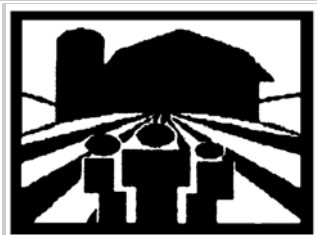


Virginia Cooperative Extension



Farm Business Management Update December 2007 – January 2008

To: Extension Unit Directors, Extension District Directors, Extension Program Directors, and Farm Management Agents, and ANR Specialists

Dear Co-Workers:

Farm Business Management Update is a joint effort of the Agricultural and Applied Economics faculty and the area farm management agents. Subject matter areas include timely information on farm management, marketing, tax management, finance, credit, labor, agricultural law, agri-business, estate planning, 4-H and economic education, natural resources, and CRD. Please use this information in your on-going Extension programs and circulate to all Extension staff. **Farm Business Management Update** is electronically accessible via the Virginia Cooperative Extension World Wide Web site (<http://www.ext.vt.edu/>). To see the articles listed in the reverse chronological order, select "News," then select "Farm Business Management Update" listed under the heading "Periodicals."

Gordon E. Groover
Extension Economist, Farm Management
and Farm Management Coordinator

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Karen Mundy to Retire

By Gordon Groover (xgrover@vt.edu), Extension Economist, Farm Management, Agricultural & Applied Economics, Virginia Tech

Karen Mundy will retire in January 2008 and move to Hawaii – a tough job, but someone has to do it! She has ridden herd over the English language for many of us (mostly me), keeping our words in line, our participles from dangling, and cutting out jargon to make our points clear to our readers. She provided the day-to-day management of the Rural Economic Analysis Program (REAP) to publish, coordinate, and edit the Horizons newsletter and research and policy publications. She was also instrumental in developing a number of educational displays for REAP and for extension. She has helped me edit this newsletter since 1995.

Karen, best of luck and thanks for all the help over the years.

Is Irrigation Profitable in an Era of Higher Corn Prices?

Eric Eberly (eeberly@vt.edu), Extension Agent, Farm Business Management, Central District

Irrigation allows producers to sustain their crops during dry periods of weather. It can be viewed as a type of insurance policy by growers by reducing yield swings from year to year, and by ensuring that a crop is unlikely to be completely lost to a drought. In order for irrigation to be profitable, it is essential that the benefits in crop production are large enough to offset the added costs.

This study of irrigation costs applies to corn, but it could easily be applied to any crop that can be irrigated by overhead irrigation systems. It is based on the use of a traveling irrigation reel, paired with a diesel engine and pump to supply water from creeks or ponds. This study is based on a traveling irrigation reel with 4.1' diameter, 1250' long hose supplying one inch of water per acre per hour supplied by 1320' of 6 inch lock-ring pipe to reach water supplies.

A full pull of the reel can cover 10 acres in about 9.7 hours, but an average day in Southern Virginia would more likely consist of two smaller pulls, of about six hours each, covering roughly six acres each. Covering 12 acres a day for six days allows a producer to cover 72 acres in a week. This six day irrigation period would require 1 foot of water depth of a 6 acre pond or almost 2 million gallons of water. In a worst case scenario, four of these irrigation cycles spread throughout the peak growing periods may be required to sustain a crop through severe drought conditions.

Total fixed costs for this irrigation system are \$60,567 (Table 1), which is equal to \$841 per acre when 72 acres are covered. Running 5 days a week, as opposed to six days figured above, would limit a producer to covering about 60 acres, thereby increasing investment costs per acre to \$1009. However, running seven days a week would allow the producer to cover approximately 84 acres with the same machinery, thereby lowering investment costs per acre to \$721.

Table 1. Total Fixed Costs (All number in \$)			
Item	Costs	Cost per acre (7 Day Cycle)	Cost per Acre (14 Day Cycle)
Traveling irrigation reel	35,500	493	247
Pump and engine	16,800	233	117
Water suction assembly	1,007	14	7
1320' ft of 6 inch lock-ring pipe	7,260	101	50
Total	\$ 60,567	\$ 841	\$ 421

Another alternative to reduce fixed costs is to extend the irrigation cycle to 14 days reducing the investment cost by half to \$421. Critical water needs of crops could be spread over a longer period of time by using varieties with different maturities and multiple planting dates. This 14 day cycle will not meet all of the water needs all the time resulting in a reduced yield on 18 percent (52 out of 290) of the observations.

