Farm Commodity Programs: Essential Safety Net or Corporate Welfare?

Luther Tweeten*

Contemporary commodity programs poorly serve publicly stated objectives for agricultural policy. These programs have become an exercise in politics rather than in economics. In a bidding war using taxpayers’ money to win votes, Congress has ignored the new agricultural paradigm that farm commodity markets are efficient, that farm households have higher income and wealth than nonfarm households, and that farm people and natural resources are more appropriate targets than commodities for public policy. This paper contends that the most effective anecdote for government failure lies not in political science but in economic education—a better informed public pressuring Congress for policy reform that recognizes the new agricultural policy paradigm.

Introduction

From 1933 to 2000, taxpayers spent $561 billion (year 2000 dollars) to support farm prices and incomes (Luttrell, p.17; Spitze; US Department of Agriculture, March 2001 and earlier editions). Spending since 1950 alone totaled $451 billion or nearly $9 billion per year. Whether federal funds for farm price and income support have been well spent depends on the public objectives for those funds and whether these objectives were served. Farm numbers dropped from 6.5 million in 1933 to 2.0 million in year 2000 or by 69 percent (US Department of Agriculture, July 1960, p. 40; February 2000, p.39), but preserving farms is only one objective of commodity programs.

In the best tradition of public policy economics, it is customary for an economist to list positivistic options (means) to meet the needs of people. The media make clear that society wants policies that improve well-being of people through greater economic efficiency (more real income), economic equity (if transfers are made they best go from the wealthy to the poor), and freedom to make decisions. Somewhat more objective socio-psychological scales of the well-being constructed by social scientists also indicate that these objectives contribute to the well-

* Professor Emeritus of Agricultural Policy and Trade, Ohio State University, Columbus. Comments of Allan Lines, Jasper Womach, and Carl Zulauf are much appreciated.
being of society (Blue and Tweeten).\(^1\) So the first objective of this chapter is to explore whether farm commodity programs contribute to well-being of people by serving economic equity, efficiency, and freedom. The second objective is to examine whether commodity programs cost-effectively alleviate economic instability, environment degradation, cash-flow squeeze, family farm loss, and other farm problems.

The conclusion of this chapter is that commodity programs, whatever virtue they once may have had, no longer serve their intended economic objectives. Contemporary commodity programs appear to be much about politics and little about economics. How are the relatively few farmers who receive most of the benefit from farm programs (0.2 percent of the nation’s population in 1999) able to extract billion of dollars annually from taxpayers and voters?\(^2\) Are commodity programs merely corporate welfare or are they entitlements essential to preserve the nation’s heritage and family farmers for survival and maintaining income parity with nonfarmers? This chapter addresses these and other policy issues.

**The New Agricultural Paradigm**

American agriculture is operating under a new economic and policy paradigm (Tweeten 1989; Tweeten and Zulauf, 1997). By paradigm, I refer to the presumptions, problem-puzzles, and problem-solving prescriptions of mainstream agricultural policy. The paradigm shift is certainly not a Kuhnian revolution in economic theory. (See Chapter 3 by David Orden for further discussion of this issue and a somewhat dissenting assessment of my interpretation of paradigms in farm policy.) To be sure, economic theory has been in flux since Adam Smith’s

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\(^1\) Satisfaction derived from another dollar declines on average (diminishing marginal utility of income) as income rises, but additional income is essential to draw competent people to demanding jobs that meet people’s needs. Hence, diminishing marginal utility is not a case for egalitarianism (equal incomes among people).

\(^2\) In 1999, there were 2 million farm households but 263,537 farm households with farm crop and livestock sales over $100,000 comprising only 0.2 percent of the nation’s population accounted for 73 percent of the $15.2 billion total payments to farmers. Payments averaged $42,020 on these farms. Some 42 percent of all farmers received payments but other farmers participated in support programs not providing payments—in all, over half of all farmers participated in government support programs.
*Wealth of Nations* published in 1776, but the economic theory of Smith was not fundamentally different from the neoclassical economic theory of today. That neoclassical economic paradigm is the *normative proposition* that well-being of society is increased by pursuing policies providing social benefits in excess of social costs and the *positive (predictive) proposition* that individuals and firms will act to raise their well-being by pursuing actions providing them perceived benefits in excess of costs (for a more nuanced treatment, see Chapter 15 by Alan Randall).

The new paradigm emphasizes that agricultural commodity markets work. To be sure, the government needs to play a role in provision of public goods (e.g. grades, standards, basic research, information systems, infrastructure, competition) so the market can function well. But compelling historical experience demonstrates that when these public goods are provided, the market rarely can be improved upon for economically efficient provision of food and fiber and for economic growth, international competitiveness, and food security. Farmers respond to prices set by supply and demand to clear markets, using all publicly available information. Farms like other firms are always in very short-run equilibrium but never fully achieve long-term equilibrium because markets are dynamic. However, equilibrium is close enough so that able commercial farmers with or without subsidies on average earn returns comparable to what their capital and labor resources would earn if employed in other sectors of the economy.

This new paradigm contrasts with the traditional wisdom which held that government must perennially intervene in agricultural commodity markets to avoid surplus production and to raise prices, resource returns, and incomes that inevitably would be low without interventions. (For a superb review of historic development of the old paradigm, see Bonnen and Schweikhardt.) The old paradigm held that, because farm markets do not work, chronic income
transfers from taxpayers and consumers (the latter from commodity prices inflated by supply controls) are essential for farm resources to earn a “parity” return. The old paradigm contended that farmers could not adjust rapidly enough to avoid surplus output and chronic low returns as agribusinesses released a continuing torrent of new labor-saving, output-increasing technologies.

The old paradigm held that farmers could not survive in a farming economy at the mercy of shocks from nature and man—the latter from misguided macroeconomic policy, use of food as a weapon, and the like. The new paradigm recognizes that market failure is much more frequent with natural resources than with commodities and that government failure in providing public goods is more common than price-system failure in supplying market goods.

The old paradigm dominated agricultural economists’ thinking for decades. The presumption that the farming economy was in chronic disequilibrium and unable to earn returns comparable to resource returns in other sectors was supported by an elaborate conceptual superstructure. Most notable was Willard Cochrane’s *treadmill theory* that technology continually increases food and fiber supply relative to demand, forcing commodity prices and revenues down; the latter because of inelastic product demand. Glenn Johnson’s (see Johnson and Quance) *fixed asset theory* held that the process of moving low-paid labor and other redundant resources out of farming in response to lower revenue was thwarted because resources were fixed to farming—tractors and combines had no use, no salvage value, and hence no mobility outside agriculture even if returns on them in agriculture were low.

These theories are indeed useful to explain annual and cyclical instability of farm prices, resource returns, and income, but do not explain chronic low returns for one simple reason: data unequivocally establish that able operators of commercial farms earn as favorable returns as their resources would earn elsewhere when averaged over almost any five-year period since the
1930s. I have explained in detail elsewhere the shortcomings of the treadmill and fixed asset theories (Tweeten 1970, 1989).

The “new” agricultural paradigm may be said to be old in that a few perceptive agricultural economists such as Don Paarlberg in the 1960s noted the tendency for markets to properly reward resources on commercial farms. The term “new” refers to accumulation of enough years of data to definitively validate the paradigm.

Many, perhaps most, agricultural economists now subscribe to the new paradigm. Some agricultural economists remain agnostic, contending that presence of interventions in the past do not provide a real test that (free) markets work. But we have had abundant tests: only about two-fifths of farmers receive payments from government and only about half of all farm commodity output is covered by government commodity programs. Markets for these non-program commodities are characterized by considerable instability, but competent commercial operators earn favorable returns over time if they do not pay excessive prices for land as in the asset-inflation “bubble” of 1975-1985. Not surprisingly, individual farmers and farm organizations benefiting from commodity programs tend to reject the new policy paradigm.

