

PURDUE AGRICULTURAL ECONOMICS REPORT

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The Producer Protection Act - Will It Protect Producers?

*Michael Boehlje, Professor; Lee Schrader, Professor Emeritus; Chris Hurt, Professor;
Ken Foster, Professor; and James Pritchett, Assistant Professor*

Iowa Attorney General Tom Miller and 16 state Attorneys General have proposed new laws to protect contract growers and producers. By contract growers, we refer to the growing number of farmers and ranches who produce live-stock or grain on a contract with large contractor companies or other farmers. Former Indiana Attorney General Karen Freeman-Wilson was one of the cosponsors of the model Producer Protection Act. Senator Thomas Harkin of Iowa has proposed similar legislation in the U.S. Senate.

Miller and the Farm Division of his office led the multi-state project drafting the model legislation, which is designed to be introduced in individual state legislatures. Several of the measures are based on laws that recently were adopted in Iowa – banning confidentiality clauses in contracts, for example, and giving farmers a first-priority lien for payments in case a contractor company goes out of business.

In a joint statement accompanying the model Producer Protection Act, Miller and the 16 state Attorneys General said the legislation would “help preserve competition in agriculture for the benefit of farmers and consumers.”

The Attorneys General cited their concern about “the rapid trend toward consolidation in agriculture” and about the fact that fewer firms

control the production, processing, preparation, and retailing of agricultural commodities and food. The rapid rise of production contracts and marketing contracts is a trend that has dramatically increased vertical coordination in U.S. agriculture. This change is most noticeable in the pork and poultry industries.



Attorney General Miller said: “In production contracting, we worry about the great disparity in bargaining power and marketing information between the contractor companies and individual producers. Large companies often offer contracts to producers on a take-it-or-leave-it basis. Risks to producers are buried in pages of legalese, and producers easily can be stuck with unfair contract terms. On top of that, they may be barred from disclosing any of the terms to others.”

The Attorneys General said contracting often results in unfair shifting of economic risk to farmers and ranchers, especially those who are required to make large capital investments in buildings and equipment.

The model state legislation Producer Protection Act contains at least five key provisions:

1. Requires contracts to be in plain language and contain disclosure of material risks.
2. Provides contract producers with a three-day cancellation period to review production contracts and allow them to discuss contracts with advisors.
3. Provides producers with a first-priority lien for payments due under a contract in case the contractor company should go out of business.
4. Protects producers from having contracts terminated capriciously or as a form of retribution if

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farmers already have made a sizeable capital investment required by the contracts.

- Prohibits tournament contracts whereby grower compensation is determined in part by performance compared to other growers.

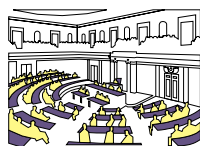
Some Important Questions

The dialogue concerning the advantages and disadvantages of contract production and the proposed Producer Protection Act raises a number of questions that merit discussion and investigation. The article identifies some of the important issues raised by this proposed legislation in the spirit of furthering that dialogue. We are not here criticizing or supporting this proposed legislation; rather, our goal is to further the discussion and debate on this important public policy issue.

General Issues

A key general issue that must be considered in assessing this or similar legislation is the intended impact, and whether there may be unintended consequences. It would appear that the intended impact of the Producer Protection Act is to

reduce the potential for exploitation of producers by processors and packers in contractual arrangements, and to foster continuation of a relatively independent (although aligned through contracts and other arms-length business arrangements) agricultural sector. A key concern is whether the rules imposed by the Producer Protection Act may be sufficiently restrictive with respect to contracting and similar arrangements that the unintended consequence and end result would not be to maintain a relatively independent agricultural structure, but instead to encourage vertical integration through ownership of production facilities by processors and packers. For example, in the early 1990s the state of Missouri enacted tough anti-corporate farming legislation. In a few short years afterward, the independent pork industry declined significantly and was ultimately replaced by the vertically integrated Premium Standard Farms company and other contract production systems.



A second general issue that must be considered in any legislation concerning the provisions surrounding contracting is that it is virtually impossible to write a long-term contract that will meet all contingencies. Because of this, contracts must be flexible and based on trust. In fact, the major goals of public policy in the area of contracting should probably be:

- to facilitate informed decision making by both parties to a contract, and
- to encourage an environment of trust and confidence in contracting arrangements.

These goals are likely to be more achievable than a goal of specifying the full set of conditions and contingencies that must be included and considered in the specification of a complete contract. In essence, determining a set of rules that the public

will enforce for the specification of a complete contract is almost surely doomed to failure.

A third general issue in the discussion of the Producer Protection Act or similar legislation is what provisions or protections are already available in current law, and what new provisions are needed that are not part of current law. This issue is particularly important as one considers whether producers entering contracts need unique protections compared to other parties entering a contract, or whether they need to be better informed about the protections already provided by current contract law.

A fourth general issue relates to the long term location of the world's livestock industries. Greater regulation on a state (or even multi-state) level is likely to shift production away from that state (or states) in the longer run. Binding regulation at the federal level could result in a movement of an industry to Canada, Latin America, Asia, and Australia. Are the benefits of contract regulation worth the risk of losing the economic and employment benefits of these industries?

Specific Issues

Specific issues that must be considered relate to the key provisions of the Producer Protection Act noted earlier. They include the following:

- What are the benefits of the provisions requiring plain language and a description of risk? What are the costs that this will impose? Will there be a standardization of terms in all contracts? Will disclosure include layman discussion of compensation technique and method? If the best advice is to have a contract reviewed by an attorney, or accountant, should there be a requirement or certification that has occurred as part of the contract or should all production contracts be scrutinized by a state Attorney General's staff? What are the benefits compared to the costs of full disclosure?

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Editor

Gerald A. Harrison
E-mail: harrison@agecon.purdue.edu
Phone: 765-494-4216 or
toll free 1-888-398-4636

Editorial Board

Lee F. Schrader
Stephen B. Lovejoy
Christopher A. Hurt
Philip L. Paarlberg

Layout and Design

Cathy Malady

Circulation Manager

Patt Sheahan

Agricultural Economics Department

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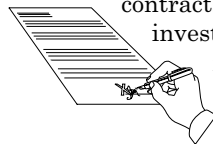
2. Does the three-day right to review provision provide significant benefits? What are the disadvantages or costs of providing this three-day right to review? If better informed decision making is desirable, it appears reasonable that a producer should have the opportunity to discuss contracting provisions with advisors. Thus, provisions prohibiting confidentiality seem desirable. However, what does this disclosure requirement mean to the processor/packer in terms of revealing strategically important information relative to their competition? What does it do to the creativity and innovation in incentives for compensating suppliers for various attributes if a packer cannot obtain any competitive advantage from this innovation?

Furthermore, contractors invest significant legal expense in the development of contracts and contract language. Making contracts open to public scrutiny allows others to “free ride” on the investment by simply copying contracts and making minor alternations. Is there any way that information with respect to the contract might be shared with advisors, but a prohibition be imposed in terms of sharing this information with competitors? If contract information is shared with those who will help the producer make a more informed decision, then steps must be taken to prevent seepage of contracts into the public domain. This could take the form of a non-disclosure statement to be signed by all advisors and appended to the contract.

3. With regard to the producer being provided with a first-priority lien, production contract liens will likely *not* be acceptable to lenders as they consider the financial risk of providing capital to processors and packers. If the real issue is concern about the financial losses of a producer who does not get paid

for his services under a contract production arrangement because of financial problems of the packer or processor, an alternative might be for the packer to post a bond. Alternatively, a state or federally sponsored insurance fund to indemnify producers (much like those currently used in the grain industry to protect producers from elevator bankruptcies) might be considered. In essence, alternatives to a lien that might be as effective in protecting producers from packer or processor financial failure should be considered. Also to be considered is that most production contracts eliminate price risk for the grower in exchange for the risk of contractor bankruptcy and increased access to investment capital. This shift from short term price risk to long-run risk of contract termination has drawn significant investment into livestock industries, and therefore, must be preferred by a significant group of producers.

