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## Mixed News from 1998 Farm Records

Kent Olson

Farming is a risky business. Our farm finance records from 1998 highlight those risks, as if anybody needs reminding! The actual returns from two farm management associations show results expected by anyone who was paying attention to product prices during 1998 or who checked out my predicted returns in the late fall issue (no. 694) of *MAE* at [www.extension.umn.edu/Documents/F/L/Other/ag237-694a.html](http://www.extension.umn.edu/Documents/F/L/Other/ag237-694a.html).

Crop farms suffered from lower incomes but not as much as did hog and beef farms. Dairy farms did better as a result of the high milk prices—but these have dropped by 30 percent in the past three months.

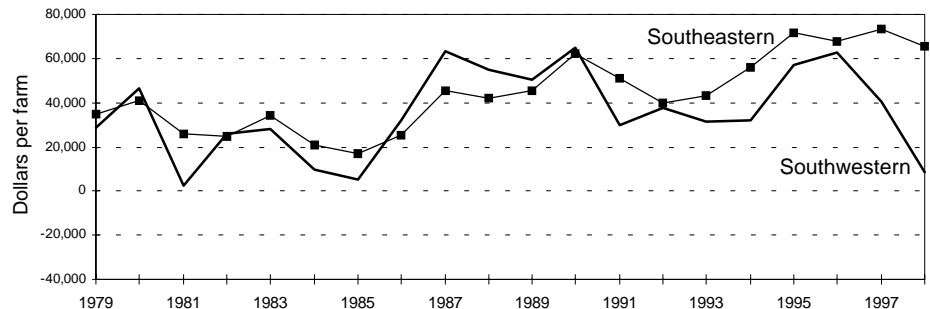
Average net farm income fell to \$8,616 (which includes \$30,000 in government subsidies) for the 210 farms in the Southwestern Minnesota Farm Business Management Association. This is a decrease of 79 percent from 1997 and continues the pattern of large swings in income in this region (Figure 1). During the past 20 years, net farm income has been lower than the 1998 level in only two years: 1981 and 1985.

The drop from 1997 can be attributed to decreases in hog sales, to decreases in corn and soybean sales, and to substantial decreases in the value of inventories. (Net farm income, reported here, is what accountants call an accrual measure. It is calculated by subtracting total cash farm expenses and depreciation from gross cash farm income and adjusting for changes in inventory items.)

In contrast, average net farm income for the 60 farms in the southeastern association was \$65,739 (which includes \$23,000 in government subsidies). This was a decrease of only 12 percent from

(See *Farm Records*, page 2)

Figure 1. Average net farm income (including government payments)



## Which Came First: Growth in Trade or Trade Arrangements?

Xinshen Diao, Terry Roe, and Agapi Somwaru

The number of regional trade arrangements such as the North American Free Trade Association (NAFTA) and the Southern Common Market (MERCOSUR) have increased dramatically in the past decade. Thirty-three sprang up between 1990 and 1994 alone. This explosion in the number of arrangements has fostered debate and controversy among economists, political parties, and special interest groups.

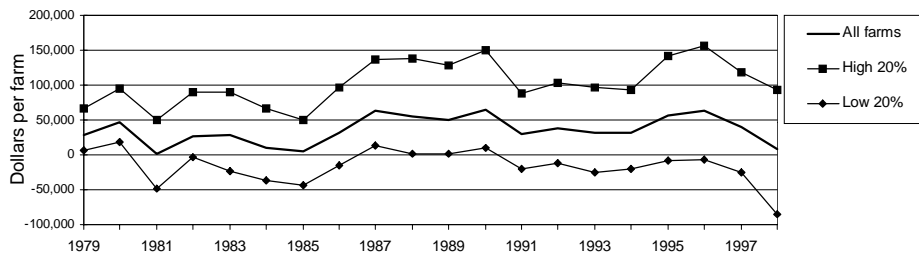
Some observers express concern that these arrangements create, artificially, trade patterns among neighboring countries that do not reflect the trade pattern that would prevail if all countries followed free trade policies. If these arrangements *divert* trade away from natural trading partners, then they can cause an inefficient allocation of resources within countries. These arrangements can also prevent or slow the rate of trade *creation* among nations,

that is, to dampen the extent to which countries can pursue their true comparative advantage in world trade.