It should be noted that these investment costs could vary considerably depending on the brand of machinery purchased, the size and model of the machinery, and the number of options added to the irrigation system. It is also important to note that the investment cost is figured on the assumption that the irrigation system's water supply (in the form of a creek or pond) is already established and accessible. Building irrigation ponds will increase investment costs significantly.

Annual fixed costs of the system are presented in Table 2. For simplicity, costs are not discounted so a dollars in year 18 have the same value as they do in year one. Depreciation is figured on the useful life of the irrigation system components, considering a salvage value of 20% of the original value can be obtained at the end of the useful life. All of the components are estimated to have an average life span of 5,000 hours. The irrigation equipment will have a useful life span of 18 years if a producer averages 288 hours of use per year on this system. Insurance costs were figured at 0.8% of the total initial investment costs. Interest on the system was figured at an 8% rate using the system's average value through its life span, for an interest cost of \$2,423 per year.

Table 2. Annual Fixed Costs				
			Cost per Acre	
Item	Useful Life	Annual Cost	7-Day Cycle	14-Day Cycle
Traveling irrigation reel	18	1577.78	21.91	10.96
Pump and engine	18	746.67	10.37	5.19
Water suction assembly	18	44.76	.62	.31
1320' ft of 6 inch lock-ring pipe	18	322.67	4.48	2.24
Insurance		484.54	6.73	3.36
Interest		2725.52	33.65	16.82
Total Fixed Costs		\$ 5599.08	\$ 77.76	\$ 38.88

Variable costs (Table 3) of fuel, labor, tractor use and repairs for one year are \$8,074.11 or \$28.03 per acre inch based on 288 hours of annual usage. Limiting irrigation to two applications cycles per year, the system could cover 144 acres at a cost of \$56.06 per acre. Keep in mind, however, that up to four irrigation cycles could be required in a very dry year resulting in variable costs of \$112.12 per acre.

Table 3. Variable Costs			
Items	288 Hours	72 Acres	144 Acres
Fuel	4061.92	56.40	28.20
Labor	1728.00	24.00	12.00
Tractor Use	1375.68	19.12	9.56
Repairs	908.51	12.60	6.30
Total	\$ 8074.11		
Cost per Application	\$ 28.03		
Cost per Acre		\$ 112.12	\$ 56.06

Weekly labor costs, as described above, would require two people working 3 hours per day, six days a week, at \$12.00 an hour. This would mainly involve moving the reel system in between pulls, laying the aluminum pipe needed to reach the water source, and ensuring that the diesel engine is fueled. Fuel costs for the diesel engine and pump are calculated using fuel

consumption of 4.9 gallons per hour at \$3.00 gallon, running 12 hours per day, and six days per week. Tractor use for moving the reel and pump from one pull to the next is figured at \$29 per hour, 2 hours per day, and six days per week. Total repair cost of \$908.51 per season is calculated to be 1.5% of the initial investment costs.

The variable cost of irrigation per bushel is calculated by dividing the cost of irrigation by the increased yield. Table 4 shows the variable cost of irrigation per bushel with varying yield increases and number of irrigation applications. To simplify calculations, it is assumed that the system operates for 288 hours annually with no adjustments made for actual equipment usage. The \$28.03 operating cost per application becomes a constant in all tables that follow this text.

Table 4. Price Needed to Cover the Variable Cost of Irrigation Applications					
	Yield Increase (Bushels per Acre)				
	10	30	50	70	90
Number of Irrigation Applications	Price per Bushel				
1	2.80	.93	.56	.40	.31
2	5.61	1.87	1.12	.80	.62
3	8.41	2.80	1.68	1.20	.93
4	11.21	3.74	2.24	1.60	1.25

Irrigated corn requires additional fertilizer inputs to cover the increased production over non-irrigated corn. Based on the 2008 Virginia Crop Production Budgets, the marginal cost of an additional bushel of corn is \$1.29, which includes increased costs of fertilizer and hauling. Tables 5 and 6 show the breakeven price of corn needed to cover irrigation cost and marginal production costs based on increased yields over a non-irrigated crop. The breakeven price is calculated by multiplying the increased production times the marginal cost of production plus the irrigation cost (Table 4) and then dividing the total by the increased yield.