4. Provisions concerning production contracts that involve investment requirements need serious consideration before adoption.



If the fundamental issue is that producers are making long-term investments based on a short-term contract, an alternative is to make sure that producers are fully informed as to the risk they are taking in such a contract. Or it might be required that under contracting arrangements where the producer makes a long-term financial commitment to fulfill the contract, the processor or packer is required to also make a long-term contract commitment that more closely matches the maturity of the investment. More creative ways for solving this classic hold-up problem should be considered. If this provision were to make it necessary for the processor to take all of the financial risk of

the producer’s investment, a natural response would be for the processor to make that investment and have complete control. In this situation, the end result may be vertical integration, the exact opposite of the proposed legislation’s intent.

5. The prohibition of tournament contracts should also be evaluated carefully. The purpose and function of tournament compensation does not appear to be well understood. Objection to tournament contracts can be summarized as:
- (1) they place growers in a position of competing rather than cooperating with other growers,
 - (2) they place growers in the position that if all achieve better performance, none are rewarded for the better performance, and
 - (3) performance variation may be due to differences in quality of inputs supplied by the contractor rather than production practices of the grower.

The case for tournament compensation is that it automatically ensures that performance rewards keep up with technological progress, leaves the contractor free to alter input use to adapt to changing prices without penalizing the grower, and automatically reflects the effects on performance of outside factors such as weather.

Tournament-based compensation is widely used by broiler chicken companies. It is a means of varying compensation to reflect performance of the grower. The practice recognizes the difficulty (impossibility) of monitoring or measuring in a meaningful way all aspects of the grower’s activity that affect

performance. The method bases grower payment per unit (usually pounds reaching the processing plant) on the grower's ranking relative to the average of all growers completing flocks in a specified period of time (usually a week or two) with respect to some index of performance. Factors may be feed conversion, death loss, or a prime cost calculation including chick and feed cost per pound produced (usually calculated using a standard price for feed and chicks).

birds, feed nutrient density, or strain of birds that will maximize contractor profits. Any change in these practices will affect the performance measures used for compensation. If the performance standards are based on current average grower performance, the contractor is not inhibited from using the most efficient production practice. A fixed feed conversion standard would reduce the incentive to use a higher nutrient density feed when prices favor it. The average-based compensation provides greater flexibility for the

proposed legislation appears to require renewal of a contract except for breach of contract, a rather unusual concept of contract that ignores a specified term as part of a contract. What is breach of contract? This implies some quantitative standard of performance. A standard based on the average performance of the producer group seems much more equitable than any fixed standards set in the past or the qualitative judgement of a producer's compliance with some list of practices which would need to be specified in much detail.

“The Producer Protection Act could have significant implications for the competitiveness of the grain and livestock industries in the state of Indiana.”

Based on experience in the broiler industry, there are three significant advantages of this method of compensation, the third is of great significance to the producer.

- Performance rewards keep pace with technology. There is no way for a contractor or grower to safely agree to a long-term contract using fixed performance standards. Regulations, genetics, nutrition, etc. will change over time. Any fixed set of performance standards will be out of date and likely untenable for the company or the grower before the contract term expires. A compensation base tied to average performance of all growers automatically keeps pace with technology.
- Performance standards reflect current best management practice. Changing demand for products or input prices require changes in the size of

contractor and, if the same production practices are implemented across all farms in the tournament, then growers are not penalized by changes in the production system.

- The tournament compensation system automatically adjusts for factors affecting all producers. Ambient temperature, humidity, disease conditions, feed quality, chick quality, etc. are factors affecting all producers. Inasmuch as these factors affect all producers in a specific time period in the same way, the use of an average performance base maintains a level playing field for the producer. Of course, farms in a tournament with each other must be within a limited geographic region where weather patterns etc. are similar.
- Contract termination and/or renewal are related to the performance standard's issue. The

A Final Comment

The Producer Protection Act could have significant implications for the competitiveness of the grain and livestock industries in the state of Indiana. The proposed legislation and details of its intent can be obtained at <http://www.state.ia.us/government/ag/AGContractingIowarelease.htm>. Whether or not this specific legislative proposal is debated in the state legislature or in the U.S. Congress, concerns about the impacts of the trend to more contract production and vertical coordination in agriculture will abound in the future. This article is an attempt to add to the discussion of the potential consequences of this and similar legislation to determine its possible impact on producers and the future competitiveness and characteristics of the agricultural industries. It is not meant to reflect on advocacy for, or against, the proposed law.

The Purdue Department of Agricultural Economics continues to develop educational materials and programs aimed at contract growers, potential contract growers, public officials, and other interested parties. EC-675 “Production and Marketing Contracts in the Pork Industry” is available from the Purdue Cooperative Extension Service. This publication along with other useful information about agricultural contracting is available on the Internet at <http://www.agecon.Purdue.edu/extensio/contracting/>.

Global Warming: FAQ's

Stephen B. Lovejoy, Professor

Is there a greenhouse effect?

Certainly, without the Earth's atmosphere acting to retain heat, we would freeze to death.

Is the Earth's climate changing?

Certainly, it has always been cooling or warming; thus the Ice Ages and the Age of Dinosaurs.

If the Earth warms by several degrees will that have major social and economic impacts?

Certainly, the very idea of how we could cope with much higher sea levels and oppressive year around temperatures suggests economic dislocations and changing geo-politics. Of course, warmer weather would require less home heating and promote plant growth.



Does the evidence suggest that temperatures are rising?

Not necessarily, while some land stations record higher temperatures over the past century, satellite observations show tremendous stability in temperature over the past few decades.

How can the trend of readings on land be different from the trend of atmospheric readings?

One of the explanations is measurement error from land stations. This occurs by changes in measuring protocols (the average of 6 daily measurements versus the average of the daily high and low temperature). Poor maintenance of the measuring stations may also have an effect (less frequent painting with white paint and more dirt clogging ventilation openings). Also changes in the surrounding micro-climate will have an impact; more pavement and concrete creates urban heat sinks or increased vegetation around the gauging station can reduce cooling winds.

What is the scientific bottom line?

Is the planet warming?

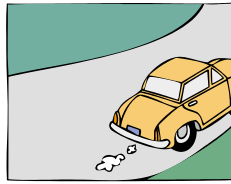
The evidence is very contradictory. While many climate models still predict warming in this century, their predictions are not consistent, internally or externally. They cannot predict the relationship between emission of greenhouse gasses and temperature.

Does the evidence show that increasing the concentration of carbon dioxide has led to global warming?

No, recent research suggests that carbon dioxide has little or no effect as a greenhouse gas.

Should we be concerned about the emission of carbon dioxide from our factories, homes and cars?

Certainly, changing the concentration of atmospheric gasses is no laughing matter. The composition of our atmosphere is critical to our survival although we have limited understanding of what impact our actions have on the atmosphere.



Isn't it still a wise action to reduce carbon dioxide emissions, just in case?

That depends upon how much risk we think there is, the potential impacts of the changes in carbon dioxide concentrations, the costs of the abatement strategies and most importantly, what environmental improvements are we giving up by allocating our time and money to curtail CO2 emissions.

But how important is cost when we are talking about the health of our planet and ourselves?

Cost is still important because we have numerous alternative actions to protect our health and the health of

our planet. As an environmentalist, I want the most environmental protection for every dollar I spend or every hour I contribute.

