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Financial Performance of Publicly-Traded Agribusinesses

Ani L. Katchova and Sierra J. Enlow
University of Kentucky

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Ani L. Katchova is an Associate Professor and Sierra J. Enlow is a graduate student in the Department of Agricultural Economics at the University of Kentucky. Ani Katchova is the corresponding author and can be contacted at: akatchova@uky.edu.

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University of Kentucky, Department of Agricultural Economics, 400 Charles E. Barnhart Bldg., Lexington, KY. 40546-0276
Phone: 859-257-5762; Fax: 859-323-1913; Web: www.ca.uky.edu/agecon

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Financial Performance of Publicly-Traded Agribusinesses

Structured Abstract:

Purpose – Agribusinesses represent a fundamental link in connecting farmers with retailers and consumers, yet little research has been done to examine the historical financial performance of these food processing firms.

Design/methodology/approach – Our research examines how publicly-traded agribusinesses perform financially compared to all firms over the period from 1961 to 2011. We utilize several indicators of company success, including financial ratios and balance sheet/income statement items, to compare agribusiness firms to all firms in the market. We perform the analysis over time and also for companies with low-, median, and high-performance. We also perform DuPont analysis to compare return on equity components between agribusinesses and all firms.

Findings – We find that agribusinesses outperform at the median the sample of all firms in terms financial ratios related to profitability, liquidity, and market ratios, but have slightly lower liquidity and debt ratios. The DuPont analysis shows that the higher return on equity for agribusinesses is mostly due to higher asset turnover ratios, indicating higher operating efficiency of agribusinesses. The strong financial performance of food manufacturing agribusinesses makes them valuable companies in an investment portfolio.

Originality/value – Our study provides a basic overview of financial ratios used to examine the financial performance of publicly-traded agribusinesses. Our findings show that agribusinesses outperform all firms in terms of key financial indicators.

Keywords: Agribusinesses, Compustat, DuPont Analysis, Financial Performance, Financial Ratios.

JEL Codes: Q13.

Financial Performance of Publicly-Traded Agribusinesses

Introduction

The 2008 financial crisis forced many investors to reconsider various sectors of the economy and to evaluate their economic strength and financial performance. We seek to examine whether agribusinesses exhibit strong sector performance when compared to the rest of the firms in the economy. Our goal is to provide an unbiased examination of agribusinesses compared to all firms based on common performance indicators; this will allow us to objectively examine the historical financial performance of publicly-traded agribusinesses. The financial and economic climate in which agribusinesses perform has been characterized by several ebbs and flows in the time period from 1961 to the present.

We focus our analysis on agribusiness companies that are involved in food manufacturing and processing. Food and drink is still the largest manufacturing sector in both Europe and the United States, accounting for 13.6 and 12.6 percent respectively of total EU-15 and U.S. manufacturing (Aragon-Correa and Rubio-Lopez 2007). The food-sector's contribution to manufacturing and the larger economy motivates several authors to examine the sector financial performance. Financial aspects of the agri-food enterprises have changed in recent years. For instance, as the firm's size has increased, cash expenses have gone up and larger amounts of credit are being used (Kalogera et al. 2005). As we move through our analysis we evaluate this food manufacturing sector financial performance utilizing financial ratios as well as balance sheet and income statement items.

Very little research has been done to examine the historical financial performance of agribusinesses. We initiate our overview of agribusiness performance with a brief history of agribusinesses, and then move into existing literature. As we strive to fill this gap in existing research, we draw information from the financial literature to determine the indicators to define successful agribusiness performance. We then apply the analysis of company performance to an agribusiness sample obtained through the Compustat database. We compare financial ratios for agribusinesses and all publicly-traded firms and DuPont analysis to examine agribusiness performance. Our findings show that agribusinesses exhibit strong financial performance and outperform the sample of all firms based on many of the financial criteria. These findings are important for investors considering agribusinesses as part of their investment portfolios.

A Brief History of Agribusinesses

The term agribusiness first appears in publications around the mid-20th century. The concept of agribusiness is introduced by Davis and Goldberg's research at the Harvard Business School (Davis and Goldberg 1957). Early studies into agribusinesses focused on agribusiness role in helping the small farmers (Goldsmith 1985) and on the position of agribusinesses in market structure (Goldberg 1965). Goldberg continued his work defining the role of agribusiness with his article on the role of multinational companies (Goldberg 1981).

Loosely defined the term agribusiness can encompass everything from a production agriculture operation to a multinational company. The USDA Economic Research uses such a definition to define a food and fiber system:

“Agribusiness comprises the economic activities of the farms and the firms that assemble, process, and transform raw agricultural commodities into final products for distribution to U.S. and foreign consumers. Agribusiness includes all economic activity that supports farm production and the conversion of raw farm products to consumable goods—for example: machinery repair, fertilizer production, farming itself, food processing and manufacturing, transportation, wholesale and retail trade, distribution of food and apparel, and eating establishments. The income and employment generated within agribusiness is the income earned and jobs provided by these firms.”

