

Overview of U.S. Agricultural Policy

by
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Abstract

Agriculture progresses through four stages of policy: traditional, developing, maturing, and modern. The third or maturing stage of sizeable transfers from taxpayers and consumers to farmers is described at length and 10 implications drawn for the United States and other countries. Among the lessons learned are that government commodity programs once initiated contain much momentum for continuation; that benefits of programs accrue disproportionately to the least disadvantaged among those eligible; that markets work for farm commodities because goods are rival, exclusionary, and transparent; that agricultural market forces are difficult to circumvent; that the least competitive traditional farm commodities are most likely to seek and receive government help; that multilateral trade reform has not been very effective in liberalizing farm trade; that American farm policy has been heavily influenced by populist myths; that economic analysis matters; and that direct payments targeted solely to small farms are essential but politically infeasible to save small farms.

This paper depicts American agricultural policy as stages in a stylized transition similar to the demographic transition. I describe four stages in the policy transition, but emphasis is on stages 3 and 4 which respectively feature phasing in and out of commodity price supports by government. Before describing American agricultural policy and the policy transition, I outline some characteristics of American agriculture that make it unique among sectors, but that mostly are part of an earlier stage in the

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agricultural transition. The purpose of this paper is to glean lessons for other countries from American agricultural policy.

The Policy Transition

Agriculture progresses through a policy transition much as population progresses through the demographic transition. The four policy stages are as follows:

<u><i>Policy Stages of agriculture and the economy</i></u>	<u><i>Tax or subsidy for commodity programs</i></u>
1. Traditional	Neither tax nor subsidy
2. Developing	Tax
3. Maturing	Subsidy
4. Modern	Neither tax nor subsidy

Precolonial America was a traditional society in stage 1 of the agricultural policy transition. As noted by T.W. Schultz (1964), a traditional society is in a local equilibrium of primitive technology and of general poverty. It is a hunter-gatherer or agricultural economy because the primitive technology forces a large part of society's efforts to be devoted to meeting its most basic need—food. Because such a society is so heavily agricultural and poor, agricultural commodities cannot be subsidized or taxed.

The economic equilibrium of a traditional society, while only local, is not surprising. Decades and even centuries of adjustment to a relatively static technology enable such a society eventually to combine resources so as to reach about as high a living standard as local technology and resources permit. The local economic equilibrium is only partial, however, because new technology is available from other countries and/or from local ingenuity by shifting a modest amount of the traditional society's resources from consumption to investment in technology transfer and development.

Comparison" held in June 1998 in Taiwan and sponsored by the Council of Agriculture Taiwan, ROC. Comments of Allan Lines and Carl Zulauf are much appreciated.

Stage 2 begins with the economic development process. The process began with the colonial era in the United States. Some improved technology arrived from Europe, but colonial Americans farmed much like the Egyptians farmed four millennia earlier—with animal draft power, unimproved seeds and breeds, and primitive plows and harrows. As the only sector of any size, agriculture had to provide the tax base to fund education and technology development, transfer, and diffusion initiating and powering the economic development process in stage 2. Through the property tax, land, a relatively abundant resource, was used to fund development of the human resource, a relatively scarce resource. The process of development was self-reinforcing as savings and investment created human, material, and technological capital. That capital in turn provided the economic base for more savings, investment, and economic growth. Agriculture provided food, fiber, and human capital for the nonfarm sector which provided improved capital inputs to agriculture.

Development was speeded by mechanical innovations such as the cotton gin, grain reaper, and steel plow and by the industrial revolution which began around 1850 in the United States. The development process was furthered by the Morrill Act of 1862 establishing the land-grant agricultural college system of education, the Hatch Act of 1887 establishing a system of agricultural experiment stations for research, and the Smith-Lever Act of 1914 establishing the agricultural extension service to bring practical education and improved farming methods to nonresident students.

Stage 3 begins when a nation's nonfarm sector has developed to a level supplying much of its national income.¹ It began in the 1920s in the United States. For various reasons, agricultural progress in stages 2 and 3 is likely to lag that of other sectors, and the United States was no exception. In the U.S., the “farm problem” arose from more rapid technological change in agriculture than elsewhere. Rapid labor-saving technological change coupled with an inelastic and slowly increasing output demand and sluggish farm labor adjustments created a surplus of agricultural operator and family labor earning low returns on resources.

¹ This section draws on a recent paper in which I and Carl Zulauf (1997) describe the recent shift from the old policy paradigm (stage 3) to a new policy paradigm (stage 4).

