Staff Paper P98-9 **November 1998**

STAFF PAPER SERIES

Minnesota Current Farm Situation

Brian Buhr
Bill Lazarus
Ward Nefstead
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DEPARTMENT OF APPLIED ECONOMICS
COLLEGE OF AGRICULTURAL, FOOD AND ENVIRONMENTAL SCIENCES
UNIVERSITY OF MINNESOTA

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Preface

These papers describe the current economic conditions and outline some of the opportunities facing Minnesota farmers as they complete 1998 and develop plans for 1999. The first paper, *Prospects For Farm Income in 1998*, describes the variation in net farm income farmers in the Southeastern and Southwestern Farm Management Associations have experienced over the past twenty years. The possible effects of 1998's low commodity prices and government program payments on net farm income are discussed in the context of this historical variation. This paper points out that some farmers are experiencing a very good year in 1998, while others may have very low net farm income this year. Those with high incomes in 1998 may be primarily interested in opportunities to enhance their cash flow for 1999, while those experiencing financial stress during 1998 may need to consider a wider range of adjustments as they plan for the coming year.

The remaining papers provide information farmers may want to consider as they plan their marketing and financial strategies for the coming year. *Financial Management Alternatives* outlines a wide range of financial management alternatives that can be used to deal with cash flow problems. Some of these alternatives will be of interest to farmers who have difficulty in projecting a positive net cash flow with the relatively low commodity prices being projected for 1999. Others are of primary interest to farmers who have relatively high debt levels and must find ways to improve both their net cash flow and their debt/asset position.

Some observers have suggested that the low commodity prices projected for 1999 may lead to reductions in cash rental rates. The paper, *Cropland Rental Market Impacts of Low Crop Prices,* discusses a procedure to estimate “fair rental rates”, and provides an historical perspective of the impact low commodity prices have had on land rental rates. The remaining two papers, *Situation and Outlook For the Livestock Sector*, and *Considerations in Developing a Corn/Soybean Marketing Plan for 1998/1999,* discuss the major factors to evaluate and options to consider in developing a marketing plan for corn, soybeans, hogs and cattle for the coming year.

These papers are also available through the Department’s home page. The address is http://www.apecon.agri.umn.edu/ Questions about the content of the papers and the recommendations they contain should be addressed to the authors of the respective papers.

November 1998 Vernon R. Eidman

THE PROSPECTS FOR FARM INCOME IN 1998

by Kent Olson[1]

This fall's low prices are putting tremendous downward pressure on farm income in 1998 and into 1999. The impact, however, will be mixed. For some farms, income is expected to fall to extremely low levels. Other farms, especially dairy farms, will not experience these low incomes and may, in fact, do quite well. To help us understand how this has happened and to put this in a historical perspective, this paper begins with a historical perspective on farm income and then looks at recent trends in prices, costs, production and export levels, and recent changes in U.S. farm policy. The paper concludes with estimates of 1998 farm income for two groups of farms in Minnesota.

Farm Income trends

Farming has always been a risky business. However, not all farms experience the same level of risk. That is, riskiness is not just due to yields and prices but also by the type of farm and the management choices of the farm operators. This riskiness and the effect of the type of farms can be seen by looking at the income trends of two groups of farms: the Southwestern Minnesota Farm Business Management Association and the Southeastern Minnesota Farm Business Management Association. The Southeast Association contains a larger proportion of dairy farms than the Southwest Association and consequently do not suffer the variability in income that the grain, hog, and beef farms have been experiencing.

From 1978 through 1997, the average farm in the Southwestern Minnesota Farm Business Management Association has experienced a wide range of accrual net farm income (Figure 1a). Measured in nominal dollars, net farm income has ranged from a low of $2,272 in 1981 to a high of $63,404 in 1987, a range of $61,132. During these 20 years, average accrual net farm income has been above $50,000 seven times and below $25,000 three times. While some farms in the Association have had negative incomes, the average has never been negative. The 20-year average is $38,316 before accounting for inflation and $55,598 after accounting for inflation and thus expressing the 20 year average in terms of estimated buying power in 1998. Similar patterns of riskiness can be seen in the rates of return to assets and equity and in the level of equity and the ending debt-asset ratio for the average farm in the Southwestern Minnesota Association (Figures 2a and 3a). The steady rise in average asset values and equity is a good trend. However, note that the jump between 1992 and 1993 is due in very large part to a change from using cost basis to market basis for valuing assets.

During the same 20 years, the average farm in the Southeastern Minnesota Farm Business Management Association also experienced a wide range of accrual net farm income (Figure 1b) but the range was much tighter. Measured in nominal dollars, net farm income in the Southeast

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Figure 1a. Average Net Farm Income
SW Minnesota Farm Business Mgt Ass'n

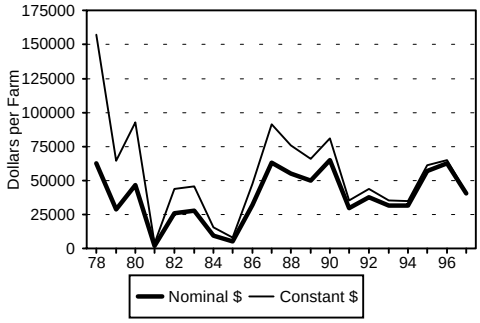


Figure 1b. Average Net Farm Income
SE Minnesota Farm Business Mgt Ass'n

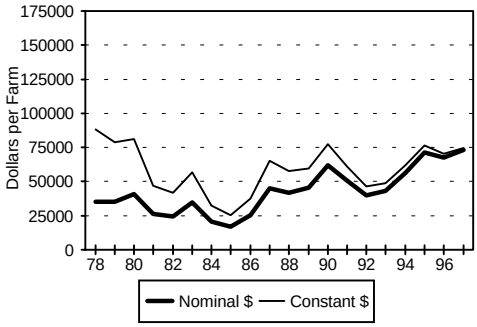


Figure 2a. Rates of Return on
Assets (ROA) and Equity (ROE) in SW MN

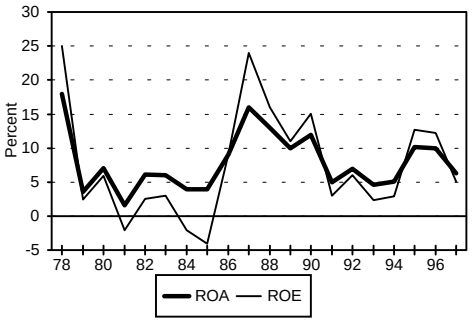


Figure 2b. Rates of Return on
Assets (ROA) and Equity (ROE) in SE MN

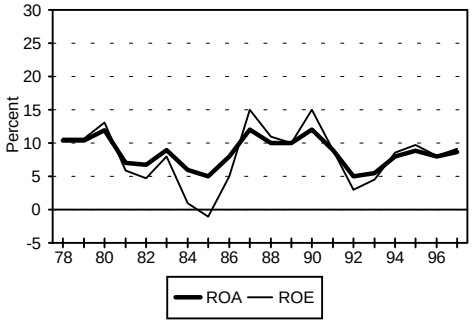


Figure 3a. Ending Assets, Equity,
and Debt-Asset Ratio in SW MN

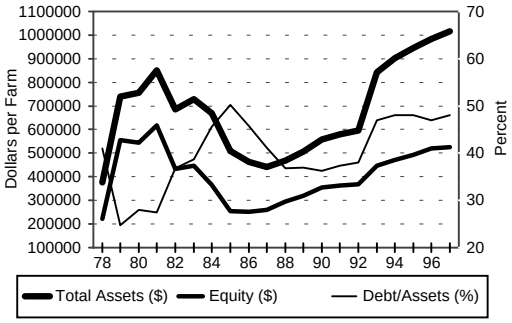
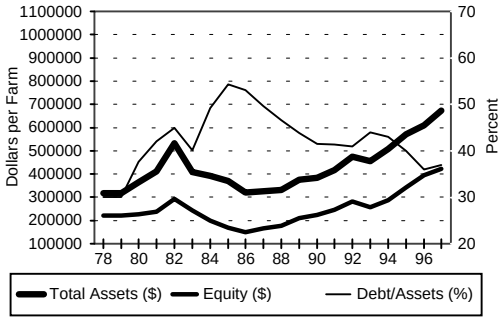


Figure 3b. Ending Equity and
Ending Debt-Asset Ratio in SE MN



Association ranged from a low of $16,709 in 1985 to a high of $73,311 in 1997, a range of $56,602. During these 20 years, average accrual net farm income has been above $50,000 six times and below $25,000 only twice. While some farms in the Association have had negative incomes, the Southeast Association has also never had a negative average. The 20-year average is $42,778 before accounting for inflation and $59,397 after accounting for inflation. As previously noted, similar patterns of riskiness can be seen in the rates of return to assets and equity and in the level of equity and the ending debt-asset ratio for the average farm in the Southeastern Minnesota Association (Figures 2b and 3b).

Product and Input Prices

All major commodities (except milk) are experiencing low prices this fall. Product prices have dropped considerably from where they were in early 1998 and especially 1997 and 1996. However, they have not dropped significantly below the levels seen in late 1994 and early 1995. Since January, 1994, according to Minnesota Agricultural Statistics Service, the highest price was $3.95 in August, 1996, and the lowest price was $1.83 in September, 1994 (Figure 4). In September, 1998, the average corn price for Minnesota was $1.80 per bushel. Wheat and soybean prices tell a similar story. Hog and beef prices in Minnesota are lower in 1998 but not as low as they were in late 1994 for hogs and 1995-96 for beef (Figure 5).

Figure 4. MN Grain Prices, '94-98

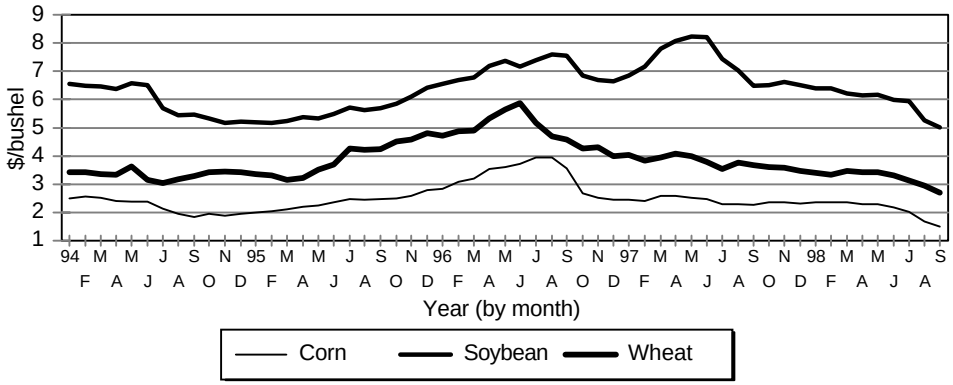
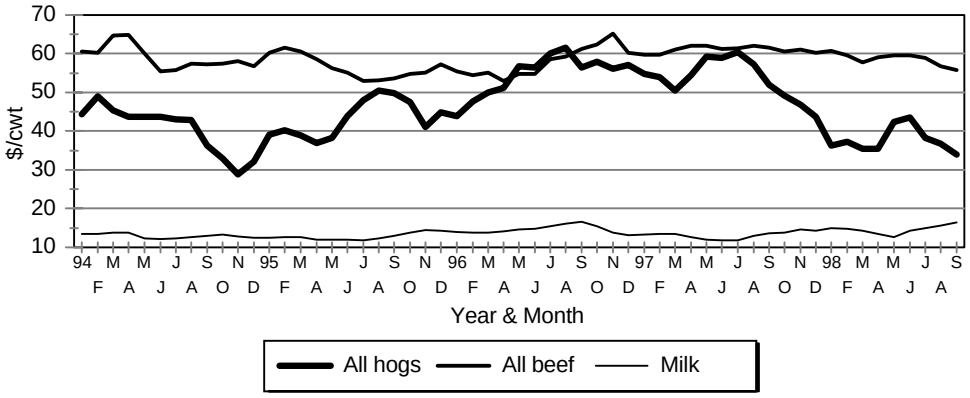
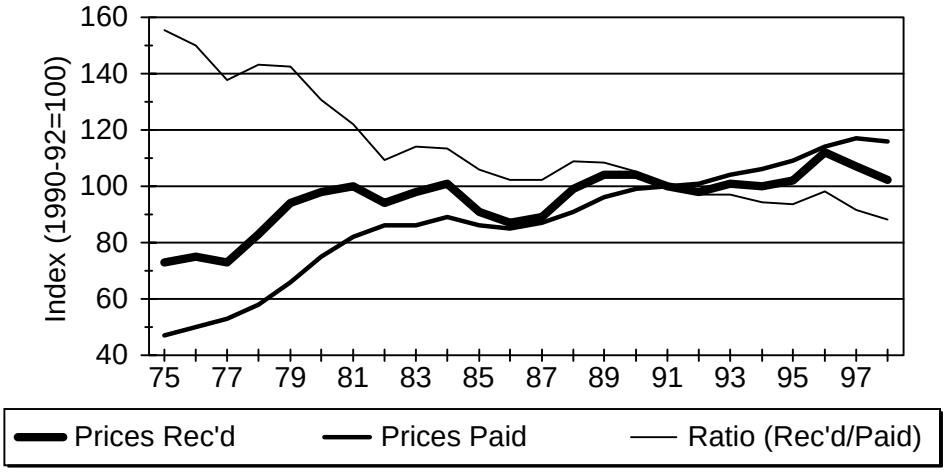


Figure 5. MN Livesotck Prices, '94-98



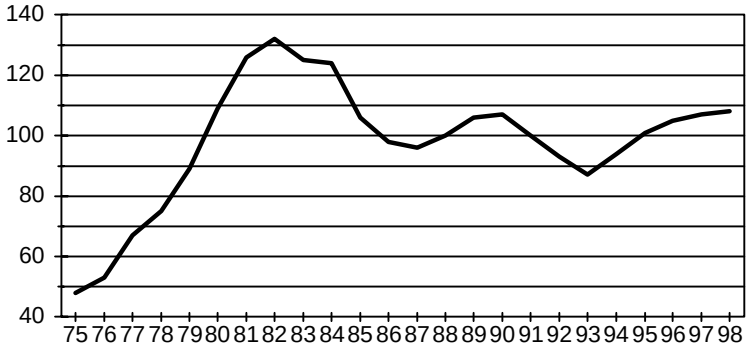
Even though the prices received by farmers have continued to increase with some fluctuations, the prices paid by farmers for inputs have continued their general increase over time (Figure 6). The resulting squeeze felt by farmers between prices and costs can be seen in the downward movement in the ratio of prices received to prices paid.

Figure 6. Prices Rec'd & Paid
(U.S. Annual Average)



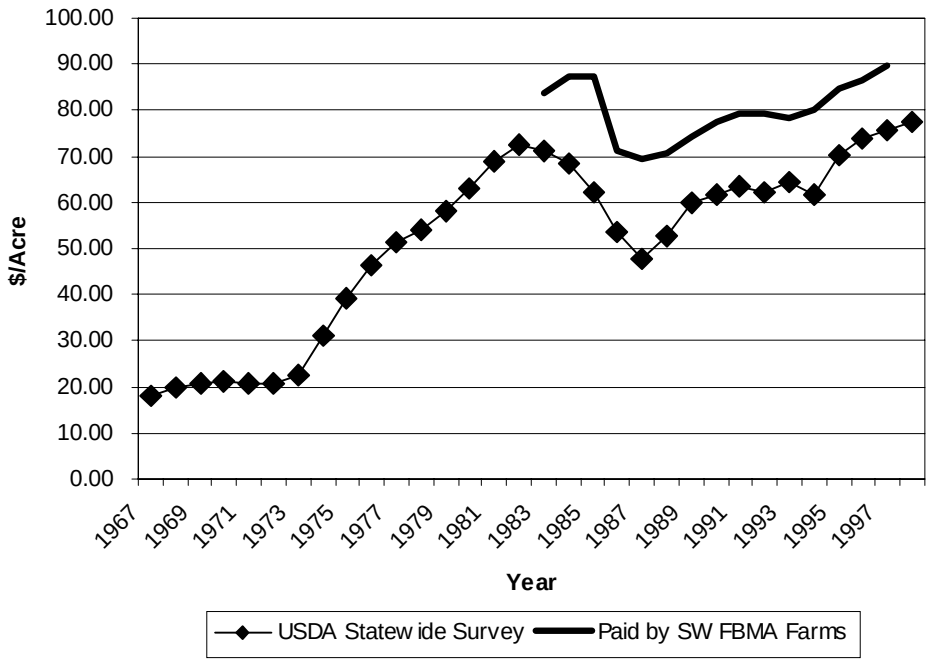
The current concern over farm income is often compared to the situation in the 1980s when there was a prolonged period of low farm income. During that period, the high interest rates were often pointed to as a source of high costs and thus low income. Now that situation is not true. Interest rates are not at the levels they were in the early 1980s and, thus, not as large a concern now as they were then (Figure 7).

