Farmers and Social Security Reform

By James L. Novak, Paul Gentle, Patricia Duffy, and Alison Keefe

For several years, reports from the Trustees of the Social Security system have warned us that at the current rate of benefits and given the current age structure of our population, the Social Security system will go broke sometime between 2038 and 2042. To address Social Security Trustees' concerns, President Bush, in his postelection speech, reported that one of the legacies of his administration would be to reform the Social Security system. Farm operators tend to be older, on average, than people in other populations, meaning that changes in Social Security would more likely be of near-term concern to them. Although there is still considerable debate on whether reform is necessary or desirable, this article reports on what a changed Social Security system might look like, and how changes in the system might affect farmers' need for additional savings.

Social Security Today

Trustees of the Social Security system are appointed to oversee the four separate funds that make up the current Social Security Trust Fund Account. These funds are *Social Security* (Old Age and Survivors Insurance, OASI), *Disability Insurance* (DI), Medicare's *Hospital Insurance* (HI), and *Supplementary Medical Insurance* (SMI). OASI is what most people consider when they talk about Social Security retirement income.

Social Security is a pay-as-you-go system (sometimes called "pay-go"). It was designed so that current workers pay for the benefits of current retirees out of taxes. Payroll and self-employment taxes, premiums, and other income are deposited to trust fund accounts. Retirement and disability benefits and administrative costs are paid from the OASI and DI funds. Trust funds not used in the current year are invested in government bonds. When the bonds reach maturity or are needed, they are cashed to pay benefits. According to the Social Security Administration, the nominal interest rate earned on OASI and DI funds in 2004 was 4.3% (OASDI Trustees, 2005).

Proposals for Reform

Many proposals for fixing the Social Security system have been drafted over the past years. These can be summarized as follows:
- keep the current system (OASDI) intact and maintain or raise existing benefits;
- keep the current system intact but reduce benefits;
- change to a regulated two-tiered retirement system, which includes reducing current OASI benefits and making up the difference with a Personal Savings Account (PSA);
- develop a regulated PSA system, eliminate SS benefits entirely, and provide a PSA invested in securities but regulated by the government; or
- eliminate the Social Security system and allow the private sector to handle retirement.

In 2001, the final report of the President's Commission to Strengthen Social Security (2001) listed three voluntary proposals for reforming the Social Security system. The President's recent proposal for reform comes largely from this Commission's study. The idea behind all three proposals is that Social Security benefits would be lowered but made up for ("offset") using a worker's own *Personal Savings Account* (PSA). PSA funds are to be invested and are to earn an interest rate guaranteed to exceed inflation. A retirement annuity would be paid from these funds based on the individual's life expectancy and contributions to his or her own PSA. Benefits from individual savings are projected by the 2001 Commission to be higher or to at least equal to those received under the current Social Security system.

Under the Commission's first proposal, a *Two Percent Personal Account* would result in expected benefits that would exceed (by approximately 12%) those received under the current (2001) Social Security system. This proposal establishes a PSA with voluntary contributions of 2% of taxable wages. Invested funds would be com-

pounded at a guaranteed rate of 3.5% above inflation.

The Commission's second proposal is called the *Voluntary Progressive Personal Account.* This proposal establishes voluntary personal accounts without raising taxes or requiring worker contributions above what is currently required. Features of this program include:

- voluntary contributions of 4% of "redirected payroll taxes" from the OASI trust fund to a PSA, with PSA contribution limits of $1,000 annually;
- contributions are to compound earnings at an interest rate of 2% above inflation;
- the $1,000 contribution limit would be adjusted upward for annual inflation; and
- OASI benefits would be indexed to price inflation rather than national wage growth.

Social Security benefits payments will be offset by payments from the workers' individual personal accounts. According to the Presidential Commission, total benefits are expected to at least equal the OASI benefits received (as measured by 2001 income). Under this plan, additional Social Security benefits would be paid to low-pay, high-risk workers. The minimum Social Security benefit payable to 30-year minimum wage earners would be at a rate of 120% of the poverty level.

The third proposal deals with *Voluntary Add-On Accounts with Matches from Payroll Taxes.* This proposal "carves out" a part of the payroll tax and invests that amount in PSAs. This proposal is designed to preserve Social Security benefits (as calculated in 2001) by allowing workers to contribute voluntarily an additional 1% of wages to a PSA. Features of this proposal are:

- The 1% would be matched by 2.5% of a worker's payroll taxes up to a maximum of $1,000 annually;
- contributions would be compounded at 2.5% above inflation, with the maximum contribution indexed by inflation; and
- refundable tax credits would be given for the add-on contribution.

Under this plan, scheduled Social Security benefits would be offset by payments from workers' personal accounts. Minimum benefit of 100% of poverty level would be guaranteed for 30-year workers and 111% of the poverty level would be guaranteed for 40-year workers. Any benefits received from the Social Security system would be modified by adjusting the growth rate for future changes in life expectancy, decreasing early retirement benefits, increasing benefits for delayed retirement, and reducing the benefits for those with higher incomes.

So What's the Downside?

If all of this sounds good, what's the downside? Concern has been expressed about the cost of implementing the personal savings account system. The cost of funding and regulating such a system, independent of the contributions required by the workers, has been estimated by at least one source to be an additional $25–50 per person per year, on top of what the current system costs, which is about $16 per person per year (Hill, 2000). A Congressional Budget Office report (Walliser & Becker, 1999) estimates PSA administrative costs (based on Chilean and Argentinean PSA experience) at about $50 per contributing worker per year—similar to the cost experi-

enced by US employer-sponsored pension plans.

