



Ag Decision Maker

A Business Newsletter for Agriculture

Vol. 13, No. 4 www.extension.iastate.edu/agdm February 2009



Managing through a recession: options for farm operators and agriculture lenders

By Bob Jolly, extension economist, 515-294-6267, rjolly@iastate.edu

With financial institutions and businesses collapsing world wide, rising unemployment, record home foreclosure rates and government deficits, the agricultural sector seems like an island of tranquility. One of the big questions on the minds of farmers, and the lenders and agribusinesses who serve them is when will these conditions start to have a

major impact on agriculture and what can be done to avoid or lessen their impacts. The challenge for agricultural managers, however, is that the current financial meltdown is so unprecedented and so widespread that it is difficult to discern a reasonable course of action. After all, if several Nobel prize-winning economists can't make coherent statements, what is a garden variety farmer or lender to do?

loads have risen over this same period, but at a modest rate. Consequently the net worth of the agriculture sector in today's dollars is at historically high levels. Stated another way, the debt-to-asset level of the US farm sector is as low as it has been since the 1960s. Net worth is a critical asset during hard or uncertain times. Net worth provides a credit reserve – unused borrowing capacity that can be tapped if adverse conditions occur. And it also means that even with reduced returns to assets, less income is needed to pay for debt service.

On the farm income side, the picture at the national level is a little less rosy. Inflation-adjusted farm income was fairly stagnant from the late 1980s through the next 20 years. Again, beginning in 2002, there was a significant increase in net income – along with an
continued on page 2

Handbook updates

For those of you subscribing to the handbook, the following updates are included.

Historical Costs of Crop Production – A1-21 (2 pages)

Cash Corn and Soybean Prices – A2-11 (4 pages)

Computing a Cropland Cash Rental Rate – C2-20 (4 pages)

Flexible Farm Lease Agreements – C2-21 (4 pages)

Historical County Farmland Values – C2-72 (10 pages)

Please add these files to your handbook and remove the out-of-date material.

continued on page 6

In this article we will attempt to describe what we know about the current financial condition of farmers in Iowa and suggest a few options for managing through some very difficult and uncharted waters. One of the key points we want to emphasize, however, is that the future is extremely uncertain and managers need to think in terms of contingencies – having plans for a number of possible situations that will be revealed to all of us later in the year.

Farm finance at the national and farm level

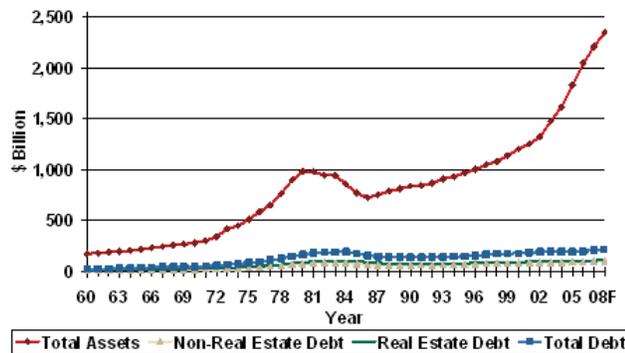
Looking at the balance sheet of the agricultural sector, there has been a remarkable increase in asset values since the late 1980s. Figure 1 shows this increase has accelerated significantly beginning around 2002. Debt

Inside . . .

Managing through a recession: options for farm operators	Page 3
Brazil ethanol industry - part two	Page 4

Managing through a recession: options for farm operators and agriculture lenders, continued from page 1

Figure 1. US Farm Assets and Liabilities: 1960 to 2008



Source: USDA/ERS

increase in volatility. However, farm income leveled off in 2008, decreasing in real or inflation-adjusted terms. Despite the plateau, real U.S. net farm income is significantly above levels that persisted over the 1990s.

Aggregate statistics can hide a great deal of variability in the financial situation of individual farm families. To get a little information on farm-level conditions, we applied a simple credit scoring model to farm financial data obtained from the Iowa Farm Business Association for 2007 – the most recent information available. Farms in this data set are, generally, representative of full time commercial operations. The credit scoring model takes into account the farm’s debt repayment capacity and its debt load and classifies it into one of four categories: strong, stable, weak or severe. Strong and stable farms have significant capacity to survive short term economic downturns because of their earning capacity or their equity position. Farms classified as weak are more vulnerable either because of lower cash flows or net worth. Farms in severe financial condition are unlikely to survive if current (i.e. 2007) economic conditions persist.