Table 5. Breakeven Corn Price Needed to Cover the Irrigation and Marginal Production Costs					
	Yield Increase (Bushels per Acre)				
	10	30	50	70	90
Number of Irrigation Applications	Breakeven Corn Price				
1	4.09	2.22	1.85	1.69	1.60
2	6.90	3.16	2.41	2.09	1.91
3	9.70	4.09	2.97	2.49	2.22
4	12.50	5.03	3.53	2.89	2.54

Table 6 shows the breakeven corn price needed to cover both fixed and variable costs of irrigation when the system is designed to keep the corn crop out of moisture stress. The system would meet all irrigation needs on 72 acres. Breakeven corn prices range from \$20 per bushel with a low yield response to four irrigations but could decline to as little as \$2.15 per bushel in years where no irrigation is required and the corn is fertilized for maximum production of 90 additional bushels of corn. In years where no irrigation is required, the corn crop must still pay fixed costs of 77.76 per acre. If irrigated corn has a 50 bushel average yield increase over non-irrigated corn, then the system as designed would cost from \$2.85 to \$5.09 per bushel depending on the number of irrigations required in a season.

Table 6. Corn Price Needed to Cover the Fixed and Variable Cost of Irrigation (72 Acres)					
	Yield Increase (Bushels per Acre)				
	10	30	50	70	90
Number of Irrigation Applications	Breakeven Corn Price				
0	9.07	3.88	2.85	2.40	2.15
1	11.87	4.82	3.41	2.80	2.47
2	14.67	5.75	3.97	3.20	2.78
3	17.48	6.69	4.53	3.60	3.09
4	20.28	7.62	5.09	4.00	3.40

Table 7 shows the breakeven corn price to cover both fixed and variable cost of irrigation when the system is designed for maximize economic yield response. A maximum of two irrigations could be applied to 144 acres over a 14 day period. In years where no irrigation is required, the corn crop must still pay fixed costs of \$38.88 per acre. If irrigated corn has a 50 bushel average yield increase over non-irrigated corn, then the system as designed would cost from \$2.07 to \$3.19 per bushel depending on the number of irrigations required in a season.

Table 7. Corn Price Needed to Cover the Fixed and Variable Cost of Irrigation (144 Acres)					
	Yield Increase (Bushels per Acre)				
	10	30	50	70	90
Number of Irrigation Applications	Breakeven Corn Price				
0	5.18	2.59	2.07	1.85	1.72
1	7.98	3.52	2.63	2.25	2.03
2	10.78	4.45	3.19	2.65	2.34

Irrigation can be a powerful management tool if used properly and efficiently. This study shows that it takes an increase of 40 to 65 bushels of corn per acre at \$3.00 per bushel to justify irrigation on corn. The traveling irrigation reel would be a good system to use, assuming that there is a good supply of water and that a producer can be assured of at least some yield increase from irrigation. However, if steps must be taken to acquire a water supply, the cost and benefits will be greatly affected. A lack of water is one of the most common constraints for corn producers when it comes to irrigation decisions.

Considerations:

1. Will a producer have the time, resources, and management to operate the system effectively?
2. What is the yield increase that can be expected from irrigation? Is the yield increase enough to offset the cost of increased production and irrigation?
3. How will additional irrigation costs affect a producer's cash flow? Can a producer afford to pay for the investment in the irrigation equipment?
4. Will a producer have the water resources necessary to irrigate?

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The Management Calendar

By Gordon Groover (xgrover@vt.edu), Extension Economist, Farm Management, Agricultural & Applied Economics, Virginia Tech

Farm business managers should consider putting the following activities on their management calendar for December and January.

