CREATING VALUE WITH EQUITY MANAGEMENT AT AG VALLEY COOPERATIVE

by

KEVIN NIELSEN

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Major Professor
Dr. David Barton

ABSTRACT

The main objective of this thesis is to aid Ag Valley Cooperative's board of directors in the construction of a superior income distribution and equity redemption strategy. The key information provided is a detailed financial analysis and pro forma financial projections. Ultimately, this study focuses on increasing patron value by returning retained patronage refunds in an equitable and timely manner. This paper examines the benefits of eliminating Ag Valley Cooperative's current equity redemption program, age of patron, and replacing it with a revolving fund.

Chapter 1 introduces Ag Valley Cooperative and gives a brief description of the cooperative's business model. The chapter concludes with the study's methodology.

Chapter 2 briefly examines cooperatives and people who use them. This chapter introduces Cooperative Performance Profile, the financial analysis used in the study. The chapter concludes with a look at cooperative finance theory and equity management.

Chapter 3 describes key points of the Cooperative Performance Profile and separates it into five groupings: profitability, liquidity, solvency, efficiency, and size. Analyses are conducted in each category on Ag Valley Cooperative's historic trends and comparisons to other Nebraska cooperatives.

In Chapter 4 Ag Valley Cooperative's current equity redemption strategy is defined along with four pro forma analyses. The first strategy, S0, assumes the cooperative continues business as normal with estate and age of patron redemption methods. Strategies S1 and S2 interject balance sheet management constraints and revolving fund redemption into the projection. In S1, revolving fund equity redemption is added to distribute any excess equity redemption budget, in S2 the revolving fund method is phased in. Strategy S3 builds upon S2 with a look at the effects and tax consequences of distributing non-qualified equity or retained patronage refunds instead of qualified retained patronage refunds.

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ACKNOWLEDGMENTS

This project is motivated and supported by the insight of Ag Valley Cooperative's board of directors and senior management team, specifically Ron Hunter and Jeff Krejdl who provided insight and direction from conception to final draft. I am indebted to them. Ultimately, the goal of this project is to increase patron value at the cooperative. I sincerely hope the information provided here is successful in doing that.

I am deeply thankful to Dr. David Barton, Charles Mickelsen and staff at the Arthur Capper Cooperative Center who provided the resources to make this project possible. Dr. Barton served as the Major Professor on this project. Under his guidance, the team crunched numbers and provided invaluable insight and support on this project. Thank you!

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CHAPTER 1: INTRODUCTION

Alone we can do little; together we can do much. - Helen Keller

There is only one good, knowledge, and one evil, ignorance. - Socrates

1.1 Motivation

My initial exposure to cooperative employment occurred a quarter century ago. Midway through undergraduate studies, my wife and I were expecting our first child, and I was happy to have steady employment that offered overtime. I worked at a local co-op, enjoyed the job, the customers, and my co-workers. One day while in the office I witnessed a heated conversation between a customer and the assistant manager. The farmer conveyed his feeling of loyalty to the co-op but was upset with the higher prices he was paying versus other agribusinesses in the area and threatened to take his business elsewhere. In my youthful innocence I interjected into the conversation that cooperatives are only as good as the support they receive from their members, and, by the way, members receive patronage for doing business with the co-op. The customer ended the conversation by saying, "What patronage?" as he walked out the door.

Fast forwarding 25 years, I find myself employed at a cooperative once again. The work includes human resource duties which touch most every part of Ag Valley Cooperative Non-Stock (AVC). The cooperative world, along with agribusiness in general, has transformed over the years. Agricultural cooperatives have morphed in size and scope, merging with other cooperatives, purchasing and growing new ventures, and developing their business models. Like AVC, many rural agricultural cooperatives have grown to the critical mass of having major influence on the local economy and are key employers in their trade territories. Farming operations have evolved in similar fashion. Fewer and bigger farmers are influencing the way agribusiness conducts itself. In essence, this thesis project is being written to address that same question presented 25 years ago, "What patronage?"

In theory and practice, customers choose to spend their limited resources in places returning the greatest value. Although the definition of value is subjective and constantly

evolving, in my opinion, the perceived "value" of being a loyal customer to the local cooperative has diminished in an inverse relationship to the size of farming operations in the last 25 years. To remain relevant in today's economy, agricultural cooperatives like AVC must not only continue to evolve by providing goods and services required by farmers, but also provide increasing value in the marketplace. Motivation for this project is ultimately to explore alternative equity redemption methods at AVC that have the potential to provide increasing value for farmer patrons.

1.2 Ag Valley Cooperative

AVC has grown from humble beginnings as Edison Non-Stock Cooperative Association, a grain elevator in Edison, Nebraska, into a multi-state agri-business with sales over $532 million in fiscal year 2011. Edison Non-Stock Cooperative Association incorporated in October of 1953 and began operations November 1, 1954. There were seven members on the original board of directors and James Fox was the first manager. In that first year, the cooperative purchased 107,046 bushels of grain consisting of corn (59,406 bu.), wheat (34,434 bu.), and milo (13,206 bu.).

An audit for the first seven months of operations ending May 31, 1955 conducted by Consumer Cooperative Association of Kansas City, Missouri reveals total sales of $180,750.39 and net operating savings of $4,566.77 (Appendix A). Ending grain inventories on May 31, 1955 were 864 bushels of corn, 857 bushels of wheat, and 364 bushels of milo valued at $3,636.58. Interestingly, H.P. Hayes, Jr., Auditor-Analyst for that first audit had this advice to the Board of Directors, "Because you have only recently organized and have heavy investments in new facilities, you have sizeable long-term liabilities. The greatest amount of liabilities is to your membership, which is a healthy situation." Initially, the cooperative raised capital by issuing common shares to its 184 members with par value of $100.00 each. Membership was limited to entities that patronized the association annually and were bona-fide producers of agricultural products in the trade territory. H.P. Hayes, Jr. concluded his comments to the board with, "You should make an effort to keep your office and elevator neat and as clean as possible. Appearance means much to your members, especially the ladies."

Edison Non-Stock Cooperative Association purchased or merged with several companies in the 1970s, 1980s and 1990s (Table 1.1). In the mid 1990s, to reflect its greater service and trade area, Edison Non-Stock Cooperative changed its name to AVC.

