



# ECONOMIC \$ COMMENTATOR

South Dakota State University

No. 486

May 25, 2007



## Distribution of Farm Program Payments in South Dakota

by

Larry Janssen, Professor  
and

Yonas Hamda, M.S. Graduate

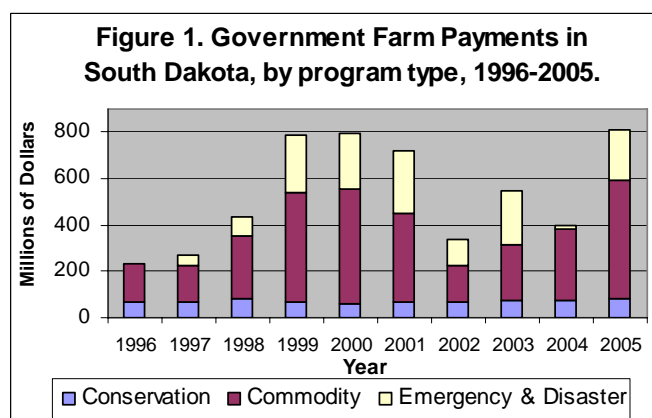
Examining the distribution of and the changing dependency of the farm sector and state-local economies on farm program payments is of interest and importance to farmers, farmland owners, and policy makers. A review of United States (U.S.) farm economic conditions from the 1990's to present and passage of the Farm Security Act of 2002 indicates continued importance of farm program payments to U.S. agriculture. Many issues related to farm program payments are included in 2007 farm bill discussions underway in Congress.

Farmers and farmland owners, especially in the Midwest and Great Plains, rely on farm program payments for debt servicing, payment of other business expenses, and as a source of household income. The Northern Plains, which includes South Dakota, is considered to be one of the most farm program dependent regions in the United States.

Farm program payments (FPP) to South Dakota farmers and landowners varied from \$229 million in 1996 to an annual average of more than \$700 million per year in 1999, 2000, and 2001. Total FPP varied from \$333 million to \$548 million per year from 2002 to 2004 and spiked to an all-time high of \$807 million in 2005 (figure 1). During this ten year period, South Dakota received 3.3% of total federal farm program payments.

The focal point of this *Commentator* is to examine the distribution of farm program payments and dependency on payments in South Dakota. Distribution of payments is examined from three main

perspectives: by farm program type, by farm size (based on gross receipts), and by amount per recipient.



## Distribution of Payments by Farm Program Type

The U.S. Department of Agriculture (USDA) subsidies<sup>1</sup> for farms in South Dakota totaled \$5.33 billion dollars from 1996 through 2005. These farm program payments (FPP) are divided into three major categories: commodity programs, conservation programs and emergency / disaster payments. During the ten year period when 1996 or 2002 farm bill provisions were in effect, commodity programs accounted for a total of \$3.15 billion or 59.2%, conservation programs received \$715 million or 13.4%, and emergency / disaster payments received \$1.46 billion or 27.4 % of total farm program payments.

From 1996 to 2005, farm commodity program payments were less than \$165 million in three years (1996, 1997 and 2002) and greater than \$465 million in 1999, 2000, and 2005. Most of the annual

<sup>1</sup> USDA subsidies include direct payments to farms for commodity programs, conservation programs (including Conservation Reserve Program payments), and disaster payments. The subsidies exclude the portion of commodity loans repaid and crop insurance indemnity payments.

variation in commodity program payments was due to changes in the amount of loan deficiency payments and marketing loan gains for program crops. Variation since 2002 is also because of changing countercyclical payments.

Disaster and emergency payments varied from less than \$1 million in 1996 to more than \$200 million in each of the following years: 1999, 2000, 2001, 2003, and 2005. During the ten year period from 1996 to 2005, South Dakota received 4.0% of federal payments for emergency / disaster programs, compared to 3.0% of federal commodity program payments.

Conservation program payments, which include Conservation Reserve Program (CRP) payments, did not change much per year. The annual amount varied from nearly \$62 million in 2000 to about \$80 million in 1998 and in 2005 (figure 1). South Dakota received 3.7% of federal conservation program payments during the 1996 to 2005 period.

The annual number of FPP recipients in South Dakota, which included farm operators and farmland owners, varied from 39,900 to 46,500. The annual number of program recipients for conservation program payments only varied from 12,400 to 15,100, while the annual number of program recipients for commodity program payments varied from 33,500 to 41,700. Depending on year, the number of disaster payment recipients varied from less than 300 to more than 22,000.