- Before the end of the year (calendar tax year filers), follow up on end-of-year tax management strategies recommended by your tax advisor. Additional information can be found in IRS publication 225 Farmer's Tax Guide at <http://www.irs.gov/pub/irs-pdf/p225.pdf>. Hard copies of Farmer's Tax Guide can be obtained from your local extension office or many of your public libraries.
- Begin closing out the farm books by collecting information for the farm net worth statement. Around the first of the year when you need to walk off all that holiday food, take a notepad or try out the new digital camera and walk around the farm. Record the number and approximate value of all the farm assets (cattle, tractors, machinery, buildings, inventories of grains and feedstuffs, chemicals, etc.) that can be organized on the asset side of the balance sheet. Be sure to save the notes recording or, better yet, place the notes recording in a safe location (safety deposit box or fireproof box) for possible insurance claims. Review your end-of-year bank statements or contact your lender for current listings for all personal and business liabilities.
- If you are using cash accounting methods for tax purposes (computerized business records or hand kept), you need to make sure your actual records match the deposit and check dates for all claimed income and expenses. A quick check of the records will help address any problems that might arise at tax time.
- Plan to get all tax records summarized and to your tax advisor by February 1, 2007, and check with your Virginia Cooperative Extension's farm business management agent on farm-related changes in state and federal taxes. A listing of Virginia tax credits can be found at the following site: <http://www.tax.virginia.gov/site.cfm?alias=TaxCredit>. Make sure that your tax advisor is aware of these credits. An abbreviated list of credits for agriculture and forestry are listed below.
 - Agricultural Best Management Practices Credit
 - Conservation Tillage Equipment Credit
 - Fertilizer and Pesticide Application Equipment Credit
 - Land Preservation Tax Credit

- Riparian Waterway Buffer Credit
- Using 2007 financial and production records develop projected budgets, cash flow, and income statements for 2008. If you are using Quicken or QuickBooks, use the automated feature to create a budget based on last year as a starting place to create a detailed budget to reflect your expected costs and returns for 2008. If you are using the Virginia Cooperative Extension “Farm Record Book: Expenses and Receipts,” the back pages provide the forms to summarize all your financial data.
- Depending on the type of farm, begin working on a marketing plan for 2008 by collecting information on prices and world market situations. Be sure to check with your local Farm Service Agency for changes in government programs and sign-up deadlines. Contact information for your local FSA office can be found at <http://offices.sc.egov.usda.gov/locator/app?state=us&agency=fsa>
- Keep up-to-date on release of economic, crop conditions and estimates, world agricultural situation and outlook, and many other USDA reports by looking at the USDA report calendar at <http://www.usda.gov/news/releases/rptcal/calindex.htm>.
- Check on crop insurance policies by visiting the Risk Management Agency website at <http://www.rma.usda.gov/> to find an agent and view the multitude of policies that are available in your area.
- Close out and summarize livestock and/or crop records for 2007, noting problems that must be addressed when making cropping, feeding, and breeding decisions during 2008. Compare 2007 records to previous years looking for strengths and weaknesses.
- Review 2007's crop, hay, and livestock records for labor problems, bottlenecks, and down times. Include all employees in spotting and planning to correct labor bottlenecks. Draw up a labor flow chart listing estimated times and identify employees who will be responsible for major tasks.
- Schedule regular meetings with all workers and family members to discuss work activities as you gear up for the spring push. Make sure all workers feel free to suggest ways to improve efficiency. Think about creating an employee handbook for important information on pesticide safety, farm bio-security, and safe operations of machinery and equipment.

Selective information that might be useful to farmers and their advisors:

- The Virginia's Use Value Assessment Program web site has been updated for Tax Year 2008 (TY) (<http://usevalue.agecon.vt.edu/>). There are two new documents on agricultural and horticultural use value taxation methods posted on our site: 1) [Why Use-value Estimates Differ: Comparing Halifax and Pittsylvania Counties](#), and 2) [Methods and Procedures: Determining the Use Value of Agricultural and Horticultural Land in Virginia](#). This site provides individuals with details, a summary, and many links to information about Virginia's land use taxation program.
- Want to know how to describe a “family farm?” Take a look at the USDA-ERS - Economic Information Bulletin Number 24 titled “Structure and Finances of U.S. Farms Family Farm Report,” By Robert A. Hoppe, Penni Korb, Erik J. O'Donoghue, and David E. Banker. June 2007. There is a wealth on information describing how farms have changed and the implications for the future. The publication can be found at <http://www.ers.usda.gov/publications/eib24/eib24.pdf>.