In recent literature the term agribusiness is more commonly utilized to describe larger operations that have a corporate structure, including many that have an international scope. Historically, multinational enterprises in the food system sprawl across national boundaries filling a void in the vertical food system from farm supplier to ultimate consumer and carrying on those functions of input technology, farming, grading, assembly, storage, processing, and distribution that either are not performed at all or ineffectively performed by others in the total vertical food system we call 'agribusiness' (Goldberg 1968).

Agribusinesses operate under several different business models. Cooperatives remain popular in this industry. Traditionally, agricultural cooperatives are producer-driven organizations providing a retail outlet that yields a higher profit margin. Other cooperative structures exist in different parts of this market sector, including consumer cooperatives and cooperatives designed to meet the demand created by government mandates.

Several authors looked at the role of cooperatives in the agricultural industry and the unique management strategies associated with those organizations. These studies have found that managerial factors and consumer relationships are important strategies for success. Lerman and Parliament (1990) studied the relationship between the comparative financial performance of cooperatives and investor-owned firms (IOFs) in the fruit and vegetable processing and the dairy industries from 1976 through 1987. They found the cooperatives in both industries were performing as well as or better than the comparable IOFs using profitability, leverage, and interest coverage measures (Lerman and Parliament 1990). The lack of significant differences in profitability between the two types of firms suggests that cooperatives may be following goals similar to IOFs (Lerman and Parliament 1990).

Granted that cooperatives, and several other structures of agribusinesses, can issue stocks, these businesses are not the publicly-traded firms we consider in our analysis. Other authors have studied the persistence of profitability in the food and agribusiness industry (Schumacher and Boland 2003), and included cooperatives in their analysis. Our interest remains predominately focused on the financial performance of those businesses that trade in the public sector.

Publicly-traded agribusinesses are defined as those that trade on the open market (a stock exchange or an over-the-counter market). The owners of the publicly-traded companies are individual and institutional shareholders who hold stocks issued by the company. Publicly-traded companies have greater access to financing because they can issue more stock but are also subject to more regulation in terms of filing requirements and corporate taxes. Publicly-traded agribusinesses have not received much attention in the literature even though substantial indicators point to their economic strength as a market sector.

Literature Review

Our study focuses on the financial performance of agribusinesses and takes into account the substantial finance literature on firm performance. An overview of existing literature identifies indicators of firm performances, clarifying fundamental differences between types of agribusinesses and other established firms. Agribusinesses operate with various business models. The differing business objectives of these models necessitate defining the separation between publicly-traded firms and other types of agribusinesses.

Researchers examine agribusiness management strategies with various methodologies. Several studies focus on cooperative management strategies; they define a significant portion of agribusinesses and present interesting business models to study. Katz (1997) focuses on the managerial behavior and strategy choices in agribusiness cooperatives while acknowledging that limited empirical research exists in examining the differences in management behavior of cooperatives and investor-owned firms (IOF's). Katz's study utilizes some of the same management strategies we examine throughout our research, including measures of leverage and liquidity. Katz argues that publicly-traded firms are fundamentally different than cooperatives; market-based measures serve as good indicators of firm performance in publicly-traded firms while agribusiness cooperative may have a different focus. Our analysis focuses on market-based measures of financial success compared to Katz's focus on cooperative's member benefit.

Nilsson and Dijk (1997) work to bridge the gap between cooperatives and publicly-traded firms in their book on strategies and structures in the agro-food industries. They examine the impacts of mergers and acquisitions in the performance of the U.S. food industries and the strategic behavior that leads to firm success.

Other authors have looked at the impact of agribusinesses on the global economy. Cook and Chaddad (2000) provide a referential framework on the global economy; their work focuses on providing an overview of the issues related to agro-industrialization and the role of agribusiness management in bridging the gap between agribusiness and foreign development. Cook and Chaddad (2000) also note a shift in the early 1970's from intra-firm to inter-firm analysis in agribusiness management literature.

Wells (1979) supports the examination of U.S. based firms as an indicator of global economic performance. Financial literature often examines the strength of these U.S. based multinational firms. However, strategic examination of financial performance of agribusinesses has rarely been studied.

Existing literature has found that investor and managerial perceptions of firm quality are highly related to measures of financial success. In an analysis of a Fortune survey of firm managers, McQuire et. al (1990) found that although firms with high return on assets and low debt-to-asset ratios were considered successful, other measures of firm success (growth in sales and operating income) were not significantly related to any of the reported qualitative performance indexes of quality. Other studies, particularly those that focus specifically on

business growth through exporting, find that sales and sales growth are good indicators of firm success.

Liquidity as a measure of firm success has been studied in depth. Cleary (1999) evaluates existing studies to state the investment decisions of financially-constrained firms are more sensitive to firm liquidity than those of less constrained firms. Cleary's resulting regression finds that investment outlays are less sensitive to liquidity at different levels of financial constraint. In imperfect capital markets, a firm's ability to make investment decisions impacts long-term corporate planning and success.