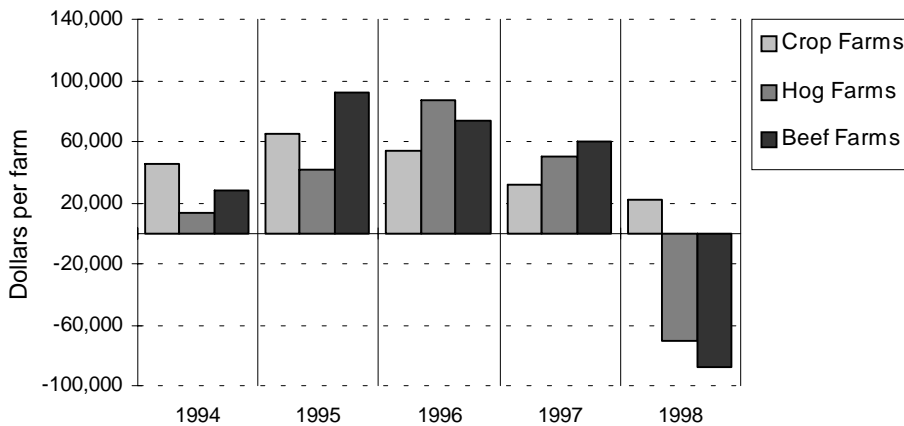
Others debunk this line of reasoning. They note that these arrangements are most often made among neighboring countries, and that the average annual rate of growth in world trade over the period from 1975 to 1995 has been far outpaced by the annual rate of growth in trade among neighboring countries that now belong to a regional trade arrangement (RTA). They suggest, instead, that the tendency toward neighborhood trade is so strong as to make it overwhelm-

(See *Trade*, page 2)

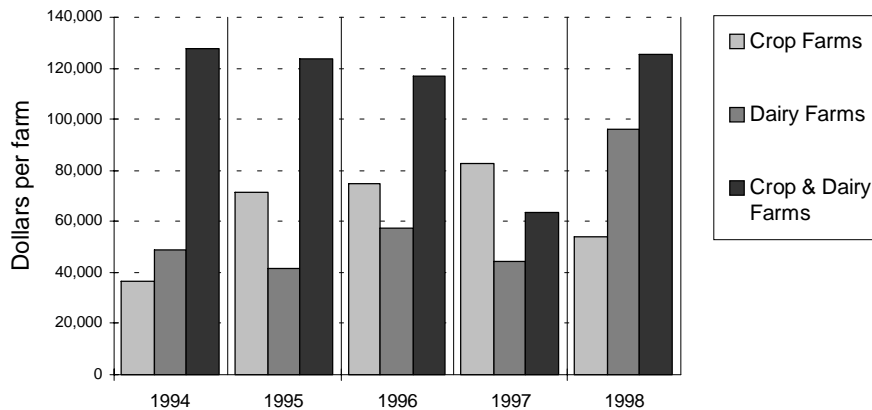
**Figure 2. Average net income by income groups for the southwestern association.**



**Figure 3. Average net farm income by type for the southwestern association.**



**Figure 4. Average net farm income by type for the southeastern association.**



(*Farm Records* continued from page 1)

1997. Gross cash farm income and cash expenses increased in this region, while inventory values changed very little. Thus, 1998 net farm income was lower but is still higher than it was in the 1980s and early 1990s.

As in previous years, the actual income levels experienced by individual farms varied greatly from the overall average. Figure 2, for the southwestern association, shows the range in income for the 20 percent of farms with the

highest net farm income and the range of income for the lowest 20 percent.

Net farm incomes also varied widely by type of farm. As one might expect from the price news of late 1998, farms in the southwestern association producing either hogs or beef suffered large negative net farm incomes (Figure 3). Crop farms, however, had positive incomes, although their income has declined steadily since 1995. In the southeastern association (Figure 4), crop-and-dairy farms showed the highest

(See *Farm Records*, page 6)

(*Trade* continued from page 1)

ingly clear that distance and the political-cultural similarity that often prevails among neighboring countries are the driving forces behind neighborhood trade.

This article draws upon the key results of a larger project that seeks to determine whether trade arrangements are trade creating or trade diverting. Let's look first at the historical growth path of agricultural trade among countries that currently belong to three of the largest RTAs: NAFTA, MERCOSUR, and the European Union.