Income Tax Rules for Weather Related Sales of Livestock

Bill Whittle (wwhittle@vt.edu), Extension Agent, Farm Business Management, Page County

Weather often raise havoc with the income stream on a farm. This year's drought is no exception as livestock farmers wrestle with short feed supplies coupled with substantial increases in feed costs. A common response is to reduce herd size by selling more livestock than in a normal year. However, this has the potential of creating dramatically higher taxable income. To assist farmers with leveling such taxable income spikes, the federal tax code has two provisions (elections) that address the issue of increased income when forced to sell more livestock than normal because of a weather related situation.

Though the provisions are similar in that gain (income) on excess sales is postponed to a future year, these elections are also very different in the length of postponement, the classes of livestock involved, and the information required. The first election, IRC 1033(e) or involuntary conversion, applies to the sale of breeding, dairy, and draft animals if the livestock are sold because of weather-related conditions. This provision allows the farmer to postpone recognizing 2007 gain from animals sold in excess of normal annual sales or if the farmer purchases replacement livestock within two years from the end of the tax year in which the sale occurs. If the locality receives a federal disaster designation, the deferment time is extended to four years, and may be further extended if adverse weather conditions continue for more than three years. Replacing the livestock generally requires purchasing like-kind livestock; beef cows for beef cows and dairy for dairy. However, if the weather conditions that created the involuntary conversion make replacing the livestock infeasible, then the livestock can be replaced with any property used in the farming business.

For all postponed gain, the purchase cost of each replacement animal must equal or exceed the gain from the drought-forced sale. If replacements cost less than the postponed gain, the excess gain is included as income for the year of replacement. If you choose not to replace the animals, then you must file an amended return and report the income for 2007.

Record keeping is a must for proper tax management, and IRC 1033(e) requires that specific information be included when you file taxes for the sale year, including evidence that weather conditions forced the sale of livestock. However, federal drought designation is not required. Other required information includes the amount of gain realized on the sale, and the number and kind of livestock normally sold. When livestock are replaced under IRC 1033(e) the records required for filing include the date of purchase of replacements, and cost, number, and kind of replacement livestock or property. The basis in the replacement livestock will equal the basis in the livestock sold plus any amount invested in the replacement livestock that exceeds the proceeds from the sale.

The second election, IRC 451(e), is for farmers in areas that receive a federal weather related disaster designation and applies to the sale of any animals in excess of normal sales. IRC 451(e) does not require replacing animals, but allows you to defer income from the sale of animals in excess of what is normally sold for one year. Requirements for using IRC 451(e) include: 1) farming must be the principal business; 2) the cash method of accounting is used; 3) the excess

livestock sold would normally be sold in the following year; and 4) the weather-related conditions that caused an area to be declared eligible for federal assistance must have caused the sale of livestock.

A final component of both provisions is that it is not necessary that the livestock be raised or sold in the declared disaster area but just that the weather related conditions caused the sale. The sale can take place before or after an area is declared eligible for federal assistance as long as the same weather-related conditions caused the sale.

These tax management elections can prevent a large increase in taxable income due to sales forced by this year's drought. It is important to discuss your situation with your tax preparer prior to the tax deadlines so that you can take advantage of these provisions, if applicable.

Managing the Dairy with Financial Records

Bill Whittle (wwhittle@vt.edu), Extension Agent, Farm Business Management, Page County

The Farm Business Management staff of Virginia Cooperative Extension has partnered with Farm Credit to provide dairy farmers with financial management tools useful for financial decision making. This program, Dairy Management Institute (DMI), has completed its seventh year with 40 dairies participating. DMI has three goals. They are to provide participating farmers with 1) a year-to-year comparison of their farm's financial status; 2) a within-year comparison of income and expenses to the DMI class average; and 3) to provide all Virginia dairy farms with financial benchmarks against which their financial health can be measured.