Legislated minimum guarantees may be of particular value in the case of limited-resource farmers or for farmers with financial difficulties. A potential PSA fund accumulation problem for farmers in particular is that they may have years of minimum or no contributions because of farm operating losses. Farm profits contribute to the size of fund an individual can accumulate. The longer contributions are in a fund, the more time they can compound and potentially accumulate into a larger nest egg on which to draw during the retirement years.

Issues such as the definition of emergencies (natural disasters, health emergencies, etc.), which would allow for early withdrawal, would need to be worked out. Other questions include: If participants outlive their PSAs, should the system continue paying benefits? If individuals mismanage their portfolios, what should be done?

Investment Policy

An excellent article on the marginal effects of four proposals for restoring long-run actuarial solvency to the Social System looked at "including the establishment of private accounts, providing for Trust Fund investment in private securities, using General Fund revenues, and changing the benefit structure of Social Security" (Lyon & Stell, 2000, p. 473). Their finding is that a one-step process of contributing 2% of payroll taxes to a PSA (at the historic 3% rate of return earned on long-term bonds) would not fix the system. Additional measures, such as a transfer of funds from the General Fund or earning higher rates of return (6%), are required to balance the sys-

tem. Restoring solvency to the system as it currently exists requires such measures as including newly hired state and local workers in the system, raising the Normal Retirement Age, and increasing the contributions and benefits base to 90% of covered wages.

With regard to private investments, a portfolio of 40% bonds and 60% stocks has been suggested for Personal Savings Accounts (Liu, Rettenmaier, & Wang, 2001; Lyon & Stell, 2000). At least one opponent to stock market investment, John Mueller, expressed concern over its volatility (Mueller, 1997). Liu et al. (2001) point out that the higher interest rate earned in the market is largely a risk premium. The relative riskiness of alternative investments would certainly need careful weighing in any move to a PSA-type system.

Farmer Savings Needed to Replace Social Security?

Table 1 shows the accumulated savings needed to provide $775, $979, and $1,327 monthly annuities to replace average age 62, 65, and 70 Social Security benefits, respectively, for an individual born in 1936 and who earned the national average wage for the past 35 years. Although it is unlikely that there is a farmer who earned exactly the national average wage rate for the past 35 years, these numbers are provided to show the approximate retirement fund necessary to replace Social Security on average. For example, on average, a $152,000 nest egg would be required (at a 2.5% real rate of return on investment) to replace a $775 Social Security monthly annuity with a PSA annuity.

Seventy to eighty percent of pre-retirement earnings has been estimated to provide a retiree with his or

Table 1. Savings required to provide a monthly annuity equal to average earned social security benefits ($).

Retirement age	Monthly annuity ($)	Investment portfolio rate of return				
		2.5%	3.5%	4.5%	5.5%	6%
62 (early retirement)	775	152,000	138,166	126,197	115,678	110,893
65 (normal retirement)	979	170,500	156,725	144,753	134,052	129,128
70 (delayed retirement)	1,327	176,583	166,125	156,510	147,661	143,502
Note. Assumes a person will live to age 83.						

her pre-retirement standard of living. Shipman states that to achieve a 70% income replacement at retirement, "one's portfolio would have to earn an annual real rate of return of 5.7%" (p. 1). Table 1 shows that a 6% return on investments would require retirement funds of $110,893 to pay $775 per month, $129,128 to pay $979 per month, and $143,502 to pay $1,327 per month. Additional family savings would be required to replace Social Security annuities for both a husband and wife. At Normal Retirement Age, spousal annuities are currently 50% of the primary earner's annuity. Family earnings are subject to maximum limits. Higher earnings on investment would reduce the size of the fund required for retirement.

Care Needed In Redesigning the System

There is significant discussion about the cost of implementing a dual retirement system and whether any cost savings would result from such changes. Farmers who participate in the Social Security system would be subject to the same impact as the general population of self-employed if the benefits formula were changed. In 1998, 150,000 limited-resource farmers had household incomes of $9,924 and current assets of $6,790. This group of farmers is relatively poor (19.1% of national average income) and would expect a significant impact from Social Security

changes. However, farmer retirees are not generally totally dependent on Social Security. According to a USDA Economic Research Service study of retired farmers, farm rental, value of farm products consumed, and CRP are listed as sources of retirement income (Hoppe, 1996). Total household income was listed as 88% of the national average income (Hoppe et al., 2001). Two problems identified by ERS with farm assets as a source of retirement funding is the relatively fixity of real estate assets and that partnership arrangements may complicate conversion of wealth to a liquid form (Hoppe et al., 2001).

Alternatives to reforming the Social System include raising payroll taxes, cutting benefits, and eliminating tax cuts. Although reform is mostly targeted to younger wage earners, changes to the tax system will affect nonretired as well as retired farmers.

According to the Trustees and others, if the system is to be "fixed," an early fix is preferred. According to the 2003 Trustees report, "To the extent that changes are delayed or phased in gradually, greater adjustments in scheduled benefits and revenues would be required" (Social Security and Medicare Boards of Trustees, 2003, p. 1).

Clearly, changes to the system should be designed with care and with adequate safeguards for farm as well as nonfarm participants. Potential savings problems of farmers and

other self-employed individuals, like accounting for low or negative income years, health problems, and accidents, should be factored into the reform equation. Anything less would result in more insecurity than the current debate provides over the future of Social Security.

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CHOICES

The magazine of food, farm, and resource issues

The Business of an Agricultural "Way of Life"

By Steven C. Blank

In an earlier *Choices* article, Blank (2002) argued that a majority of America's farms and ranches are "hobby farms" that represent a lifestyle choice more than a commercial business. In answering the question "Is agriculture a 'way of life' or a business?", Blank concluded that:

> Agriculture is both a way of life and a business. It is a way of life to, possibly, all participants, but it is a business to only some. Large-scale "commercial farms" clearly act like businesses. Many of those farm operators may also view their business as a desirable way of life. On the other hand, "rural residence farms" are hobbies that operators must subsidize with earnings from off-farm sources. (p. 29)

This article takes the analysis a step further by posing a second explanation for why farmers are willing to subsidize their family farm. It abandons the naive view, often expressed by farm advocates, that rural residents are only in it for the lifestyle. That gross underestimate of farm owner-operators' business savvy is replaced with a modern view of the big picture.