The number of payment recipients exceeds the number of farms enrolled in federal farm programs because many farms have multiple operators (often including spouses) or multiple landowners that receive payments.

### **Farm Program Payment Dependency**

From 1996 to 2005, farm program payments to South Dakota averaged 2.7% of the state's personal income, 10.4% of gross farm income, and 45% of net farm income.<sup>2</sup>

---

<sup>2</sup> The measures of state personal income, gross farm income, and net farm income are from the economic accounts for South Dakota prepared by the Bureau of Economic Analysis, U.S. Dept. of Commerce. Gross farm income is equal to the annual value of agricultural production, adjusted for inventory change,

Farm program payments and farm incomes (gross and net) in South Dakota vary considerably from year to year which leads to variability in farm program dependency. For example, farm program payments as a percent of gross farm income varied from a 4.8% in 1996 to 16.4% in 1999. Similarly, farm program payments varied from 15% of South Dakota's net farm income in 1996 to 83% in 2001.

Based on research completed by Hamda (2004) for the 1996 – 2001 period, the northeast and north central regions of South Dakota had the greatest dependency on farm program payments and federal transfer payments as a percent of personal income, while the western regions of South Dakota had the greatest dependency on farm program payments as a percent of net farm income. These regional trends have likely not changed from 2002 to present.

### **Distribution of Payments by Farm Size**

The distribution of farm program payments in South Dakota are closely related to farm size, as payments for many federal farm programs are related to the number of eligible acres and past (or current) volume of production.

Based on data from the 2002 Census of Agriculture, nearly 64% of all South Dakota farm operators and three-fourths of those reporting cropland received government payments. Medium-size and larger farms in South Dakota, with \$100,000 or more of gross farm receipts, were much more likely to participate in and receive farm program payments than smaller farms. Farm program participation rates varied from 85% for farms with more than \$500,000 of gross receipts to about 45% for small residential farms with less than \$10,000 of gross receipts (table 1).

The average amount of FPP per farm receiving payments also increased from \$2,885 per farm with less than \$10,000 gross receipts to \$39,605 per farm with \$500,000 or more of gross receipts. The overall average FPP per South Dakota farm operation in 2002 was \$10,617.

---

plus government payments and other agricultural income. Several net farm income measures are available – the measure selected includes net farm business income received by farm proprietors and farm corporations.

Table 1. Government Payments to Farm Operators  
by Economic Class, South Dakota, 2002.

Economic Class <sup>a</sup> (\$1,000)	Farms Receiving Payments (%)	Average Payment per Farm (\$)	Proportion of Farm Payments (%)	Proportion of Farms (%)
500+	84.5%	\$39,605	20.4%	5.5%
250 - 499	82.0%	\$21,277	20.5%	10.2%
100 - 249	78.7%	\$12,570	28.9%	24.4%
10 - 99	64.7%	\$6,607	24.8%	39.8%
<10	44.5%	\$2,885	5.5%	20.1%
Overall <sup>b</sup>	63.8%	\$10,617	100.0%	100.0%

<sup>a</sup> Economic class is equal to the market value of agricultural products sold plus government payments.

<sup>b</sup> Data based on 20,259 farms receiving governments payments total \$251.1 million in 2002. The total number of South Dakota farms was 31,376.

Source: Compiled from data in Table 57, South Dakota Census of Agriculture, 2002.

Conservation Reserve Program (CRP) payments were much more likely to be received by smaller farms, those with less than \$100,000 of gross receipts, while commodity payments were more likely to be received by medium-size and larger farms.

### Distribution of Farm Program Payments by Recipients, 1996 to 2001

Distribution of farm program payments per recipient is another approach to analyzing concentration of farm program payments. Micro-level (federal farm program payment per recipient) data for 1996 to 2001 were obtained from USDA – FSA (Farm Service Agency) and were used to sort payment data per recipient per year (or series of years) from highest to lowest payment amount. We report the statewide distribution of farm program payments for recipients in five equal categories (quintiles) from the top 20% to the lowest 20% of payment amounts received.

South Dakota's average annual farm program payment (FPP) from 1996 to 2001 was \$11,295 per recipient, while the median annual FPP was only \$3,972. The statewide average payments per recipient were lowest in 1996 and 1997 (\$4,777 and \$5,517 respectively) and were highest in 2000 and 2001 (\$16,845 and \$15,293 respectively) (Hamda, 2004).