In East Asia, the farm problem had opposite origins—high man-land ratios coupled with more rapid growth in capital and productivity of the nonfarm than of the farm economy. That rapid nonfarm productivity growth efficiently supplied exports, earning foreign exchange that raised the value of local currency in international markets. Coupled with lagging productivity gains in local agriculture, the result was falling terms of trade for agriculture. Agricultural exports were expensive to consumers abroad while cheap food imports from abroad competed successfully for domestic food markets. The result was an *East Asia Disease* manifest in chronic low income and redundant labor in agriculture as farm families adjusted slowly to emerging economic disequilibrium in stage 3 of the policy transition. While earnings of farm people lagged behind those of nonfarm people per capita in stages 2 and 3, the distinguishing characteristic of stage 3 was nonfarm wealth sufficient to transfer wealth to agriculture through government in the United States and East Asia.

Stage 4 begins when agriculture in a developed country has worked off much of its redundant resources and approaches long-term economic equilibrium (it never reaches that equilibrium). That time arrived in the United States around 1970, but the transition was obscured by oil embargoes and inflation of the 1970s followed by the farm financial crisis induced by agricultural over-expansion in the 1970s and Reaganomics (large federal budget deficits and attendant high real interest and exchange rates) of the early 1980s. Stage 4 clearly had arrived by the late 1980s, however, and commodity programs no longer could be justified on economic equity or efficiency grounds. American farm *and* nonfarm sectors had become affluent. Each had become capable of relying primarily on markets without transfers. However, government properly continued to provide public goods, correct externalities, and provide a safety net.

In the next section, I pick up American agriculture at stage 3. The nation is wealthy enough to subsidize agriculture if a case can be made. Salient characteristics of American agriculture in the 1920s and 1930s are described before I present a brief history of U.S. commodity programs.

Characteristics of U.S. Agriculture

As noted above, stage 1 for American agricultural policy extended to the colonial era. Stage 2 began with the colonial era, accelerated with the industrial revolution starting about 1850, and ended about 1920. Of interest for commodity programs is the background for agricultural policy in the 1920s when policy stage 3 began.

Several characteristics of U.S. agriculture, while not unique to America, were used to justify interventions transferring income in stage 3 from consumers and taxpayers to farmers:

1. Agriculture is subject to biological processes dependent on the vagaries of weather and pests. The long biological lead time between production plans and output intensify instability and associated uncertainty problems for farmers.

2. Agricultural production comes from millions of family farms recognized to be efficient units of crop and livestock production. No one producer can influence price—each producer is a price taker facing a perfectly elastic demand at the farm level.

3. People operating family farms have unique moral attributes prized by society and judged by many to be worth subsidizing to preserve.

4. Aggregate demand and supply for farm commodities are price inelastic in the short run to intermediate run. Hence, small changes in either supply (due to weather, technology, pests, price expectations, etc.) or demand (due to national economic conditions, export markets, etc.) produce sizable changes in price that can cause extended hardship to farmers if prices fall and to consumers if prices rise. The inelastic demand implies that consumers place great value in having enough food, but little value in having more.

5. Productivity advance is unusually rapid for agriculture. A steady stream of improved capital inputs (technology) comes from innovative science and industry. Farmers find many of these inputs profitable and adopt them to cut unit costs by saving labor or raising output. Crop and livestock supply advancing rapidly against an inelastic demand reduces not only real farm prices, but also gross and net farm income. Hence, labor resources must exit agriculture as productivity advances.

6. Supply response is slow in part because resources are specialized to agriculture. Farmers cannot maintain income by converting their resources to profitable nonfarm use when farm prices fall. The argument for asset fixity has largely focused on capital assets such as machinery and land, but it applies more realistically, if at all, to operator and family labor. High birth rates in agriculture exacerbate the excess labor problem.

7. The income elasticity of demand for farm output is very low, hence economic growth raises demand for farm products more slowly than demand for other products. This compounds the excess product supply and labor problems.

8. Buildup of labor-saving capital inputs raises capital requirements and land prices, creating cash flow problems for the family farm refinanced each generation. Debt service demands force high savings rates on farmers. This reduces living standards, but fuels capital gain accumulation as farmers “live poor and die rich.” Because they “live poor,” they generate considerable demand, even by commercial farmers earning favorable economic returns, for income transfers from the government (taxpayers).

9. American agriculture is a net exporter. As such, given the elastic export demand, the nation is inclined to let markets set export prices. Maintaining prices above free market levels in the domestic sector brings charges by foreign competitors that the U.S. is dumping products in export markets. Production controls and high overall price supports cause loss of much needed export markets. Alternatives to market intervention such as direct payments to farmers leaves their economic livelihood vulnerable to political whims of Congress. Hence, except for sugar and a few other commodities, American agriculture lacks the advantage of concealing farm subsidies in inflated consumer prices using import tariffs or a “single desk” monopsony buyer as used in some food net importing countries.

