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Financial Characteristics of Arkansas Farms, 2002-2013

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Introduction

- Arkansas agriculture was responsible for 18 cents of every dollar of value added in the state in 2012, and provides jobs in production, processing and related industries that account for almost 18% of all jobs in the state (English, Popp, & Miller, 2014).
- Farms are an integral part of Arkansas agriculture, and analyzing their financial characteristics is important in understanding the potential economic impact of an erosion in their financial performance.
- Comparative financial information by farm type and year is scarce, but useful, because it reveals trends and differences in financial conditions. It is helpful in assisting farm investors and managers to measure their financial status relative to peers. Lenders can use it to evaluate loan applications, monitor loan performance, and understand different farm types over time.

Objectives

- Descriptive analysis of Arkansas farm financial characteristics by farm type and time.
- Explanations of observed cross sectional differences and trends.
 - Net cash farm income
 - Working capital to expense ratio
 - Operating expense to gross cash farm income ratio
 - Debt to asset ratio
- Distribution of financial characteristics by farm type.
- Potential share of farms having financial difficulties by time.

Data and Methods

- Data were obtained from the Agricultural Resource Management Survey (ARMS), conducted by the USDA's National Agricultural Statistics Service (NASS) and Economic Research Service (ERS).
- Financial data for non-retirement, Arkansas farm operators for 2002-2013 were studied to analyze farm-level financial performance.
- Four variables were used as indicators representing financial characteristics across nine farm production specialty types during the 12 years. The indicators are compared across specialties and years and discussed.
- Due to small sample size for several production specialty types in some years, farm production specialties are assembled into four, three-year groups, which are 2002-2004, 2005-2007, 2008-2010, and 2011-2013. The production specialties are soybean, rice, cotton, other cash grain, fruits-vegetables-tree nuts, beef cattle, hogs, poultry, and dairy.
- Although data for general crop and general livestock farms are available, they were excluded from this presentation because the financial data for these two farm types are quite different from others.
- Critical values are applied to ratios to identify the potential share of farms in financial stress.

Acknowledgement

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Results

Figure 1. Median and 25th percentile net cash farm income and working capital to expense ratio by farm type, 2002-2013.

