$$

Ag Decision Maker

$$

A Business Newsletter for Agriculture

Vol. 12, No. 11 www.extension.iastate.edu/agdm September 2008

Who profits from the corn ethanol boom?

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

The emergence of the ethanol industry has generated substantial profits for individuals involved in ethanol and corn production. However, different sectors of the industry benefit at different times. Outlined below are the beneficiaries and when they benefit. This is shown graphically in Figure 1.

To understand how returns are allocated, it is important to understand the role of prices. The price of ethanol is the major factor determining the total amount of revenue to be divided among the participants in the ethanol industry. The price of corn determines how this revenue is allocated between the ethanol producer and the corn farmer. The cropland cash rental rate (essentially a price) determines how the revenue received by the corn farmer is divided between the farm operator and the land owner.

Another important concept is that profits accrue to the limiting resource in the production chain. This can be seen when we trace how the profits of the ethanol industry have been allocated so far (Figure 1) and how the profits are expected to be allocated in the future.

First Temporary Beneficiary -- Ethanol Producers

During the initial expansion period of ethanol production during 2005 and 2006, large profits accrued to ethanol producers. They benefited from the combination of high ethanol prices and low corn prices. Ethanol prices were high and demand was strong due to the need to supply the oxygenate market vacated by (Methyl Tertiary Butyl Ether) MTBE. At the same time, corn prices were low due to overproduction. The small size of the ethanol production capacity was the limiting resource.

However, ethanol production is a commodity business. It sells a commodity (ethanol) and buys a commodity feedstock (corn). Typically commodity industries expand production capacity until profits are driven to a minimum. The generous profits generated during this period attracted others to the industry in an attempt to also capture generous profits. So more ethanol plants were built and the industry expanded. Production capacity expands until either ethanol is oversupplied and the price is driven down and/or corn shortages emerge and the price of corn increases. Ethanol production capacity is no longer the limiting resource. As shown in Figure 1, this started to occur in late 2006.

continued on page 2

Handbook updates

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

Deductible Livestock Costs for Adjusting 2008 Income Tax Returns – B1-15 (1 page)

Monthly Returns from Cattle Feeding – B1-35 (3 pages)

Iowa Farmland Rental Rates (1994-2008) – C2-09 (1 page)

Survey of Iowa Leasing Practices, 2007 – C2-15 (8 pages)

Iowa Farm Building Rental Rate Survey – C2-17 (1 page)