Table 1.1 Ag Valley Cooperative Purchases and Mergers

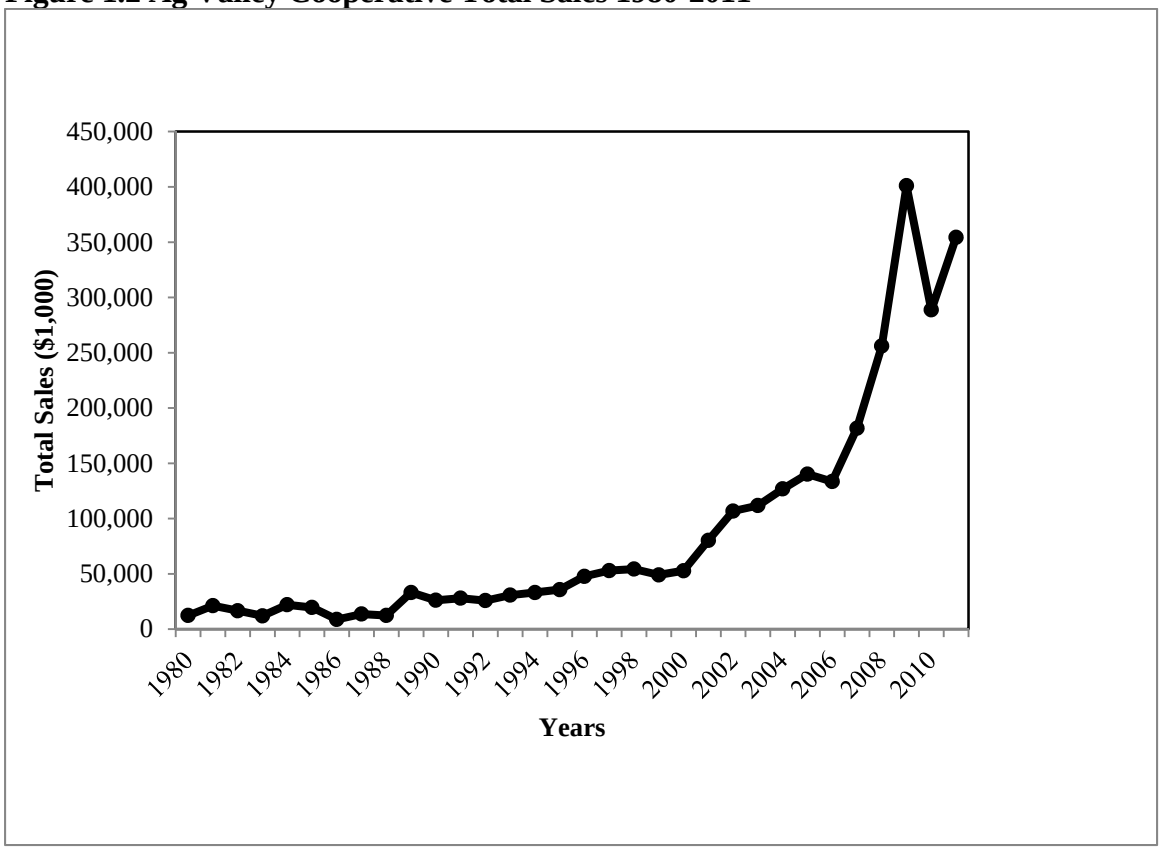
Date	Ag Valley Cooperative Merger/Purchase Events
1972	Oxford Cooperative, Oxford, Nebraska
1975	Purchased Rogers Grain Company, Beaver City, Nebraska
6/1/1980	Farmers Union Cooperative Association, Holbrook Merger
5/1/1986	Hendley Coop Merger, Hendley, Nebraska
2/28/1990	Purchase Indianola Oil Company in Indianola, Nebraska
5/1/1995	Bartley Equity Cooperative Merger, Bartley, Nebraska
1/12/1998	Purchase Koch Agricultural Company facilities, Arapahoe, Nebraska
3/1/2000	Lebanon Coop Merger, Lebanon, Nebraska
10/1/2000	Maywood Coop Merger, Maywood, North Platte, Curtis, Moorefield, Nebraska
9/1/2005	Norton County Coop Merger, Norton, Kansas
12/1/2006	Cambridge Cooperative Oil Company Merger, Cambridge, Nebraska
5/1/2008	Holbrook Non-Stock Cooperative Company Merger, Holbrook, Nebraska

Today, AVC operates from facilities in twenty south-central Nebraska and north-central Kansas communities as follows: North Platte, Maywood, Curtis, Moorefield, Indianola, Bartley, Cambridge, Holbrook, Arapahoe, Edison, Oxford, Orleans, Stamford, Beaver City, Hendley, Wilsonville, Lebanon, Norton, Reager, and Clayton (Figure 1.1). The headquarters is in Edison, Nebraska.

Figure 1.1 Ag Valley Cooperative Locations

The size of AVC's labor force fluctuates as seasonal employees fill a void during harvest and spring seasons but typically 300 employees make up the workforce. In 2009, AVC was listed as the 63rd largest agricultural cooperative in the nation by the USDA with gross revenue of $416 million. In 2010, they ranked 90th with $289 million (Ali and Chesnick 2012) and in 2011, AVC posted total sales that topped $532 million. Except for the 2008 global economic downturn which produced subsequent commodity price declines, AVC's sales have grown steadily over the past 20 years (Figure 1.2).

Figure 1.2 Ag Valley Cooperative Total Sales 1980-2011



Five departments comprise AVC's business model: Grain, Agronomy, Petroleum, Water Resource, and Feed. The **Grain Department** purchases, sells, stores, and markets farm commodities produced by area growers. It provides transportation services from farm to cooperative facilities and also makes deliveries to area end-users. The Grain Department is an introducing commodity broker for Country Hedging, Inc. (Goding 2012).

The **Agronomy Department** provides soil nutrient inputs of liquid and dry fertilizers, anhydrous ammonia, and pest control including herbicide, insecticide and fungicide chemicals. The Agronomy Department offers soil testing, seed sales, leaf tissue sampling, and fertilizer and pest control recommendations. The Agronomy Department provides custom application services of products including variable rate technology. Product delivery and equipment rental is also available (Fellows 2012).

The **Petroleum Department** provides energy products of gasoline, diesel fuel, engine oils, hydraulic fluids, grease and propane to area farmers, ranchers, and community residents.

Bulk fuel delivery, bulk oil delivery, and transport fuel delivery provide convenience and cost advantages to customers. The petroleum division has service stations, cardtrol fueling locations and retail convenience stores serving area communities. The department also sells various farm-related products such as: fence posts, wire, tanks, and farm supplies from stores and various locations (Zeller 2012).

The **Water Resource Department** specializes in sub-surface micro-irrigation using pressure compensated drip tape that is installed beneath the surface of the field to irrigate with nearly 100% efficiency. The systems are installed using global positioning and auto steer and fields are digitally mapped for future use. The Water Resource Department also specifies precision fertilizer application using a SDI system as the delivery mechanism. The department also installs underground pipe and pumping stations as well as variable frequency drives on pumps and wells to control flow while conserving energy. Real-time field condition monitoring via satellite communication is offered to producers. The Water Resource Department prides itself on water and energy conservation while providing opportunities to produce maximum economic returns (Masten 2012).

The **Feed Department** provides animal nutrition products to all classes of livestock producers. It provides premixes, concentrates, and custom mixed feeds. The Feed Department operates two grind and mix mills; one in Maywood, Nebraska and the other in Norton, Kansas. Bulk feed is available to customers at these locations and the department supplies livestock equipment, farm supplies and animal health products. The Feed Department has an experienced staff that provides nutritional information and recommendations to customers (Hall 2012).

In part, AVC's growth is a function of its investment in capital assets. In the last thirteen years, AVC has invested over $57 million in capital assets (Krejdl, Personal Interview 2012). Major improvements have been made to grain and fertilizer facilities (Table 1.2). Rail loading facilities in Edison, Bartley, and North Platte along with a modern agronomy plant in Edison have allowed for increased efficiencies which have driven sales and profits.