Return on assets and return on equity are popular measures of firm performance in financial literature. Hansen and Wernerfelt (1989) utilize return on assets as an organization determinant of firm performance. Johnson and Soenen (2003) provide an overview of literature related to indicators of successful companies while testing out different measures of success for a large sample of firms. The indicators cover several consistent measures of financial performance, including cash relative to assets, return on equity, return on assets, a capital structure ratio and sustainable growth measuring retained earnings relative to equity. Johnson and Soenen (2003) also outline other potential indicators of successful companies; these indicators include measures of advertising expenditures, research and development, cash conversion cycle, and earnings volatility.

Overall these performance indicators provide a basic foundational framework to utilize in our study. As we move forward with additional research, we can examine how combined measures of firm success relate to agribusiness firms. Indicators such as the Economic Value Added (EVA), Sharpe's ratio, and Jensen's alpha could possibly provide an introspective look into firm performance. The Sharpe Ratio (1966, 1994) would provide a look at how agribusinesses perform within a portfolio. Jensen's alpha (1969) signals above market performance and has some ability to indicate free cash flows. Economic value analysis is also used as an additional measure of stock market performance.

Many analysts and investors tend to focus on return on equity as their main measure of company financial performance. Several more sophisticated valuation techniques such as the internal rate of return, cash flow return on investment, and discounted cash flow analysis have been used more recently. However, the rate of return on equity has proven most enduring in evaluating company's performance as it focuses on the simple concept of returns to the

shareholders of a company. In addition, return on assets has been widely accepted as a performance measure, which unlike the return on equity avoids problems related to growing debt leverage and stock buybacks to increase return on equity.

Very few studies apply the methodologies found in financial literature to the study of agribusinesses. Schumacher and Boland (2003) compared the business performance (accounting profitability) for publicly-traded and cooperatively-owned food agribusiness firms. They used return on equity as their dependent variable to study industry and corporate effects. Manfredo, Sanders, and Scott (2011) examined the forecast accuracy of earnings per share (EPS) estimates for agribusiness firms. They found that forecast accuracy has decreased over time and for many of the firms, the professional analysts provide EPS estimates that are found to be biased and inefficient. Clark et al. (2012) developed a composite agribusiness stock index and then compared the returns and volatility to other broad-based market indices. They found that the index of agribusiness stocks has historically exhibited lower returns than the market indices. Mishra et al. (2012) applied the DuPont expansion analysis to examine the financial performance of farm businesses, which are typically not traded. Our analysis of firm performance follows various aspects of the financial literature and applies them to agribusiness firms.

Data

This overview of corporate agribusiness performance focuses exclusively on those publicly-traded firms for which the financial data is found in the Compustat North America Data, a database of U.S. and Canadian fundamental and market data. The Compustat North America database is standardized according to financial statement presentation and specific data item definitions assuring consistent, comparable data for company and industry analysis (Standard & Poor's). Generally Accepted Accounting Principles (GAAP) accepted and defined by the United States federal accounting standards advisory board further standardizes the data definitions in Compustat.

Examining US-based multinational firms with the Compustat North America database generally provides insights into the global market. The peculiar nature of the U.S. market, as a bellwether of other markets, had led to the particular vitality of U.S.-based multinational firms, according to the theory (Wells 1979, p.4). The utilization of Compustat as a database for

financial information is supported through its frequent use in the finance literature and growing use within the agriculture field.

The data for this study is obtained from the Standard & Poor's Compustat dataset accessed via the Wharton Research Data Service at the University of Pennsylvania. The Compustat data organizes companies in terms of GVKEY codes and the Standard Industrial Classification (SIC). Compustat has defined a proprietary identifier, the GVKEY, for each company in the database. The GVKEY can be used to track a company over time, while the company name, CUSIP, or ticker may change over time (Compustat 2011). The Standard Industrial Classification (SIC) represents a 20th century development on behalf of the United States Government designed to distinguish between companies in a systematic manner. More recently the SIC codes were replaced by North American Industry Classification System (NAICS) starting in 1997. The SIC and NAICS classify companies by their primary type of business. In this study, we utilize SIC codes to maintain consistency with earlier years for which data are available, but there is a close correspondence between SIC and NAICS codes in terms of company classifications. We also use financial data starting in 1961, although data in earlier years is less reliable so we concentrate most of our discussion on later years.

This dataset contains some limitations for a historical analysis. Data prior to 1960 is unavailable and incomplete in some cases. However, some authors suggest that post-war economies experience a period of structural change (van Ark 1995). This shift in policy changed the position of American companies, allowing them to grow into multinational operation. The fundamental differences in trade policy could possibly warrant the consideration of a separate in depth study for data prior to 1960. Davis (1956) conceptualizes the definition of agribusiness – “sum total of all operations involved in the production and distributions of food and fibers”—referring to the post-WWII phenomenon of increasing “unified functions” and the “interdependency” between the agricultural production sector and the pre- and post-farm gate business world.