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

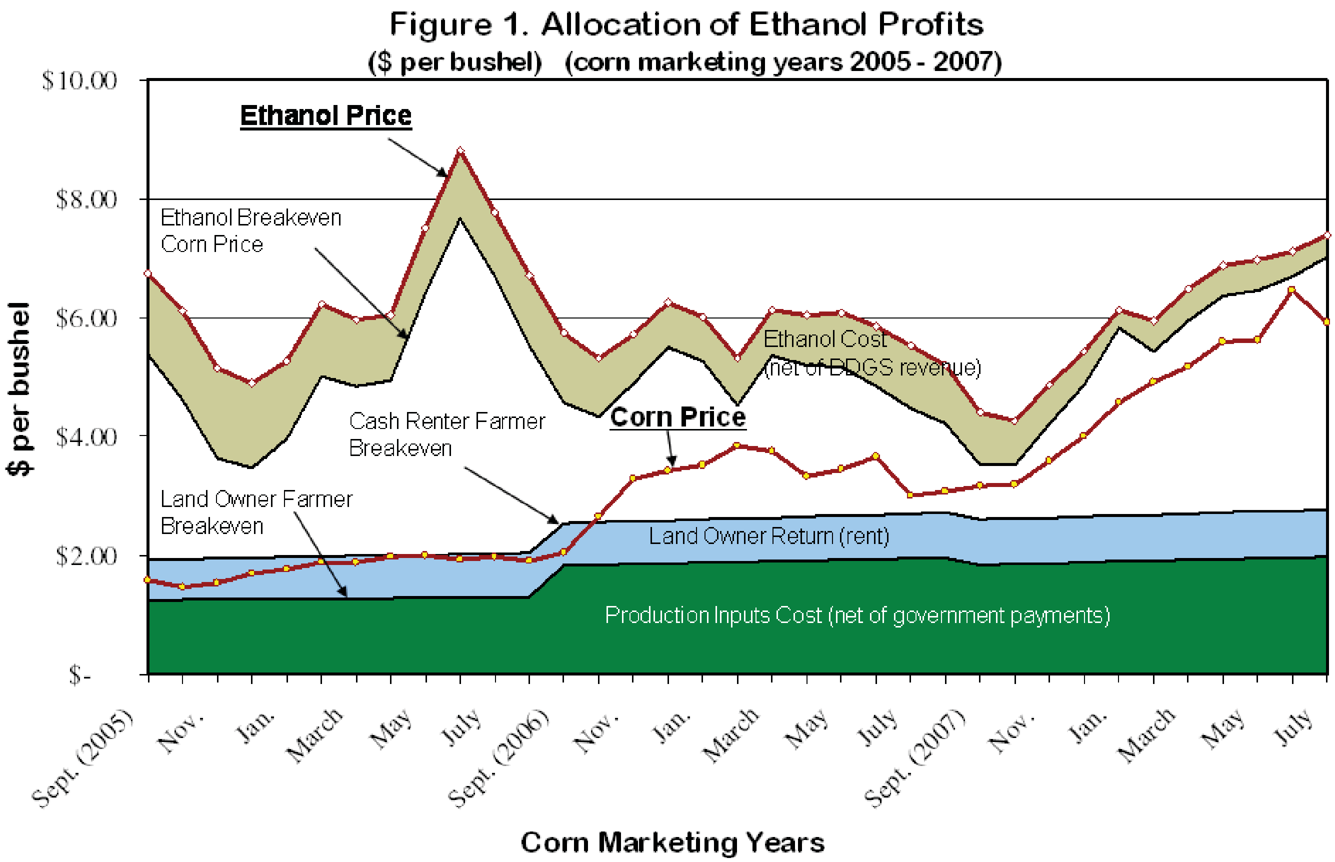
continued on page 6

Inside . . .

IOWA STATE UNIVERSITY
University Extension

Ag Decision Maker is compiled by:
Don Hofstrand, dhof@iastate.edu
Extension Value-added Specialist and
Co-director of the Agricultural Marketing Resource Center

Who profits from the corn ethanol boom?, continued from page 1



Note: Between 2005 and 2006 the farmer breakeven increased substantially. Although some costs increased during this time period, most of the increase is due to the loss of government payments due to higher corn price.

Figure 1 Explanation

(Everything is expressed as dollars per bushel of corn)

Ethanol Price ($/bu.) -- Ethanol revenue is the ethanol price received by the ethanol producer. However, ethanol revenue is not shown as dollars per gallon of ethanol. Rather, it is shown as dollars per bushel of corn ($ per gal. times 2.8 gal. per bu. equals $ per bu. of corn).

Ethanol Production Costs (net of DDGS revenue) ($/bu.) – This amount includes all ethanol production costs except corn. Because an ethanol facility also produces DDGS (distillers dried grains with soluble), the sale value of the co-product is deduced from the cost to create a net cost. This net cost is subtracted from the Ethanol Price to compute the Ethanol Breakeven Corn Purchase Price (below).

Ethanol Breakeven Corn Purchase Price ($/bu.) – The breakeven purchase price is the maximum price that the ethanol producer can pay for corn and still break even. Paying less (more) than the Breakeven Corn Purchase Price will generate profits (losses) for the ethanol producer (farmer).

Corn Price ($/bu.) – This is the price ethanol producers pay for corn and farmers receive for corn.

Landowner Farmer Corn Price Breakeven ($/bu.) – This is the breakeven corn selling price for farmers who own their land (debt free). Selling for a higher (lower) price than the breakeven generates profits (losses) for the farmer.

Corn Production Input Costs (net of government payments) ($/bu.) -- The amount is computed by adding the cost of production inputs, machinery and labor together and subtracting the government payments received by the farmers.

Renter Farmer Corn Price Breakeven ($/bu.) – This is the breakeven corn price (minimum selling price) for farmers who cash rent their land. Selling for a higher (lower) price than the breakeven generates profits (losses) for the farmer. The breakeven is computed by adding the cost of cash rent to the breakeven for the landowner farmer.

Landowner Return ($/bu.) -- This amount is the cash rent landowners receive who rent their land to tenant farmers.

continued on page 3

Who profits from the corn ethanol boom?, continued from page 2

Second Temporary Beneficiary -- Corn Producers

As ethanol production capacity expands, the limiting factor in the supply chain changes from ethanol production to corn production. The price of corn (the limiting feedstock) is bid up. As corn price moves upward, ethanol profits are shifted from ethanol producers to farmers. As shown in Figure 1, by mid-2008, almost all of the profits accrue to farmers. However, as farmers expand corn production to take advantage of these generous profits, they begin bidding up the price of production inputs.

