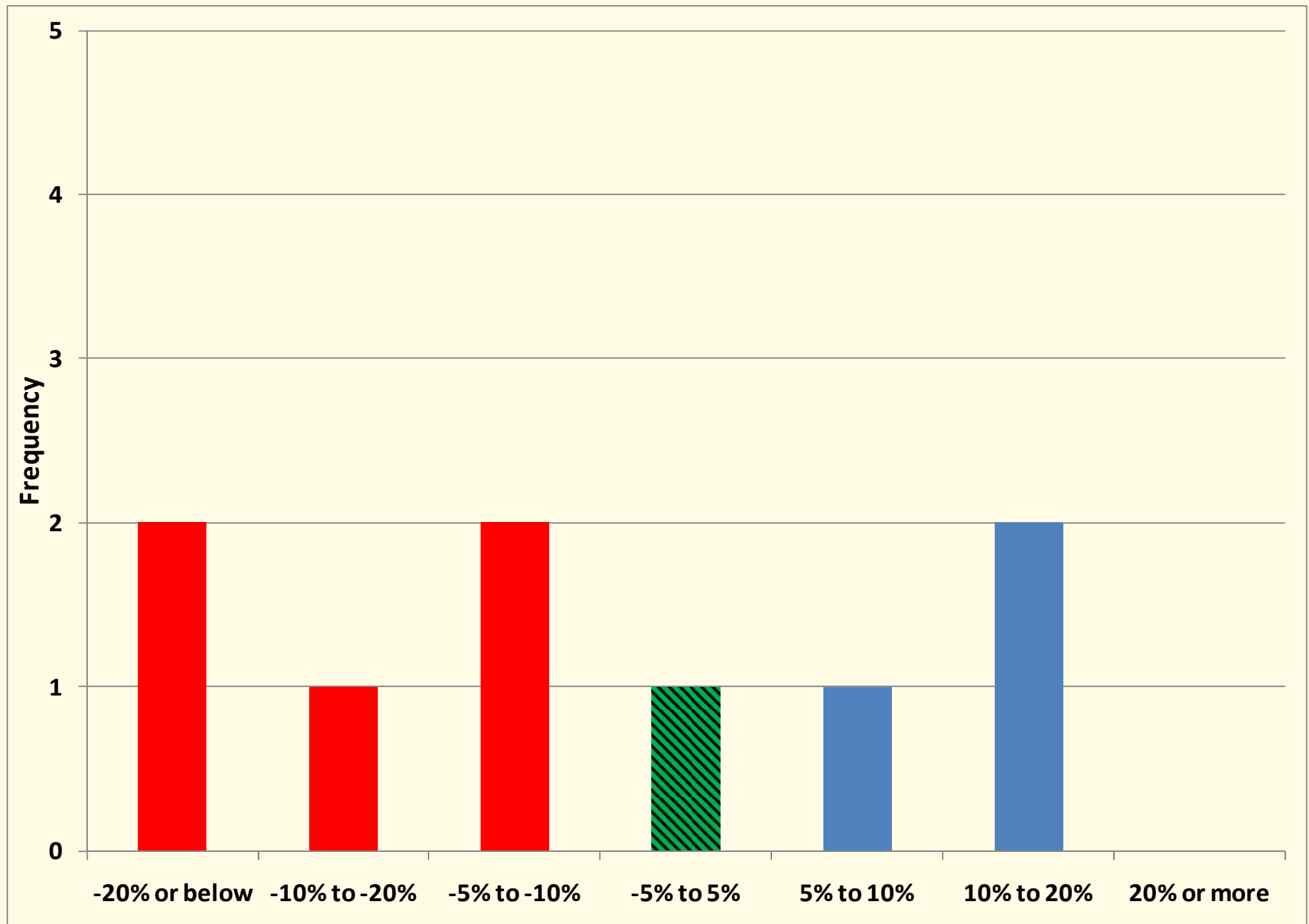
FAPRI wheat price one year ahead – realized U.S. prices, 2000-2011



