

South Dakota State University
**Open PRAIRIE: Open Public Research Access Institutional
Repository and Information Exchange**

Economics Commentator

Department of Economics


11-17-1992

Is Publicly Funded Research in Agriculture Still Needed?; Grain Price Outlook

Donald Peterson
South Dakota State University

Richard Shane
South Dakota State University, richard.shane@sdstate.edu

Follow this and additional works at: http://openprairie.sdstate.edu/econ_comm

 Part of the [Agricultural and Resource Economics Commons](#), and the [Regional Economics Commons](#)

Recommended Citation

Peterson, Donald and Shane, Richard, "Is Publicly Funded Research in Agriculture Still Needed?; Grain Price Outlook" (1992).
Economics Commentator. Paper 283.
http://openprairie.sdstate.edu/econ_comm/283

This Newsletter is brought to you for free and open access by the Department of Economics at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in Economics Commentator by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michael.biondo@sdstate.edu.

Is Publicly Funded Research in Agriculture Still Needed?



by

Donald Peterson
Extension Economist
Marketing & Management

As more and more research in agriculture is being conducted by private companies, it seems reasonable to ask if public investment, that is, the use of tax dollars for research in agriculture, still is warranted. This is especially true with increased concern over the national debt and the desire to cut government spending.

Recently, Jean-Paul Chavas and Thomas L. Cox, at the University of Wisconsin, conducted a study aimed at determining the returns to private and public investment in agricultural research.¹ They found that private investment has an average internal rate of return of about 17% with a lag time of 0 to 7 years. This lag time means that it takes between 0 and 7 years before the investments begin to provide a positive return to the investor.

Investment by the public sector is quite different. It has an average internal rate of return of 28% with a lag time of 8 to 15 years. This return of 28% is slightly below that reported in earlier studies. For example, in 1976 Knutson and Tweeten² reported an internal rate of return of 35% for the years 1969 to 1972.

An internal rate of 28% means that for every \$100 the public has invested in agricultural research, consumers have saved an average of \$28.02 per year in their purchases of food and fiber products over the next 30 years. Because of the competitive nature of farming, the benefits of research cannot be captured by the farmer in the long run. While agricultural producers who first adopt a new technology are able to increase profits due to lower costs, they cannot maintain their enhanced profit position for long. As more producers adopt the new techno-
(Continued on p.2)

Grain Price Outlook



by

Richard Shane
Extension Grain
Marketing Specialist

Record corn and large soybean crops were reported in the November 10, USDA Crop Production report. Corn production was raised 391 million bushels from the October estimate of 8.938 billion bushels. Soybean production was increased about 60 million bushels from the October amount. Record yields were set by both crops, corn at 129.3 bushels per acre and soybeans at 37.3 bushels per acre. This corn yield exceeds the previous record by nearly ten bushels per acre and has silenced analysts who claim the current corn yield trend is too steep. The previous soybean yield record set just last year was 34.2 bushels per acre. South Dakota's estimated corn yield of 83 bushels per acre is one bushel lower than the record set in 1985 but production will still be a record this year.

Small grain and wheat production was unchanged compared to the October report. Sorghum production was raised 25 million bushels.

The immediate reaction to the supply side of the report was bearish. Prices opened lower on Wednesday (report released on Tuesday) but contract lows held and prices rallied late in the trading session. Ability to rally in the face of bearish market factors is good news for the grain trade. Such price action normally signals a seasonal low has been set. Future grain price rallies will be tempered by the large supplies on hand and demand will have to be brisk for price increases to exceed costs of storage.

Corn

The December corn contract low of \$2.04½ held even in the face of record
(Continued on page 2)

(Peterson -- cont'd from p.1)

logy, supply increases and prices fall back to a "normal profit level." Thus, the benefits of public investment are passed along in the form of lower prices to the consumer or they are used to buffer cost increases incurred because of government regulations, increased marketing costs, higher labor costs, etc.

Although the average benefit is 28% per year, the actual benefit stream is not even. Historically, for public investment, the first 8 to 15 years generally has shown no, or very little, return. But then the pay off begins, with the peak flow occurring about the 23rd year and then tapering off to zero about the 30th year. (It should be noted that these numbers are aggregates for the whole of public investment in agricultural research and not for any one set of research projects.)

The differences in the rates and longevities of returns to investments in agricultural research between the private and public sectors can be explained, at least partially. First, few businesses are willing to invest in research which has an incubation period as long as 15 years, even though the expected return may be high. This requires a substantial cash flow and the risk is high for private concerns. Economic conditions could change so that the firm would not be able to continue the investment or be unable to liquidate the investment without substantial economic loss. Second, patent rights are good for only 17 years. Thus, research which has a long time between cash out lay and the receiving of a cash benefit is left to the public sector.

In short, private industry's investments in agricultural research concentrates in those areas with a net benefit period of less than 17 years, while public investment has concentrated in those areas with a higher rate of return and a longer economic life. Public research also serves as a foundation for much of the private research.

