CHOICES
The magazine of food, farm, and resource issues
3rd Quarter 2014 • 29(3)

A publication of the Agricultural & Applied Economics Association

AAEA Agricultural & Applied Economics Association

Welfare Effects of PLC, ARC, and SCO

Bruce Babcock

JEL Classifications: H2, Q1
Keywords: Deadweight Loss, Farm Programs, Rent Seekers

The late Gary Becker (1930-2014), winner of the prestigious Nobel Prize in Economics and the Presidential Medal of Freedom, was a theorist who developed explanations for common phenomena not normally associated with economic inquiry. He analyzed drug addiction, crime, and family structure among many other topics. Of particular relevance to farm policy and the development of the Agricultural Act of 2014 is Becker's (1983) theory of political competition between rent-seeking pressure groups which predicts that policies that have enough political support to be adopted will tend to have two attributes.

First, they have lower deadweight losses—an economic measure of the loss of economic efficiency—than competing policies because high deadweight losses increase the political advantage of opponents. Second, the chosen policies will be designed to allow them to be defended as providing public goods, as correcting externalities, or as increasing social welfare, broadly defined. Policies with this second attribute create opportunities for public relations campaigns to deflect criticisms about wealth transfers from consumers and taxpayers to favored industries.

Leaders of the House and Senate agricultural committees introduced several new policies in the new farm bill, including the new commodity title programs called Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC), and the new crop insurance program called Supplemental Coverage Option (SCO). An examination of the likely deadweight losses from these policies along with the arguments put forward by their supporters shows that Becker's theory of competition provides a useful framework for understanding why farm subsidies have been so resilient.

Stated Rationale for New Farm Programs

Farm programs are largely written by House and Senate leadership with direct input from representatives of the beneficiaries of the programs. In addition to agricultural commodity group representatives, a relatively new beneficiary of farm support is the crop insurance industry, which consists of insurance providers and crop insurance agents. Congress uses baseline budgeting procedures—an accounting approach to develop future cost estimates that uses the current spending level adjusted by forecasts of inflation and population changes. Hence, the problem facing this collaborative group was how to allocate a largely fixed budget among programs and commodities that the group could support internally without generating so much opposition from external forces that it could not pass Congress and be signed into law.

Early in the process of creating the new farm bill, Frank Lucas, chairman of the House Agriculture Committee (R-OK) stated the rationale for farm programs as one of providing a necessary safety net:

> "Along with crop insurance, Title I programs form the very fabric of our farm safety net. They ensure that dramatic swings in commodity prices and volatile weather don't put our farmers and ranchers out of business."

Lucas went on to argue that taxpayers and consumers benefit from farm programs because they insure an adequate food supply:

> "While they (farmers) do the hard work of producing our food, we have to do our part to support them. Without a safety net, a few bad seasons can put a farm

AAEA-0914-061

out of business. When we lose that source of production, we don't usually get it back. So maybe instead of speaking about this as a farm safety net, we need to start calling it a food safety net. Perhaps that will get the message out that commodity support keeps farmers in business, which keeps food on our plates." (Oklahoma Farm Report, 2011.)

Lucas' framing of the rationale for farm programs was adopted by nearly all supporters of farm subsidies because it was easy to state, easy to understand, and argued that, because the public interest was being served, farm programs deserved taxpayer support. Becker's theory focuses on how increasing deadweight losses from wealth transfers limit the equilibrium amount of transfer that will take place. The purpose in Lucas' framing of farm programs was to make it appear that transfers to farmers actually increase social welfare in an attempt to neutralize political opposition motivated by the economic damage such transfers can cause.

Actual Deadweight Losses

Farm programs have the potential for generating significant deadweight losses in two ways.

First, deadweight losses caused by inefficiencies in tax collection will occur even with lump-sum transfers. Assuming that the amount of money spent on farm programs was going to be spent on other programs and not used to reduce government outlays, the net increase in deadweight losses from tax collection to fund farm programs is zero. If actual farm bill spending changes relative to projections, then so, too, will deadweight losses associated with collecting taxes.

Second, within the crop-producing sector, a necessary condition for large deadweight losses is for farmers to significantly alter the mix of crops as a result of the incentives provided by the programs. Past experience with U.S. farm programs demonstrates that the mix of crops is significantly altered only if program payments are coupled with current planting decisions. Thus, the most important factor that determines whether farm programs have the potential for creating deadweight losses is whether the size of program payment varies with a farmer's planted acreage. One major discussion during the farm bill debates centered around whether subsidies should be paid based on the actual acres a farmer plants or instead on the farmer's "base"—which are the historical planted acres of certain crops (Zulauf, 2013).

Becker's theory predicts that, to reduce opposition to new farm programs, they would be designed to minimize deadweight losses by basing payments on base acres and base yields rather than actual planted acres. An examination of the three new programs for crops—PLC, ARC, and SCO—largely supports this prediction.

Price Loss Coverage

PLC is basically the previous countercyclical payment program with a new name and higher trigger prices. Payments are triggered when the season-average market price is less than a crop's reference price. The payment is equal to the product of 0.85 base acres of the covered commodity, the difference between the reference price and the effective price, and the program payment yield for the covered commodity. The key feature of this program is that payments depend on base acres and base yields. Thus, they are "decoupled" from actual planted acreage and will have minimal impact on acreage decisions, hence minimal deadweight losses. Even though payments to a particular crop may be substantial if market prices fall below program reference prices, there is no reason to believe that farmers will respond to large, anticipated payments for a particular crop by planting more because the amount of payment they receive will not be affected.