The general public seems to be unaware of the new paradigm. Orden et al. state that “We found that agrarian mythology [the old paradigm?] played little or no role in the 1996 FAIR Act outcome” (p. 227). That may be what they observed but the power of agrarian mythology is truly manifested in its enabling of costly transfers to agriculture without raising a high profile. The 0.2 percent of America’s population (commercial farmers) who receive most of the benefits of

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3 Most small operations are unable to achieve economies of size. Less efficient operators who produce at high cost per unit (or market for low commodity prices per unit) receive low returns whether they are in farm or nonfarm occupations and whether they receive government payments or not. Government payment support is of transitory benefit because land prices are bid up so that higher land costs or rents offset benefits of programs to operators. An exception is targeted payments to small farmers (see Gunderson et al.). Other sectors of the economy also have some small and inefficient firms earning low returns but few sectors indeed have the unique situation where a large share of firms in the sector are small and earn negative returns due to tax and hobby benefits of an occupation as a way of life. The nation ordinarily does not subsidize consumption goods such as yachts or pleasure cruises.
commodity programs are in no position to dictate farm policy to the remaining 99.8 percent of the population. The public must be submissive. The myths of farm fundamentalism and the old paradigm immobilize the nonfarm public so that commercial farm interests can prevail in farm policy. Thus farm policy reform requires a more informed public operating in the political arena.

The propensity for equilibrium emphasized in the new paradigm means that farm income is now set by income of nonfarmers. The farming economy, a vital but small part of the nation’s economy, is much influenced by but does not much influence the nonfarm economy. It follows that the farming industry and the nation have a stake in sound public policies that raise national income, and not in commodity programs that lower national income. But before returning to the role of the public in the farm economy and politics, I review current farm policy in light of policy objectives and farm problems.

**Economic Efficiency**

Economic efficiency is apparent when resources are allocated to their highest and best use. Such allocation is apparent in rates of return on resources—markets will move resources from low return uses to higher return uses. This movement draws down high returns and lifts low returns until returns to a resource are equal among uses—adjusted for risk and pleasure of working in an occupation. Thus economic efficiency is evident if resources on commercial farms with competent managers earn rates of returns on average (not necessarily each year) comparable to what those resources would earn in nonfarm uses. (Of course, part-time and poorly-managed resources receive less reward.)

Economic efficiency means that over time the public is getting the most out of resources used to meet its food and fiber needs. Too many resources in agriculture would mean that society is being denied resources for education, health care, recreation, or other favored
purposes. Too few resources in agriculture could cause food shortage. Several means are available to judge economic efficiency. One is to apply principles from welfare economics:

(1) \textit{Market goods} are rival, excludable, and transparent (see box). A huge body of historic evidence indicates that markets almost never fail to provide efficient allocations of such market goods—helped of course by basic research, infrastructure, information, antitrust, and sound macroeconomic policies provided by the public sector. \textit{Public goods} are characterized by externalities and are candidates for government interventions to correct these externalities. Externalities mean that private returns (costs) differ from social returns (costs) so that private firms do not act in the public interest. Consequently, presence of externalities is the first welfare economics condition for a public good justifying government intervention.

Markets work well where goods are rival, excludable, and transparent. The latter terms cannot be separated from externalities: where goods are nonexcludable, freeloaders cannot be kept away, thus marginal private returns to firms fall short of marginal social returns to the public at large. Consequently, the private sector producers too little to maximize social benefits.

Where goods are nonrival so that consumption by one consumer does not reduce consumption available to another, marginal cost of good A to a consumer is zero because no goods and services are foregone to expand output of A. Hence, a private firm that
sets a positive price to cover overhead costs will charge private marginal costs in excess of social marginal costs. The result is too little output to maximize net benefits for society.

Lack of market transparency including lack of knowledge also constrains market choices and the role of public policy. For example, many farmers do not know and probably underestimate their soil erosion or water pollution rate. Hence, they are likely to underestimate payoffs from conservation and underinvest in “best management practices” for sustainable agriculture. The public sector supplying information can help producers to make better decisions.

Competition also contributes to well-functioning markets. Experience indicates that only a few firms are necessary to provide a competitive and efficient market as noted in Chapter 7 by Persaud and Tweeten. The important conclusion, however, is that farm commodities are rival, excludable, and transparent, and that markets are competitive. Such markets have been found to operate efficiently the world over as well as in American agriculture.

This conclusion contrasts sharply with the situation for natural resource markets. Environmental issues of soil conservation and of air, water, and food quality or safety are closely tied to externalities driving a wedge between private and social costs so that the public interest is not served. Where externalities abound and markets are scarce, public intervention may be essential to avoid excessive soil, water, and air degradation (see Tweeten and Amponsah).
The second condition for government involvement is that interventions to correct market failure must cost less than the market failures being corrected. An example is crop yield risk in agriculture. Asymmetry of information (farmers know more than insurers), adverse selection (only high-risk farmers tend to sign up for insurance), moral hazard (insured farmers can plant a high-risk rather than a low-risk crop knowing they will be covered if the high-risk crop fails), and unequal discount rates (the public can borrow at lower interest rate than can private firms to support insurance, storage, etc.) all point to a possible role for the public to cushion farmers against instability. On the other hand, the record of public mismanagement of crop insurance is legendary. For that reason the social cost (waste, etc.) of publicly supplied insurance, storage, and forward pricing is quite likely greater than the social cost to the public of relying on private tools of risk management.

The “bottom line”, however, is that farm commodities are market goods that are allocated most efficiently by prices set through market supply and demand. Thus efficiency is served by public intervention in some natural resource markets but not in commodity markets.

*Rate of Return on Farm Resources*

I have elsewhere summarized a large number of farm management and farming industry studies indicating favorable rates of return on resources of competent commercial farm operators (Tweeten 1989, ch. 4). At least since 1970, rates of return on resources have averaged 3-4 percent over all farm assets but 15-20 percent on large farms (Tweeten 1989, pp. 118-123). Compilations from data used by Hopkins and Morehart in Chapter 4 indicate that three-fifths of farm households had negative rates of return on assets in the late 1990s, but three-fifths of farm
output had positive rates of return. Returns are somewhat comparable among types of farms of similar size, although returns vary by year and among farms of a given type.

Lost National Income

Rates of return on assets in a well-functioning market will be equal with or without market interventions because benefits to farmers from market distortions are bid into rents and land prices until returns are equalized among resources. This subsection measures economic inefficiency by the loss in national income (deadweight loss or cost) caused by commodity program market distortions. Before turning to that topic, however, I briefly review why aggregate farm commodity price or terms of trade (parity ratio defined as the ratio of the index of price received by farmers for crops and livestock to the index of prices paid by farmers for inputs) is a poor measure of market efficiency and fairness.

Farm commodity terms of trade or parity in 1999 was only 40 percent of the 1910-14 average (US Department of Agriculture, March 2001, p. 27). This number has been interpreted by some to mean that farmers are only receiving 40 percent of a “fair” price. In fact, as explained below, real farm prices have risen!

Technology is not the villain it is often portrayed to be. It has raised real economic terms of trade for farmers and nonfarmers alike—including for farmers who left their operations in mid-career (see Perry et al.; Bentley et al.). Aggregate farm output and aggregate production input are measured over time by weighting physical quantities by constant dollar prices. These constant-dollar values are added over all inputs to measure aggregate production input and are added over all crops and livestock to measure aggregate farm output. The multifactor productivity index (ratio of aggregate output of crops and livestock to aggregate farm production
input) in 1999 was 3.94 times the 1910-14 level.\(^4\) Thus the factor terms of trade index, defined as the real price (purchasing power) of farm output per unit of farm production input, was 158 percent \((40 \times 3.94)\) of the 1910-14 level. In other words, real buying power (factor terms of trade) of the average production input was 58 percent greater in 1999 than in the 1910-14 base period!

Alternatively, a productivity index of 3.94 in 1999 meant that farmers were “growing 4 blades of grass where one grew” in 1910-14 with the same input volume. Hence farmers needed only 25 percent as high a real price in 1999 to achieve the same real income per unit of production input as in 1910-14. In fact, however, real farm commodity price in 1999 was 40 percent of that in 1910-14, hence real price received per factor input in 1999 was \(40/25\) or 158 percent of that in 1910-14 after the parity ratio is adjusted for productivity growth. It follows that, comparing 1999 with 1910-14, the real parity ratio (factor terms of trade) was \(up\) by 58 percent rather than down 60 percent as implied by the conventional parity ratio (commodity terms of trade) of 40 percent.

