Look for Hidden Costs

Why Direct Subsidy Can Cost Us Less (And Benefit Us More) Than A "No Cost" Trade Barrier

by Bruce Babcock and Andrew Schmitz

To judge commodity programs on the basis of the amount our federal government spends on them ignores other costs and benefits, and therefore, the wider implications of policy on social welfare. After all, farm programs affect both the prices farmers receive for their farm products and the prices we all pay at the supermarket. Simply summing up government expenditures may badly reflect what producers truly gain and consumers (as taxpayers too!) truly lose.

Take, for example, deficiency payment schemes like we have for corn, wheat, rice, and cotton. With these programs the government supports the income of producers by making up the difference between a targeted price and whatever the market price turns out to be.

These programs often result in large government expenditures and taxpayer costs. But they also tend to encourage greater production and so result in food prices lower than they would be without the program. In such cases the gains to consumers from the market place offset the burdens of tax expenditures.

Or take the government sugar program, which restricts the import of foreign sugar. The consumer—as a taxpayer—does not pay a cent for the program.

But, looking at the difference between the domestic sugar price (nearly 21 cents a pound) and the world price (about 5 cents), one sees that while we save as taxpayers, we lose as consumers. When we buy sugar at the supermarket, or purchase any of the hundreds and thousands of products containing sugar, we pay an extra 16 cents for each pound of sugar.

As these examples show (and there are many more), it is misleading to judge the relative merits of government programs simply on the basis of taxpayer expense. The effects of policy on society’s welfare are broad and complicated. One must identify and quantify both consumer and producer gains and losses from government intervention before choosing the best policy.

Farm Program Costs and Benefits

You are likely to hear economists argue in favor of free markets; that the amount of goods produced and the resulting market prices maximize society’s welfare. This is economists’ shorthand, but what does it mean? The argument goes something like this:

In a free market, farmers increase supply until the cost of producing just one more bushel is equal to the price received for it. Supply does not expand further, because otherwise the farmer benefit (the price received) would be less than the additional production cost. Likewise, consumers demand a commodity until the pleasure of consuming that last bushel has a value just equal to the purchase price. When the benefit consumers obtain from that last bushel is equal to the cost of producing it, society’s welfare can be no better given a particular distribution of wealth in society.

An illustration is useful. Suppose the price consumers pay for a commodity is increased by a government policy that restricts production (a production quota). Market prices then are above production costs. Consumers would consume more if prices were lower. The consumer benefit from additional supplies would be greater than the cost of producing them. Or, to put it another way, consumers could bribe farmers to produce more, and if it were legal to do so—they would. And individual producers would be pleased to accept the bribe.

In this example, the cost of the program is a loss in consumer welfare. It is the amount consumers would be willing to pay to eliminate the production restriction. The benefit of the program is the increase in producers’ profits due to the price enhancing effects of the supply restriction. The difference between these two is the economic cost of the program—the amount of consumer income lost that is not counted as a producer benefit.

Here we have two cost concepts: the consumer welfare loss and the net economic cost. They are often overlooked in the political debates about farm programs. The following examination of
two policies in particular, the 1984 corn program and the 1983 sugar program, is particularly instructive. Budget expenditures overstate the true cost (the net economic cost) of the corn program, and underestimate the true cost of the sugar program.

**Corn Program Costs and Benefits**

The components of the corn program have changed little since 1974. Each major component of this program—deficiency payments, government storage, and acreage removed from production (coined “set-asides”)—affects both the welfare of society in general, and the welfare of consumers in particular. The effects of individual components of the program are often disguised or overlooked if they are not examined separately.

One way that economists analyze these effects is to assume first that policy consists of a single component. Then, the net economic costs and consumer losses of a policy can be established by summing up the effects of the individual components of the program. All three components of the corn program at particular times may substantially affect net program costs.

However, for our discussion here, we focus only on the deficiency payments and acreage set-aside components in 1984. We ignore government storage for this year, since we can think of government corn storage as simply replacing what private interests would have undertaken without intervention.