Table 1.2 Major Capital Asset Projects

Year	Asset	Total
2001	Edison Elevator and Rail Upgrade	$ 2,121,538
2002	Maywood Grain Bin	$ 780,000
2003	Grain Bunkers/Bins	$ 1,700,000
2006	North Platte Bin	$ 1,500,000
2007	Edison Liquid Storage	$ 2,800,000
2008	Edison Grain Bins	$ 2,700,000
2009	Liquid Storage Facilities	$ 1,800,000
2010	Bartley Shuttle Loading Project	$ 2,275,350
2010	North Platte Rail Project	$ 1,357,056
2010	Orleans Grain Storage Facility	$ 1,995,283
2010	Norton Grain Storage Facility	$ 1,926,334
2011	Orleans Grain Storage Facility	$ 2,476,348
2011	Norton Grain Storage Facility	$ 2,441,996
2011	Bartley Shuttle Loading Project	$ 9,801,749

(Krejdl, Personal Interview 2012)

1.3 Scope and Objectives

The objective of this study is to provide the board of directors a comprehensive financial analysis of AVC and to develop strategies that best manage the cooperative's equity. First, a financial profile comparing AVC with its peers will be developed and analyzed. Second, a pro forma analysis will be conducted to examine alternative equity redemption strategies. The results of this study will be presented to AVC's board of directors before the cooperative's fiscal year-end to aid in decisions regarding equity management policy. Ultimately, the main objective of this project is to provide increased value to AVC's members through an improved equity redemption program.

1.4 Methodology

The analysis in this project has two parts. First, AVC's financial performance profile is built using proprietary software developed at Kansas State University called PERFORM. Second, this historical profile is used to help construct a pro forma financial analysis of alternative equity redemption strategies using a software program named FINPLAN also developed at Kansas State University.

1.4.1 Cooperative Performance Profile

AVC's financial analysis, called Cooperative Performance Profile, was conducted with software called PERFORM. It was developed by Dr. David Barton and Chuck Mickelsen at the Arthur Capper Cooperative Center at Kansas State University. The software compares AVC's financial data with that of other Nebraska cooperatives. This standard financial analysis calculates and compares financial ratios in four categories: profitability, liquidity, solvency, and efficiency. Other statistics developed in the Cooperative Performance Profile analysis include product mix and size.

The Cooperative Performance Profile analysis reports performance measures in three ways: variability from the higher ratios to the lower ratios, grouping based upon profitability, and variability using the coefficient of variation. In all, forty-three different measures are calculated in six different categories. The focus narrows in this study to concentrate on a sub-group of these measures. The primary goal of this analysis is to provide AVC's board and management an overall financial picture of the cooperative that can then be used as a base for strategic financial discussions.

1.4.2 FINPLAN

FINPLAN is a financial projection simulator that uses Microsoft Access and is programmed in Visual Basic to carry out pro forma analysis. The proprietary and complex software was developed by Dr. David Barton and Chuck Mickelsen with the Arthur Capper Cooperative Center at Kansas State University. This study utilizes FINPLAN to evaluate AVC's finance and equity management strategies.

CHAPTER 2: LITERATURE REVIEW

This chapter examines cooperatives and defines the core cooperative principles that guide strategic financial decisions for cooperative boards. In addition, this chapter also defines the financial profile and theory used to evaluate AVC's performance in chapter three as well as setting the basis for the pro forma analysis used in chapter four. Chapter 2 concludes with an overview of cooperative equity and redemption strategies.

2.1 Cooperatives

The cooperative business model is common today in many parts of the world although in the last century cooperatives have been most successful in North America and Europe (Ortmann and King 2007). Cooperatives are found in a wide range of industries from the agricultural sector to healthcare, utilities, teaching and transportation. Farmer-owned cooperatives play an important role in the world's food supply. They are a vital component in the food supply chain and consumers depend on cooperatives for safe, plentiful food supplies. Farmers rely upon cooperatives to supply important products and services and local communities rely on them for their positive economic impact and job creation. Most begin locally as small, single product organizations that are highly accessible to members and exist as long they meet member's needs. A growing number of modern cooperatives are large multi-sector organizations controlled by bureaucratic structures and procedures coordinating complex operations (Gray and Butler 1994). Administration of present-day cooperatives has become increasingly sophisticated and, as such, requires increasingly sophisticated management practices. While there are several social described reasons for belonging to a cooperative, in this paper, it is assumed that a user's primary motivation is purely economic in that the cooperative meets their needs in a manner that maximizes value.

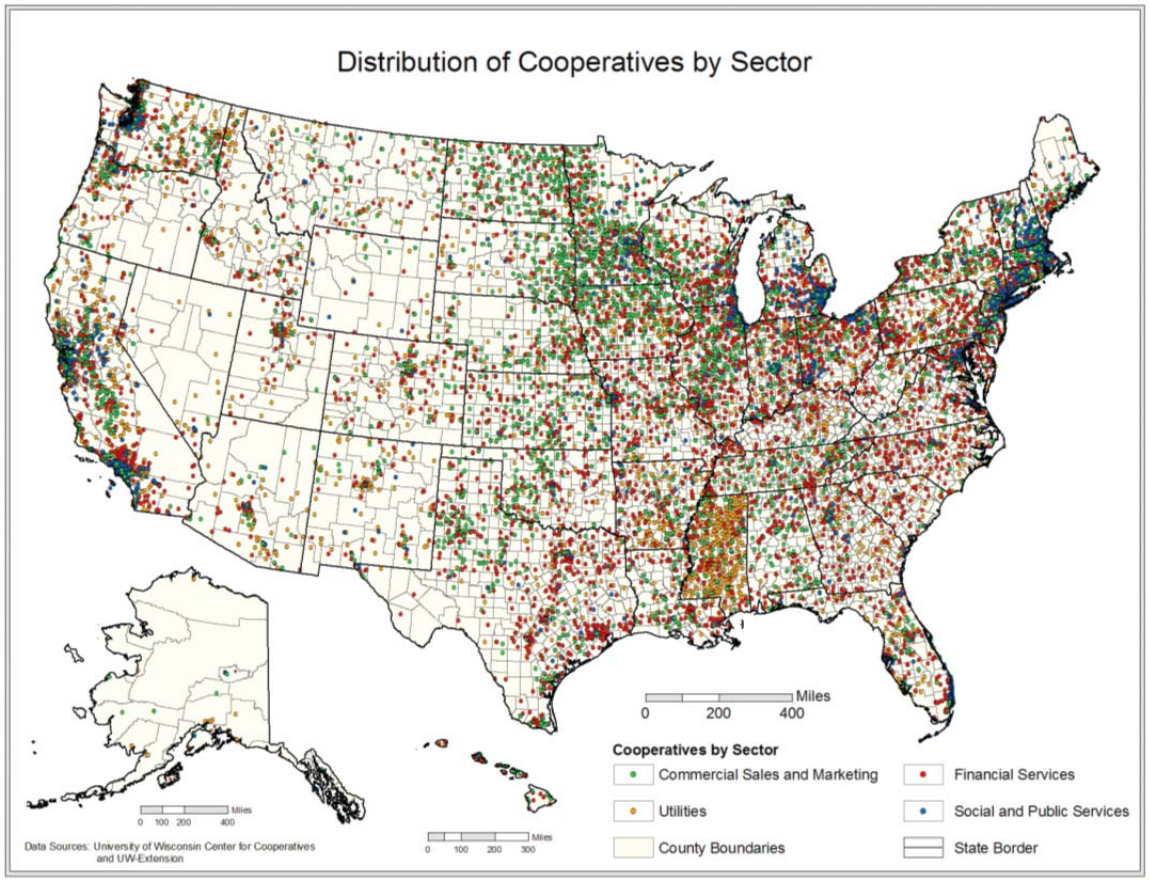
2.1.1 Economic Impact

The cooperative business model is credited for enabling communities to reach their goals and create employment opportunities for people around the globe. The International Cooperative Alliance estimates that worldwide over 800 million people are members of

cooperatives. In many countries, cooperatives and their guiding principles are responsible for the solidarity, tolerance, education, and well-being of entire populations (ICA 2011).

