



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



# Doing Good—Doing Well: Public Policy and the Financial Fortunes of Commercial Farm Businesses in Iowa

By Robert W. Jolly and Darnell Smith

One of the more highly publicized news items of the recent Farm Bill debate was the realization that farmers who owned more land or produced a greater volume of program crops received more money than those who did not. Because farm payments are distributed largely on the basis of acreage or output and have been for decades, this sudden indignation seems surprising. A more important question might be whether or not the program did what it was purported to do—raise farm incomes for family farmers, protect them from massive losses in wealth, and “keep them on the land.” We can’t fully explore this topic in these few pages, but we can examine a few consequences of farm programs and changing economic conditions.

## A Little History

Following the adoption of the 1996 Farm Bill, agriculture in the United States experienced two exceptionally good income years (1996 and 1997), the Russian and Asian financial crises, the devaluation of the Real and the emergence of Brazil as a competitive force, the collapse of the hog market in 1998 (and a more modest reprise in 2001), a major economic recession, the terrorist attacks of September 11, 2001, animal disease outbreaks in Europe, GMO-related market losses, and a number of other calamities. All this was accompanied by the grinding consolidation and integration that has almost become background noise in U.S. agriculture.

As it became apparent that the 1996 Farm Bill could not adjust to income shocks of this magnitude, in 1998 the federal government began a series of ad hoc emergency subsidies, ostensibly to shore up farm incomes. An unprecedented flow of federal subsidies poured into the farm sector. In 2002, the

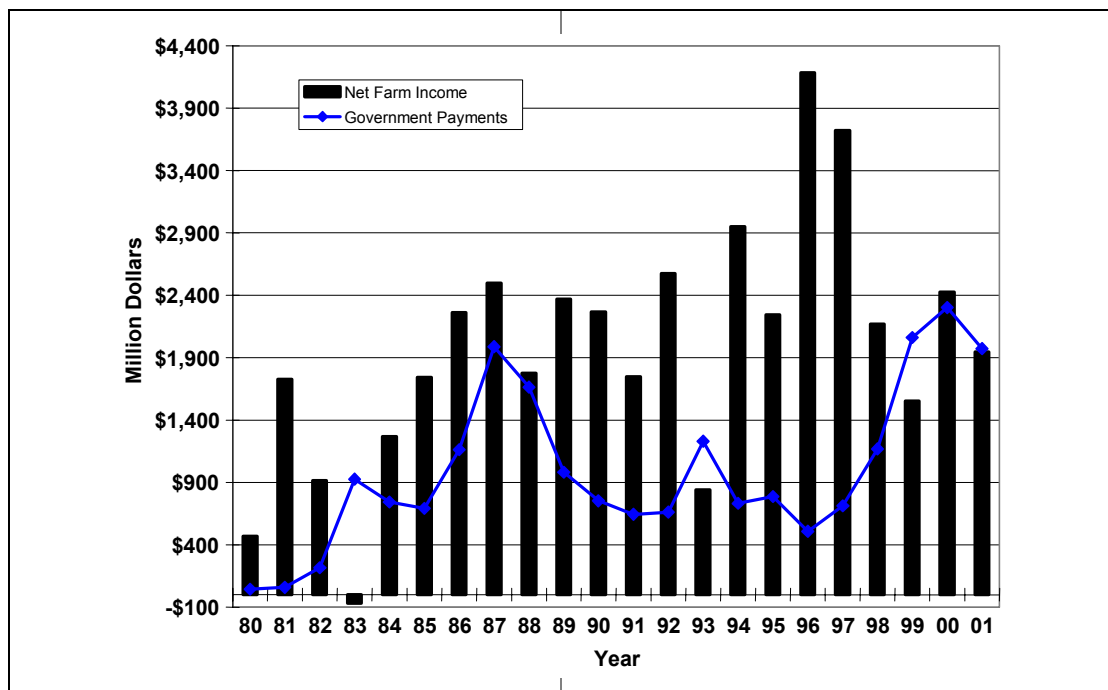
Farm Bill was revised again in part to automate the ad hoc subsidies and keep the money flowing.

So, with all of that, did we—the Great American Taxpayer—do good with our multi-billion-dollar intervention? Let’s take a look—using Iowa as a case study.