Figure 7. Interest Rate Index
(1990-92=100)



Land prices, as reported by Taff in his 1997 survey, have continued their rise in recent years. For the whole state, the mean sales price rose from $912 per acre in 1996 to $939 in 1997. In the southern part of the state, average sales were over $1,100 per acre in 1997 with the South Central district reporting sales just under $1,700 per acre. Lazarus (1998) reports an almost continual rise in land rent since 1988 to almost $80 per acre in a statewide USDA survey and almost $90 per acre paid by members in the Southwestern Minnesota Farm Management Association (Figure 8). The only sustained decline in rental rates occurred with the financial crisis in the 1980s. The wet year of 1993 provided some downward pressure on rental rates in 1994, but the upward trend continued in 1995 and after.

Figure 8. Rental Rate Trends in Minnesota



Domestic Production and Exports

The world situation of supply and demand has contributed to the downward pressure on prices and thus farm income. For several years, the world has not experienced a major production disaster. That, coupled with expected and actual reports of record and near record production in the U.S., has created a very good supply of both food and feed grains and livestock products. The USDA estimates the ending stocks at the end of the 1997/98 marketing year to be 58% higher for corn and 53% higher for soybeans than a year earlier. Stock at the end of the 1998/99 marketing year are estimated to rise even more.

On the demand side, exports of U.S. agricultural goods have suffered due mainly to trouble in several Asian economies. The latest USDA forecast of exports in fiscal 1998 is for a total value of $54.5 billion, down from $57.3 billion in fiscal 1997 and $59.8 billion in fiscal 1996 (Whitton, 1998). The fiscal 1998 estimate is very close to the fiscal 1995 actual results. Exports of grain and feeds, which are critical to Minnesota farmers for price support, are estimated to be down $2.5 billion in fiscal 1998 from fiscal 1997. For the fiscal year 1999, USDA estimates that the physical quantity will increase but the total value will decrease. The value of exports of grains and feeds is estimated to be stable, but the exports of oilseeds and products is estimated to decline by $1.8 billion in fiscal 1999.

Policy changes

The Federal Agriculture Improvement and Reform (FAIR) Act of 1996 (i.e., the new farm bill) made significant changes in the market orientation and exposure of U.S. farmers. Under the previous policy, market prices were not supported directly, but farmers received an income support payment directly linked to historical production if the market price was lower than that commodity's target price. Except for the loan program, FAIR removed the final link between the market price and the support payments farmers receive for wheat, corn, grain sorghum, barley, oats, rice, and upland cotton. Instead of price-sensitive support payments, FAIR provides for 7 annual fixed but declining payments to 2002 when, presumably, support payments will end. FAIR also eliminates most acreage use restrictions, suspends the Farmer-Owned Reserve program, eliminates the dairy price support starting in the year 2000, reduces the funds for commercial agricultural export programs, extends the conservation and wetland reserve programs, authorizes several new conservation and rural development programs, and extends the Food Stamp Program and many research and extension programs.

These policy changes have been blamed for the projected drop in farm income due to the removal of target price supports for farmers. However, as has been seen this fall, price protection has not been removed entirely. Farmers can still place their crops in storage and receive a commodity loan from the government. Alternatively, they can receive a loan deficiency payment (LDP) if the posted county price (PCP) drops below the county loan rate. These rules and the rationale for choosing to take advantage of these programs are presented in detail in another paper in this series. While the loan rate does provide a safety net by being above the variable costs of production for most farmers, the loan rate is below the total costs of production for most crops.

1998 Income Estimates

To estimate the impact of this fall's low prices on farm income in 1998, the average income statements for the Southwestern and Southeastern Minnesota Farm Business Management Associations are adjusted by the estimated changes in prices, yields, and government payments. All other variables, such as crop acreages, numbers of livestock, production methods, etc., were assumed to remain at 1997 levels. This simple method does not reflect the complexity of farmers'

decision making and the differences in the economic conditions between 1997 and 1998. However, this estimate does provide an indicator of the severity of the potential income change and the need for corrective actions to be taken now.

For the price estimate, monthly prices for 1997 and the first 9 months for 1998 are taken from Minnesota Agricultural Statistics Service (MNASS). Prices for the remaining 3 months of 1998 are estimated based on current market trends. Simple annual averages are then used to calculate prices changes. Since we do not know when during the year Association members sell their crop, the estimated change in the average prices from 1997 to 1998 is used to estimate the change in the value of sales. For example, the corn price in 1998 is estimated to be 84% of the 1997 level. So if everything else is constant, 1998 corn sales are estimated to be 85% of the 1997 level due to price changes alone; soybean sales, 80%; beef, 95%; and hogs, 69%. Due to the widespread use of hog contracts which guarantee a certain price, the decrease in the hog price is not as large as the market now indicates for purely cash sales. Milk, the only positive spot in these prices, is expected to have an average 1998 price that is at least 13% above 1997 levels.

The 1997 crop sales are also adjusted for yield changes to estimate the cash crop sales for 1998. If they do not feed their grain to their own livestock, farmers usually sell in the current year the crop they produced last year. (This isn't true for all farms, but is the usual case and is why this assumption is made.) Thus, 1997 crop sales are most likely from crops produced in 1996. To make a yield-adjusted estimate of crop 1998 sales, 1997 sales (of crops produced in 1996) are adjusted by the change in yields between 1996 and 1997. In 1996, the average corn yield in the Southwestern Association was 133 bushels and 126 bushels in 1997. Thus, for lack of a better estimate of changes in physical sales, 1998 corn sales for the Southwestern Association are estimated to be 95% of the 1997 level due to changes in yields alone.

To estimate the net effect of price and yield changes on 1998 crop sales, the 1997 average sales are multiplied by the 1998 price as a percent of the 1997 price (e.g., 84% for corn) and by the difference in yields between 1996 and 1997 (e.g., 95% for corn in the Southwest Association). The average corn sales in the Southwest Association are estimated, for example, to decline from $72,569 in 1997 to $57,918 in 1998.

Similar physical adjustments for livestock sales are not as obvious or as easy, so they are not made in these estimates of 1998 income. Price adjustments are made however, for livestock sales; 1998 livestock sales are estimated by multiplying the 1997 level by the 1998 price as a percent of the 1997 price.

While transition payments under the 1996 FAIR act are estimated not to change between 1997 and 1998, two recent policy changes will increase the government payment to farmers. Under the FAIR Act, the transition payment per bushel of corn will drop from $0.46 in 1997 to $0.36, but farmers were required to pay back about $0.10 per bushel in 1997 from a 1996 payment so that change is nullified. However, recently the federal government changed the rules to allow farmers to elect to receive all of their 1999 FAIR transition payments in 1998. Some farmers may elect to receive all of their 1999 payments; others may not. For this estimate of 1998 income, half of the farmers are estimated to choose to receive it if the average income for the

Association is estimated to be negative. The other change is Congress' attempt to help farmers suffering from low prices by increasing the transition payment for 1998. At the time of this estimate, this emergency payment to all farmers was estimated to be 52% of the scheduled 1998 transition payment.

All other cash income is estimated to decrease by 11% based on USDA's index of all prices received by farmers: 139 in 1997 and estimated to be 124 in 1998.

Based on USDA's index of prices paid by farmers in May 1998 versus May 1997, farm expenses are estimated to decline by 2%. Since sales are already estimated to be lower, 1998 cash expenses for the Southwestern Association are also estimated to drop another $5,000 to account for fewer expenses for 1999 being prepaid in 1998. This figure of $5,000 is an arbitrary number chosen to account for this expected behavior of farmers. For the Southwestern Association, it is approximately 21% of the ending 1997 value of prepaid expenses and supplies. Since the Southeastern Association does not have, as will soon be seen, a large drop in income, no change in prepaid expenses is estimated although expenses are decreased by 2% as indicated by the USDA index. Similarly, farmers in the Southwestern Association are expected to decrease their capital expenditures for machinery and equipment so depreciation is estimated to drop to $30,000 in 1998. However, farmers in the Southeastern Association are expected to maintain their 1998 capital expenditures at 1997 levels due to a smaller drop in income.

Accrual net farm income, a more accurate estimate of the current year's income, accounts for changes in inventory levels. In both Associations, inventory levels of crops are adjusted from ending 1997 levels by the price change from December 1997, to the estimated price for December 1998, and by the increase in inventories due to higher yields in 1998.

The balance sheet was adjusted to account for changes in the retained earnings. The specific changes to individual categories are made arbitrarily to reflect a farmer's choices of spreading an operating loss over higher debt, lower cash balances, and liquidation of nonfarm assets. A positive income is also spread over the same categories, but changes are obviously in the opposite direction. Because of the uncertainty of any effects on asset values, no adjustments were made to any asset category (e.g., machinery, land, buildings). The only exceptions are the change in inventory values of crops and livestock and a small decline in the total machinery value (10% in the Southwest and 5% in the Southeast) due to a decrease in capital expenditures. Thus, the effect on the debt-asset ratio and the rates of return should be viewed as indicative of the potential impact of the change in income.

Estimates for the Southwestern Association. Based on the procedures just described, the accrual net farm income for the average member of the association is estimated to be a **minus** $16,229 in 1998 (Table 1). This is a drop of 140 percent from the 1997 average of $40,598. This estimate is not as drastic as an earlier estimate made in August (Olson), but it still would be the first negative average accrual net farm income in the 59-year history of the Southwestern Association.

Net cash farm income is also estimated to decline in the Southwestern Association. The

specific estimate is harder to make because of our inability to estimate whether farmers will sell or store their grain at the end of 1998. The accrual net farm income provides a more accurate picture of income production within the year and is easier to estimate because the value of inventories are included in the calculation. So whether the grain, for example, is sold or stored, it is counted as income in the calculation of accrual net farm income.

When these losses are factored into the balance sheet, the debt/asset ratio is estimated to rise from 48% at the end of 1997 to 52% at the end of 1998 with assets valued on a market basis (Table 2). The rate of return on assets (ROA) drops from 6.3% to -1.9% and the rate of return on equity (ROE) drops from 5.1% to -8.3%. Both ROA and ROE are estimated using assets valued on a market basis. These changes are estimated with no adjustments (other than estimated normal depreciation) in the value of capital assets such as machinery, breeding livestock, buildings, and land. If those values are lowered, the debt-to-asset ratio would rise and the financial condition worsen.

Estimates for the Southeastern Association. Following the same procedures, the accrual net farm income for the average member of the Southeastern Association is estimated to be $54,863 in 1998 (Table 3). This is a decrease of 25 percent from the 1997 record average of $73,312. This income estimate is higher for the Southeastern Association than for the Southwestern Association because the Southeastern Association has a much larger proportion of dairy farms which are benefitting from high milk prices, low feed prices, and increased government assistance in 1998.

When the 1998 income is factored into the balance sheet, the debt/asset ratio is estimated to fall from 37% at the end of 1997 to 32% at the end of 1998 with assets valued on a cost basis (Table 4). The rate of return on assets (ROA) drops from 8.7% to 7.3% and the rate of return on equity (ROE) drops from 9.2% to 6.8%. Both ROA and ROE are estimated using assets valued on a cost basis. Again, these changes are estimated with no adjustments (other than estimated normal depreciation) in the value of capital assets such as machinery, breeding livestock, buildings, and land.

Around the state, the situation will be different. In the Northwest part of Minnesota, farm incomes have been low for several years due to scab and weather problems. The current low prices for wheat will only exacerbate the problems they have been facing.

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Table 1. Estimated 1998 Net Farm Income for the average farm
in the Southwestern Minnesota Farm Business Management Association.

	actual 1997 (208 farms)	estimated prices (98 as % of 97)	estimated yields (97 as % of 96)	predicted 1998	percent change
Gross Cash Farm Income					
Corn	72569	84%	95%	57918	
Soybeans	86906	80%	100%	69535	
Beef	37010	95%		34985	
Milk	13902	113%		15748	
Hogs	91965	69%		63299	
Transition pmts.	8486			12611	(Includes ½ of 99 payment)
LDPs	0			10000	
Emergency $	0			4413	(52% of 98 payment)
All other	48872	89%		43598	
Total Gross	359710			312107	-13%
			Decr. in "prepaids":		
Cash Farm Expense	303241	98%	-5000	293101	-3%
NET CASH FARM INCOME	56469			19006	-66%
Inventory Changes					
Crops & Feed	-2086			8419	
Market Livestock	11614			-8654	
Accts Rec & other	2022			0	
Prepaid Exp & Supp.	7055			-5000	
Accts Payable	1164			0	
Total Inventory	19769			-5235	-126%
Depreciation & other capital adjustments	-35640			-30000	-16%
NET FARM INCOME	40598			-16229	-140%
less est. family living	34139			30000	
less income tax paid	9542			8000	
plus nonfarm income	18982			20000	
RETAINED EARNINGS	15899			-34229	

YIELDS:	corn	soybean
1996	133	42
1997	126	42
est.1998	170	53

Table 2. Ending Balance Sheet for the Southwestern Minnesota Association

	actual 1997	predicted 1998	1998 estimates using cost basis:	
ASSETS (market values)				
Current Assets	219495	195546	195546	
Intermediate Assets	215895	196044	63881	
Long-Term Assets	447823	447823	296204	
TOTAL FARM ASSETS	883213	839413	555631	
Total Nonfarm Assets	133096	131096	102176	
TOTAL ASSETS	1016309	970509	657807	
LIABILITIES				
Current farm liabilities	144096	164096	164096	
Intermediate farm liabilities	46090	46090	46090	
Long-term farm liabilities	128562	128562	128562	
TOTAL FARM LIABILITIES	318748	338748	338748	
Total Nonfarm Liabilities	9095	11095	11095	
Total Deferred Liabilities	162297	154182	0	
TOTAL LIABILITIES	490140	504025	349843	
NET WORTH (farm & nonfarm)		526169	466484	307964
Net Worth CHANGE	46216	-59685	-54063	
RATIO ANALYSIS				
Total Liabilities / Assets	48%	52%	53%	
ROA	6.3%	-1.9%	-2.8%	
ROE	5.1%	-8.3%	-12.3%	
value of operator's labor & mgt =		25000	25000	
interest payment used for ROA= actual 1997 payment		22282	22282	

Table 3. Estimated 1998 Net Farm Income for the average farm
in the Southeastern Minnesota Farm Business Management Association.

	actual 1997 (64 farms)	estimated prices (98 as % of 97)	estimated yields (97 as % of 96)	predicted 1998	percent change
Cash Farm Income					
Corn	57517	84%	116%	56147	
Soybeans	50126	80%	105%	42016	
Beef	10675	95%		10091	
Milk	100984	113%		114395	
Hogs	22087	69%		15202	
Transition pmts.	12244			12244	
LDPs	0			10000	
Emergency $	0			6367	(52% of 98 payment)
All other	41054	89%		36624	
Total Gross	294687			303086	3%
Cash Farm Expense	225501	98%		221679	-2%
NET CASH FARM INCOME	69186			81407	18%
Inventory Changes					
Crops & Feed	16458			-4413	
Market Livestock	1429			-6131	
Accts Rec & other	184			0	
Prepaid Exp & Supp.	2223			0	
Accts Payable	717			0	
Total Inventory Change	21011			-10544	-150%
Depreciation & other capital adjustments	-16885			-16000	-5%
NET FARM INCOME	73312			54863	-25%
less est. family living	32840			30000	
less income tax paid	12009			12000	
plus nonfarm income	26290			26000	
RETAINED EARNINGS	54753			38863	

YIELDS:	corn	soybean
1996	126	42
1997	146	44
est.1998	170	53

Table 4. Estimated Ending Balance Sheet for the Southeastern Association

	actual 1997		predicted 1998	
ASSETS (cost basis)				
Current Assets	150520		145383	
Intermediate Assets	145319		139916	
Long-Term Assets	255445		255445	
TOTAL FARM ASSETS	551284		540744	
Total Nonfarm Assets	122095		129095	
TOTAL ASSETS	673379		669839	
LIABILITIES				
Current farm liabilities	40310		30310	
Intermediate farm liabilities	68393		58393	
Long-term farm liabilities	130836		115836	
TOTAL FARM LIABILITIES	239539		204539	
Total Nonfarm Liabilities	11461		9461	
TOTAL LIABILITIES	251000		214000	
NET WORTH (farm & nonfarm)		422379		55839
Net Worth CHANGE	34933		33460	
RATIO ANALYSIS				
Total Liabilities / Assets	37%		32%	
ROA	8.7%		7.3%	
ROE	9.2%		6.8%	

value of operator's labor & mgt =	25000
estimated 1998 interest for ROA= 1997 actual amount	18957

Financial Management Alternatives

Kent Olson, Dale Nordquist, and Erlin Weness[1]

While we do not know what the exact income figures will be, we do know that the major impact of the current low prices will be low income. The first step for farmers--and everyone involved in agriculture--is to fight the urge to deny this problem. The second step is to respond in ways they deem appropriate to their situation.