But how can we compare environmental protection with other concerns like it was a sweatshirt or a car?

If the resources used to reduce CO2 emissions could be used to restore wetlands or clean up hazardous waste, which should we undertake? That becomes the crux of the matter. While science can answer what-if questions (e.g. if A, then B), science cannot answer the big questions of how to value the consequences (e.g. which is more important, B or C?). Citizens must answer these value questions; through their market behavior, their voluntary actions and their voting.

Was the Presidential election of 2000 important for the quality of our environment in general and global warming in particular?

Certainly. The candidates expressed very different viewpoints about environmental protection and suggested very different strategies for achieving our goals. Mr. Gore suggested ratifying and implementing the Kyoto Protocol while Mr. Bush said we should fund more research but not implement the provisions of the Kyoto Protocol.

What is the Kyoto Protocol?

It is an international agreement which would, if ratified by Congress, require the United States, by 2005, to limit CO2 emissions to 93% of 1990 levels.

What would be the impact of such a reduction?

Analysis by the Dept. of Energy predicts that if the US complies with the Kyoto Protocol, the price of natural gas would increase 147%, electricity would go up 86% and gasoline prices would rise by 53%.

Is it worth it?

Science cannot answer that question. It is a policy question based upon our values.

Is reducing CO2 emissions important?

Probably!

How important?

No one knows for certain. The better questions may be, "Is this the best way to spend our environmental protection dollars?" or "How important is curtailing CO2 emissions compared to other environmental problems?"

This new President and Congress, will partially answer the question of our preferred strategy for protecting the environment. Let us be certain that decisions are based upon the best science, an understanding of our values and clear recognition of the trade-offs we are making.

The Rural/Urban Conflict*

*Rick Chase, Ag & Natural Resources Educator
and Scott Hutcheson, Leadership &
Community Development Specialist*

In the real world of today, country life and city life are often not as distinctive. In many areas, retail centers, business parks, housing developments, and agricultural land all share the same landscape, blurring the lines between "urban" and "rural." As the urban and rural "cultures" begin to co-mingle, conflicts can arise.

The Rush to the Country

More and more people are selling their urban and suburban homes and moving to the country. For some, the willingness to make longer commutes or the ability to work from home with a computer and telephone is giving them the freedom to live further from urban areas. In other cases, people are relocating to the country to retire or to work for the increasing number of business that have moved or expanded to rural areas.

Rural areas have had a net inflow of 2 million Americans this decade that is, 2 million more people have moved from metropolitan centers to rural areas than have gone the traditional small-town-to-big-city route. By contrast, rural areas in the 1980's had a net loss of 1.4 million people. Thanks to the newcomers, 75% of the nation's rural counties are growing again after years of decline.

People are moving to the country for a variety of reasons:

- **Escape from the City**—Some urban areas are plagued with crime and poor schools.
- **Rural Character**—The serenity of scenic landscapes and the beautiful views lure people from the city.
- **Cheaper Living**—The cost of a comparable home is usually less, and other costs of living may be less.
- **Opportunity to Work at Home**—Technology, permits more people to work at home.
- **Industry Relocation**—The Internet and overnight shipping are enabling high-tech industries to settle in the countryside.

The Clash of Cultures

Many new residents are finding that life in the country, with all its benefits, also brings some new

challenges. Long-time rural residents, including farmers, are also facing new challenges, which seem to have arrived with their new neighbors. The different expectations and lifestyles of new move-ins and long-time residents may prompt complaints and lead to conflicts.

Farmers' Complaints

Some common complaints of farmers include increased amounts of trash and litter in fields and pastures, unleashed dogs disrupting or killing livestock, trespassing, and increased vandalism to buildings, fences, and equipment.

**Non-Farm Neighbors' Complaints**

For the non-farm neighbor, most of the complaints concern the day-to-day operations of farming. Typically, rural residents complain about noisy equipment—tractors, grain dryers, and trucks. Other common complaints are about the dusty conditions during planting and harvest, livestock odors, fear of harm from farm chemicals and wide, slow-moving farm equipment on roads and highways.

**Differing Viewpoints**

"What is that farmer doing out there?" "Why is that city slicker so upset?" It is likely that questions like these get asked pretty frequently.

* This article is based on a Purdue Cooperative Extension Service publication, ID-221. This publication is available on the Internet at: <<http://persephone.agcom.purdue.edu/~agcom/Pubs/ID/ID-221/ID-221.html>>, and it is available at your local Purdue Cooperative Extension Service Office or by ordering from the Agricultural Communication Service, Media Distribution Center, 301 S 2nd Street, Lafayette IN 47901-1232. ACS-MDC has a Web page at: <<http://www.agcom.purdue.edu/AgCom/mdc/distrib.html>>

Farmers and non-farm residents have different ways of viewing their surroundings. Both need more understanding of the opposing point-of-view. Both parties need more understanding of the other's desires. With such different points of view it is easy to understand why some farmers and non-farm residents feel they way they do. Neither may be right or wrong.

Building Bridges & Cultivating Relationships

Farmers and non-farmer residents all have a role to play in maintaining good relationships. Everyone can enjoy the benefits of rural life if the stakeholders are willing to come together to deal with common problems. There are specific steps that can be taken by farmers, non-farmers to help make rural living more enjoyable for everyone.

What Farmers Can Do

Farmers can use a number of strategies to head off potential conflict and build stronger ties with their non-farm neighbors and their local communities. It is important to realize that commonly accepted practices in agricultural areas are not always in the best interest of neighbors or others in the community. Everyday, farmers and researchers learn more about controlling odors, dusts, insects, weeds, and noises. Farmers should take advantage of these technological advances. There are cost-sharing programs to protect groundwater supplies and to integrate pest management strategies.

In this information age, a farmer may keep up with technological advances by using the advice of private consultants, Extension specialists, county Extension educators, and agri-business experts.

Get involved in the community

Farmers should make a sincere effort to get to know their neighbors and get involved in community projects. Sitting on a planning board or taking on other community leadership roles is an empowering experience. Social institutions like places of worship, civic groups, and charities

provide informal opportunities to discuss problems and find solutions.

Promote benefits of the farm to neighbors and community

Although generosity takes time and resources, simple gestures, like the ones listed in Table 1, are great ways to build bridges and create a stronger sense of community. Small favors, however, can sometimes lead to requests for larger favors. Farmers should be aware of how much can be done, and not hesitate to say no. If activities suggest more liability insurance, an attorney and insurance agent should be contacted for advice.

What Non-Farmers Can Do

If non-farm residents have a problem with something a farmer is doing, they should meet with the farmer. Farmers may resent having to spend time and money to solve what they perceive is "someone else's" problem. However, solutions require all parties to participate and a willingness to resolve a problem. Bridge building tips for non-farmers are listed in Table 2.

What the Community Can Do

The community wishing to minimize conflict should rely less on lawsuits, right-to-farm laws, and zoning

ordinances, and work more informally with farmers and other local residents to mitigate or mediate conflict. Table 3 lists some of the steps a community can take to minimize potential conflicts.

All in This Together

Farmers, and non-farmers working through conflict involves finding common ground and shared interests. In the case of rural/urban conflict, one of the shared interests is the desire of farmers and non-farmers, new residents and long-time residents, to all enjoy life in the country. As urbanites and suburbanites continue to move to rural areas and farmers and other long-time residents continue to have more new neighbors, cultivating relationships and building bridges will be vital to working through the rural/urban conflict.

Give Farm Tours.	Provide Garden Space.
Host Community Picnics.	Sponsor Sports Teams.
Organize hay rides.	Plow snow.
Give away free manure.	Publish newsletters and memos.