In Figure 1, we show nominal net farm income for Iowa along with total government payments. (Keep in mind that government payments are included in net farm income.) Note the volatility of farm income over this period and the growing dependency on subsidies since 1997. During years when incomes would have been low in the absence of subsidies (1987, 1988, 1999, 2000, and 2001) the realized income levels were comparable with reasonably good income years (1990, 1992, and 1994).

## What Farm-Level Panel Data Can Tell Us

Sectoral data doesn’t reveal much about how individual firms are impacted by or respond to changing economic conditions. To examine this issue, we assembled a panel data set of farms that are members of the Iowa Farm Business Association (a farmer-owned record-keeping service). Most of the 475 farms included in the panel would be considered large to very large family farms using the USDA’s typology (Hoppe & McDonald, 2001). The 1997 Ag Census reported that farms of this size comprised about 14% of the farm businesses in the state of Iowa and produced more than 60% of gross sales. In 2002, the panel average for gross sales was \$260,000, the operator’s share (all land farmed less the landlord’s share of crop share leased land) of crop acres was slightly less than 700 acres, and the total labor supply averaged 1.5 person-years. Net



**Figure 1.** Iowa net farm income and government payments, 1980-2001.

Source: USDA.

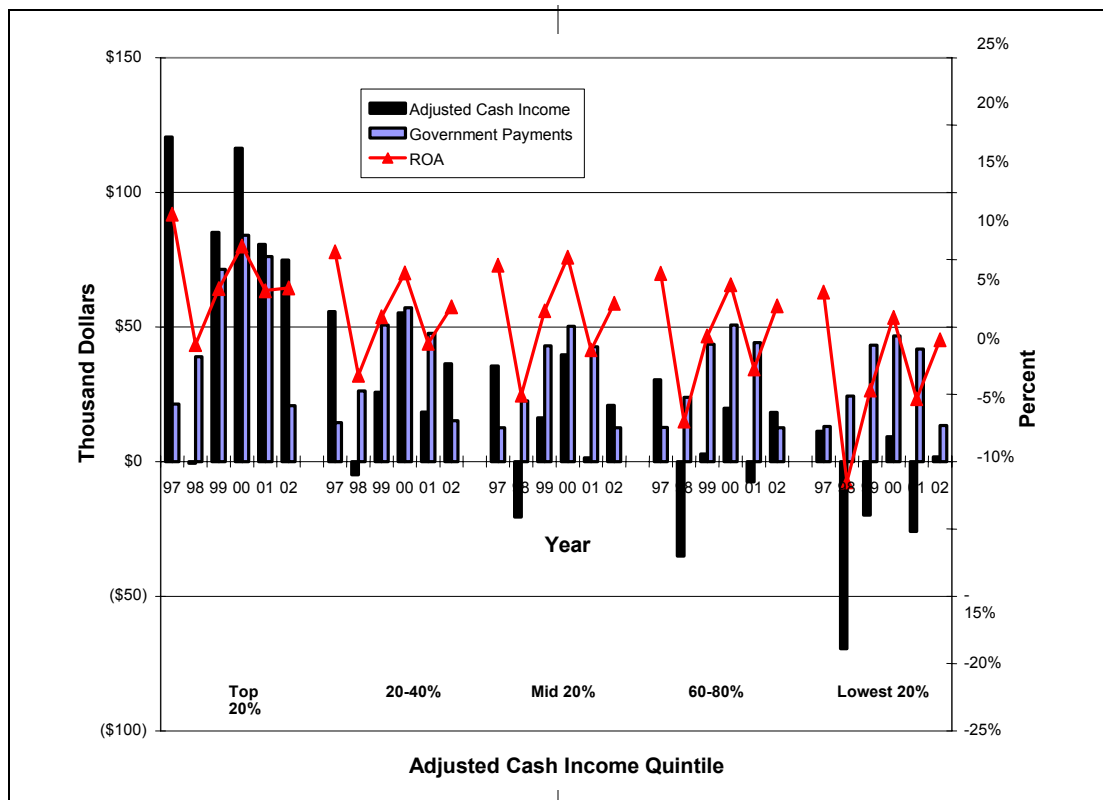
farm income was more than three times reported off-farm income from all sources.

