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ABSTRACT

Large capital requirements needed for many agricultural businesses to operate result in many relying on borrowed funds. Fixed repayment commitments combined with a leveraged financial condition and volatile commodity prices result in increased emphasis on managing risks. Deterioration in the financial condition of an agricultural business is used to illustrate development of a risk management plan by a farm manager and his lender. The case study approach is used to initiate discussion, generate ideas from readers, and provide an example that can be used by those who teach farm management, risk management, and/or financial management.

The Perfect Storm: A Case Study Illustrating How a Series of Events Led One Farm Operator to Develop a Risk Management Plan that Includes a Lender's Perspective

By Freddie L. Barnard & Elizabeth A. Yeager

Introduction

Large capital requirements needed for agricultural operations, reliance on increasing amounts of borrowed funds, and volatile commodity prices have placed increased emphasis on effectively managing risks associated with producing, marketing and financing agricultural production. The need to manage risks is important for all agricultural operations but takes on added importance for farm and ranch businesses that use borrowed funds.



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The authors wish to acknowledge reviews and helpful comments from Greg Foulke, Chief, Farm Loan Program, Farm Service Agency, Indianapolis, IN; Larry Kummer, President, Ag One Agency, Inc., Howe, IN; and Richard Ritter, Senior Vice President of Agricultural Lending, Flanagan State Bank, Le Roy, IL.

Risk management has been described as anticipating the potential for undesired events and then taking measures to either avoid those events and/or their consequences when it is cost effective to do so. Various types of risk are often grouped in production, marketing and financial categories (Wachenheim & Saxowsky, 2003). Also, greater uses of debt affects risk, because the borrower's fixed loan payment obligations have to be satisfied through varying levels of net farm income. In fact, the importance of risk management practices increases significantly for the use versus the non-use of debt (Micheels & Barry, 2005).

This comprehensive attitude toward risk management occurs when agricultural lenders are including more profitability and repayment capacity measures in their credit analysis than the traditional liquidity (e.g., current ratio and working capital) and solvency measures (e.g., debt-to-asset ratio and debt-to-equity-ratio). Such an approach enables a more in-depth analysis as to the strengths and weaknesses of an agricultural business, as well as additional insight into an operation's vulnerability to various risks.

The case study discussed here provides an example of a farming operation that was profitable through 2009 but experienced net farm losses, on an accrual-adjusted basis, in 2010 and 2011. The lending institution financing the operation became concerned about its financial condition and performance after preparing an accrual-adjusted income statement. The response of the lender was to require the borrower prepare a risk management plan.

The following paragraphs discuss the risk-reducing tools and alternatives proposed and reaction of the lender. The lender reaction is included to more fully understand the position and motivation of a lender when reacting to a borrower's efforts to manage risks.

Description

The case farm is organized as a sole proprietorship. The major players are the father, who will be referred to as John Farmer, who is retired but provides seasonal, part-time labor, and the son, who will be referred to as Jim Farmer, who is the primary decision-maker. Jim has worked with his father since graduating from college about 25 years ago. During that time, Jim purchased his father's machinery. Jim has two older sisters who are not involved in the operation and who do not wish to be involved in the future. Both sisters are married and live in other parts of the country.

John and his wife, Joan, own 615 acres, of which 610 are tillable. All their farm real estate is owned debt-free. They rent the 610 tillable acres to Jim and his wife, Janet. There is a 5-acre tract where both homesteads, machinery shed and grain facilities are located. Jim and Janet also own three semis that are used to haul their own grain and for other firms throughout the year.

Jim and Janet have two children who are in college, neither of whom has expressed interest in farming. Janet currently does not work off the farm, but she does have a Bachelor of Science degree in Agribusiness from the state Land Grant University. She worked off the farm following graduation, but

has been a stay-at-home mom the past 20 years. She is currently considering entering the off-farm workforce now that both children are in college.

Production Overview

The cropping program consists of 3,879 acres of continuous corn, of which 610 acres are rented from John and Joan for \$200 per acre and the remaining acres are rented from landlords located close to the owned acres. The rental agreements are negotiated annually with each of the non-family landlords. There is no livestock enterprise.