### Regional Trade Grew Faster Than Global Trade

On average, agricultural trade of the three blocs grew more rapidly than world total agricultural trade (Table 1). The bottom row of numbers shows that growth in intra-regional agricultural trade, that is, growth in trade among countries belonging to a trade bloc, exceeds growth in total (intra-regional trade plus trade with the rest of the world) agricultural trade. As intra-regional trade accounts for a large share of each bloc's total agricultural imports or exports, rapid growth in intra-regional trade has contributed to the growth in agricultural trade around the world. But has this growth in intra-regional trade been caused by trade agreements, or instead has this growth contributed to the formation of trade agreements?

### The Case of NAFTA

To obtain a general picture of intra-regional trade in total agriculture over the last three decades, consider Figure 10, which shows a three-year moving average of the shares of intra-regional trade in total agricultural exports and imports for the North American region (the U.S., Canada, and Mexico). The share of intra-regional exports in NAFTA total agricultural exports generally fell during the 1970s, reaching a low in the early 1980s, and then rose rather dramatically through 1995 for all three member countries.

Next, we used a "filtering methodology" to identify the underlying longer-term trend in annual rates of growth in agricultural exports and imports between

(See *Trade*, page 3)

(Trade continued from page 2)

countries within NAFTA only (referred to as intra-regional), and trade between countries in NAFTA with countries outside of NAFTA (referred to as extra-regional). These growth paths are shown in Figure 11 for exports and in Figure 12 for imports.

Notice the high variability in trade. Prior to about 1980, the annual growth in total agricultural exports from the U.S., Canada, and Mexico to each other (intra-regional trade) was below the world trend line. Since then, however, the growth in total exports has been far above the world trend line. Thus, for reasons we suggest below, markets for agricultural exports among the U.S., Canada, and Mexico have been “created” since about 1980.

Looking at imports in Figure 12, we see growth in total agricultural imports from the rest of the world to NAFTA countries (extra-regional trade) that rose above the world benchmark in the early 1980s, but then converged back to the world level of growth in total agricultural trade in about 1994. Clearly, the trade opportunity created among the NAFTA countries since about 1980 has been a key to increasing the growth in their total agricultural trade.

U.S. agricultural trade accounts for 70 to 80 percent of total NAFTA exports and imports, and the bilateral trade between the U.S. and the other two countries accounts for about 98 percent of intra-NAFTA agricultural trade. Figure 13 shows that the growth rate of U.S. agricultural exports rose with the depreciation of the U.S. dollar in the early 1970s, and fell when the dollar appreciated in the late 1970s and early 1980s. Figure 14 shows that when the dollar depreciated, the growth rate of imports tended to fall, and that imports grew when the dollar appreciated. The pattern also shows that trade among NAFTA countries is becoming more important for the U.S.

So, which came first: growth in neighborhood trade or growth in trade arrangements? In the case of NAFTA, the agricultural trade evidence clearly shows that growth in intra-regional trade preceded the signing of the Canada-U.S. Free Trade Agreement in 1989 and preceded the creation of NAFTA in 1993.

There must, however, be other factors besides the formation of regional trade arrangements that stimulate the growth of intra-regional trade. The fact that growth in trade preceded NAFTA suggests that factors affecting a country’s border economy tend to generate relatively larger effects on its neighbors than on the rest of the world. These factors likely include the adoption of a more open trade policy by Mexico following the financial crisis of the early 1980s and efforts by the U.S. and Canada to pursue more market-based incentives for their farmers.

## Evidence from Other Trade Blocs

Figures 15 and 16 show the annual growth in intra-regional, extra-regional, and total agricultural trade for the MERCOSUR countries. The striking features are 1) the rise in the rate of growth in intra-regional agricultural exports and imports during the early 1970s, which coincided with a rise in the prices of primary commodities—including petroleum; 2) the subsequent fall leading up to the second oil shock of the late 1970s; and then, 3) the explosion in the rate of growth in intra-regional agricultural trade starting in about 1981–82 and continuing through the period when our data end in 1995.