The Never-Ending Debates

In agricultural policy debates, farm advocates have often used the "way of life" argument to support their claim that production agriculture in general and family farms in particular need to be protected in various ways—such as subsidization through direct and indirect government payments. However, many things in agriculture are not what they seem. The net farm income totals reported by the United States Department of Agriculture (USDA) overstate the profitability of agricultural production while they understate the profitability of being a farm owner-operator. The overstatement comes in the form of direct government transfers to agriculture that in some recent years have been nearly half the total net farm income reported by the USDA (2005). The understatement comes from the income data's focus on only farm/ranch production related activities, ignoring other sources of income. Of these two misrepresentations of American agriculture's big picture, the understatement is far more important. It leads to the perception that an agricultural way of life is one of poverty for most farmers, thus providing a justification for government support.

However, if things down on the farm are so bad, why do farmers stay in agriculture, and why has the number of farms with annual sales of less than $10,000 increased since 1992, while total farm numbers continue to decline? As Blank noted, the reverse migration from cities to small farms observed over the past decade suggests that more Americans want to pursue a rural lifestyle (Deller, Tsai, Marcouiller, & English, 2001). But is that all there is to it?

The debate over why farmers stay dates back many decades and is typified by Brewster's (1961) hypothesis that farmers willingly accept lower returns than other investors because of the lifestyle benefits derived from farming. This view often leads to a mistaken interpretation of the fact that most farmers are part-timers. The misinterpretation usually made is that farmers seek off-farm income simply to enable them to pursue their lifestyle choice. However, a second possible explanation for why farmers stay is implied by the results of Blank, Erickson, Moss, and Nehring (2004), who found that farmers' wealth comes from capital gains, not production income. This leads to the proposition that many owner-operators may be real estate investors using off-farm income to help them stay on the farm until they choose to capture their capital gains. This implies that farmers, like all investors, have a desire to build wealth, which is consistent with the view that owner-operators see agriculture as a business.

Table 1. Average rates of return by region, 1960–2002.

	ROA from current income	ROA from capital gains	Total ROA	SD of total ROA	Total ROE	SD of total ROE
Northeast	-0.03	2.56	2.54	3.65	2.24	4.38
Lake States	1.82	2.13	3.95	6.22	3.53	8.15
Corn Belt	3.13	1.06	4.18	7.83	3.86	9.57
Northern Plains	3.97	0.83	4.80	6.57	4.57	8.37
Appalachia	2.58	1.45	4.04	4.59	3.86	5.52
Southeast	5.50	1.92	7.42	4.48	7.90	5.50
Delta	4.62	-0.02	4.60	6.58	4.34	8.42
Southern Plains	1.87	0.71	2.58	4.92	2.27	5.88
Mountain	2.67	1.24	3.90	5.51	3.78	6.88
Pacific	5.41	0.97	6.39	4.95	6.84	6.57
AK & HI	2.93	1.92	4.85	5.26	4.92	5.80
US total	3.04	1.26	4.30	5.26	4.12	6.60

Note. ROA—return on assets; ROE—return on equity; SD—standard deviation of the time series.

Wealth is the Key

A business has the objective of increasing the wealth of owners. For most small and mid-sized farms, owners' wealth is reduced by the production losses they incur most years, on average; thus, they are often labeled as "hobby farms" (Mishra, El-Osta, Morehart, Johnson, & Hopkins, 2002). However, if you understand the full definition of wealth, you know that production income is only one source.

Three types of income (or economic gains) contribute to wealth: profits from farm output, off-farm income, and capital gains on assets. Total wealth (W) is usually expressed as equity at time t. Changes in wealth during a time period ending at t (ΔW_t) equal farm income ($FInc$) plus off-farm income ($OFInc$) plus capital gains (ΔK) minus consumption (C), or $\Delta W_t = FInc_t + OFInc_t + \Delta K_t - C_t$.

Capital gains are simply the change in value of a farmer's capital from one period to the next: $K_t - K_{t-1}$. Capital gains are only realized if the asset is sold. However, lenders will usually loan a farmer up to some specific portion of the market value of assets, referred to as the *loan-to-value* ratio. Thus, some portion of unrealized capital gains can be immediately converted into cash and used to acquire other assets. In this regard, capital gains—even unrealized gains—immediately improve a farmer's ability to borrow, and thus they aid in financing a larger operation, which presumably will increase the growth in wealth.

So, how are agricultural producers doing in generating income to build wealth? The 2002 Census of Agriculture (USDA, 2004) reports that 53.3% of all farms generated a net *loss* for the year, although the average household earnings from farming activities for that year were $3,473 (USDA, 2005). Clearly, this amount is not sufficient to support a family—it does not exceed household consumption cost. Thus, relying on this source of income only would result in annual reductions in household wealth.

So, why continue to farm? Although income from farming activities is low, on average, if it is still positive, it helps operators cover (at least part of) their ownership costs. As an investment, farming has generated a positive return for American farmers. The first column of Table 1 shows the average return on assets (ROA) received by producers in the different regions of the country, plus the average for the United States, over the 1960–2002 period. It shows that over the long run, American agriculture has generated a 3.04% average return on assets used in production activities. That provides some incentive to continue investing in the business.

