MORE PIGS PER SOW PER YEAR CAN DRAMATICALLY INCREASE INCOMES

by

Jim Polson and Allan Lines

Each additional market hog produced in a year by a herd of 100 sows and gilts may increase net income before tax by over $40 when market hogs are selling for $50 cwt. In fact, increasing the number of animals produced by a given number of sows and gilts (reproductive efficiency) is one of the surest ways to increase net income before tax. It doesn't require any additional feed or facilities to take care of the breeding herd and boars. The only significant cost increase is the cost of feeding the additional animals produced.

The typical commercial swine producer in Ohio is probably weaning 12 to 14 pigs per sow per year, when all breeding age sows and gilts are considered. The animals are probably producing seven to nine pigs per litter, but only 1.5 to 1.8 litters per sow and gilt per year. The number of litters per sow per year has increased in recent years with increased adoption of pregnancy testers, earlier weaning, and an increased emphasis on breeding and scheduling. However, there are still significant gains to be made on many farms.

It is generally more meaningful to make calculations on the basis of the average number of sows and gilts on the farm rather than just on the sows that farrow. All of the sows and breeding age gilts on a farm have to be fed, housed and taken care of whether they farrow or not. The costs of feeding, housing, labor, etc. required to care for the breeding herd represent a fixed cost which must be paid regardless of the number of pigs produced.

Procedure

The Ohio State University "Swine Farm Simulation" computer program was used to project differences in income for swine producers who might experience different levels of reproductive efficiency. The projections were based on a hypothetical "typical" swine producer who has an average of 100 sows and breeding age gilts on the farm during the year. The producer is assumed to produce 1,095, 1,300, or 1,489 market hogs per year (odd number due to computer rounding). Comparisons were made for market hogs at $40, $50, and $60 cwt.

The producer was assumed to have adequate building space to house all of the market hogs produced. However, some producers would have to increase the size of their nursery and finishing floor if reproductive efficiency increased significantly. The computer automatically calculates the additional labor and feed needed to care for the additional market animals produced and deducts the extra as a cost. However, no attempt was made to identify how much additional labor or other resources would be needed in order to get the breeding herd to farrow more pigs per sow per year. Therefore, no cost or charge was made for those inputs.

Estimating Reproduction's Impact on Profits

A producer who produces 1,300 market hogs per year is assumed to be "average." The change in income for other levels of reproductive efficiency (pigs/sow/year) are shown as so many dollars above or below average in Table 1.

The middle line in Table 1 serves as a basis for comparison for incomes. For example, if a person could produce an additional 189 market hogs (1,489 instead of 1,300) with the same 100 sows and gilts, before tax income would go up by $8,460 with $50 hogs. The additional animals would require approximately an additional 1,700 bushels of corn (16,420-14,710) and 140 hours of labor.

If the sows and gilts produced 1,095 market hogs (line 1 in Table 1) instead of 1,300, the producers income would drop by $9,230. The smaller number

TABLE 1: Projected Differences in Net Income Before Tax, Bushels of Corn Fed and Labor Required Per 100 Sows and Gilts on the Farm, at Three Different Levels of Reproduction

LEVELS OF REPRODUCTION	Market Hogs Produced in One Year Per 100 Sows and Gilts on the Farm	Net Income* Before Tax Compared to "Average" Reproduction ($50 Hogs)	Estimated Bushels of Corn Fed	Estimated Hours Labor Required
Below "Average"	1,095	-$9,230	12,850	2,020
"Average"	1,300	Average	14,710	2,170
Above "Average"	1,489	+$8,460	16,420	2,310

*Corn priced @ $3.50; supplement at $300 per ton; labor at $4.75 per hour.

of animals would also require less corn and labor as shown in the Table 1. The potential payoff of moving from below average reproduction of 1,095 hogs per year to above average reproduction of 1,489 hogs per year is $17,690 at $50 hogs. That is certainly worth the additional effort. Each additional animal marketed per year by a herd of 100 sows and gilts is projected to increase net income before taxes by approximately $45.

Value of Good Reproduction Varies at Different Hog Prices

The projected results are different at different hog prices. The computations in Table I were based on hogs selling for $50 cwt. In general, the higher hog prices go, the greater the advantage to increasing reproductive efficiency. Table 2 shows the projected results with $50 hogs from Table I, plus the projected differences in swine incomes for $40 hogs and $60 hogs. It also shows that each additional hog produced by 100 sows in one year will increase net income before tax by approximately $23, $45, and $67 when hog prices are at $40, $50, and $60 respectively.