An extensive research project studying the economic impact of cooperatives on the U.S. economy was conducted at the University of Wisconsin and funded in part by the USDA, National Cooperative Business Association, and the State of Wisconsin. The study identified nearly 30,000 cooperatives operating in 73,000 locations that hold more than $3 trillion in assets (Figure 2.1). The project estimated that cooperatives account for nearly $654 billion in revenue, $75 billion in payroll benefits, and more than 2 million jobs (Deller, et al. 2009).

Figure 2.1 Distribution of Cooperatives by Sector



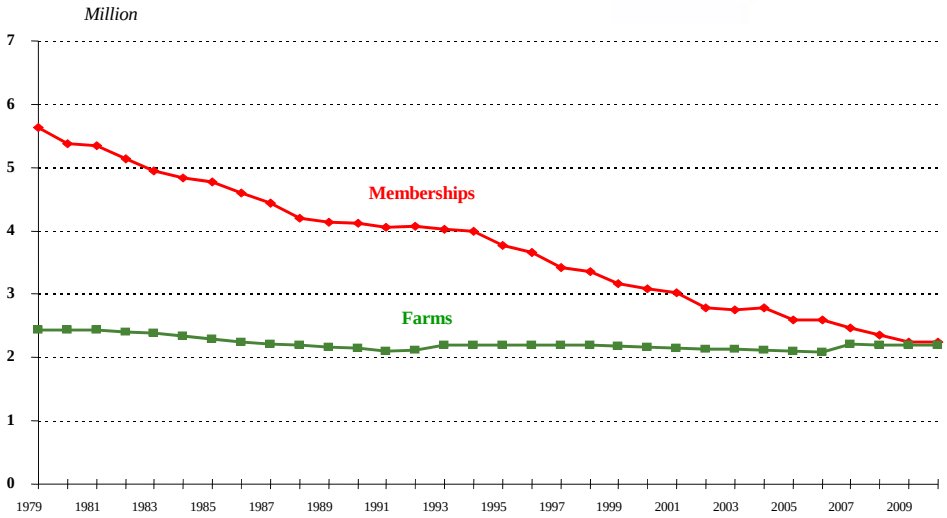
(Deller, et al. 2009)

The United States Department of Agriculture (USDA) collects annual statistics on the Nation's farmer, rancher, and fishery cooperatives through its Rural Development's

Cooperative Programs. Collection is authorized by the Cooperative Marketing Act of 1926, which expands upon the Capper-Volstead Act of 1922 giving agricultural associations certain exemptions from antitrust laws. The Cooperative Marketing Act is significant in that it allows farmers to exchange "past, present, and prospective crop, market, statistical, economic and other similar information" at cooperative meetings without breaking antitrust laws (Varney 2010). Data are collected by the USDA Rural Development Cooperative Program through a mail survey of organizations identified as farmer, rancher, or fishery cooperatives. Statistics for non-respondents are estimated and combined with respondent information and census data for the overall statistical analysis published annually (Penn, DeVille and Eversull 2009).

Current trends in agriculture have resulted in fewer and larger farms. Currently the USDA recognizes around one million farms in the United States whose farming operations comprise 500 acres or more. These are larger than what is normally considered "hobby" farms. Larger farms most often have membership in multiple cooperatives and some studies suggest that individual farmers belong to an average of three cooperatives (Eversull, Phone Interview 2012). Trends in agribusiness have also resulted in fewer and larger cooperatives. In the last decade, cooperative numbers have dropped by 1,221. Cooperative memberships have also been affected by these declines. In 1979 there were over 5.5 million cooperative memberships. According to the 2010 USDA report, membership in U.S. farmer, rancher, and fishery cooperatives dropped to 2.2 million (Figure 2.2).

Figure 2.2 U.S. Farms and Cooperative Memberships, 1979-2010

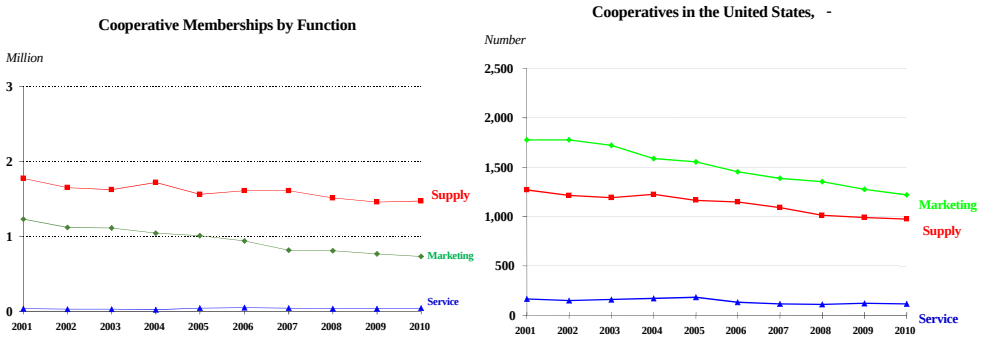


(USDA, USDA Rural Development Business and Cooperative Programs n.d.)

The USDA Cooperative Statistics, 2009 report classifies 2,389 U.S. farmer, rancher, and fishery cooperatives under one of the following functions; marketing (1,169), supply (970), or service (250) (Appendix B). Marketing cooperatives engage mainly in the sale of their members' products and are further classified into 13 separate commodity classes; Bean and Pea (dry edible), Cotton, Dairy, Fish, Fruit and Vegetable, Grain and Oilseed, Livestock, Nuts, Poultry, Rice, Sugar, Tobacco, Wool and Mohair. Supply cooperatives sell machinery, equipment, building materials, and other various production supplies. Service cooperatives specialize in services such as cotton ginning, artificial insemination or trucking (Appendix C).

AVC is a grain marketing and farm supply cooperative. The USDA classifies AVC as a marketing cooperative since grain marketing comprises the majority of its business activity and its supply sales are less than 25% of total sales (Eversull, Phone Interview 2012). A majority of cooperatives classified by the USDA are marketing cooperatives; supply cooperatives have the largest membership while service cooperatives are smallest in numbers and memberships (Figure 2.3).

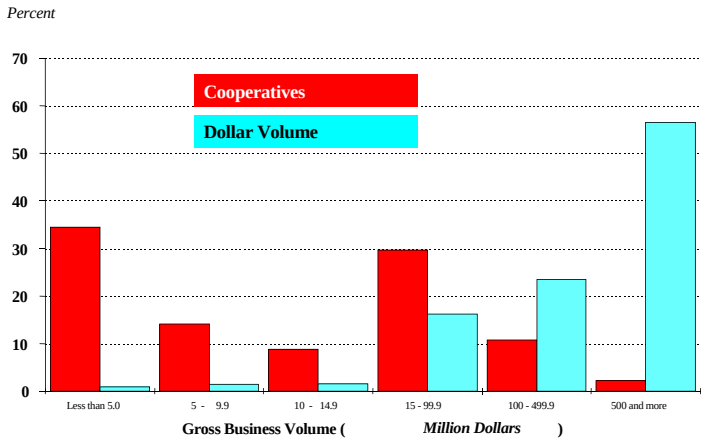
Figure 2.3 U.S. Cooperatives and Membership 2001 - 2010



(USDA, USDA Rural Development Business and Cooperative Programs n.d.)

