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# **Farming Without Commodity Programs: The New Risk Environment**

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For nearly sixty years, price and income support programs have been fundamental to U.S. farm policy. For many cash crop farmers keeping up with the changing details of government programs has been an important activity. The Federal Agricultural Improvement and Reform Act of 1996 (FAIR) changed all of that. FAIR also changed the risk environment faced by many U.S. farmers. Most farmers in the U.S., who grow the seven favored commodities (corn, sorghum, barley, wheat, rice, cotton, and rice), have never farmed without government commodity programs. The availability of price and income support programs is entrenched in the farming systems of these farmers.

In the contentious debate over FAIR, members of Congress challenged traditional approaches to government support for agriculture. Under FAIR, farmers receive a fixed government payment no matter what they produce. Acreage set asides are eliminated. More than any time over the past sixty years, market forces will now determine what, and how much, farmers choose to produce. The level of government transfer payments to farmers will be phased down over seven years. The result will be increased risk exposure for many crop farmers.

Some policy-makers supported FAIR simply because it allowed their farmer constituents to continue receiving government transfer payments during a period of high commodity prices. However, many others supported FAIR because they saw it as a mechanism for transitioning into a more market oriented agriculture. At the end of the seven year period, FAIR will expire and policy-makers will need to adopt new farm policy. The FAIR act provides for a special commission to investigate a wide array of agricultural policy alternatives before the seven years expire. What will this new farm policy look like? Will it be a return to price and income support programs or will it focus on market oriented alternatives designed to improve opportunities for risk sharing? To what extent can insurance and futures markets provide the needed safety net for U.S. agriculture? In large part, the answers to these questions will depend on successful experimentation with market based alternatives for risk sharing.

## **The New Game in Town**

At least some farm interest groups believe that price and income support programs will not return. They are already focusing their attention on what they perceive to be the "new game in town" - government efforts to facilitate market oriented approaches to risk sharing.

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Table 1.1

**Selected legislation emphasizing market-oriented risk sharing instruments**

*Crop Insurance Improvement Act (1980)*

- Shifted the policy focus from free disaster assistance to Federal crop insurance.
- Introduced a premium subsidy for Federal crop insurance.
- Allowed the private sector to deliver Federal crop insurance.
- Greatly expanded insurable crops and areas.

*Agricultural and Food Act (1981)*

- Mandated a study to examine revenue insurance as a replacement for price and income support programs.

*Futures Trading Act (1982)*

- Lifted the 46 year ban on trading options on domestic agricultural commodities.

*Food Security Act (1985)*

- Mandated a study to determine the feasibility of using options to replace price and income support programs.

*Federal Crop Insurance Commission Act (1988)*

- Mandated "the thorough review of the Federal crop insurance program and the development of recommendations . . . to improve the program."

*Food, Agriculture, Conservation, and Trade Act (1990)*

- Included a special title for crop insurance and disaster assistance that emphasized fixing the problems with Federal crop insurance.
- Federal Crop Insurance Corporation mandated to test market new products. Private insurance companies authorized to develop supplemental products that could be packaged together with the Federal crop insurance product.
- Mandated a premium rate increase for Federal crop insurance to reduce excess losses.
- Federal Crop Insurance Corporation mandated to take actions to control fraud.

*Crop Insurance Reform Act (1994)*

- Developed more restrictive procedures for passage of future free disaster assistance.
- Required farmers to sign-up for catastrophic Federal crop insurance in order to be eligible for price and income support programs.

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In recent years, policy-makers have demonstrated an interest in these approaches by facilitating the development of crop insurance and other risk sharing instruments (table 1.1). Under FAIR, farmers and the government enter into contracts for specified amounts of government transfer payments over seven years. Since these government transfers are locked in place, those interested in acquiring additional

government benefits for farmers have focused their efforts on the federal crop insurance program.

Economists use the term "rent-seeking" to refer to efforts by various organized interests to elicit benefits from the government. The Risk Management Agency, a little known division within the U.S. Department of Agriculture that administers the federal crop insurance program, has become a target of rent-seeking activity. Farm interest groups are trying to influence the development of new federal crop insurance products in a manner that will result in the largest possible net transfer of taxpayer dollars to U.S. farmers. The private insurance companies that sell federal crop insurance policies are also involved. The more attractive federal crop insurance products are to farmers, the more policies the insurance companies will be able to sell.