DMI uses readily accessible financial data derived from Schedule F, summary of milk checks, and farm records to provide a snapshot of the farm's income and expense picture. The records of participating farms are aggregated and analyzed to provide a set of benchmarks for Virginia dairies access the financial health of their business. Benchmarks are averages which allow a dairy to judge progress or lack of progress against the average. Benchmarks are management tools, not definitive numbers. One dairy may have high labor costs while the next uses only family labor that does not require a typical paycheck. Another dairy may have high purchased feed expenses but low fertilizer, chemical and other expenses associated with growing feed. If your farm's records don't match a benchmark, it does not necessarily mean there is a problem. It does mean that there is a difference and, as the manager, you should determine if the difference is actually an indicator of a problem or just of different management objectives and outcomes.

Aggregated records paint a picture of an "average" Valley dairy farm. In Tax Year 2006, the average DMI herd consisted of 134 cows selling 19,869 pounds of milk per cow at an average price of \$14.82 per hundredweight. \$14.82 is \$1.54 less than the average received in TY 2005 and \$2.00 less than the TY 2004 price. As you can see, milk price fluctuates dramatically.

Table 1 provides a list of the top five and top 10 expenses for Valley dairy farms for Tax Year 2006. The top five expenses for the average farm were 66.0% of the Cash Operating Expenses, and Purchased Feed alone accounted for \$4.38 of the \$14.82 per hundredweight received for

milk. The top five expenses are scrutinized because any opportunity to affect the farm's bottom line comes from reducing major expenditures rather than dealing with fringe expenses. A minor percentage reduction in purchased feed can make a substantial reduction in overall expense as opposed to eliminating a minor expense such as office supplies or DHIA costs.

The aggregate Total Cash Income per cow in TY 2006 was \$3,494, down \$284 from 2005, while the aggregate for Cash Operating Expenses per cow (not including Interest and Depreciation) was \$2,910, up \$291 from 2005. The average Valley dairy farmer was left with \$584 per cow to pay debt, cover family living expenses and make improvements to the farm. In TY 2005, this amount was \$1,159. These less-than-rosy numbers are not meant to discourage producers, but to stress the importance of knowing your financial picture. A good year can quickly be wiped out if the volatile milk price drops.

Milk price volatility will continue and the successful dairy will manage both income volatility and expenses. Financial benchmarks become a management tool when a dairy can compile its information in a format and compare its progress. Maintaining DMI records over years allows a dairy to judge its progress and adds credence to management decisions. Dairies interested in the DMI can contact Tom Stanley in the Augusta County Extension Office, or Bill Whittle in the Page County Extension Office.

Table 1. Top 10 Expenses as a Percent of Cash Operating Expenses for DMI Dairies 2006 Tax Year			
(Interest and Depreciation are not included) Labor Expense was adjusted to account for Management and unpaid family labor by adding \$30,000 to reported labor expenses.			
	Rank	% of Total Cash Expenses	\$/ CWT of Average Price of Milk
Purchased Feed	1	29.9%	\$4.38
Hired Labor	2	17.8%	\$2.61
Milk Marketing & Haul	3	6.8%	\$1.00
Repairs	4	6.3%	\$0.92
Fertilizer, Lime & Chemicals	5	5.2%	\$0.76
Gas Fuel & Oil	6	4.7%	\$0.69
Supplies	7	4.6%	\$0.67
Veterinary & Medical	8	3.5%	\$0.51
Custom Hire	9	3.0%	0.44
Seeds & Plants	10	2.6%	\$0.38
Total of Top 5 Expenses		66.0%	\$9.67

Financial Analysis of an Agricultural Business – Liquidity & Solvency

By Alex White (axwhite@vt.edu), Instructor, Agricultural Finance and Small Business, Agricultural & Applied Economics, Virginia Tech

A manager needs to take a broad view to critically analyze a business. Far too often managers and lenders focus on just one area of the business rather than looking at the entire picture. From

a financial analysis standpoint there are 4 main areas that should be considered: Liquidity & Solvency, Repayment Ability, Profitability, and Financial Efficiency. This issue focuses on Liquidity and Solvency. We'll cover the remaining areas in the upcoming issues.