Buy direct from farmers (U-pick, farmers markets, farm stands, etc.).	Ask permission before going onto a farmer's property.
Ask for an informal farm visit.	Invite the farm family to meals, parties, etc.
Recognize that farms are businesses.	Help out, if needed.
Host Community Picnics.	Wave to farmers in passing.

Sponsor a farmers' market, farm tour or agricultural fair.
Support agricultural education for youth.
Celebrate Agriculture Day annually.
Encourage safe and sound farm practices.
Encourage problem-solving that satisfies interests of both parties.
Recognize that farmland generally contributes a large share of property taxes relative to the services used.

A Glimpse at the 2001 Ag Outlook*

A slowing U.S. economy, much higher costs for crop production, and a new administration in Washington. How will these and other events effect the agricultural economy in 2001. Here we provide you with a brief summary of the outlook for 2001.

Will Recession Visit in 2001?

Will there be a recession in 2001? Several leading indicators say we are on the edge, but that we may experience an economic slowdown rather than an actual recession. On the positive side, high employment should support consumer spending. Housing construction should revive, as indicated by increased building permits and lower mortgage rates. By mid-summer the economy should feel the effects of recent interest rate cuts.

Since the economy is nearer to a recession than it has been in years, a shock could push it over. These could include: further energy costs increases; Middle East conflict escalation, severe natural gas shortages; or electricity disruptions in California.

Barring these potential shocks, expect GDP to grow 3.0% above inflation in 2001, with the unemployment rate rising to 4.5% by this time next year. Without explosive energy cost rises, inflation should remain around 3.0%. Interest rates are likely to fall, with the 3-month Treasury rate to be 5%, and the 30-year Treasury rate to be 5.3% by this time next year.

New Folks @ 1600 Pennsylvania Avenue

The political climate has changed with the new administration in Washington. How might this impact the farming sector?

* Contributors to this article include: Larry DeBoer, Phil Paarlberg, Phil Abbott, Wally Tyner, Otto Doering, Chris Hurt, James Pritchett, Marshall Martin, Howard Doster, Craig Dobbins, and Mike Boehlje.

1. The change in the White House provides less support for the "prairie populists" who would like to return to old agricultural programs like supply controls.

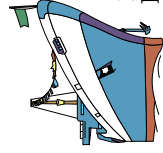
2. A strong Secretary of Agriculture may regain from EPA some of the environmental agenda for agriculture.

3. Tax cuts and other issues requiring attention in 2001 are likely to absorb the attention of Congress such that current Freedom to Farm policies will not be changed. It is more likely that Congress will appropriate "emergency" payments again for the 2001 and 2002 crops rather than amending current legislation.

4. Any slowdown in the economy coupled with potential tax cuts could reduce or eliminate the projected budget surplus. Thus in 2001, Congress will have to look at the full range of agricultural policy options and especially be concerned with the budget.

Improving Ag Trade Prospects

Exports are expected to improve for the second consecutive year in 2001 and



are currently forecast at \$53.0 billion compared to \$50.9 billion last year. The major forces boosting exports this year include: reduced export competition with smaller Chinese corn and wheat output plus poor production in Eastern Europe; increased global meat demand; improved economic growth in Asia; and a weakening U.S. dollar. The largest growth in sales is expected for corn, wheat, cotton, and meats.

However uncertainties include: The impact of StarLink corn contamination; potential global economic slowdown; high energy prices; and the lack of Presidential trade negotiating authority.

Lower Corn Acreage

Corn exports are expected to be a key to price direction this winter. Concerns over StarLink contamination have slowed exports, and the pace will need to pick up. However,



world corn supplies are reasonably tight and both Argentina and South Africa are expecting smaller crops this winter. This means that buyers will increasingly come to the U.S. for supplies. Prices are expected to improve somewhat in the early spring, with central Indiana prices reaching \$2.10 to \$2.20 per bushel.

Higher energy cost and concerns about availability of nitrogen fertilizers are expected to result in a reduction of 2001 corn acreage by about 1.5 million acres. With normal yields, 2001 production would drop to about 9.6 billion bushels from near 10 billion in 2000. Carryovers from the 2001 crop could drop from the 1.8 billion level to about 1.3 billion. Prices for the 2001 crop are expected to be above the loan level. Thus, LDP's may not be working. Harvest prices may be near \$2, and reach \$2.30 to \$2.40 during the marketing year. If so, these higher anticipated corn prices would largely offset the higher costs of production.

Downside Risk on Bean Prices

Another record South American crop, now estimated to be up 9% has dimmed prospects for strong soybean price recovery this winter. Carryover stocks from the 2000 crop will be sufficient at over 300 million bushels, and prospects of huge South and North American crops in 2001 could turn the lights out on price prospects.



Increased acreage is expected in the U.S. as production costs increases are more moderate for soybeans as compared to corn or spring wheat. In addition, the smaller winter wheat acreage will provide some added bean acres. In total, soybean acres could increase

by 2 to 2.5 million acres, and produce a record crop near 3 billion bushels. If so carryover stocks from the 2001 crop could grow to near 500 million bushels.

Only moderate recovery is anticipated for soybean prices this winter, with the possibility of cash prices in the central portion of the state moving to \$4.75 to \$5.00. Harvest prices could drop back into the low \$4 range if the U.S. crop should develop. Thus at this early point, it appears that soybean prices for the 2001 crop will face another year of LDP activity without prices trading above the loan.

Wheat Prices Could Rise

The outlook for wheat has improved due to increased domestic utilization and higher potential exports. Poorer growing conditions for US hard red winter wheat on the heels of delayed planting and emergence have recently strengthened new crop futures prices. In addition to less than ideal crop conditions, the acreage seeded to winter wheat is down by 2 million acres.

Ending stocks of wheat are expected to be sharply lower for the 2000/01 marketing year with prospects for even smaller production in 2001. Carryovers from the 2001 crop are expected to be decreasing once more, perhaps to about 650 million bushels, the tightest stocks since 1997. Cash prices at harvest for the 2001 crop are expected to average at or above the loan rate, thus LDP's may not be working for the 2001 crop. U.S. average prices could be around \$3 per bushel for the marketing year, with prospects of soft red wheat in Indiana trading above \$3 per bushel for the first time since March of 1998.

Gloomy Hog Forecast Returns

Hog producers have expanded the size of the breeding herd by 1% and anticipate farrowing 4% more sows this winter and 1% more in the spring. This will increase supplies by about 3% for the year to



a record production of 19.5 billion pounds.

Prices are expected to be in the higher \$30s in the first quarter, and increase to the lower \$40s in the second quarter. Some profitable returns can be expected, especially in the spring and early summer. However by mid-summer, prices are expected to head downward under the weight of large supplies, and average in the higher \$30s for the summer before dropping to the lower to mid \$30s in the fall. If so, this means that prices would drop back to breakeven in the late summer and end the year at about \$4 per hundredweight below costs. Some continuation of losses can be anticipated into early 2002.

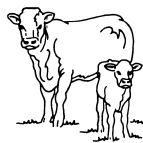
Cattle Producers Celebrate

The cattle industry is expected to have high prices to celebrate in 2001. Beef production is expected to drop by 5%, with the largest decreases in the last-half of the year. Not only are supplies dropping, but beef demand appears to have improved in the past two years. Smaller supplies are expected to result from reduced cow slaughter and from retention of heifers to begin rebuilding the cow herd.

Prices of choice steers in the early part of 2001 have already reached \$80. Highs in late March or early April should be a few dollars higher yet. Finished cattle prices will likely recede to the lower \$70s by late summer, but return to the very high \$70s by the fall. Feeder cattle and calf prices will also be very strong with 500 pound steer calves reaching \$1.10 to \$1.20 per pound in the spring. Fall calf prices are expected to exceed those of the last fall. Brood cow producers can anticipate several years of strong, and profitable, calf prices.