The rise in the growth rate of trade among member countries of MERCOSUR is associated with their abandonment of the inward-oriented policies they pursued during the 1960s and 1970s, and the movement toward freer trade in the 1980s. Note, too, the growth in agricultural imports from non-MERCOSUR countries. Clearly, the pursuit of freer trade among MERCOSUR countries has created agricultural trade opportunities for the rest of the world, even though countries in this bloc are major agricultural exporters. Finally, it is clear that trade was increasing among MERCOSUR countries about a decade before MERCOSUR was actually created.

We should expect to see a far different pattern for the European Union (E.U.) because it is the only region for which a fully implemented trade agreement has been in effect for decades. Figures 17 and 18 show there has been an overall trend of decline in intra-

E.U. and extra-E.U. agricultural exports since the E.U. was formed. Thus, E.U. agricultural policies appear to have diverted trade to member countries. Clearly, E.U. policies have not created agricultural trade opportunities for the rest of the world.

## Conclusions

As neighborhood trade grows, it is natural for nearby countries to form trade arrangements to harmonize trade policies. We should not be surprised, therefore, if growth in intra-regional trade exceeds growth in extra-regional trade. Nor should it be a shock that this relationship usually shows up before the formation of a regional trade agreement.

Intra-regional trade is clearly the driving force behind the observed overall growth in world agricultural trade. RTAs appear to have contributed positively to the specialization and division of labor in agriculture among already trading nations, permitting more common and open trade policies.

It remains to be seen whether the creation of additional trade blocs like NAFTA will hinder or promote the growth of free trade around the world.

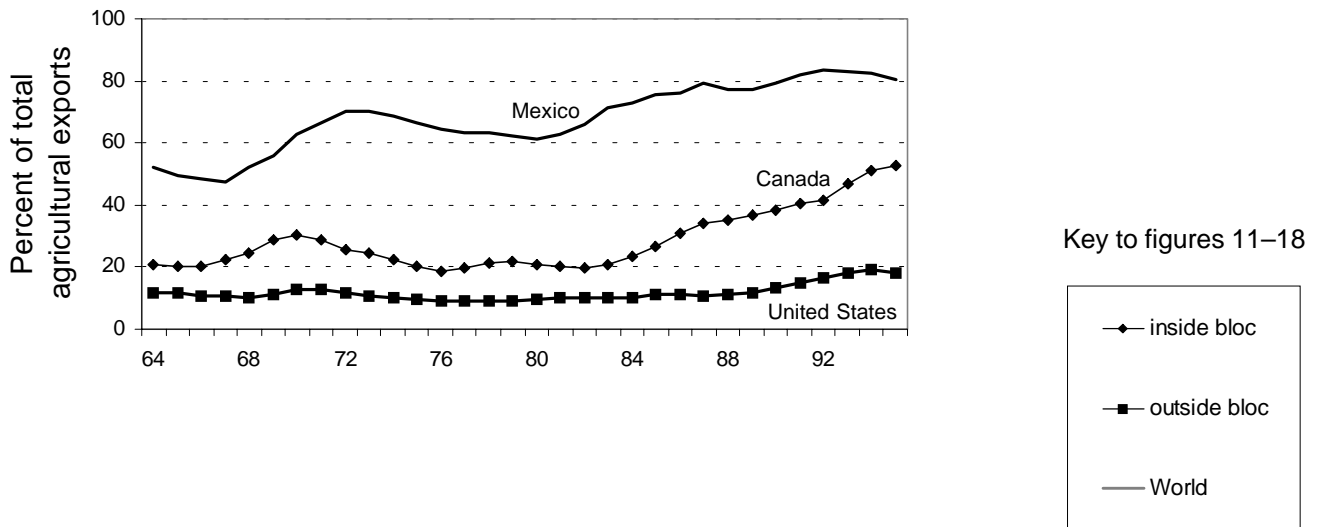
*Xinshen Diao and Terry Roe are research associate and professor, respectively, in the Department of Applied Economics at the University of Minnesota; Agapi Somwaru is an economist with the Economic Research Service of the USDA.*

**Coming in the next issue** of the *Minnesota Agricultural Economist*: Jerry Hammond on what low milk prices mean for Minnesota’s dairy farms.