The farm is located in a very competitive area in the Midwest in terms of land rental rates. All of the 3,269 acres rented from landlords outside the family are cash rented and average cash rent paid is \$250 per acre. All cash rent is paid in the spring. There are 15 non-family landlords, with two large tracts of 520 and 580 acres that rent for \$300 and \$275 per acre, respectively. There is fierce competition among farmers in the community to rent those two farms. The smallest parcels are two, 50- acre farms that each rent for \$200 per acre and are located between the farmstead and the larger rented farms. The remaining rented acres are between those acreages and rental rates.

Through 2009, the five-year average per acre corn yield was 198 bushels, which was the actual yield for 2009. However, the operation experienced drought conditions each of the next two years resulting in actual yields of 110 and 130 bushels per acre for 2010 and 2011, respectively. The local lender has always required Jim to carry crop insurance, since the lending institution was financing the grain

production and had a lien on growing crops, grain inventory, and farm machinery.

Jim carried Group Risk Income Protection (GRIP) crop insurance rather than a yield or revenue protection plan because it required less paperwork and there had been instances in the past in which the county revenue triggered a payout even though Jim did not experience a loss on his farm. That happened as recently as 2009, so Jim felt the probability of receiving a claim was higher with GRIP than with a revenue or yield protection policy.

However, in both 2010 and 2011 the reverse happened and Jim's farm experienced reduced yields due to drought, while the county revenue was not low enough to trigger the county revenue payout. Consequently, Jim did not collect an insurance payout in 2010 and 2011. Now, Jim's lender is becoming reluctant to approve the operating loan and agree to use GRIP insurance after the experiences of the past two years. Hence, Jim's lender is urging him to consider a yield or revenue protection plan for 2012.

Marketing Practices

Jim does not have a marketing plan that guides his decisions when he markets grain. Instead, he watches the market and sells grain to the local elevator when he thinks there is a "good" price. Jim does not have detailed farm records that enable him to know his cost per acre or cost per bushel with a high degree of accuracy. Instead, he keeps the records he needs to file his taxes.

He has been reluctant to seek the advice of a marketing consultant to prepare a marketing plan, because he feels he can do as well as a consultant and does not want to pay the consultation fee. The average prices received by Jim for 2009, 2010, and 2011 were \$3.50, \$5.15, and \$5.75, respectively; whereas average annual prices received by all farmers during those three years were \$3.55, \$5.18, and \$6.20 (Crop Value 2011 Summary, 2012). As can be seen from the comparison, prices Jim received have been below the average received by all farmers each of the previous three years.

Financial Situation

Although John and Joan have assumed Jim and Janet will continue the family farm when they pass away, there has not been an agreement, or even a discussion, with Jim and Janet and with Jim's two older sisters as to the equitable disposition of the farm real estate when they pass away. Jim and Janet purchased the machinery a few years ago and rent the land. They borrow the operating funds and borrow any money to upgrade machinery.

John and Joan were asked to co-sign the operating note when Jim started farming but have not been asked to co-sign notes for Jim and Janet or guarantee the operating and machinery loans for more than 10 years. The decision to not require John and Joan to co-sign the notes was made because Jim and Janet were profitable prior to 2010 and generally had a conservative attitude about borrowing money. Also, the lender knew that John and Joan were available to add financial strength to the loan.

Since there has been no discussion on how the farm real estate will be transferred, there is uncertainty

as to how each sibling will receive his/her inheritance. This uncertainty has created concern, and even reluctance, on the part of the lender when Jim recently requested an increase in his machinery loan to purchase larger machinery. The lender would like assurance the home farm will continue to be farmed by Jim after the passing of John and Joan to justify financing larger machinery.

Credit Situation

To maximize the use of section 179 expensing to reduce taxable income and to prepare for the possibility of increasing the size of the operation, Jim recently traded several items of machinery. Much of the money was borrowed from the local lender and principal and interest payments were scheduled over five years. The five-year average historical yields and prices were used to justify the capital purchases and subsequent increases in the machinery loan.