The first column of Table 2 shows the projected differences in swine income caused soley by different levels of reproductive efficiency when hogs sell for $40 cwt. The difference between the income for below average reproduction and average reproduction is only $4,750. There is increased income (or a reduced loss) from producing more hogs per sow, but the differences are not nearly as great as they are at higher swine prices. However, even at $40, each additional hog produced per 100 sows and gilts is projected to increase income before tax by approximately $23.

When market hog prices move to $60 and above, there is a very significant advantage to those producers who can produce more hogs per breeding animal per year. The last column in Table 2 shows that with $60 hogs a producer

TABLE 2: Projected Differences in Net Income Before Tax Per 100 Sows and Gilts on the Farm at Three Different Levels of Reproduction for Hogs Selling for $40, $50, and $60 Cwt.

LEVELS OF REPRODUCTION	Market Hogs Produced in One Year Per 100 Sows and Gilts on the Farm	Net Income* Before Tax Compared to "Average" Reproduction at Different Prices		
		$40 Hogs	$50 Hogs	$60 Hogs
Below "Average"	1,095	-$4,750	-$9,230	-$13,710
"Average"	1,300	Average	Average	Average
Above "Average"	1,489	+$4,350	+$8,460	+$12,570
Additional Income Before Tax For Each Additional Market Hog Produced by 100 Breeding Animals	NA	$23.10	$44.90	$66.70

*Corn priced @ $3.50; supplement at $300 per ton; labor at $4.75 per hour.

with 100 sows who produced 1,095 hogs per year would make $13,710 less than a person who produced 1,300 hogs per year. The producer who could produce 1,489 market hogs per year would make $12,570 more than the average producer and a whopping $26,280 more than the below average producer for every 100 sows on the farm. Thus, when prices go up there are some very high payoffs to those producers who do a good job of managing their herd for high levels of reproduction. When hogs are at $60, <u>each</u> additional hog produced per 100 sows and gilts will increase <u>net income</u> before tax by approximately $67.

5) Uncertainty Caused by the Actions of Others: Farming remains one of the more independent of businesses, even so, farmers must interact with others. Most people are predictable, reliable, and responsible. Still, there remains uncertainty of action on the part of others. By keeping well informed, a lender can help reduce this uncertainty for a borrower.

6) Personal Uncertainty: Illness, injury, divorce, or sudden death can severely affect a borrower's income. A lender may insist on insurance to protect himself and the borrower to the extent possible.

These business risk factors plus the cyclical patterns of cash flow typical of farming operations have caused many lenders to use detailed cash flow analyses to aid in determining a borrower's ability to repay a loan. Cash flow statements based on partial budgeting or on complete budgets are time consuming to generate. However, they are extremely valuable, almost essential, in determining fluctuations in cash flow typical of modern farming operations. Cash flow planning is indispensable when a borrower is carrying a heavy debt load or is making major changes in operations.

The type of repayment plan chosen may also hinge on the cash flow analysis. From the lender's standpoint, the repayment plan should be structured in such a way to keep pressure on the borrower to repay, but it sould not contribute to a borrower's liquidity problem. Neither borrower nor lender can be helped by a repayment plan structured so tightly the borrower may be forced to sell assets at an inopportune time to raise cash to meet obligations.

Solvency is the condition which exists when the sum of assets and owner's equity is equal to or greater than all liabilities. In other words, a farmer or other agribusinessman could sell out (turn all assets into cash), pay the claims of all creditors, and either break-even or have some money left. A lender can determine the relative solvency of a borrower by computing ratios based on figures taken from the balance sheet. A commonly used measure of liquidity is the debt to equity ratio.

One of the most important decisions a borrower must make, usually with the help of his lender, is the amount of debt to include in his business capital structure. The term used to describe the use of debt is leverage. The greater the proportion of debt in a firm's capital structure, the greater the leverage. Leverage works to the advantage of a borrower as long as the rate of return to capital in his business is greater than the cost of borrowed capital. Under such conditions, the borrower can realize a greater return on his equity capital than if he did not use debt.