Liquidity and Solvency – you've probably heard these terms in your lender's office, but a significant portion of business owners don't really understand what they mean. So today we will discuss what liquidity and solvency mean, how you measure them, and what to do if you're having troubles in these areas.

Liquidity

Liquidity is a measure of how easily a business can meet its upcoming short-term debts with its current assets without disrupting the normal operation of the business. Or, in everyday words, does the business have enough liquid assets to cover any debts or upcoming payments within the next year. Do not confuse liquidity with "cash flow." Cash flow measures your cash surplus (or deficit) during each period whereas liquidity just looks at your current (or liquid) assets and your current liabilities at one point in time. A business may have poor liquidity but strong cash flow. Conversely, a business may have strong liquidity and poor cash flow – but not for long.

The most common measure of liquidity is the current ratio. The current ratio is calculated by dividing your total current assets by your total current liabilities (from your balance sheet). Liquid assets would be most of the assets you have listed under the current assets section of your balance sheet – cash, savings, inventory held for sale, and accounts receivable. Current liabilities include principal due and accrued interest on term debts, operating loan balances, and any other accrued expense.

For example if your current assets are \$10,000 and your current liabilities are \$8,000, then your current ratio would be 1.25 ($\$10,000 / \$8,000$). We interpret this ratio as follows: you have \$1.25 of current assets (cash, savings, etc.) for every \$1.00 of obligations (loan payments, accounts payable, etc.) you owe within the upcoming year.

Benchmarks for the current ratio vary, depending on the industry. For agriculture I usually like to see a current ratio between 1.5 and 3.0. In other words, I like to see an agribusiness have at least \$1.50 in current assets for every \$1.00 of current liabilities. Personally, I do not like to see this ratio go above 3.0 – this tells me that the firm may have too much of their assets in liquid, non-earning assets, and this can hurt your profitability. For example, assume that I have a large percentage of my assets in cash and savings. While my liquidity is strong, I should realize that cash and savings accounts do not earn a substantial rate of return – maybe my operation would be more profitable if I used some of those liquid assets in a more productive manner.

What can I do if I have poor (low) liquidity? There are two general ways to improve your liquidity – increase your current assets or decrease your current liabilities. Looking deeper into these options, we can find several practical methods of improving our liquidity. To increase our current assets, we can:

- Sell unneeded non-current assets and keep the proceeds in savings or use them to pay down your current liabilities
- Improve on production efficiency to lower your operating expenses (without hurting quality!) – then keep the margin in your savings
- Build up your inventories (as needed). This can provide a cushion in case of bad times. Or you might be able to sell the unneeded inventory and use the proceeds to reduce some current liabilities
- Build your savings. Lower your expenditures, rein in your capital purchases, and use any excess cash to increase your savings accounts.

To lower your current liabilities:

- Use excess cash to pay down your accounts payable, operating loan balances or to prep-pay your term debts
- Refinance your term debt over a longer term or at lower interest rates. Either method can reduce your annual term debt payments

A firm can survive and thrive with poor liquidity – but the management will have to be on their toes. To overcome poor liquidity in the short term, the firm must have strong cash flow and/or access to operating funds for emergencies. For the long term (“chronic” poor liquidity) the firm must have strong profitability and/or strong solvency.

Solvency

Solvency is a measure of whether the business can cover its total debts with its asset base. This is a longer-run measure than liquidity. With solvency we are concerned with all debts, not just the current obligations. When a firm is “insolvent,” it has more debts than it has in assets – not a good position!

The main measures of solvency are “Owner’s Equity” (aka “Net Worth”) and the debt/asset ratio. Just like liquidity, all of the information we need to calculate solvency comes from the balance sheet.