FAPRI wheat price two-year ahead forecasts – realized U.S. prices, 2000-2011



FAPRI wheat price three year ahead forecasts – realized U.S. prices, 2000-2011



Main U.S. farm subsidies

**Projected outlays of current programs
FY2012 - FY2021: \$15.2 billion/year**

1. Commodity programs

- **Government payments for eligible commodities**

2. Risk management

- **Subsidized insurance for yield or revenue shortfalls**

3. Ad hoc disaster programs regularly compensate for revenue shortfalls of specific industries

- **Authorization**

4. Environmental subsidies pay farms for land idling and green practices, with the result of higher farm revenue

U.S. commodity programs

Commodity programs	Projected avg. outlays FY2012-FY2021: \$5.7 billion/yr
Direct payments (DP)	\$4.9 billion/yr
Counter-cyclical payments (CCPs)	\$0.2 billion/yr
Marketing Assistance Loan benefits	\$0.1 billion/yr
Average Crop Revenue Election (ACRE)	\$0.4 billion/yr
Milk Income Loss Program (MILC)	\$0.1 billion/yr

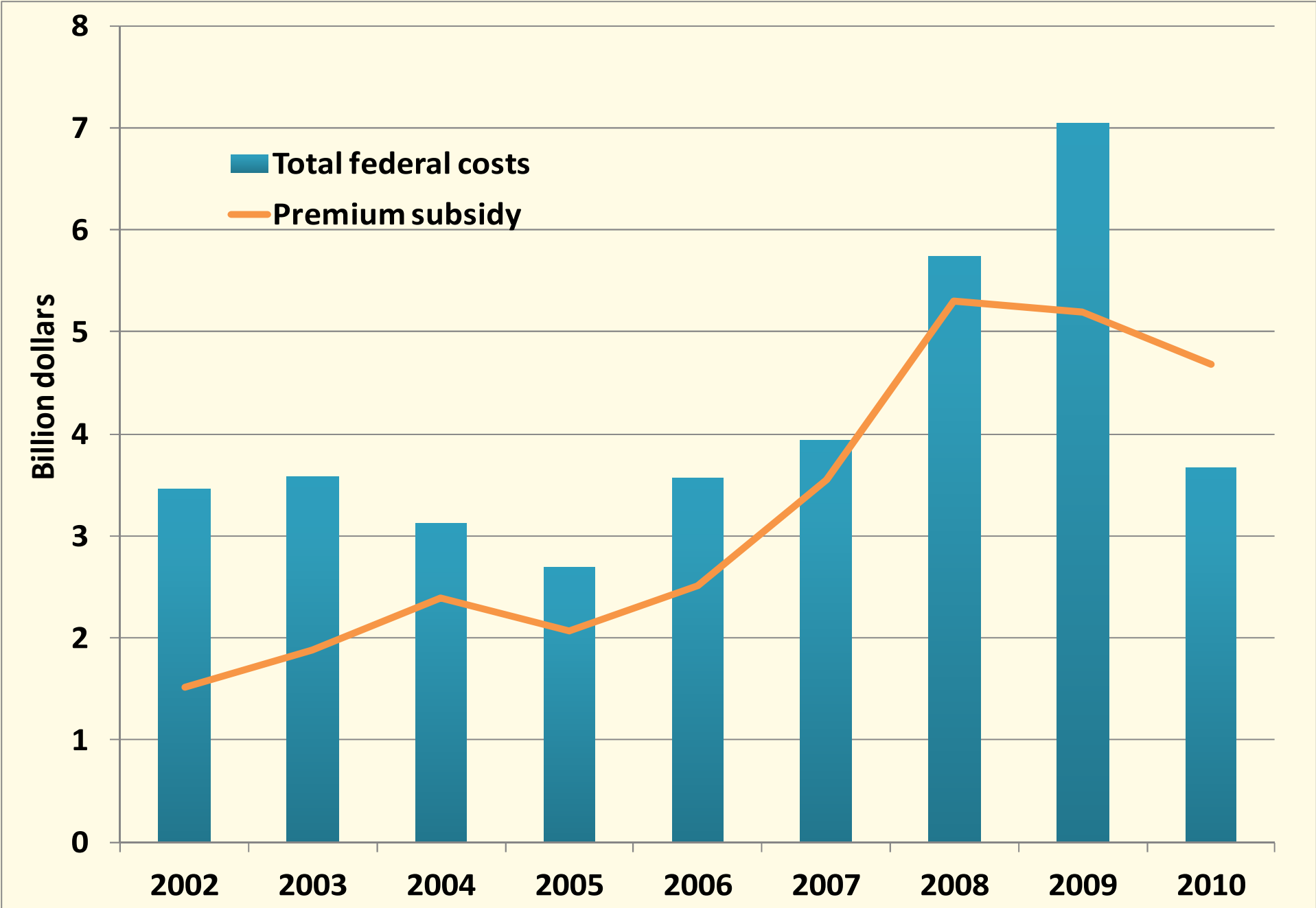
None of the current commodity programs are expected to smooth revenue much