Jim has historically provided a balance sheet prepared around the end of each calendar year, with assets valued at market value. The tax year for the operation is a calendar year and the Schedule F of the Form 1040, prepared on a cash basis, was used as a proxy for an income statement. To address the issue of shifting farm income and expenses between years to reduce taxable income and to minimize the resulting inaccuracies in measuring net farm income on a cash basis, the financial institution has averaged the previous three years of net farm income reported on the tax return for previous loan renewals.

However, the lending institution adopted a new loan analysis software program in 2011 that prepared

an accrual-adjusted income statement. The lending institution took information reported for the past two years and prepared accrual-adjusted income statements for 2010 and 2011. They were not able to prepare an accrual-adjusted income statement for 2009.

Net farm income on a cash and accrual-adjusted basis is presented below for 2010 and 2011, as well as the debt-to-asset ratio and current ratio using market values to value the assets. The term debt and capital lease coverage ratio¹ was calculated by the software for 2010 and 2011 using accrual-adjusted net farm income and was used to evaluate the repayment capacity for Jim. The lender's desired levels for the debt-to-asset ratio, current ratio, and coverage ratio are 0.4, 2.0, and 1.5 percent, respectively. As can be seen from the numbers reported, the financial condition deteriorated in 2010 and 2011.

	2009	2010	2011
Net Farm Income – Schedule F	\$165,630	\$67,742	(\$221,247)
Net Farm Income – accrual-adjusted	---	(\$232,921)	(\$378,492)
Debt-to-Asset Ratio	0.58	0.67	0.76
Current Ratio	1.54	0.99	0.79
Term Debt and Capital Lease Coverage Ratio		(1.1)	(1.5)

Lender Assessment and Response

The local lender has provided the operating loan every year since Jim joined the operation and made the loans for machinery purchases. All loans have performed as agreed. The lender holds a first lien on the grain inventory, all growing crops, and all machinery. The local lending institution has always felt comfortable financing the operation, until the accrual-adjusted income statements revealed the magnitude of the operating losses for 2010 and 2011. In addition, the local lender is concerned the accrual-adjusted net farm losses occurred at a time

when Jim borrowed additional money to purchase machinery, which increased his principal payments on the machinery loan.

In response, the lender wants Jim to provide a risk management plan for the operation before he approves the operating loan for 2012. The lender offered several suggestions to get the process started but would like Jim to develop his own plan so he has ownership in it, which will facilitate its implementation.

Risk Management Plan

A farming operation is exposed to numerous risks that are not only associated with the farm business, but also the well-being of the farm operator and family (e.g., health, death, disability, fire, etc.). Those risks are usually addressed through the purchase of insurance and that assumption is made in this situation. The risk management plan requested by the lender is confined to the business risks that effect the farming operation and will influence the decision by the lender to make or deny the loan request.

In general, farmers tend to combine various risk management practices to formulate comprehensive strategies when responding to risk (Micheels & Barry, 2005). That approach was used by Jim Farmer when responding to the request from his lender to formulate a risk management plan. The following is the nine-point risk management plan Jim prepared for his lender. The tools and practices proposed and the rationale for each are presented below. In addition, a section is included that presents the lender's reaction to the tool or practice

and additional requirements that might be required by the lender to approve the loan.

1. Form of Business Organization and Land Ownership

The form of business organization used in the operation is a sole proprietorship. Unfortunately, a sole proprietorship does not provide an efficient manner to transfer ownership of the land to Jim's two sisters, except to sell those acres. An additional concern associated with the business organization is the owner's personal assets are subject to any business liabilities. Conversations need to be had among John and Joan and their children regarding fair and equitable transfer of the real estate. Other forms of business organization should be considered after meeting with tax and estate planning professionals to evaluate the ability of each to address such issues as limited liability, intergenerational transfer of assets, the equitable distribution of farm assets to siblings not involved in a farming operation, and the flexibility to exercise tax management strategies. Possible alternatives include a sub-chapter S corporation, a limited liability company, a land trust with buy-sell provisions, as well as others (Curtis, 2006).

Other options could include: Jim purchasing life insurance policies on his parents and using the settlement to purchase his sisters' interest in the farm in the future; after discussions among the family members about the future of the farm, Jim and his parents could set-up a lease with the option to purchase agreement where Jim would

put a down payment on the farm and have the first option to purchase the land at a reasonable price; or, Jim could identify an investor who would purchase the farm ground and rent it to him on reasonable terms.