In an economy where there is need to cut spending, investment in public research could become a prime target, especially when the pay back is long term and the impact may not be felt for 8 to 15 years. However, such a move would only

reduce society's income producing ability and increase upward pressure on the cost of living in the future, making the problem worse within a few years. Therefore, it is in the consumers' long run interest to see publicly funded research in agriculture maintained.

References Cited:

- ¹Chavas, Jean-Paul and Thomas Cox, "Influence of Research on Productivity", Amer. J. of Agr. Econ., 74(1992):583-591.
- ²Knutson, M., and L. Tweeten, "Toward an Optimal Rate of Growth in Agricultural Production Research and Extension," Amer. J. of Agr. Econ. 69(1979):70-76.

(Shane -- continued from p.1)

setting yields and production. The slow pace of harvest may be responsible for holding price above \$2.00 per bushel. Only 50 percent of U.S. corn is harvested compared to the five year average harvest pace of 91 percent as of November 8. Some harvest loss may be encountered, but the magnitude of such losses will not reduce overall corn production. However, normal production increases recorded after the November report may be offset by such losses and leave U.S. production at 9.329 billion bushels.

Strong demand for corn will be necessary to feed any post-harvest price rally. Export demand has been strong with nearly 50 percent of expected annual sales booked only eight weeks into the marketing year. Demand has been strong for several reasons. First, importing countries realize corn price is low and they are taking advantage of it. Second, the dollar has been weak making U.S. grain prices attractive. Third, South Africa had a major drought which has forced them and their normal export customers into the U.S. market. Fourth, President Bush has announced grain credit and export enhancement provisions early in the marketing year. What this all points to down the road is a chance for flat prices next spring as export sales slow.

Feed demand is expected to be very strong. A mild winter could change that

picture very quickly. The bottom line is that storage gains may be realized by early 1993. Of course severe winter weather and a dry spring could change this whole scenario very rapidly.

With this information, it appears that the national average corn price will be 10 cents either side of \$2.00 per bushel for the marketing year. Corn price will most likely average below \$2.06 from December 15 to March 15 and the Farmer Owned Reserve (FOR) will be opened. Farmers can put corn in the FOR after their 1992 9-month CCC loans mature. An upper limit of 900 million bushels has been set for the FOR, so entry may be on a first come-first served criteria. Such farmer action may help to strengthen corn prices next summer.

Soybeans/Sunflowers

Soybean production of 2.167 billion bushels will meet all demand requirements and still leave a relatively high 350 million bushels carry out for 1993. Current price action suggests that seasonal lows have been established and a post-harvest rally has begun. The magnitude of the rally will be impacted heavily by export demand near term and South American weather next spring.

Soybean exports booked in the first eight weeks of the marketing year beginning September 1, 1992 have already reached 50 percent of annual export expectations. The threatened trade war with the European Community (EC) has lead EC countries to stock pile soybeans early so they can hold out for more supplies until South American harvest is underway next spring. The weak dollar and export credit announcement have also helped keep soybean prices in a sideways range for the past two months.

The most likely near term scenario is for the January futures to trade in the upper half of the trading range from \$5.55 to \$5.75 per bushel. The post-harvest price rally into 1993 will most likely just cover farm storage costs unless a spring drought breaks everything loose.

Sunflower acreage was down 23 percent in 1992, but an excellent yield of 1,416 pounds per acre has held the production decline to only 19 percent. Demand for

sunoil remains strong and will help push South Dakota prices back over 9 cents per pound by next spring.

Wheat

Wheat prices continue in a post-harvest up trend showing strength on excellent export sales. Export sales are at 60 percent of annual expectations with one-third of the market year finished. This is slightly ahead of normal. Wheat price received a boost when President Bush announced a full year's EEP allocation before the election. Also, China has been buying wheat as they fear their Most Favored Nation (MFN) status may be in danger under the Clinton administration. These early sales may help the wheat price reach an early seasonal peak. The wheat price usually peaks between November and February and often before the first of the year.

Factors to watch this spring in addition to EEP and exports are the winter wheat conditions and the impact of farm program set aside requirements of zero percent. Unless exports are very strong, increased plantings may lead to an early price decline into harvest.

Fall and winter price rallies should be considered as opportunities to sell wheat from storage. Also, early pre-harvest pricing of 1993 wheat may prove very profitable with the large acreage potential.

Oats/Barley

Record U.S. yields for oats and barley of 65.6 and 62.4 bushels per acre, respectively, will not lead to record production as acreage of both crops continues in a downtrend. Ample supplies of both are available to meet industrial needs. Feed grain price will prevail with oats near 65 to 70 percent of the price of corn and barley at 80 to 90 percent of the price of corn. Malting barley will demand a 15 to 20 cent premium over feed barley. Look for oats and barley acreage to continue to decline in 1993.



SOUTH DAKOTA STATE UNIVERSITY
Economics Department
Box 504A
Brookings, SD 57007

Address Correction Requested

ECONOMICS COMMENTATOR

EDITOR: Don Peterson, Agricultural Economist



ECONOMICS DEPARTMENT
South Dakota State University
Box 504A
Brookings, SD 57007
Phone: (605) 688 - 4141

400 copies of this publication were produced at a cost
of less than \$100.