The statewide annual average FPP from 1996 to 2001 varied from \$40,169 for the first quintile, \$10,450 for the second quintile, \$4,101 for the third quintile, \$1,622 for the fourth quintile, and \$424 for the fifth quintile of FPP recipients (table 2). Similar magnitudes of payment inequality were noted in all sub-state regions and in selected counties, although the specific FPP amounts received varied by location.

Table 2. Distribution of Farm Program Payments,  
South Dakota, 1996-2001.

SD Farm Payment Recipients <sup>a</sup>	Annual average payment per recipient	Proportion of total payments	Sum of payments
Overall	\$ 11,295	100.00 %	\$ 3,231.4
<u>Sorted by Quintile:</u>			
Highest 20%	\$ 40,169	70.1	\$ 2,286.2
Second	\$ 10,450	18.7	\$ 595.1
Third	\$ 4,101	7.5	\$ 233.6
Fourth	\$ 1,622	2.9	\$ 92.4
Lowest 20%	\$ 424	0.8	\$ 24.1

<sup>a</sup> Annual average number of farm payment recipients was 47,862.

Source: Data made available by USDA-FSA and compiled by Hamda (2004).

Depending on region, the highest quintile of recipients received from 68% to 71% of total FPP, the second quintile received 18% to 20% of total FPP, and the remaining three-fifths of recipients received 11% to 13% of FPP (Hamda, 2004).

From 1996 to 2001, 94% of total farm program payments to South Dakota farm operations were received by residents of the state and 6% were received by residents of other states. The amount of payments received by South Dakota residents from farms owned in other states was not available. Overall, the distribution of farm program payments was highly unequal in South Dakota regardless of region and specific year examined. Other results from Hamda (2004) indicate the extent of FPP inequality is similar to the extent of income inequality and earnings inequality among self-employed persons in the United States.

## Explanation of Findings

The amount of and distribution of farm program payments in South Dakota are primarily results of the following factors:

- (1) Most South Dakota farmers participate in federal farm programs for program crops and/or conservation programs.
- (2) More than 40% of South Dakota cropland acres are leased and many landowners, in addition to farm operators, share in and receive farm program payments. In addition there are multiple operators on many farms. For these reasons, the number of FPP recipients exceeds the number of farm operations in all regions of South Dakota.
- (3) The amount of farm program benefits received was closely related to farm size as measured by gross receipts or cropland acres. Many farm program payments are based on eligible number of acres enrolled and past (or current) production.
- (4) Distribution of farmland ownership and size of farm operations in any region of South Dakota are also highly unequal.
- (5) Payment limits for specific programs did not impose effective limitations on size of South Dakota farms participating in federal programs.

Thus, the distribution of farm program payments in South Dakota largely reflects the inequality of farm size and farmland ownership patterns in the state. Since farm operators and farm households are increasingly integrated with their state and national economy it is likely that the income (and perhaps

wealth) distribution of farmers is similar to that of other households with self-employed persons.

U.S. farm commodity programs are not designed, in practice, to greatly alter the income or wealth distribution of farmers and farmland owners, in the short and intermediate run. Over a longer period, farm programs have likely altered risks faced by individuals and favored growth-oriented farm businesses and farmland owners. Thus, we should not expect existing types of farm programs to reduce income or wealth inequality in the farm sector.

## Reference Sources

Hamda, Y. 2004. Analysis of Farm Program Payments in South Dakota: 1990 – 2001. M.S.Thesis. Economics Dept. SDSU.

Janssen, L. and Y. Hamda. 2005. Federal farm program payments: an analysis of changing dependency and the distribution of farm payments in South Dakota. Selected Paper at 2005 annual meeting of AAEA and available electronically at <http://agecon.lib.umn.edu/> by searching author's last name.

\*\*\*\*\*

### ECONOMICS COMMENTATOR

\*\*\*\*\*

Economics Department  
South Dakota State University  
Box 504 Scobey Hall  
Brookings, SD 57007-0895  
Phone: 605-688-4141  
Fax: 605-688-6386  
E-Mail: Penny.Stover@sdstate.edu  
200 copies of this newsletter were produced at a cost of less than \$100.



SOUTH DAKOTA STATE UNIVERSITY  
Economics Department  
Box 504  
Brookings SD 57007-0895

Change Service Requested