For this analysis we consider agribusiness firms that produce food and kindred products with SIC 2-digit codes of 20 (Table 1). Specifically, these food manufacturing and processing agribusinesses produce meat products, dairy products, canned, frozen, and preserved fruits and vegetable products, grain mill products, bakery products, sugar and confectionary products, fats and oils, and beverages. Most of the observations (in terms of company's quarterly financial

data) are for beverages, meat products, canned, frozen, and preserved fruits and vegetables. There are 483 unique agribusinesses that are classified as food product manufacturing companies for the period of 1961 to 2011. On average, they report data for 52 quarters (13 years), for a total of 25,283 quarterly observations of data for agribusiness firms. Jointly with the rest of the companies, there are 31,741 unique companies in the Compustat data from 1961 to 2011 that we use in the analysis for all firms.

Furthermore, Compustat lacks bankruptcy data in the North American Quarterly Fundamentals database. The inclusion of this information would strengthen the analysis of historical financial performance and firm financial distress. In this study, we use S&P credit ratings to indicate financial distress of a company. Companies which are also borrowers are rated on a scale from AAA to D to indicate ranges from financial strength to financial distress. These scores are based on a number of metrics and Compustat's record of S&P ratings reflects the current S&P rating system, adjusting historical scores to be comparable with today's classification of corporations.

Financial Performance Measures and Methodology

When examining financial performance of companies, one can examine either the absolute performance in terms of the scale of operation (balance sheet and income statement items) or the relative performance in terms of financial ratios. Ratios allow us to scale for factors, such as size, that vary within an industry and across industries. These measures facilitate the comparison between companies and allow us to examine agribusiness performance versus all firm performance. These financial performance measures can be used to compare performances over time, across industries, against benchmarks, or within segments of a particular business.

We include five different types of financial ratios into our analysis to measure profitability, liquidity, firm activity, solvency and market performance for a total of twelve specific ratios. In addition to these financial ratios we also report measures of various items from the balance sheet and income statement. Table 2 reports the major financial ratios, the specific indicators used to measure these financial ratios, the formulas used for calculating them, and the Compustat codes for calculating these financial ratios based on the Quarterly Compustat database.

The long-term profitability of a company is vital for the company's survival and to ensure that adequate benefits are received by its shareholders. Profitability examines the amount of profit a company generates on its sales at different stages of an income statement. Profitability can be measured in a number of different ways. Return on equity (ROE) examines firm performance relative to equity. Return on assets (ROA) examines firm performance in terms of total assets and evaluates how efficiently assets are used. The gross margin ratio looks at gross profit (net sales – cost of goods sold) for the net sales that a company generates, whereas a net profit margin ratio looks at net income to net sales. The profit margin ratio serves as an indicator of how well a company controls internal costs to generate profits from its sales.

Liquidity ratios measure the company's ability to pay off its short-term debt obligations. This is done by comparing company's most liquid assets (those that can easily be converted to cash) to short-term liabilities. We use two ratios to measure liquidity. The current ratio is a measure of the company's short-term financial strength. Acceptable current ratios ranges differ from industry to industry, but ratios above 1 indicate ability to cover short-term liabilities. Our measure of current ratio is calculated as current assets divided by current liabilities. Similar to the current ratio, the quick ratio measures company's financial health in the short run but it excludes inventories which are not as easily converted to cash.

Activity ratios provide a measure of the company's resource utilization. The asset turnover ratio reflects net sales relative to total assets. A high asset turnover ratio demonstrates effective utilization of company assets, an operating efficiency we like to see in the analysis of financial performance. Other activity ratios could include the cash conversion cycle or a measure of change in operating leverage.

Other ratios examine the solvency position of the firms. They measure the company's overall debt load in relation to the mix of debt and equity. The greater the amount of debt held by a company, the greater the financial risk of a bankruptcy. The debt-to-asset ratio measures total debt relative to total assets and the long-term debt-to-asset ratio examines a firm's long-term position by dividing long-term debt by total assets. The third included solvency ratio measures assets relative to equity, which is also named equity multiplier.

We include two market ratios into our analysis. Stockholders often consult earnings per share to gauge a company's position. Companies are required by federal law to report on earnings per share as an item on their income statement report; this item is available in the

Compustat database. Also, the price earnings (P/E) ratio is included as measure of market performance. The P/E ratio examines the market price of common stock per share relative to the company's earnings per share.

While ratios provide scaled comparisons between companies and industries, finite measures of firm performance allow us to examine characteristics of agribusiness compared to all firms. We including six balance sheet and income statement items to continue to examine the performance of agribusinesses: total assets, total liabilities, equity, sales, net income, and retained earnings.

The DuPont analysis further breaks down the return on equity into three components to measure profitability, operating efficiency, and financial leverage. This analysis allows us to further examine the sources of superior or inferior returns by comparing companies in similar industries or between industries. Profitability is measured by the profit margin, calculated as the net income to net sales. Operating efficiency is referenced by asset turnover of net sales to total assets. Financial leverage is measured by the equity multiplier, which is defined as the assets to equity ratio. In cases of differences in ROE, the DuPont analysis is helpful to determine if these differences are due to differences in profitability, operating efficiency, or financial leverage.