Farmers, their families, and their business colleagues need to be aggressive in their search and implementation of alternatives; they can't afford to be passive. One of the first items that should be on the list of things to do is "talk." Farmers need to talk with their spouse and family, their friends, their bankers, and everyone else involved with their business. Communication is very important — communication about the situation and about alternatives. Listen to more people than yourself and the people in the coffeeshop. Discuss the situation and alternatives with your management team: your spouse, family, partners, lenders, and other people critical to the success of your business.

To assess where a farm is or where it is headed, a cash flow should be done for both the remainder of 1998 and all of 1999. Doing them together is necessary because some alternatives may be beneficial for one year and detrimental in the other year. For example, asking for the full 1999 transition payments in 1998 may help the cash flow and income situation in 1998 but it will decrease the cash receipts in 1999. Doing the cash flows for both years will allow better informed decisions to be made. Also, the tax implications of alternatives may affect both years.

The following financial management alternatives are listed roughly from the easiest change or adjustment to the most severe. How far down the list a farmer needs to go depends on how bad the initial cash flow problem is estimated to be. The basic idea of each alternative is described as well as some potential concerns that need to be evaluated before the alternative is chosen.

Improving marketing skills. One of the first financial skills needed for the remainder of 1998 and in the future is better marketing skills. Farmers can protect themselves and their financial condition by protecting against extreme adverse price movements. Learning the skills needed to make wise use of hedges, options, contracts, insurance, financial reserves, and other risk management tools will help many farmers deal with risk in the future.

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[1]Olson is an Associate Professor and Nordquist and Weness are Extension Educators in the Department of Applied Economics, College of Agricultural, Food, and Environmental Sciences, University of Minnesota.

Cutting expenses. Most expenses are already spent or committed for 1998, but there is some room to reduce expenditures. Nonessential repairs can be cut. Go easy on capital expenditures for machinery, equipment and buildings. If new machinery is truly needed, consider leasing, sharing, or custom hiring versus owning; the initial expenditure may be lower. Prepaying less expense for the 1999 year may be a very obvious way to cut expenditures. However, if input suppliers offer better discounts this fall compared to other years, the decision may be harder to evaluate. On the personal side, family living expenses can be curtailed to some degree. All of these potential cuts need to be discussed with the management team to decide whether the expenditure is indeed something that can be cut or delayed to another year.

Increasing income. Are there ways to increase income that have not been used before? If you have an empty feedlot, is it worthwhile to buy some feeders yourself or is someone else interested in renting the facility from you. The exposure to risk by renting to someone else needs to be evaluated: the cost of insurance, the risk of nonpayment of rent, any additional costs or work due having someone else's livestock on your farm. The potential of increasing nonfarm income to replace declining farm income may be an alternative for some farm families.

Government payments. Weigh the interest savings from taking out CCC loans vs. the income potential from the loan deficiency payment (LDP). The LDP may be more beneficial if you do not need the cash flow generated by the CCC loan. Also, the recent change allowing farmers to receive all of their 1999 government transition payments in 1998 may help with cash flow problems. However, marketing and tax considerations will affect these decisions as will the concern for 1999 income. These considerations will cause different farmers to make different decisions based on their unique situation.

Tax management. Consider all possible (legal) ways to minimize taxes. Remember income averaging is now available starting in 1998. Also, remember that net operating losses can now be carried back up to 5 years. If taxable income is extremely low, be sure to obtain the maximum earned income credits available. Take advantage of all the state education credits. In some situations, a family's taxable income may be below the minimum taxable level, that is, no tax is due. In these cases, the farmer may find it beneficial to sell some products to raise income up to the point of entering the minimum taxable brackets. For instance, if corn can be sold in 1998 without raising taxes, a price of $1.60 may be equivalent to receiving $2.00 and losing $.40 to the federal and state governments if the farm was in a combined 20% tax bracket. While the price of $1.60 is still low, this option still needs to be considered.

Zero based budgeting. With the prospect of low prices continuing into 1999, farmers may need to reevaluate how they grow their crops and livestock. Every expense should be evaluated for its benefit compared to its cost. Some expenses are obviously worthwhile: seed, some fertilizer, feed, etc. However, what is the best seeding rate when crop prices are low? Is

that tillage needed or is it "recreational"? Is it worthwhile to pay technology fees when other pest control methods are available? What is the optimal protein percentage when hog prices are so low? The decision may be to continue growing as we currently are but it may not be either. For example, if soil tests indicate sufficient levels of P and K, this may be the year to farm what is in the soil and not build up levels.

Land rent negotiation. Low prices are a very good reason to talk with landowners about renegotiating cash rents. Consider changing to a share rent or a flexible cash rent for the future of increased risk. A good starting point for rent negotiation is estimating the revenues and costs for both the tenant and the landowner. By splitting the total revenue and costs, both the tenant's maximum bid and the landowner's minimum bid can be estimated. This is done as an example using information from the Southwestern Farm Business Management Association for 1997 (Table 1). Note that the estimates in Table 1 are different from the usual enterprise budget. Since rent is the cost to be determined, it is left out of the costs. Two items used in rent negotiation but not usually in an enterprise budget are the returns to the farmer's labor and management for production ($25 per acre in this example) and the landowner's money tied up in the estimated value of the land ($88 per acre which is a 5% return on land worth $1750 per acre). Based on these estimated yields, prices, and costs, the tenant's maximum cash rent is the difference between revenue and costs or $62 per acre in this example. In order to pay the estimated costs and receive the desired returns to land investment, the landowner's minimum cash rent is the total of these costs or $121 per acre in this example. In most years, the landowner's minimum and the tenant's maximum would define a negotiating range between these figures. In this example, there is not enough income to satisfy both parties so negotiations involve one or both parties accepting a lower than desired return. For example, the landowner may have to accept less that $88 return on the money invested in land or the tenant would have to expect less that $25 per acre for labor and management. If this is not acceptable, other costs must be decreased or revenues increased so the two parties can reach agreement.

Liquidate unprofitable enterprises. Now may be the time to consider liquidating that unprofitable cow-calf enterprise or that farrowing unit that needs updated facilities to be profitable. Weigh the pros and cons of these decisions. If short term debt can be substantially reduced by selling assets being employed by these enterprises, cash flow may improve dramatically. On the other hand, it is not usually desirable to liquidate enterprises when asset values are low. But sometimes it is necessary to stop the bleeding. Most enterprises are probably covering their cash costs. To make liquidation pay, you need to find a more profitable way to employ the resources they were using. This is often operator labor. You may need to consider increased off-farm employment, for example, to use the freed-up time profitably.

Refinance. Take advantage of the very low interest rates now available and refinance your debt at lower levels. Spending money to refinance may be very wise even in a tight cash flow situation. Even a 1% drop in the interest rate can be worthwhile for reducing cash flow

requirements as well as the cost of borrowing for loans to be held longer than the next 3-4 years.

Restructure. Moving short-term debt to long-term debt by refinancing can be a very good strategy if two conditions are present. First, will the business be able to handle the debt load in the future? Second, is the management able to assure that a short-term debt problem will not recur in another year or two?

A new mortgage. Another option to consider (and to be wary of) is obtaining an operating loan by putting a mortgage on currently unmortgaged land. This may seem like the only way to obtain an "operating" loan, but what impact does it have on future plans? What impact on the solvency of the business?

Rent out land. If your personal situation for 1999 looks very bad but you have some solid evidence that the situation may improve for future years, consider renting out all or part of your land and subleasing your rental land for 1999. This option may sound very drastic, but it may make good financial sense. If you can't obtain sufficient operating funds from your lender or from your own reserves, renting your own land to someone else and continuing to farm the land you rent may help preserve your farm operation through a tough period for better years in the future. Talking with your lenders and landowners is certainly necessary so they all know your plans and reasons.

Sell excess assets. How much machinery is needed to farm? Sell any extra tractors or equipment that you and your team decides you do not need or can obtain the services of through other means. If the combine is larger than needed for your size farm, could it be sold and harvesting done by a custom operator. (The other option of doing more custom work yourself is an obvious alternative is mentioned below also under increasing income.)

Sell productive assets. In extremely severe situations, selling income producing assets may be an alternative that has to be evaluated. Do a cash sale only; if you are in need of cash, don't consider a contract for deed. Selling productive assets needs to be evaluated for its impact on cash flow, the solvency of the business, and the impact on potential income production. Can the assets be sold for a reasonable value or will its forced sale drop its price? Will the cash received for the asset allow a sufficient amount of debt reduction? In some areas, selling a portion of land for nonfarm uses may be an alternative; for example, land along a river or with a view may be sought after by people wanting either a cabin site or a rural residence. These alternatives may raise a good cash flow and not affect the potential for future income potential. One caution in all of these asset sales is the impact on the retirement plans. If the land for cabins or rural residences is part of a farmer's retirement fund but is now used to pay operating debts, what happens to the retirement plans?

Liquidate? If you have to get out, do so before you have lost all your equity. We have heard

farmers say they do not plan to repeat what some of their neighbors did in the 1980s: struggle to survive and lose everything anyway. Even though it is heart wrenching and dream shattering, many farmers who have quit realize that they can live happily in town and in other jobs. The skills and qualities possessed by farmers (management, personnel, leadership, initiative, work ethic, honesty, etc.) are what other employers are looking for.

Most farms will be able to survive one down year with a combination of these suggested measures. For those who remain in farming, better risk management skills will be needed both for 1999 and for the long run. With the 1996 farm bill, the Federal government has been taken out of the business of actively protecting farmers from the downside risk of the market, that is, low prices. So farmers need to consider many new facets of risk management that weren't needed before. Hedging, forwarding contracting, and options have been available and need to be used when appropriate. Satisfactory, profitable prices need to be taken when available; let the speculators speculate. New forms of crop insurance (such as, crop revenue coverage, and "Dollar-for-dollar") are being offered and developed to provide protection for both price and yield risk. Using the futures market and buying insurance are not the only risk management tools available. Simple tools can be very powerful for reducing risk exposure. Controlling debt and not overextending the risk bearing capacity of the farm will be crucial. Farmers may also need to develop financial reserves or "rainy day funds" for future poor years.

As an ending note, let us return to the first step that is necessary to deal with the financial situation facing farmers and others involved in agriculture: fight the urge to deny this problem.

Table 1. Comparison of tenant's and landowner's costs based on information from the Southwestern Minnesota Farm Business Management Association.

	Tenant's Share: Long Range Plan		Owner's
	Corn	Soybeans	Share
REVENUE			
Yield	120	40	
Price	2.25	6.00	
Transition payment	39	1	
Other income	1	2	
Total	310	243	0
DIRECT EXPENSES (except rent)			
Seed	33	16	
Fertilizer	48	5	
Chemicals	29	30	
Crop Insurance	6	10	
Drying fuel	5	-	
Fuel & oil	10	8	
Repairs	21	17	
Misc.	7	4	
Operating interest	10	8	
Total	169	98	0
OVERHEAD EXPENSES			
Hired labor	7	5	-
R. E. Taxes	-	-	15
Farm insurance	3	3	3
Utilities	3	2	1
Interest (opp.)	7	5	88
Depreciation	35	28	5
Miscellaneous	8	7	4
Total overhead	63	50	116
Labor & Management	25	25	5
Total Listed Expenses	257	173	121
Net Return (w/o rent)	53	70	-121
Average Net Return	62		-121

Cropland Rental Market Impacts of Low Crop Prices

by
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It is the time of year when tenants and landlords renegotiate rental rates for the coming year. How will the rental market for Minnesota cropland be affected by corn and soybean prices 25 to 30% lower than a year ago? Data from past years suggest that cash rents will adjust over time but adjustments will be small compared to changes in profitability from year to year.

Tenants' expected net returns from future crops are probably the main factor determining how much they tend to bid. Expected net returns involve expectations about crop prices and yields, and cash expenses. Landlords' expenses such as property taxes may also affect their willingness to compromise on rates in a given year, but if a widespread decline in crop prices and yields reduces the bidding willingness of all potential tenants, then landlords may have no choice but to reduce rates. The alternative of letting the land lie idle will not be very attractive in most cases.

FAIRRENT Calculations for Southwestern Minnesota

FAIRRENT, a computer software package available through the Center for Farm Financial Management at the University of Minnesota, calculates a breakeven rental rate which a tenant would be able to pay after paying certain user-specified crop production costs, with specified crop yields and prices. A FAIRRENT analysis is a useful starting point for rental negotiations in any year, and particularly for 1999.

Table 1 is similar to a FAIRRENT report, except that some of the detail on individual expense items, and several yield and price sensitivity tables, are left out to save space. FAIRRENT also includes a share rental analysis not included here. Table 1 illustrates how projected 1998 corn and soybean prices and yields might affect tenants' willingness to pay rent for cropland in southwestern Minnesota in 1999.

It cost an average of $322 to grow an acre of corn on rented land in southwestern Minnesota in 1997, based on averages from the Southwestern Minnesota Farm Business Management Association[1]. Land rent amounted to $90, or 28% of this amount. Corn averaged 125 bushels per acre in 1997. At a harvest-time price of $2.40, gross returns were $340 when government transition payments of $39 are factored in. Net returns over direct and overhead expenses were $18 per acre (line 20). Crop enterprise costs per acre as calculated in farm record databases include 1) direct expenses and 2) an allocated share of cash farm overhead expenses.

The above costs do not include either cash for family living expenses, or alternatively what is called an "opportunity cost" charge representing what the unpaid operator could have earned in other employment. Putting an average value of $26,283 on the operator's labor and management activities and allocating that amount across all enterprises works out to $27 per corn acre. Opportunity cost of operator labor and management is separated out from the other costs in the current record summary because it is a more subjective figure than the other costs.

Total cost with the labor and management charge included is $349 per acre, or $9 more than gross returns. This means that the average tenant came up short of covering the rent plus other expenses and

[1] Olson, Kent D. and others. "1997 Annual Report of the Southwestern Minnesota Farm Business Management Association," Staff Paper P98-3, Department of Applied Economics, University of Minnesota, St. Paul, http://agecon.lib.umn.edu/mn/p98-03.html.

opportunity costs. The second column of the table shows that soybeans worked out slightly better and made up the shortfall. The corn-soybean rotation covered the rental expenses with a few dollars left over (compare lines 27 and 32). An allocated share of interest paid on debt is included, but one other cost which is not included in these enterprise summaries is the opportunity cost of equity capital invested in machinery, buildings and direct inputs so total costs are under-estimated to that degree.

Projections for 1998, which tenants will be looking at when negotiating rates for 1999, do not appear as promising. The middle two columns of Table 1 shows projected figures for the 1998 year. Costs are not expected to change much in 1998 and 1999, so are left at 1997 levels in the analysis. On October 9, 1998, corn was selling for around $1.65 in southwestern Minnesota. A loan deficiency payment was available for $0.21 so that a producer could net an effective price of $1.81 per bushel, and $5.21 for soybeans. Yields were forecast to run around eight percent higher than 1997 for corn and one percent higher for soybeans, so the 1998 projection is increased to 133 for corn and 43 for soybeans.

As of October 20, 1998, an agricultural relief package with a provision for a one-time payment equal to 52 percent of Freedom to Farm transition payments was reported to be nearing passage in Congress. This was factored into Table 1 as a $20 per acre increase in the transition payment for 1998 corn.