Lender's Reaction. The lender has been asked in the past to finance machinery purchases that included larger pieces of machinery, which implies Jim will continue to farm the 610 acres owned by John and Joan. In order to be assured the operation maintains the scale needed to generate net farm income sufficient to make those principal payments, the lender would want assurance the 610 owned tillable acres owned by John and Joan will continue to be farmed by Jim in the future.

2. Operating Entities

The three semis owned by Jim and Janet are operated as part of the farming operation, which is organized as a sole proprietorship. However, the risk inherent in operating a trucking enterprise and the potential liability associated with such an enterprise suggest creation of a separate entity for the trucking enterprise. Jim and John are the primary drivers of the semis, but they do employ other employees who drive the semis. Jim plans to discuss the formation of a separate corporation for the trucking enterprise to reduce the potential liability that could arise from an accident (Legal Business Organizations, 2012). Jim plans to work with his attorney to determine whether a sub-chapter S corporation or a regular corporation would better meet the needs of the operation.

Lender's Reaction. Again, the lender would encourage such a move. Assets owned by the corporation would be the semis and liabilities would be the debts against those semis. Consequently, the corporation, with limited liability, would have limited equity at risk should a lawsuit occur. The lender would require Jim and Janet to guarantee the loan to the corporation to finance the semis. Also, the lender may suggest evaluating the profitability of the three semis first, and if they are not profitable, it may be suggested to sell the semis instead of forming a corporation.

The lender may suggest Jim consider a corporate form of business organization as an operating entity for the farming operation as a whole for the same reason as the trucking firm, liability. This would require the loan documents comply with the regulations pertaining to loans made to a corporation, but the segregation of business and personal as well as the ability to monitor salaries paid versus a withdrawal for family living may outweigh the cost of increasing loan documentation and complexity. Again, the lender would require Jim and Janet guarantee the loan.

3. Loan Structure

Jim's operating loan increased in 2010 and 2011, due to losses from the operation, which prevented Jim from completely repaying the 2010 operating loan. Those losses will be carried forward in the operating loan balance in succeeding years and make it difficult to completely repay those loans from the earnings for the next year. That was the case in 2011

when an additional loss was realized. Hence, the operating loan for 2012 would include operating losses for 2010 and 2011 and would be expected to be repaid from the earnings in 2012. Jim plans to ask the lender to restructure the loan.

Lender's Reaction. The lender may suggest the operating loan for the 2011 crop, which is in inventory, be made as a separate crop inventory loan and make a separate operating loan for the 2012 crop. The segregation of the loan amounts would facilitate the determination of the amount of a loss carryover from the 2011 crop. The lender may also suggest the 2011 crop be sold, applied to loans, and purchased on paper to cover any upside market potential (with the assistance of a marketing plan). Any loss carryover for 2011 would need to be repaid over the next three to five years with annual payments and not rolled into the operating loan for the current year's crop. Otherwise, the comingling of the loans for the two crops makes it difficult to monitor progress on repayment of the operating loan for 2012 from the proceeds of the 2012 crop.

The lender may determine if Jim would have had a negative accrual adjusted net farm income in 2010 and 2011 had he purchased revenue insurance. Using revenue assurance crop insurance at an 80 percent coverage level, Jim's potential claims in 2010 or 2011 could have prevented or limited his negative net farm income. In the future, the lender may require revenue insurance.

4. Land Rental Arrangements

The possibility of changing from a cash rental agreement to a rental arrangement that reduces the risk for Jim should be discussed with his landlords. There is often aversion on the part of landlords to change from a cash to a share rental arrangement, especially in a highly competitive area because of the desire of many landlords to receive a cash return up front with minimum risk.