From an economist's perspective, this rent-seeking activity is a particular concern because the federal crop insurance program reaches well beyond the seven favored commodities. Sixty crops are now insurable under the federal crop insurance program. Additionally, only a select few individuals actually understand the full scope of crop insurance programs. When fewer parties understand a complex program the opportunities for rent-seeking are enhanced.

New products that couple price and yield insurance into the Federal crop insurance program are now being pilot tested. While these revenue insurance programs are exciting, caution is warranted. Major challenges exist in rating such programs and in determining the manner and extent to which they will be subsidized. If not done correctly, it is quite possible that these efforts could actually run counter to Congressional intent to make U.S. agriculture more market oriented.

### **Which Way to the Future?**

Many argue that it would be a mistake for policy-makers to return to the price and income support programs of the past. But it might actually be a worse mistake for policy-makers to use Federal crop insurance products as a guise for continuing to provide high levels of government transfers to farmers. Improvements in market based risk sharing opportunities are critical if policy-makers are to resist the temptation to return to the failed programs of the past.

This is a critical period for U.S. agricultural policy. There are many potential market oriented risk sharing instruments. Much of the on-going effort is building on the current structure of insurance and futures/options markets in the U.S. While traditional price and income support programs transferred income from taxpayers to farmers, market oriented approaches require farmers to pay all or part of the costs of shifting risk to others.

A fundamental issue involves improving the mix of markets and government in facilitating the development and implementation of improved risk sharing instruments. Each risk management alternative that is considered in the future will involve varying degrees of market versus government involvement. But mixing markets and government in risk sharing ventures is tricky. Too much government involvement will crowd out product development by private markets. Insurance alternatives can be subject to fraud. Incentives rule. Providing the wrong incentives will result in unintended consequences. Anticipating these unintended consequences is critical to institutional design. Any government involvement must be undertaken with a framework for understanding the political economy and the incentives of the decision makers within that political economy.

### **The U.S. Farm Sector**

There are nearly two million farmers in the U.S. Yet only 125,460 farms - those with gross farm sales over \$250,000 - produce more than 62 percent of the food and fiber. The largest farms in the U.S. are clearly commercial operations. Approximately 1.4 million farms have annual gross farm sales of under \$50,000. For these small farms, household income comes largely from off-farm employment. The farms in the middle - those with farm sales between \$50,000 and \$250,000 - depend on commercial farming activities and off-farm jobs (table 1.2).

<i>Economic Size of Farm (Sales)</i>	<i>Number of Farms</i>	<i>Sales (\$1,000)</i>	<i>Farm Income as a percentage of total household income</i>	<i>Off-farm Income as a percentage of total household income</i>
less than \$50,000	1,403,675	\$14,850,840	-8.0%	108.0%
\$50,000 - \$99,999	187,760	\$13,516,761	36.3%	63.7%
\$100,000 - \$249,000	208,405	\$32,710,764	61.9%	38.1%
\$250,000 - \$499,999	78,546	\$26,914,023	67.1%	32.9%
\$500,000 and over	46,914	\$74,615,946	70.0%	30.0%
Total	1,925,300	\$162,608,334	10.8%	89.2%

Sources: 1992 Census of Agriculture; Economic Research Service.

U.S. farms are extremely diverse. Farms differ by geographic location, commodities produced, the mix of production inputs, and marketing strategies. A cash crop farm in the Midwest is very different from a cotton farm in the Mississippi Delta. A wheat farm in Montana has few similarities to a peanut farm in Georgia. Such diversity poses a major challenge when developing national farm policy.

### **Risk in Agriculture**

One commonality is that farming is a risky business enterprise. Crop production is susceptible to natural hazards such as drought, excess moisture, hail, wind, insects, and disease. Many farmers must also cope with volatile prices for the commodities that they produce. The 1980s demonstrated that modern capital-intensive farming increases the risk associated with dramatic changes in interest rates. A final source of risk stems from the potential for dramatic changes in government policies.