In 2009, U.S. cooperatives' gross business volume was $170.243 billion and net income was $4.4 billion (Appendix D). This is the second largest sales and income year for U.S. farmer, rancher, and fishery cooperatives, second only to 2008. In comparison, when considering annual gross business volume, most of today's cooperatives are relatively small and serve local trade areas. In 2009, 57% of U.S. farmer, rancher, and fishery cooperatives accounted for only 4% of total gross dollar volume while 13% of the cooperatives – those reporting gross business volumes of $100 million or more - accounted for 80% of the total volume (Figure 2.4).

Figure 2.4 Distribution of Cooperatives and Volume, by Size, 2009



(USDA, USDA Rural Development Business and Cooperative Programs n.d.)

2.1.2 History and Definition

Principles of modern day cooperatives are thought to have originated in Europe in the mid-1800s to counter poverty and marketplace failure to provide acceptably priced goods and services in necessary quantities (Ortmann and King 2007). Facing poor working conditions and low wages, twenty-eight cotton mill employees in northern England joined resources to open a shop that stocked four basic goods; flour, oatmeal, sugar and butter calling themselves the Rochdale Equitable Pioneers Society (ICA 2011). This society is considered by most to be the originators of the modern cooperative principles. The small group joined together to purchase consumer goods and supplies that were, at the time, expensive and difficult for the average individual to obtain. Rochdale Equitable Pioneers Society charged members one English pound for a single share and adopted the following ten principles that have evolved into today's cooperative principles: open membership; one vote per member; cash transactions; education for members; neutral politics; limited risk

assumption; limited stock interests; regular retail price trading; limited ownership of share by members; and net income paid to members in the form of patronage (Meyer 1994).

Depending upon the author, cooperative principles have evolved over time with varying definitions. The International Co-operative Alliance defines cooperatives as "an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise" (ICA 2011). According to Ortmann and King in their 2007 paper titled Agricultural Cooperatives I: History, Theory and Problems, the international community recognizes seven cooperative principles: "voluntary and open membership; democratic member control; member economic participation; autonomy and independence; provision of education, training and information; cooperation among cooperatives; and concern for community" (Ortmann and King 2007). Cooperative Education Specialist, Tammy Meyer, writes in the Cooperative Information Report that four principles are recognized today by Federal and State statutes to identify cooperatives: service at cost; financial obligation and benefits proportional to use; limited return on equity capital; and democratic control (Meyer 1994).

The USDA considers four criteria when identifying farmer, rancher, and fishery cooperatives: "(1) Membership is limited to persons producing agricultural and aquacultural products and to associations of such producers; (2) Cooperative members are limited to one vote regardless of the amount of stock or membership capital owned; or the cooperative does not pay dividends on stock or membership capital in excess of eight percent a year or the legal rate in the State, whichever is higher; (3) Business conducted with non-members may not exceed the value of business conducted with members; (4) The cooperative operates for the mutual interest of members by providing member benefits on the basis of patronage" (Penn, DeVille and Eversull 2009). In their 1991 report Advising People About Cooperatives, the USDA identifies three distinct principles of cooperatives: the user-owner principle; the user-control principle; and the user-benefits principle (USDA, Advising People About Cooperatives 1991). Regardless of definition, cooperatives are universally understood as organizations that are member owned and controlled and operate

for the purpose of providing member benefits while distributing surplus income based upon use or patronage, not ownership.

2.1.3 User Roles

Several terms are used to define persons conducting business with a cooperative. The USDA defines a cooperative as being owned by, controlled by, and operating for the benefit of "users". The USDA's term "user" is often times confusing. Hence, in this paper we focus on roles users have in regards to their relationship with the cooperative – customer, patron, owner, and member.

2.1.3.1 Customer

Serving the needs of customers is the main focus of a successful cooperative. In the broadest sense, users are customers. They "buy products and services from the cooperative or sell products to the cooperative." (Barton, What Is a Cooperative? 2000) At AVC customers purchase fuel for their tractors, feed for their cattle, propane to heat their homes, and fertilizer for their fields. Customers also market and sell their grain through the cooperative. In this sense they are user-customers. The primary customer segment is that consisting of agricultural producers. Not everyone who buys or sells to AVC is considered a customer though. For example, manufacturers sell products to the cooperative for resale. They are considered suppliers. Feedlots purchase grain from AVC. They are considered buyers but not user-customers.

2.1.3.2 Patron

The term "patron" is also widely defined in cooperatives. It can be broadly defined as a cooperative's customer or narrowly defined as those who receive a portion of the cooperatives profits in the form of patronage refunds. In this thesis, patrons are those who gain from the user-benefit principle of cooperatives that reward patrons for utilization through patronage refunds. The user-benefit principle mirrors a cooperative's purpose to distribute profits to patrons based upon patronage. As cooperatives generate earnings, profits are distributed to patrons in proportion to their use (Frederick 1997). Patronage refunds can be paid in cash or retained for a period of time. Cash refunds benefit patron-owners immediately while retaining patronage refunds strengthens the cooperative's

financial position and allows for redemption of older equity. A cooperative's equity management strategy must be crafted to consider the costs and benefits to all parties, big and small, old and young. It is one of the most challenging tasks that a cooperative board administers.

2.1.3.3 Owner

Owners are users who have an equity stake in the cooperative. They own it and are required to finance the business so it can operate and grow. Owners gain equity ownership in a cooperative through distributions of net income to allocated equity accounts, through per-unit retained equity, or through direct investment – typically stock or membership certificates (Smarsh 2010). At AVC, ownership is gained through patronage business transactions and retained patronage refunds. AVC has two classes of owners, members and non-members. The equity management strategy of a cooperative should strive to align with the user-owner principle in that patrons currently using the cooperative are also those supplying equity financing. In a perfect world, equity ownership is proportional to patronage use.

2.1.3.4 Member

Members are considered to be users who have voting rights in the cooperative. Not all customers, patrons, or owners are members. To explain, AVC has two types of owners, bona-fide farmers and patron-customers who don't actively participate in the occupation of farming. Both can accumulate $100 in ownership equity. Only farmers have the right to vote in the cooperative and are issued "membership stock." Non-voting patrons are issued "participating stock." Members have the responsibility to govern the cooperative by voting on important issues and board elections. Most often, members engage in governance activities by communicating with board members and participating in annual meetings. Typically, members have one vote regardless of the equity they own or the amount of business they conduct with the cooperative. AVC follows a one-member one-vote rule but other well-known cooperatives like CHS and CoBank have voting rules that allow multiple votes per account for patronage volume and/or equity ownership.

2.1.4 Education

The original Rochdale members understood the importance of an educated membership and member education became one of their original principles. Certainly education and knowledge is important for any business owner but it is vitally important for cooperatives for two reasons. First, the overall lack of familiarity and experience with the cooperative business model in today's society requires cooperatives to take on educational responsibilities themselves; business and economic courses seldom spend much time discussing the cooperative system (USDA, Advising People About Cooperatives 1991). Second, since cooperatives are controlled through democratic decisions made by members, it's critically important that individual members have a working knowledge of cooperatives and be informed on national, state and local issues affecting their local cooperative.