Table 1. Financial Condition of Commercial Farmers in Iowa (2007)

Variable	Financial Status Classification			
	Strong	Stable	Weak	Severe
Farms (%)	65	26	8	1
Assets (\$1000)	1405	1404	868	1044
Liabilities (\$1000)	192	525	584	826
Equity (\$1000)	1213	879	284	218
Debt-to-Asset Ratio (%)	14	37	67	79
Value of Farm Production (\$1000)	514	516	444	432
Net Farm Income (\$1000)	197	151	102	42
Acres operated	771	794	636	691
Labor months	15.9	16.1	15.6	17.8

The results of this credit scoring analysis are presented in Table 1. Most farms – more than 90 percent, were classified as strong or stable. Only 9 percent were classified as financially stressed. For the record, this compares to nearly a third of farms in weak or severe conditions during the Farm Crisis of the 1980s. The balance sheet and income information summarized in Table 1 also demonstrates the financial strength and potential resilience of the farms included in this analysis. High grain prices in 2007 and 2008 should have allowed crop producers to improve their financial situation even more. Some livestock producers, on the other hand, would likely show a weakening in their financial position.

Informal lender survey

In December, 2008, we conducted an informal survey of agricultural bankers in Iowa. This is a very small sample analysis, but it does provide some information on bankers’ expectations for the credit review period currently underway. In a nutshell, lenders responding to the survey report:

A sizable majority of their borrowers will show positive cash flows for 2009.

Of those with negative cash flow projections, most have either strong or adequate balance sheets – reflecting their equity and working capital positions.

Less than 5 percent of borrowers will require some type of restructuring or debt roll over.

A significant number of their borrowers will be attempting to judiciously reduce input costs, delay capital purchases and renegotiate rental arrangements and rates.

Very few banks reported that they would be discontinuing any borrowers in the year to come for failing to meet credit standards.

In addition, a majority of banks responding to the survey stated they had a very adequate or adequate supply of loanable funds – credit worthy farmers will be able to obtain the financing that they need.

The picture that emerges from this admittedly preliminary analysis is that farmers and their lenders are in a relatively strong position to withstand the likely stresses to come in 2009. If economic conditions worsen or continue for several years, however, the capacity of farm businesses to continue without major adjustment will likely decline.

Managing through a recession: options for farm operators and agriculture lenders, continued from page 2

As we stated earlier, farmers and lenders need to think in terms of contingencies – what should be done if conditions worsen, asset values decline or if rural and agricultural lenders start to experience liquidity problems. For some

concrete suggestions that can assist with good management decisions during a very difficult and uncertain period see the next article, “Managing through a recession: options for farm operators,” by William Edwards.



Managing through a recession: options for farm operators

By William Edwards, extension economist, 515-294-6161, wedwards@iastate.edu

After several years of high grain prices and generous margins, crop producers are facing a 2009 that looks less than rosy. Higher inputs costs and selling prices well below the peaks of 2008 will result in fewer dollars left over to pay landlords and put into savings. Livestock producers have had to endure many months of thin or negative margins, as well.

Here is a list of possible financial management practices and strategies that could come in handy this year.

Prepare an accurate set of financial statements.

Highly variable inventory prices and increasing land values will make this year’s balance sheet look quite different from last year’s. And for grain farmers, a net income statement for 2008 may be something you to share with your lender. Check out the handy spreadsheets under the Finance section of Ag Decision Maker Web site.

Prepare a detailed cash flow budget. Many crop farmers will have a hard time meeting all their cash commitments from sales in 2009. Higher input costs and rents will increase operating line requirements. Livestock farmers will need to budget feed purchases carefully. More AgDM decision tools are available to make the task easier.

Shop around for inputs. Depending on when suppliers booked fuel, fertilizer, pesticides and other inputs, prices may vary dramatically.

Consider both cost savings and yield effects when applying inputs. For example, cutting back on nitrogen fertilizer when costs are high makes sense, but only up to a point. Use the ISU Nitrogen Calculator to find the right level for current prices.

Know your costs of production. When profitable selling opportunities arise, lock them in. Watch for opportunities to price crop inputs, feed, and feeder livestock, as well.

Document yields for a possible crop insurance or SURE payment. Many crop producers will receive an insurance indemnity payment due to falling prices in 2008 as well as from damage caused by rain or floods. Additional payments may be available under the SURE disaster program in the new farm bill.

Increase crop insurance coverage for 2009. Higher production costs may require higher levels of protection to assure a breakeven level of revenue. Cattle, hog, sheep and dairy producers can set price floors using LGM or LRP insurance programs.