Farmers use a number of different strategies for managing risk. They may attempt to diversify their sources of income. As indicated earlier, many farmers are highly dependent on off-farm income. Others

achieve income diversification by producing multiple crops or producing in multiple geographic areas. Some farmers use market instruments that allow them to share risks with other investors. Among these market instruments are forward pricing contracts, futures and options contracts, and private-sector hail insurance. Other risk-management strategies include renting, instead of purchasing, land and equipment and maintaining "rainy-day" capital reserves.

### ***Single year versus multiple year risk***

Much of what will be done in the policy arena will focus on yield and price risk. More specifically, much of the focus is on protecting against single season yield and price risk. Historically, since target price levels were relatively stable for many years, traditional income support programs provided protection against longer run price changes as well as within year price variability. Given the sensitivity of agricultural prices to major changes in supply and demand, this is an important consideration. Insurance and insurance-like alternatives (such as futures and options markets) typically do not protect against the longer run risk associated with major structural changes in supply and demand.

While managing within year income risk is important, it does not guarantee that a farmer will be able to withstand major shocks that drive down commodity and/or asset values. Credit reserves can help in managing the risk related to market shocks as can off-farm income. However, these longer run risk issues deserve special attention and the challenge remains of how to use insurance and/or futures markets to transfer these longer run risks. Can new market based alternatives be designed to protect against longer run risk? This is a particularly important question given the current bidding up of land prices. How soon will farmers respond with significant production that lower commodity prices and creates downward pressure on land prices? Will this create another farm financial crisis? None of the current policy alternatives will help with this. Is it possible to trade land prices into the future using a futures market? This and other innovations will be needed if markets are to work in a farm sector that will always have boom and bust cycles.

### ***Systemic Risk versus Independent Risk***

There are also important differences between the yield risk and price risk of agricultural commodities. For homogeneous agricultural commodities (e.g. number 2 yellow corn), the world market price drives the local market price. Due to factors such as transportation costs, the local price will likely be different than the world price. This difference is called the "basis." The basis will vary over time but this variation tends to be relatively small and fairly predictable in major production regions. Any significant change in the local price will most likely be the result of a change in world price. That is to say, local price risk is largely a systemic risk. Since all producers and consumers of the homogeneous commodity face the same systemic price risk, futures and options markets have evolved to help manage that risk.

In contrast, the yield risk faced by any given producer likely consists of both systemic and independent components. As argued earlier, some natural perils, such as drought or flood, create widespread systemic yield losses. But the impact of other natural perils, such as hail, may be localized with one loss occurrence being largely independent of any other loss occurrence. Insurance markets work by pooling a large number of independent risk exposure units. Since crop yield risk is not strictly independent, efforts to provide insurance against yield risk (so called "all risk" or "multiple peril" crop insurance) have proven difficult. Likewise, since crop yield risk is not strictly systemic, futures and options markets will not provide adequate risk protection for many farmers. The introduction of Yield Futures Contracts on the Chicago Board of Trade in 1995 recognized that crop yields do have a systemic risk component.

## **The New Risk Environment**

While risk has always been part of farming, U.S. agriculture is entering a period of increased risk. This belief is based on the effects of the FAIR act, international trade agreements, and other changes in government policy.

### ***The FAIR Act***

Prior to 1996, producers of the seven favored commodities received deficiency payments from the government whenever market prices were below target levels. Unlike earlier government programs, the deficiency payments program did not support commodity prices. Instead, the program made transfer payments to farmers whenever prices were low. Thus, the deficiency payments program was an example of an income support program rather than a price support program.

In order to be eligible for deficiency payments, farmers agreed to produce the crop only on a portion of their farmland called "base acres." Base acres were tied to a specific favored crop. If a farmer produced more than one of the favored crops, the farmer would have a certain amount of base acres for each crop. In some years farmers were even required to idle, or "set-aside," some of their base acres. Deficiency payments were permanently reduced if farmers produced other crops on the base acres designated for a specific favored crop. In recent years, farmers were also required to abide by various conservation provisions in order to be eligible for deficiency payments.

The FAIR Act of 1996 changed all of this. Farmers who once received deficiency payments will, for a seven year period, receive an entitlement check from the government, regardless of market prices. They are not constrained with regard to what crops they may produce, or how much. They still must, however, continue to abide by the standing conservation requirements.