What about capital gains? Farmland has historically represented about 75% of assets held by farm households (USDA, 2000). Therefore, the ROA from capital gains reported in the second column of Table 1 are primarily from farm real estate. Agricultural land prices are the result of assessments of a parcel's value by both agricultural and nonagricultural markets (Drozd & Johnson, 2004; Plantinga, Lubowski, & Stavins, 2002), and many of those factors are out of the control of the farm owner. Therefore, farmland values vary much more than do the val-
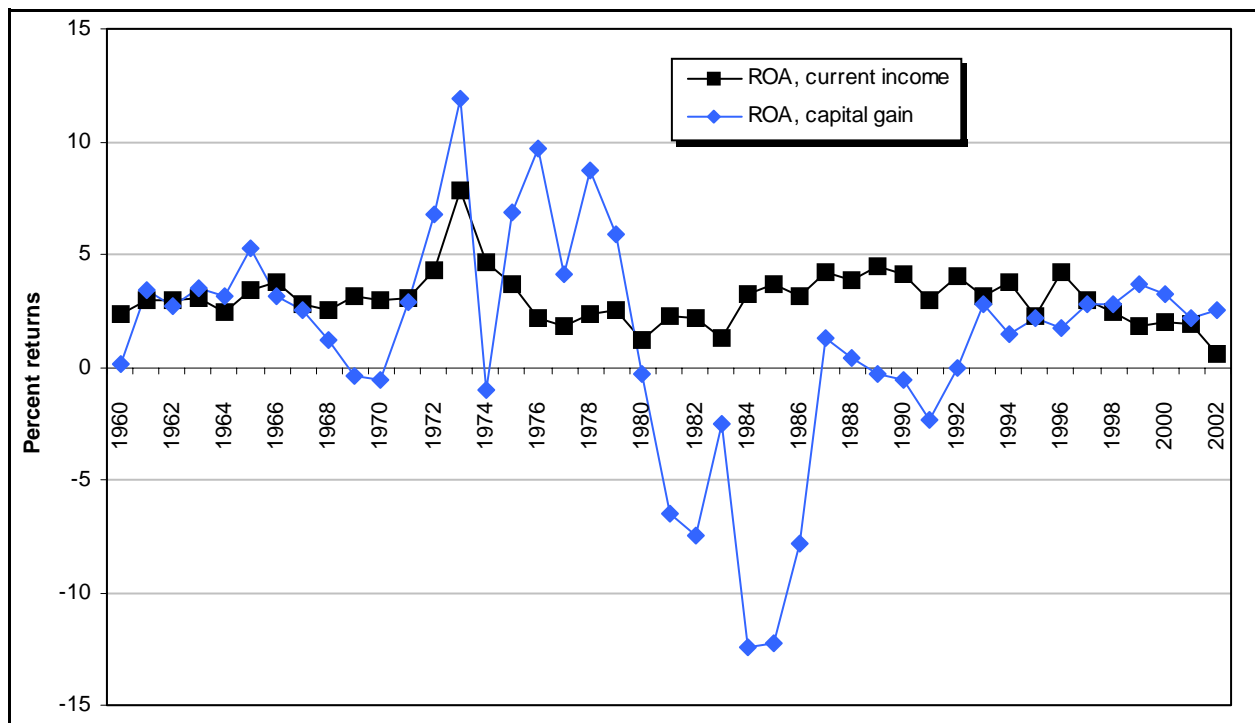
Figure 1. US agriculture's returns on assets, 1960–2002.

ues of other agricultural assets, but they have generated an average return on those assets of 1.26% annually for owners over the 1960–2002 period. The volatility of the two sources of returns is apparent in Figure 1. What is also apparent is that returns from capital gains have been higher than returns from current production income for most of the past decade. What is not apparent is the relative scale of the contributions to owner wealth that are made by capital gains.

As it turns out, capital gains have increased owner-operators' wealth more than have farming profits, on average, in many years. For example, in 2002 the Census of Agriculture found that the estimated market value of farm real estate was $1.145 trillion dollars. Assuming that the long-run national average rate of return from capital gains of 1.26% (shown in Table 1) was earned on the real estate gives a conservative estimate of $14.4 billion for capital gains in agriculture for 2002. That total

equals $6,777 in capital gains earned for the year by each of the 2,128,739 farms reported in the Census. The actual capital gain rate reported for 2002 was 3.18% (USDA, 2005), which gives an estimate for average capital gains of $17,078 per farm—nearly five times as much as the average amount of farm income per household. Therefore, capital gains are relatively much more important in building farm owner-operator wealth, even though they look relatively minor when reported as in Table 1. In addition, the distribution of capital gains is likely to be weighted more heavily toward small lifestyle farms (that are more often closer to cities) than to large commercial farms (that are usually farther from urban areas). In other words, it is expected that small farms are earning above-average rates of capital gain, thus improving owner-operator wealth faster for lifestyle farms because of the "urban influence" on

land values in their location (USDA, 2000).

Finally, it should be clear that farm income must be augmented by off-farm income to cover the cost of living for most farm households. Even if capital gains could all be realized each year, combining the long-run annual average of $6,777 in capital gains with the low average earnings from farm activities ($3,473 in 2002) gives an average farm household income of only $10,250 per year—far below the poverty line for a family of four. Therefore, off-farm income is a necessity for most farmers. Is this an indicator of poverty?

Apparently not. Farmers are doing better than the rest of us, on average. The average off-farm earnings of farm households in 2002 was $62,285, with lifestyle farms averaging much more than that and large farms averaging much less (USDA, 2005). Combining this figure with the $3,473 average earnings from farming activities gives a total income

of $65,757, which was 13.7% higher than the US average household income of $57,852 for that year. This means that farm households may be building wealth faster than other Americans, on average.

So, who wants to argue that the agricultural "way of life" needs government subsidies?