Technology not only allowed real farm prices to improve, it also helped real farm income to improve. Real personal income per capita of the US population increased to 3.5 times its 1930 level by 1999, an average annual gain of 1.8 percent per year (Council of Economic Advisors, 2000, p. 335, and earlier issues). Meanwhile, per capita income of farmers increased from 40 percent that of the average American to 117 percent of the average American (US Department of Agriculture, 1960, p. 38; March 2001, p. 46). It follows that real income per person on farms was approximately 10 times \((3.5 \times 117/40)\) higher in 1999 than in 1930.

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\(^4\) Data were available only through 1996 (Council of Economic Advisors, 2000, p.418, and earlier issues), but were extrapolated to 1999.
In an earlier study (Tweeten, 1994, p.7), I apportioned the 3.4 percent annual growth rate in real per capita income of farm residents to five principal sources for the 1930-1990 period as noted below:

<table>
<thead>
<tr>
<th>Source of Income Growth</th>
<th>Proportion of Farm Household Income Growth by Source (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parity price ratio</td>
<td>-5</td>
</tr>
<tr>
<td>Multifactor productivity</td>
<td>19</td>
</tr>
<tr>
<td>Farm size growth</td>
<td>28</td>
</tr>
<tr>
<td>Government payments</td>
<td>2</td>
</tr>
<tr>
<td>Off-farm income growth</td>
<td>56</td>
</tr>
</tbody>
</table>

Technology played a role in several of these sources of income growth. Partly because of productivity gains in excess of the increase in demand for farm output, a falling parity ratio would have reduced farm household income from 1930 to 1990, ceteris paribus. Multifactor productivity gains more than compensated. Other things equal, multifactor terms of trade accounted for approximately 14 percent (19 percent gain from productivity less a 5 percent loss from falling parity price ratio) of the increase in farm income per capita from 1930 to 1990. Government payments and farm commodity programs in general contributed little to growth in productivity and income of farm people (Makki et al.).

Technology was central to the two major sources of farm income growth—farm size and off-farm income. Mechanization technology accounted for much of the 28 percent increase in farm income attributed to greater farm size. Mechanization along with improved roads and vehicles also facilitated off-farm employment and earnings, which accounted for 56 percent of the income gain of farmers per capita.

Market distortions caused by commodity programs reduce national income in several ways. Federal income taxes used to support government programs lose on average at least $16 of real national income (deadweight loss) per $100 collected (Ballard et al., p. 13). Thus, government payments to farmers averaging $18.6 billion per year from 1998 to 2000 lost $3.0
billion of national income annually because the public made different savings, investment, and labor use decisions than they would have in the absence of taxes that finance farm programs.

Commodity programs reduced national income by distorting use of farmers’ as well as taxpayers’ resources. Prior to the 1996 farm bill, commodity programs emphasized idling cropland, causing output to fall short of output of a well-functioning economy by an average of 5-6 percent in the 1960s and 1980s—periods of considerable excess capacity (Tweeten, 1989). Annual loss in national income averaged $4-6 billion (about 4 percent of farm receipts according to estimates by Tweeten (1989, p.351) and the Council of Economic Advisors (1987, p.159).

In contrast to earlier farm bills, the 1996 farm bill induced too much rather than too little commodity production for economic efficiency. Estimates of excessive farm production induced by direct payments, marketing loans, and insurance subsidies are shown in Table 1. Only grain, oilseed, and cotton supports are considered.

Table 1. Annual Production of Farm Output Above Competitive Market Levels Induced by the 1996 Farm Bill and Crop Insurance Programs, US, 1998-2000

<table>
<thead>
<tr>
<th>Program feature</th>
<th>Contribution to farm output</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Direct payments</td>
<td>0.15</td>
<td>Midrange estimate, Westcott and Young</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.25</td>
</tr>
<tr>
<td>Marketing loans and loan deficiency payments</td>
<td>0.68</td>
<td>Assumes crop output 51% of total farm output. Westcott and Young, p.12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.38</td>
</tr>
<tr>
<td>Insurance subsidies</td>
<td>0.28</td>
<td>4.10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assumes 25 million acre increase, and Conservation Reserve Program yields; Skees, p.2</td>
</tr>
</tbody>
</table>
### Total, all sources

<table>
<thead>
<tr>
<th>Loss in farm receipts ($ billion)</th>
<th>Sum of low estimates</th>
<th>Sum of high estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total, all sources</strong></td>
<td>1.11</td>
<td>5.73</td>
</tr>
<tr>
<td><strong>Loss in farm receipts ($ billion)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short run (E=-0.3)</td>
<td>4.93</td>
<td>25.46</td>
</tr>
<tr>
<td>Intermediate run (E=-0.6)</td>
<td>1.42</td>
<td>7.38</td>
</tr>
<tr>
<td>Long run</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Direct Government Payments.** Production flexibility contract payments and disaster loss payments presumably don’t affect producers’ current and future production decisions. Payments are said to be decoupled from future production. However, some portion even of payments not specifically tied to current or future production decisions find their way into production inputs. One reason is because farmers are short of capital. Payments lessen that restraint by providing security for production loans or by directly purchasing production inputs. Direct payments have raised farm output over competitive market levels by 0.15 percent (Westcott and Young) to 0.25 percent (interpreted from Burfisher et al.) as noted in Table 1.

**Marketing Loans and Loan Deficiency Payments.** Even loan support prices set below the average market price distort production because the anticipated or expected (mean) commodity price (on which producers make production decisions) is raised when the lower part of the price distribution is removed. Loan rates for crops under the 1996 farm bill are well above operating costs of production, hence supports induce farmers to produce because operating costs are sure to be covered. In some cases, as in soybeans, loan rates are above total unit cost (including land and overhead expenses) of production on efficient commercial farms. Hence loan supports distort production and trade compared to production and trade in well-functioning competitive markets.
Westcott and Young (p.12) estimate that marketing loan and loan deficiency payments have added 4-5 million crop acres. The high estimate in Table 1 assumes that acres added are as productive as average cropland and that all crop and livestock production depends ultimately on crop production, hence production is increased by 4.5 million acres on 325 million acres of cropland or by (4.5/325) or 1.38 percent. The lower estimate of 0.68 percent added output adjusts for possible lower productivity of added acres and for resources beyond crops required to produce livestock. This lower estimate recognizes that livestock can be produced from grass and imported feeds as well as from domestic crops.

In the 1990s, the government shifted from nonrecourse loan rate supports (which tended to hold market prices at the loan support rate) to marketing loans that provided payments to farmers on the shortfall of market prices below the loan support rate. The former nonrecourse loan program was faulted for holding prices at high levels that provided an umbrella under which our export competitors produced to take over our world markets. In contrast, the marketing loan program has been faulted for dumping our commodities in world markets at subsidized prices below production costs. Either type of loan support distorts markets by generating excess production. An alternative would be a recourse loan that farmers could obtain from government for the loan rate value of a commodity at harvest but would have to be repaid at full loan value plus interest before the next harvest. A recourse loan would enable operators to avoid selling on an oversold harvest market and relieve cash-flow pressures while not distorting market incentives.

Insurance Subsidies. In year 2000, crop and revenue insurance subsidies totaled approximately $2.5 billion and accounted for 60 percent of crop revenue insurance cost, encouraging output. The nation gets more of what it pays for with insurance subsidies—risk.
Crop risk is especially great in the Plains states, thus it is no surprise that Jerry Skees finds the contribution of insurance subsidies to crop acreage harvested is especially large in the Great Plains states such as Texas and North Dakota. (See Shiva Makki’s detailed analysis in Chapter 6.) Crop and revenue insurance loss ratios (program costs for indemnity payments and administration relative to premiums) averaged 1.88 for the US from 1981 to 1999 and averaged over 2.0 in several states including Arkansas (2.97), Texas (2.72), Georgia (2.68), North Carolina (2.40), and North Dakota (2.16).