However, other alternatives are being used and one possible alternative would be a flexible cash rent lease that could be used to pay minimum cash rent close to the current market level and then share gross revenue above a specified amount based on revenue or yield. A 2009 survey of producers attending the 2009 Top Farmer Crop Workshop (TFCW) held at Purdue University found 32 percent used flexible leasing arrangements on a portion of their rented acres. Almost 43 percent of the leases were renegotiated each year, with 36 percent reporting an increase in their landlord's willingness to make capital improvements to their farm real estate, such as improved drainage (Alexander & Patrick, 2010).

Lender's Reaction. The lender would want to maintain the scale of the operation while reducing the amount paid in the spring and the overall risk associated with using cash rent. In Jim's case, negotiation with his landlords would include the amount of the cash rent, base gross revenue calculation and percentage allocation of the amount shared above a specified amount of

gross revenue. The fixed cash rent portion could continue to be paid in the spring if landlords insisted, while the bonus could be paid after harvest. The lender may also want assurance Jim will continue to rent the most productive acres he is currently farming, at a reasonable rate. The use of longer-term rental agreements can reduce the risk he will lose current rental acres in the next three to five years and provide incentive to both Jim and the landowners to invest in long-term improvements to the land and maintain the soil fertility (Edwards, 2011).

5. Crop Insurance

A survey of producers on factors that influence crop insurance purchase decisions found that price was the most important factor when considering crop insurance purchases, followed by compatibility with grain marketing plans and probability of receiving a claim. The two lower ranked reasons were agent recommendations and lender requirements (Ginder, Spaulding, Winter, and Tudor, 2010). However, the objective for purchasing crop insurance is to protect the producer from the adverse effects of lower levels of crop production and not as an investment from which to receive a return.

Jim is no longer in a position to ignore the importance of purchasing crop insurance from a risk management position and needs to reconsider what he has perceived as the advantages for GRIP. The increased paperwork associated with yield or revenue protection insurance is worth the protection when the county revenue does not trigger a payout. Jim

is willing to reevaluate his crop insurance to reduce his production risk and work with his lender.

Lender's Reaction. Although the probability of receiving a claim was the determining factor for Jim from 2009-2011, his financial condition deteriorated over the past two years and the need to reduce production risk for his farm is now more important than the probability of receiving a claim.

The type and level of coverage for Jim's crop insurance needs to be reevaluated by Jim, the crop insurance agent, a marketing consultant, and the lender. They would want to compare Jim's past experience with GRIP to what it would have been using a revenue protection plan. Additionally, claim checks for both revenue protection and yield protection can be issued within a few weeks after records are provided for the claim. GRIP/GRP claims are usually not known until February or March with the check coming after those dates. This provides a timing issue when trying to obtain next year's operating loan. Once the decision has been made on which insurance to purchase, the lender will require an assignment on the indemnity payments in their name.

In addition, the marketing plan should be coordinated with the crop insurance product. The marketing plan could be set up to not exceed the maximum yield guarantee of the insurance product allowing Jim and his marketing consultant to be aggressive at pre-harvest

pricing if needed. A 2001 study evaluated risk management strategies combining crop insurance products and marketing alternatives. The combination of a crop insurance revenue product and hedging resulted in the highest average returns among nine alternatives evaluated (Hart & Babcock, 2001).

6. Accrual-adjusted Income Statement and Financial Analysis

A comprehensive financial analysis of a farm or ranch operation must include not only balance sheet information, but also income statement information. Also, the use of a farm accounting program that prepares an accrual-adjusted income statement yields a more accurate measure of net farm income than the cash basis tax return. The annual differences between net farm income calculated on a cash basis and net farm income calculated on an accrual-adjusted basis for the 2002 through 2006 period was found to exceed 50 percent every year during the period. Furthermore, for operations with debt-to-asset ratios above 40 percent, the difference was over 60 percent (Barnard, Ellinger, and Wilson, 2010).

Farm financial analysis programs are available to prepare an accrual-adjusted income statement and various financial measures. For example, software available from Purdue University at no charge produces an accrual-adjusted income statement, the financial measures recommended by the Farm Financial Standards Council, and sensitivity analysis. Data needed for the program includes two balance sheets

prepared as of the beginning and end of the tax reporting period and the cash basis Schedule F of the Federal income tax return (Wilson, Barnard, and Boehlje, 2007).