A Growing Investment

Agriculture is a way of life to rural residents, but it is a business to all its investors, including absentee owners. Large-scale farms clearly act like profit-maximizing businesses. On the other hand, most smaller farms are lifestyles that provide owners with deductions to write off against their taxable earnings from off-farm sources while gaining wealth in the form of capital gains. In other words, all farmers are pursuing both lifestyle and business goals. This can be more easily understood if we describe farm and ranch owner-operators as investors and wealth builders like all businesses.

A business that builds wealth primarily from capital gains is an investment firm. In many cases, a farm is a passive investment that does not interfere with the owner's ability to work off-farm. The Census shows that 54.8% of all farmers reported working off-farm at some time during 2002, with the share being higher for small farms and lower for large farms, as expected. Even more telling is that 39.1% of farmers reported working off-farm 200 days or more during the year. That is virtually full-time employment! No wonder farmers earned more money per household off-farm during 2002 than the average American household earned in total. This indicates that farm owners are a talented group and are valued by the labor market, on aver-

age, more highly than average Americans are. Therefore, the business savvy of farmers should no longer be underestimated.

Many farmers are smart investors who have taken "moving to the suburbs" one step further and have found wealth. The direction of causality in the migration from cities to small farms is unclear. Do rising rural real estate values cause the migration, or does migration raise farm real estate values? Or are both explanations working in a circular fashion?

Clearly, the answers vary across the country. For example, the regional results in Table 1 show that farms in the Northeast and Lake States derive a majority of their long-run returns from capital gains, which have outperformed returns from agricultural production as an investment. The reverse has been true in the Delta region. Thus, the relative portions of "farms" in a region that might be called "investment firms" will differ across locations.

What is a "Farm"?

The discussion to this point has raised questions about whether all operations currently defined as "farms" by the American government truly deserve that label and the government support that comes with it. This article offers the proposition that many owner-operators may be real estate investors using off-farm income to help them stay on the farm until they choose to capture their capital gains. If this description fits an operation, it can be argued that the household is more accurately portrayed as an investment firm, even if they are enjoying an agricultural way of life. For these firms, the business motivating their rural way of life has little to do with real agriculture.

"Real" farms and ranches make a real effort to support their household on earnings from agricultural activities. This means making household labor allocations with the primary objective of producing agricultural output, rather than viewing agriculture as the residual market for excess labor in the household. When more household labor is allocated off the farm than is allocated to agricultural activities, the operation is primarily a real estate investment firm, not a farm.

However, care must be taken when trying to distinguish between real farms and investment firms. Sometimes farmers act very much like investors in their business decisions, but they have very different motives. For example, it has often been observed that farmers reinvest most farm income into their operations. This raises the question: Do farmers reinvest out of economic necessity, or are they making investments in expanding their farms to increase their long-run wealth derived from increased capital gains? It might appear that any investment made with capital gains in mind indicates that the person is not a real farmer. However, farm real estate investments play a very important role in the life of real farmers: providing current farmers with a retirement "nest egg." With no other source of income, most real farmers need to capture their farmland capital gains to be able to retire from the business that has been their life. Ultimately, differences in the nature of investments made in a farm will indicate whether the household is operating like a real farm or an investment firm. A farmer makes investments that raise the value of the operation as a "working farm." An investment firm makes investments that raise the real estate value of the operation.

Some investments can raise both values.

Policy Implications

Policies aimed at protecting an agricultural "way of life" are outdated and badly in need of replacement by programs that are based on an understanding of the true business objectives of those living in rural America. The country needs a modern definition of what constitutes a "farm" and an agricultural policy with differential treatment of farms across scale ranges with regard to policy benefits. Also, care must be taken in land-use policies so as not to hurt those people who have served the country as agricultural producers.

At present, at least 53% of farms lose money each year, on average, and focus much of their attention and household labor off-farm. This raises the question of whether those operations should be considered "farms" and receive agricultural policy benefits. It does not make good business sense for the country to have taxpayers subsidize these real estate investors. Yet current subsidies include income tax breaks and direct government payments to farm owners totaling billions of dollars each year. The fact that a lot of money goes to large farms and/or absentee owners adds fuel to the argument that much of agricultural policy is no longer accomplishing its original goals of providing an economic "safety net" for those people producing our country's food supply.

Land-use policy now holds the future of American agriculture. The lifestyle-driven reverse migration from cities to rural areas has several economic impacts on American agriculture. It creates demand for agricultural parcels that can be developed; thus, it increases the price of farmland in at least two ways (Drozd & Johnson, 2004). First, farmland with potential for development serves two markets (rural and urban) and is valued at its "highest and best use," which is the urban value. Second, each time land leaves agriculture there is a new delineation of the urban fringe, thus causing an outward ripple in land prices reflecting the new pattern of development potential. This can raise the value of current farmers' retirement "nest egg" but can also make it more difficult for new farmers to enter the profession. On the other hand, if land-use policy tries to keep land in agriculture through zoning (for example), it can hurt real farmers. Without the freedom to capture the development value of their farmland, many farmers will lose most of their expected retirement funds.

Thus, policy-makers need to understand the composition of real farmers' wealth and the effects of any proposed legislation before undertaking a much-needed overhaul of agricultural programs. The country would be better served by investments in "real" farms, rather than in "lifestyle" operations housing real estate investment firms in rural locations.

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Beef Packers' Captive Supplies: An Upward Trend? A Pricing Edge?

By Clement E. Ward

Captive supplies in fed cattle procurement have been a major concern and divisive issue in the beef industry for nearly two decades. The issue has sparked lawsuits, protracted debates among cattlemen, and research by agricultural economists.