Of concern to the lender, however, is the fact that as the proportion of debt in a firm's capital structure increases, so does financial risk. Financial risk is the exposure to insolvency of a borrower because of debt incurred. If a borrower cannot pay interest or repay principle as it comes due, then he may be forced into bankruptcy by his creditors. As the proportion of debt increases, so does the burden of the debt and the risk of insolvency.

In carrying out his role as trustee, a lender may place some restrictions on a borrower because of financial risk. At very least, the lender may require the borrower to pledge some property as collateral to secure the loan. As financial risk increases, a lender may increase the rate of interest charged the borrower to reflect the added risk. As the proportion of debt increases even more, the lender may become involved in the borrower's decision-making by placing restrictions on the borrower's use of funds or on the acquisition of additional debt funds. At the extreme, a lender may become actively involved in making crucial operating decisions in an effort to protect the lending institution's capital. At that stage the agricultural lender effectively becomes a farm manager.

Case Study:

This case study is presented to illustrate the analysis of a loan requested by a hypothetical Ohio farmer. The emphasis is on the information needed by a lender in analyzing the request. Because the cast study is just an example, it is brief and the amount of information needed is not great.

A North Central Ohio farmer whose family is comprised of his wife and two teenage children is requesting a loan of $67,500 to purchase a new tractor and accompanying tillage equipment. The family owns 420 acres of land valued at $1,400 per acre and rents 798 acres at $80 per acre. The farmer keeps few records. Most financial information comes from his memory or estimation. This means the lender must construct the needed financial statements. The balance sheet and income statement for the year ending December 31, 1980 follow as Exhibit 1 and Exhibit 2.

A lender would start his analysis, after constructing the financial statements, by computing several ratios to determine profitability of the farmer's operation and to assess liquidity and solvency. Ratios commonly examined include the following:

$$\text{Profit Margin} = \frac{\text{Operating Profit}}{\text{Revenues}} = \frac{\$\,81{,}650}{\$347{,}300} = 23.5\%$$

The net profit of $23,600 could be used to compute the profit margin but since the lender is primarily interested in the profitability of operations, operating profit was used. The profit margin of 23.5% seems uncharacteristically high but is a before tax profit margin. For the lender it would be important to compare this year's profit margin to previous years. Determining constancy and trend would give the lender valuable information. The lender could also compare the profit margin for this operation to the profit margins experienced by other farmers in the area with similar operations.

Other measures of profitability the lender may want to examine are return

[2] Exhibits are grouped at the end of the paper.

on equity and return on investment.

$$\text{Return on Equity} = \frac{\text{Income}}{\text{Net Worth}} = \frac{\$\ 81,650}{\$532,200} = 15.3\%$$

$$\text{Return on Investment} = \frac{\text{Income}}{\text{Total Assets}} = \frac{\$\ 81,650}{\$962,000} = 8.5\%$$

These percentages seem very low compared to the attractive returns currently offered by alternative investments. However, a sizeable proportion of this farmer's yearly income is unrealized. Land value appreciation is not included in the income used in the calculations. If land appreciation could be included it is likely the returns would be comparable to the alternatives.

The current ratio gives the lender a measure of the borrower's liquidity position.

$$\text{Current Ratio} = \frac{\text{Total Current Assets}}{\text{Total Current Liabilities}} = \frac{\$196,000}{\$\ 86,000} = 2.28$$

In most cases a current ratio of 2 to 1 or better is advised. However, in a farm business where inventory can quickly be converted to cash and where accounts receivable are few a lower current ratio is usually acceptable.

The lender will also be concerned about solvency. The net capital ratio is a measure of solvency.

$$\text{Net Capital Ratio} = \frac{\text{Total Assets}}{\text{Total Liabilities}} = \frac{\$962,000}{\$379,800} = 2.5$$

In this case the sale of all assets could easily eliminate all liabilities. A related ratio is the Debt to Equity Ratio. It is a measure of leverage and financial risk.

$$\text{Debt to Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Owner's Equity}} = \frac{\$379,800}{\$532,400} = .71$$

Most lenders would like to see the Debt to Equity Ratio lower than this example. However, a person just starting in farming or an established farmer expanding could have a rather high Debt to Equity Ratio. In those cases the lender should take appropriate measures to protect the institution's capital.

