

Regional Considerations in Use of Model Farms for Policy Analysis

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**Crop Insurance and the Farm Bill:
A New Paradigm in US Agricultural Policy**

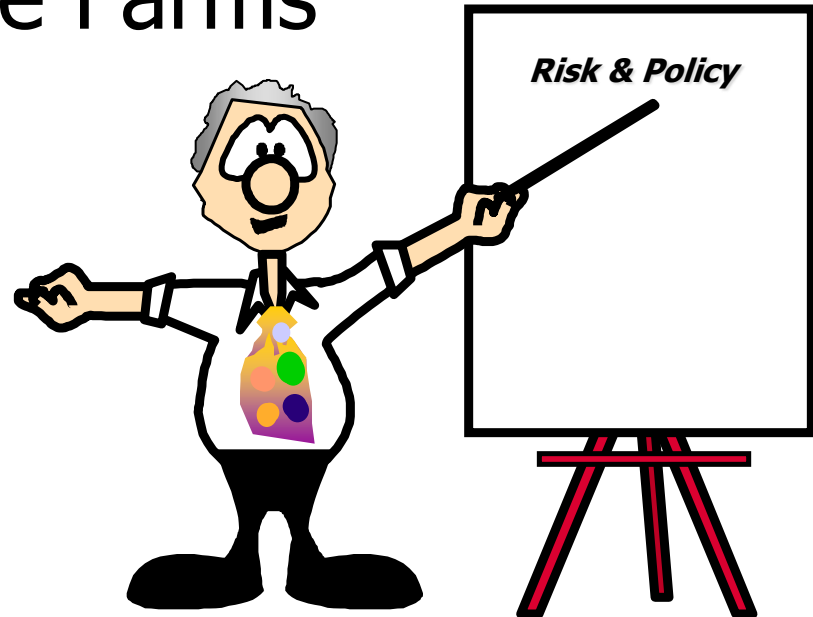
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Presentation Outline

- AFPC Representative Farms
- Panel Farm Process
- Simulation Model
- Data for Representative Farms
- How Farms are Used
- Lessons Learned
- Future Risk Work
- Conclusions



AFPC Has 100 Representative Farms

- Locations of farms originally set by the four economists on House and Senate Ag Committees
- Located to provide information for how farm programs affect farms in major production regions
- Also covered regions where political interests were greatest

Representative Farms and Ranches



Representative Farm Panels

- Select a region
- Identified a facilitator
 - Select farmers to participate in one or two panels – typical size and larger than typical
 - Full-time farmers in the area (size, technology, crop mix, production practices)
 - Better than average producers on panels
- 4-6 farmers meet for 3-4 hours, bring their records for costs and insurance

Panel Farm Interview Process

- Consensus building process – interactive Delphi is most descriptive of process
- Used a common set of questions since 1984
- Focus on getting panel to agree on values for each question to describe a virtual farm representative of the panel
- Do not let Extension budgets override the panel's costs
- Order of questions is the same every time
- Important to gain buy-in by panel, it is their farm and their data

Simulation Model: FLIPSIM

- General farm simulation model
 - Simulates any kind of crop/livestock farm in any state in the US
 - All data to define & simulate a farm entered as input, including policy assumptions – makes model portable across regions and farm types
 - Use baselines: FAPRI, USDA-World Board, CBO
 - Most all farm programs since 1933
 - Most all crop/revenue insurance products
 - State income tax provisions updated annually
 - Federal income tax provisions updated annually

Data for Panel Farms

- It's very simple, we need all of the data necessary to simulate a farm for 10 years
- Assets
 - Acres owned and leased
 - Value of land
 - Each piece of machinery with separate depreciation and replacement schedules, market values, and replacement costs

Data for Panel Farms

- Fixed or un-allocated costs – more than a dozen categories of these costs
 - Property taxes, fuel, electricity, communications, farm labor, etc.
- Financing costs – terms for long-term, intermediate-term and operating loans
 - Interest rates, number of years for loans

Data for Panel Farms

- Budgets for each crop
 - Average yields and prices for last two years
 - Prices used to calculate regional differences based on location and marketing patterns
 - Variable costs for 12 categories (seed, tech fees, fertilizer N P K, herbicides, custom, etc.) for past year
 - Farm program history (payment yields, base acres), CRP
 - Insurance product, level of coverage, and premium

Insurance Products Used by Farmers

- CAT, Revenue Assurance, Trend Adjusted Yields
 - All levels of coverage provided for each product
 - Enterprise units
 - Individual coverage

Type of Insurance for Panel Farms

Farm	Product	Enterprise	Level
Feegrain			
IAG1350	REV	Y	0.80
IAG3400	REV	Y	0.80
NEG2400	REV	N	0.70
NEG4300	REV	N	0.70
MOCG2300	REV	Y	0.70
MOCG4000	REV	N	0.70
MONG1850	REV	Y	0.80
ING1000	REV	Y	0.75
ING2200	REV	Y	0.80
NDG2500	REV	Y	0.70
NDG8000	REV	Y	0.75
TNG900	REV	Y	0.75
TNG2200	REV	Y	0.75
SCG3500	REV	Y	0.70-0.75
TXNP3000	YIELD	N	0.50-0.60
TXNP8000	YIELD	N	0.50-0.60
TXPG2500	YIELD	N	0.50-0.70
TXPG3760	YIELD	N	0.65
TXHG2500	REV	Y	0.70
TXWG1600	REV	Y	0.70
TXUG1200	CAT	N/A	CAT
LAG2640	REV	Y	0.70
LANG2500	REV	Y	0.70