Agricultural Risk Coverage

ARC generates payments to farmers when per-acre actual market revenue falls below the ARC per-acre revenue guarantee. Growers have a choice of whether to calculate actual revenue and revenue guarantee on county yields or on farm yields. The key feature for ARC, in terms of it generating deadweight loss, is that payments are calculated using base acres as with PLC. Thus, an individual grower's planting decision has no effect on the size of any payment. Hence, ARC payments will not cause significant deadweight losses within the agricultural sector.

Supplemental Coverage Option

SCO is a new crop insurance program that makes payments if county revenue or yield falls below 86% of the SCO guarantee. Unlike PLC and ARC, SCO payments will be based on planted acres. Hence, they have the potential to distort planting decisions and cause deadweight losses. However, two features of SCO make it unlikely that these losses will be significantly higher than they currently are with other crop insurance programs. First, prices that will be used to set SCO guarantees will be the same prices used to set other crop insurance guarantees. Crop insurance prices reflect current market conditions at about the time that planting decisions are made. Thus, crop insurance guarantees provide no incentive to plant a particular crop that is not already reflected in current market prices. Second, price or revenue must fall 14% before an SCO payment is received so, at planting, there is a rather low probability that a payment will be received. An additional consideration that limits deadweight losses is that because SCO provides coverage between 86% and the percent coverage level of a grower's underlying crop insurance, it is likely that many growers will substitute SCO coverage for their individual coverage level. Thus, even if crop insurance coverage causes deadweight losses, any net increase in deadweight losses from SCO should be negligible.

During the farm bill negotiations within and between the House and Senate agriculture committees, there was a lot of discussion about whether PLC and ARC payments should be calculated using base acres or planted acres. The Lucas rationale for farm programs argues for planted acres because it is difficult to imagine designing an effective safety net for soybean farmers who have wheat base if, for example, their payments are based on what happens to wheat. Arguments for base acres were made by groups concerned that farmers would otherwise plant in response to government prices rather than market prices, thereby resulting in deadweight losses. The compromise solution was to allow farmers to update their base acres using recent past planting decisions. This feature better aligned base acres to the crops actually planted on farms while keeping payments decoupled from current planting decisions. This compromise was consistent with Becker's prediction that consideration of deadweight losses is likely to be important in determining which policies are adopted.

Resiliency of Farm Programs

Record crop income in recent years and subsequent record-high land prices make it absurd to argue that crop subsidies are needed to maintain agricultural production capabilities in the United States. And the argument that the food security of the United States depends on subsidizing production of crops is easily countered by the fact that 30% to 40% of U.S. corn production is diverted to produce ethanol while about 50% of U.S. wheat production is sold in export markets. Yet these two arguments continue to be the primary justifications put forth for crop subsidies.

The disconnect between a lack of an actual economic rationale for farm subsidies and their continued existence demonstrates that farm programs exist not because of a need to enhance social welfare but rather to meet the political objective of members of Congress to care for a constituency that lends them political support. Thus, it is not surprising that record farm income in the last five years had no real impact on the question of whether farm subsidies would continue. Farm income levels have no impact on the benefit of subsidies to farmers and, hence, they have no impact on the political benefits to members of Congress to provide the subsidies.

The outcome of the recent farm bill, in terms of what programs were adopted, coincides nicely with Becker's theory of political competition with its focus on deadweight losses. The newly adopted programs will not lead to a significant misallocation of resources because program payments are decoupled from planted acreage. This attribute helped defuse opposition to the programs because, in one sense, they do no economic harm.

Unlike in some previous farm bills, the most important welfare costs of farm subsidies in the Agricultural Act of 2014 are not traditional deadweight losses, but rather the lost opportunity to use the funds for programs that unequivocally have the potential to increase social welfare. Examples include agricultural research, agricultural pollution prevention, invasive species control, transportation infrastructure investments, increased food quality and food safety inspections, and nutrition programs. But transferring funds from farm subsidies to these types of public goods will not happen without a dramatic increase in the political power of groups advocating for the public good, which is a daunting challenge, given the defuse nature of public good benefits and the highly targeted nature of the current subsidy programs to a relatively small number of farm households.

For More Information

Becker, G. S. 1983. "A Theory of Competition Among Pressure Groups for Political Influence." *Quarterly Journal of Economics*. 98: 371–400.

Oklahoma Farm Report. 2011, July 27. "House Agriculture Committee Chairman Frank Lucas Says a Food Safety Net is Needed." Available online: http://www.oklahomafarmreport.com/wire/news/2011/07/01041_LucasComments07272011_103903.php.

Zulauf, C. 2013. "The Base vs. Planted Acre Issue: Perspectives, Trade-offs, and Questions." *Choices* 4th Quarter. Available online: http://www.choicesmagazine.org/choices-magazine/submitted-articles/the-base-vs-planted-acre-issue-perspectives-trade-offs-and-questions.

Bruce Babcock (babcock@iastate.edu) is the Cargill Endowed Chair of Energy Economics, Director, Biobased Industry Center, and Professor, Department of Economics, Iowa State University, Ames.Iowa.