10. Agriculture in America is viewed by populists as exploited by agribusiness (input supply and product marketing firms) at home and by predatory foreign businesses and governments abroad. It is said that American farmers can compete with foreign producers, but they cannot compete with state (foreign government) trading monopolies or export subsidies provided by foreign governments.

In the 1920s, the above considerations constituted a view of agriculture best described as chronic economic disequilibrium. Interventions in agricultural markets was justified, it was held, because agriculture was persistently characterized by low and falling prices, low incomes, low rates of return on investment, high financial failure rates, excess labor, and instability that private risk management strategies and tools could not avoid or protect against. In short, conventional wisdom held that agricultural markets did not work or caused too much adjustment pain.

Brief History of U.S. Commodity Programs

With the U.S. wealthy enough and the nonfarm sector large enough to subsidize agriculture, the above characteristics provided a rationale for intervention in markets in stage 3 of the policy transition. Programs for cotton and grains are described first. Attention then turns to dairy, peanuts, sugar, and tobacco. I have drawn on *Farm Policy Analysis* (Tweeten 1989) for considerable portions of the following history of commodity programs.

Grains and Cotton

Historically, grains and cotton have been the most extensive and costly U.S. farm commodity support programs. Federal involvement began with the Federal Farm Board in 1929. With modest funding, the Board attempted to raise farm income by assisting farm supply and marketing cooperatives and by purchasing stocks of wheat, cotton, and other commodities. The Board arose out of a perennial misconception that low farm prices and incomes were from exploitation by “middlemen”—agribusinesses selling inputs to farmers and marketing farm output. The cause instead was excess supply of output (resources) relative to demand in the 1920s caused by expansion of U.S. agriculture during World War I and subsequent recovery of European agriculture in the post-war years.

The American agricultural economy deteriorated further with domestic and export demand falling with the Great Depression. Farm income per capita dropped to as little as one-third that of nonfarmers; up to three-fourths of the farm population was classified as poor. The federal governments’ response was the Agricultural Adjustment Act of 1933, the grandfather of today’s commodity support programs. The

Act featured voluntary programs of (1) nonrecourse loan price supports, (2) government financed buffer stock accumulation, and (3) paid cropland diversion to control commodity supply.

Under the nonrecourse loan, the producer pledged his recently harvested crop as security for a federal loan at a specified loan rate (crop support price) from the government. If the market price rose above the loan rate, the producer could repay the government loan and sell the commodity to the highest private bidder. If the market price did not rise above the loan rate, the farmer could turn in the commodity to the government—the government having no recourse (hence the term “nonrecourse”) but to accept the commodity as full repayment of the loan. Participation by producers was high so the loan rate tended to set a floor price under the commodity.

Although the 1933 Act was declared unconstitutional because it taxed agribusinesses to finance it, the basic features of the legislation were redrafted into other legislation that continued to 1996. For food grains and cotton, programs for decades were mandatory for all producers of a commodity if a specified majority (usually two-thirds) approved of supply control and support prices in a national referendum. Producers regularly voted approval. After approval, all producers were required to stay within their acreage allotment or base to qualify for nonrecourse loans. The acreage allotment was based on each producer’s acreage in a historic period.

Over time, key controversies for grains and cotton were how high and on what criterion to support prices, how to control production, whether supports should be flexible or fixed, whether programs should be voluntary or mandatory, whether to restrict acreage or output sales, whether the purpose was to preserve family farms or stabilize prices, and whether to rely on production controls and price supports or direct payments.

After tying price supports to the inverse extent of surpluses in the late 1930s, the government set high rigid price supports made feasible by strong demand during World War II. After the war, the high support prices contained political momentum difficult to reverse although they generated surpluses. After surpluses mounted after the Korean War ended in 1953. The Agricultural Trade Development and Assistance Act, Public Law 480, was approved in 1954. This Food for Peace Act provided substantial

financial assistance for export disposal of American farm surpluses to foreign countries. The Agricultural Act of 1954 established lower and flexible supports for basic commodities. Thus, flexible price supports finally arrived after repeated postponements following World War II.