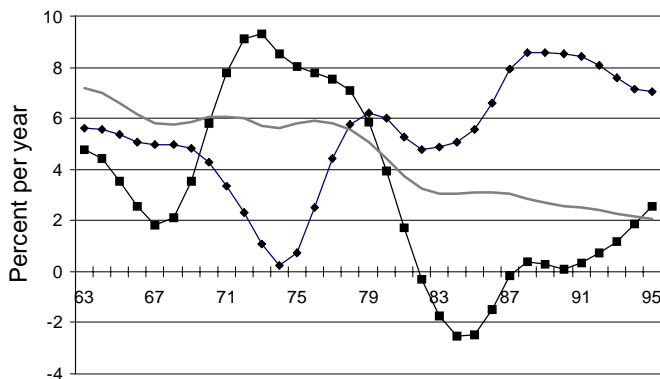
**Table 1. Average growth rates (percent) by regions 1970–95.**

	NAFTA	MERCOSUR	EU-15
Gross domestic product	2.6	3.2	2.5
Total agricultural exports	3.9	4.5	4.8
Total agricultural imports	3.5	6.5	2.6
Intra-regional trade	5.0	6.8	4.9

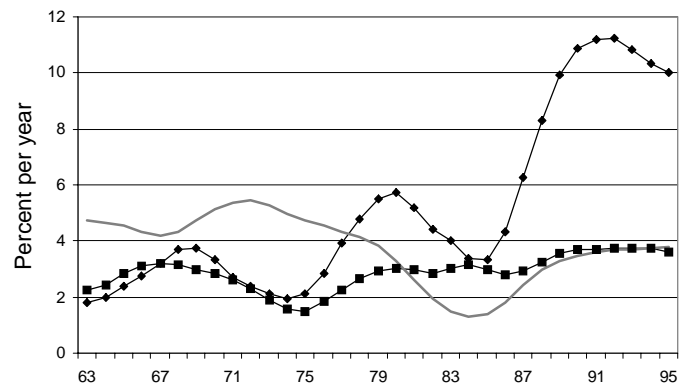
**Figure 10. Agricultural exports to other NAFTA members.**



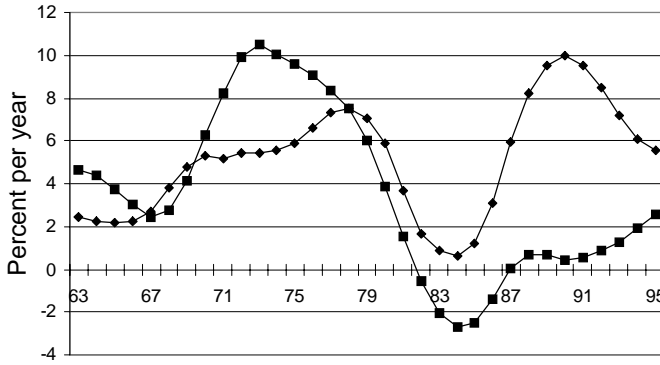
**Figure 11. Annual change in agricultural exports by NAFTA members.**



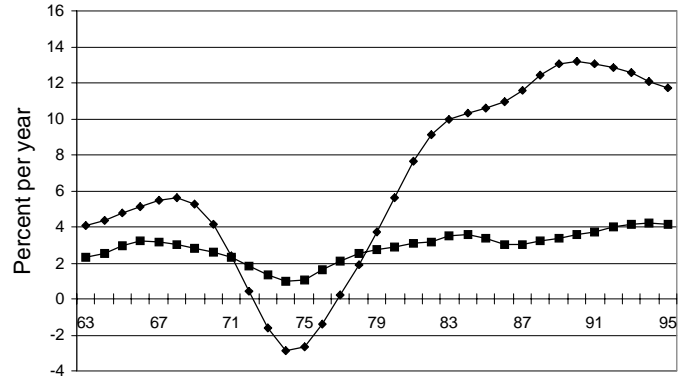
**Figure 12. Annual change in agricultural imports by NAFTA members.**



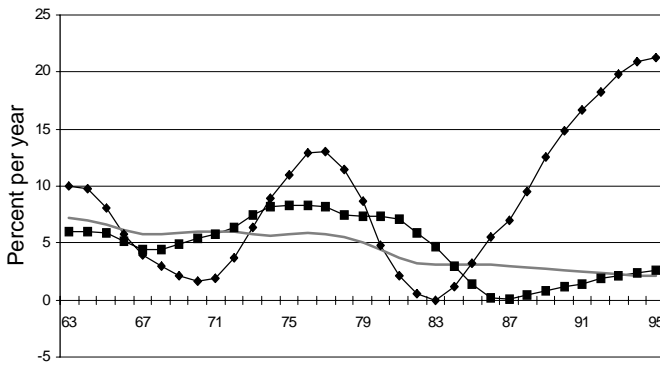
**Figure 13. Annual change in U.S. agricultural exports.**