Results and Findings

We use financial ratios to compare the financial performance of food producing agribusinesses to the performance of all publicly-traded companies. Table 3 reports the financial ratios as well as balance sheet and income statement items for agribusinesses and all firms using quarterly Compustat data for 2008-2011. We concentrate on comparing the performance measures using medians as opposed to means. Financial ratios typically contain outliers that skew the means for these financial ratios, while the use of medians does not suffer from this problem.

Table 3 shows that the median agribusiness performance compares very well to the all-firm median with respect to profitability. Agribusinesses yield higher performance on three out of four of the profitability ratios that we utilize in our analysis. For the last four years, the agribusiness median exceeded the all firm median on return on equity and profit margin ratio. The agribusiness median also exceeded the median for the all firms in two out of the four previous years. Agribusinesses slightly underperformed the all-firm median on gross profit margin. The median return on equity ranged from 2.4% to 3.4% in the previous four years for

agribusinesses while it was between 1.1% and 1.7% for all firms. We expect return on assets to be lower than return on equity after accounting for financial leverage. Median return on assets varied between 0.9% to 1.5% for agribusinesses and between 0.1% and 0.3% for all firms, which are somewhat low numbers reflecting the effects of the recent economic recession.

Over the previous four years, agribusinesses demonstrate a slightly lower current ratio of 1.642 than the median ratio for all firms of 1.834 for 2011. Given that the current ratio acceptable ranges differ across industries, these results show adequate liquidity. The quick ratio for agribusinesses has gradually risen over the years, indicating that either inventories have decreased or that the relationship between current assets and current liabilities has changed.

Agribusinesses outperform all firms with respect to the asset turnover ratio with ratios of 0.274 for agribusinesses and 0.127 for all firms in 2011; this result suggests agribusinesses generate twice more sales from their assets. This ratio varies across industries, and the result is likely attributed to that variation. Our dataset excludes agribusinesses retailers, which is substantial to note when interpreting this result. Retailers typically have the highest asset turnover ratios as a reflection of the competitive and high turnover nature of their industry. Future research with an expanded dataset including retailers would likely further support our conclusions for the asset turnover ratio.

Agribusinesses have slightly more long-term debt compared to assets than the all firm median result, but have slightly lower overall debt-to-asset ratios. The comparison theorizes that agribusinesses structure less of their debt in short-term liabilities and more in long-term debt. This is a particularly interesting result regarding the structure of agribusiness debt compared to the all firm median.

In terms of market performance, we find that agribusinesses outperform all firms in terms of median performance. Agribusinesses show strong earnings per share compared to all firms. As an important note, the median P/E ratio for agribusinesses is drastically higher than the all-firm median. To the average investor comparing stock performance, with knowledge of the P/E ratio, agribusinesses would appear to be a less desirable investment than a firm with the median P/E of all firms. However, acceptable P/E ratios differ with the industry and our result is useful in providing information on how the agribusiness sector compares to other sectors.

When examining balance sheet and income statement items, we note that the median agribusiness tends to be larger in size than the median of all firms. We find that agribusinesses

have higher sales, assets, net income and retained earnings than all firms. However, agribusinesses also have higher total liabilities. These results provided some basic information on agribusinesses and expand the comparison provided by our analysis of financial ratios.

In addition to the statistics in table 3 presented for 2008 to 2011, we plot some of the financial ratios over longer periods of time for a more comprehensive overview of agribusiness performance compared to all firms. Financial data in the 1960s in Compustat is frequently missing or less reliable; therefore, each of the charts displayed in figure 1 show the trends of agribusinesses compared to all firms from 1971 to 2011. The trends over time correspond with our previous results from Table 3; we find that agribusinesses outperform all firms in several categories. The median current ratio and median quick ratio show agribusinesses have lower liquidity than that for all firms, showing differences in the food manufacturing sector. The solvency ratios also show changes over time, but similar overall ratios. Agribusinesses consistently show higher asset turnover ratios over the last 40 years. In terms of profitability measures such as return on equity and return on assets, agribusinesses consistently show better performance in the past four decades.

In table 4, we provide a more detailed look at the comparison between agribusinesses and all firms, not only in terms of median performance but also along different percentiles. Table 4 examines high-performing (75th percentile) and low-performing (25th percentile) firms for both agribusinesses and all firms. These results are consistent with the results presented in table 3. Not only do agribusinesses tend to outperform all firms at the median, but that is also true at the respective percentiles of performance for the profitability, activity, and market ratios.

The DuPont analysis continues to substantiate our results (Table 5). The DuPont analysis breaks down return on equity into its three components: profitability, operating efficiency, and financial leverage. Agribusinesses outperform all firms in median financial performance with respect to every category except the equity multiplier. The median ROE for agribusinesses in 2011 of 2.8% compares favorably to the median ROE for all firms of 1.9%. Agribusinesses have slightly higher median profit margins of 5.1% compared to 4.2% for all firms. They have similar equity multipliers of about 1.8 as the asset-to-equity ratios. The most significant difference is in terms of the median asset turnover of 0.274 for agribusinesses compared to 0.127 for all firms. Given that we established that agribusinesses have higher return on equity, it's important to note that agribusinesses achieve this by having a substantially higher asset turnover rate than all firms.