The next step in the analysis would be for the lender to examine the profitability of the enterprise supported by the new loan. The primary purpose at this stage in the loan analysis should be to determine the repayment ability of the potential borrower. This could be accomplished by examining cash flows. Another consideration would be the potential effect of the loan, if granted, on the borrower's financial statements to see that debt in relation to equity remained within acceptable limits.

The ability of a borrower to repay a loan depends upon the cash available. The lender therefore must carefully analyze cash flows. The amount of cash available during a period must be enough to pay operating expenses, debt payments, family living expenses, income taxes, and allow for replacement of depreciated capital items as well as allow for the purchase of new capital items. Otherwise, the borrower will be faced with liquidity problems in the short-run and possibly a problem with solvency in the long-run. The starting point for determining the amount of cash available is the development of enterprise budgets.

Some farmers maintain detailed, accurate records and would be able to provide a lender with the information needed to develop enterprise budgets. However, most farmers keep records only to the extent necessary to complete income tax statements. Fortunately for lenders, the Extension Farm Management Faculty in the Department of Agricultural Economics and Rural Sociology at The Ohio State University each year publishes estimated budgets for various Ohio farm enterprises. Exhibit 3 shows the 1980 Corn Production Budget. The sample budget, based on the records of farm families part of the OSU Farm Business Analysis Program shows approximate cash and non-cash costs of raising corn under various yield assumptions. Any of the items may be altered to fit a particular farmer's circumstances. For example, the borrower in question may have a yield goal of 120 bushels per acre but feels he could expect to receive $3.00 a bushel rather than the $2.60 shown. He may also feel the $35.00 cost for nitrogen fertilizer is too low. The lender could then insert a higher cost, say $40,00 in the 'your budget' column. The lender would undoubtly increase the amount of interest on operating capital to reflect current interest costs.

The fixed costs represent expenses for items that may not necessarily represent a cash outlay in the period under consideration. However, if a cash outlay is expected to be made it should be included in the cash flow. For example, a farmer owning his own land would not expect to pay himself a land charge. But if the farmer rents the land, the rent payment should be included in the cash flow.

Exhibit 4 shows the corn production budget for the hypothetical farmer in the case study. The items modified were marked out and the figures used in the calculations were handwritten above the items marked out. With the modifications the farmer is projected to realize a return above variable costs (out-of-pocket expenses) of $201.00 per acre. The return above all costs is expected to be $62.00 per acre.

Similar enterprise budgets are available for all major field crops and some specialty crops grown in Ohio as well as for the more common livestock enterprises. Besides determining the profitability of a particular enterprise, the budgets may be used to make decisions involving tow or more enterprises. For example, comparison of a corn production budget and a soybean production budget could quickly lead to the corn vs. soybean decision farmers in Ohio must make each year.

For the purpose of our case study, we will not analyze other enterprises but proceed to the cash budget worksheet. On the worksheet, (Exhibit 5) the cash amounts generated by all enterprises are added to determine the total cash available from farming operations. To that is added cash flowing to the farm family from other sources since it would also be available to repay a loan.

From the total cash available is subtracted all expected uses of cash. Expenses directly related to the farming operation have already been deducted in the enterprise budgets. The first item deducted is family living expenses. This information may be supplied by the loan applicant. The amount may also be estimated using the yearly O.S.U. Farm Business Analysis Summary as a guide. The other uses of cash-income tax, hired labor, insurance, and property taxes can be determined in a similar manner. Care should be taken to see that these uses of cash are not deducted twice, once in the enterprise budgets and again in the cash budget worksheet. The amount of capital debt payments depend upon the debt structure of a particular borrower and the terms of repayment of the debts. Notice that the hypothetical farmer's operating note was not included here. The interest on operating capital is included as an expense in the enterprise budgets. The principle must be paid during the projected period but it is assumed the operating loan will be renewed. As a source and use of cash the payoff and renewal cancel.

In this case, subtracting the uses of cash from the total cash available leaves the prospective borrower with $13,600 available to support a new loan. The farmer is requesting a loan of $67,500. Assuming for simplicity no down-payment and a 5 year loan at 18% interest, the yearly payment would be approximately $21,500.