Wheat	Product	Enterprise	Level
WAW1725	REV	Y	0.80
WAW5500	REV	Y	0.80
WAAW3500	REV	Y	0.80
KSCW2000	REV	N	0.70
KSCW4500	REV	N	0.70
KSNW4000	REV	Y	0.70
KSNW5500	REV	Y	0.70
COW3000	REV	Y	0.65-0.70
COW5640	REV	Y	0.70
MTW4500	REV	Y	0.75
OWR3600	REV	Y	0.80

Type of Insurance for Panel Farms

Cotton	Product	Enterprise	Level
CAC4000	CAT	N/A	CAT
TXSP2500	REV	N	0.50
TXSP4500	REV	N	0.50
TXRP2500	REV	Y	0.65
TXCB2500	REV	N	0.70
TXCB8000	REV	N	0.70
TXVC4500	YIELD	N	0.60-0.65
TXMC1800	REV	N	0.65
TXEC5000	REV	N	0.65
GAC2300	REV	Y	0.70
TNC2100	REV	Y	0.60-0.70
TNC4050	REV	Y	0.70
ARNC5000	YIELD	N	0.60
ALC3000	REV	Y	0.75
SCC1800	REV	Y	0.75
NCC1500	YIELD	N	0.65

Rice	Product	Enterprise	Level
CAR550	REV	Y	0.65
CAR3000	CAT	N/A	CAT
CABR1300	REV	Y	0.70
CACR800	CAT	N/A	CAT
TXR1350	CAT	N/A	CAT
TXR3000	CAT	N/A	CAT
TXBR1800	REV	Y	0.75
TXER3200	CAT	N/A	CAT
LASR1480	YIELD	N	0.65
ARSR3240	CAT	N/A	CAT
ARWR1400	CAT	N/A	CAT
ARHR3000	REV	Y	0.55-0.75
ARMR7500	CAT	N/A	CAT
MOWR4000	REV	Y	0.80
Peanuts			
NCNP1500	REV	N	0.70
NCSP1800	REV	Y	0.75

Risk Analysis with Panel Farms

- 10 Years of yields for each crop
 - From crop insurance forms
- 10 years of county and national yields
- Use FAPRI stochastic national prices for 500 iterations
 - Farm, county, and national yields correlated to FAPRI stochastic prices
 - Simulate yields as multivariate empirical (MVE)

Futures Prices for Risk Analysis

- For CRC simulate planting and ending futures prices for specified contracts, for each of our regions
- Use MVE percentage deviations from national average prices, then use FAPRI stochastic prices as the national annual stochastic prices
 - Percentage deviations insure constant relative risk as national prices rise and fall
 - Distribution parameters from 1982-2011 data

Safety Net Farm Policy Analyses

- Safety net options in farm bills analyzed at farm level, as requested by Ag Committees
- 1985-2008 farm bill analyses included
 - DP, CCP, ACRE, LDP, MLA, CCC Loan, TP, AMTA, Double AMTA, plus the other options
 - Crop insurance products & payment limitations
- 2011/2012/2013 farm bill options
 - PLC, RLC, SCO, STAX, ARC, AMP, dairy margin insurance, and other options
 - Payment limitation options

Annual Uses of Model Farms

- Annual Baseline outlook for 5 years in March
- Side-by-side policy comparisons for each model farm for House and Senate 2013 Bills
- The results are what the results are
 - Results are presented without value judgments
 - Alternatives are analyzed and the consequences are reported
- Add regional details to FAPRI baseline and policy analyses

Lessons Learned

- Farmers do not cook the numbers for fear results used by bankers
- Farmers willing to cooperate in group; provide confidential data
 - Data validated against USDA ARMS survey
 - Model validated with producers
- Ag Committee interested in regional impacts of policy
 - Results have helped educate staffers

3 Decision Aids Developed by AFPC for Farmers Across the US

- Program Participation
 - 2013 bill will have options so risk analysis will play a role in participation decisions
 - Interaction between programs and insurance
- Insurance Options
 - Many options to consider and levels to consider
 - More than 350 combinations programs & insurance
- Dairy Policy
 - Participate or use options
 - Level of participation

Conclusions

- Regardless of When Next Bill is Finished There Will be a Shift from Commodity Program Tools to Manage Risk to More Insurance Tools
- Not a Problem... Just Different Than What Producers are Used to
- Major education role for Extension
- Decision Aid Can Provide Some Assistance

Conclusions

- AFPC's farm level policy analysis has contributed to every farm bill debate since the 1985 Bill
- We maintain rapport with 500+ farmers
- Insight into how farmers react to policy changes, technology adoption, and insurance by region across the country
- Longitudinal aspect of data useful for understanding farmers response to changes