2.1.5 Arthur Capper Cooperative Center

The Arthur Capper Cooperative Center was established in 1984 at Kansas State University with a mission to provide cooperative education. The center focuses on increasing awareness and understanding of the cooperative form of business through cooperative research, development, finance, leadership, management, and marketing programs. The center established a collection of corporate documents for two former cooperatives, Far-Marko and Farmland Industries, at Kansas State University's Hale Library. It also houses an extensive collection of over 7,000 books, videos, and other cooperative related documents in the Department of Agricultural Economics. The center's education efforts are supported through income from an endowment and fees generated from projects, grants, and endowments. Educational components include: student education, an annual symposium, an annual CEO Round Table, and other research/education projects (University 2011). Dr. David Barton, Professor and Director Emeritus, specializes in planning projects that aid cooperatives in examining their current financial status and in developing pro-forma analyses. This project uses the Arthur Capper Cooperative Center's resources and staff in developing AVC's financial profile and in exploring various equity redemption strategies.

2.2 Financial Profile

The board of directors has the fiduciary responsibility to understand a cooperative's financial performance and condition. This understanding is enhanced by examining financial statements, developing financial ratios, and benchmarking these with others in the same industry. It's important to note that financial ratios be benchmarked to similar firms in an industry. For example, grain marketing cooperatives have rather high turnover but low profit margins whereas others such as rural electric cooperatives receive high profits from low turnover (Peterson, Understanding and Measuring Cooperative Returns 2000). Also, it's important when comparing ratios to consider the business model and product mix of each cooperative. A bulk of one cooperative's business may be derived from grain sales whereas another may be heavily weighted on the farm supply side. Therefore, there aren't widely accepted standards of financial ratios and one size certainly doesn't fit all. The proper use of financial ratios includes historical and industry-wide comparisons. They seldom provide all the answers but are most useful in developing the right questions (Brealey, Myers and Allen 2008). As noted in chapter one, this study utilizes software and methods developed by Dr. David Barton and staff at the Arthur Capper Cooperative Center to produce the Cooperative Performance Profile.

Cooperative Performance Profile analyzes financial data from cooperatives in Nebraska over a 32 year period, 1980 to 2011. The data on local grain and supply cooperatives are sourced from two places: Farmland Industries; and CoBank. Data from Farmland Industries are used for years 1980 to 1995. The 1996 to 2011 data comes from CoBank. Farmland Industries was at one time the largest agricultural cooperative in North America. It was a joint venture partner with various entities such as Land O' Lakes, Cenex Harvest States, ConAgra, Simplot, and Archer Daniels Midland. After failing to secure a $500 million loan to meet lender demands, Farmland Industries declared Chapter 11 bankruptcy in May of 2002 (Wikipedia 2012). CoBank is part of the Farm Credit System with headquarters in Denver, Colorado. The bank provides loans and other financial services to customers in all 50 U.S. states. CoBank specializes in serving the borrowing needs of agriculture and the nation's rural economy (CoBank 2011). Since the two data sets keep a

cooperative's identity confidential, comparing statistical information on individual cooperatives between the two time segments isn't possible.

Three primary questions become the focus of the Cooperative Performance Profile analysis: (1) what is AVC's historical financial performance?, (2) how does AVC compare to other Nebraska cooperatives?, and (3) what strategies will help AVC improve?

Four common categories of financial ratios are formulated in this analysis: profitability, liquidity, solvency, and efficiency. Product mix and cooperative size are also part of the analyses. In all, the Cooperative Performance Profile analyzes AVC's financial performance with forty-three different measures in six categories. More detailed information is provided in Chapter 3 and Appendix E.

2.2.1 Profitability

Profitability ratios show the returns earned on a firm's assets and are one of the most frequently used in financial ratio analysis. They indicate efficiencies in a cooperative's operation and can be divided into two categories; margins and returns. Margin ratios describe the cooperative's ability to turn sales into profits. For this paper we use Gross Margin Percentage. Return ratios describe how efficiently the cooperative generates returns. Many generally accepted return ratios are of little use when examining cooperatives since they are owned by their members. For example, ratios measuring returns on common or preferred stock don't apply since cooperatives seldom trade their stock on the open market. This study focuses on four profitability measures in Chapter 3, Return on Local Assets (ROLA), Return on Assets (ROA), Gross Margin Percentage (GMP), and Return on Equity (ROE).

2.2.2 Liquidity

Liquidity ratios explain how easily a firm can get hold of cash and how easily it can pay short-term indebtedness – 12 months or less. Ratios falling within an acceptable range are optimal and lead to higher opportunities for profitability. Two liquidity ratios are examined in Chapter 3, Working Capital and Current Ratio (CR).

2.2.3 Solvency

Solvency is a measure of a firm's ability to meet its long term debt payments and compares debt to equity financing of a cooperative's assets. Solvency ratios are also referred to as leverage ratios. These ratios assist shareholders in determining a firm's financial strength and likelihood of long-term survival. The level of solvency is one of the most important decisions a cooperative's board makes because it acts as a buffer in uncertain times and also a source of reserve to capture opportunities in the marketplace. A higher solvency ratio indicates a greater use of equity to finance a cooperative's operations. Ultimately, the goal of a firm should be to maintain an optimal level of solvency where debt and equity costs are minimized (Barton, Cooperative Performance Profile 2012). In this study, we use solvency ratios that measure a cooperative's equity compared to its assets. The two ratios we used in Chapter 3 are Equity to Assets and Adjusted Equity to Assets.

2.2.4 Efficiency

Efficiency ratios measure how productively a firm utilizes its resources. Efficiency is a key driver of profitability and is a reflection of leadership's effectiveness and the labor group's productivity. Efficiency is also a function of a cooperative's facilities. For example, modern facilities are far more efficient at storing and moving grain. AVC's newest rail loading facility, Bartley, can load a single rail car (approximately 4,000 bushels) in three minutes as opposed to the recent use of an auger to load a rail car in four hours at the Maywood location. Efficiency is examined in Chapter 3 of this study with the following two ratios: Gross Income to Personnel Expense (GIPE), and Gross Income to Depreciation (GID).

2.3 Cooperative Finance Theory and Equity Management

Financial decisions revolve around three critical and interrelated decisions: income decisions, investment decisions, and financing decisions. Investment decisions are those made in regards to the assets needed to support the cooperative's business strategy. These decisions are driven by a cooperative's income and risk expectations. Financing decisions specify the debt and equity necessary to finance the cooperative's assets and the amount of working capital required to operate in the short-term. These decisions are also driven by income and risk expectations as well as the cost of capital. Income decisions are the level

of income generation and how to distribute this income as cash, allocated equity and unallocated equity to patron owners. These decisions are based upon a cooperative's desire to distribute income to patrons through cash or increased ownership.

2.3.1 Income Decisions

Distributing a cooperative's income can be a challenging task for cooperative boards. Income decisions are connected to the earnings generated by the cooperative and are driven by expected investment and financing needs. Boards must decide if and how to distribute earnings and these decisions become easier as a cooperative's profitability increases. Distributing earnings to patrons are either in the form of cash or increased ownership (equity) in the cooperative.

2.3.2 Investment Decisions

The easiest way to manage the finances of a firm is to earn a profit, as much profit as possible, and retain a large portion of this equity to finance the assets. Boards and management teams constantly formulate investment decisions based upon their vision and strategy for the cooperative. In recent years, AVC has invested substantial capital resources to build infrastructure in the grain and agronomy departments. These decisions are an example of investment decisions and are based upon the AVC's desire to grow and compete efficiently in the long term. High profitability enhances AVC's ability to finance growth.