Under the conditions outlined in the case study, this farmer's repayment capacity is not great enough to support a loan for the purchase of a new tractor and equipment. He would have to reconsider his plans. Perhaps he could wait a year. The lender might suggest he alter his cropping plans. For example, if the farmer could switch his wheat ground to corn production, his cash flow would increase by $32,200 (200A.x $161/A.). If the wheat has already been planted, a switch from soybeans to corn would also improve cash flow. By increasing the cash flow in this way, the loan may become feasible.

Cash flow analysis, even a rather simple analysis as in this case study, should be a part of nearly every loan application review. Here the analysis pointed out rather quickly to both lender and borrower that repayment capacity was insufficient to support the requested loan. Going ahead with the loan without altering operations to improve cash flow would quickly put the farmer in a liquidity bind and put the lender's repayment in jeopardy. A word of caution is in order. A cash flow analysis such as this can only be as good as the information used and the assumptions made. Accuracy can be improved by using historical data supplied by the farmer or estimates based on his experience. The lender must also use his judgement. Overly optimistic or pessimistic estimates should be made more realistic. The information sources listed in the last section of this paper can augment the lender's judgement.

Provided the cash flow can be made to support the loan, one more step remains in the loan analysis. The lender will want to re-examine liquidity and solvency assuming the loan is granted. A pro forma or projected balance sheet would be used for this part of the analysis.

In the case study, if we assume that all other asset and liability amounts remain unchanged, the equipment loan would increase Intermediate Assets, the machinery and equipment account, by $67,500. Intermediate Liabilities, machinery notes, would also increase by the same amount. The current ratio, a commonly used measure of liquidity, would not change since only current assets and current liabilities are included in the calculation. Our cash flow analysis gives us more information about liquidity, in this case, than the current ratio.

As far as solvency is concerned, the net capital ratio declines slightly from 2.5 to 2.3. The debt to equity ratio rises slightly to .75. Because of the hypothetical farmer's strong equity position due to land ownership, these slight changes are of no real concern. The new loan would leave the solvency situation almost unchanged.

The case study was made simple by design to show that a loan analysis does not have to be complicated. A quick analysis of the basic financial statements and a straight forward cash flow analysis based on enterprise budgets can give an agriculture lender the basis for a loan decision. However, even a simplified analysis as demonstrated in the case study requires up-to-date information.

Keeping up-to-date is not an easy task for an agricultural lender. In order to do a good job managing and safeguarding the funds entrusted to him the lender must have access to a wide variety of current information. Fortunately there is an abundance of information available.

There are many publications that could be included in the following list. Those listed were selected specifically on the basis of their usefulness to an Ohio agricultural lender or to illustrate a publication type. Many other publications could also provide valuable information. As a lender gains experience, he or she will undoubtedly come to rely on a selection of publications found to be most useful. The reader should write directly to the address given for subscription information. Many of the publications must be purchased.

List of Publications

Government Sponsored Publications

Agricultural Prices

E.S.C.S. Publications
Room 0054 - South Building
U.S.D.A.
Washington, D.C. 20250

A monthly U.S.D.A. publication. Contents: average prices received by farmers, U.S. and by State; feed price ratios for livestock and poultry; farm supplies and farm input prices paid by farmers by State.

Agronomy Guide

Cooperative Extension Service
The Ohio State University
Room 3, Ag. Administration Building
2120 Fyffe Road
Columbus, Ohio 43210

An annual publication prepared by O.S.U. extension agronomists. Contents: provides recent research results on crop production and soil management. Includes recommendations on production practices such as fertilizer and lime requirements and weed control.

Ohio Agricultural Prices

Ohio Crop Reporting Service
Room 608, Federal Building
200 North High Street
Columbus, Ohio 43215

Issued monthly. Contents: reviews changes in prices of crop, livestock, and dairy products for the month as reflected by price indexes.

Ohio Agricultural Statistics

Ohio Crop Reporting Service
Room 608, Federal Building
200 North High Street
Columbus, Ohio 43215

An annual publication. Contents: comments on crop and livestock price and production situations for the year; distribution of crop and livestock production around the state; miscellaneous information relating to farm operations.

Ohio Crop Enterprise Budgets, 1981 and Ohio Livestock Enterprise Budgets, 1981

Department of Agricultural Economics and Rural Sociology
The Ohio State University
Room 103, Ag. Administration Building
2120 Fyffe Road
Columbus, Ohio 43210

Updated yearly. Separate publications are available for grains/forages and specialty crops. Contents: provide estimates of fixed and variable costs for specified enterprises at different levels of production. Useful for developing projected enterprise cash flows for a specific farming operation.