Third Temporary Beneficiary – Input Suppliers

As farmers expand corn production, they bid up the price of production inputs such as fertilizer, chemicals, and seed. Higher input prices generate larger input profit margins for agribusinesses. This leads to competition and expanded input production capacity, which over time limits input prices and profit margins. The exceptions are production inputs whose ingredient price increases such as natural gas in the production of nitrogen fertilizer, and inputs with proprietary information like seed companies.

Permanent Beneficiary – Land Owners

Cropland is the eventual limiting resource in the supply chain. All other segments of the supply chain can expand to meet demand. But the amount of corn produced is limited by the number of acres of farmland available for corn production. So, excess profits are bid into rental rates and land values. Over time cash rental rates rise until most of the profits accrue to the land owner. The other segments of the supply chain give up their profits because they expand through competition until they earn only normal profits.

Putting it All Together

Figure 1 shows the allocation of profits from ethanol production from 2005 to the present time.

How do we expect the graph to play out over the coming years? Based on our previous discussion, the price of corn will stay near the breakeven corn purchase price of ethanol producers. Also, the breakeven corn selling price for the cash rent farmer will move up and converge with the price of corn. The increase in breakeven price will come from higher corn production costs. Although a portion of this cost increase will be due to higher input prices (seed, fertilizer, etc.), the primary increase will be due to higher cropland rental rates. Neither the ethanol producer nor the cash rent farmer will continue to receive any excess profits. The major portion of the excess profits will accrue to the land owner in terms of higher cropland cash rental rates. Because the higher cash rental rates increase the return to land ownership, the price of cropland will increase in conjunction with cropland rental rates.

The breakeven corn price for the farmers who own their land will not increase as much. So they will continue to earn excess profits. But these profits accrue from owning land. Not from operating a farm.

If Boom Turns to Bust

The ethanol boom is expected to continue as long as the subsidies, export tax, and mandates stay in place. However, what if critical industry elements change and the price of ethanol falls sharply? For example, an alternative transportation fuel is developed that makes ethanol obsolete. How will this affect the scenarios described above?

Essentially the same scenario will play out, except it will involve losses rather than profits. Ethanol producers are the first segment hit with losses. Many of the facilities will stop production, either temporarily or permanently. This softens the demand for corn and corn prices decline.

Declining corn prices transfer the losses to farmers. With corn prices plummeting below breakeven levels, substantial losses are incurred by farmers. Government price support mechanisms are of little value because, during the ethanol boom, corn breakeven prices moved significantly higher and are above the support mechanisms.

Farmer losses will soften the demand for production inputs and cropland. Production input prices will decline and tighten the margins for suppliers. More importantly, cropland rental rates will be forced down over time. However, these adjustments will not occur immediately. They will occur gradually, imposing substantial losses on farm operators in the meantime.

If Ethanol Busts, But Agriculture Booms

There is another scenario that may occur. A scenario where ethanol production busts but the agriculture sector continues to boom. With this scenario, the demand for traditional uses of corn and other grains increases to take up the slack created by the waning ethanol demand for corn.

A continuation of the rapid economic expansion of China, India, and other parts of the world could precipitate this scenario. As people's incomes increase, they tend to change to a diet with larger amounts of meat. Expanding meat production requires a substantial increase in the supply of feed grains. This would use the corn previously designated for ethanol production. However, as with the first scenario (above) the eventual beneficiary of the boom is the cropland owner.

Conclusion

Due to the rapid emergence of the biofuels industry, the agriculture sector is going through a period of rapid change. How the future of the biofuels industry will evolve is uncertain. Regardless of how it evolves, residual profits or losses will accrue to the limiting resource. The current limiting resource is the amount of cropland. So, residual profits (losses) will accrue to land owners. However, it is not an instantaneous process. During the economic adjustment process, the other players in the supply chain will benefit or lose.

Payment limitations in the Food, Conservation, and Energy Act of 2008 (the 2008 Farm Bill)*

by Neil E. Harl, Charles F. Curtiss Distinguished Professor in Agriculture and Emeritus Professor of Economics, Iowa State University, Ames, Iowa. Member of the Iowa Bar, 515-294-6354, harl@iastate.edu

This article will provide a summary of a few of the major payment limitation provisions in the new 2008 farm bill.

Payment Limitations

Limitation on payments

The limit on direct payments under the Act is $40,000 per person (for those not participating in the "average crop revenue election" program). The limit on counter-cyclical payments is $65,000, again for those not participating in the ACRE program. There is no longer a limit on marketing assistance benefits. Act § 1603(b), amending 7 U.S.C. § 1308.