Economists had long recognized that the benefits of the deficiency payments program were being bid into the value of land. Over time, when the cost of land was considered, farm net incomes adjusted to previous levels - landowners' wealth increased and farmers were left largely unaffected. Of course, farmers are not always landowners. In fact, nearly half of U.S. farmland is farmed by someone who does not own it.

Economists had also argued that the deficiency payments program distorted price signals - encouraging farmers to produce favored crops in areas where they might not otherwise be produced. Such distortions reduced aggregate social welfare by causing society's scarce resources to be allocated inefficiently.

Yet more than these issues, the cost of the deficiency payments program led to its ultimate demise. In 1985 and again in 1990, policy-makers made significant alterations to the deficiency payments program in an effort to reduce expenditures. The FAIR Act gradually reduces federal income enhancement expenditures over the seven year period. Many policy-makers have expressed hope that federal income support payments can be eliminated at the end of the seven year period. Farmers' risks increase as these government payments are reduced.

### ***International Trade Agreements***

Farmers in major production regions have long recognized that when crop yields were low, prices tended to be high (and *vice versa*). Thus, when yields were lower than expected the offsetting price increase would make up for part of the lost revenue. This relationship created something of a natural income

hedge for crop producers. There is now evidence that this relationship is breaking down. New trade agreements (GATT and NAFTA) are opening U.S. markets to the world. In 1993 when the corn crop was cut short by massive flooding and persistent rains, livestock feeders imported a large volume of wheat and oats into the U.S. Many have argued that this imported grain kept corn prices in check. Corn farmers, who were counting on significantly higher prices to offset yield losses, were disappointed. To the extent that the opening of U.S. markets has broken down the historic negative correlation between yields and prices in major production regions, crop producers in those regions will be faced with higher income risk.

### ***Changing Government Policies***

Additional changes have created further reasons for farmers to be concerned about managing risk. Historically, federal spending for *ad hoc* agricultural disaster assistance was designated as "emergency supplemental appropriations" and thus was exempt from the spending caps imposed by the 1990 Omnibus Budget Reconciliation Act. The Crop Insurance Reform Act of 1994 mandated that any future disaster assistance be included in the federal budget. This reduces the likelihood of future disaster assistance since such spending would have to be offset by tax increases or spending cuts elsewhere.

Emerging environmental regulations require farmers to change production practices. Many of these new practices increase yield risk. In addition, lessons from the late 1970s and 1980s have reinforced recognition of the vulnerability of U.S. agriculture to changing macroeconomic policies. In the 1970s, low real interest rates and favorable exchange rates created an environment of expanding production, increased exports, and rising land values. The shift to a tight money supply to control inflation resulted in high real interest rates, unfavorable exchange rates, diminishing export markets, and significant drops in land values.

### **Implications and Conclusions**

Two messages emerge from this changing farm policy environment. First, U.S. farmers will be forced to cope with increasing risk. Second, there will be very limited federal dollars available to help ameliorate that risk. The ability to read and react to change - that is, to manage risk - will, in large part, determine the success of U.S. farmers in the future.

U.S. agriculture is extremely diverse. One thing that all farmers have in common is that they are exposed to a wide variety of risks. Price and yield risks can be classified as either single year or multiple year and as systemic or independent. A number of recent policy changes have led to increased risk exposure for many U.S. farmers.

FAIR provides U.S. policy-makers with an opportunity to transition into a more market oriented agricultural policy. For those who would view this as a positive step, the challenge is to develop more market oriented risk sharing instruments for U.S. farmers. Failure to do so, will invite a return to the inefficient policies of the past.

Those who take on this challenge must realize that all of the rent-seeking activity that was once associated with traditional price and income support programs, will now be focused on these new alternatives. If these market oriented alternatives can not be sufficiently protected from this rent-seeking activity, the resulting products may end up being more inefficient than the policies of the past. At the same time, it must be recognized that markets have limits and regulations of markets may still be important to protect against fraud and undue market power.

The historical moment is unique. The challenge is great. Opportunities exist for significant institutional change and innovation. There is a tremendous need for sound economic and political analysis.