Lender's Reaction. For an operation that has a debt-to-asset ratio above 40 percent and has experienced declining profitability, preparation of an accrual-adjusted income statement would be essential from the lender's standpoint. Efforts to increase net cash farm income by liquidating inventory and/or increasing accounts payable and accrued expenses are revealed in a straightforward manner when using such a program. The use of a financial analysis program not only provides a more accurate measure of profitability, it also enables Jim to monitor financial performance using the same measures used by his lender. If available in Jim's area, it may be suggested he utilize a farm management service that would ensure the records were being kept accurately and on a timely basis.

In addition, software that enables the user to evaluate management alternatives would be desirable so the projected impact on profitability and repayment capacity could be analyzed. One alternative that should be considered is the impact of Janet returning to off-farm employment, which she is currently considering. The added income could partially or totally offset withdrawals for family living from the operation during a time when principal payments on term debt have increased and operating losses have occurred.

7. Loan Guarantees

In order to improve the solvency and collateral position of the operation, Jim needs someone or some program to guarantee the operating and machinery loans. The increase in debt-to-asset ratio from 48 to 76 percent would be a disturbing development for Jim and his lender. However, the operation has been profitable up until 2010, so the situation would appear to be temporary and not due to systemic management problems. Two possibilities are to use a loan guarantee program through the Farm Service Agency (FSA) and to ask John and Joan to either co-sign or guarantee the loans.

Jim would prefer not to ask John and Joan to co-sign or guarantee the loans even though they have previously done so. The current lack of communication between family members as to the future of the farm may be viewed more negatively by Jim's sisters if Jim defaults on the loans and John and Joan were the guarantors.

Lender's Reaction. Applying for an FSA operating loan guarantee could be considered a first step for Jim and his lender, with a loan guarantee by John and Joan kept in reserve as a back-up plan. If Jim qualifies and receives approval for a FSA loan guarantee, the default risk to the lender would be reduced and allow more latitude on negotiating loan covenants. An FSA 90 percent loan guarantee may be possible on both the operating loan for 2012 and restructured loan from 2011. The lender may also choose to sell the loan on the secondary market. If the FSA loan guarantee is not approved, then several options could be pursued. First, the

lender may limit operating funds to revenue assurance crop insurance guarantee limits. Next, the lender could ask that John and Joan guarantee the loans or co-sign the loans with Jim and Janet. Finally, John and Joan could be asked to consider a hypothecation agreement. A hypothecation is a special arrangement where John and Joan would put up specific collateral to secure the debt of Jim and Janet. If the debt is not paid the lender may have the property seized to satisfy the debt, but John and Joan are not personally liable if the collateral does not pay off the debt.

8. Limit Capital Purchases

In the past, Jim has traded machinery when he desired and then applied for a loan. However, repayment capacity of the operation deteriorated during the past two years and such a practice would no longer be acceptable. Since principal payments on machinery debt are made from net farm income, which was negative in both 2010 and 2011, principal payments on the machinery loan were likely made from the depreciation allowance, liquidating inventory or possibly included in the operating loan.

Consequently, the purchase of additional machinery using borrowed funds should be avoided until the financial condition and repayment capacity for the operation improves (Barnard & Boehlje, 1990-99). Ideally, that decision should be made voluntarily by Jim.

Lender's Reaction. However, given that Jim has purchased machinery in the past and then

arranged financing after the transaction, his lender may require Jim to provide assurance that practice will not be used in the future. The lender would also be aware that Jim could purchase machinery from a dealer and then arrange the financing of that purchase through either the dealer or by another lender, without notifying his local lender until after the transaction. In order to prevent that practice in the future, a loan requirement or covenant would likely be required by the local lender to notify the lending institution of any purchase of machinery above a specified amount. The lender may also require Jim to work with his tax preparer before any unnecessary capital investments or replacements are made. In the past, Jim was able to justify some machinery purchases with the objective of reducing taxable income; however, there is now increased concern about Jim's repayment capacity. Future decisions should be made with the objective of maximizing after tax profits over time rather than minimizing taxes in the short term (Klinefelter, 1989). Again, this decision should be recognized and made voluntarily by Jim.