Meaning of "person"

The 2008 Act changes the definition of "person" to mean a natural person and does not include a legal entity. All payments are deemed attributed to a natural person, taking into account direct and indirect ownership interests. Payments to a legal entity are to be attributed to those persons who have a direct or indirect ownership interest in the legal entity.

Payments made to a joint venture or general partnership cannot exceed the amount determined by multiplying the maximum payment amount by the number of persons and legal entities comprising the ownership of the joint venture or general partnership. Thus, those joint ventures and general partnerships are not subject to the attribution rules applicable to other types of entities.

The attribution of ownership in other types of legal entities is traced through four levels of ownership.

For marketing cooperatives, the attribution rules do not apply to the cooperative association of producers but apply to the producers as persons.

Payments made to children under the age of 18 are attributed to the parents of the child.

Revocable trusts are considered to be the same person as the grantor of the trust. For irrevocable trusts and estates, the Secretary is to administer the rules in a manner that will ". . . ensure the fair and equitable treatment of the beneficiaries of the trusts and estates." Act § 1603(b), amending 7 U.S.C. § 1308(a)(4)

Cash rent tenants

The payment limitation rules define a cash rent tenant as a person or legal entity that rents land for cash or ". . . for a crop share guaranteed as to the amount of the commodity to be paid in rent." The provision goes on to state that a ". . . cash rent tenant who makes a significant contribution of active personal management, but not of personal labor, with respect to a farming operation shall be eligible to receive a payment . . . only if the tenant makes a significant contribution of equipment to the farming operation." Act § 1603(b).

Federal agencies

The legislation states that a "Federal agency" is not eligible to receive any payment, benefit, or loan under Title I (commodity programs) or Title XII (crop insurance and disaster assistance) of the 2008 farm bill. However, a lessee of land owned by a Federal agency may receive payments. Act § 1603(b).

State and local governments

Under the Act, "a State or local government, or political subdivision or agency of the government, shall not be eligible to receive any payment, benefit, or loan . . ." under Title I (commodity programs) or Title XII (crop insurance and disaster assistance) of the 2008 farm bill. Again, a lessee of land owned by a State or local government or political subdivision or agency of the government may receive payments. Act § 1603(b).

Changes in farming operations

Changes will not be approved in a farming operation unless the changes are "bona fide and substantive." The addition of a family member to a farming operation is considered a bona fide and substantive change.

If an ownership interest in land or a commodity is transferred as the result of the death of a program participant, the new owner may, if eligible to participate, succeed to the contract of the prior owner and receive payments without regard to the payments received by the new owner. However, payments may not exceed the amount the prior owner was entitled to receive under the terms of the contract at the time of death of the prior owner. Act § 1603(b).

continued on page 5

**Reprinted with permission from the June 13, 2008 issue of Agricultural Law Digest, Agricultural Law Press Publications, Brownsville, Oregon.*

Payment limitations in the Food, Conservation, and Energy Act of 2008 (the 2008 Farm Bill) continued from page 4*

Public schools

A special rule applies to public schools owned by a unit of government. A State or local government, or political subdivision or agency of government, is eligible to receive a payment for land owned by the State or local government, or political subdivision or agency of the government, that is used to maintain a public school. However, except for states with a population of less than 1,500,000, a State cannot receive more than $500,000. That limitation presumably applies to payments received each year. Apparently, states with a population of less than 1,500,000 do not face a limitation on payments. Act § 1603(b), amending 7 U.S.C. § 1308(a).

Repeal of the "three-entity" rule

The Act repeals the so-called three-entity rule that limited the number of entities through which an individual could receive program payments. Under the three-entity rule, an individual who received payments as an individual could not receive payments from more than two entities. An individual who did not receive payments as an individual could receive payments from up to three entities. Individuals who could potentially receive payments from more than the allowed number of entities were required to designate from which entities they would receive payments. Act § 1603(c), amending 7 U.S.C. § 1308-1.

Changes in the "actively engaged" rule

The legislation makes minor changes in the "actively engaged" requirement for payment eligibility.

In order to receive payments, under the new language, a person is considered to be actively engaged in a farming operation if (1) the person makes a significant contribution (based on the total value of the farming operation) to the farming operation of (a) capital, equipment, or land; and (b) personal labor or active personal management; (2) the person's share of the profits or losses from the farming operation is commensurate with the contributions of the person to the farming operation; and (3) the contributions of the person are at risk.