We classified the farms into five equal groups based on their average financial performance from 1997 through 2002. Each group, or quintile, consists of the same farm businesses each year of the study. The financial performance measure, adjusted cash income (ACI), takes accrual net farm income, adds in off-farm income and depreciation, and subtracts family living expenditures. Adjusted cash income is a pre-tax term debt repayment margin and gives a more comprehensive measure of the farm household's financial capacity than does farm income alone. If ACI is positive, the farm will first pay income taxes and use the remainder for principal payments on term debt, capital purchases or other investments. If ACI is negative, after taxes the farm will have to liquidate assets, borrow funds, or seek additional equity to cover the shortfall.

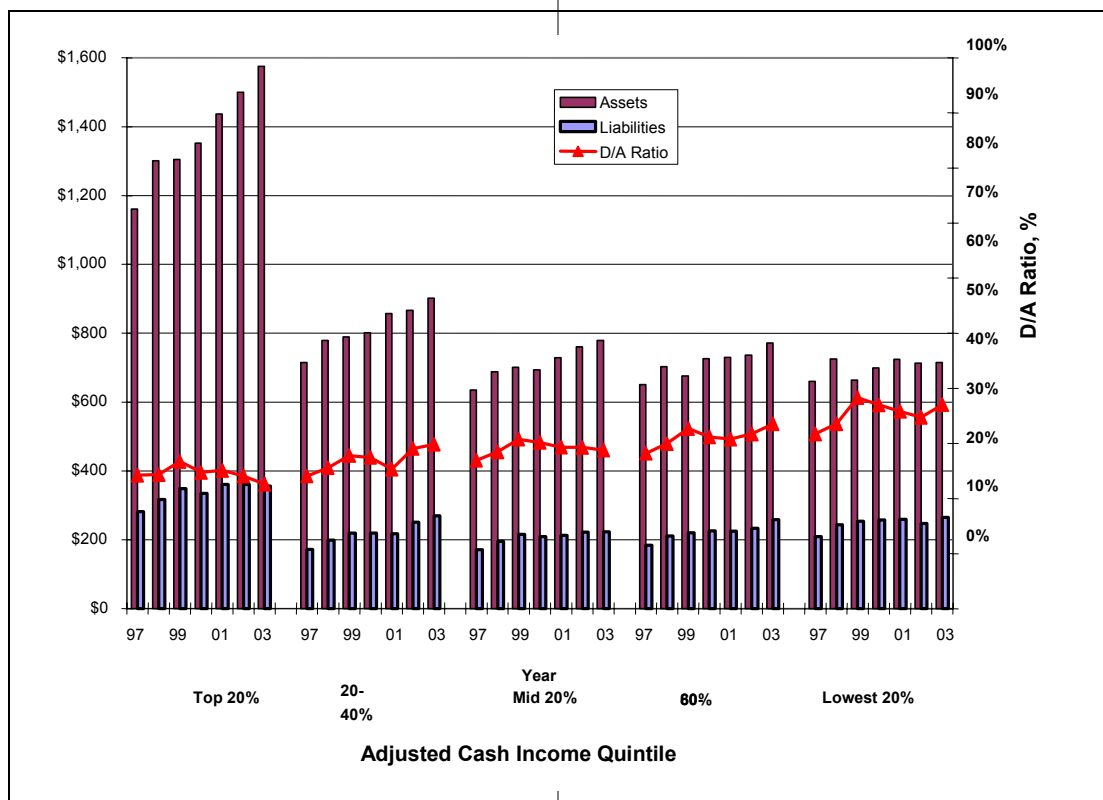
Figure 2 shows the average ACI for farms in each quintile from 1997–2002. For comparison, total government payments are shown next to ACI. Again, recall that ACI includes government payments. In addition, on the right axis we show the average return on assets (ROA) earned by farms in each quintile. The ROA is a relative measure of farm profitability that is not affected by financial structure or off-farm income. Farms in the top

20% significantly outperformed farms in the remaining groups. After the subsidies kicked in, in 1998, all but farms in the bottom two groups earned a positive ACI for the remaining four years. Note, too, that as financial performance declines, the dependence on farm subsidies increases—continuing in 2002 with the new Farm Bill provisions. The ROA shows the same temporal pattern for all farms, but we also see that the ROA declines along with decreasing ACI.