9. Marketing Plan and Tools

Increased output price volatility has caused some grain elevators in the past to reduce forward pricing contracts because they simply could not secure the line of credit to meet margin calls associated with hedging in the futures/options markets (Thiesse, 2008). In 2008, 85 percent of those surveyed at the Purdue TFCW reported their grain elevators reduced the offering of price contracts in the summer of 2008. For

producers who experienced such a reduction, almost 31 percent turned to the futures market to forward price by hedging with futures and options through a broker (Alexander & Patrick, 2010).

Although the additional cost associated with hedging may be viewed negatively by Jim, the need to manage the risk faced by the operation makes it a necessity. In addition, Jim's knowledge and experience are limited in marketing, so he may need to seek and pay for outside advice. Hence, acquiring the advice of an outside marketing consultant would need to be included in a risk management plan. Also, the marketing plan would need to be coordinated with his crop insurance product.

Lender's Reaction. Increased price volatility in the grain markets, the risk of local grain elevators reducing the availability of forward pricing contracts, and deterioration in Jim's financial condition makes it essential Jim develop a marketing plan and plan for marketing contingencies. Development and implementation of a marketing plan would add discipline and reduce market risk through the use of futures and/or options.

The lender and Jim should work together to determine a 2012 cash flow plan and estimate break-even points for corn. Cash flow income can be based on state FSA grain prices unless the grain is sold, then use market prices received. The FSA prices may be conservative, so Jim might have to sell a portion on cash basis or use

options to set a minimum price higher than FSA to help cash flow.

The lender would likely want an agreement among Jim, the broker, and him or herself that specifies the marketing plan is to be used for hedging purposes only and not for speculative purposes. They may want to focus on cash sales and options with no storage costs. That agreement would require periodic summary reports from the broker on market positions to agree to fund margin calls and the lender should share the farmer's break-even points and goals. The goal should be to sell or have all grain covered over the break-even point, thus, locking in a profit. The lender would want to set up a separate loan to fund the margin calls to monitor advances on that loan as opposed to including those advances in the operating loan.

The lender may also require Jim to develop a strategy for purchasing inputs. The price of seed, fertilizer, fuel and chemicals has increased in recent years with dramatic price swings in the fertilizer and fuel markets. A plan for purchasing inputs and knowing the cost of production is one step toward developing an effective marketing program.

Final Comment

The case study discussed here provides an example that risks are always present, even during profitable periods in agriculture and a risk management plan is needed to mitigate the adverse effects of those risks. The plan discussed here is not intended to provide a solution that can be generalized to satisfy

the situations faced by all producers. Instead, the tools and practices discussed are suggested courses of action to provide a starting point for development of a risk management plan for this particular operation. Risks vary across operations and the respective risk management plans need to be tailored to fit the needs of each situation.

The tools and practices discussed include not only those desired by the producer, but also those that might be suggested by a lender who provides borrowed funds for the operation. Such a coordinated approach is needed, since all interested parties have a vested interest in reducing the overall risk of the operation and the input of all parties should be included as the risk management plan is developed.

The risk management plan addressed nine areas and provided tools and practices that could be used to reduce the risk in each. Although it is acknowledged other business and personal risks are often present and need to be addressed, this discussion centered on the business risks associated with financing this particular operation at this point in time.

The suggestions presented in this discussion are intended to initiate thought and discussion. Producers and lenders need to work together to develop a risk management plan, as well as seek the advice and counsel of other professionals, such as attorneys, tax professionals, government agencies, marketing consultants, and insurance agents to prepare a risk management plan. This case study was presented to illustrate such an approach.

Endnote

- ¹ Term Debt and Capital Lease Coverage Ratio =
$$\frac{(\text{Net Farm Income From Operations} +/\text{- Total Miscellaneous Revenues/Expenses} + \text{Total Non-farm Income} + \text{Depreciation/Amortization Expense} + \text{Interest on Term Debt} - \text{Total Income Tax Expense} - \text{Owner Withdrawals (Total)})}{(\text{Principal and Interest on Term Debt} + \text{Current Portion of Capital Leases} + \text{Prior Period Loss Carryover} + \text{Annual payments on Personal Liabilities})}$$

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