Crop Input Cost Make Headlines

Higher energy costs are driving 2001 crop production costs sharply higher. This is especially true for corn and to a lesser extent for wheat and soybeans. Leading the



increases are nitrogen fertilizer costs. Estimates made in early 2001 were for corn production costs to rise by around \$15 per acre, and about \$4 per acre for soybeans. Nitrogen fertilizer prices were still highly volatile at the time of these estimates so producers should check actual prices closely. In addition to much higher prices, concerns over availability, especially for anhydrous were evident.

These large increases in corn costs are expected to cause more producers to consider shifting somewhat to soybeans. The corn price breakeven to shift to corn may be around \$2.20 to \$2.30 cash corn prices at harvest. Since many producers are already near a 50/50 rotation on corn and beans, shifting to more bean acres would force them to plant some bean acres on 2000 crop bean acres. They should carefully think about potential for disease buildup from a movement to beans-on-beans.

Land Values Continue To Strengthen

Despite continued low cash commodity prices, land values in Indiana have continued to strengthen. The June 2000 Purdue Land Survey showed a nearly 4% annual increase in farm land values, and a more recent Federal Reserve Bank of Chicago survey indicated another 3% or so strength in the last-half of the year. The reasons land values continue to increase even with low commodity prices is likely related to a host of factors including: large government payments; a strong non-farm economy and the demand for small acreage home sites; a small amount of land on the market; very good yields in 2000, and financially strong farmers who want to grow.

For 2001, less increase in land prices can be expected. A slowdown in the general economy, continued uncertainty about government payments, higher production costs; and a return to more normal yields may all contribute.



Land Use - A Growing Issue

Growth pressure increased rapidly during the 1990's and urban sprawl is a trend in Indiana and across the nation. Loss of farmland, and difficulty farming land impacted by sprawl are two of many concerns. Recently, 62 counties noted land use was an issue where Cooperative Extension Service education could help.

Purdue Extension Programs

The Purdue Extension Land Use Team offers programs in three main areas to help communities address land use concerns.

- 1) Training for Plan Commission Members and other local officials and interested citizens, starting with "Rolling Up Out Sleeves: The Nitty-Gritty Work of Plan Commissions", a basic training for plan commissions. Three advanced topics are offered. "Growth Management: Smart Growth" will be held in Ft. Wayne later this spring. For information of these programs, see this web site: <<http://www.agecon.Purdue.edu/lcd/landuseed.htm>>.
- 2) Customized County Training Programs are tailored to fit the needs

of a county, and work especially well if county/city/town plan commissions or boards of zoning appeals all come together with local elected officials in a workshop setting.

- 3) General land use programs provide information and encourage discussion with various situations and groups. There are four general programs, and six planning and zoning programs:

- Land Use Lesson for Youth
- The Rural/Urban Conflict
- Agricultural Land Protection in Indiana
- What is the Plan Commission and How Does it Work?
- The ABC's of P & Z: A Planning & Zoning Glossary
- Citizen Participation in Land Use Planning
- Zoning - What Does It Mean to Your Community?

- The Comprehensive Plan
- How Good Is Your Comprehensive Plan?
- Farming on the Fringe: When City and Country Collide

Purdue Extension Publications

Of the 13 publications now available from Purdue Extension, eight mirror programs listed above. The five other titles are:

- Plan Commission Public Hearing: A Citizen's Guide
- Plan Commission Public Hearings: A Plan Commissioner's Guide
- Private Property: Rights, Responsibilities, and Limitations
- Conservation Easements in Indiana
- Land Use and Water Quality

These publications are available in Indiana for a modest fee from your county Purdue Cooperative Extension Offices or from the Purdue Media Distribution Center at 1-888-EXT-INFO (1-888-398-4636). They are also on the web at: <<http://www.agcom.Purdue.edu/AgCom/Pubs/agecon.htm#30>>.

New Staff



Mark Spelbring

Mark Spelbring joined the Ag Econ Department in May in a one year position as an Extension Land Use Specialist. Mark has been part of the Purdue Land Use Team since its creation in 1996. He took a leave of absence from Extension duties in Vermillion and Parke Counties for this assignment, but continues to serve on the plan commissions in both counties.

Mark is working to develop new materials, coordinate existing and new land use efforts with other Purdue staff, and assist Extension Educators serving on plan commissions across the state. One focus is helping put analytical tools developed on campus into the hands of

decision makers throughout the state, leading to more informed public judgements.

Mark is a Clay County native and earned a B. S. in Animal Science and M. S. in Genetics at Purdue. He did Extension work in Florida before joining Purdue Extension in Vermillion County, and later switched to a split position serving half time in Parke County.

Farming on the Fringe

- When City and Country Collide -
March 21, 2001

Allen County Extension Office
— IPFW Campus
4001 Crescent Ave.,
Ft Wayne, IN 46815

Registration Fee: \$20 per individual, \$15 for the spouse of a registrant; \$40 if for continuing education credit.

To contact the host, Roger Moll, phone: 219-481-6826
Fax: 219-481-6439.
E-mail: <roger.moll@ces.purdue.edu>.

For information about the tax legal subject matter, contact Gerry Harrison, toll free 1-888-398-4636; office 765-494-4216; E-mail: <harrison@agecon.purdue.edu>.

Improving Farm Financial Performance

Michael Boehlje, Professor; Craig Dobbins, Professor; and Alan Miller, Farm Business Management Specialist

Analyzing farm profitability is important to the continued success of the farm business. The focus of this discussion is the key drivers of financial performance of a farm business, possible actions to take to improve that performance, and how to analyze the payoff from these possible actions.

Drivers of Financial Performance

Unacceptable financial performance or financial ratios can have many causes. Poor financial performance may result from temporary setbacks beyond the farmer's control; the appropriate response then may be to "hunker down and wait for the storm to pass." On the other hand, poor financial performance may be symptomatic of more persistent problems. In that case, the farm business manager must make adjustments to improve financial performance, even if the underlying cause is external to the farm. For short-run survival, it is only necessary to maintain a positive cash flow. But longer run survival is only assured through the effective use of resources to generate revenues and produce profits at levels that are competitive in the farming industry and sufficient to meet farmer's needs.

One approach to improving profitability involves assessing key drivers of farm profitability. With that in mind, it is useful to think of the farm business in terms of scale, employment, efficiency, and leverage.

Scale

Scale refers to the size of the farm business. Farm businesses can be too large or too small. In large, complex operations, managerial control or input can be spread too thinly, which can result in inefficiencies. Conversely, small farm businesses can be inefficient because fixed costs are spread over too few units of output. Scale problems can also occur when the labor supply is too large relative to the productive capacity of the

farm business, so it cannot generate enough income to support the families involved. One of the more critical tasks farm business managers must accomplish is to determine the optimal scale for their businesses. This generally involves being large enough to take advantage of economies of size and to minimize per unit costs.

Employment

Employment refers to both the farm business and off-farm employment. Full employment is, in most cases, necessary to ensure an acceptable standard of living. If there is excessive labor, the dollars withdrawn for wages or family living expenses can adversely affect the profitability and liquidity of the farm business. If the scale of the farm business is inadequate, and the farm business is too small relative to its labor supply, farmers can consider a number of options. Farm financial managers can reduce labor supply through off-farm employment or by eliminating hired family employees. Or farm financial managers can increase labor utilization through expansion by purchasing or leasing additional assets, shifting to more labor-intensive enterprises, or improving productivity through more intensive management.