- **Direct payments provide steady income, connect only loosely to economic conditions for commodities**
- **Counter-cyclical price triggers are far below recent market prices, would not pay much, even if prices drop somewhat**
- **Loan rates are lower than counter-cyclical triggers**
- **Expected ACRE payments are low, but there is a potential for large payments with modest price drops**
- **MILC price floors are unlikely to trigger payments and the milk price support is even lower**

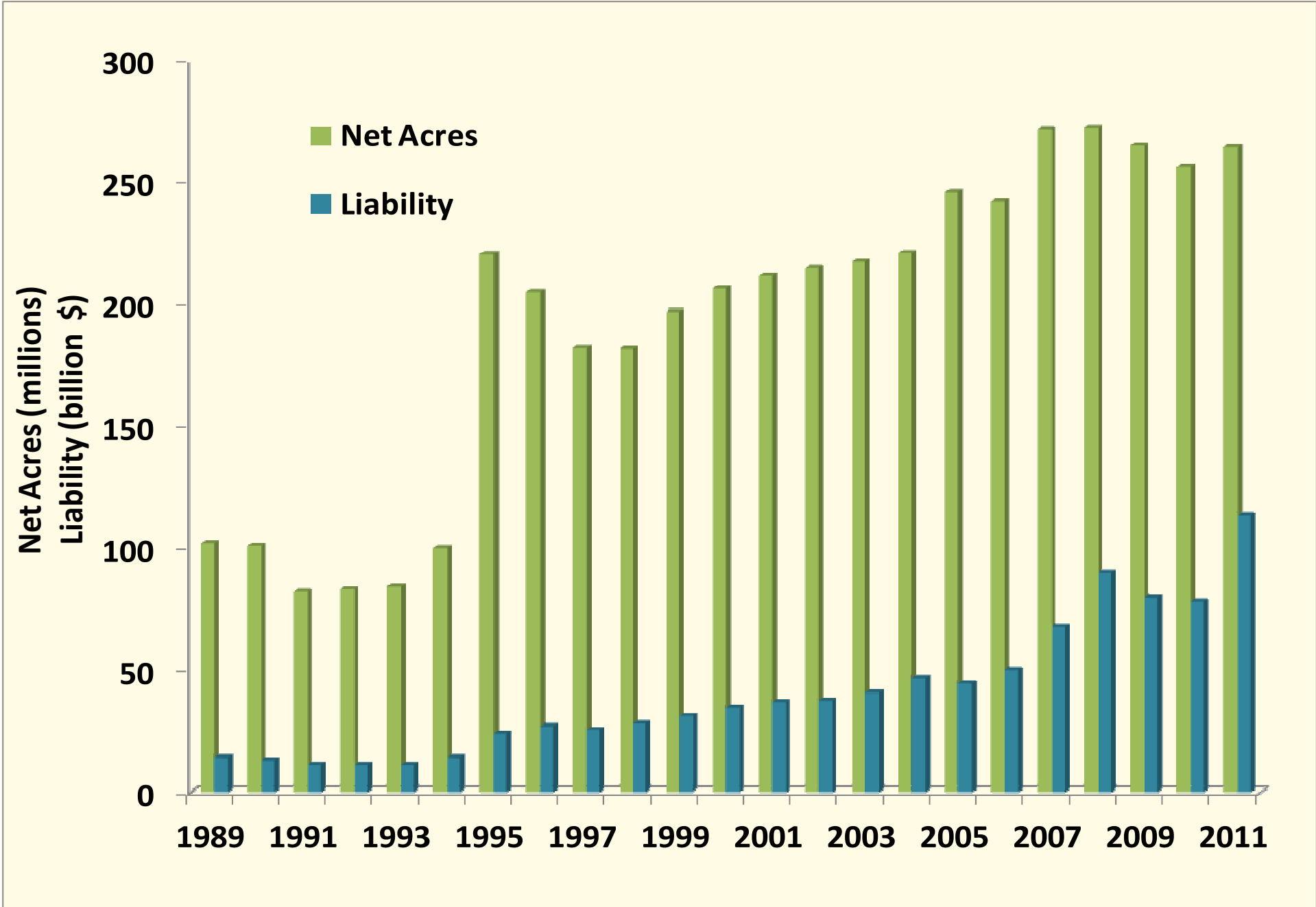
A history of U.S. crop insurance administration