Crop and revenue insurance causes more land to be in crops and causes land to be cropped more intensively. For example, risky corn may be planted in place of less risky grain sorghum in the semi-arid Plains because a high corn yield will earn more than grain sorghum and a low corn yield will “earn” an insurance payment. Insurance subsidies hold land in crops that otherwise would be unprofitable to farm and would revert to grassland or forest. The land is not only marginal for farming, it also may be environmentally fragile, prone to wind and water erosion. Westcott and Young (p.12) estimated that crop and revenue insurance premium subsidies have added approximately 900,000 acres to aggregate plantings of eight major crops. This translates into a 0.28 percent increase in farm output (Table 1).

Jerry Skees estimated that crop and revenue insurance subsidies have added 25 million to 30 million acres of crops in the US—an area nearly as large as that enrolled in the Conservation Reserve Program (CRP) and about one-tenth of total cropland harvested in the nation. The high estimate in Table 1 assumes that 25 million crop acres are added by insurance subsidies and that they are only as productive as CRP acres—about half the productivity of an average acre cropped (see Tweeten, 1989, p. 350). Thus, insurance subsidies add as much as 4.1 percent to farm output.
**Total Impact.** Excessive output and resources committed to farming cost the nation $0.93 billion in lost income based on the average, 3.4 percent, between the low (1.11 percent) and high (5.73 percent) estimate of excessive production estimate in Table 1. The national income (deadweight) loss is $2.64 billion with the high estimate. This average for 1998-2000 is not much less in real terms than the cost of commodity program distortions in the 1960s and 1980s. Adding previously uncounted annual loss from tax distortion ($3.0 billion) and of administrative and lobbying resources (about $2 billion that could have been better used elsewhere), the total loss in national income is $5.93 billion based on 3.4 percent excess output in grains, oilseeds, and cotton only. Income loss of $600 million from peanut, tobacco, sugar, and dairy programs (Tweeten et al., 1997) brings the total to $6.53 billion, or 3 percent of farm receipts (see Council of Economic Advisors, 1987, p. 159 for cost in 1985). The above estimates and alternative calculations by Bruce Gardner in the next chapter indicate that losses in national income from farm programs could be greater from distortions in the way taxpayers use their income than from distortions in the way farmers use their resources.

Several other observations follow from estimates in Table 1:

- Based on adjustment elasticities shown in Table 1, additions to output reduced farm receipts from $4.93 billion to $25.46 billion in the short run of 1-2 years, and by $1.42 billion to $7.38 billion in an intermediate run of 3-4 years. The impact on farm

\[ DW = 0.5R \left( \frac{1}{\alpha} - \frac{1}{\beta} \right) \left( \frac{\Delta q}{q} \right)^2 \]

where \( DW \) is deadweight cost in $ billion, \( R = $193.2 \) billion farm receipts, \( \alpha = \) intermediate-run supply elasticity of 0.2, \( \beta = \) intermediate-run demand elasticity of –0.3, and \( \Delta q/q = 0.034 \) is the addition to output as measured by an average of the high and low estimate in Table 1 of excess farm output induced by programs. Government outlays which are mostly transfers between taxpayers and producers should not be confused with deadweight costs which are a loss in national income.
receipts is zero in the long run because farm aggregate demand is near unitary elasticity.

- Termination of grain, soybean, and cotton commodity programs might not reduce aggregate farm income. Less production attending termination of programs could raise farm commodity prices and gross farm receipts to compensate for the loss of government payments, which totaled $23.3 billion in year 2000. This number is less than the “high” estimate of $25.5 billion added to farm receipts in the short run from termination of 1996 farm bill production incentives.

- A notable conclusion from Table 1 is that most of the excess output under the 1996 farm bill comes from excessive loan rates and (especially) from insurance subsidies. These production incentives lower farm prices and receipts while raising costs, creating pressure to return to supply management programs (Schnittker, pp. 93-98). Because sizable direct payments induce relatively little excess output, it follows that direct payments could be set as deemed necessary to maintain desired farm income after terminating loan rates (or setting them to cover only variable production costs or to provide the basis for recourse loans) and insurance subsidies that distort farm resource allocation. Thus liberalization of domestic and export markets potentially could make no group worse off but make the public better off while being supportive of the World Trade Organization “green box” rules for nondistorted trade. An extended period of direct payments to farmers, however, would lose substantial national income.

Because US agricultural import tariffs average only one-fourth the 45 percent average for other industrialized countries, the US stands to gain $20 billion of farm receipts annually
from the 12 percent gain in word agricultural prices expected with world trade and commodity program liberalization (see Burfisher, pp. 5, 10). Domestic farm program and trade liberalization could add $5-$7 billion annually to US national income and $31 billion annually to global income in the short run. Gains would be double that each year in the long run as dynamic gains from additional savings, investments, and productivity work their way through the system (see Burfisher, p.5).

The 1996-type direct payment program makes freer world trade less onerous to US farmers. One reason is because pre-1996 supply management programs caused farm output to be too low while post-1996 programs caused output to be too high relative to a well functioning market. It follows that with an inelastic short- and intermediate-run output demand, liberalization with a pre-1996 program would lower farm receipts and with a post-1996-type program would raise farm receipts. While price support and insurance reform along with trade liberalization would add receipts to compensate for an end to direct payments, thereby benefiting American farmers and the nation, continuation of some decoupled payments could help farmers through the transition.

**Economic Equity**

Economists have avoided economic equity issues about as assiduously as other social scientists have avoided economic efficiency issues. Perhaps the most controversial issue of my professional career (at least as measured by attacks from economists whom I respect) is my effort to analyze as objectively as possible a presumably taboo topic: the marginal utility of income. Neal Blue and I estimated that the value of another dollar is 50 percent higher for low income families than for families with median income. In turn, the latter families derive about five times as much utility from another dollar as a family with five times the median income. Of
course, before concluding that wholesale income redistribution is warranted, issues of property rights and investment incentives must be confronted. The conclusion of importance here, however, is that government transfers of income/wealth from households with low to those with high income/wealth reduce well-being of society.

If the first principle of economic equity is to make transfers only from higher to lower income/wealth households, then something is amiss when massive transfers were made to farmers whose income per household set successively higher all time records in each of the years 1996 through 2000 (US Department of Agriculture, March 2001, p.46). Income per farm household averaged 6 percent to 17 percent above that of nonfarm households in each of the years 1996 through 2000. Government payments alone did not account for greater income of farm than nonfarm households. In fact, from 1998 to 2000 nonfarm income alone per farm household exceeded income from all sources per nonfarm household! If the definition of what is a farm remains unchanged, that relationship may continue for the foreseeable future, further eroding arguments for income transfers to farmers.

Farm operator household income averaged 115 percent of US average household income, and wealth averaged 174 percent of US average household wealth in 1998 (Table 2). Landowners are the ultimate beneficiaries of farm programs. Data are unavailable on their income and wealth, but it is almost certainly well above that of farm operators households shown in Table 2.

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7 Farm crop and livestock receipts averaged $198 billion annually over the five years from 1996 to 2000, also a record. Prior to 1995, receipts had never exceeded $181 billion in nominal dollars. As apparent from data in Table 1, farming expenses are inflated by and farm receipts are reduced by the 1996 farm bill programs, therefore pre- and post-1996 farm bill expenses and net farm income cannot be compared usefully. Farm subsidies cause the low farm gross and net receipts they ostensibly are designed to cure.
Table 2. Income and Net Worth of US Farm Operator and All Households Compared in 1998.