Efficiency

Efficiency refers to the relationship between inputs and outputs. To a large extent, it is determined by a farmer's managerial and technical skills. In larger operations, efficiency will reflect the performance of the owner as well as of the hired managers and workers. Although there are no perfect measures of efficiency, there are a number of satisfactory efficiency measures from which to choose. Because a farm business is a complex, interrelated system, an

analyst must examine several aspects of the farm business to conduct an assessment of farm business efficiency.

Efficiency can be measured in physical, economic, and financial terms. Physical terms include such measures as crop yields, pigs per litter, rate of gain, etc. Economic measures include variable costs per acre and returns per dollar fed. Financial efficiency measures the intensity with which a farm business uses its assets to generate gross revenues and the effectiveness of cost control strategies. Financial efficiency is influenced by production skills as well as by purchasing, pricing, financing, and marketing decisions.

Leverage

Leverage, in a financial sense, is the relationship between the debt and equity capital used to finance a business. The more debt that is used in relation to total assets, the more highly leveraged a business is said to be. Leverage can work either for or against a business, depending on whether or not debt is used to generate profits in excess of its cost. When it is not working for the business, the more farm debt the worse off the farm business will be. A critical responsibility of every farm business manager is to structure capital in such a way that leverage will work for and not against the farm business.

A farm can have too little debt, limiting its size, efficiency, growth, and earning capacity. A farm can have too much debt, leading to financial inefficiency, accelerating financial losses, and, ultimately, business failure. Any debt at all can be too much when a farm business does not generate net income. Debt influences profitability through interest costs, liquidity through debt servicing requirements, and solvency through the value of the assets available to secure the farm's liabilities. Debt



problems can arise in the short run even when debt is used profitably. Temporary setbacks can lead to financial stress, because the debt load is excessive based on current income, too costly because of rising interest rates, poorly structured because of repayment terms that call for repayment to be made over too short a period of time, or unsecured

because of a drop in the value of collateral.

Debt structure refers to the mix of debt repayment terms used by a business. Capital assets typically are financed with a combination of equity capital and borrowed capital. The structure of non-operating debt should reflect the useful, productive lives of the assets it finances, so as to

achieve somewhat of a balance between the assets that are financed and the corresponding financing. For example, farmland is a long-term investment, and the financing should be long term as well.

Operating debt should be self-liquidating with operating loans only for profitable production activities. Farmers should repay the annual operating loan in full each year. Farm financial managers should set up all other debt, including operating debt carry-over, over a long enough term to ensure the debt can be repaid with projected net income.

Farm business managers should focus on preventing problems with debt by making good decisions about using debt. In the long run, borrowed capital must be used profitably, or no amount of stretching out of payments will help. Term debt ultimately can be repaid only with net income. Farm business managers must know their limits in terms of how much their farms can comfortably repay with expected net income.

The article in the July 2000 issue of *PAER*, "Can I Repay? Managing Farm Debt Repayment Capacity," provides helpful information about how to determine a borrowing limit for a farm. If farm business managers make sure all of their capital investments have a high potential payoff, then they are less likely to run into financial difficulties with the debt that finances part of those investments. Use benchmarking to establish minimum acceptable standards of profit performance for new investments that are consistent with or higher than the targeted, annual, financial performance levels. Farm business managers should use those standards to cull capital purchases according to profitability.

Table 1 presents several potential courses of action that might be used to head-off or correct poor financial performance stemming from problems related to the scale of the farm business, employment of labor resources, efficiency of the business, and the extent to which farm business managers are utilizing financial leverage. Numerous additional actions are possible. These are

Table 1. Possible Courses of Action to Improve Profit Performance¹

Scale

1. Expand by adding an enterprise or expanding existing enterprises. Use demonstrated results (records) to make expansion decisions.
2. Use fixed resources (machinery and labor) fully.
3. Identify low-cost ways to expand, such as renting additional land or facilities, custom feeding livestock, crop-share renting, or custom farming.
4. Examine whether their management ability and emotional stability are sufficient to handle the additional stress of expansion.
5. Increase off-farm employment, but assess its effect on efficiency.
6. Scale back their farm business to allow a significant increase in off-farm income.
7. Consider retiring, if appropriate.
8. Consider merging with another farming unit.

Employment

1. Eliminate employees.
2. Obtain an off-farm job.
3. Move to part-time farming status.
4. Add labor-intensive enterprises with low-capital requirements.
5. Expand operations to increase labor use.
6. Increase intensity of operations (throughput) to increase labor productivity.
7. Reduce family withdrawals to a level that is consistent with efficiency or level of farm employment.

Efficiency

1. Reduce operating costs.
2. Focus on productivity and throughput.
3. Improve enterprise records and analysis.
4. Reorient priorities; spend more time on management.
5. Use advisory services. Don't do things that others can do cheaper and better.
6. Improve marketing skill and performance.
7. Evaluate whether the operation is too large to manage efficiently.

Leverage

1. Establish minimum standards for the financial performance of new investments.
2. Evaluate the costs and returns associated with every investment considered.
3. Don't use cash flow or operating loan proceeds to finance capital purchases.
4. Use retained earnings to finance the equity component of capital purchases.
5. Maintain adequate financial reserves.
6. Structure debt in order to maintain balance between assets' useful lives and repayment periods. Don't abdicate their role in negotiating repayment terms.
7. Never give more collateral than is absolutely necessary.
8. Avoid high-cost borrowing, such as overdrafts and credit card debt.
9. Estimate how much can be owed based on expected future income.
10. Identify and sell unproductive/unprofitable assets, reduce and restructure debts.
11. Don't own what can be controlled through leases: sell and leaseback.
12. Evaluate the rate of return expected from capital investments, and compare to the interest rate of borrowed debt.

¹ Adapted from Jolly, Robert and Alan Vontalge. *Financial Troubleshooting*, Iowa State University Extension Publication, Pm-1618, May, 1995

presented only to illustrate the possible managerial responses to different types of problems.

Analyzing the Payoff of Actions to Improve Performance

The Profitability (DuPont) Model

There are two primary ways to enhance operating performance as measured by ROA (return on assets):

- 1) increase net income per dollar of revenue or unit of output—operating profit margin, and
- 2) increase revenue per dollar invested—asset turnover.

If operating profits exceed the cost of borrowed capital, farmers can augment operating performance through the use of debt or leverage to generate the ultimate performance measure for the individual investor: ROE (return on equity). Thus, there are three primary levers that affect bottom-line financial performance:

- 1) operating profit margin,
- 2) asset turnover, and
- 3) leverage.

The relationship among these three levers is summarized graphically in Figure 1.

As illustrated in Figure 1, managers assess operating performance by first calculating net income (gross revenue minus fixed and variable cost). Fixed costs are those costs that will not vary with the level of production. Depreciation expenses, real estate and property taxes, interest on term debt, and payments for operator labor and management contributions are examples of these costs. Variable costs are those items that will change with the level of production. Seed, fertilizer, and fuel expenses are examples of these expenses. Specific decisions on cost control, efficiency, and productivity will affect net income. Net income will also be affected by product pricing and input procurement decisions.

In determining net income, one of the fixed expenses is payment for operator labor and management. We suggest family living plus income tax payments as an estimate of this cost item. Because these expense items are subtracted, net income represents the return to the operator’s capital investment and the risk of operating the business.