Issues related to captive supplies contributed to producer support for the Livestock Mandatory Reporting Act, which required packers to report considerable detail regarding their livestock purchases to the United States Department of Agriculture (USDA) Agricultural Marketing Service (AMS). Alleged "sweetheart deals" offered to selected large feedlots by large packers were thought to unfairly harm smaller cattle feeders. Limited data and information on how packers procured fed cattle were believed to hinder cattle feeders in price discovery. As a result, there was a push to move from voluntary to mandatory price reporting.

Implementation of the Livestock Mandatory Reporting Act began in April 2001. One immediate effect of the act was to create new data series on prices and quantities of fed cattle procurement, some of which pertain to captive supplies. New data in the first three years since mandatory price reporting (MPR) began provide insightful information regarding packer procurement (and cattle feeder marketing) methods.

Captive Supplies Before Mandatory Price Reporting

Captive supplies are slaughter livestock that are committed to a specific buyer (meatpacker) two weeks or more in advance of slaughter. The three most common captive supply methods are marketing/purchasing agreements, forward contracts, and packer feeding. A common element of these procurement methods is that packers have a portion of their slaughter needs purchased two weeks to several months prior to the livestock being slaughtered. A key issue is whether captive supplies can be used as leverage by packers to pay lower prices for fed cattle purchased in the cash market.

Official data on captive supplies are from the USDA Grain Inspection, Packers and Stockyards Administration (GIPSA, 2002, 2004). GIPSA began requiring packers in 1988 to report monthly procurement of fed cattle by captive supply methods. In 1994, AMS began reporting data on non-cash-market shipments of fed cattle. This series, called *additional movement*, became a proxy for some people regarding the extent of captive supplies. However, although it included shipments of cattle that constituted captive supplies, it also included shipments of cattle priced by methods not defined as captive supplies.

Captive Supplies After Mandatory Price Reporting[1]

Annual Averages

Negotiated pricing on average over the three-year period accounted for 46.1% of fed cattle marketing (Figure 1). In 2003, negotiated pricing represented the majority of fed cattle procurement (53.9% of the total). Formula pricing averaged 43.3% of fed cattle procurement for the three-year period and was the most used procurement method in 2001 and 2002. However, it declined sharply to 34.0% in 2003. According to cattle feeders who responded to a 2002 survey in Iowa, Nebraska, Kansas, and Texas, most formula price arrangements are tied to the cash market—either a quoted market price or a plant average price (Schroeder, Ward, Lawrence, & Feuz, 2002).

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1. *In this article, year 2001 refers to April 2001 to March 2002, 2002 refers to April 2002 to March 2003, and 2003 refers to April 2003 to March 2004. Data for this article were compiled by the Livestock Marketing Information Center from AMS reports. See more detail in Ward (2004a, 2004b).*
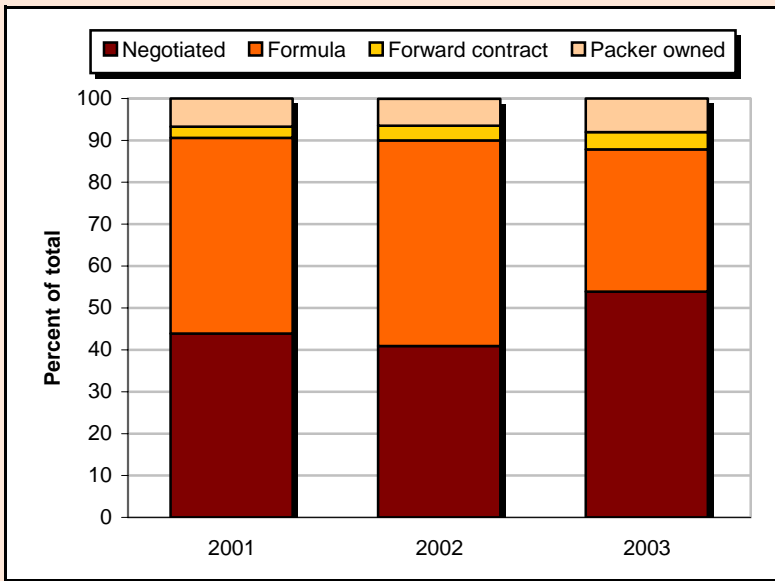
Figure 1. Average annual percentage of fed cattle purchases by procurement method since mandatory price reporting, April 2001 to April 2004.
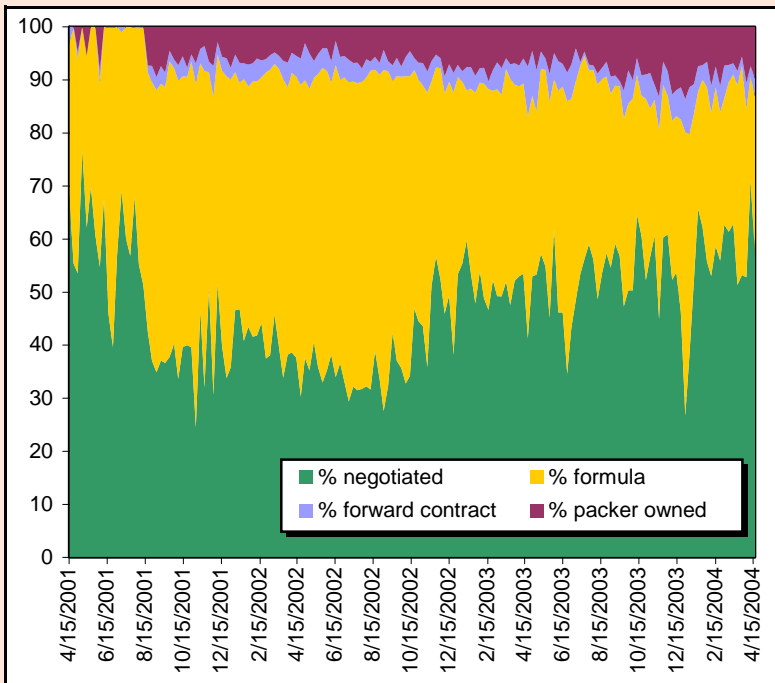

Figure 2. Average annual percentage of fed cattle purchases by procurement method since mandatory price reporting, April 2001 to April 2004.