Dumping of surpluses on international markets (PL 480) and continuing stock accumulation were unable alone to cope with excess production capacity, so in 1956 surpluses were addressed with long-term idling of acreage. The Conservation Reserve Programs (CRP) of general cropland retirement under long-term contracts as opposed to one-year specific crop retirement was launched in 1956 (and again in 1985). Instead of specifying how many acres of a grain or cotton a farmer could produce or instead of diverting a portion of (say) the corn base to soil conserving uses on an annual basis, the Conservation Reserve Programs paid the producer to divert a specified number of acres of erosion-prone cropland to soil conserving uses for (usually) a 10-year period; the producer could plant remaining land to other crops of his choosing.

The 1956 CRP eventually included a maximum of 30 million mostly low productivity acres. Given high price supports, CRP along with foreign food assistance programs (Public Law 480) were unable to reduce surpluses. Consequently, corn farmers were given the option of (1) high prices and acreage allotments or (2) low supports and no acreage controls in a 1958 referendum. They chose high supports and allotments. But the government remained unable to lower production of wheat or corn enough to avoid burdensome, costly surpluses of stocks in storage.

When John Kennedy became President in 1960, the Administration concluded that farmers must have income support, but that voluntary programs paying farmers to reduce production were too costly to taxpayers. Under voluntary programs, the government had tried to reduce costs by tying supports to the costs of production or past real prices (parity). Because none of those efforts was successful in reducing Treasury costs, the Administration attempted to extend mandatory programs. If two-thirds of the producers of a commodity agreed to a mandatory program in national referendum, then all producers must cut production (for no government payment) to force up the market price. That attempt to extend to all

grains and cotton the mandatory program previously used in cotton and wheat was turned back by Congress in 1962 and by wheat growers in 1963. Thus, except for rice and some minor commodities such as tobacco, support programs were made voluntary after 1963. Rejection of mandatory programs recognized the reality that major American crops had to be competitive in elastic world export markets and that high, rigid price supports would lose those markets. And to achieve a given net farm income, taxpayers were more willing to tolerate high Treasury costs than producers were willing to accept mandatory production controls.

Despite major commodity program interventions and Treasury outlays, family farms continued to be lost at a rapid rate. The cause was believed to be too many payments going to large farms, so Congress imposed payment limitations on individual producers in the Agricultural Act of 1970. That Act also established the “set aside” program of short-term land retirement. That is, instead of restricting acreage of specific crops, the government required the producer to divert some proportion of his historic cropland base to soil conserving uses; he could plant whatever he chose on remaining acres. The purpose was to reduce the real economic cost of programs and please producers by giving them more cropping flexibility to respond to markets.

Also to reduce real economic costs of programs and preserve more markets, direct payments were introduced. The Wheat-Cotton Act of 1964 augmented the loan support rate for wheat by providing a certificate program paying 75 cents per bushel to producers from a tax on processors. This certificate allowed the market price to be lower while maintaining farm income and global competitiveness. The subsequent Agricultural Act of 1970 also provided a certificate on a prescribed number of bushels times the difference between the wheat parity price (1910–14 ratio of wheat price to input prices updated to current year) and the market price received by farmers in the first five months of the marketing year.

Direct payments assumed greater prominence in the Agriculture and Consumer Protection Act of 1973 which established *target prices* and *deficiency payments*. Deficiency payments were direct transfers from the government to farmers equal to the shortfall of the loan rate (or market price, if higher) below the target price, multiplied by “normal” or *program* production. Target price levels under various

legislation were set at some times according to parity or cost of production, and at other times by government mandate.

The Agricultural and Food Act of 1981 was the high-water mark of commodity programs. Target prices were set by Congress at high levels. Because deficiency payments could be increased by “proving” higher yields (producing actual market receipts) and because farmers believed based on past action that the government periodically used historic acreage to update *program* acreage used with target prices to set deficiency payments, producers viewed the target price much as a supply price. Thus, a high target price induced more production to obtain higher deficiency payments. High support prices, coupled with the collapse of export markets artificially swelled by petrodollars and debt financing of third-world countries in the 1970s, raised program costs and government commodity stocks to unacceptable levels. In 1983, severe drought coupled with a massive short-term acreage diversion program reduced grain supplies to levels compromising the nation’s ability to export. Market share was lost to competing exporters.

Consequently, loan rates and target prices were reduced in the Food Security Act of 1985. Program yields and program acreage used to calculate deficiency payments were essentially fixed, decoupling payments from current production and, hence, ending the role of target price as a supply price. Marketing loans were introduced for cotton and rice featuring payments to farmers rather than government stock accumulation when the market price fell below the loan support rate. Along with a new Conservation Reserve Program converting up to 36 million crop acres to soil conserving uses, these programs constituted a major attempt to address environment problems. A Conservation Compliance program required farmers participating in commodity programs to use sound conservation practices, a Sodbuster program discourage adding to the cropland base, and a Swampbuster program discouraged drainage and cropping of wetlands.