This means that agribusinesses are able to generate more sales by using their assets more efficiently in the food processing sector as compared to other sectors of the economy.

We also provide a basic overview of S&P credit ratings comparing agribusiness and all firm performance. The S&P credit ratings signal financial stability and financial distress to investors. Table 6 outlines the comparison, and we see that agribusinesses have performed somewhat better than all firms in terms of the proportion of companies falling into each of the credit ratings. We find that no agribusinesses have moved into liquidation and they exhibit higher percentages of companies with S&P ratings above the score of C, when compared to the market of all firms. The market of all firms shows 33 percent of companies signaling financial distress with an S&P credit rating of C or lower. This is compared to the agribusiness sample where only 20% earn that classification, showing lower proportion of agribusiness firms are in distress. Slightly fewer agribusinesses are in the process of reorganization, demonstrated by the S&P credit rating of D. During this time period, no agribusinesses were classified in the stages of corporate liquidation.

Conclusions

The presented analysis lays a solid foundation for future research in terms of describing the financial ratios to examine corporate firm performance. We acknowledge existing literature and apply the techniques found in the literature to an agribusiness sample in order to examine their historical corporate performance. Our research strives to examine how publicly-traded agribusinesses perform financially compared to all firms over the period from 1961 to 2011. We utilize indicators of company success, including financial ratios and balance sheet/income statement items, to compare agribusiness firms to all firms in the market. We perform the analysis annually and for companies that represent the median and the 25th and 75th percentiles of performance. We also perform DuPont analysis to decompose the return on equity into its three components of profitability, operating efficiency, and financial leverage. We find that agribusinesses outperform at the median the group of all firms in terms financial ratios related to profitability, liquidity, and market ratios, but they have slightly lower liquidity and debt ratios. The DuPont analysis shows that the higher return on equity for agribusinesses is mostly due to higher asset turnover ratios, indicating higher operating efficiency of agribusinesses. The strong financial performance of food processing agribusinesses makes them valuable investing options

particularly during the recent economic recession. These findings contribute to existing research by examining the common indicators of corporate success on agribusinesses. Our conclusions contribute to the evidence that considerable strength exists in agribusiness performance compared to all firms in terms of median financial performance. Foundational knowledge remains the purpose of our paper, and significant additional research will need to be conducted to validate the strength of the agribusiness sector under various conditions.

Questions for further research have arisen throughout the presented analysis. There are several points that could strengthen our examination of the financial performance of agribusinesses. Examining if structural breaks exist in the data would identify specific periods to focus on for further analysis. Regression analysis could contribute to answering the question as to what factors separate agribusinesses from all firms in terms of performance. Better data would allow the inclusion of indicators such as free cash flows and export sales. While our presented research contributes to literature by identifying the impacts of common measure of financial success on agribusiness, it does not identify measures that separate agribusinesses from the rest of the market. As we continue to expand our analysis in the future, we will work to identify characteristics that separate agribusiness firm from the market and if there are management strategies specific to agribusinesses that help them stand the test of time.

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Table 1. SIC Codes for Agribusiness Firms

Industry Groups	SIC Codes	Number of Observations
<i>Food and Kindred Products (major group for industry groups listed below)</i>	20	25,283
Meat Products	201	4,044
Dairy Products	202	1,959
Canned, Frozen, and Preserved Fruits, Vegetables, and Food Specialties	203	3,613
Grain Mill Products	204	2,643
Bakery Products	205	1,689
Sugar and Confectionery Products	206	2,726
Fats and Oils	207	700
Beverages	208	7,909
Miscellaneous Food Preparations and Kindred Products	209	0

Notes: SIC 2-digit codes represent the major group and SIC 3-digit codes represent the industry. Number of observations is the number of firms-quarter observations in Compustat for 1961-2012.

Table 2. Financial Ratios Definitions and Formulas

Financial Ratios	Indicators	Formulas	Compustat Code
Profitability	Return on Equity	Net Income/Equity	NIQ/CEQQ
	Return on Assets	Net Income/Total Assets	NIQ/ATQ
	Gross Margin Ratio	(Net Sales - Cost of Goods Sold)/ Net Sales	(SALEQ-COGSQ)/SALEQ
	Profit Margin Ratio	Net Income/ Net Sales	NIQ/SALEQ
Liquidity	Current Ratio	Current Assets/Current Liabilities	ACTQ/LCTQ
	Quick Ratio	(Current Assets - Inventories)/Current Liabilities	(ACTQ-INVTQ)/LCTQ
Activity (Efficiency) Ratios	Asset Turnover	Net Sales/Total Assets	SALEQ/ATQ
Solvency Ratios	Debt to Asset Ratio	Total Debt/Total Assets	LTQ/ATQ
	Long Term Debt to Asset Ratio	Long Term Debt/Assets	DLTTQ/ATQ
	Asset to Equity Ratio	Total Assets/Equity	ATQ/CEQ
Market Ratios	Earnings Per Share	Net Earnings/Number of Shares	EPSPXQ
	P/E Ratio	Market Price Per Share/Diluted Earnings Per Share	PRCCQ/EPSFXQ
Balance Sheet and	Total Assets	Total Assets	ATQ
Income Statement	Total Liabilities	Total Liabilities	LTQ
	Equity	Equity	CEQ
	Sales	Net Sales	SALESQ
	Net Income	Net Income	NIQ
	Retained Earnings	Retained Earnings	REQ