**Deficiency Payments**

First, we consider a pure deficiency payment program. Such a program guarantees farmers a certain “target” price for their corn. Suppose it is $3.00 a bushel. If the market price is above the target price, no payments are made, costing taxpayers nothing. But if lower, for example $2.00, a deficiency payment of $1 per bushel is paid to producers.

Farmers benefit in two ways from a high target price. First, they sell at a higher target price, $3.00 in this example, all the output they would have produced at the lower, free market price. And, second, they receive the target price for any increase in production that becomes profitable.

For example, farmers may switch acreage from lower priced crops to the program crop, blow up land of marginal quality, or add more fertilizer. But of course there are some costs involved in increasing production. So the net gain to producers on the increased production is not $1 per bushel but $1 less the cost of producing the additional amount.

But the additional production will be consumed only if the market price is lower. Consumers benefit from these lower prices in a manner similar to how producers benefit from higher prices. They pay less money for the quantity they would have purchased without the program. And, they find it desirable to increase their purchases of the now lower priced corn.

Taxpayer costs of such a program may be substantial. The greater the gap between the guaranteed government price for producers, and the resulting market-clearing price consumers pay, the greater are federal expenditures. But, the net economic cost—society’s cost—of this deficiency payment program is not the amount of federal expenditures. It is a combination of the benefits to producers and consumers, as well as the tax costs.

However, there is a net economic loss from the deficiency payment program. The gain in consumer welfare, from additional supply is less than the additional production cost. Society’s welfare could increase if supply were decreased.

The net economic loss borne just by the United States increases if some of the commodity is exported. Benefits accrue to foreign consumers from subsidized U.S. grain exports. From a world welfare perspective, these benefits should be counted. But from a more narrow point of view they should not, since foreign consumers do not pay the taxes needed to support the program. In a sense, they are free riders.

The net economic losses from deficiency payments, and the amount of income transferred from consumers to producers, depends on how much farmers expand production in response to higher target prices. In reality, deficiency payments are not based on actual production, but rather based on historical production levels.

Farmers who grow more in response to high target prices do not receive the total benefits of expansion immediately. Hence, we may reasonably conclude that supply response to deficiency payment programs is fairly small, and the estimates of the actual effects of the program presented later reflect this assumption. If the corn program were suddenly ended, the short run decrease in supply (due to farmers relying solely on a lower market price) would probably be small, too.

**Acreage Set-Asides**

Now if the corn program were a pure-deficiency payment program it would be fairly easy to calculate its associated economic costs. But there are also acreage set-asides, and this complicates the calculations.

One attempt to deal with the potential long run problems of overproduction is to require farmers who participate in federal grain programs to reduce their supply by “setting aside” a percentage of their historically planted acreage. Analysts sometimes miss these set-aside requirements, since they have no claim on the federal budget. To the extent that supply is cut back, these requirements actually reduce federal expenditures by making less production eligible for government payments. Nevertheless, just because there are fewer tax dollars spent does not mean that set-aside requirements are always good for society as a whole.

To see this, consider set-aside requirements alone. Suppose all producers of a commodity are required to follow a fraction of their historic acreage. The economic cost of this program component has two parts. The first is caused by the divergence of the production cost and the consumption benefit of additional supply. The acreage restriction causes supply to decrease, and the market price to increase. Consumers pay higher prices as the market rations the decreased supply. These higher prices reflect the economic loss of reduced consumption. But the price received by

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*We pay an extra 16 cents for each pound of sugar.*
Net social loss from the sugar program is much greater than from the corn program.

farmers is greater than the cost of production, since the level of supply is restricted.

Inefficiencies are added to inefficiencies when supply is reduced by controlling the amount of land in production. This land restriction causes overutilization of other, unrestricted, production factors unless farmers have no flexibility over their production methods. The loss to society from decreased supply would be lessened if farmers were told the level of the crop they must grow and then allowed to produce this amount in any way they desired.