Weekly Dynamics

Figure 2 shows the weekly percentage of negotiated, formula-priced, forward-contracted, and packer-owned trades for the first three years since MPR began. For any given week, the percentage of negotiated pricing was as low as 24.5% and as high as 76.9%. Generally, negotiated pricing can be interpreted as cash market pricing. Formula pricing also varied widely from week to week, ranging from 22.1% to 64.8%.

For the other two procurement methods, there was considerable week-to-week variation, but the variation was of a much smaller magnitude. The range for forward contracts was 0.2–9.4%, and the range for packer-owned cattle was 2.6–13.6% of total fed cattle procurement. Week-to-week variation in negotiated trades and formula-priced trades is extensive, both on a percentage basis and in absolute volume traded. At times over the three years, formula pricing exceeded negotiated trades, and at times, the reverse occurred. The exact reason for the variation or apparent tradeoff between these two pricing methods is not clear.

Forward contracting was the least used pricing alternative over the three years. Basis contracts are dependent on the expected cash minus futures market basis, supply-demand market conditions, and the willingness of both sides to contract and take an appropriate position in the futures market. Prior to MPR, there were no weekly data on the extent of packer ownership of fed cattle, only the annually reported figures released later by GIPSA. The extent of packer feeding was reasonably stable over the three years, ranging in most weeks between 5% and 10% of total procurement but exceeding 10% on occasion in 2003.

Forward contracting, which consists mostly of basis contracts between packers and cattle feeders, represented a small percentage of fed cattle procurement each year. Forward contracts averaged 3.5% of packers' procurement for the three years. Packer ownership of livestock, one of the most discussed components of captive supplies and a frequent target for legislative reform, accounted for 7.1% of total fed cattle procurement on average for the three years.

Estimating Captive Supplies

MPR has generated additional information on packer procurement, but it is difficult to compare AMS data with GIPSA data. What is the true extent of captive supplies? Some might argue that captive supplies constitute the sum of formula pricing, forward contracting, and packer-owned procurement by packers. For two of the three categories (forward contracting and packer ownership), this argument is seemingly clear, though there could be exceptions. For formula pricing, the argument is much less clear. Many formula-priced trades are associated with supply contracts or marketing agreements. Many of those agreements allow feeders to determine the delivery date for fed cattle one to three weeks prior to harvest, either alone or in conjunction with the participating packer.

For purposes here, I assume that three types of procurement methods (formula-priced transactions, forward contracts, and packer ownership of fed cattle) comprise captive supplies. This set of procurement methods effectively establishes a near-maximum extent of captive supplies from the weekly MPR data. Combining data reported earlier, captive supplies accounted for 56.1% of fed cattle procurement in 2001, 59.0% in 2002, and 46.1% in 2003. Although the level of captive supplies no doubt concerns some, there is no apparent upward trend in the percentage based on the first three years of MPR data.

Pricing Method Data from Mandatory Price Reports

Additional information is available since mandatory price reporting began for negotiated pricing, formula pricing, and forward contract pricing
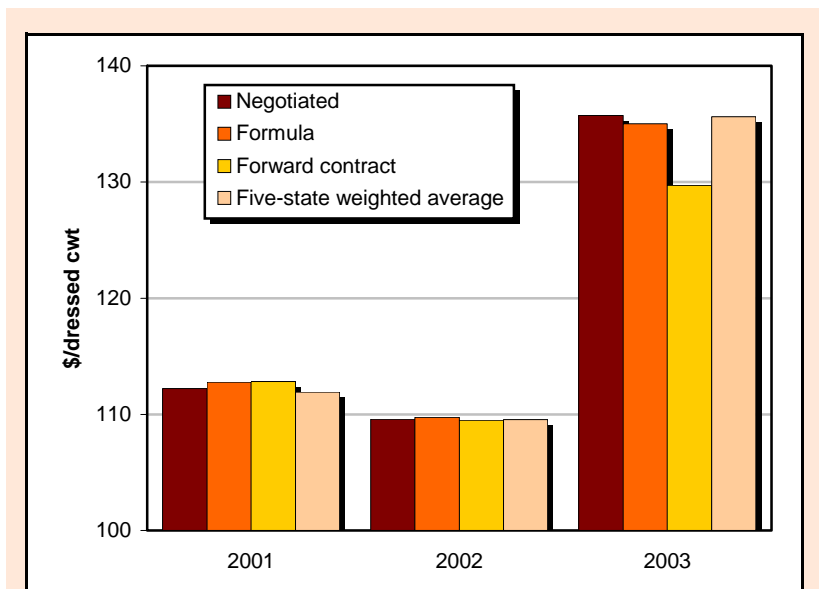

Figure 3. Average annual price of fed cattle purchases by procurement method since mandatory price reporting, April 2001 to April 2004.
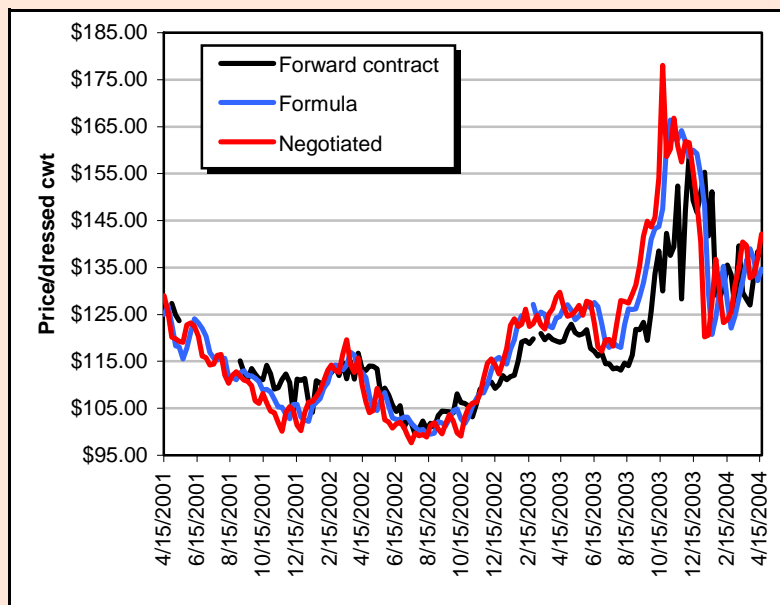