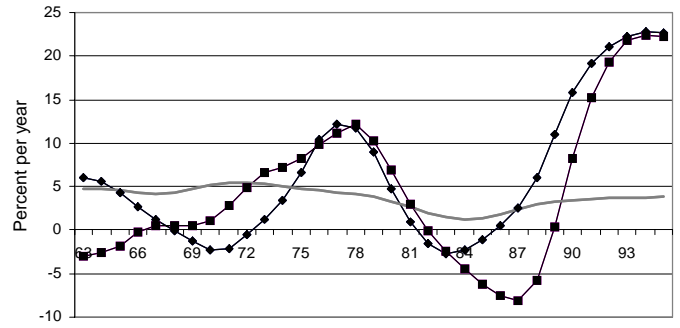
**Figure 14. Annual change in U.S. agricultural imports.**



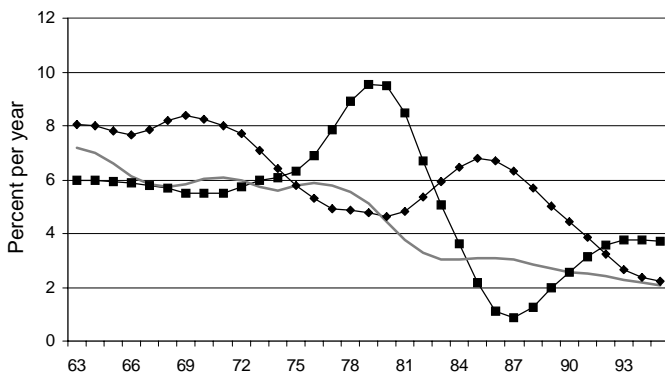
**Figure 15. Annual change in MERCOSUR agricultural exports.**



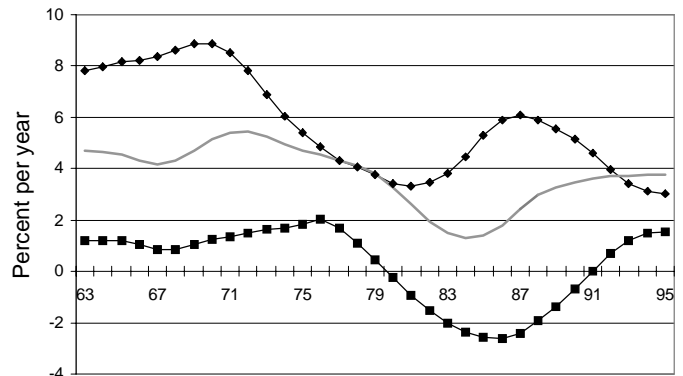
**Figure 16. Annual change in MERCOSUR agricultural imports.**



**Figure 17. Annual change in E.U. agricultural exports.**



**Figure 18. Annual change in E.U. agricultural imports.**



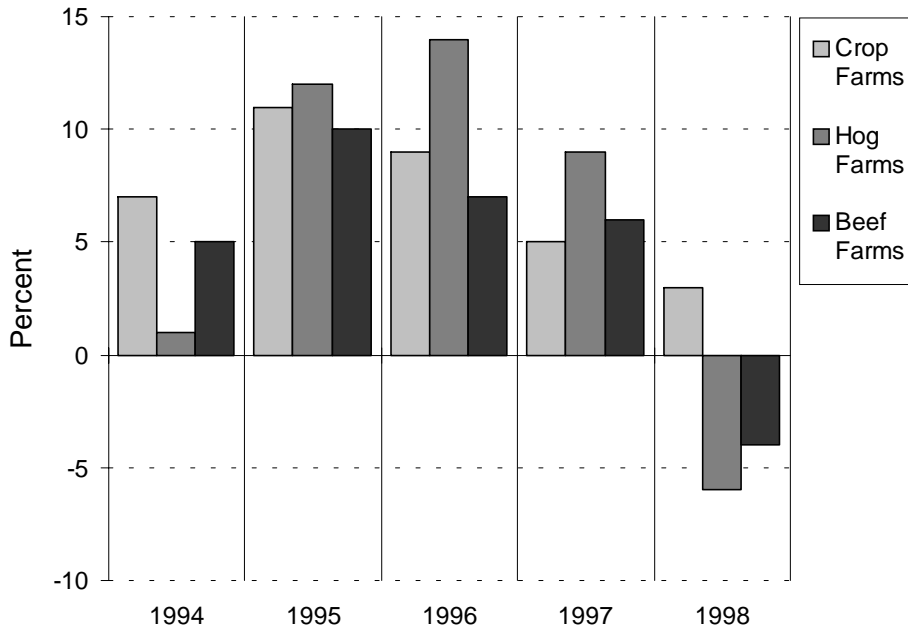
net income, followed by dairy-only farms.