Consider enrolling in ACRE. Under the new farm bill program, Average Crop Revenue Election, crop producers can substitute a gross revenue protection plan for the current price counter cyclical program, with guarantees based on higher price levels and current yields.

Use flexible lease agreements. Tying cash rents to a formula that takes into account both yields and prices will help protect margins. Land owners can share in high profits when they are available with a flexible lease agreement.

Defer capital purchases. When margins are narrower, replacing machinery, putting up new storage bins, or bidding on more land may have to wait. Replacement parts and over-hauls are cheaper in the short run.

Defer income taxes. Potential tax bills can be put off until future years through actions such as using expense method and early depreciation, deferring crop insurance payments based on yield losses, prepaying farm expenses, and using income averaging.

Compare financing rates. Federal interest rates are at historic lows. There may be wide differences among agricultural lenders. Marketing loans from the Farm Service Agency are also available for short term financing.

Managing through a recession: options for farm operators, continued from page 3

Consider refinancing long-term obligations. Compare possible interest savings to the costs of rewriting the loan. It may be a good time to convert variable rate loans to a fixed rate.

Keep assets liquid. If gross revenue is not enough to cover production costs and family living expenses this year, keep funds in savings or short-term investments rather than assets that would be hard to convert to cash.

Use equity in land, livestock and equipment. If cash

reserves aren't enough, talk to your lender about borrowing against fixed assets, with a multi-year repayment plan.

Agriculture has always been a cyclical industry. A good financial manager learns to balance the profits and losses to ensure long-term survival.

You can learn more about the strategies mentioned above by enrolling in Financial Decision Making, an on-line home study course available from the ISU Ag Management E-School.



Brazil's ethanol industry - part two*

by Don Hofstrand, co-director AgMRC, Iowa State University Extension, 641-423-0844, dhof@iastate.edu

Brazil has made great strides in running its economy on renewable energy. Renewable energy represents 46 percent of Brazil's total annual energy supply. By comparison, renewable energy accounts for only seven percent of the U.S. annual supply. The largest source of renewable energy in Brazil is ethanol, accounting for over one-third of Brazil's renewable energy.

In addition, 90 percent of Brazil's electricity comes from renewable sources, predominantly hydroelectricity. By comparison, only nine percent of the U.S. electricity supply is from renewable sources. About half of our electricity is generated from coal.

Due in part to its ethanol program, Brazil became net energy independent in 2006 after many years of energy dependence.

Although we need to remember that the U.S. economy is much larger than that of Brazil (the U.S. economy is nine times larger), Brazil's accomplishments in renewable energy and energy independence are nevertheless impressive.

Ethanol history

During the 1970s, Brazil was importing over 80 percent of the oil it consumed. Large oil imports and high oil prices were damaging Brazil's economy. In 1975 Brazil implemented the National Alcohol Program. It contained four policies to stimulate ethanol production.

- 1) It required Petrobras, its major oil company, to purchase a required amount of ethanol.
- 2) It provided \$4.9 billion of low-interest loans to stimulate ethanol production.
- 3) It provided subsidies so that ethanol's pump price was 41 percent lower than the price of gasoline.
- 4) It required that all fuels be blended with a minimum of 22 percent ethanol (E22).

Although crude oil prices were low in the 1980s and 90s, Brazil kept its ethanol program alive and moving forward. In 2000, Brazil deregulated the ethanol market and removed its subsidies. The ethanol mandate was maintained. Depending on market conditions, all fuels were required to be blended with 20 to 25 percent ethanol. The current mandate is 25 percent ethanol in gasoline set June 1, 2007.

Brazil aggressively developed cars that operated only on 100 percent ethanol. In 1979 the Fiat 147 was the first modern car to run on pure ethanol. By 1988 almost 90 percent of all new cars manufactured in Brazil were E100 (alcohol only) cars. However, an ethanol shortage in early 1990 caused a major downturn in the demand for E100 cars. In 1990, only 10 percent of the new cars were E100.