Table 3. Financial Performance of Agribusinesses and All Firms by Year

	Agribusinesses				All Firms			
	2008	2009	2010	2011	2008	2009	2010	2011
Return on Equity	0.024	0.034	0.034	0.028	0.013	0.011	0.017	0.017
Return on Assets	0.009	0.014	0.015	0.012	0.001	0.001	0.003	0.002
Gross Margin Ratio	0.326	0.345	0.347	0.339	0.354	0.355	0.375	0.379
Profit Margin Ratio	0.024	0.034	0.034	0.028	0.013	0.011	0.017	0.017
Current Ratio	1.512	1.605	1.710	1.642	1.744	1.767	1.828	1.837
Quick Ratio	0.820	0.981	1.032	1.018	1.302	1.339	1.403	1.392
Asset Turnover	0.291	0.287	0.281	0.274	0.137	0.127	0.131	0.127
Debt to Asset Ratio	0.513	0.493	0.468	0.481	0.549	0.553	0.534	0.529
Long Term Debt to Asset Ratio	0.157	0.159	0.131	0.138	0.086	0.079	0.066	0.064
Asset to Equity Ratio	1.871	1.897	1.762	1.796	1.885	1.835	1.793	1.807
Earnings Per Share	0.100	0.180	0.190	0.170	0.010	0.000	0.030	0.040
P/E Ratio	41.659	42.903	49.078	44.667	18.500	11.963	29.643	30.000
Total Assets (Million \$)	433.268	492.406	461.297	538.814	291.124	288.075	306.020	350.460
Total Liabilities (Million \$)	174.575	203.001	192.451	270.723	124.330	124.781	126.674	143.610
Equity (Million \$)	170.642	181.085	217.498	222.723	95.430	89.786	102.483	120.786
Sales (Million \$)	129.430	135.608	133.251	165.706	31.928	30.090	32.206	37.170
Net Income (Million \$)	1.925	4.240	6.618	5.217	0.277	0.187	0.719	0.842
Retained Earnings (Million \$)	48.202	31.162	53.870	78.711	-0.054	-1.885	-1.136	-0.715
Number of Firm/Quarter Observations	542	527	513	497	43,495	43,046	43,132	41,969

Notes: Calculations are based on quarterly data from Compustat for selected years. The reported numbers are medians.

Table 4. Financial Performance of Agribusinesses and All Firms by 25th Percentile, Median, and 75th Percentile

	Agribusinesses			All Firms		
	25th Percentile	Median	75th Percentile	25th Percentile	Median	75th Percentile
Return on Equity	0.004	0.028	0.060	-0.021	0.017	0.044
Return on Assets	-0.001	0.012	0.025	-0.021	0.002	0.016
Gross Margin Ratio	0.182	0.339	0.454	0.202	0.379	0.612
Profit Margin Ratio	0.004	0.028	0.060	-0.021	0.017	0.044
Current Ratio	1.148	1.642	2.636	1.050	1.837	3.374
Quick Ratio	0.712	1.018	1.511	0.788	1.392	2.786
Asset Turnover	0.157	0.274	0.409	0.022	0.127	0.274
Debt to Asset Ratio	0.334	0.481	0.637	0.287	0.529	0.795
Long Term Debt to Asset Ratio	0.036	0.138	0.271	0.000	0.064	0.260
Asset to Equity Ratio	1.351	1.796	2.680	1.213	1.807	3.247
Earnings Per Share	0.000	0.170	0.575	-0.030	0.040	0.320
P/E Ratio	-0.630	44.667	76.500	-13.583	30.000	68.167
Total Assets (Million \$)	60.684	538.814	4235.155	41.496	350.460	2048.162
Total Liabilities (Million \$)	20.519	270.723	2934.800	11.890	143.610	1243.058
Equity (Million \$)	34.745	222.723	1129.492	15.254	120.786	657.200
Sales (Million \$)	16.801	165.706	972.963	3.463	37.170	259.535
Net Income (Million \$)	-0.014	5.217	81.200	-1.042	0.842	15.217
Retained Earnings (Million \$)	-1.074	78.711	649.891	-57.627	-0.715	155.508
Number of Firm/Quarter Observations	497	497	497	41,969	41,969	41,969

Notes: Calculations are based on quarterly data from Compustat for 2011.

Table 5. Dupont Analysis for Return on Equity

Financial Ratios	Formulas	25th Percentile	Median	75th Percentile
<i>Agribusinesses</i>				
Return on Equity	Net Income/Equity	0.004	0.028	0.059
Profit Margin	Net Income/Net Sales	-0.003	0.051	0.101
Asset Turnover	Net Sales/Assets	0.157	0.274	0.409
Equity Multiplier	Assets/Equity	1.351	1.796	2.680
<i>All Firms</i>				
Return on Equity	Net Income/Equity	-0.010	0.019	0.044
Profit Margin	Net Income/Net Sales	-0.062	0.042	0.123
Asset Turnover	Net Sales/Assets	0.022	0.127	0.274
Equity Multiplier	Assets/Equity	1.213	1.807	3.247

Notes: Calculations are based on quarterly data from Compustat for 2011.