<table>
<thead>
<tr>
<th>Classification of farm</th>
<th>Operator households</th>
<th>Total household income</th>
<th>Total net worth</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>From off-farm sources</td>
<td>From all sources</td>
<td>% of US</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>% total</td>
<td></td>
<td>average</td>
<td>household</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$ per household</td>
<td>$ per household</td>
<td>%</td>
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<td></td>
<td></td>
<td>% total</td>
<td></td>
<td>$ per</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$ per household</td>
<td></td>
<td>household</td>
<td></td>
</tr>
<tr>
<td><strong>All operator households</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small family farms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited-resource a</td>
<td>150,268</td>
<td>13,153</td>
<td>132.5</td>
<td>9,924</td>
<td>19.1</td>
</tr>
<tr>
<td>Retirement (retired)</td>
<td>290,938</td>
<td>47,158</td>
<td>103.3</td>
<td>45,659</td>
<td>88.1</td>
</tr>
<tr>
<td>Residential/lifestyle (nonfarmer)</td>
<td>834,321</td>
<td>76,390</td>
<td>106.0</td>
<td>72,081</td>
<td>139.0</td>
</tr>
<tr>
<td>Farming occupation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower sales (under $100,000)</td>
<td>422,205</td>
<td>37,186</td>
<td>106.9</td>
<td>34,773</td>
<td>67.1</td>
</tr>
<tr>
<td>Higher-sales ($100,000-250,000)</td>
<td>171,469</td>
<td>28,717</td>
<td>57.2</td>
<td>50,180</td>
<td>96.8</td>
</tr>
<tr>
<td>Large family farms</td>
<td>91,939</td>
<td>47,252</td>
<td>44.4</td>
<td>106,541</td>
<td>205.5</td>
</tr>
<tr>
<td>($250,000-499,000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very large family farms (Over $500,000)</td>
<td>61,273</td>
<td>33,240</td>
<td>15.9</td>
<td>209,105</td>
<td>403.2</td>
</tr>
</tbody>
</table>

*a* Household income under $20,000, farm assets under $150,000, and gross sales under $100,000.

**Source:** US Department of Agriculture, September 1999, pp. 19, 24; Feb. 2000, p. 39.
The four classes of farms (lower four rows in Table 2) whose operators classify themselves as farmers each have wealth averaging at least double that of the average US household, hence do not warrant receiving farm commodity program payments if the equity criterion is to transfer wealth only from higher to lower wealth households.\(^8\) The remaining three farm categories are limited-resource farms (household income under $20,000, farm assets under $150,000, and gross farm sales under $100,000), retirement farms (operators retired), and residential/lifestyle farms (operators list their occupation as other than farming). These three categories of farms account for 63 percent of all farms, but for only 10 percent of the value of farm production. Because of high income of residential/lifestyle farms, the high wealth of retirement farms, and the limited production of each of these two classes of farm, neither farm class would seem to be helped much by commodity programs distributing benefits nearly in proportion to farm sales.

That leaves limited-resource farms as the only category passing the equity test in Table 2. These farms account for 7 percent of all farms but for only 1 percent of farm output and government payments. Only 18 percent of them received payments compared with 70 percent on midsized farms in 1998. Payments for limited-resource households averaged only $722 in 1998. It follows that commodity programs dispensing benefits according to farm output are of little or no benefit to limited-resource farms. Because over $100 of payments to all farmers were required to direct $1 to limited-resource households, commodity programs are a highly cost-ineffective means to help poor farmers. Rather, households on limited-resource farms can

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\(^8\) Households listing farming as their occupation but with sales under $100,000 per year accounted for only 8 percent of crop and livestock sales in 1998. They are mostly marginal farming operations for which commodity programs provide too little assistance to relieve a basically untenable situation. Commodity programs are not a cost-effective solution to their problems. Instead, they need to seek supplemental off-farm income, add livestock or leased land, or move to situations offering a brighter future.
benefit from counseling, education, training, job search and relocation assistance, and public assistance programs.

Especially with the 1996 farm bill, commodity programs have become more market oriented. Providing more freedom for farmers to make production and marketing decisions is not a pressing current issue. Nonetheless, an end to market-distorting program features discussed earlier could enhance producers’ freedom to make efficiency-enhancing production and marketing decisions.

Standard measures of poverty are so flawed they have little meaning in agriculture. A commercial farmer in poverty will not long be in business. Hobby farmers account for most small farm numbers but on average they are not poor. Even when nonmoney income, income averaging, and net worth (not currently included in poverty measurement) are considered along with conventional sources of income, many of the limited-resource farm households in Table 2 are in poverty. As noted earlier, however, their needs are not met by commodity programs. Bruce Gardner (2000, p.1072) states that “…commodity policy just cannot be justified as a remedy for any identifiable set of low income people”. Instead, human resource development and public assistance efforts are called for.

Family Farm Loss

Some 80 percent of American adults agree that “the family farm must be preserved because it is an essential part of our heritage” (Jordan and Tweeten). Surveys also indicate that families on farms more than families in the towns and cities display virtues prized by society such as self-reliance, independence, honesty, churchgoing, marital cohesion, and obedience to laws (Drury and Tweeten). The 0.2 percent of the nation’s families benefiting most from the billions of dollars spent each year on commodity programs could not sustain such outlays
politically without these farm fundamentalist beliefs and values pervading society. The irony is that commodity programs erode the very virtues of self-reliance, independence, and honesty they presume to preserve. Shrill demands by some of today’s farmers that government programs are an entitlement and that taxpayers owe them a good living belie Thomas Jefferson’s claim that “dependence begets subservience”.

Empirical evidence indicates that government commodity programs help preserve family farms in the short run such as during the financial crisis in the early 1980s (Tweeten, 1993). On the other hand, programs provide capital and security, allowing farms to leverage equity to purchase machinery and to buy out their neighbors and consolidate holdings in the long run—thereby reducing farm numbers and increasing farm size.

Some clues regarding the contribution of farm price supports to the goal of preserving family farms are afforded by the experiences of New Zealand, the European Union, and Japan. The US lost farms at a rate of 1.1 percent per year on average from 1980 to 1995. Meanwhile, Japan lost farms at the rate of 2.2 percent annually (private communication from Mitsuhiro Nakagawa, Ibaraki University) despite economic support four times the US level. The European Union with support rates nearly double the US rate lost farms at a 1.8 percent annual rate in the 1980-95 period (private communication from Mark Krum, University of Giessen). New Zealand experienced an increase in number of farms and decrease in size of farm after it ended its commodity programs supporting agriculture (Wright, p. 20).

Although these international comparisons suggest that higher supports speed consolidation of farms, I conclude from empirical analysis that commodity supports have little net influence on farm numbers in the long run (Tweeten, 1993). Forces of technology and markets rather than government programs eventually dominate to establish farm sizes and
numbers. Government commodity programs can temporarily slow but not avoid adjustments in farm size and numbers to economic pressures from the marketplace.

Direct payments emphasized by the 1996 farm bill offer unprecedented opportunities to target small family farms for preservation, unlike earlier supply control programs, which could not easily target small farms (see Gundersen et al.). For pre-1996 supply control programs, larger farms producing most output needed to be included for production controls to be effective. Current farm programs would need to be restructured nearly beyond recognition, however, to target the financially vulnerable operations in saving family farms. Such restructuring seems politically impossible based on historic evidence. Compared to commodity programs, credit programs could more easily target vulnerable farms.

**Farmers and Farming Industry Adjustment Capability**

Farmers’ economic salvation comes not from expansion of exports, value-added enterprises, nonfood use of farm output, or even from rapid introduction of improved technology. Instead, farmers’ economic salvation rests with their ability to adjust to an inevitably changing environmental, technological, social, political, and economic milieu.

The new economic paradigm recognizes farmers’ ability to adjust. To be sure, some farmers would face financial shocks and the need to adjust resources in response to termination of commodity programs. Agriculture will continue to be subject to major annual and cyclical shocks from man and nature that buffet farm prices and incomes. Weather and business and commodity cycles will continue to plague agriculture. Farmers are well aware of the risks endemic to agriculture.

A critical issue is how rapidly farmers adjust to market signals. From an industry perspective, the issue is not how rapidly one enterprise adjusts in response to a change in the
price of the commodity produced by that enterprise. Rather, the issue is how fast the industry responds—recognizing that resources specialized to farming cannot readily and profitably be moved to other sectors of the economy. Fortunately, econometric estimates provide insight into adjustment rates.

The short-run (1-2 years) aggregate farm supply (output) elasticity is at least 0.1 and the aggregate farm output demand elasticity is approximately –0.2 (see box and Arnade and Gopinath; Tweeten, 1989, p. 118; Henneberry and Tweeten). The aggregate adjustment elasticity is the sum (absolute value) of these two elasticities, or 0.3. The intermediate-run (4 years) supply elasticity is approximately 0.3 and the demand elasticity is of similar (absolute) magnitude, hence the intermediate-run aggregate adjustment elasticity is 0.6. Thus a 10 percent drop in aggregate prices of farm commodities reduces excess supply of farm output by approximately 3 percent in 1-2 years and by 6 percent in 4 years.