At these projected 1998 prices and yields, the amount remaining for rent for the corn-soybean rotation drops from $95 to $53 per acre. In a down year such as 1999 is expected to be, some tenants with low debt may be willing to forego covering some overhead expenses in order to maintain control of their rented acreage for the better years to come rather than losing it to other bidders. Machinery and building replacement is the expense most likely to be postponed[2]. The amount remaining for rent without covering depreciation is $85, so that would just about cover last year's $89 in rent paid. Also, some tenants may be willing to accept less than the estimated charge for labor and management, especially if the difference can be made up with off-farm income, other farm enterprises, or just belt-tightening. The amount remaining for rent if not covering either replacement (depreciation) or labor and management falls from $150 to $109 per acre. So, it looks as though the average tenant producer would have to forgo covering most of machinery replacement and some of their return to labor and management (or family living expenses) if they were to pay the same level of rent as in 1997.

The eight percent corn and one percent soybean yield increases for 1998 may be on the conservative side, if the most recent crop reports hold true. If yields turn out to be up 20 percent for corn (150 bushels) and ten percent for soybeans (46 bushels), the breakeven rental rate after all costs would be $77 rather than $53.

[2] Crop enterprise records include, in overhead expenses, a “depreciation” item which includes a portion of replacement expenditures in the current and past years.

Table 1. Maximum Amount Available Per Acre to Cover Cash Rent, Southwestern Minnesota Farm Business Management Association Farms, at: 1) Long Range Planning Prices for Crops, 2) Actual 1997 Prices, and 3) Projected 1998 Prices.

	Actual 1997		Projected 1998		Long Range Plan	
	corn	soybeans	corn	soybeans	corn	soybeans
1. Farms that grew the crop	163	164	-	-		
2. Acres, average per farm	100	108	100	108	100	108
3. Yield per acre	125	42	133	43	120	40
4. Price per bushel at harvest	$2.40	$6.50	$1.65	$4.85	$2.25	$6.00
5. Crop revenue per acre	$300	$273	$219	$209	$270	$240
6. Government transition payments	39	1	59	1	39	1
7. Loan deficiency payments (projected at $0.33/bu for corn and $0.35/bu for soybeans)	-	-	28	15	-	-
8. Other income	1	2	1	2	1	2
9. Gross return	$340	$276	$307	$227	$310	$243
10. Direct expenses per acre:						
11. Rent	$90	$89	$90	$89	$90	$89
12. Other direct	169	98	169	98	169	98
13. Total direct expenses	$259	$187	$259	$187	$259	$187
14. Overhead expenses per acre (allocated):						
15. Machinery and building depreciation	$35	$28	$35	$28	$35	$28
16. Other overhead	28	22	28	22	28	22
17. Total overhead	$63	$50	$63	$50	$63	$50
18. Total listed costs without depreciation	$287	$209	$287	$209	$287	$209
19. Total listed costs	$321	$237	$322	$237	$322	$237
20. Net return over total listed costs	$18	$39	($15)	($10)	($12)	$6
21. Opportunity cost of operator labor & management (allocated)	$27	$21	$27	$21	$27	$21
22. Total listed costs including operator labor & management	$349	$258	$349	$258	$349	$258
23. Total listed costs w/operator labor and management, but not rent (line 22 + line 11)	$259	$169	$259	$169	$259	$169
24. Amount remaining for rent after covering depreciation and labor and management (line 9 - line 23)	$81	$107	$48	$58	$51	$74
25. Amount remaining for rent after covering labor and management, not depreciation (line 24 + line 15)	116	135	83	86	86	102
26. Amount remaining for rent without covering either depreciation or labor and management (line 25 + line 21)	143	156	110	107	113	123

Table 1. (continued)

	Actual 1997 Corn-soybean rotation	Projected 1998 Corn-soybean rotation	Long Range Plan Corn-soybean rotation
27. Amount remaining for rent after covering depreciation and labor & management	$95	$53	$63
28. Machinery and building depreciation	31	31	31
29. Amount remaining for rent after covering labor & management, not depreciation	$126	$85	$94
30. Opportunity cost of operator labor & management	24	24	24
31. Amount remaining for rent without covering either depreciation or labor and management	$150	$109	$118
32. Average rent paid per acre	$89	???	???

The long term looks a little better than the projection for next year, but it looks as though some degree of downward adjustment in rents will be needed if tenants are to cover their costs. Part of the reason for this squeeze is that prices of crop inputs have risen substantially over the past several years. Association corn yields reached 142 bushels in 1994, but the 1993 average was only 58 bushels. Yields averaged 115 bushels over the past ten years and 118 bushels over the past five. Factoring in a little upward trend, 120 bushels looks like a reasonable long range planning estimate. Harvest-time prices have averaged around $2.25 per bushel over the past ten years. It is unclear how payments from commodity programs will change in the future, so they will be kept at the 1997 level of $39 per acre. The right two "Long Range Plan" columns show the calculations using a "middle-of-the-road" set of yields and prices. Under this scenario, corn gross returns are short of covering direct and overhead costs (line 20). The soybean net is slightly better, but over both crops the highest rent that would still cover all costs is $63 compared to 1997's $95.

Tenants who price crops before harvest or hold them until the following year may actually receive higher-than-harvest-time prices, or lower, so individual tenants' breakeven rental rates will vary from those calculated here. Some tenants may also plan for yields different from those experienced in recent years if they believe, for example, that El Nino will affect the weather or a solution to the wheat scab problem will be found. Costs can also differ considerably from farm to farm.

This analysis is based on average allocated overhead expenses reported by the 164 association farms. The association summaries were used because historical data was available for the historical analysis discussed in the next section. Another database is also available for recent years – the MnSCU Farm Management Program summaries[3]. Overhead expenses reported for the MnSCU farms are somewhat lower than for the association. For example, overhead expenses for corn on rented land for 334 farms in the southwestern MnSCU summary averaged $48.50 per acre, and $54.56 for 400 farms in the south central MnSCU summary. This is $8 to $14 less than for the association farms. There is no easy way to determine which database is most representative of all farms in the region. If the MnSCU overhead expenses were used in Table 1, the breakeven rents would be $8 to $14 per acre higher than shown.

[3] The MnSCU Farm Management Program summaries for 1997 are available at http://www.mgt.org.

FAIRRENT Calculations for Northwestern Minnesota

The previous analysis focused strictly on corn and soybeans. Other crops are grown as well, especially in central and northern Minnesota. The largest crop by acreage in northwestern Minnesota last yea was wheat, followed by soybeans, hay, and barley. Financial stress was widespread in northwestern Minnesota last year, with 30 bushel wheat yields compared to 1996's 42 bushels, along with low prices. How does the situation look for the Red River Valley in 1998? The Minnesota Agricultural Statistics Service estimates 1998 average wheat yields in Minnesota at 40 bushels per acre, up 25 percent from 1997's statewide average 32 bushel yield. Barley yields are estimated at 57 bushels, up 12 percent from 1997. Wheat and barley prices are down from 1997 levels, but an analysis similar to Table 1 for a Red River Valley farm growing wheat, barley and soybeans shows a slight improvement from 1997's situation. Maximum rent that could have been paid in 1997 after covering all costs was negligible, at $12 per acre. The amount rises to $19 per acre at the projected 1998 yields and prices with the reported 50 percent increase in transition payments factored in.

Historical Trends in Rental Rates Paid and Tenants' Breakevens

How far will the cropland rental market adjust in 1999 in response to this probable change in tenants' financial situation? This is not the first time crop income has experienced a year-to-year decline. One source of rental rate data is a statewide survey that has been conducted annually by the USDA since 1967[4]. Randomly selected farmers were asked what cash rents they expected to pay during the current year. Another source of data that goes back to 1983 is the rental expenses for corn and soybeans on cash rented land, which has been published in the Southwestern Minnesota Farm Business Management Association annual reports. Figure 1 shows the USDA and association numbers. Trends in the two sets of rates have tracked fairly closely, with the association rates averaging 25 percent higher than the USDA statewide averages. Average statewide rental rates climbed sharply from 1973 to 1982, after stability in the late 1960s. The largest percentage rise was in 1974, with a 39 percent increase from $22 to $31. Rates rose 13 percent in 1989 (from $53 to $60) and 13 percent in 1995 ($62 to $70). There were declines as well, but not as often and not by as much. The largest decline was 14 percent in 1986 (from $62 to $54). Rates also declined by 4 percent in 1994 (from $64 to $62). The reported association rates declined by 18 percent in 1986. The biggest percentage increase was 6 percent in 1995. Respondents in a recent survey of six south-central Minnesota counties expected 1999 rents to decline by one to three percent, based on a recent survey[5].

This suggests that average market rental rates are unlikely to decline by as much as this year's projected 44 percent decline in tenants' projected ability to pay. How much did tenants' ability to pay decline in these past down years? Figures 2 and 3 compare association average gross returns and dollars remaining for rent under different assumptions. Figure 2 shows average gross returns per acre for an association farm growing corn and soybeans by year from 1977 through projected 1998. Gross returns are split out into market revenues based on harvest-time prices, government payments including deficiency payments through 1995 and transition payments in 1996 through projected 1998, and projected loan deficiency payments for 1998 calculated as shown in Table 1. Crop insurance and disaster payments, including a large payment in 1993, are included as "other income" in the crop enterprise summaries, and so are shown separately from transition and deficiency payments in Figure 2.

[4] Rates through 1989 were published in Jones, John and Roger W. Hexem, "Cash Rents for Farms, Cropland and Pasture, 1960-89," Statistical Bulletin B813, USDA Economic Research Service. Rates for more recent years are available on the USDA web site.

[5] Gary Hachfeld, personal communication, Nicollet County Extension Office, September 30, 1998. Blue Earth, Faribault, Le Sueur, Nicollet, Sibley, and Waseca Counties were surveyed.

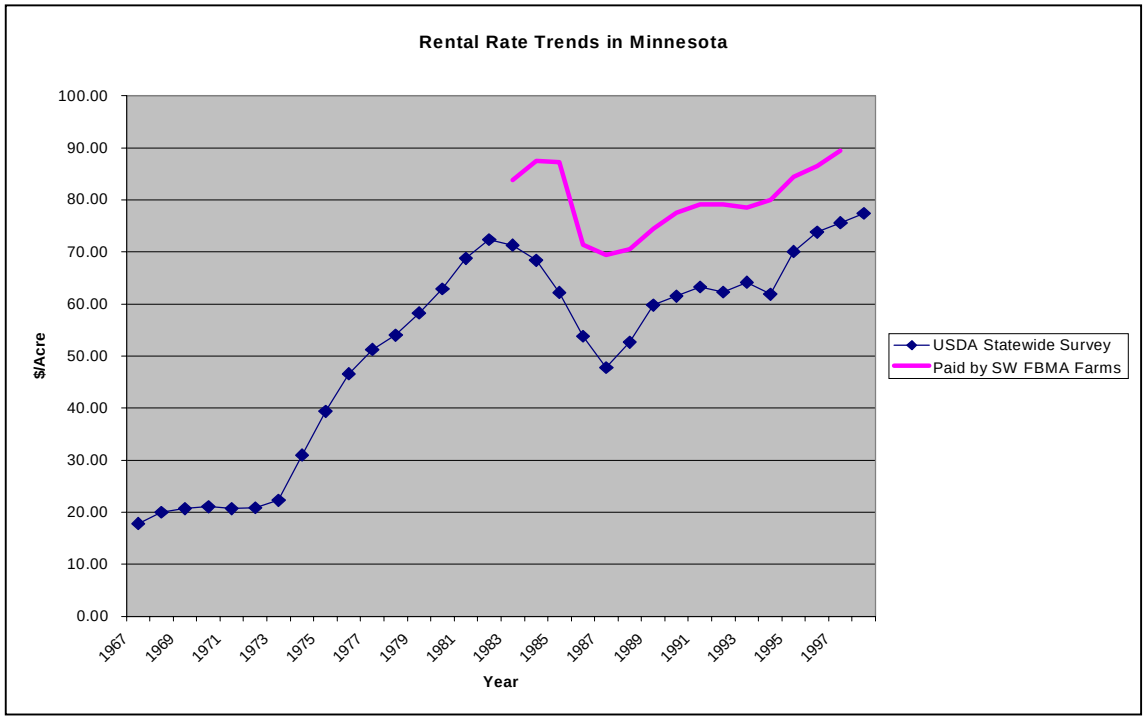

Figure 1

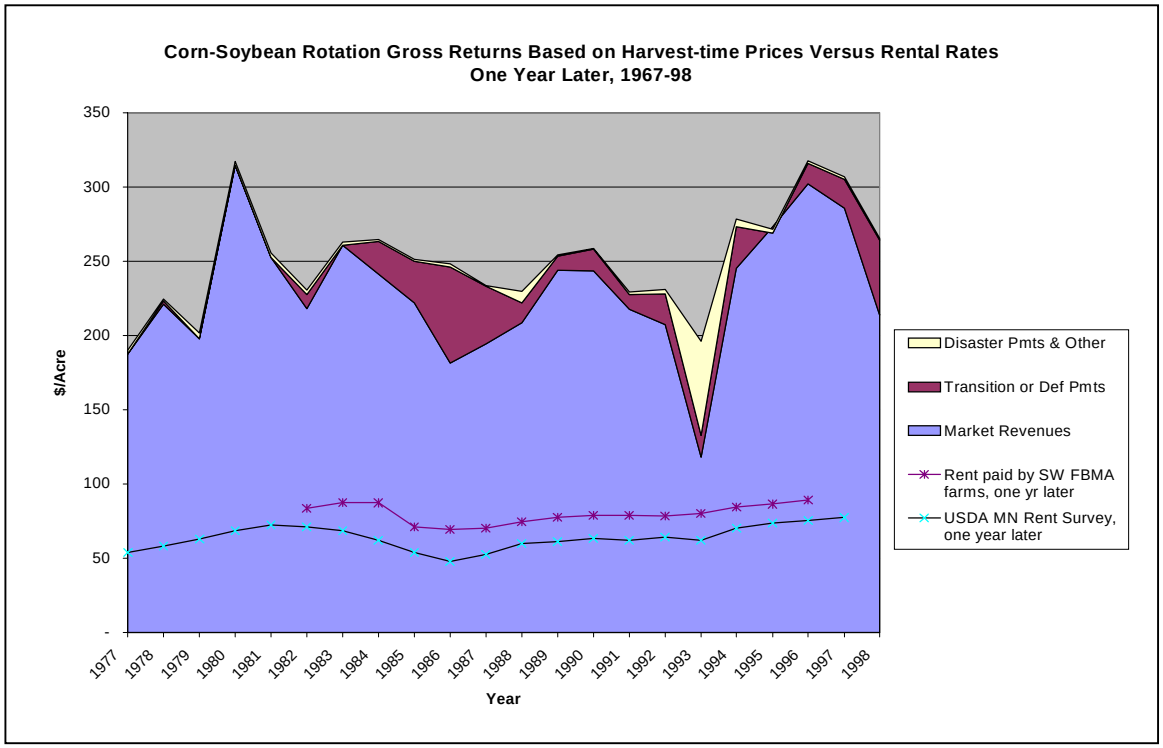

Figure 2

The best years in terms of gross returns were 1980 with $317 and 1996 with $318. The high gross in 1980 was mainly due to (harvest-time) prices of $3 per bushel for corn and $8 for soybeans. The next down year was 1982. The corn price was down to $1.90, 30 cents less than a year earlier, but was partially offset by a 15 cent deficiency payment. The soybean price was $4.90, down 90 cents from a year earlier.

Nineteen eighty six was also a down year in terms of markets, with $1.69 corn and $4.49 soybeans. A $1.11 deficiency payment for corn largely made up the shortfall, however. There was a commodity program setaside requirement of 17.5 percent of the corn base in 1986. The association summaries are presented mainly in terms of harvested acres of corn rather than program acres, with setaside acres treated separately. Net return per acre including government payments is the only number in the corn enterprise summary that is provided on a program acre basis, and was used in the analysis along with USDA data on setaside requirements and deficiency payments to adjust the corn revenue and cost data to a per program acre basis for those years when setasides were required[6]. Extraordinarily wet weather in 1993 caused the lowest gross returns since 1979. Yields in 1993 only averaged 58 bushels for corn and 19 bushels for soybeans. Much of the crop was not harvested at all, so that harvested acreage per farm was only half that of a year earlier. Market revenues were down 42 percent from 1992, but when the disaster payments were added in, gross returns were only down by 14 percent.