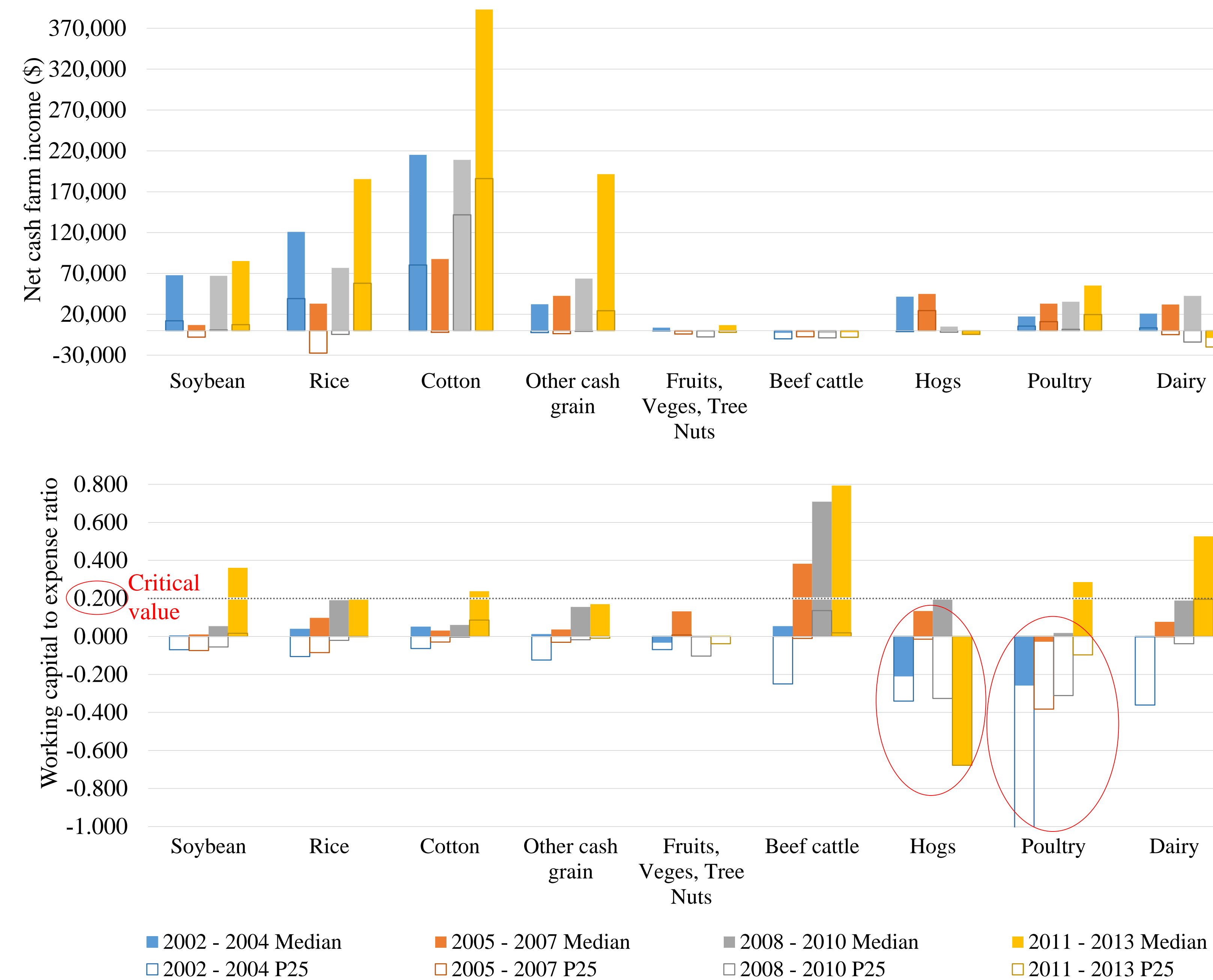
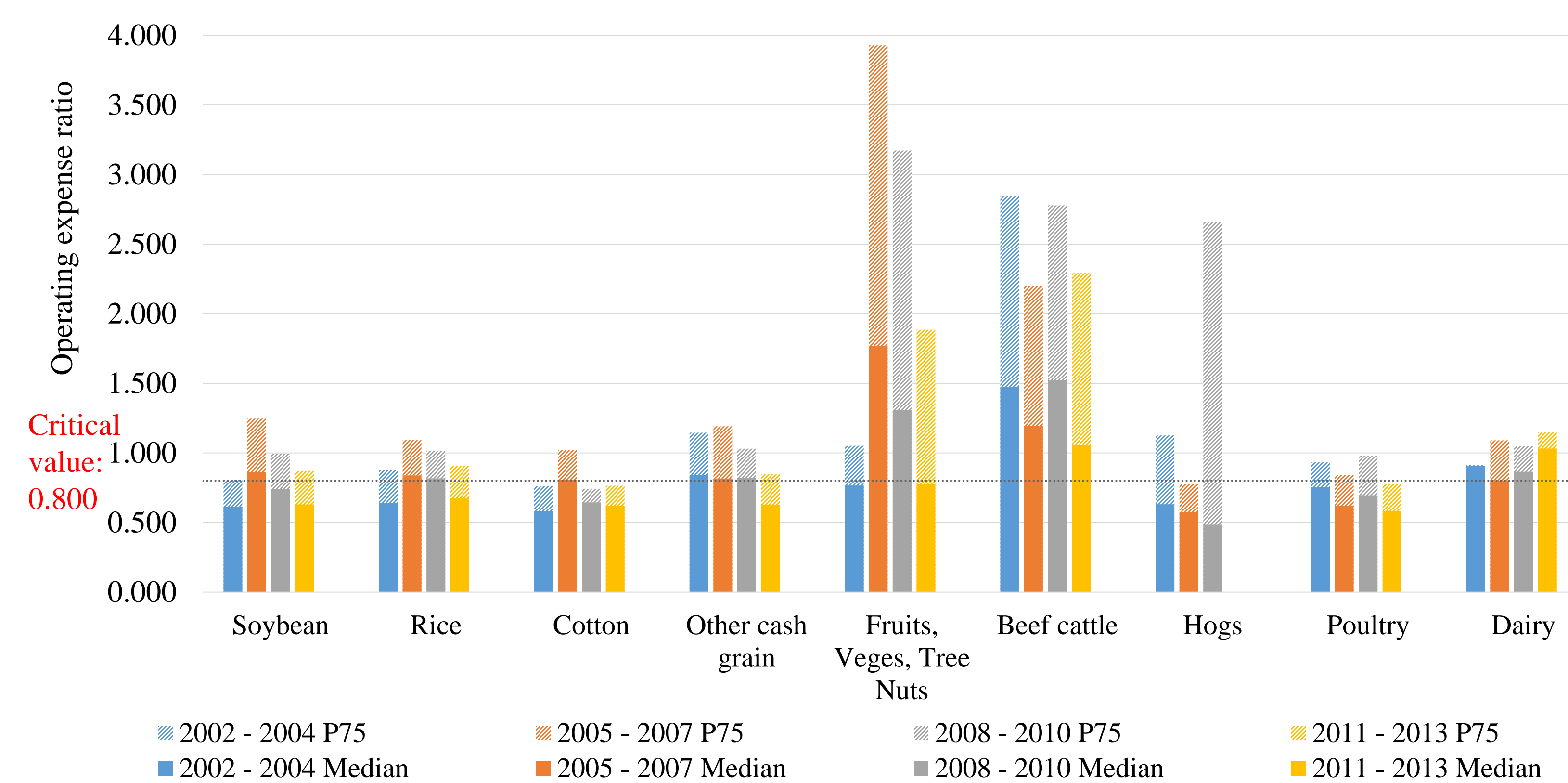