Table 6. S&P Credit Ratings

S&P Credit Rating	All Firms Frequency	All Firms Percent	Agribusiness Frequency	Agribusiness Percent	Distress Classification
A+	9,378	1.86	1,182	13.50	Financial Stability
A	17,796	3.54	625	7.14	
A-	26,376	5.24	461	5.26	
B+	67,487	13.41	1,280	14.62	
B	95,221	18.92	1,839	21.00	
B-	116,706	23.19	1,629	18.60	Financial Distress
C	132,810	26.39	1,202	13.72	
D	37,169	7.39	540	6.17	
LIQ	335	0.07	-	0	
Total	503,278	100	8,758	100	

Figure 1. Financial Ratios for Agribusinesses and All Firms for 1971-2011

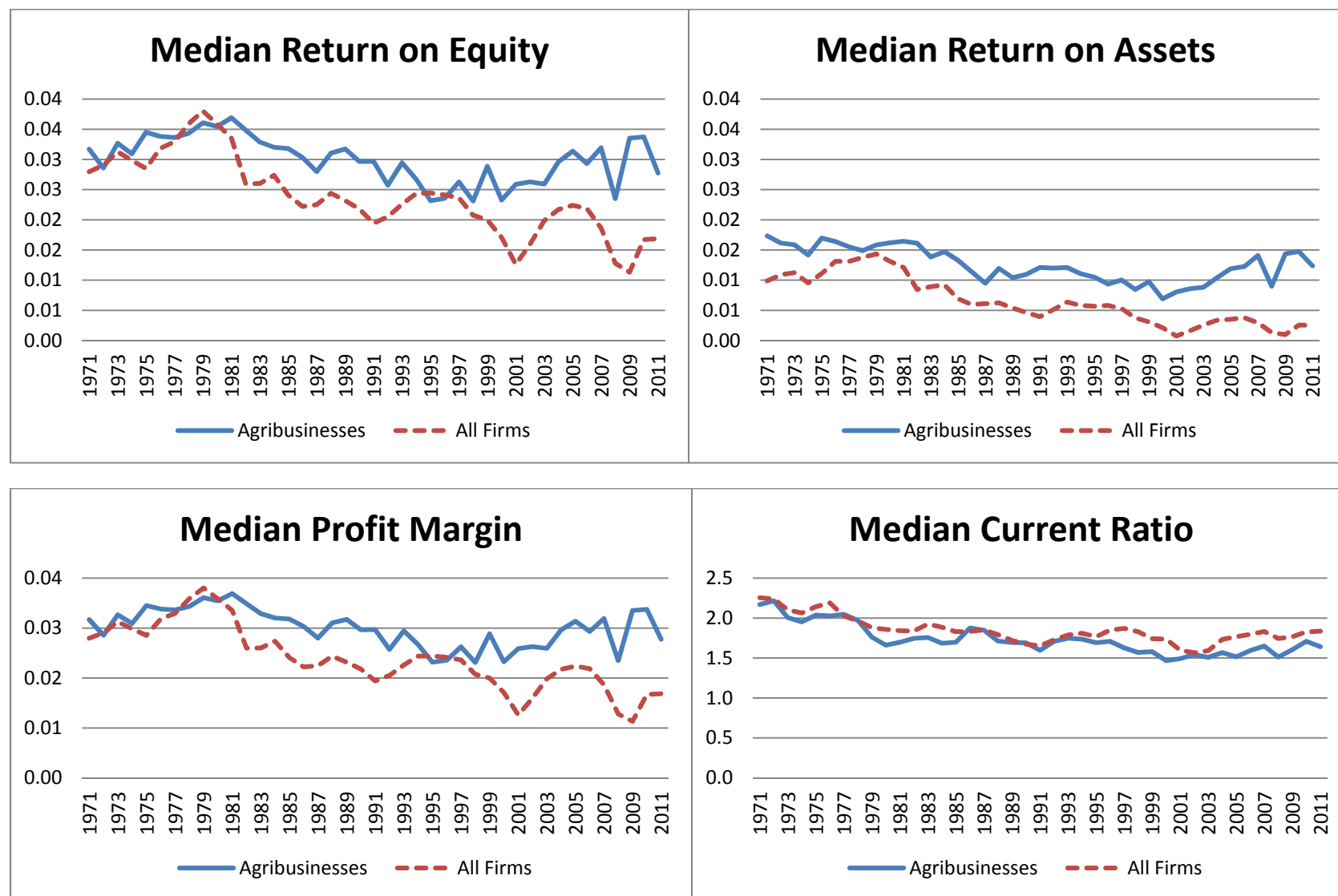


Figure 1. Financial Ratios for Agribusinesses and All Firms for 1971-2011 (Continued)