These two sources of economic losses due to acreage set-asides are reduced somewhat by the rational reaction of farmers to such a scheme. When farmers are required to set aside some cropland, the first to go is of poor quality. Thus, the drop in supply and the degree to which farmers alter their production methods are both less than what would be predicted from assuming that the land taken out of production is of equal quality to that left in.

In order to calculate society's welfare loss from a policy which includes both deficiency payments and set-asides, we must know what the world would look like without the program. Such knowledge is difficult to come by without a large scale modeling effort. Unfortunately, a reliable statistical model that would do this has yet to be developed.

We can, however, estimate a ballpark figure. We must guess at the quantities consumers would demand at different prices and how much would be produced at these prices. We can observe what the supply and market price were in 1984, and by working backwards with our guesses, we can figure out what supply and demand would have been without the program.

1984 Corn Program Costs
The estimated combined net benefits and costs of the 1984 corn program for producers and consumers/taxpayers is $0.08 billion. Corn farmers received about $1.8 billion more than they would have without the program. The total consumer/taxpayer loss was about $1.9 billion, $1.7 billion of which comes from government expenditures. The net economic loss of $0.08 billion represents a loss of 4.7 cents for every dollar going to farmers as deficiency payments.

The large taxpayer cost and relatively small net economic loss from the corn program are typical when direct government payments are made. Large net economic losses can be expected only when policies cause substantial changes in market prices. This is exactly the case with the sugar program.

Welfare Costs of the Sugar Program
In 1983 the domestic sugar price was 1.84 billion dollars.

<table>
<thead>
<tr>
<th>Benefits and costs</th>
<th>Corn 1984</th>
<th>Sugar 1983</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Import quota</td>
<td>Direct payment</td>
</tr>
<tr>
<td>U.S. producer benefit</td>
<td>1.84</td>
<td>1.35</td>
</tr>
<tr>
<td>U.S. consumer cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From price change</td>
<td>.23</td>
<td>2.7</td>
</tr>
<tr>
<td>From tax expenditure</td>
<td>1.69</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1.92</td>
<td>2.7</td>
</tr>
<tr>
<td>Net economic loss</td>
<td>.08</td>
<td>1.35</td>
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Net social loss from the sugar program is much greater than from the corn program.
22 cents a pound. The world price was
8.5 cents. This price difference resulted
in domestic consumer losses of $2.7 bil-
lion, producer benefits of $1.35 billion,
and net economic losses to the United
States of $1.35 billion. For each dollar
the policy shifts to farmers, consumers
pay $2 with a net economic loss of one
dollar.

Sugar producers receive their gov-
ernment subsidy indirectly through the
import quota. The restricted supply leads
to higher domestic market prices. Of
course, both domestic and foreign sup-
pliers gain. Suppliers of foreign produc-
tion benefit since import quotas are giv-
en free. They are not sold to the highest
bidder.

Consumers lose in two ways. First,
they find that many purchases of sugar
products are no longer justified at the
higher price: consumption falls. Second,
they must pay a higher price for this
lower level of consumption. We calcu-
late the consumer loss of the sugar quota
by estimating what consumers would be
willing to pay to eliminate the import
restriction.

As with deficiency payments for corn,
sugar import quotas allow U.S. produc-
ters to gain in two ways. They sell at the
higher supported price the supply they
would have otherwise produced at a
lower free market price. And they find
that the higher support price allows
them to profitably grow more sugar.

Like corn deficiency payments, the
world economic cost and the U.S. eco-

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nomic cost are different. Part of the
world economic cost results from the
inefficient expansion of U.S. domestic
supply. Foreign growers could supply
that quantity more cheaply. In addition,
there is a drop in quantity demanded
from U.S. sugar consumers due to a
higher market price.

The domestic economic cost is higher
than the world cost. Much of the welfare
lost by U.S. consumers goes directly to
foreign sugar suppliers. Exporters do
not pay for the privilege of supplying the
high price U.S. market. Consumer losses
that accrue to foreign suppliers must be
counted as a net U.S. economic loss.