2.3.3 Financing Decisions

Cooperatives, like all firms, need financing to operate. Their assets are financed with capital that occurs in two forms: debt and equity. Debt is short-term or long-term money payable to lenders at a certain point in time. Equity in a cooperative represents the portion of total assets that members have ownership interest in and the cooperative has no obligation to repay it at any stated time. It is considered "risk" capital that can be lost if a cooperative's operations aren't profitable (USDA, Understand Cooperatives: Financing Cooperatives 1994). Often, equity is defined as net worth on balance sheets and reflects the total assets of a firm minus its total liabilities. Thus, equity is the residual claim on

assets. Credit holders of the cooperative view high equity as protection against not being paid the debt capital they are owed.

Financing decisions are driven by projected income generation, risk, and cost of capital. The board, management team, and credit holders collaborate to develop financing decisions. The board and management team are agents of the principals, the patron-owners, and are expected to finance assets with a mix of debt and equity that is in the best interest of the patron-owners.

2.3.3.1 Balance Sheet Management

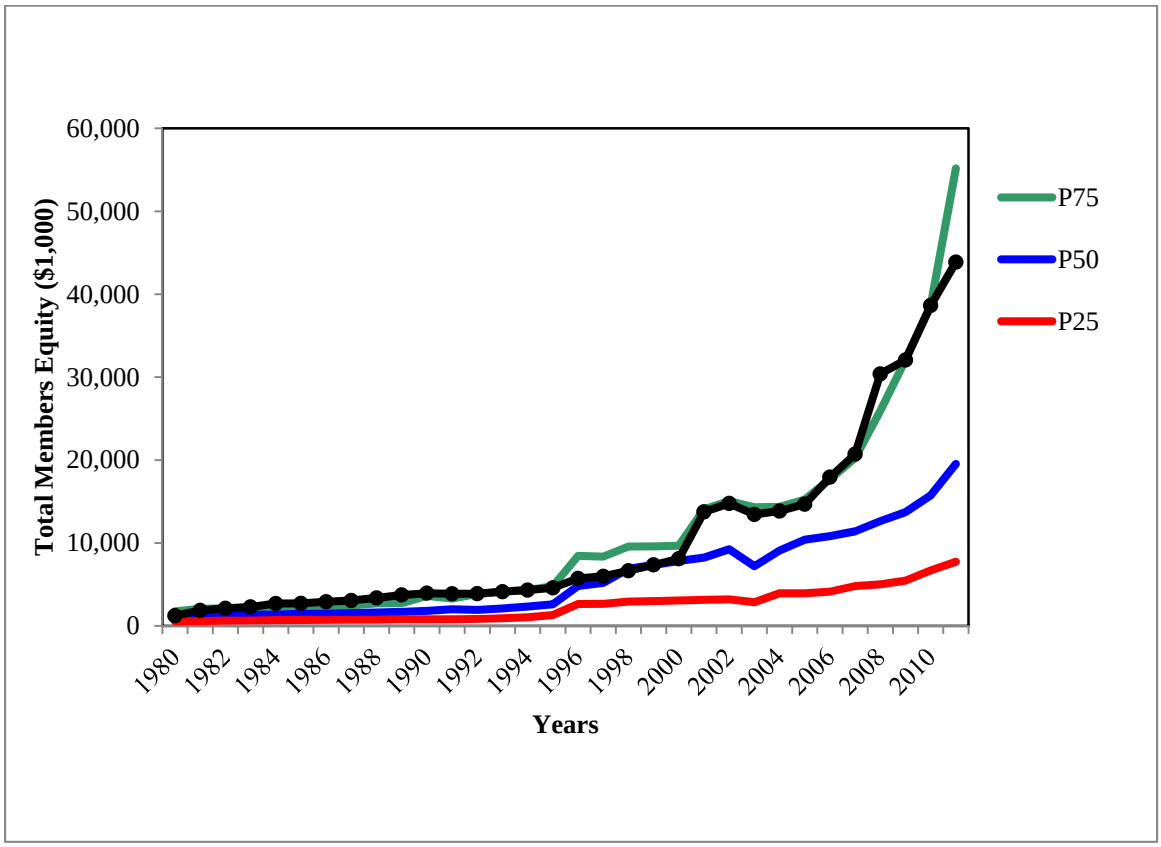
Agriculture has experienced turbulent market conditions in recent years. Thus, a strong balance sheet is not only necessary for survival but it's also needed for growth. Determining the size and composition of a cooperative's assets, liabilities, and equity is referred to as "balance sheet management". When managed properly, a cooperative is able to achieve desired solvency and liquidity goals while maintaining a preferred capital structure. Liquidity targets, such as a working capital lower limit of $27 million, and solvency targets, such as an equity to assets ratio that fall within a range of 40 to 50 percent, are used to guide balance sheet management. The cooperative board is responsible for developing this strategy and should be viewed from both the short and long term. Consideration should first be made to satisfy target solvency and liquidity goals. Secondary consideration is then made to distribute any residual earnings. Or, to put it another way, protect the cooperative's financial position first and then give owners any surplus. Large net profits make balance sheet management and financing growth less complicated. They also provide increased flexibility in the management of a cooperative's equity.

Managing equity within the framework of a cooperative's business model provides unique challenges, principally, raising equity capital (Frederick 1997). Since it's provided by members and non-member patrons, equity capital is limited by their willingness and ability to advance funds. This is similar to challenges faced by sole proprietors, partnerships, and tightly held corporations as equity capital is typically provided by owners. Some experts believe that it is desirable for members (or more precisely, patrons) to have greater

ownership of the cooperative than creditors. "Equity in a cooperative should be at least 50 percent of total assets." (Rathbone, Managing Your Cooperative's Equity 1997) Strong equity positions increases management flexibility over business operations and finances. Data in our study show many Nebraska cooperatives fall below 50 percent equity to assets ratio which suggests the optimum ratio is dependent upon each individual cooperative's circumstances (Appendix E, Table 5-14). "The members, their board, and management must weigh the pros and cons of debt and equity levels . . . and then make appropriate decisions that meet the particular needs of the cooperative" (Peterson and Cobia, Managing Capital Structure 2000).

Agricultural cooperatives like AVC can be viewed as an extension of the patrons' business, including farm business. Generally, when farmers earn profits cooperatives generate profits. Recent market conditions have allowed cooperatives to grow and generate substantial profits. At AVC, increased profits have resulted in larger member equity accounts (Figure 2.5).

Figure 2.5 Total Members Equity Ag Valley and Nebraska Cooperatives Percentiles 1980-2011



A cooperative's equity is either allocated or unallocated. Allocated equity has a member's name attached to it whereas unallocated equity doesn't. Allocated equity is "divided" among individual owners and represents a private property claim on the assets of the company. Unallocated equity is an undivided claim. Allocated equity can be held in a permanent, semi-permanent, or revolving manner. Permanent allocated equity has no expectation of redemption. AVC doesn't utilize permanent allocated equity but some new generation cooperatives that sell stock do. A major equity management consideration is the amount of permanent equity a cooperative should have on its balance sheet. Semi-permanent allocated equity is permanent until a particular event triggers its redemption. An example of this would be equity that is redeemed when a patron dies. AVC has six classes of equity that are eligible for redemption: membership, participating, stock credits, regional, Cambridge, and member equity credits. Revolving allocated equity is eligible for redemption on a systematic method such as age of patron, revolving fund, percentage pool,

or base capital. AVC has one class of revolving equity, member equity credits (deferred patronage). All non-permanent equity is like debt, owners expect redemption.