The Food, Agriculture, Conservation, and Trade Act of 1990 continued reductions in real loan rates, target prices, and deficiency payments. Other provisions provided for greater flexibility in acreage among crops. The trend was to greater market orientation and international competitiveness. In real

terms (adjusted for inflation with the GDP deflator), loan rates under the 1985 and 1990 farm bills had been reduced 52 percent from 1983 levels by 1995 for corn and wheat. Target prices for corn and wheat had been reduced 36 percent under the 1985 and 1990 Acts, but the real reduction was greater because direct deficiency payments tied to target prices were allowed on fewer acres.

Although the phase down of commodity programs including the phase out of honey, wool, and mohair programs began before the 1996 farm bill, the Federal Agricultural Improvement and Reform (FAIR) Act of 1996 represented a radical departure from previous commodity programs. It immediately ended supply control (acreage reduction programs), target prices, and stock accumulation by government. Transition payments (production flexibility contract payments) followed a rigid, preset pattern beginning with \$5.6 billion in 1996 and phasing down to \$4.0 billion in 2002. These payments, prorated to producers based on historic production on individual farms, were decoupled from current or future production and prices. Transition payments presumably will end after year 2002.

Several public provisions from previous legislation were retained including loan rates, crop insurance, an emergency grain reserve, information systems, environmental programs, and agricultural research and extension. Crop loan rates were continued at their low 1995 levels. The marketing loan concept used under the 1985 Act for cotton and rice was broadened to other supported crops, replacing the nonrecourse loan and ending government stock accumulation.

At issue is what lies ahead for grains and cotton programs after year 2002. Government supply control, stock accumulation, and the Export Enhancement (export subsidy) Program are unlikely to continue (Tweeten and Zulauf 1997). The best guess is that a safety net of minimal marketing loan supports, an emergency grain reserve, and yield or revenue insurance will be retained. Public “goods” including government support of environmental programs, basic research, and information systems also will be continued.

A problem is that Conservation Compliance and Sodbuster features in operation since the 1985 bill designed to induce farmers to use “best management practices” and discouraging conversion of land to cropland and conserving soil in return for commodity program benefits will become inoperative if

farmers no longer have transition payments to induce program participation. Thus, transition payments are likely to be relabeled “green” payments and initially continued in the name of preserving Conservation Compliance, but without retargeting of payments among recipients. Over time, however, green payments will be retargeted among farms to induce soil conservation and water quality control. The Conservation Reserve Program of general land retirement will continue to pay farmers to convert land to uses that conserve soil and protect water quality. Other programs for the environment also will be continued, but large livestock operators will be regulated by the Environmental Protection Agency and nonpoint (field) pollution from farm fertilizers and pesticides will be regulated by the Clean Water Act. Mandatory regulations under these livestock and water quality regulations contrast with the traditional agricultural industry practice of being paid by the U.S. Department of Agriculture for voluntary measures to protect the environment.

Dairy

The dairy support program is built around Federal Milk Marketing Orders (FMMOs) established under authority of the Agricultural Marketing Agreement Act of 1937. Orders in an area are instituted upon approval of two-thirds of milk producers in that area. Section 602 of the 1937 Act states that the purpose of marketing orders is

...to establish and maintain such orderly marketing conditions...as will provide in the interests of producers and consumers, an orderly flow of supply thereof to market...to avoid unreasonable fluctuations in supplies and prices.

In each milk marketing order, prices are established each month for classes of milk by end use demand. The Class I (milk for beverage consumption) price is set at the Minnesota-Wisconsin market price plus the transportation premium from that region to the order area. Prices for manufactured uses such as cheese and butter are based mainly on local supply and demand. Producers are paid a blend price of the various classes of milk consumption. Thus, price discrimination with a higher price in the inelastic fluid (Class I) market blended with a lower price in the less inelastic manufactured markets raised revenue to producers. Under the Agricultural Act of 1949, the federal government assumed responsibility for

removing surpluses generated by the blend price and that would not clear markets at a support price set by government.

In the 1990s, the order system began to unravel. The states of Minnesota and Wisconsin (M–W) presumably with a comparative advantage in dairy concluded that they were losing income because the higher blend prices in other regions (because the Class I prices rises with distance from M–W) encouraged production and milk processing elsewhere. That price advantage coupled with growing efficiency in milk production in the Southwest region caused M–W to lose market share. Studies indicated the M–W milk price would rise from terminating the FMMO system. The disarray among dairy regions evident in Congress enabled lawmakers to orient dairy programs more to markets.