A legal entity is considered to be actively engaged in a farming operation if – (1) the legal entity separately makes a significant contribution (based on the total value of the farming operation) of capital, equipment, or land; (2) the stockholders or members collectively make a significant contribution of personal labor or active personal management to the operation and (3) the entity's share of the profits or losses from the farming operation is commensurate with the contributions of the entity to the farming operation; and (4) the contributions of the entity are at risk.

The legislation recognizes six special classes of producers for the actively engaged test – (1) for landowners, a contribution of owned land is considered to meet the actively engaged in farming operation test if the returns from the land are based on the production on the land, the shares of profits or losses are commensurate with the contributions to the farming operation, and the contributions are at risk; (2) for an adult family member, if a majority of the participants in a farming operation are family members, an adult family member is considered to be actively engaged in the farming operation if the adult family member makes a significant contribution, based on the total value of the farming operation, of active personal management or personal labor, the shares of profits or losses are commensurate with the contributions to the farming operation, and the contributions are at risk; (3) for a sharecropper, a significant contribution of personal labor is considered to be actively engaged in farming with respect to the farming operation if the share of profits or losses is commensurate with the contributions to the farming operation and the contributions are at risk; (4) for growers of hybrid seed, the existence of a hybrid seed contract is not taken into consideration; (5) for persons or entities receiving custom farming services, the test is met if the general requirements for actively engaged are met or the landowner, adult family member, sharecropper, or grower of hybrid seed requirements are satisfied – and no other rules with respect to custom farming shall apply; and (6) if one spouse or estate of a deceased spouse is determined to be actively engaged, the other spouse is considered to have met the requirements.

The 2008 legislation identifies two situations of persons who are not considered to be actively engaged – (1) a cash rent landlord if the landlord receives cash rent or a crop share guaranteed as to the amount of the commodity to be paid in rent and (2) other persons who fail to meet the standards for actively engaged. Act § 1603(d), amending 7 U.S.C. § 1308-1.

Adjusted gross income limitation

A person or legal entity is not eligible to receive any farm program benefits if the average adjusted non-farm income of the person or entity exceeds $500,000. The calculation involves the last three preceding taxable years.

Moreover, a person or legal entity is not eligible to receive a direct payment during a crop year if the average adjusted gross farm income of the person or legal entity exceeds $750,000. The benefits affected by the two rules include direct payments, counter-cyclical payments, marketing loan gains, loan deficiency payments, a payment or benefit under Section 196 of the 1996 farm bill, a payment or benefit under Section 1506 of the 2008 farm bill (the milk income loss contract program), and a payment or benefit under Title IX of the Trade Act of 1974 or subtitle B of the Federal Crop Insurance Act. Act § 1604(a), amending 7 U.S.C. § 1308-3a(e)

Conservation program limits

For an array of conservation benefits, a person or legal entity is not eligible to receive benefits if average adjusted nonfarm income of the person or entity exceeds $1,000,000 unless not less than 66.66 percent of the average adjusted gross income of the person or entity is average adjusted gross farm income. Those limitations can be waived if it is determined that "environmentally sensitive land of special significance" would be protected. Act § 1604(a), amending 7 U.S.C. § 1308-3a(e)

Ag Decision Maker Teaching Activities: An educational tool for classroom instruction

by Ann M. Johanns, Extension Program Specialist, 641-732-5574, aholste@iastate.edu

How does a busy high school or community college agriculture instructor keep his/her agricultural teaching curriculum up-to-date? How do you provide your students with an educational experience that is current and relevant? How do you gather the most recent facts and current information during a busy day? Ag Decision Maker has the answer.

Ag Decision Maker is an excellent resource for teaching agricultural economics and farm management topics in a classroom setting. Ag Decision Maker provides unbiased information for everyday agricultural decisions and is an excellent resource for farmers, lenders, farm managers, agriculture instructors, and others.

Teaching Activities

Specifically for agriculture instructors, Ag Decision Maker provides an array of Teaching Activities for use in high school classrooms. Students can complete the Teaching Activities from information provided in the Information Files and Decision Tools and save or print the document and provide it to their instructor.

Answer keys are available for all teachers through a restricted area of the Web site. The name and password are available by contacting Ag Decision Maker, agdm@iastate.edu.

The Teaching Activities available on Ag Decison Maker can be found at:
http://www.extension.iastate.edu/agdm/teachactivities.html.

Updates, continued from page 1

Internet Updates

The following updates have been added to www.extension.iastate.edu/agdm.

Flexible Cash Rent Lease Examples – C2-22 (3 pages)

Current Profitability

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

Corn Profitability – A1-85

Soybean Profitability – A1-86

Ethanol Profitability – D1-10

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Jack M. Payne, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.