Owner’s equity is a measure of how much capital an owner has invested in the business over time. Obviously, we like to see an owner’s equity that is greater than zero, and typically, the higher it grows over time, the better financial condition of the firm. To calculate owner’s equity, simply subtract total liabilities from total assets. For example, assume my total assets are worth \$500,000 and my total liabilities are \$200,000. My owner’s equity would be \$300,000 (\$500,000 - \$200,000). That indicates that over time I have contributed approximately \$300,000 in assets and/or retained earnings from the business’ operations. It’s greater than zero, so I should be relatively happy with my solvency.

To explore solvency a little deeper, we use the debt/asset ratio. The debt/asset ratio is calculated by dividing total liabilities by total assets. From the above example, my debt/asset ratio would be 40% (\$200,000 / \$500,000). This measure helps us compare our solvency to similar operations.

I like to see the debt/asset ratio for an agricultural firm to be less than 60 percent. This means that for every \$1 of assets the firm has borrowed \$0.60. Another way to look at this ratio is that your creditors own 60 percent of your assets! Anything over 60 percent indicates a significant level of financial risk. It also puts tremendous pressure on the business' cash flow –the more you borrow, the higher your periodic loan payments....

How do I overcome a poor solvency measure? Well, this isn't quite as straightforward as improving your liquidity. First of all, a new operation will be expected to have low solvency – that's only natural. You can overcome this with hard work, strong cash flow, and solid profitability over time. In general terms, to improve solvency you will need to increase your asset base without increasing your liabilities. Here are a couple of methods:

- Sell unneeded assets and use the proceeds to pay down your debts
- Take good care of your assets (preventative maintenance) so they will hold their value longer
- Reinvest profits back into the operation – be sure to invest in productive, profitable assets, though!!
- Find outside investors for your business -- If you are a c-corporation you might sell additional shares of stock, etc.
- Don't take on additional debt if you can possibly help it.

So What?

Who really cares about liquidity and solvency anyway? Honestly, I don't see liquidity or solvency being the most important areas of financial analysis for a business manager. I think that cash flow, financial efficiency, repayment ability and profitability are much more important in the day-to-day management of a business. But that doesn't mean that you can ignore liquidity and solvency – they are important when looking at the overall financial condition of an agribusiness.

Many lenders are concerned about a business' liquidity and solvency, and rightly so – especially for large operations and capital-intensive operations. Chances are that your lenders will look closely at the liquidity and solvency when you are applying for a loan. If these areas are weak spots for your business I would recommend that you develop 3-4 plans for improving or overcoming your condition BEFORE you meet with your lender. Be able to answer the lender's questions with sound, reasonable alternatives – that means you need to understand liquidity and solvency!!

In future articles we will discuss repayment ability, financial efficiency, and profitability – more key areas that a good manager should be able to comprehend and use to improve a business.

Calendar of Events

December

- 10 – 11 Income Tax Seminar. Richmond II. Ethics session \$20 extra. On-line registration available through December 3, 2007. Contact: Income Tax School Registrar by phone at (540) 231-5182, or by e-mail at vttax@vt.edu.
- 17 – 18 Income Tax Seminar. Reston. Ethics session \$20 extra. On-line registration available through October 29, 2007. No farm session available for this location. Contact: Income Tax School Registrar by phone at (540) 231-5182, or by e-mail at vttax@vt.edu.

January

- 3 Introductory Tax Seminars. Roanoke. Virginia Tech Roanoke Center. On-line registration available through December 26, 2007. Contact: Income Tax School Registrar by phone at (540) 231-5182, or by e-mail at vttax@vt.edu.
- 4 Introductory Tax Seminars. Falls Church. Virginia Tech Falls Church Center. On-line registration available through December 26, 2007. Contact: Income Tax School Registrar by phone at (540) 231-5182, or by e-mail at vttax@vt.edu.
- 7 Introductory Tax Seminars. Richmond. Virginia Tech Richmond Center. On-line registration available through December 31, 2007. Contact: Income Tax School Registrar by phone at (540) 231-5182, or by e-mail at vttax@vt.edu.
- 8 Introductory Tax Seminars. Hampton Roads. Virginia Tech Hampton Roads Center. On-line registration available through December 31, 2007. Contact: Income Tax School Registrar by phone at (540) 231-5182, or by e-mail at vttax@vt.edu.