The 1996 farm bill established a very low marketing loan type of price support to be defended by payments rather than the historic practice of government purchasing surpluses from markets. Because an upward sloping supply curve coupled with downward sloping demand curves for milk in various uses inherently generates surpluses when producers are paid the blend price without supply control under FMMOs, the exit of governments from its market clearing role was a severe blow to the FMMO system. In addition, in 1994, a federal judge ruled against classified pricing, a ruling not yet imposed and being appealed.

These unsettling elements prompted dairy producers to make changes designed to promote bargaining power and stabilize prices and incomes. One response was to form regional associations such as the Northeast Interstate Dairy Compact featuring administered rather than market determined prices. A second response was to consolidate some of the 250 producer dairy cooperatives that control 80 percent of the milk supply into fewer numbers to exercise more control over market prices. FMMOs also are being consolidated.

At issue is what will happen to the dairy industry in the future. The federal government has been supportive of Compacts and cooperatives. However, the federal government is unlikely to grant these groups the supply controls and market powers essential to exercise much bargaining advantage. A

cooperative or Compact charging high prices is likely to have its market eroded by suppliers outside the system charging lower prices.

Most small, inefficient dairy farms have already exited the industry. Remaining producers on average have more wealth than the average taxpayer or milk consumer, hence, transfers to milk producers cannot be justified on equity grounds. The development of technologies such as reconstituted, sterile, ultra-high-temperature, and irradiated milk increase the feasibility of storing and transporting milk at relatively low cost. Relying on markets alone, such innovations can ensure a safe, plentiful supply of milk year round for every region. Futures and options markets as well as other risk management tools can address price instability problems. The market for milk like other farm commodities is rival, exclusionary, and transparent, hence the commodity is most efficiently allocated by markets. In short, with the rationale and public will for dairy market interventions eroding, the trend will be away from central planning and towards market pricing and output in the dairy industry.

Peanut, Sugar, and Tobacco Programs

The peanut program currently features a two price plan with quota peanuts used in domestic foods receiving a high price and over-quota peanuts receiving essentially the world price so they can compete in export markets. The sugar program utilizes quotas and import duties to protect domestic markets from cheap foreign imports. The tobacco program features high price supports and market quotas at no net cost to government.

Current peanut, tobacco, and sugar programs have several characteristics in common:

- They derive subsidies from consumers rather than from taxpayers.
- The U.S. is only marginally competitive in global markets for these commodities.
- At least two of the commodities, tobacco and sugar, exhibit negative externalities warranting a

Pigouvian tax equal to the shortfall of the private cost below the social cost. That the social cost of smoking is high is well known. Social cost of sugar consumption also exceeds private costs because the “empty” calories of sugar (along with fat, some from peanuts) are used excessively. One-third of

American are obese (more than 20 percent over recommended weight) and diseases such as atherosclerosis associated with chronic excess calorie consumption are a factor in approximately half of all deaths.

While a case can be made for a Pigouvian tax holding tobacco and sugar prices above free market levels, no economic rationale justifies paying proceeds of that Pigouvian tax to producers. Rather, the tax could be dedicated to health care.

Deadweight loss in national income (ignoring externalities) has been estimated to be approximately 10 percent of farm receipts for tobacco and sugar, but only about 1 percent for peanuts (average of two estimates shown in Tweeten 1989, p. 366). These estimates ignore social costs, however. If such costs were accounted for, the deadweight cost of these three programs would be low.

The programs cannot be justified on equity grounds because they “tax” consumers of lesser wealth to subsidize producers of greater wealth. For this reason and because these programs are inconsistent with the trend to open markets, Congressional efforts are mounting to phase out the programs.

Conclusions and Implications

The lessons of American commodity programs are not universal, but need to be carefully studied by governments that would intervene in (or exit from) farm markets.

1. Commodity programs display much momentum. They continue long after their initial justification has vanished because the relatively few recipients of benefits are aware they will suffer large losses and can justify organizing effectively to preserve their gains through political action. Meanwhile, those who gain from phaseout of programs often are numerous and widely dispersed, unaware that they will gain, and are unorganized and apathetic. Although aggregate benefits may greatly exceed costs of phasing out supports, each of the gainers receives too little and too vague a benefit to motivate active support of change in Congress. Thus, stage 3 in the United States will continue to year 2002 and perhaps beyond although agriculture shifted from a long-term disequilibrium economy to an equilibrium economy before 1990 (Tweeten 1989; Gardner 1992; Tweeten and Zulauf 1997). The lesson is that those who

observe a bona fide market failure suitable for correction by government intervention must recognize that “corrective” government programs and the distortions they introduce are likely to persist long after the market failure has vanished.