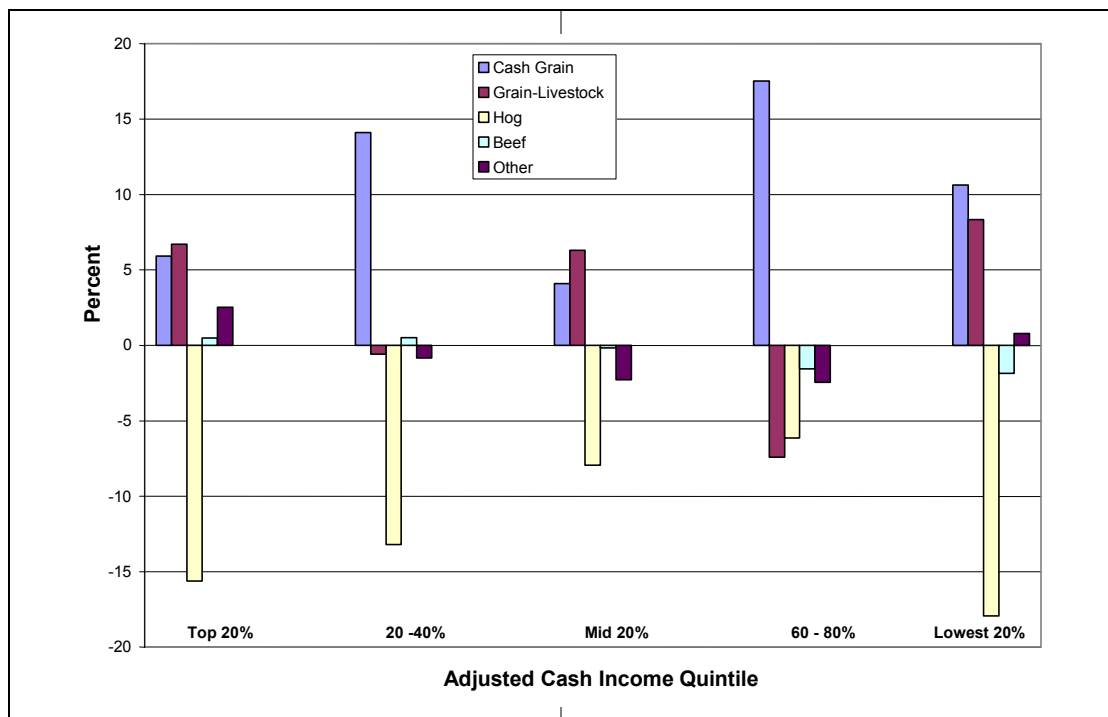
Average market value assets and liabilities are shown in Figure 3. The difference between assets and liabilities equals net worth. Note, first of all, that farms in the top 20% group controlled significantly more assets than did other farms in the panel. All but the bottom group showed a steady increase in asset values and liabilities over the six-year period. Farms in the top 20% experienced a nominal net worth gain of more than 35%. The bottom group showed a slight decrease in net worth—their asset values increased slightly, but liabilities increased somewhat more. On the right axis, we plot the average debt-to-asset (D/A) ratio for each quintile. In general, leverage and hence the risk exposure of farms increases with decreasing financial performance. With the exception of the top 20% of farms, leverage increased for all farms in the panel since 1977.



**Figure 2.** Adjusted cash income, government payments, and ROA, 1997-2002, by ACI quintile.



**Figure 3.** Average assets, liabilities, and debt-to-asset ratios, 1997-2003, by ACI quintile.



**Figure 4.** Change in farm type distribution by ACI quintile, 1997-2002.

Figure 4 shows the changes in the farm type distribution between 1997 and 2002.<sup>1</sup> For example, in 1997, 42% of the farms in the second quintile were classified as cash grain operations. By 2001, 56% were classified as cash grain farms or an increase of 14%. Because the definitions are based on sales composition, changes in farm type can be influenced by price changes as well as output changes. In general, the farm type changes for all farms tend to be away from a reliance on livestock enterprises to cash grain.

Absolute changes in labor and land are shown in Figure 5. Across the board, the operator share of land operated increased. This could result from land purchases, inheritance, increased land leasing

or shifting share leases to cash leases. All farms shed labor during this period with the greatest absolute changes occurring in the bottom two groups. This may reflect the reduction in livestock production or increased reliance on off-farm work.