Soil Survey by County

Agricultural Stabilization and Conservation Service

Surveys may be obtained from the A.S.C.S. office located in each county. Contents: describes the soil types predominant in an area. Aerial maps aid in identifying soil conditions at a specific location in the county. Also discusses the capabilities of soils and offers soil management advice.

Magazines

AgriFinance

Century Communication, Inc.
5520 Touhy Avenue
Skokie, Illinois 60077

Written specifically for agricultural lenders and others involved in agricultural financial management.

Crops and Soils

Crops and Soils Magazine
Business and Editorial Office
677 South Segoe Road
Madison, Wisconsin 53711

Published by the American Society of Agronomy for the purpose of disseminating information on research findings in agronomy.

Farm Journal

Farm Journal, Inc.
230 West Washington
Philadelphia, Pennsylvania 19105

Monthly except semi-monthly January, February, March and bi-monthly June/July.

Contains information for families who own or operate farms/ranches. Special emphasis on marketing outlook, machinery, and specific enterprises. Several other magazines of this type are also available including: Successful Farming, Top Farmer, etc.

Hog Farm Management

Hog Farm Management
P.O. Box 67
Minneapolis, Minnesota 55440

A monthly magazine that provides news and reports on hog production and management techniques. Similar species specific magazines are available for beef, dairy, poultry, and just about every other type of domesticated livestock. A visit to the local library will reveal the value of the information presented and subscription information.

The Ohio Banker

The Ohio Banker
41 S. High Street
Columbus, Ohio 43215

Provides reports on activities of the association and current financial development of the banking industry. Also includes articles designed to improve the skills of bankers.

The Ohio Farmer

The Ohio Farmer
Circulation Office
2021 East Dublin-Granville Road
Suite 150
Columbus, Ohio 43229

A magazine (two issues each month except for June, July and September) that provides current information and outlook specifically for Ohio farmers.

Ohio Report

Ohio Agricultural Research and Development Center
Mailing Room
Wooster, Ohio 44691

A free bimonthly magazine that reports on recent research and development in agriculture, home economics and natural resources.

Weeds Today

Weeds Today Magazine
P.O. Box 11422
Greensboro, N.C. 27409

A monthly magazine that gives reports on recent research findings and other related information on herbicides and weed control.

Newsletters

Doane's Agricultural Report

Doane Agricultural Service
8900 Manchester Road
St. Louis, Missouri 63144

Weekly looseleaf inserts contain up-to-date market news and cultural practice suggestions.

Farmer's Newsletter

E.S.C.S. Publications
Room 0054 South Building
U.S.D.A.
Washington, D.C. 20250

A relatively new, free newsletter published monthly by commodity specialists in the U.S.D.A. Separate reports are issued for the major farm commodities and contain up-to-date production conditions and marketing information.

The Informed Marketer

Heinhold Commodities, Inc.
Farm Market Division
222 South Riverside Plaza
Chicago, Illinois 60606

A newsletter for hedgers and other commodity traders. Contains reports and outlook information for crop and livestock products.

Kiplinger's Agricultural Letter

Kiplinger Agricultural Letter
1729 H Street, N.W.
Washington, D.C. 20006

A newsletter designed to bring to attention the international and domestic political events which may affect agriculture.

Ohio Weekly Crop-Weather Summary

Ohio Crop Reporting Service
Room 608, Federal Building
200 North High Street
Columbus, Ohio 43215

Published weekly during periods of peak farming activity. Presents detailed information on precipitation and temperature, air and ground. Planting, growing, and harvesting progress is up-dated weekly. Summaries of field activities are also included.

The Soybean

American Soybean Association
P.O. Box 27300
St. Louis, Missouri 63141

A newsletter which highlights domestic and world market developments for soybeans and soybean products. Many other national commodity organizations also publish periodic newsletters.

Technical Market Letter

Conti Commodity (Continental Grain Company)
Conti Technical Research Center
5100 Poplar Avenue No. 3004
Memphis, Tennessee 38137

Written primarily for the professional commodity trader. However, much of the information presented would be useful for making hedging and other forward contracting decisions.