In a comparatively recent study, Arnade and Gopinath (p. 94) lament that “agriculture’s capital behaves almost like a fixed factor. Our estimated rate of adjustment of agricultural capital is 2 percent per year.” They cite three previous studies with higher adjustment rates. Earlier, I (Tweeten, 1989, pp. 115-118) noted that farm machinery capital may indeed adjust slowly, but highly productive financial and operating capital inputs can adjust rapidly. Thus it is notable that Arnade and Gopinath calculated the aggregate agricultural output supply elasticity to be 0.2 in the short run and 1.4 in the long run—surprisingly high numbers closely in line with my estimates made in 1972 (see Henneberry and Tweeten).

I noted earlier that government-induced disequilibrium averaged about 6 percent in the 1960s and the early 1980s—periods of unusual shocks to the farming economy. Farm operating and financial inputs are much more easily adjusted and farmland is less easily adjusted than the
capital Arnade and Gopinath calculate to adjust at 2 percent per year. But if overall agricultural resources adjust at only 2 percent per year, one of the very lowest numbers found among many empirical estimates, then excess capacity of 6 percent could be eliminated in three years if no additional inputs are added! This does not indicate severe resource fixity.

Not only is the farming industry dynamic, it has the good fortune of not being called on to make quantum adjustments characteristic of many small nonfarm businesses. Based on annual reports from agricultural banks, on average 3.0 percent of US farmers went out of business each year from 1982 to 1999 and 2.4 percent for the 1992 to 1997 period (USDA, February 2000, p. 48). Thus approximately 15 percent go out of business in five years, a rate well below the 50 percent attrition rate for small nonfarm businesses in the same period of time (Kirchhoff, p.10). Only approximately 10 percent of the farms going out of business experience foreclosure; most leave for other reasons such as death and retirement which annually averages about 2 percent of all farmers (Tweeten and Zulauf, 1995).

Farms were lost at an unusual average net rate of only 0.1 percent from 1992 to 1997 according to the Census of Agriculture (US Department of Agriculture, March 1999, p. 10). The dynamics of farm numbers adjustments for the 1992-97 period are summarized as follows:  

<table>
<thead>
<tr>
<th>(Percent change per year, 1992-97)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm gross entrants</td>
<td>2.3</td>
</tr>
<tr>
<td>Farm gross exit due to:</td>
<td></td>
</tr>
<tr>
<td>foreclosures</td>
<td>-0.2</td>
</tr>
<tr>
<td>retirements</td>
<td>-2.0</td>
</tr>
<tr>
<td>other exits</td>
<td>-0.2</td>
</tr>
<tr>
<td>Net exit</td>
<td>-0.1</td>
</tr>
</tbody>
</table>

Thus farming was a positively dynamic industry in the 1992-97 period, attracting far more entrants than exited because of financial failure. That time period was not turbulent. At

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9 The attrition for farmers and small nonfarm businesses are not strictly comparable—we do not but would like to know what percent of new starts in farming survive for five years.
10 Retirements (including deaths) were estimated from the aged operator cohort in 1987 (Tweeten and Zulauf, 1995, p.216), hence are only an approximation for 1992-97.
issue is how these numbers would change with phasing out of farm commodity programs. If
government payments (totaling $20.6 billion or 11 percent of cash farm receipts in 1999) were
gradually rather than precipitously phased out and if other farm income did not change, farm
numbers are predicted to fall 1.0 percent in the short run and 5.8 percent in the long run based on
the elasticity with respect to farm-nonfarm income ratios (Heady and Tweeten, p. 423). Such
results based on dated parameters need to be viewed cautiously, but even casual observation
cannot escape the reality that Americans farmers adjust to change.

Future adjustments in farm numbers are likely to occur at a higher rate than occurred in the
1992-97 period. Farm technology moves inexorably, like tectonic plates. Continuing tremors
can dissipate the pent-up energy without suffering, but in the absence of tremors a major
“earthquake” strikes, causing massive trauma. Agricultural labor productivity is likely to expand
at least 3 percent annually on average (it increased on average 4 percent per year from 1976 to
1996 according to the Council of Economic Advisors, p.418) and output is likely to increase 2
percent annually, hence annual labor and farm numbers need to decline (tremor) by at least 1
percent per year to avoid a later painful farm operator and family “earthquake” exodus.

Generous farm programs of recent years avoided tremors but are unsustainable. Eventually an “earthquake” to adjust labor will be unavoidable. Adjustment pressure will mount
even with continuing payments because of rising rents and land prices. Given that labor-saving
technology will not be stopped and that large farms don’t need help, the only affordable means
for taxpayers (and consumers) to maintain a stable number of farms in the face of relentless technological change may be to subsidize retention of small farms with sales of under (say) $50,000 per year. But, as indicated earlier, targeting of small farms appears to be politically unacceptable.

Using mandatory farm-size restrictions rather than payments to save family farms also will not work as labor-saving technology advances. Advancing labor-saving technology with a regulated fixed farm size will forego some benefits to producers and society of size economies, but still will free labor for off-farm work. Thus, US farmers would be driven even more to be “weekend warriors,” working off-farm all week while doing their farm work on weekends with labor-saving technology—a phenomenon especially prominent in Japan, which does not have a functioning farmland market.

What farm households would be most likely to fail financially and exit from agriculture when exposed to the market? All farm categories with sales under $100,000 and accounting for 85 percent of farms had, on average, negative returns on assets and farm economic costs in excess of gross farm income in 1998. These farms, accounting for only one-sixth of farm output and receiving very little on average from government payments, are mostly hobby operators who seek tax and rural amenity advantages. Their high off-farm income sustains their hobby with or without taxpayers’ generosity. Limited-resource small farms will not be well served by any policy designed as in past programs to provide payments proportional to farm receipts, especially crop receipts because many produce beef cattle and calves.

Mid-size farms with sales of $100,000 to $250,000, accounting for 8 percent of farms and 16 percent of crop and livestock sales in 1998, are especially vulnerable financially to termination of commodity programs. One reason is because households on such farms in 1998
received over half of their net farm income from government payments. The farms are only marginally profitable and efficient. They were helped by off-farm income of $28,717 per household in 1998. Despite wealth averaging twice that of US households in 1998, household income from all sources averaged just below that of all US households. Although only 4.3 percent were rated as financially vulnerable in 1998, many of these households would suffer financially with termination of farm commodity programs. With or without commodity programs, large numbers of households in this “disappearing middle” category will seek more off-farm income, will grow larger and more efficient, or will exit farming. They constitute perhaps the strongest case for help from federal/state extension services and from other public agricultural as opposed to welfare agencies to assist with adjustments. These farms can be helped for a fraction of current program costs by targeting government credit and payments to them.

What happens to farmers who fail? Conventional wisdom holds that farm households are so wed to the farm by culture and specialized skills that they cannot adjust to alternative employment without trauma. That conjecture, if it ever was true, is no longer a valid generalization. Most farm operators have had experience in off-farm employment. By a 3:1 margin, Oklahoma farmers who left farming in mid-career said they were better off (Perry et al.). Similar results were found by Bentley et al. for other states.

Cash Flow

Family farms refinanced each generation face a cash-flow squeeze as they struggle to service debt and pay living expenses. Farmers, it is said, “live poor and die rich.” To be sure, commodity programs help farmers to meet cash flow needs in the short run. But the expected future benefits of commodity programs are capitalized into land prices, raising debt-service
costs. Thus commodity programs can intensify cash-flow problems of new farm operators. The appropriate response to cash-flow problems is not more generous commodity programs, but rather is leasing of farm real estate and equipment, contract farming, off-farm work, raising livestock, and the like.

Countercyclical payments to farmers also could reduce cash-flow problems, but it is difficult to design programs that do not create incentives for excessive production (see Commission on 21st Century Production Agriculture). The proposal in 2001 of the US House Agriculture Committee to return to the pre-1996 target price, deficiency payment system, if implemented, would induce overproduction and a return to supply management. By paying producers the shortfall of the market price below a high target price, deficiency payments would offset some or all of the market price signal to produce less. By basing deficiency payments on historic program yield and acreage, farmers have reason to raise their current yield and acreage in preparation for the time when historic program parameters are updated.