Figure 4. Weekly negotiated, formula, and forward contract dressed steer prices since mandatory price reporting, April 2001 to April 2004.

of fed cattle. Price data are not reported for packer-owned cattle, because those cattle are transferred internally from one business area of the company (cattle feeding) to another (slaughter-fabrication).

Summary of Prices

Price comparisons are on a dressed weight basis, and the five-state

weighted average price includes prices for all grades of fed cattle purchased from several major cattle-feeding states (Texas-Oklahoma, Kansas, Nebraska, Colorado, and Iowa-So. Minnesota). It could be argued that the five-state weighted average price is the most comprehensive and representative of market conditions in the cash market. Here,

the five-state weighted average steer price is used as the base or standard for comparing prices reported by procurement methods.

Negotiated prices for the three years together averaged $0.14/cwt above the five-state weighted average price (Figure 3). On an annual basis, negotiated prices averaged as little as $0.04/cwt higher than the five-state average in 2002 to as much as $0.29/cwt in 2001. Formula prices averaged higher than other pricing methods or the five-state average in some years and lower in others. For the three-year average, formula prices were $1.43/cwt higher than the average for forward contracts and $0.07/cwt higher than average negotiated prices.

Forward contract prices varied the most relative to other pricing methods. They were $0.06–0.91/cwt higher than comparison prices in 2001. However, in 2003, forward contract prices were $6.02/cwt below negotiated prices and $5.31/cwt below formula prices. This large price difference is likely related to the nature of pricing basis contracts.

One of the major concerns with some producers is whether there are special "sweetheart deals" between packers and feedlots. Given the annual average prices reported here, although sweetheart deals may exist, there is no significant advantage on average with formula prices relative to other procurement methods or the more broadly reported five-state weighted average price.

Comparison of Negotiated, Formula, and Forward Contract Prices

Comparing each of the price series for pricing methods to the broader weighted average price is important to identify similarities and differences. In a comparison of weekly weighted average dressed steer prices

versus negotiated prices for the three years since MPR began (not shown here; see Ward, 2004a), there appears to be no distinguishable difference between prices.

One of the major concerns for many supporters of MPR was the presumed favorable relationship of formula prices relative to negotiated prices. Figure 4 compares weekly negotiated prices, formula prices, and forward contract prices for the first three years of MPR. Because the weighted average dressed steer price was indistinguishable from negotiated prices, we compare formula prices and forward contract prices graphically with reported negotiated prices. Between formula prices and negotiated prices, there is a noticeable difference in many weeks. Do those who formula price receive preferential prices? The answer appears to be yes—sometimes—and no—sometimes.

Recall that the price difference on average between negotiated and formula prices was just a few cents per hundredweight and favored formula prices two of the three years. A partial explanation may be gleaned from Figure 4. Negotiated prices tend to be lower than formula prices on a declining market. Conversely, formula prices tend to trail negotiated prices on a rising market. Many base prices in grids are formula prices tied to last week's cash market—either a reported cash market price quote or the average cost of fed cattle at the packer's plant where the cattle will be harvested. Therefore, a closer relationship is expected between this week's formula prices and last week's negotiated prices, compared with this week's negotiated prices and this week's formula prices.

A comparison of forward contract prices with negotiated prices shows that forward contract prices

deviate sharply from negotiated prices in some weeks. With basis contracts, packers bid a futures market basis in the month fed cattle are expected to be harvested, and cattle feeders can pick the fed cattle price anytime before delivery of the cattle. Thus, cattle feeders determine when the futures market contract price has peaked for the expiration month just after the cattle will be harvested. As a result, this week's reported forward contract prices may or may not be closely aligned with this week's negotiated prices.

Summary observations can be made regarding the above comparisons. First, prices for the three procurement methods track each other relatively closely in general. Each is generally representative of broad market conditions but not of what might be affecting prices within and between weeks. However, less reliance should be placed on forward contract prices as an indicator of current market conditions compared with either negotiated or formula prices.

Second, no single pricing method has been consistently higher or lower than any other. This seems especially important, given the concerns regarding captive supply prices versus cash market prices. Neither of the two pricing methods typically associated with captive supplies is consistently above cash market prices. However, there appears to be differences associated with rising or declining prices that could be important in choosing one marketing method over another.

Final Assessment

Is there more information available on the volume of captive supplies since mandatory price reporting? Yes. The extent of captive supplies can be

tracked now with weekly data. Although the data do not present an exact picture of captive supplies, most would likely conclude the new information is insightful and an improvement.

Moreover, more price information by procurement method is available since mandatory price reporting was established. This availability enables tracking prices by procurement method and making comparisons that were not previously possible.

One final comment is appropriate. It bears repeating that the data on captive supplies using the AMS mandatory price reports does not match exactly the definition GIPSA has used for captive supplies. Thus, although there is both more timely and more information on captive supplies from mandatory price reports, caution must be exercised in using the AMS data to estimate the exact extent of captive supplies.

For More Information

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