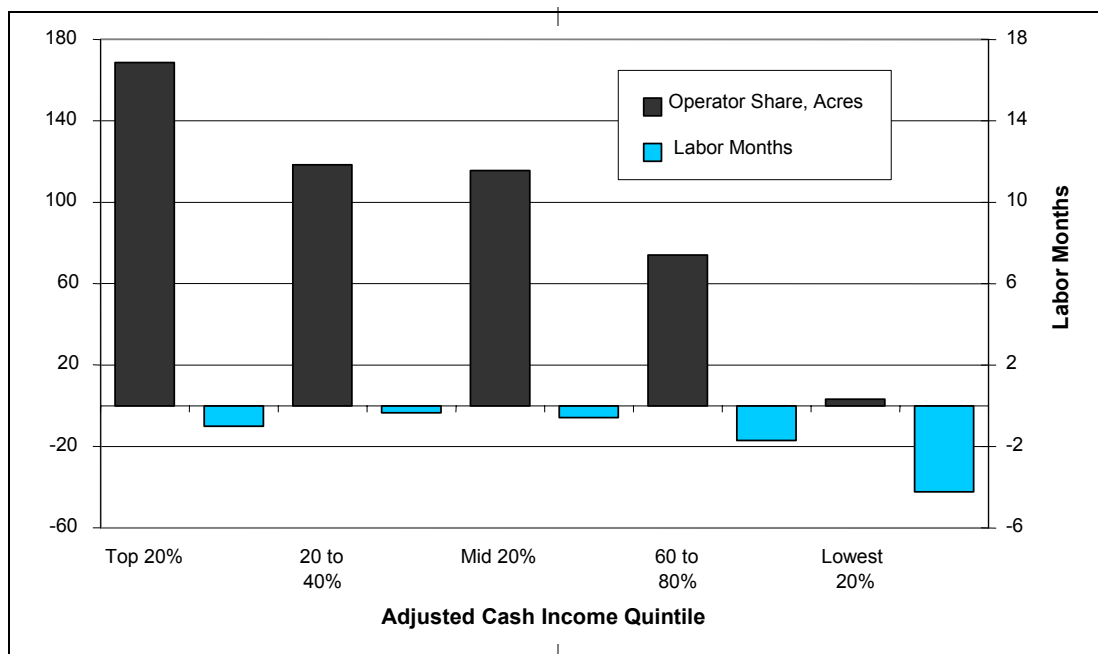
Finally, Figure 6 examines changes in investment in machinery and equipment and in breeding stock. All groups increased the value of their machinery and equipment inventories with farms in the top two quintiles increasing by 20–30%. All groups except the top 20% reduced breeding herd assets as well.

### And the Conclusions Are...?

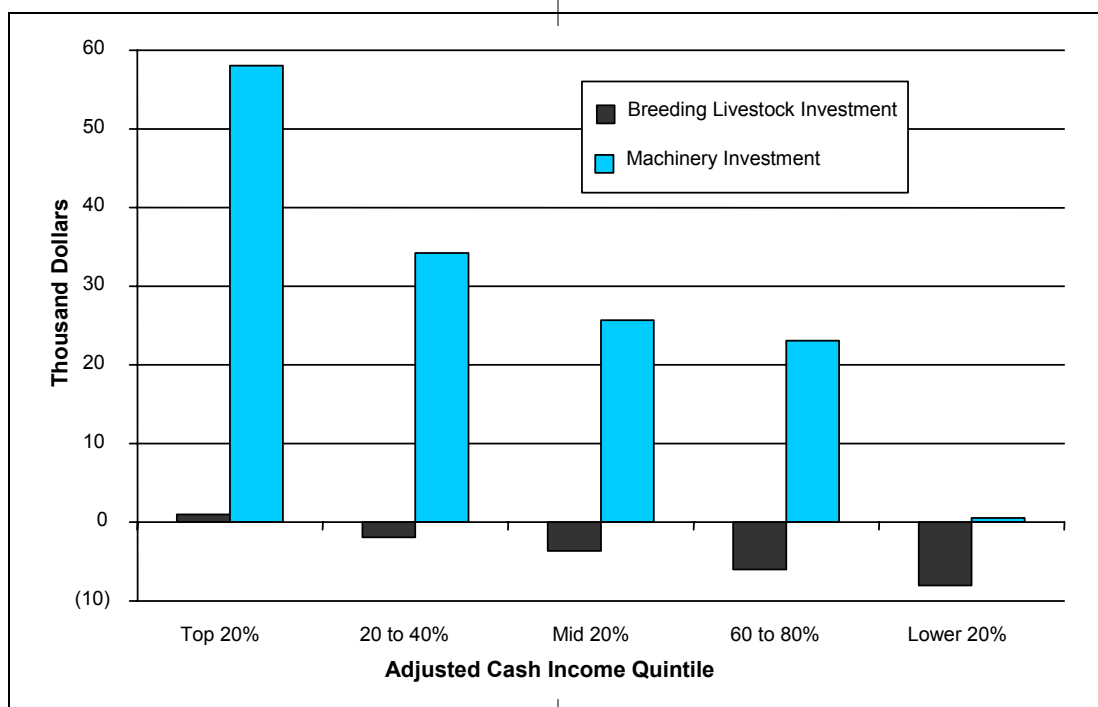
What can we learn about changes in farm and financial structure for this group of farmers since 1997?