Average financial performance has fluctuated dramatically in the past for both associations. One pair of profitability measures watched closely by agricultural economists is the return on equity (ROE) and return on assets (ROA), which are shown in Figures 5 and 6 for the various farm types. When ROE is greater than ROA, debt capital is being used profitably. In the southwestern association (Figure 7), ROE was lower than ROA in 1998 because of the poor performance of livestock farms. In the southeastern association (Figure 8), ROE and ROA were equal.

Figure 9 shows how the debt-to-asset ratio has fluctuated for the two associations during the past 19 years. In the southwestern association, where members value assets on a market basis, the average debt-to-asset ratio at the end of 1998 was 49%—a figure that has not changed much over the past six years. In contrast, in the southeastern association, where members value assets on a cost basis, the debt-to-asset ratio was 35%, which continues a favorable six-year decline.

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**Figure 5. Average return on assets for the southwestern association.**



**Figure 6. Average return on assets for the southeastern association.**

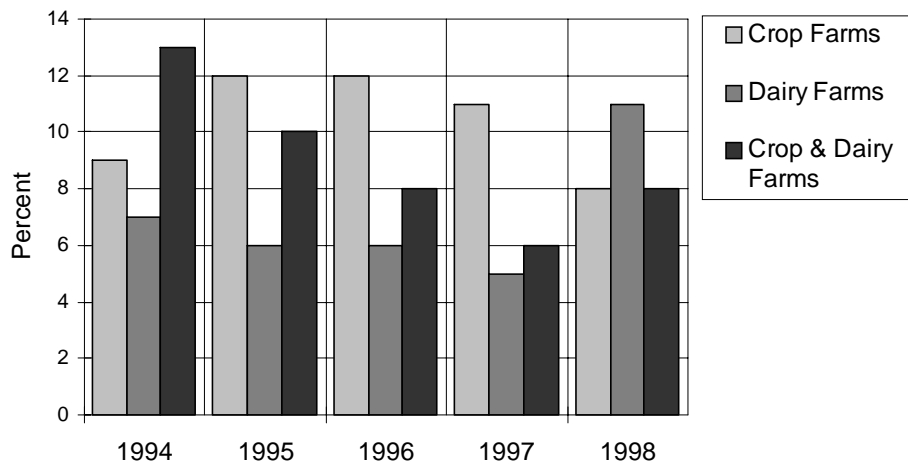


Figure 7. Average profitability measures for the southwestern association.

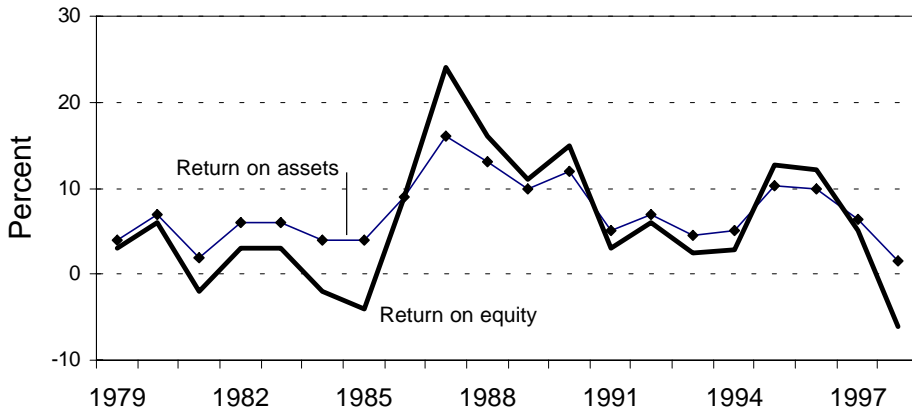


Figure 8. Average profitability measures for the southeastern association.