Figure 3 shows breakeven amounts remaining to pay rent under the same assumptions as in Table 1, with costs, crop prices, yields, and acres per farm taken from the association summaries for 1977 through 1997, along with the projections for 1998. The bottom band is the calculated amount remaining to pay rent after paying all costs including depreciation and the opportunity cost of operator labor and management. The middle section shows the increase in rent that is calculated if depreciation is left out of the cost calculation, and the top section is the rental rate when labor and management is also left out. Labor and management charges were not allocated to enterprises until the 1996 summary. For earlier years, the 1997 labor and management charge was adjusted for inflation using the consumer price index.

The top line on the graph shows the rental rates reported in the summaries. The bottom line shows the USDA statewide survey rates. Because of the difference in geographic coverage, the USDA rates are not directly comparable to the costs but were included to give an indication of trends prior to 1983 when the association rent data became available.

Figure 3 shows that returns were sufficient to pay the following year's rents actually paid in 10 of the 15 years for which data is available (1982-96). There were shortfalls in 1983 and 1991-3. The projection for 1998 looks slightly better than in 1993, when rents exceeded returns available even without either the depreciation or labor charges included. Perhaps rents will decline next year more than they did in 1993, because people may realize that the 1993 economic losses were due mainly to a one-season weather event, while the current price declines are being attributed to world economic adversity and policy factors which might take longer to reverse. It is interesting that statewide rental rates apparently continued to climb through the early 1980s, and did not turn down until after the third down year out of four. Statewide rental rates then declined for five straight years, even as returns stabilized at a reasonably high level. The big 1986 decline in association rents came five years after the big 1981 decline in returns and smaller declines in the next two years.

[6] Data on deficiency payments and setaside requirements were taken from Robert Green, "Program Provisions for Program Crops: A Database for 1961-90, USDA Economic Research Service, March 1990.

Breakeven rents after all costs (bottom band) declined by 41 percent from 1980 to 1981 and 49 percent from 1992 to 1993. So, the projected 54 percent decline for 1998 is in the same ballpark as what happened in those two years.

Perhaps tenants base their crop price expectations on cash prices received during the year, which probably came from selling last year's crop in the spring, rather than on the harvest-time prices shown in Table 1 and Figure 2. Comparing annual average cash prices received with harvest-time prices in 1985-98, cash corn prices received over the period 1984-97 were $2.28 compared to average harvest-time prices of $2.16. Cash corn prices were higher than at harvest in 8 of 15 years. Soybean annual cash prices averaged $5.97 compared to harvest-time $5.69, with cash prices higher than at harvest in 9 of 15 years. The difference works out to $11 more per acre available to pay rent.

What does all of this indicate about where rental rates will head for the 1999 year? The crystal ball is pretty cloudy, but the historical trends described in this paper would suggest that rental rates might decline slightly this year, but it may take another year or two of financial stress before substantial declines in rental rates are seen.

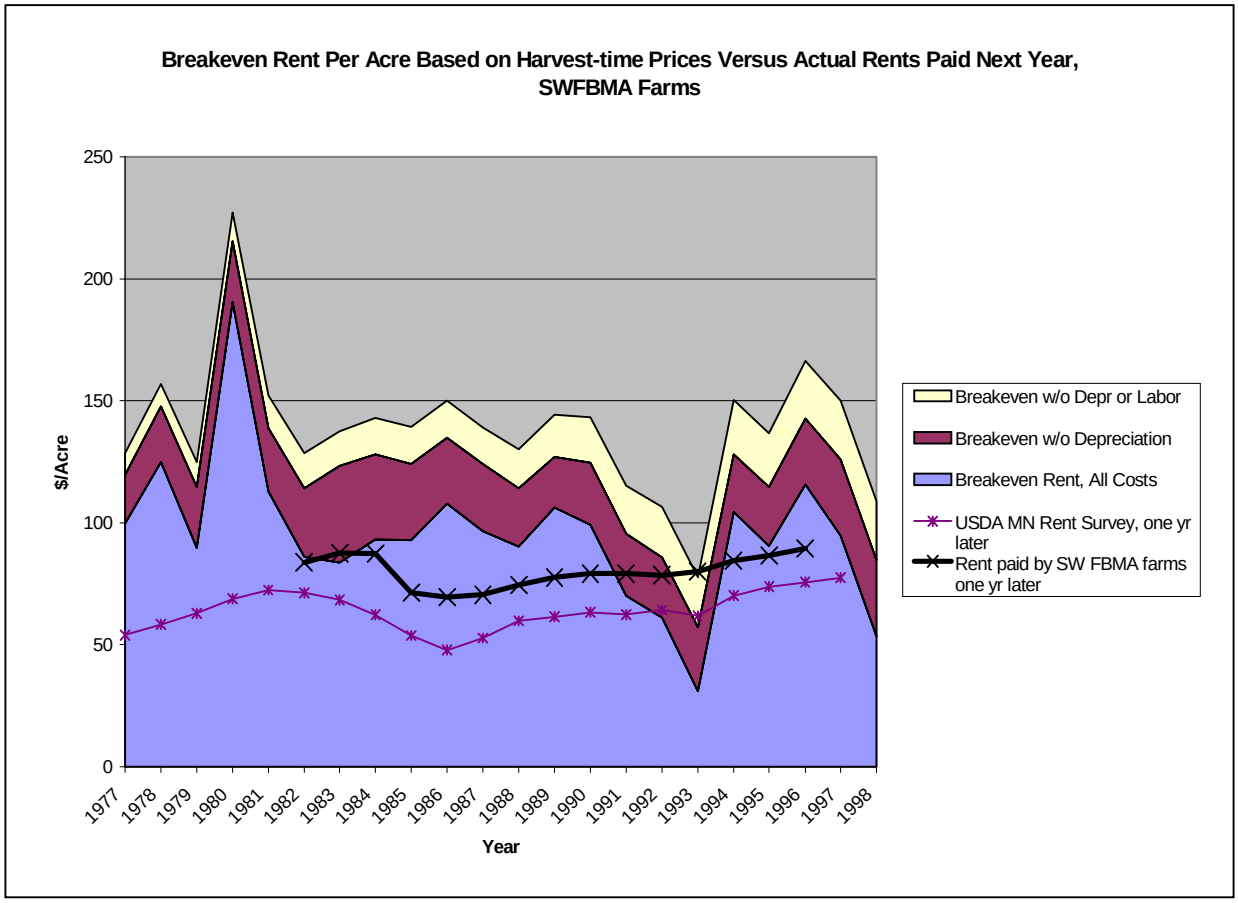

Figure 3.

Situation and Outlook For the Livestock Sector

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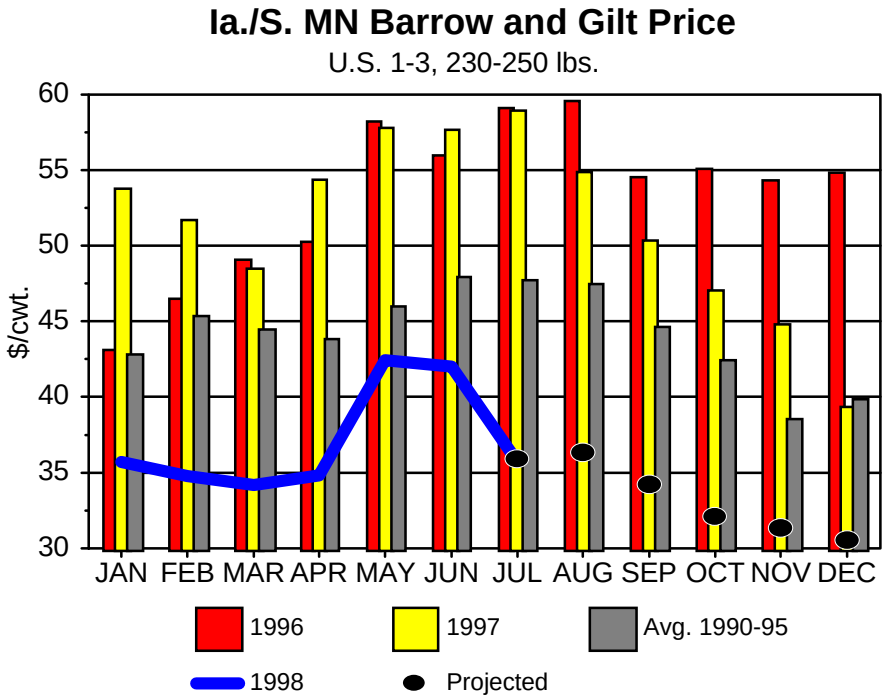
As with most commodity sectors livestock and meat is currently under severe price pressure. Following is an overview of critical fundamental factors affecting the current price situation in livestock. Price expectations and strategies for the coming year are included.

Livestock Prices

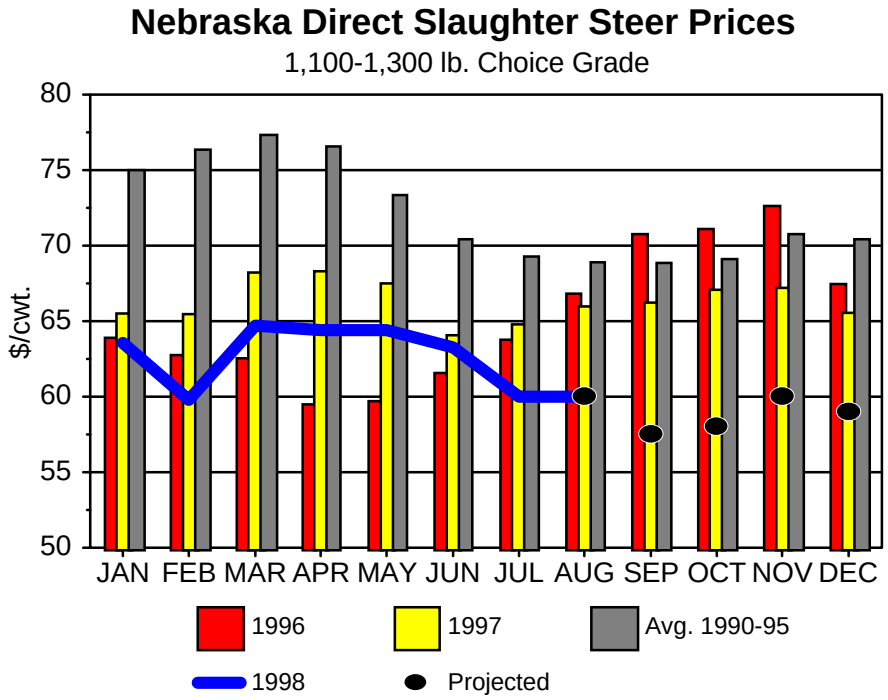
The following two charts show the recent history of market prices for both hogs and cattle.



While hog prices are currently low (weekly averages have been near $30/cwt. since Labor Day), 1996 and 1997 prices were high relative to average month prices. As shown later, this was not necessarily profitable for pork producers because feed prices were also high during those time periods.

In contrast to hog prices, beef prices have been low relative to averages since 1996. This is because cattle cycle inventories peaked in 1996 so that production has been high since mid-decade. In late 1997 cattle prices appeared to be recovering from their cyclical lows, however, slow marketings of feeder cattle and cattle on feed, a slump in exports to Asian markets, and

dramatically higher pork production have resulted in lower beef prices in 1998. It now appears that any sustained higher prices will have to wait until 1999 — and until cattle feeders slaughter off heavier weight cattle currently back-logging the beef production pipeline.



Hog and Cattle Inventory Reports

The following two tables are the most recent USDA reports on inventories of both hogs and cattle. These inventory reports are the basis for forming future production expectations for pork and beef. Table 1 shows that there continues to be growth in all categories of hog inventories relative to year ago levels. September 1, breeding herd inventories are equal to a year ago, and so we would expect the expansion in market hogs to eventually cease as well. However, the 3 percent increase in market hogs and the 6 percent increases in market hog inventories in the two heavy weight categories suggest that production and slaughter will remain much higher for the remainder of the year and into 1998.

Table 2 shows cattle inventories. For the first time this year, cattle on feed are lower than the same period one year ago at 99 percent of 1997's inventory. Given the low placements of cattle on feed, it is likely that inventories and hence production will begin to decline relative to year ago levels.

Although the inventory levels provide insight into expected future production, actual meat supplies also depend on slaughter weights, cold storage stocks and trade of both live animals and meat. Table 3 includes production and price estimates based on current information.

Table 1. September 1, 1998 Summary of *Hogs and Pigs* report Hog Inventories

Item	September 1, 1998	% change from 1996	%change from 1997
	(1,000 head)	(percent)	(percent)
All Hogs and Pigs	62,900	108	103
Breeding Herd	6,936	103	100
Market Hogs	55,964	109	103
Market Hogs by Weight			
Under 60 lbs.	21,210	110	102
60-119 lbs.	13,743	108	102
120-179 lbs.	11,511	109	106
180 lbs. and over	9,500	109	106
Sows Farrowing			
Jun-Aug	3,019	109	102
Sep-Nov*	2,922	110	102
Dec-Feb*	2,997	108	103

Source: United States Department of Agriculture, National Agricultural Statistics Service (USDA, NASS).
* indicates intentions to farrow in future.

Table 2. September 18, 1998 Summary of *Cattle on Feed* Report

Item	Inventory	% change from 1996	% change from 1997
	(1,000 hd)	percent	percent
On Feed Aug 1	8,985	119	102
Placed on Feed During Aug	2,031	90	84
Fed Cattle Marketed During Aug	1,942	101	96
Other Disappearance During Aug	52	104	116
On Feed Sep 1	9,022	115	99

Source: USDA, NASS. Survey of 1,000+ head capacity feedlots.

Table 3. Expected Production and Price Levels for Cattle and Hogs, Current - 1999

Quarter	Commercial Pork Production	5- market Hog Price	Commercial Beef Production	Nebraska Direct Cattle Price
1997	(Mil. Lbs.)	($/cwt.)	(Mil. Lbs.)	($/cwt.)
I	4,194	51.01	6,107	66.40
II	4,091	56.43	6,416	66.63
III	4,194	54.09	6,603	65.65
IV	4,767	43.69	6,258	66.61
1998				
I	4,687	34.74	6,215	62.68
II	4,430	39.49	6,463	64.02
III	4,635	33.73	6,587	59.21
IVp	4,976	27-30	6,190	59-62
1999				
Ip	4,804	30-33	5,861	62-65
IIp	4,540	32-35	6,114	64-67
IIIp	4,735	35-38	6,324	63-66
IVp	4,860	33-36	5,932	68-71

p: predicted values

Hog prices will remain under price pressure due to higher production levels through 1999. Expectations are currently that the first year-to-year decline in production will not occur until the last quarter of 1999. Producers may be slower to respond to unfavorable hog prices because of very low priced feed.

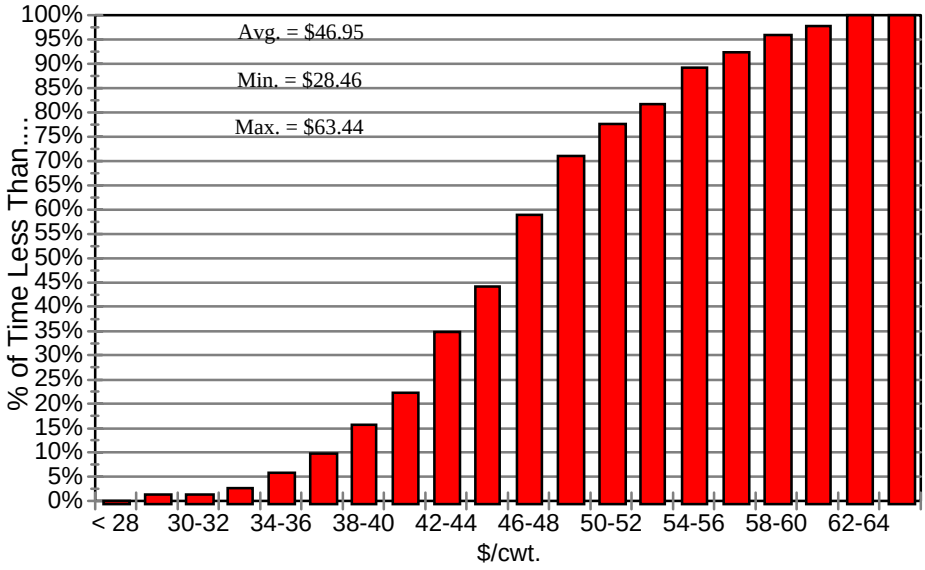
Beef production is entering a period of year-to-year declines in production. This downward production trend will likely continue through 2000 and into 2001. Unfortunately, beef prices will not respond quickly because of overall higher competing meat supplies. Still, by the end of 1999, fed cattle prices will have a chance to average in the low-70 range.