2. Another law of public programs is that program benefits often accrue disproportionately to the least poor and disadvantaged among those eligible for benefits. Much rhetoric had been devoted to saving family farms which continued to be lost throughout the commodity program era of stage 3. Commodity support prices tied to production provided larger farmers with much greater economic benefits than small farmers. Program benefits provided economic security and capital enabling operators to leverage equity to buy out their neighbors and realize economies of size. Empirical studies (see Tweeten 1993) give evidence that programs did not preserve family farms except in the short run when commodity programs and generous government credit subsidies saved many family farms that otherwise would have failed as in the financial crisis of the 1981–1986 period.

The public would like to see commodity programs redesigned to preserve family farms. Redesign of programs could have saved family farms and markedly slowed if not reversed the relentless movement to a dual agriculture made up of a few large farms accounting for most farm output and a large number of small farms accounting for most farms. The policy solution would have been to rely on direct payments for support of agriculture. Saving small family farms means giving up supply management coupled with reliance solely on carefully targeted direct payments to support income of small farms.

That reform never occurred for several reasons. One is that although small farms dominated farm numbers, they never dominated the politics of agriculture. Commercial farms used data for low-income small farms to buttress the need for commodity programs, but made sure payment limitations and other rules were written so that the relatively few commercial farms continued to receive most of the monetary benefits of programs.

Commodity program reform also has been thwarted by diffuse goals. One goal was to support and stabilize farm income and prices by cutting output. Opponents of payment limitations argued that

commercial farmers needed to be included in acreage diversion programs because they accounted for most production.

Although Americans in vast majority say they want to preserve family farms, they are unwilling to pay much to preserve them. One reason is that Americans may not very highly value preserving family farms. Another reason is that most Americans recognize the political infeasibility of designing and implementing programs that do in fact save family farms.

3. Farm commodities are market goods (rival, exclusionary, and transparent) rather than public goods, hence are allocated more efficiently by markets than by governments. The farm and food economy requires millions of decisions each day to operate efficiently; central planning from American dairy markets to Soviet Union collective farms has proven incapable of making such decisions wisely over the long run. Despite the advantages of relying on markets for farm commodities, many people continue to make a case for government supports. One justification for farm programs is the continuing apparent low current return on aggregate farm assets averaging of about 4 percent annually. Tweeten (1979) advanced the decreasing cost theory and the cash flow theory of farm problems to explain why farm resource returns appear to be low even when they are not.

Another frequently invoked justification for government commodity programs is to cushion the impact of the very real instability and uncertainty endemic to agriculture. A case can be made that the private discount rate is greater than the social discount rate and that hence the private sector underinvests in buffer stocks and other risk management tools. On the other hand, a case can be made that mismanagement of public buffer stocks and insurance programs has been too pervasive and wasteful to warrant continuation of the programs.

Of course, externalities warrant a continued public role but in farm inputs rather than commodities. The public role in environmental programs, basic research, infrastructure, and information systems will continue into stage 4 of farm policy.

4. Markets for agricultural commodities are difficult to circumvent. Benefits of higher supports are rather quickly passed to landowners as farm operators bid-up land rents and land prices. Benefits are

lost by renters, new landowners, and farm laborers. For some time, I have been calculating rates of return on farms by size. I find that commercial farmers tend to earn returns comparable to those elsewhere within approximately five years after either a positive or negative shift in earnings. The ability of farmers to adjust to risk and uncertainty often is underestimated. Some economists have developed neat theoretical rationalizations for commodity programs. The most effective refutation of these elegant theories is the simple fact that commercial farmers who account for most output have been doing well economically and the market is performing very much like neoclassical economics predicts (see Gardner 1992; Tweeten 1989, Ch. 4). Commodity programs in the United States have lost their intellectual base; they cannot be justified on grounds of economic equity or efficiency. Many of the 10 characteristics of American agriculture in policy stage 3 continue to hold, but do not preclude timely adjustments to emerging economic realities.

5. Major farm commodities losing comparative advantage are likely to most seek and find protection from market competition. Deadweight costs are one measure of protection and inability to compete in international markets. Measured by deadweight (national income loss) cost as a percent of receipts, the social costs of commodity programs have been highest for sugar, rice, cotton, and wheat; are less for feed grains and dairy; and are least for soybeans, livestock, and poultry (see Tweeten 1989, p. 366). Many of the established commodities most threatened by foreign competition are in the Southern region of the U.S.; it is perhaps no coincidence that Southern members of Congress are most active and effective in maintaining programs.