- **Congress authorized the Federal Crop Insurance Corporation (FCIC) in 1938**
- **The Federal Crop Insurance Act of 1980 expanded coverage to many more crops and regions**
- **USDA's Risk Management Agency (RMA) was created in 1996 to operate FCIC**
- **RMA oversees insurance program delivery by 17 private-sector insurance companies in several ways:**
 - **Sets premium rates**
 - **Subsidizes farmer premiums (about 60%) and expenses**
 - **Reinsures insurance companies**

Government cost of federal crop insurance program, FY 2002-10



Program participation, 1989-2011

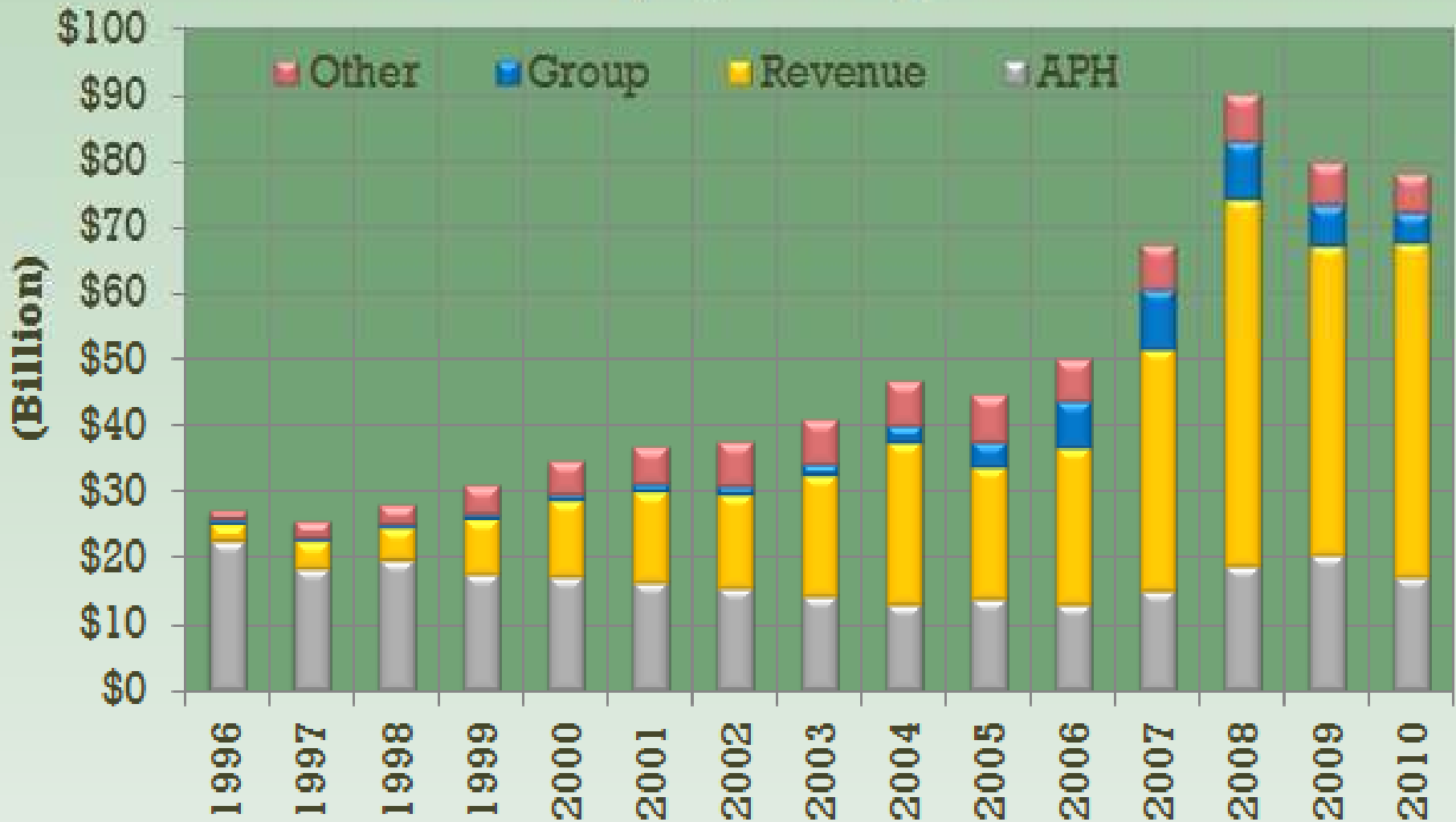


Crop insurance choices have changed

- **Revenue-based policies have become more popular than yield-based policies for staple crops**
- **Farmers are choosing higher coverage levels:**
 - **In 1995, nearly all insured acres were of 65 percent coverage or below**
 - **In 2011, about 75% of insured acres were of 70 percent coverage or above**

Revenue-based insurance a growing component of RMA liability

Liability by Plan Type



As of 9-06-11, William J. Murphy, Administrator, Risk Management Agency

Summary of crop insurance program evolution

- **Since 1989, the number of insured crops has increased from about 50 to over 150, expanding to include crops such as nursery and livestock products.**
- **Insured acreage has increased by 1.5 times.**
- **Liabilities totaled \$113 billion in 2011, over 7 times more than in 1989.**
- **Indemnities have increased from \$1 to \$7 billion.**
- **Since 1989, total premium subsidies have increased by 35 times to \$7 billion in 2011.**

The choice to buy crop insurance is driven by subsidies that cause positive net returns to buying “insurance” with little evidence that growers will pay for the risk management contributions, and clearly they will not enough to buy unsubsidized insurance.

Projected outlays for risk management, not including ad hoc disaster assistance

Crop Insurance	Projected avg. outlays FY2012- FY2021: \$7.8 billion/yr
Federal crop insurance	\$7.7 billion/yr
Noninsured Crop Disaster Assistance Program (NAP)	\$0.1 billion/yr
Disaster Assistance	Avg. annual losses: \$1.7 billion/yr
Supplemental Revenue Assistance Payments Program (SURE) + others	\$1.7 billion/yr

Recent proposals on major U.S. crop subsidies

- **Replace Direct Payments, Counter Cyclical Payments, ACRE Payments and SURE Disaster Payments,**