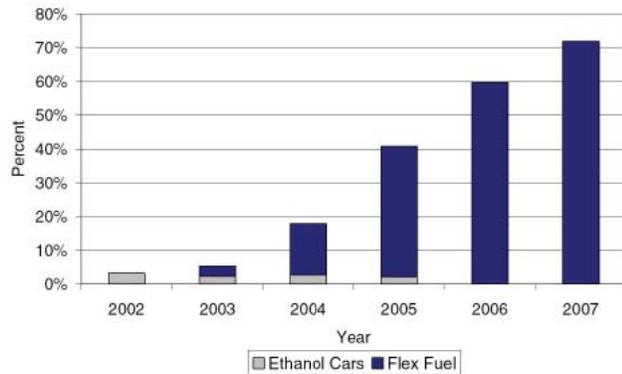
Flex-fuel vehicles were introduced in 2003. These vehicles can run on 100 percent ethanol, 25/75 percent ethanol/gasoline blend (the 25 percent minimum ethanol mandate) or any combination of the two. Today more than 70 percent of the new cars sold in Brazil are flex-fuel as shown in Figure 1. Consumers have 49 models to choose from. Flex fuel vehicles have electronic sensors that detect the fuel blend mix and automatically adjust the engine combustion. The production of E100 cars, popular in the 1990s, has virtually disappeared. The remaining 28 percent operate on the mandated E25 minimum blend. There are no light vehicles running on pure gasoline.

Seventy percent is the generally accepted tipping point of whether consumers purchase ethanol or gasoline for their flexible fuel vehicles. In other words, if ethanol price is less than 70 percent the price of gasoline, they will purchase ethanol. Anything over 70 percent and consumers will purchase gasoline. The need for the discount is due to ethanol lower energy level per gallon than gasoline. However, the prices

continued on page 5

Brazil's ethanol industry - part two, continued from page 4

Figure 1. Ethanol car manufacturing in Brazil (percent) (2002-2007)



of gasoline and ethanol vary independently of each other. So Brazil's flex fuel vehicle program means that consumers have discretion in the combination of gasoline and ethanol they purchase. Midsummer is the sugarcane crush season. In July of 2008, the price ratio ranged from a low of 52 percent in Sao Paulo to a high of 69 percent in Porto Alegre. By contrast the ratio in Jan. 2008 ranged from 54 percent in Sao Paulo to 73 percent in Porto Alegre.

Because high ethanol blends have a low vapor pressure, starting in cold weather is a problem. This is one of the reasons why the U.S. maximum blend is E85. So a small secondary pure gasoline tank is installed for starting in cold weather. An improved flex fuel motor installed in 2009 models will eliminate this problem.

Brazil has 33,000 gas stations offering pure ethanol side-by-side with gasoline. By comparison, the U.S. has about 1,500 stations distributing E-85 ethanol, mostly in the corn-belt. Federal taxes on gasoline are higher than ethanol. States provide similar incentives. To receive an operating license, all fueling stations must provide an ethanol or ethanol-blend pump.

To provide perspective on Brazilian ethanol prices, during the first six months of 2008, ethanol sold for \$2.75 to \$4.25 per gallon, depending on the location in Brazil. By comparison, ethanol sold for \$1.60 to \$2.45 per gallon during the first six months of 2005. Most of this price increase was due to the exchange rate between the U.S. dollar and the Brazilian real. The real strengthened from 2.5 reals per dollars during this period in 2005 to 1.7 reals per dollar in 2008.

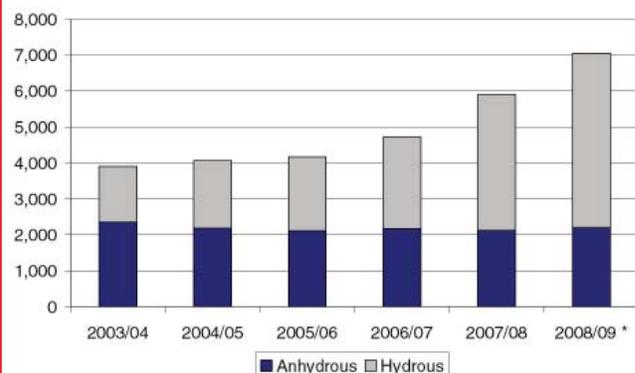
Ethanol production and usage

Brazilian sugarcane production reached 423 million tons in 2005/06. This represented 31 percent of the world sugarcane production. Sugarcane production is divided equally between sugar production and ethanol production. As shown in Figure 2, Brazilian ethanol production is expected to top

7 billion gallons in the 2008/09 marketing year. This is up from about 4 billion in 2005/06.

In ethanol production, the "beer" resulting from the fermentation is processed in distillation columns where an azeotropic mixture of ethanol and water is separated out from the rest of the stillage. This is called hydrous ethanol and contains about 96% ethanol and 4% water. As shown in Figure 2, the growth in Brazilian ethanol production has been in hydrous ethanol.

Figure 2. Brazilian ethanol production



Source: USDA/FAS/ATO/Sao Paulo.