Historical Perspective

The following two figures show the cumulative distribution of hog and cattle prices since 1980. This could be taken back to the 1970's but we observe dramatically higher prices for both cattle and hogs beginning in about 1975 and so comparisons become less clear.

Hog Price Cumulative Density

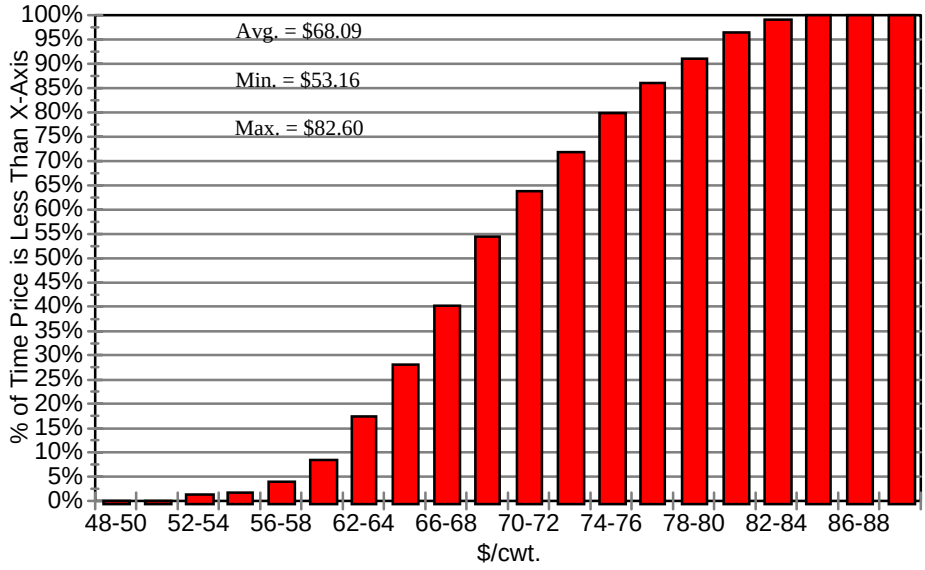
Monthly Prices, 1980-August 1998



The cumulative density chart shows the percent of time (the y-axis) that prices have been less than the corresponding price on the x-axis. For example, current monthly prices averaging in the low $30's have only occurred about 2.5% of the time since 1980. Keep in mind that these are *monthly* average prices. Weekly prices would be slightly more variable than monthly prices.

Fed Cattle Price Cumulative Density

Monthly Prices, 1980-June 1998

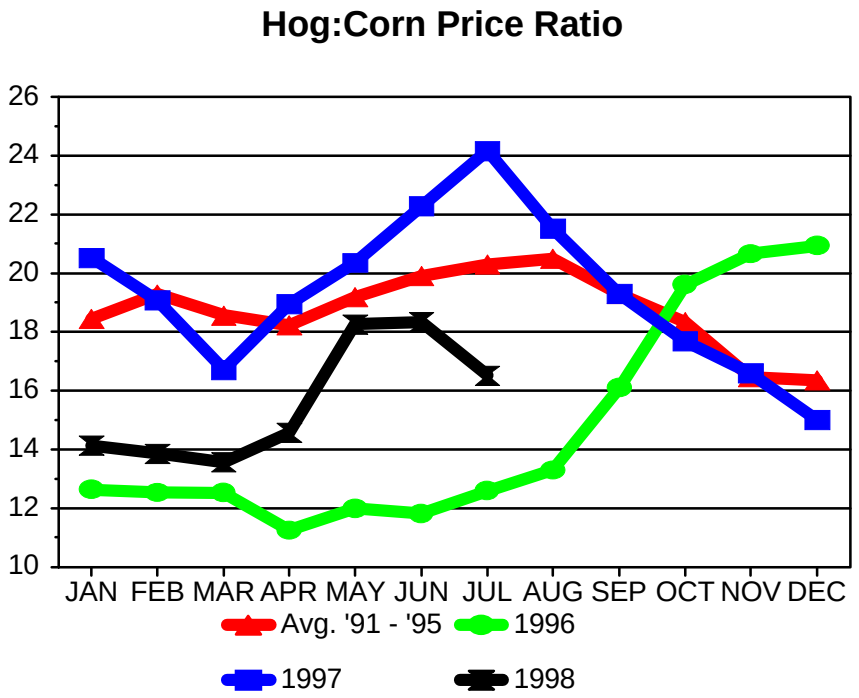


Current average monthly prices for fed cattle of $59/cwt. have only occurred about 4 percent of the time since 1980. Hence, just as swine, it will likely take dramatic events to reduce cattle prices much below their current levels.

The historical context of the charts makes them useful for determining trigger strategies on price protection plans. For example, suppose we were fortunate enough to observe cattle futures prices in the range of $81/cwt. From this chart it's clear that more than 95% of the time, the average monthly price is lower than $81/cwt. Therefore, forward pricing at that point would put you in the 95th percentile of marketings. Concerns about losing from an upward price move should be limited. Therefore, awareness of these distributionscan calm concerns about whether a set of prices are "good" prices or not, and the probabilities of prices moving much higher or lower.

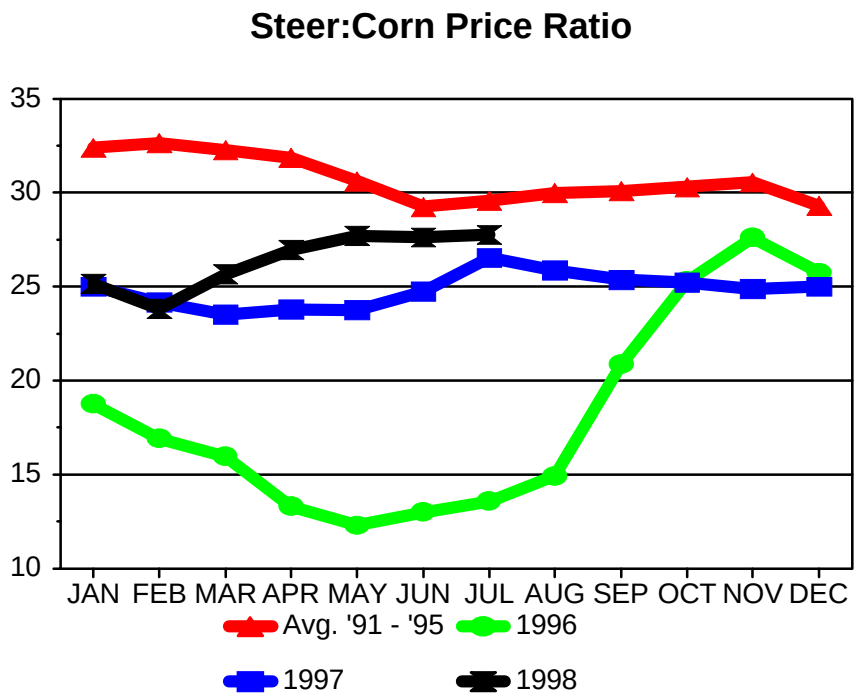
Feed Grain Prices

For both cattle and hogs, the greatest single cost item will be feed. While improving feed performance is an available strategy to minimize these costs, feed grain and soymeal prices can destroy even the best feeding program. As shown in the crops situation, feed grain and soymeal prices were extraordinarily high in 1996 but moderated in 1997. To provide perspective relative to hog and cattle prices, the following charts show hog:corn price ratios and cattle:corn price ratios. For hogs, the index is simply the hog price ($/cwt.) divided by the corn price ($/bushel). For cattle, the fed cattle price ($/cwt.) is substituted for the hog price.



Although hog prices were high in 1996, high grain prices offset them to give the lowest

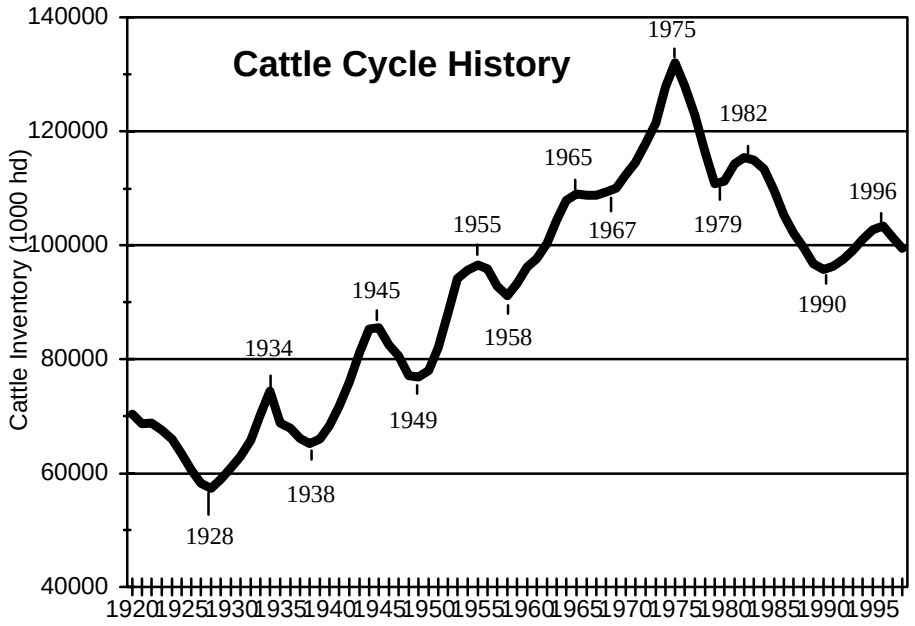
hog:corn price relationship of the decade. One important factor to consider in this comparison is that hog production efficiency has increased dramatically in the 1990's, hence the hog:corn comparison can be misleading, just as comparing the consumer price index can be misleading over time. If efficiency has increased dramatically (i.e., it takes fewer bushels to add a 100 pound gain to hogs), then the corn price should be given a lower weight in comparison to earlier prices.



The steer corn price ratio does not hold quite the same direct relationship as the hog:corn price ratio because relatively low cost forages can be substituted into cattle's diet during times of extraordinary feed grain prices. Even so, this shows that cattle feeding after the mid-point of the decade has been a low margin proposition. In fact, returns to cattle feeding have been estimated as negative for all but the middle-to-end of 1997.

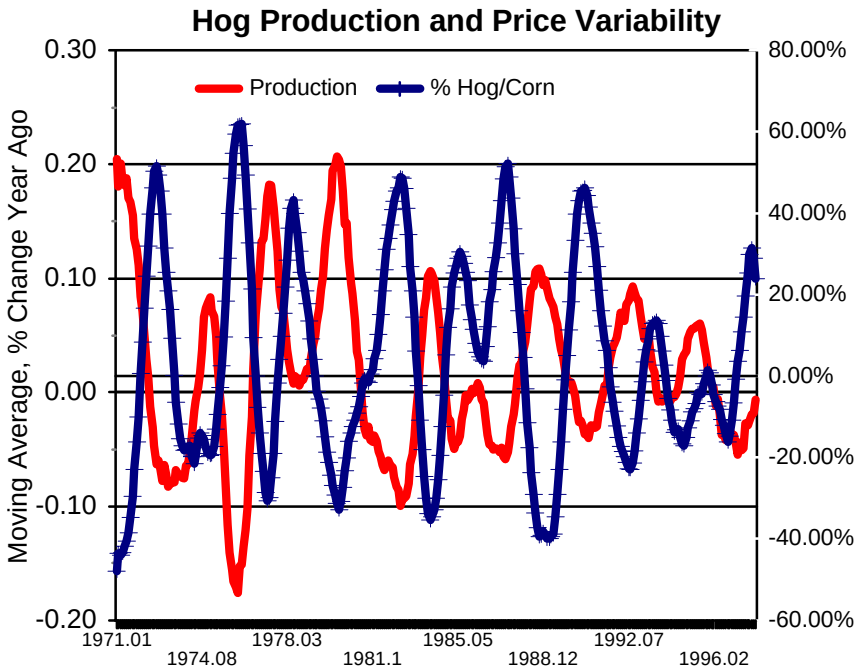
Livestock Cycles

Within year price predictions are very difficult in livestock because of constantly changing supply and demand conditions whereas grain prices are relatively easy to predict within the crop year. However, cattle and hog prices exhibit predictable cycles over multiple years which make longer term price and production predictions somewhat easier than grains where year-to-year variation is more directly at the mercy of hard to predict weather events. The following charts show cattle and hog historical cycles.



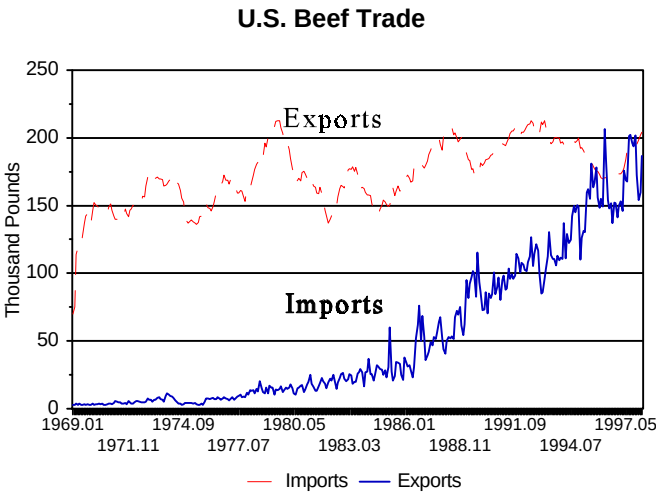
The graph shows cattle inventories back to 1920. Since the mid-1970's, cattle inventories have been on a downward trend. However, cycles still persist. The peak in cattle inventories was 1996, however, prices still remain low, as it takes at least 18-24 months to move the higher calf supplies resulting from the peak through the beef market pipeline. It's unfortunate, but not surprising that beef prices are still low as of mid-1998. However, expectations are that cattle inventories will again bottom out in 2000 or 2001 and one or two years later cattle and beef price levels will peak. This is not a new phenomenon - in fact, it's strikingly repetitive.

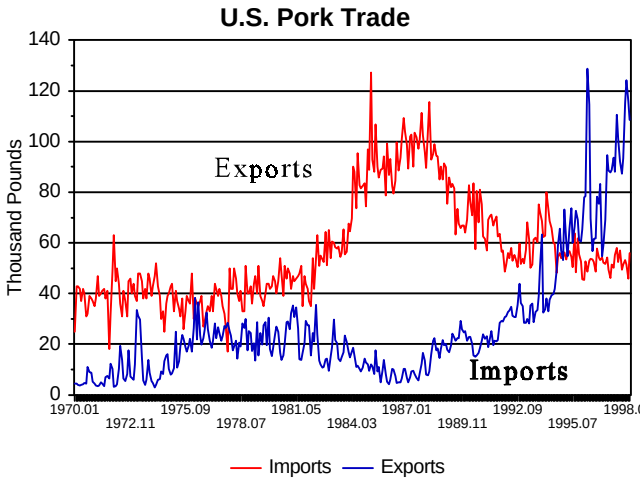
The following chart takes a slightly more detailed look at hog inventory and price cycles by including variations of each on the same chart. Hog cycles are much shorter than cattle cycles, lasting about four years. The last peak in production was late 1994 so, the current peak in production is on schedule. It's informative that even with the dramatic changes in the hog industry, its cyclical nature still exists and will likely persist in the future. Cycles are based on two key factors: production mistakes resulting from imperfect foresight and biological lags in production. These conditions are not likely to change soon. However, more capital intensive and specialized production has likely affected the time necessary for response to changes in market conditions. It is likely that this will affect the future intensity and length of hog cycles.



Export Markets

One of the great success stories of the U.S. meat industry has been its increasing exports. Both beef and pork have dramatically increased exports as trade liberalization has occurred. Beef is near becoming a net exporter on an annual basis, but the Asian economic crisis has likely slowed its growth. Pork so far seems to be unaffected by the Asian crisis. However, that may be due to reduced world supplies (particularly Taiwan and Denmark). Asia is important because Japan is the large export customer for both beef and pork; South Korea was also increasing in its importance as a U.S. beef importing country; and China always remains the elusive Shangri-la of market access. Fortunately, Mexico has picked up much of the slack created by Japan in the pork market. However, if the "Asian Contagion" spreads to Latin American economies as some predict, there could be future pressure on U.S. exports to these countries as well.