Top Farmer Intelligence

Top Farmers of America
225 East Michigan
Milwaukee, Wisconsin 53202

Presents reports on management of finances and marketing for larger farming operations.

Reference Manuals

Agricultural Credit Analysis Handbook

American Bankers Association
1120 Connecticut Avenue N.W.
Washington, D. C. 20036

A comprehensive self-development guide for new agricultural lenders. It would also be of value to an experienced credit officer entering agricultural lending from a non-agricultural area.

Exhibit 1

BALANCE SHEET
December 31, 1980

ASSETS			
Current Assets			
Cash	$ 4,125		
Corn 29,000 bu.@$3.25/bu.	94,250		
Soybeans 7,000 bu. @$7.00/bu.	49,000		
Wheat 8,400 bu. @$4.00/bu.	33,600		
Hay 3,500 bales @$65/ton	5,600		
Supplies	9,425		
Total		$196,000	
Intermediate Assets			
Livestock	$ 25,200		
Autos	7,500		
Machinery and Equipment	130,100		
Cooperative stock	15,200		
Total		178,000	
Fixed Assets			
Land - 420 acres @$1400/A.[3] (includes house and buildings)		588,000	
TOTAL ASSETS			$962,000
LIABILITIES AND OWNER's EQUITY			
Current Liabilities			
Operating Notes	$ 60,000		
Accounts Payable	26,000		
Total		$ 86,000	
Intermediate Liabilities			
Livestock Note	$ 13,000		
Machinery Notes	94,100		
P.C.A. Note	17,000		
Land Note (seven years	20,700		
Total		144,800	
Long-Term Liabilities			
Land Note (30 years)		149,000	
TOTAL LIABILITIES			$379,800
OWNER'S EQUITY			582,200
TOTAL LIABILITIES AND OWNER'S EQUITY			$962,000

Exhibit 2

INCOME STATEMENT
For Year Ending December 31, 1980

REVENUES			
Crop Sales		$341,600	
Livestock Sales		5,700	
Total			$347,300
EXPENSES			
Operating Expenses		$238,000	
Depreciation		27,650	
Total			$265,650
	Operating Profit		$81,650
OTHER INCOME			
Wife's Off-Farm Employment		$ 8,500	
Dividends and Interest		750	
Total			
	Total Income		$ 90,900
	Less Interest and Taxes on Land		62,700
	Income before Income Tax		28,200
	Income Tax (Est.)		4,600
	Net Profit		$ 23,600

Exhibit 3

OSU

Farm Management Extension

1980 CORN PRODUCTION BUDGET[1/]
(Conventional Tillage Practices)

ITEM	EXPLANATION	PRICE PER UNIT	Yield Level 90 bu.	120 bu.	150 bu.	YOUR BUDGET
RECEIPTS		$ 2.60/bu.	$234	$312	$390	$
VARIABLE COSTS						
Seed	22,000, 24,200, 26,400 kern.	$.70/1000 k.	$ 15	17	18	
Fertilizer[2/]						
N	80, 140, 200 lb.	.25/lb.	20	35	50	
P_2O_5	33, 44, 56 lb.	.22/lb.	7	10	12	
K_2O	52, 60, 68 lb.	.10/lb.	5	6	7	
Lime	1,000 lb.	10.00/T	5	5	5	
Chemicals						
Atrazine	2 lb. 80W	1.85/lb.	4	4	4	
Lasso	2 qt.	17.00/gal.	8	8	8	
Fuel, Oil & Grease			13	14	15	
Drying-Fuel & Electric Only	Dry 10 pts.	.08/bu.	7	10	12	
Trucking Fuel Only		.02/bu.	2	2	3	
Repairs			12	13	14	
Miscellaneous[3/]			10	11	12	
Interest on Oper. Cap. 7 mo.[4/]		12%	7	9	10	
Total Variable Costs			$115	$144	$170	
FIXED COSTS						
Labor Charge	4 hrs.	$ 4.50/hr.	$ 18	$ 18	$ 18	
Machinery & Equip. Charge[5/]			35	35	35	
Land Charge	Rent		40	70	100	
Management Charge	5% of Gross		12	16	20	
Total Fixed Costs			$105	$139	$173	
TOTAL COSTS			$220	$283	$343	
RETURN ABOVE VARIABLE COSTS			$119	$168	$220	
RETURN ABOVE TOTAL COSTS			$ 14	$ 29	$ 47	

1/ Does not include costs for storage of grain

2/ Assumes only maintenance application of fertilizer needed, continuous corn, 3.8% O.M., 20% C.E.C., and soil test values of 45 lbs. P/A. and 250# K/A.