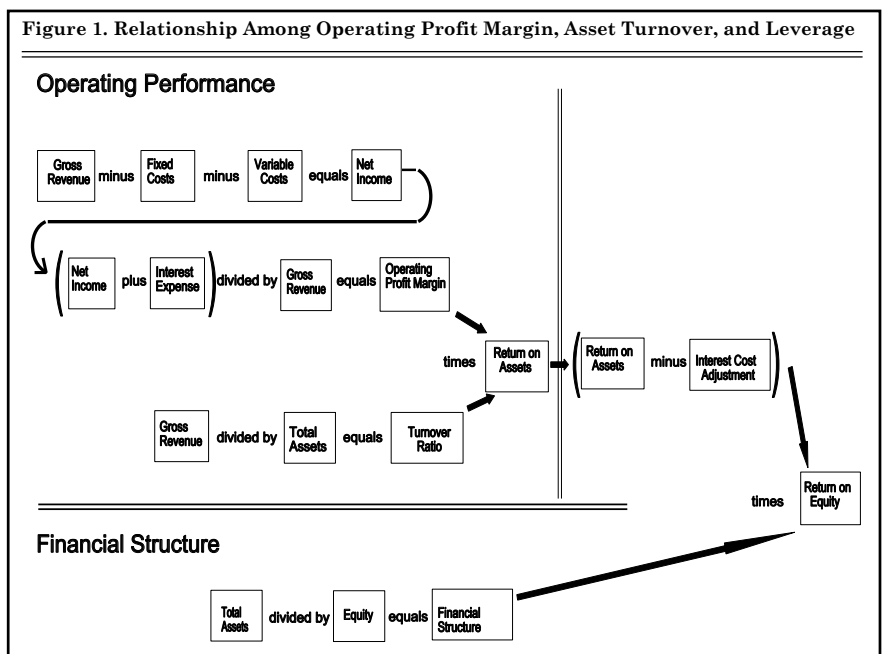
After determining net income, add back interest cost to obtain earnings before interest, and divide the result by gross revenue to determine the operating profit margin (operating income ÷ gross revenue). Operating profit margin is the proportion of each dollar of revenue that is operating profit and thus remains to pay financing expenses.

Next, divide gross revenue by total assets to determine the asset turnover ratio. Asset turnover is the dollars of revenue that are generated annually by each dollar of invested funds or assets. Consequently, multiplying the operating profit margin (operating profit ÷ gross revenue) by the asset turnover ratio (gross revenue ÷ total assets) results in the rate

of return on assets (ROA) that captures the essence—the bottom line—of operating performance.

Business managers incorporate financial structure and debt cost into the analysis by first dividing assets by equity to obtain the asset to equity ratio. The asset to equity ratio indicates to what extent equity capital is being leveraged by the use of debt capital. To get the rate of return to equity, subtract the interest cost per dollar of assets from ROA to get an adjusted ROA. Multiplying this adjusted ROA [(operating income ÷ total assets) - (interest expense ÷ total assets)] times the financial structure ratio (total assets ÷ equity) results in the rate of return on equity (ROE), which measures the rate of return on farm business manager’s invested funds.

Any decision that influences product prices, per unit costs, volume, or efficiency (output per unit of input) will affect the operating profit margin or the asset turnover ratio. And any decision that affects the amount of debt used will affect the financial structure of the business. The model in Figure 1 allows managers to determine the financial impact of any of numerous decisions that farm



financial managers might make to improve performance.

Links between Managerial Decisions and Rates of Return

The information just presented won't be very useful for producing improved financial performance unless you can connect the bottom line results to your own actions and decisions. One step in making that connection involves thinking about the many factors that may influence those results. Although ROE is influenced by only three factors – asset turnovers, operating profit margin, and leverage – several managerial actions can influence these factors. Figure 2 summarizes a few illustrative examples of actions you can take to influence asset turnover, operating profit margin and leverage that, in turn, will affect the measured value for ROE. For example, an increase in yields per acre will increase asset turnover, even if per bushel prices don't change, through its impact on gross revenues. The precise impact of a yield increase on the operating profit margin is less clear, because the yield increase will affect both revenues and variable costs. However, if the value of the

additional yield exceeds the added cost to produce the increase, then operating profit margin will also increase.

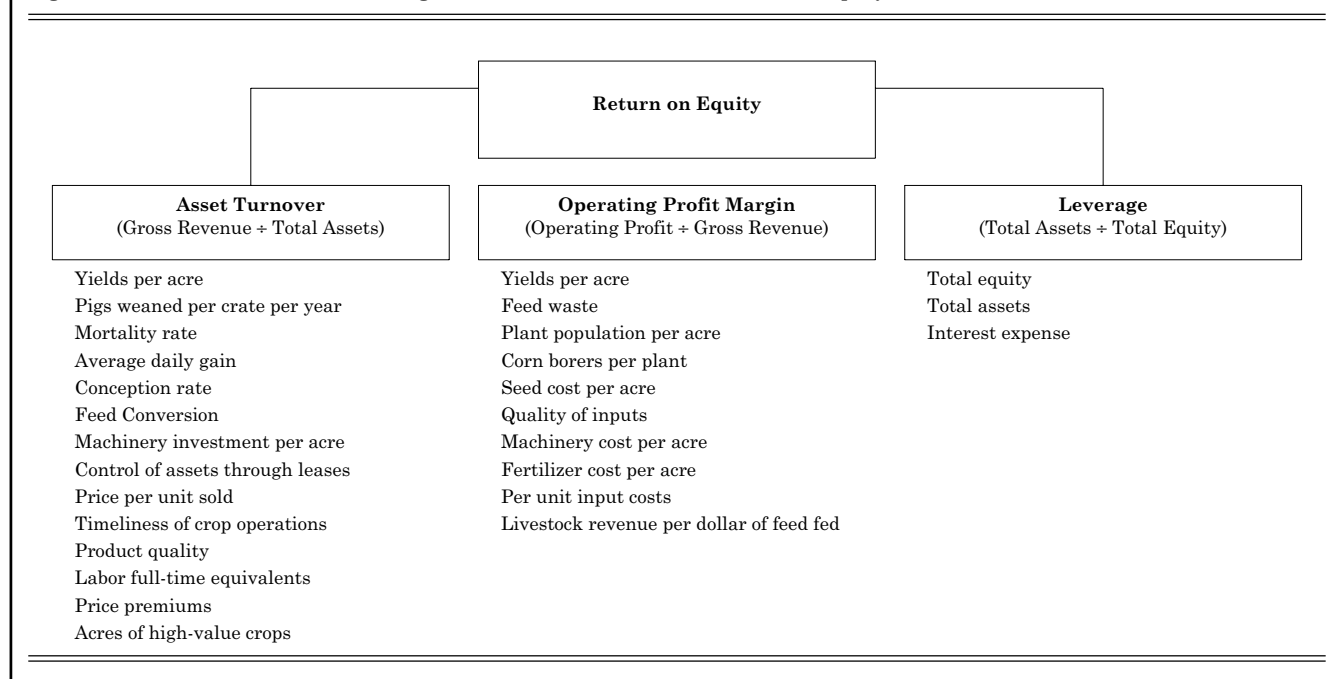
In identifying strategies that you can use to improve performance or the rates of return (return on assets and return on equity), farm financial managers should realize that some actions might affect only one of the performance measures (operating profit margin, asset turnover, or financial structure), whereas others will affect two or more. Cost-control strategies, such as lowering the cost of fertilizer or seed, will improve only the operating profit margin. Other strategies, such as devoting more time to the improvement of marketing skills, would increase both the operating profit margin and the asset turnover ratio. Improving both the operating profit margin and the asset turnover ratio gives farm financial managers a better chance to improve the return on assets and return on equity than those strategies with just a single impact.

The appended Worksheet provides a method for assessing how changes in their operation will affect ROA and ROE. In completing the Worksheet, we suggest that

managers use data for the current situation to complete the "Actual" column. These values can be obtained by completing the worksheet discussed in "Financial Performance: Measurement and Analysis," in the March 2000 issue of *PAER*. Use the "Projected Change" column to estimate how a change will affect financial performance. Use the projected column to refigure the financial data and financial measures based upon a proposed change. Then, compare the projected performance based on the change to the current situation as it is summarized in the "Actual" column.