Figure 2. 75th percentile and median operating expense ratio by farm type, 2002-2013.



➤ Net cash farm income (Figure 1):

- Magnitudes show wide gaps across different farm types, especially crops compared to livestock.
- **Cotton farms** have the highest median for the most recent period at nearly \$400,000. **Beef cattle farms** have the lowest median for each period and the value is negative.
- An increasing trend in net cash income is observed for all farm types except for **hogs and dairy farms**.

➤ Working capital to expense ratio (Figure 1):

- There is variation across farm types, but in general, there appears to be **improvement over time** at the median.
- Hogs and poultry farms are more negative than other farms. Both typically have contract production and do not own many current assets, e.g., chickens and feed, but they do have current liabilities, resulting in negative working capital.
- Farms with a ratio less than 0.2 are frequently considered to be in the critical zone, i.e., potential liquidity problems.

➤ Operating expense ratio (Figure 2, Table 1):

- Crop farms tend to have higher efficiency than livestock farms.
- About 70% of livestock farms were in the critical zone (>0.80 ratio), especially beef cattle and dairy farms.
- Farm efficiency **improved over time**, except for **dairy farms**.
- Abnormal values for Hogs farms in 2011-2013 were removed.

➤ Debt to asset ratio (Table 1):

- The share of farms in the solvency/leverage critical zone for both livestock and crop farms is around 5%. Not many farms have solvency pressure in the studied time period.
- However with a deteriorating farm economy, the 2014 ARMS data showed an increase in debt to asset ratio for all farms (USDA, ERS, 2016), indicating farmers are becoming more vulnerable to financial stress.

Table 1. Debt/Asset ratio and operating expense ratio by production specialty and year.

Year	Low Efficiency Operating Expense Ratio Critical (>.80)		High Leverage Debt/Asset Ratio Critical (>.55)	
	Crop	Livestock	Crop	Livestock
2002 – 2004	49.24	78.76	5.30	6.25
2005 – 2007	73.77	66.33	4.06	4.48
2008 – 2010	64.29	73.89	5.71	5.00
2011 – 2013	55.30	64.81	3.52	4.29
All Years	61.50	71.25	4.56	5.05

Conclusions

- Most farm types experienced increased profitability over time, except beef cattle, hogs, and dairy farms.
- Many farms have low working capital to expense ratios and are susceptible to liquidity problems, although low ratios for hogs and poultry farms may be explained by contract production.
- Efficiency improved during the study period for many farms, although large shares of farms are in the critical zone.
- Only around 5% of farms are in the critical zone for solvency/leverage pressure.
- With a worsening farm economy, more farms are likely to become vulnerable.

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