Farm real estate values climbed 15 percent despite the lowering of crop receipts by farm programs from 1996 to 2001. Cash flow pressures from higher debt service costs come gradually to landowners because 3 percent or less of farmland changes ownership annually. Pressures come almost immediately for renters, however. Ryan et al. (p. 23) note that nearly all the value of production flexibility contract payments was passed almost immediately by renters to landowners as higher rents. Because 43 percent of farmland is rented, it follows that nearly half of program payment benefits were lost quickly by renters and new landowners.

The proportion of farmland value attributed to government payments increased from 13 percent in 1990-1997 to 25 percent in 1998-2001 (Ryan et al.). The latter is one estimate of the loss in farmland value if payments were terminated without reform in price support, insurance
subsidy, and trade policies. Because withdrawal of commodity programs would cause major wealth losses, a phased rather than immediate withdrawal of programs seems warranted (see Orden et al.). Congress was unable to adhere to the phased withdrawal called for in the 1996 farm bill. But it is difficult to justify maintaining farm commodity programs indefinitely just because the government has led farmers to believe they will continue to receive transfers from taxpayers that have been capitalized into land prices.

**Instability**

I regard instability as the major problem of commercial agriculture (see later chapters herein by Makki and by Zulauf for an excellent overview). Risk is not in itself a case for subsidies from taxpayers, however. We don’t provide government payments to lottery players, Las Vegas gamblers, Wall Street plungers, futures market speculators, day traders, and small businesses. Still, many consumers are nervous about relying strictly on the private sector to supply risk management tools to farmers and to store food reserves for consumers.

The best economic argument for subsidizing storage to reduce variation in farm and food prices is that the public discount rate is less than the private firm discount rate. The contention is that, because of high cost, private firms hold too little stock for socially optimal price and food supply stabilization. Similarly, it may be argued that systemic (industry-wide) risk is so high for private firms that only the government has sufficient scale to underwrite (reinsure) crop and farm revenue insurance.

The global record of government mismanagement of stocks, price supports, and insurance is not reassuring, however (Reinsel). The US House Agriculture Committee’s proposal to provide countercyclical deficiency payments based on the shortfall of market prices (or loan rates) below target prices could increase farm income instability. As Carl Zulauf notes in Chapter
5, national price and yield of major farm commodities are negatively correlated and hence tend to self insure—helping to stabilize farm receipts. Stabilizing on price may increase variation in receipts.

Government-financed stocks and insurance to manage risk appear to fail the second efficiency criterion noted earlier for public intervention. That is, the social cost of a private sector supplying less than “optimal” amounts of reserve stocks, insurance, and forward pricing is less than the administrative and mismanagement costs of public stabilization policies. Langemeier and Patrick show that farmers are remarkably good at stabilizing consumption despite unstable income from year to year. Farmers are extremely adept at self insurance, are not very risk averse on average, and nowhere in the world are they willing to pay for unsubsidized all-risk crop insurance (see Reinsel). Operators voluntarily enter farming and assume risks they well-know characterize the industry.

Current commodity programs would have to be restructured massively to cost-effectively address problems of instability. Such restructuring would recognize the observation made earlier that most small farms have adjusted to risk relying on off-farm income to stabilize their finances, and commercial farms on average have sufficient wealth to pay for the many private risk management tools available to them.

The mid-size family farms that frequently are least able to cope with risk can be provided with a risk safety net most cost-effectively by focusing stability on the "bottom line", net income, rather than on price, yield, gross revenue, or cost components of income that can vary to offset each other and hence stabilize net income. An investment retirement account (IRA) type program with the government partially matching a farmer's contribution and giving tax-exempt status to interest revenue is an option to address farming instability at minimal cost, including the
low transaction cost of administration by the Internal Revenue Service. That type of program could easily be extended to all farmers and regions and would not need to be restricted to crops.

The program, recognizing that farming is not a low income/wealth sector, can focus on facilitating the shift of earnings of farm people from high- to low-income years. By targeting net income of farmers, an insurance program patterned after Canada’s Net Income Stabilization Account (NISA) can be cost-effective in stabilizing farm income. Such a program could be very cost effective if payouts could be triggered only by very low or variable income of farm people from all sources--off-farm as well as farm.

US Representatives Kenny Hulshof (R-MO) and Karen Thurman (D-FL) originated legislation for a related nontaxed, super-savings, income-averaging Farm and Ranch Risk Management Account (FARRM), allowing individual farmers and ranchers to put up to 20 percent of their income into a nontaxed savings account and draw on that account in bad years. Congress could afford to support this type of program more generously if it ended commodity price support and insurance program subsidies. Indeed, other farm income supports would need to be terminated with introduction of a net income (from all sources) stabilization program to avoid compounding problems of administering an already unmanageable farm policy.

**Environment**

Instability may be the number one problem of commercial farmers but environmental degradation is the number one problem of farmers affecting nonfarmers. Farm operating and durable capital input markets for the most part work well, but externalities preclude reliance solely on markets to address problems of soil erosion and water and air quality in agriculture. That is, costs to society exceed the costs to the farms on which soil erosion and water and air problems originate. Commodity programs are not a cost-effective means to address
environmental problems, however. Use of environmental programs such as US Senator Tom Harkin’s Conservation Security Act of 2001 as a “Trojan horse” to channel direct payments to farmers serves neither the environment nor farm economic welfare well.

Economic growth fostered by letting markets work can benefit the environment (see Chapter 11 by Hervani and Tweeten). And markets can be used more widely to address environmental and cultural/lifestyle concerns, including preservation of farmland, as pointed out by Lawrence Libby in Chapter 10. Labeling and certification, now widely employed for organic foods, can be extended so that consumers can vote with dollars in the marketplace to support food produced nonintensively and to protect wildlife and biodiversity. Thus, all farmers and consumers are not forced into one lockstep method of food production. A disadvantage is the free rider problem and the reality that low-yield farming, by requiring more total cropland, diminishes land for wildlife and raises aggregate erosion.

Helpful public efforts include the Environmental Quality Improvement Program (EQIP) to address externalities of livestock production, the Wetlands and Conservation Reserve Programs to address environmental problems in land and water management, and *conservation compliance* programs to improve water quality and reduce soil erosion. The conservation compliance program is in disarray and needs rethinking. It may be argued that the public deserves much more in environmental protection than it is now getting from the tens of billions of dollars taxpayers are providing to farmers. Proposals for programs to more carefully target problems of soil conservation and air and water quality are addressed in more detail elsewhere (Tweeten and Zulauf). In Chapter 14, David Ervin and Frank Casey present additional options for improving delivery of environmental protection services to agriculture.

**Miscellaneous Concerns**
Because of their prominence, the foregoing issues and problems were treated in some detail. Other concerns potentially addressed by commodity programs (rural community loss, food and farm operator supply, food security, and international and agribusiness competitiveness) are examined only briefly in the following pages because of space limitations or because they warrant only terse treatment.

*Rural Community Loss*

Some persons have proposed that farm commodity programs are necessary to preserve rural communities—small towns and cities. Rural areas, defined here as nonmetropolitan counties (no cities of over 50,000 residents) have been growing in population. Farming-dependent counties, defined as those in which at least 20 percent of income is derived from farm labor and proprietor income, numbered 555 or 24 percent of nonmetro counties and 18 percent of all US counties in 1990 (personal communication from Calvin Beale). Many are losing population. Less than one-tenth of the rural (nonmetropolitan) labor force works in farming, and 93 percent of the rural population resides in non-farming-dependent counties (Wright, p.17). Many farming-dependent counties are located in the Great Plains, a region suited by climate and sparse population to deal with environmental problems associated with livestock feeding-processing clusters to which the nation is headed (Tweeten and Flora). Many such counties will attract livestock feeding and processing operations to raise income and employment.

Farm safety net programs are not cost-effective means to support rural towns and cities. Many farming dependent communities are best helped with extension programs that assist rural communities in deciding how they wish to use their resources. In many cases, more federal and state financing of schools can be justified to better prepare local rural youth for employment at home or elsewhere. Increased government aid to rural schools reduces the burden on rural
communities of paying for human resource development programs that benefit communities elsewhere—often growing urban areas—where former rural residents live and work.