If the action is only revenue increasing (e.g., better prices), then only gross revenues will need to be changed. This will change both the operating profit margin and the asset turnover ratio. If the action reduces variable costs (e.g., reduced fertilizer costs), this will change the operating profit margin. Each change managers consider may influence various financial data items. If the action is designed to increase throughput, the change will affect both revenues and costs. Revenues will increase because of the increased level of production.

Figure 2. Selected Production and Management Factors that Influence Return on Equity



The increased level of production will also cause variable expenses to increase. Because fixed resources are the same, fixed costs will remain the same. This type of change will influence both operating profit margin and asset turnover.

If the action is an asset sale, it is likely that it will change gross revenue, fixed costs, variable costs, and total assets. In estimating gross revenues, remember this is an estimate of the operating gross revenue after the asset sales are made. As a result, gross revenues would not include the revenue from the sales of the assets. If farmers use the proceeds of the asset sale to reduce debt, equity will remain the same, but interest costs are likely to decline. Asset sales can have a number of effects. Farmers need to exercise care to be sure that all the changes are captured in the analysis.

Example

Let's finish this discussion by considering an example. John Jones has completed an analysis for his farm and finds an ROA of 7.25%, but his ROE was only 3.1%. The fact that his ROE was well below his ROA indicates that financial leverage is working against the farm and that improvement is needed. A local banker mentioned that he would refinance John's land mortgage at a 1% lower interest rate than the best rate he could obtain from his current lender. John has a \$300,000 land mortgage on the farm. John has estimated that his total interest expense on his mortgage would decrease by \$3,000 as a "result of changing lenders." But he has been satisfied with his current lender and won't change lenders unless the change will significantly improve his farm's financial performance. Because debt appears to be part of the problem, he suspects the lower interest rate might have a big impact.

John hasn't projected his income for the upcoming year. So he decides to look at how the decreased interest expense would have affected performance during the year that has just ended, as summarized in the "Actual" column of Table 2. This is what accountants call a "pro forma"

analysis. The numbers in the middle column of Table 2 are the recomputed performance measures for John's farm using the worksheet, based on his estimates of the impact of the reduced interest rate on his mortgage.

Notice in Table 2 that if John had been able to obtain the 1% rate reduction on his \$300,000 mortgage, his return on equity would have improved only slightly, from 3.1% to 3.45%. The only calculation affected by the change in the interest rate would have been the interest cost adjustment. Operating profit margin and asset turnover, the key elements of the productive use of the farm's assets to generate profits, wouldn't have changed at all. So the 1% interest rate reduction doesn't have nearly as big an impact as John had expected.

John's decision about whether to change lenders isn't that critical in terms of its likely impact on farm financial performance. Other factors, such as his history with his current lender, may have more impact on his farm's long-term prospects for improvement. However, it is apparent that he needs to take action to improve the performance of the farm. John's overall debt load isn't particularly large given his debt-to-asset ratio of 26%, but his interest expense consumes an uncomfortably large portion of the revenues the farm

generates. Given the farm's current equity, he certainly appears to have the resources to change directions and a lot to gain from improved performance. If the drop in interest rate won't produce enough improvement, what other types of adjustments might have the amount of impact he really needs?

John decides to use the Worksheet to evaluate another alternative that he has been considering. John has been planting about half of his full-season soybeans after May 23. University research data suggests that he could increase his yields and revenues by pushing a little harder to get his entire bean crop in the ground earlier. That information is consistent with his own observations based on the yield history of the ground he farms. He estimates that his farm revenues could have been increased by 6% by pursuing this operating strategy and at negligible additional monetary cost. The right-hand column in Table 2 shows the estimated impact of the proposed change in the management of the bean planting operation. Both ROA and ROE have been improved, unlike the previous example, in which only ROE improved. Notice that the cost of debt and the amount of financial leverage haven't changed compared to the Actual column, and, thus, the increased ROE was entirely due to the increase in profitability.

Table 2. Financial Performance Calculations for the John Jones Farm

	Actual	Reduced Operating Interest	More Timely Planting
1. Gross Revenues	\$347,500	\$347,500	\$368,350
2. Fixed Costs	\$128,450	\$125,450	\$128,450
3. Variable Costs	\$192,675	\$192,675	\$192,675
4. Net Income	\$26,375	\$29,375	\$47,225
5. Total Farm Assets	\$1,150,000	\$1,150,000	\$1,150,000
6. Owner's Equity	\$850,000	\$850,000	\$850,000
7. Interest Expense	\$57,000	\$54,000	\$57,000
A. Operating Profit Margin $[(4 + 7) \div 1]$	0.2399	0.2399	0.2830
B. Asset Turnover Ratio $(1 \div 5)$	0.3022	0.3022	0.3203
C. Return on Assets $(A \times B) \times 100$	7.25%	7.25%	9.06%
D. Interest Cost Adjustment $(7 \div 5)$	0.0496	0.0470	0.0496
E. Financial Structure (leverage measure) $(5 \div 6)$	1.3529	1.3529	1.3529
F. Return on Equity $[(C \div 100) \cdot D] \times E \times 100$	3.10%	3.45%	5.55%

Worksheet

Assessing the Effect of a Change on the Rates of Return

Financial Data	Actual	Projected Change ²
1. Gross Revenues (Item w) ³		
2. Fixed Costs ⁴ (Depreciation, interest, family living and income tax items c+x+v)		
3. Variable Costs ⁵ (Other expenses minus depreciation, Item y-c)		
4. Net Income (1-2-3)		
5. Total Farm Assets (Item q)		
6. Owner's Equity (Item s)		
7. Interest Expense (Item x)		
Calculations		
A. Operating Profit Margin [(4 + 7) - I]		
B. Asset Turnover Ratio (1 5)		
C. Return on Assets (A x B) x 100	%	%
D. Interest Cost Adjustment (7 5)		
E. Financial Structure (5 6)		
F. Return on Equity [(C 100) - D] x E] x 100	%	%

² In conducting their analysis, it is best to consider only one change at a time.

³ Items refer to Worksheet 1 from the March 2000 issue of PAER.

⁴ Costs that do not vary with the level of production. If a more precise estimate of fixed costs is desired, include the insurance and property taxes reported on Schedule F of their tax return.

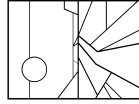
⁵ Costs that vary with the level of production. If a more precise estimate of variable costs is desired, subtract the insurance and property taxes reported on Schedule F of their tax return.

The revised planting strategy looks potentially rewarding. John will need to consider making additional improvements in performance. Typically, poor performance isn't the product of only one problem, such as high interest rates or lack of timeliness, but instead is the result of a number of things that could be improved. Changes that will simultaneously increase profitability and decrease the amount or cost of using leverage will produce more impact dollar for dollar than changes that affect only one or the other. Typically, the impact of each one of the contributors alone to poor performance may not be that great, but all the smaller performance shortfalls add up.

Calculations

Final Comment
Unacceptable financial performance can occur for a number of reasons related to the scale, efficiency, employment, and leverage or debt use of a farm business. By using the DuPont Profitability Analysis Model, farm business managers can evaluate the potential payoff of various actions that might be identified to improve financial performance. The real challenge is implementing the action once farm financial managers have identified it.

Note: The URL for this publication is now <http://www.agecon.purdue.edu/ext/paer>.



Gerald A. Harrison
Purdue University
Department of Agricultural Economics
1145 Krannert Building, Room 630
West Lafayette, IN 47907-1145

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