- Larger farms certainly received more federal money than did the smaller ones—we knew this going in, and Figure 2 confirms our suspicions.
- Average net worth for all groups increased or remained relatively stable. This is, in part, the result of the role the subsidies played in maintaining positive ACIs and in supporting land values.

1. *The definitions for the farm type categories are based on the composition of gross farm income (GFI). A farm is classified as cash grain if revenue from crops is greater than 95% of GFI, grain-livestock if revenue from crops is greater than 50% but less than 95% of GFI, hog farms if revenue from pork is greater than 50% of GFI, beef farms if revenue from beef is greater than 50% of GFI, or other (all farms not included in the previous categories).*



**Figure 5.** Average land and labor change, 1997-2003, by ACI quintile.



**Figure 6.** Change in breeding livestock and machinery investment by ACI quintile, 1997-2003.

- Financial leverage increased for all groups except the top 20%.
- Farms in the top 20% received the highest subsidies but (with the exception of 1998) would have earned a positive ACI without them.
- The remaining 80% of farms in the panel were fully dependent on subsidies (with the excep-

tion of 2002). Their ACI would have been negative were it not for farm payments. And, as a consequence, their debt loads would have climbed rapidly—lenders permitting.

- All farms in the panel, with the possible exception of the financially troubled bottom 20%, appear to be pursuing an expansion strategy.

Land, machinery, and debt are all increasing. Does this imply that the farmers think the subsidies will last forever? On the other hand, are they trying to invest what they perceive as a windfall in capital assets?

- By varying degrees, most farms in the panel tilted toward cash grain and the subsidies and away from value-added livestock enterprises.

It wasn't pretty, and it probably wasn't particularly efficient, but the farm subsidies received since 1997 appear to have carried vulnerable and generally smaller farm businesses through a difficult period. We did good with our farm programs. The offsetting outcome is that the inability to target or limit payments also resulted in gains in wealth and farm size for larger, well-positioned farm businesses. Some farmers did well. The social desirability of our efforts will likely be scrutinized once again when political attention returns to farm policy and the Doha Round.

### For More Information

Jolly, Robert W., & Smith, Darnell. (2002). *Changes in farm financial performance and structure between 1997 and 2002: A case study of Iowa commercial farm businesses* (FM1869 Revised). Ames, IA: Iowa State University Extension. Available on the World Wide Web:

<http://www.extension.iastate.edu/Publications/FM1869.pdf>.

Mishra, Ashok K., El-Osta, Hisham S., Morehart, Mitchell J., Johnson, James D., & Hopkins, Jeffery W. (2002). *Income, wealth and the economic well-being of farm households* (AER 812). Washington, DC: United States Department of Agriculture Economic Research Service. Available on the World Wide Web: <http://www.ers.usda.gov/publications/aer812/aer812.pdf>.

Hoppe, Robert A., & McDonald, James M. (2001). *America's diverse family farms: Assorted sizes and situation* (Agricultural Information Bulletin No. 769). Washington, DC: United States Department of Agriculture Economic Research Service. Available on the World Wide Web: <http://www.ers.usda.gov/publications/aib769/aib769.pdf>.

*Robert W. Jolly is a professor of economics and Darnell Smith is an extension associate at Iowa State University. This journal paper of the Iowa Agriculture and Home Economics Experiment Station, Ames, Iowa, Project No. IOW03558, was supported by Hatch Act and State of Iowa funds. Thanks to William Edwards, Sergio Lence, and Neil Harl for helpful comments on an earlier draft.*