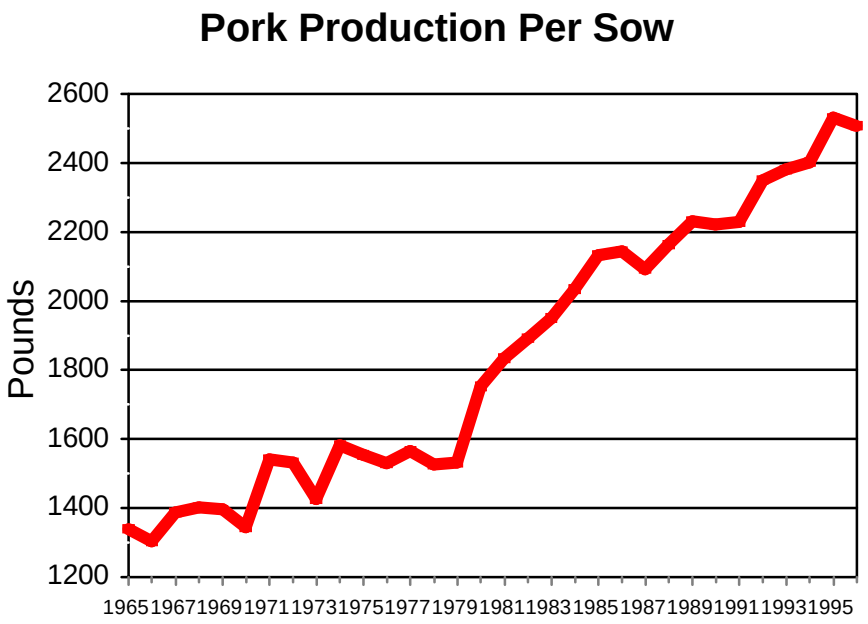




Keeping things in perspective, the U.S. only exports about 6.5 percent of its total pork production and only about 7.5 percent of its total beef production. In the case of pork, these hard fought gains have been dominated by one year's production increases.

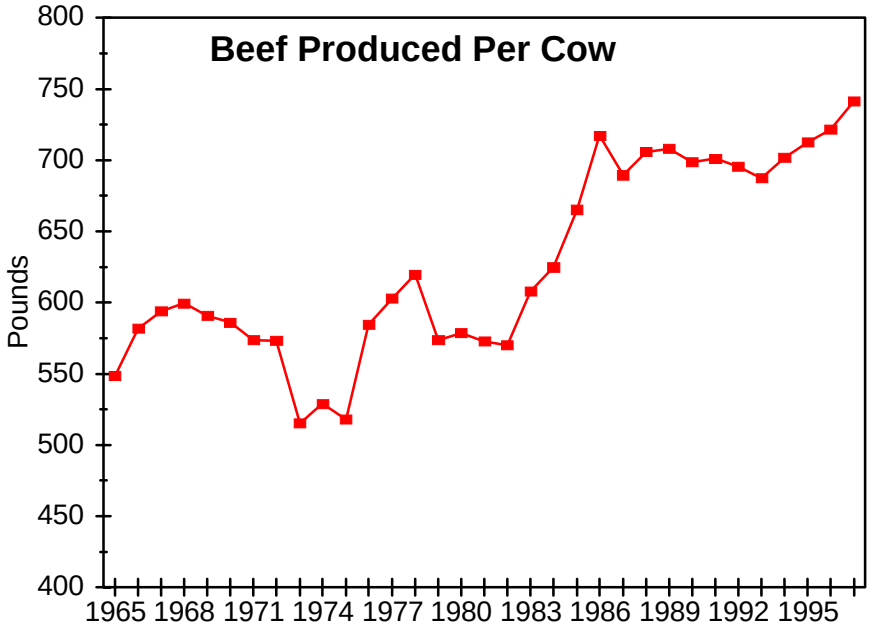
Production Efficiency Changes

Although prices are much lower than historically and certainly are still below break-even levels for both beef and pork, generally increasing productivity in both beef and swine likely reduces the impacts of lower prices.



Swine productivity increases are illustrated in the above chart as "pounds of pork per sow per year". This figure clearly illustrates that each sow now in the breeding herd produces more than double the amount of pork produced by sows in the 1960's. As a result, fewer sows are required to produce the same amount of pork as before.

The following figure illustrates a similar productivity measure for beef. Most increases in beef can be attributed to increasing frame sizes of cattle and greater weights at slaughter. In hogs, the increases are due to more intensive use of the sow (i.e., litter size has increased due to improved breeding, and the number of non-productive sow days (not bred or with pigs) have decreased).



Price and Contract Issues

Open market transactions are increasingly being replaced by pre-established contracts for the exchange of both cattle and hogs. Contracts are offered between all possible exchanges (e.g., farrower to nursery, nursery to grow-finish, cow-calf to feedlot and feedlots to packers.). Contracts serve the important role of providing stable supplies in markets where it is sometimes difficult to predict future supply and demand conditions which may be out of the direct control of all participants in the contract. They also can serve the role of reducing monitoring costs for specific product characteristics. An excellent example in swine is the case of high-health status pigs. Without "source identifying these pigs", the buyer has a difficult time establishing the actual status on sight. Therefore, the buyer may contract with a farrower to deliver a pre-defined quantity of these high-health status pigs at some negotiated price. Similar scenarios occur between cattle backgrounders and feedlots. Health protocols, feeding and nutrition protocols and implant strategies in the backgrounding phase all affect performance in the feedlot. The feedlot operator only has the reputation of the backgrounder to assure this quality. Contracts offer a way to directly communicate and facilitate the exchange of these animals with specific attributes that are of value to the final user, but which are difficult or expensive to identify by visual inspection or other measurement techniques. Contracts can promote efficiency in markets and are a necessary and useful tool, but as with most economic transactions, there are risks associated with contracting.

The most obvious potential problem with contracts is that they may oblige one or the other of the parties involved to unfavorable terms. This is why it is critical to understand the terms of any contract completely before entering into a contracting agreement. If you are uncertain of the terms, identify and consult with available experts such as lawyers, accountants, economists, or

your lender. If the other party requires you not to divulge the terms of the contract to any other party, this should raise suspicion about the acceptability of the contract. Remember, most people offering contracts have an incentive to write the terms of the contract in their own favor — not your favor.

The second potential problem is one of pricing. A market's fundamental purpose is to determine prices. Market prices are determined by the quantities of cattle or hogs supplied and demanded in the market. If a contract is written as assuring or exchanging quantities between two parties, prices of exchange must also be established. These price mechanisms are as varied as the number of contracts written. If the contract is not meant to mitigate market price risk, they may simply offer the prevailing market price as the exchange price. The advantage of this method is that the buyer and seller will never be at a competitive disadvantage relative to the prevailing market price. The disadvantage is that it offers no protection from volatile market conditions and assumes that the market price is available. A second method of determining price for a contract is to use a formula technique where the contract price is determined from an existing market price of either inputs (possibly pro-rated as costs of production) or outputs, but is not necessarily identical to the market price. This method may offer price risk sharing incentives, and also somewhat follows market conditions so that the risk of either party being at a significant competitive disadvantage relative to the market is reduced. The final general method is a fixed price agreement, wherein an agreed upon price will be paid for the period of time the contract is in effect. While this contract seems to eliminate all price risk, it is perhaps the most risky type of contract *relative* to market conditions. Setting the price too high will put the buyer at a competitive disadvantage and setting the price too low will place the seller at a competitive disadvantage. It is these contracts which will likely have the greatest need for renegotiation or simply defaulting when market conditions change dramatically as they have over the past few months. Both parties in all contracts must realize that neither is likely to benefit from a poorly written contract, and that neither is likely to benefit in the long run by continuously providing unfavorable terms of agreement.

Finally, the least intuitive aspect of the implications of contracts are the facts that contracts can begin to influence market conditions. As more hogs or cattle become contracted at pre-determined prices, the number and quality of animals available to determine the open market price also changes and may begin to effect the behavior of market determined prices. Unfortunately, there is no clear threshold at which this occurs. The other problem is that as one particular buyer or seller contracts a greater share of the market, they may gain market power, at which point they are more able to offer "take it-or-leave-it-unfavorable-terms" to other parties. Again, there is no hard and fast rule as to when this occurs.

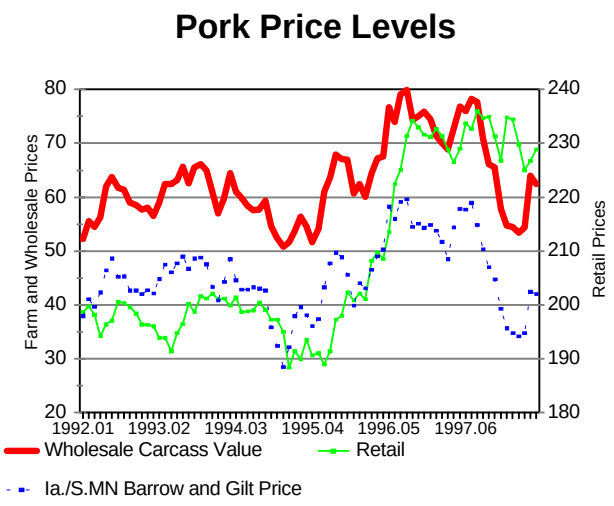
Undoubtedly contracts are having an impact on current market prices. Those with fixed price agreements likely have not adjusted their output to the lower market prices which they do not directly face. However, over the longer run - if production stays high, those contracts will become impossible to maintain as one party in the contract is losing and will also be eliminated or renegotiated. Hence, contracts may make some in the market less responsive to market prices resulting in greater swings in the market prices observed. This phenomenon is why market responses are often referred to as elastic or inelastic or as sticky or fluid. Prices are like a

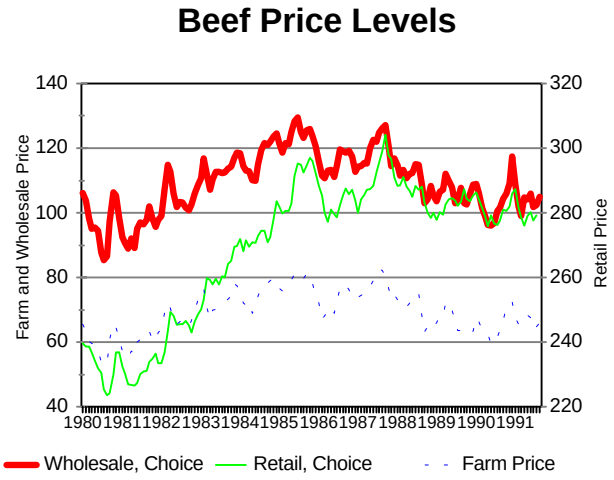
rubberband trying to dissipate the energy of supply and demand changes. If prices become more fixed (less elastic) it is more likely the system will snap (just like a rubberband).

As with most aspects of economics there are both positive and negative aspects of contracts. Contracts can help identify and transfer products with higher or specific quality characteristics, and they can help reduce the risk of exposure to short term market fluctuations. However, contracts can be poorly written and in attempting to reduce risk may actually increase risk or shift risk from one party to the other. Long term contracts can be particularly risky because uncertainty naturally increases as we move out into the future. Producers must improve their negotiation skills if they are to protect their interests in contracts in the future. Eliminating contracts will further restrict an important tool for facilitating market transactions and is a rather unimaginative solution to any problems which arise.

Price Margins - The Farmer's Share

A final important aspect of today's livestock market is the relationship of the farm price of livestock to the wholesale and retail prices of meat products. The following two charts show these relationships for both beef and pork.





While not dramatic, wholesale price levels for both beef and pork have increased relative to farm prices. More dramatic has been the increase of retail prices relative to both farm and wholesale prices. As in most of agriculture, the farmer's share of the consumer dollar is falling. Some reasons for this include (1) a greater share of further processed products at retail, (2) more meat products being consumed away from home, where prices are generally higher (3) and possible unreliability of the retail price series in adequately capturing actual prices.

The other aspect of this relationship is how quickly retail and wholesale prices respond to changes in market price. Data available to date show that pork retail prices have not declined relative to farm prices. However, retail prices can take up to six months to adjust to lower farm

prices. Beef retail prices have been relatively low as they are entering their second year of very low farm prices.

Producer Strategies

Given this current situation, what are livestock producers' strategies? Following is an itemized list of possibilities.

Forward Pricing Livestock

Currently, forward pricing strategies are limited. Prices are low accross the board for futures and options prices. For cattle, generally upward trending prices suggest that producers are likely best of taking holding a cash market position. However, buying put options will be as useful way of eliminating any remaining downside market price risk while not reducing upside potential. Hog producers may find it useful simply to hedge hog production. There is not much risk of upside price movement in the hog market, and hedging will generally be lower cost than the purchase of put options. Heding is a reasonable strategy mainly because of the potential for dramatically lower hog prices in some circumstances if hog slaughter reaches levels approaching slaughter plant capacity as some are predicting.

Forward Pricing Feed

Feed grain prices and soymeal prices are at their lowest levels in years. For southwestern Minnesota, it likely makes sense for livestock producers to forward price all their grain and soymeal needs for the next year. Forward booking in cash grain markets and paying the associated carrying charges may make the most sense as reduced storage capacity and temporary rail car shortages will likely lower cash prices in the country. However, hedging or buying call options will also be effective.

Production Management

Cost containment is the key factor over which producers have control. Production management is critical during these periods. Minimimizing feed waste, marketing at moderate rates to avoid over-finishing, and managing health can help assure lower costs of production. Avoiding overfinishing saves you feed costs as an individual, but also keeps excess weight and hence production off the market and avoids further price discounting.

Summary

The livestock industry continues to undergo structural change. Fewer and larger more intensive farms, increased reliance on contracts, and dramatically improving technologies all affect the way the livestock and meat markets behave. As operations become more capital intensive and cost efficient, it is likely that long run prices will be lower relative to historical levels. It is also highly likely that the historical price cycles will persist into the future. However, the length and depth of the cycles might be expected to change as producers respond differently to market

stimulus than in the past.

Given current high production levels across all meat sectors, it is likely that prices will remained depressed at least through the middle of 1999. After that point declining beef production and moderating pork production will begin to relieve some the immediate downward pressure on prices. Although trade prospects seem dim given current global economic conditions, any improvement in the global economy is likely to be reflected quickly in meat demand and hence prices. Favorable crop prices will also help producers limit losses. Hog and cattle producers will likely find it beneficial to lock in their feed grain needs at current low prices for the coming year. Swine producers in particular are encouraged to lock in soymeal prices which are at record low prices for the past 20 years.

Considerations in Developing a Corn/Soybean Marketing Plan for 1998/99

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October 1, 1998

The rapid decline in prices of many grain and livestock products raises the interest in techniques to do a better job of marketing--if not for good prices, at least for some basic level of profitability. Prices of corn for fall delivery are currently in the range of $1.38 to $1.59 for corn and $4.55 to $5.00 for soybeans. Forward contract bids do, however, increase to approximately $2.00 for corn and $5.30 for soybeans in July 1999, so storage is definitely a marketing alternative. This clearly illustrates that just selling it may not be the optimal marketing plan. In this paper, we briefly touch on some general considerations for developing a comprehensive marketing plan, with our thoughts about the current low prices and prospects of 1999 used for specific comments or as examples.

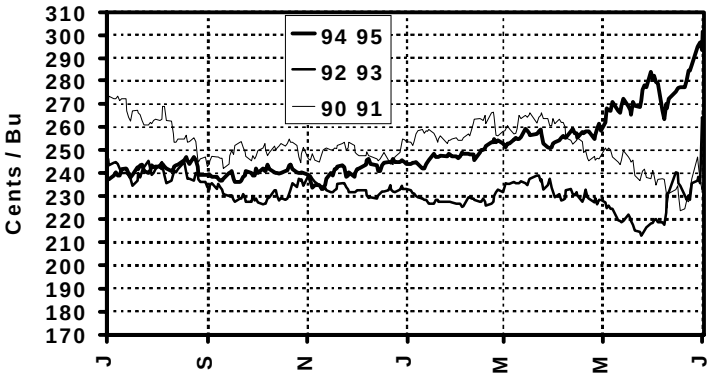
The most important consideration is the actual decision on whether to sell or hold for sale later. Recent history, in the corn market for years when crops were good and fall prices low, suggests that holding for sale later can improve the pricing opportunities (as measured by July futures) by 15 to 25 cents per bushel. Attached is a graph (Chart 1) of July futures for the three recent years that are somewhat comparable to 1998--1999 (July 1991 futures), 1992 (July 1993 futures), and 1994 (July 1995 futures).