6. Multilateral trade reform has not been a very effective means to liberalize farm policies. It is notable that the major American (1985 and 1990 farm bills) and European Union (McSharry) reforms came before rather than with completion of the Uruguay Round bargaining. Reforms were made unilaterally because the major social costs of commodity programs are borne by the country practicing them. Multilateral trade agreements are helpful, but initiatives for freer trade often originate at the national level for national benefit.

7. American farm policy has been heavily influenced by the populist belief that better marketing can resolve problems of the farm economy. One of the most persuasive populist myths is that agribusiness exploits American farmers, robbing them of rightful profits. Accordingly, farmers have called for and government has granted numerous means to market at lower cost and without exploitation by agribusinesses. Thousands of cooperatives and numerous marketing initiatives including the Federal Farm Board of 1929 were formed to save the family farm and raise rates of return on farm resources. Farm resources now adjust fairly rapidly to equalize returns among sectors, providing parity resource returns with or without a competitive agribusiness marketing sector. With the farm sector now close to long-term economic equilibrium, rates of return on farm resources are set by rates of return elsewhere, and the number of farms is based mainly on technology. Thus, technology and resource markets rather than product markets largely determine the structure and economic destiny of agriculture.

8. Commodity programs often have been defended on economic efficiency grounds of providing forward prices of benefit in allocating farm resources, of reducing instability so that farmers can adapt improved technology with greater security, and of retaining efficient farmers in hard times so they can produce commodities when needed. Most of these arguments do not stand scrutiny. The best case for farm programs in the 1950s and 1960s was that they bought time for the millions of redundant workers in farming to adjust more painlessly to retirement, an off-farm job, or an efficient farming operation. This mostly is an equity rather than an efficiency argument, and one that was lost once agriculture had moved to stage 4. Given that agriculture is now earning equilibrium returns with the nonfarm sector, but is a small part of the economy, it follows the agriculture has a stake in sound policies that promote national economic growth. Such growth raises income of farmers and nonfarmers alike because resource markets and returns are integrated and in the long term are mostly independent of what happens in agricultural product markets.

9. Economic analysis matters. Various analysts attribute the major reforms in the 1996 U.S. farm bill to Republican control of the Congress, budget pressures, a skillful chairman of the U.S. House agriculture committee, and to other tactical sources (Browne *et al.* 1997; Orden *et al.* 1996). That is like

attributing World War I to the assassination of Archduke Ferdinand at Sarejevo. A more plausible explanation is that Congress realized from widely circulated economic analysis that the intellectual paradigm (arrival of stage 4) no longer justified continuation of commodity supports. Legislators cleverly sought and found tactics to implement the new agricultural paradigm in the face of intense pressures by special interests to continue past transfers to producers. The shift in public policy towards direct payment supports and gradually phasing those down while emphasizing environmental, basic research, information system, and infrastructure support has generally been consistent with economic principles although the path often has been twisted and treacherous.

10. Shifts in the paradigm of policy stages often take time to show up in legislation. That is because special events often are the precipitating factor behind changes in policy. In the 1930s it was the Great Depression that brought the first major farm policy intervention, in the 1940s World War II brought high rigid price supports, in the 1950s massive surpluses brought flexible price supports, in the 1960s a hard-fought wheat referendum brought voluntary rather than mandatory programs, in the 1970s the recognized need to compete internationally brought direct payments versus high price supports, in the 1980s high treasury costs and an overvalued dollar losing export markets forced lower supports and greater flexibility in programs, and farm prosperity of the 1990s finally convinced many disbelievers that farmers could earn “fair” returns in markets without commodity programs.

In conclusion, American farm programs after year 2002 are likely to be more market oriented. A 4 million metric ton emergency grain reserve will provide perceived food security for American consumers (real security lies in exporting less, importing more, slaughtering livestock, private stocks, etc.), but more assurance for developing country consumers. Producers will be provided with some security against instability through modest price supports and crop yield or revenue insurance. Transition payments will be converted to “green” payments and eventually better targeted to encourage conservation compliance for soil erosion control and water quality. The Conservation Reserve Program will continue to pay for holding fragile cropland in soil conserving uses and converting land along streams to filter strips. Public “goods” programs for agricultural research, extension, information systems, grades,

standards, and regulations will continue. The major departure from the past will be an end to supply control, stock accumulation, export subsidy, and coupled direct payment programs.

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