3/ Includes supplies, utilities, soil tests, small tools, crop insurance, etc.

4/ Interest on all variable costs except drying and trucking.

5/ Estimated by adjusting 1978 OSU Farm Business Analysis for interest and inflation to reflect 1980 costs.

Exhibit 4

OSU
Farm Management Extension

1980 CORN PRODUCTION BUDGET[1/]
(Conventional Tillage Practices)

ITEM	EXPLANATION	PRICE PER UNIT	90 bu.	120 bu.	150 bu.	YOUR BUDGET
			Yield Level			
RECEIPTS		$3.00 ~~$ 2.60~~/bu.	$234	$360 ~~$312~~	$390	$ 360
VARIABLE COSTS						
Seed 22,000, 24,200, 26,400 kern.		$.70/1000 k.	$ 15	17	18	17
Fertilizer[2/]						
N	80, 140, 200 lb.	.30 ~~.25~~/lb.	20	42 ~~35~~	50	42
P_2O_5	33, 44, 56 lb.	.22/lb.	7	10	12	10
K_2O	52, 60, 68 lb.	.10/lb.	5	6	7	6
Lime	1,000 lb.	10.00/T	5	5	5	5
Chemicals						
Atrazine	2 lb. 80W	1.85/lb.	4	4	4	4
Lasso	2 qt.	17.00/gal.	8	8	8	8
Fuel, Oil & Grease			13	14	15	14
Drying-Fuel & Electric Only	Dry 10 pts.	.10 ~~.08~~/bu.	7	12 ~~10~~	12	12
Trucking Fuel Only		.02/bu.	2	2	3	2
Repairs			12	13	14	13
Miscellaneous[3/]			10	11	12	11
Interest on Oper. Cap. 7 mo.[4/]		20% ~~11~~	7	15 ~~9~~	10	15
Total Variable Costs			$115	$144	$170	$159
FIXED COSTS						
Labor Charge	4 hrs.	$ 4.50/hr.	$ 18	$ 18	$ 18	
Machinery & Equip. Charge[5/]			35	35	35	
Land Charge	Rent		40	70	100	
Management Charge	5% of Gross		12	16	20	
Total Fixed Costs			$105	$139	$173	$139
TOTAL COSTS			$220	$283	$343	$298
RETURN ABOVE VARIABLE COSTS			$119	$168	$220	$201
RETURN ABOVE TOTAL COSTS			$ 14	$ 29	$ 47	$62

1/ Does not include costs for storage of grain
2/ Assumes only maintenance application of fertilizer needed, continuous corn, 3.8% O.M., 20% C.E.C., and soil test values of 45 lbs. P/A. and 250# K/A.
3/ Includes supplies, utilities, soil tests, small tools, crop insurance, etc.
4/ Interest on all variable costs except drying and trucking.
5/ Estimated by adjusting 1978 OSU Farm Business Analysis for interest and inflation to reflect 1980 costs.

Exhibit 5
CASH BUDGET WORKSHEET

Enterprise	No. of Units		Cash Available Per Unit		Cash Available Total
Corn	400 A	x	$201/A	=	$80,400
Soybeans	300 A	x	100/A	=	30,000
Wheat	200 A.	x	40/A	=	8,000
Hay	30 A	x	90/A	=	2,700
Livestock	200 hd.	x	25/hd	=	5,000
		x		=	

CASH AVAILABLE - FARM		$126,100
ADD NONFARM & MISC. SOURCES	+	9,250
TOTAL CASH AVAILABLE		$135,350

Uses of Cash

Family Living	$ 20,500
Income Tax	4,600
Hired Labor	12,000
Insurance	2,400
Property Taxes	9,250
Capital Debt Payments (Princ. & Int.)	
Current Liabilities	26,000
Intermediate Liabilties	35,500
Land Note	11,500
Other Uses	
TOTAL	$121,750

Balance (Capital replacement, new capital, savings, new debt payments) $13,600