Two of these years produced a spring rally (1990 and 1994) and one (1992) was mostly sideways, but still unable to move to new lows before spring. We believe that this phenomenon is fairly reliable and our conviction is based mostly on the general seasonal selling patterns of farmers versus seasonal use. Chart 3 illustrates how new sales of corn typically exceed the use rate through, perhaps, January. In the February through April time frame, however, sales are slow relative to the normal use rate. A little more competition for new supplies tends to move price moderately higher. These seasonal characteristics tend to be absent in the soybean market, probably because of the Southern Hemisphere crops, beans have more world market impact than does corn. This suggests that beans should be sold first to cover short-term cash flow needs.

CHART 1

JULY CORN FUTURES:

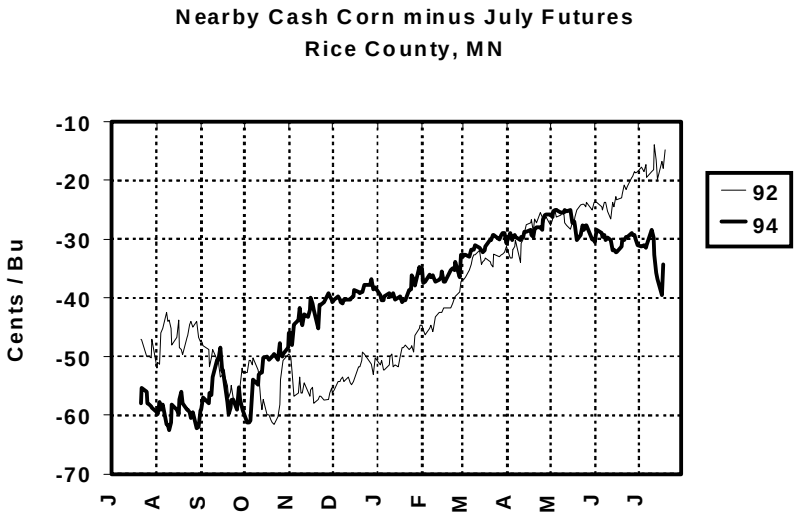
Weak Fall Markets Set the Stage for a Spring Rally



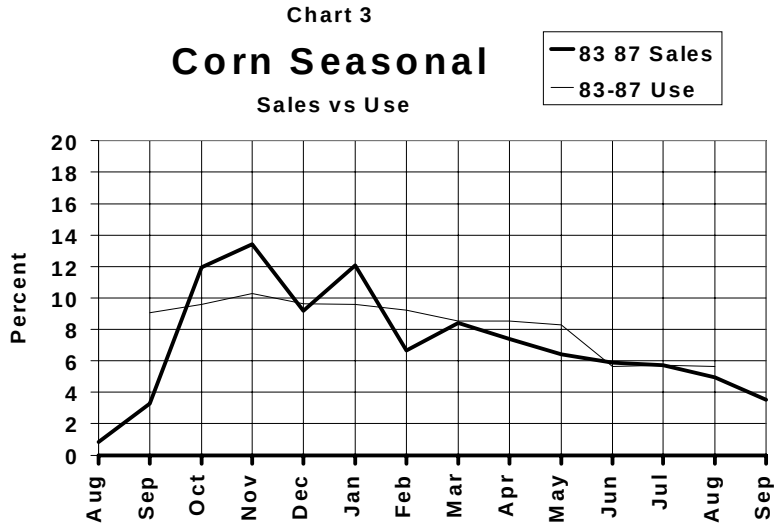
Source: Compilation by Stanley C. Stevens, extension economist, University of Minnesota.

Also, local prices tend to improve relative to futures every year (this is basis appreciation), but especially in periods following low harvest prices. Attached is Chart 2, showing the basis appreciation for a Rice County elevator for the similar to 1998 years--1992 and 1994. Local bids that were as much as 60 cents under the July futures narrowed to about 25 cents under July by late-spring. A 35-cent basis gain will reward those who have storage and use it. We expect it to happen again this year. Basis appreciation in soybeans is less assured, supporting the idea that they should be sold ahead of corn. Selling soybeans directly at harvest and incurring no storage cost or tying up the potential to store corn on the farm probably makes sense. Deferred payment contracts should be considered if deferral of the taxability of the income is more important than the near-term need for cash.

Chart 2



Source: Compilation by Stanley C. Stevens, extension economist, University of Minnesota.



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Of major importance are considerations focused on full use of government loan programs, particularly the Loan Deficiency Payment alternative. This payment, which is the difference between the loan rate and the posted county price (PCP), can be collected in lieu of a commodity loan. An aggressive strategy that we expect to be popular this year is to collect the LDP and store for higher prices. The seasonal tendencies mentioned above would suggest that this approach should have a favorable result again this year. On the other hand, this approach does have its downside risk as well as upside potential. Once the LDP is collected, it no longer buffers poor pricing opportunities that are below the loan rate. If market prices move lower, you are no longer able to qualify for a larger LDP. Those who are unable or unwilling to accept this risk can lower their risk level by selling some and holding some, or buying Put options.

One should also keep in mind, however, that foregoing the use of the loan program means foregoing not only its price protecting aspects, but also its cash flow (cheap credit benefits) as well. Erlin Weness, farm management specialist at the University of Minnesota, estimates the difference in interest rates on commodity versus bank loan places about a 5-cent penalty on corn (and a 14-cent penalty on soybeans) on collecting LDP payments. Also, keep in mind that these benefits are becoming substantial and, therefore, the old CFSA compliance issues are very important again. Review and be sure you are in compliance with the rules of your local FSA office regarding certification of acreage, delivery, and beneficial interest (control).

We think that the current volatility of the market is greater than ever before. Within the last three years, corn has ranged from historic highs (over $5) to current prices that are slightly lower than the depressed market bottoms during the falls 1992 and 1994. Although we think we are near the seasonal lows for the 1998 crop, we cannot absolutely rule out lower prices ahead.

As we worry about the downside risk, we wonder mostly about how the new LDP might affect prices under pressure. Because the current LDP operates to protect the price the farmer receives but does not defend any particular price--like loan programs of the past--it is possible that recent market bottoms are no longer valid. In 1986 when PIK certificates were an important part of the government program to protect the farmer again sub-loan prices, Chicago futures made a low at 149-1/2 and some rural Minnesota bids were below $1. Yet, we doubt that it will play out that way this year. The reason is that in 1986, because of certain nuances of the PIK program, the certificates achieved a premium over face value in the PIK certificate market. This created a situation where this LDP-like buffer increased in value more than prices declined. This created an unstable market and a crash. This year is a test of the middle question where the loan does not support and the LDP is rewarding, but not subsidizing lower prices.

It's not too early to think about the 1999 crop. As of October 1, 1998, the opportunity exists to hedge new crop corn and soybeans in the futures market for $2.46 and $5.68 per bushel, respectively, (equivalent to localized cash price of $2.11 and $5.19 using last year's (1997) basis levels in Mankato, a south central Minnesota elevator)--there clearly remains downside risk for new crop regardless of good chances that 1998 prices are near support. These better new crop bid levels are very unlikely to hold if Corn Belt weather is normal or favorable in 1999. On the other hand, current stock levels are not so burdensome that a severe drought in 1999 could not move prices substantially higher. We think the right place to start a marketing plan is right at the beginning when the decision is made to continue producing for another year. Often this is in the winter months. No one knows how the weather will play out, but the consequences of carrying too much risk and getting it wrong are serious in financial terms. A risk level assessment is a good place to start when developing the marketing plan. Getting risk balanced with risk-bearing ability will go a long way toward keeping the producer in business for the long-term. There is new software available that can help by actually measuring risk and displaying easy to understand graphical representation of it (more details later).

The marketing plan can be fine-tuned to capture the benefits of the many marketing alternatives that are available today. They offer the possibilities for excellent risk control and small or moderate price improvement. Various marketing alternatives allow the plan to be tailored to meet the cash flow and work scheduling preferences as well.

A market plan should review and identify the best local cash marketing bid net of transportation costs. For example, current local Minnesota cash prices range by 32 cents for corn and 47 cents for soybeans as of October 1, 1998. In some cases, the extra transportation costs can be justified, especially if the producer has the ability and the time to transport grain (see Exhibit 1).

A number of these higher bids are from south central Minnesota elevators such as Courtland. A review of various marketing tools (contractual arrangements such as deferred price, basis contracts, hedge-to-arrive (where available), minimum price and various options and futures hedging strategies) will uncover additional opportunities to enhance the price received and especially control the risk exposure. As mentioned, it is wise to review the risk balance question early in the marketing plan with long-tern survivability in mind. This review should include consideration of insurance guarantee programs such as revenue assurance and income protection (where available) that can stabilize revenue per acre. This combination of price and yield insurance now allows the producer to protect income with greater certainty than ever before.

As mentioned earlier, there is software that will help marketers monitor and fine-tune the execution of their plan. Excerpts of several programs are included. The first is a spreadsheet program, which compares marketing alternatives including government loans (see Exhibit 2). The output of this program using current price and cost data suggests that gains to storage for corn to July 1999 would yield net prices of $1.87 for corn and $5.03 for soybeans as shown in the storage calculating part of Exhibit 2.

The second is a program called AgRisk (an addition to MRP-Ohio State University/Baldwin) which allows the user to view pre-harvest strategies in terms of their effect on a probability distribution for revenue. A comparison of four preharvest strategies--Strategy 1 involving forward contracts, Strategy 2 involving the purchase of Put options at the money, and Strategy 3 involving the use of minimum price contracts shows a gain of over $2,000 by choosing the best marketing alternative on a 600 are farm with 300 acres of corn and 300 acres of soybeans in Blue Earth County. You may obtain this software without cost by downloading it on the Internet. The web address is: http://www-agecon.ag.ohio-state.edu/AgRisk/download.html.

The last is a program, which works out a marketing plan from a given set of costs (see Exhibit 3). This program shows a basic marketing plan for corn which would yield over $90,000 of revenue using a scale-up marketing strategy based on expected prices for 1998/99 for a south central Minnesota farm with 300 acres of corn. This program was introduced by AgriData and is currently used by Ward Nefstead, one of the authors of this paper. You may contact him directly at (612) 625-7228 if you have questions on the use of this program.

A market information source is fundamental to the execution of the plan. An electronic source such as DTN or Internet sites can give you information about weather, expert opinions, and government programs as well as the basic price data that allows users to monitor trends and compare various market alternatives. Local and regional market information is high quality and easy to obtain. Weather, as always, will be a key part of the outlook for prices in 1999. Your access to weather information will be an extremely important element in the execution of the marketing strategy.

Finally, one of the most important aspects of a marketing plan is the application of the personal discipline to execute it. Marketing concept and tools to enhance price and control risk will not enhance price and control risk without someone actually executing the plan. Granting authority to one person in a group arrangement and holding that person responsible to follow the plan is a good idea. Periodic group-level reviews to validate that this person is, in fact, following the plan are good. Where the marketer is an individual, it’s a matter of a personal commitment to give the attention and discipline to the marketing challenge.

Exhibit 1

	Soybean Price	LDP	Corn Price	LDP	Spring Wheat	Barley	Oats
Atwater AF			159				
Barry	456	54	136	34	302		
Beardsley	452	54	133	34	300		92
Belgrade	458	54	142	34			100
Bellingham	461		137		300		125
Beltrami	444	54	140	34	307	107	
Benson UF	456	54	151	34	291		
Bigelow	471	54	156	34			
Bird Island	457	54	149	34	303		
Blue Earth	471	54	156	34			
Brandon	456	54	142	34	298	102	90
Breckenrdige	461	54	142	34	310	100	
Brewster	469	54	156	34			
Briclyn	471	54	156	34			
Brownton	458		147				
Chokio	456	54	137	34	29		
Clara City	459	54	148	34	30		
Clarksfield	463	54	147	34			
Clarksgrove	470	54	157	34			
Clear Lake	457	54	145	34			
Clinton	456	54	137	34	30		
Cokato	458	54	145	34			
Cottonwood	464	54	147	34	30		
Courtland	471	54	152	34			
Crookston	445	54	141	34	30		
Dawson Dg	466	54	136	34	30		
Dawson A		54		34			
Dawson F	466	54	140	34	30		
Dennison	458	54	150	34			
Delavan	473	54	156	34			

Source: Data Transmission Network, local cash prices for October 1, 1998.

Exhibit 2

Assumptions:					
Loan rate Accrued interest Months Rate Cash corn price Posted county price	1,72 0.0774 9 0.06 1.45 1.45				
1. Repay CCC loan plus interest Loan rate borrowed Loan rate repaid Accrued interest (pd)	 1.8 1.8 0.0774	2. Loan repaid at PCP Loan rate PCP	 1.72 1.5	3. Loan forfeiture Net price = loan rate	1.72
Cash corn price minus accrued interest	1.45 0.0774	Gain Plus cash corn price Equals net corn price	0.22 1.45 1.67		
	1.3726				
Best alternative 1.8					
** An alternative for new crop is to accept a Loan Deficiency Payment, instead of a loan.					
Calculation of Loan Deficiency Payment		********** 1998 crop only			
Loan rate Posted county price	1.72 1.45				
Loan deficiency payment paid (on bu. not under loan)	0.27				

Storage Return Calculation:

	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept
Corn:										
Price or Carry	1.49	1.59	1.59	1.81	1.85	1.9	1.93	1.96	2	
Minus										
Interest	0.0149	0.02385	0.0318	0.04525	0.0555	0.0665	0.0772	0.0882	0.1	0.015
Damage	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.05
Shrink	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
										0.065
Total	0.0799	0.08885	0.0968	0.11805	0.1205	0.1315	0.1422	0.1532	0.165	0.065
Net	1.4101	1.50115	1.4932	1.69975	1.7295	1.7685	1.7878	1.8088	1.835	
Cost-carry		0.1777	0.18565	0.20705	0.23075	0.252	0.2737	0.2954	0.3182	
Soybeans										
Price or Carry	4.7	4.87	4.87	5.01	5.18	5.16	5.27	5.27	5.2	
Minus										
Interest	0.047	0.07305	0.0974	0.12525	0.1548	0.1806	0.2108	0.23715	0.26	0.025
Damage	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Shrink	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.075
Fixed	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.075
Total	0.172	0.19805	0.2224	0.25025	0.2798	0.3056	0.3658	0.36215	0.385	
Net	4.528	4.67195	4.6476	4.75975	4.8802	4.8544	4.9342	4.90785	4.815	
(sum of storage)		0.19805	0.42045	0.47265	0.53005	0.5854	0.6414	0.69795	0.74715	

Source: Excel spreadsheet compiled by Ward Nefstead, extension economist, University of Minnesota. This program is available from Ward Nefstead (612/625-7228).

Exhibit 3
Crop Marketing Plan

Crop: Corn Number of acres Yield/acre Total bushels	 300 acres 140 bushels 42,000 bushels		
Projected Costs	Total Cost	Cost/Acre	Cost/Bushel
Variable costs Fixed costs Total costs	43,782.00 26,000.00 69,782.00	145.94 86.67 232.61	1.04 0.62 1.66
		Breakeven	1.66
Price Objectives USDA Season Average Projections		Expected Season Average	1.88
1. High 2. Low Midpoint 3. Futures Range	2.35/bu. 1.40/bu. 1.88/bu. 0.86/bu.	Expected Range 1.44 to 2.31 Average Sales Objective 2.16 Selling Range 2.02 to 2.31	
Type line number if you want to change entry. Type N to see next page. Type M to return to MENU.			
Scale Up Selling Plan			
	Price Target	Bushels	Revenue
4. First 20% 5. Next 20% 6. Next 20% 7. Next 20% 8. Next 20%	2.02/bu 2.09/bu 2.16/bu 2.23/bu 2.31/bu	8,400 bu 8,400 bu 8,400 bu 8,400 bu 8,400 bu	16,968.00 17,556.00 18,144.00 18,732.00 19,404.00
100%	Total	42,000 bu	90,804.00
Average Price Expected	2.16/bu		
Type line number if you want to change entry. Type B to back up. Type M to return to MENU.			

Source: Marketing plan compilation using AgriData software assumes a 300 acre farm in south central Minnesota.