Once again, to calculate these benefits
and losses requires that the situation
without the sugar quota be known. Un-
like corn, this is straightforward. With
the multitude of foreign producers of
sugar, it is likely that if the import quota
had been eliminated in 1985, U.S. con-
sumers would have paid, and U.S. pro-
ducers would have received, the prevail-
ing world sugar price.

The results in the table show that both
the U.S. corn and sugar programs have
increased the net incomes of U.S. farm-
ers substantially, and that U.S. consum-
ners of both commodities suffer. Howev-
er, the net social loss from the sugar
program is much greater than that from
the corn program.

One source of economic loss is
caused by inefficient production. This
comes from farmers getting paid more
than what consumers are willing to pay,
or by restrictions on the use of land. The
economic cost of the 1984 corn program
is relatively low, since the main instru-
ments of the program—the deficiency
payment and acreage set-asides—did
not substantially change the quantity
supplied by corn farmers. This implies
that the tax payments made to farmers
act largely as direct redistribution, and
therefore the cost to the taxpayer is
largely offset by the gain of the farmers
who receive the checks.

The sugar program, on the other
hand, imposes large economic costs on
American society because much of the
extra consumers have to pay for sugar
goes to suppliers of imports. The results
in the table show that while the consum-
er cost of the sugar program is $2.7 bil-
lion, U.S. producers only benefit by half
that amount.

Interestingly, we calculate that if the
government paid U.S. sugar farmers di-
rectly what they are gaining with import
restrictions, then we could save the U.S.
society over a billion dollars in econom-
ic losses. Obviously, this means large
transfers through the federal govern-
ment. But, for every $1 that was paid to
sugar producers as a government check
taxpayers/consumers would be saving
$2 on their market transactions. Foreign
suppliers would lose relative to the pre-
sent system.

One last interesting aspect, which dif-
ferrentiates the corn and sugar programs,
are the average benefits each type of
farmer receives. As noted above, total
farmer benefits are of the same magni-
itude, $1.7 billion for corn and $1.4 bil-
lion for sugar. But, because there are so
many more corn farmers than sugar
farmers who received program benefits
(117,000 compared to 12,500) the aver-
age gain to sugar farmers was about
$100,000 higher than the average gain to
corn farmers. This high concentration
of program beneficiaries perhaps explains
why the sugar program has been so
much more resilient to attacks from
those who otherwise would favor free
markets.

Final Remarks

Treasury costs are a poor indicator of
the true costs of protecting domestic in-
dustry. The sugar program costs the gov-
ernment nothing in terms of tax expen-
ditures. However, the losses to U.S. soci-
ety for this program were more than the
corn program in each of the years we
studied. Nevertheless, sugar producers
received $500 million less in benefits.

The relatively high economic costs of
the sugar program and low costs of the
corn program are due to the policy instru-
ments chosen. Import quotas, which
are not auctioned off, involve substantial
net economic costs for the importing
society.

Such costs are not unique to agricul-
tural commodities. In another study we
(with Roy Allen) estimate that automo-
bile and steel import quotas have annual
net economic costs of $1.06 billion and
$770 million, and annual consumer
costs of $4.2 billion and $3.4 billion.

These costs are borne by U.S. society
in order to transfer $3.2 billion to dom-
estic automobile producers and $2.61
billion to steel producers each year.
Both programs cost the government
nothing in terms of tax expenditures,
but the policy instrument of quotas
hides the true social burden.

There is a recent push to reduce our
federal government's role in agriculture.
In light of this, the continuing support
enjoyed by key manufacturing sectors
and U.S. sugar through the policy of im-
port restrictions is somewhat surpris-
ing—especially when we consider the
relatively high social losses from quotas.
Clearly, if we are concerned with the
hidden costs of import restrictions, then
efforts to eliminate quotas on many
manufactured goods should go hand in
hand with efforts to reduce subsidies on
agricultural export commodities.