Note: Marketing Year starts in May and ends in April of the following year.

* Forecast

Anhydrous ethanol does not contain any water. Anhydrous ethanol is created by putting hydrous ethanol through a dehydration process after distillation to remove the remaining water. The dehydration process is costly and energy-consuming. Anhydrous ethanol is used in the U.S.

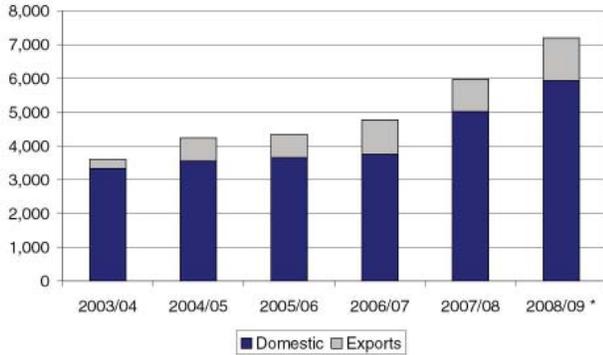
During 2008, hydrated ethanol has sold in Brazil for an average discount of about 12 percent compared to anhydrous ethanol. In Brazil both ethanol-only and flex fuel vehicles are manufactured to utilize hydrous ethanol. Anhydrous ethanol is used in the more traditional cars that run on the mandated E25 minimum ethanol blend.

As shown in Figure 3, the usage of ethanol has increased substantially in recent years. Strong demand for ethanol is due to mandated ethanol in gasoline, robust sales of flexible fuel vehicles (FFV) and a favorable ethanol/gasoline price ratio. Despite production growth in the industry, ethanol supply lags demand. An ethanol shortage occurred in 2006.

Ethanol currently replaces about 50 percent of the fuel needed to operate light vehicles on gasoline. When trucks and other diesel vehicles are included, ethanol represents about 20 percent of the road transportation usage. Ethanol represents 15 percent of the total supply of liquid fuels in Brazil.

Brazil's ethanol industry, part two, continued from page 5

Figure 3. Brazilian ethanol usage



Source: USDA/FAS/ATO/Sao Paulo.
 Note: Marketing Year starts in May and ends in April of the following year.
 * Forecast

Labor and environmental impact

Traditionally sugarcane has been harvested by hand. The fields were usually burned to remove leaves and other debris and rid the fields of snakes, making it easier and safer for the workers to harvest the cane. Due to advancements in harvesting technology, concerns about worker exploitation and environmental concerns about burning the fields, mechanical harvesting is becoming more common, especially in southern Brazil. This is displacing many of the workers who are usually the poorest in Brazil. Although the work is hard and may be dangerous, it does provide employment for a seg-

ment of the population. The Brazilian Sugar Cane Industry Association believes that 500,000 jobs will be lost of which 80 percent will disappear within three years. No alternative employment opportunities appear to be available.

From 1975 to 2000, the replacement of gasoline with ethanol reduced carbon emissions by 100 million tons. Big city improvements in air quality in the 1980s were evident. Conversely, the air quality degradation from a partial return to gasoline in the 1990s was also evident.

References

Ethanol Demand Driving the Expansion of Brazil's Sugar Industry, <http://www.ers.usda.gov/Briefing/sugar/sugarpdf/EthanolDemandSSS249.pdf>

GAIN Report Number: BR7011, USDA GAIN Report Number: BR8013, USDA, <http://www.fas.usda.gov/gainfiles/200707/146291791.pdf>

Green Car Congress, <http://www.greencarcongress.com/2008/01/study-compares.html>

Ethanol Fuel, Wikipedia, http://en.wikipedia.org/wiki/Ethanol_fuel

Ethanol Fuel in Brazil, Wikipedia, http://en.wikipedia.org/wiki/Ethanol_fuel_in_Brazil

* Reprinted with permission from the Ag Marketing Resource Center

Updates, continued from page 1

Current profitability

The following profitability tools have been updated on www.extension.iastate.edu/agdm to reflect current price data.

Corn Profitability – A1-85

Soybean Profitability – A1-86

Ethanol Profitability – D1-10

... and justice for all

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Many materials can be made available in alternative formats for ADA clients. To file a complaint of discrimination, write

USDA, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964. Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Jack M. Payne, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.

Permission to copy

Permission is given to reprint ISU Extension materials contained in this publication via copy machine or other copy technology, so long as the source (Ag Decision Maker Iowa State University Extension) is clearly identifiable and the appropriate author is properly credited.