*Food and Farm Operator Supply*

It has been said that in the absence of commodity programs the nation will run out of food and farm operators. I am not aware of recent studies, but older studies indicate that overall farm productivity is raised with consolidation because operators taking over vacated farms are more efficient than the operators who exit. The 3 percent average decrease in farm output attending a phase out of farm commodity programs as noted in Table 1 might raise farm commodity prices up to 10 percent. Given that American consumers spend only 2 percent of their income on farm food ingredients, they would hardly notice—especially if the change were spread over (say) five years. The overall cost of food and fiber plus public outlays for commodity programs would fall substantially with a phase out of commodity programs because government costs would fall more than food costs would rise.

Relatively few commercial farm operator replacements are needed annually and the supply of potential operators from smaller farms and from off-farm sources is large (Tweeten and Zulauf, 1995). The nation is in no jeopardy from running out of food or farmers with or without commodity programs although some marginal farmers would exit farming in the absence of government subsidies.

In 1999, some 85,000 farms (4.2 percent) were classified as vulnerable to financial failure, having negative farm cash flow and a debt-asset ratio over 40 percent (US Department of Agriculture, September 2000, pp. 20,21). However, off-farm income would sustain many if not most of these farms in the absence of a public safety net. Small farms will survive on off-farm
income and most large farms have substantial income and wealth. Many financially fragile farms will fail eventually with or without farm safety net programs.

Food Security

Food insecurity issues and ways to address them are treated with insight by Daniel Sumner in Chapter 12. At issue here is whether American farm commodity safety net programs are essential to ensure future food security at home and abroad? The answer is no. The world has been blessed with food availability, even abundance, since World War II. The food insecurity problem traces to lack of productivity and buying power in poor countries rather than to US commodity programs.

America has provided helpful humanitarian assistance in the form of food aid from surpluses generated by farm safety net programs. On the other hand, subsidized food exports and international commodity prices depressed by agricultural support programs in developed countries have lowered prices and discouraged local food production in poor countries. The US government could continue to maintain its 4 million ton grain reserve as a ready source of humanitarian food assistance, but need not maintain current commodity programs for food security at home and abroad. As the world’s largest exporter of food, the United States will remain food secure without a farm safety net.

International Competitiveness and Agribusiness Concentration

It is said that a farmer can compete with other farmers at home or abroad, but cannot compete with foreign governments subsidizing farm exports. Similarly, many farmers view a safety net as essential to countervail the market power of agribusinesses that are growing larger and more concentrated.
Several observations are warranted. First, neither economic theory nor empirical evidence indicates that American farmers are systematically exploited by foreign governments or domestic agribusiness firms (see Chapter 7). To be sure, imperfect competition characterizes many agribusinesses. If they do indeed exercise market power, fewer resources will be used in farming than if agribusiness industry were competitive. However, the oligopolistic (few firms) market structure that characterizes much agribusiness is recognized for massive advertising and innovation to expand food and fiber sales. This expansion of markets along with the prominence of cooperatives in agribusiness points to a contemporary farming sector as large and paid as high commodity prices as would prevail if the agribusiness sector were comprised of many more firms.

In Chapter 13, Tim Josling finds evidence that some countries are embracing the new agricultural economic paradigm even as other entities such as the European Union seem to be moving in the opposite direction. Considerable progress has been made in reducing trade barriers with major competitors such as Australia, Canada, and New Zealand. More open trade encourages global competition among agribusinesses to price farm inputs and commodities more competitively for farmers.

**Conclusions: Politics Triumphs Over Sound Economics**

Conclusions regarding the overall contribution of commodity programs to society could be thwarted because the economic and other farm program objectives considered in this study are incommensurate—they cannot be added together or simultaneously achieved. However, this potentially troublesome shortcoming need not be confronted because public commodity program interventions fail essentially all economic tests.
Commodity programs have lost their economic justification. They are neither economically equitable nor efficient. American agriculture is not a welfare case. Agricultural problems of family farm loss, cash flow, instability, poverty, and environment are real, but current commodity programs do not address these problems cost-effectively.

Commodity programs also have lost their social justification. The irony is that commodity programs erode the very virtues such programs were originated to preserve. Government commodity programs have created an insidious culture of dependency, with farmers depending on supports from taxpayers because programs have reduced farm receipts. Farmers have been placed by Congress on an ever higher income and asset value pedestal that eventually will collapse at great loss in farm wealth and personal trauma.

The 1996 FAIR Act and subsequent legislation in the 1990s brought fundamental, useful reform: an end to set asides and coupled deficiency payments, and to massive government stock accumulation and subsidized exports. These worthy economic reforms and planting flexibility can be retained while flaws in the 1996 act are corrected.

The 1996 farm bill works at cross-purposes. Direct payments helping to maintain income of farmers are partly or wholly offset by high commodity price loan rates and crop insurance subsidies generating output to reduce commodity market prices and farm receipts. If direct payments are retained, loan rates and insurance subsidies at the least need to be ended or sharply lowered to avoid a return to supply management set asides and government stock accumulation. Long-term restructuring would retain resource programs and environmental protection but not current commodity programs.

11 Farmers are fortunate indeed that commodity programs are not welfare for the poor, because, under 1996 federal law, welfare recipients are only entitled to payments for five years.
If commodity programs have lost their justification based in the new economic paradigm and the traditional welfare criteria outlined above, why is “good” economics such “bad” politics? Why is “bad” economics such “good” politics? Answers to these questions are important because commodity programs are now an exercise in politics rather than economics.

The billions of dollars spent each year on commodity programs could not be sustained politically without an uninformed and inattentive public. The new paradigm of agricultural policy may be accepted by most economists and may be known by many farmers, farm organizations, and members of Congress. However, the general public appears to be unaware of the economic position of farm households or of the legislative measures being used to address farm problems.

David Bullock and Jay Coggins document in Chapter 8 how farmers have been unusually successful in the political arena, parlaying a relatively small lobbying investment into large payouts from government. One reason for the success as highlighted in Chapter 9 by Charles Moss and Andrew Schmitz is that farmers and agribusinesses often have common interests and work together for favorable legislation.

A more important factor in recent years is that Republicans and Democrats in a hotly contested race for Presidential and Congressional leadership have entered a bidding war of “I’ll see you and raise you one ($billion)” for farm programs and votes. That’s an attractive strategy indeed for politicians when the race is tight and other people’s (taxpayers’) money is being spent. Farmers are thought to be switch voters, willing to vote for politicians who respond to their “pocketbook” needs. Many states with small populations are farm states with more seats in Congress and electoral votes per capita than large urban states. Thus farm votes are viewed as cheaper to gain than most. The strategy worked for normally conservative Republicans bidding
against populist Democrats, giving Republicans the Congress and Presidency in the 2000 election. The bidding war could continue because it is a “prisoners’ dilemma”—the nation would be better off without it but each party cannot afford to stop bidding.

The basis for farm policy reform has been weakened by shifts in the agricultural political landscape. Voices for commodity policy reform have been lowered. One is agribusiness which thrives on farm output volume and got what it wanted with an end to set asides in 1996. Another voice is the American Farm Bureau Federation which became an active proponent of commodity programs after its membership base shifted from the cornbelt to the sunbelt—the latter’s agriculture is more committed than most regions to commodity programs (see Guither et al., p.15).

The conclusion is that farm policy is another case of government failure. And in our democratic-capitalist system, government fiat trumps market solutions. Given that farm policy is an exercise in politics rather than in economics, the time appears to have come for economists to turn over farm policy to political scientists. The time appears to have come to give Congress a 12-step program for obsessive-compulsive behavior rather than give another workshop of economic education.

That view is cynical and I reject it. At its core, failed farm policy traces to an uninformed and inattentive general public. Unless that public becomes more literate on economic policy, 0.2 percent of the nation’s population will continue to command a large chunk of the Treasury without being contested in Congress or anywhere else. More time can be spent usefully on educating the general public regarding the new agricultural policy paradigm.

References