- **With payments triggered by revenue shortfalls from moving averages that include the record high crop revenues of recent years**
 - **Many variants of revenue triggers are being proposed based on whole farm, area-wide and other concepts**
- **Expand crop insurance coverage and subsidy**
- **Create stand-alone payments for cotton also triggered by drops in revenue**

Recent proposals on U.S. dairy subsidies

- **Replace the little-used price supports, MILC payments, and export subsidies,**
- **With margin-based subsidies triggered by a small difference between milk prices and feed costs**
- **Require periodic supply management (for eligibility for subsidies), whenever milk margins are low**
- **Supply management quotas would be based on recent production and would not be directly marketable**
- **Supply management would be relaxed when margins rose above the legislated trigger and reinstated when margins fall again**

Proposed U.S. Dairy Supply Management

- **The proposal calls for only periodic supply limits to raise low margins, but such programs often see ‘mission creep’**
- **Supply management taxes the vigorous, innovative and young to subsidize those on their way out**
- **Balagtas and Sumner (Amer. J. Ag. Econ. 2011) illustrate how taxing growth shifts returns within the industry**
- **The geographic pattern of support for the program is consistent with these within-industry economic impacts. Congressman Peterson from Minnesota is the driver and urban-constrained California producers add their support.**
- **The other significant winner can be milk producers in Australia and, especially, New Zealand who gain from any reduction in U.S. productivity growth.**

Concluding Remarks

- **Variability is inherent in agriculture and no programs have been devised to change this fact**
- **Growers have markets (futures, options, insurance, forward contracts, share arrangements) in which to shift some forms of variability**
- **Shifting losses to taxpayers is understandably popular among many growers**
- **But, variability remains and the probability that government programs may change is the most important risk faced by some growers**
- **High rate of return on supply management instruments is strong evidence that government-created risk can be substantial**

Thank you.
www.aic.ucdavis.edu