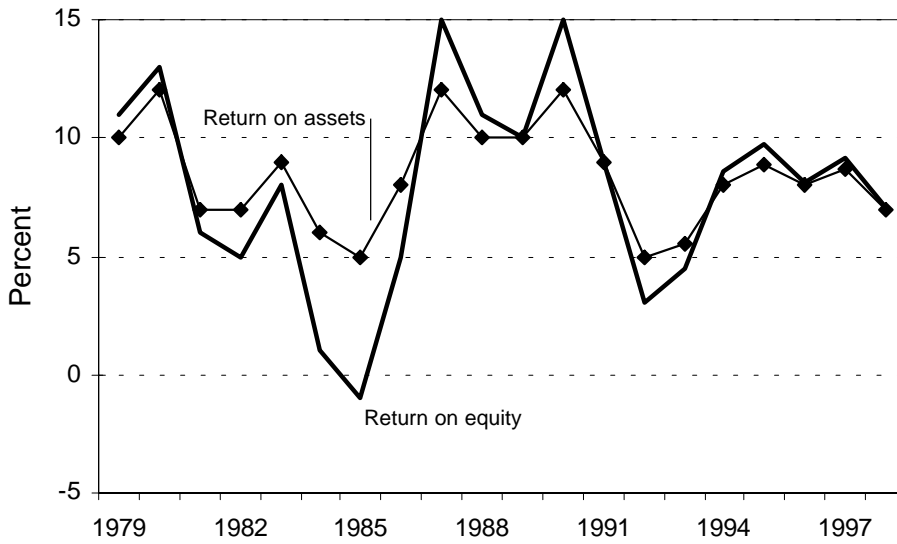
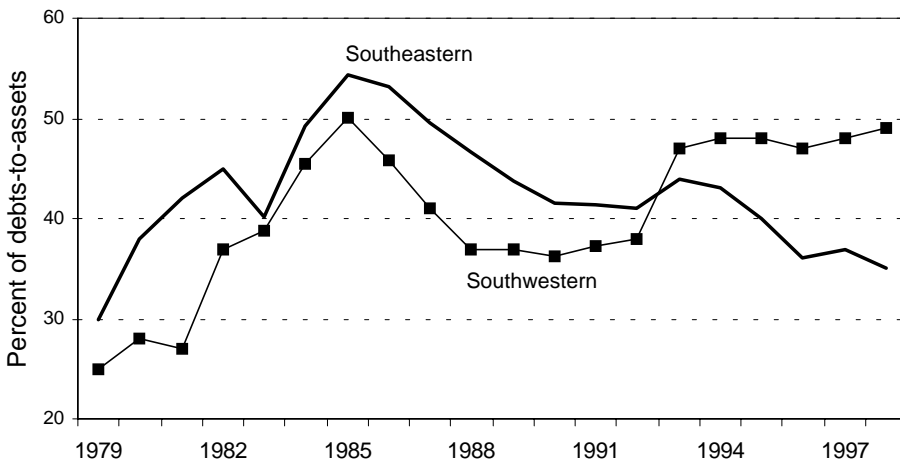


Figure 9. Average ending debt-to-asset ratio.





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### No. 695 Winter 1999

1998 Farmland Sales Don't Support "Crisis" Talk—Yet!  
*Steven J. Taff*

### No. 694 Late Fall 1998

The Current Minnesota Farm Situation  
*Bill Lazarus* (Cropland Rents), *Kent Olson* (Farm Income),  
*Stanley C. Stevens* (Corn Prices), and *Brian Buhr* (Livestock Prices).

Estimating the Size of the Soybean Industry in Minnesota  
*George W. Morse*

### No. 693 Fall 1998

Poultry's Place in Minnesota's Economy  
*George W. Morse*

Energy Use in Minnesota Agriculture  
*Barry Ryan and Douglas G. Tiffany*

(There was no Summer 1998 issue)

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