2.3.3.2 Unallocated Equity

Unallocated equity is not assigned to any member's account. Bylaws often dictate a cooperative's ability to retain unallocated equity which is most often obtained from after-tax non-patronage net income but can also be generated by designating a portion of patronage income as unallocated or from special events like the sale of assets. Unallocated equity serves as a capital base and provides a reserve to protect allocated equity and absorb operating losses.

Managing the mix of unallocated and allocated equity is the responsibility of cooperative boards. If unallocated equity accounts become too large, there is fear of losing the loyalty of members, especially if the membership feels they are losing control of capital decision making and do not have a significant individual equity investment. In extreme cases, member-owners may be tempted to vote to sell the cooperative to get their share of the unallocated equity's claims on residual assets.

2.3.3.3 Allocated Equity

Allocated equity is equity that has someone's name attached to it. It's allocated to each owner's account on a proportional basis and can be acquired individually or in combination of three ways: direct investment, retained patronage refunds, and/or per-unit capital retains (Rathbone, Managing Your Cooperative's Equity 1997). Direct investment in a cooperative's equity usually involves the purchase of membership certificates, common stock, or preferred stock. The majority of cooperatives are stock cooperatives while a small percentage is non-stock or membership equity structured (Barton, Equity Management Survey 2005: Kansas and Nebraska Local Cooperatives 2005). There are numerous combinations of stock offerings used by cooperatives to classify their equity. Some have separate equity classes for voting and non-voting members. Cooperatives use classes of common stock, preferred stock, and membership equity, or combinations thereof, to classify equity ownership that is commonly regulated by the cooperative's bylaws. Since

most cooperatives attempt to attract new members, large direct investment by members isn't normally a significant source of equity for traditional cooperatives.

In some cooperatives, direct investment involves larger initial investment proportional to use along with a right and obligation to patronize the cooperative at certain levels. These new generation or "closed" cooperatives are relatively rare compared to traditional cooperatives like AVC.

AVC provides two separate classes of stock to indicate voting rights. The two classes are "membership" or voting and "participating" or non-voting. Membership is gained through the accumulation of $100 in equity that is earned through allocated retained patronage. To be eligible to vote and hold membership stock, patrons are required to be engaged in farming. These patrons can also be voting members. Non-farmer customers are allowed to participate in income distribution by receiving patronage refunds and ownership in the cooperative but are not allowed voting rights. They are classified as non-voting patrons and owners. AVC is unusual because it is a 521 or "Exempt" cooperative that allows virtually all customers to be patrons. Most cooperatives like AVC are non-521 cooperatives and don't allow some customers to be patrons. Non-patron customers don't have a claim on profits and don't receive patronage refunds.

Retained patronage refunds are a source of allocated equity. The cooperative's board decides how to distribute and redeem patronage refunds. They can be distributed in the form of patronage refunds paid in cash, retained as allocated equity, or a combination of both. Typically a cooperative pays a portion of patronage refunds in cash and retains the remaining portion as a means of acquiring capital. Normally, AVC follows an equity program that allocates around fifty percent of local savings to patronage refunds. Of this, half is typically returned to members in the form of a cash patronage refund and the other half is distributed as allocated equity or retained patronage refunds classified internally as member equity credits or "deferred equity". This equity can be redeemed at a future date through the age of patron and estate settlement redemption methods. The fifty percent of patronage income not distributed as patronage refunds is distributed as unallocated equity and designated as "retained savings."

Per-unit retains are equity investments made by members based upon a particular volume of business conducted with the cooperative. An example of this would be the retention of five dollars for each ton of fertilizer purchased from the cooperative or five cents for each bushel of grain sold to the cooperative. Marketing cooperatives are the main users of this form of equity retention that is often combined with the retained patronage refund to create allocated equity investment (Rathbone, Managing Your Cooperative's Equity 1997). Retains are collected when the sale or marketing transaction occurs which alleviates the instability of distributing equity through net income. Per-unit retains are not a frequently used equity management tool in today's grain marketing and farm supply cooperatives like AVC (Mickelsen 2012).

2.3.4 Equity Redemption Methods

There is a wide variety of equity redemption methods and various combinations of each in use at cooperatives (Table 2.1). In 1993 the USDA reported that eighty-six percent of agricultural cooperatives had equity that was subject to redemption. The fourteen percent whose equity wasn't redeemed were mostly small, low-equity firms that had little available net income to allocate (Rathbone and Wissman, Equity Redemption and Member Equity Allocation Practices of Agricultural Cooperatives 1993). This study also found that larger cooperatives were more likely to have a systematic method for equity redemption and that revolving fund programs were most predominantly used. This study focuses on six popular redemption methods: special, age of patron oldest first, age of patron prorate, base capital, percentage-of-all-equities, and revolving fund.

Table 2.1 Popularity of Equity Redemption Methods

	KSU 1987	USDA 1991		KSU 2005	
Primary Method	KS	KS	NE	KS	NE
Special Only	27%	27%	32%	0%	0%
Age of Patron: Any	51%	40%	47%	53%	93%
Age of Patron Oldest First				35%	73%
Age of Patron Prorate				18%	20%
Base Capital	0%	0%	0%	0%	0%
Percentage of all Equities	3%	5%	2%	12%	0%
Revolving Fund	16%	19%	14%	35%	7%
None	3%	9%	5%	0%	0%
	100%	100%	100%	100%	100%

(Barton, Cooperative Finance: Principles and Practices February 16, 2012)

2.3.4.1 Special

Special redemption methods are used by cooperatives to address a change in a member's status and are often times used in conjunction with other redemption strategies. They redeem a member's equity in situations such as death, hardships, exit from farming, or move-a-ways. Advantages of using a special redemption method are that they are easy to understand, act as a safety net when used in conjunction with other redemption methods, and work well with cooperatives that typically redeem equity quickly. One disadvantage of using special redemption methods is that the dates of redemption are hard to predict and may be controlled by events initiated by members which makes it difficult for cooperatives to plan for and manage. Special methods also conflict with the user owner principle of cooperatives in that typically as a member ages, their use of the cooperative also decreases, causing them to be over invested compared to use or patronage. Another disadvantage of using death as a special redemption method is that members don't personally benefit from their equity investment in the cooperative which has the potential to mitigate the perceived value of cooperative membership (Peterson and Cobia, Managing Capital Structure 2000).

2.3.4.2 Age of Patron Oldest First

The age of patron oldest first method redeems a patron's equity when they reach a certain age, assuming the cooperative knows the patron's age. Often all of the patron's equity is redeemed at this qualifying age with approval of the board. The age at which redemption occurs varies between cooperative but most often falls between 65 and 80 (Barton,

Cooperative Finance: Principles and Practices February 16, 2012). The main advantage to this form of redemption is that it is easy for patrons to understand. Another advantage to using the age of patron method is that it keeps capital in the cooperative while allowing the cooperative to accumulate replacement equity. There are several disadvantages to the age of patron oldest first redemption method. First, often a cooperative doesn't know the age of all patrons and many patrons are corporations without a birth year, in which case those patrons don't ever receive an age of patron redemption. Second, the age of patron method lacks flexibility of balance sheet management in that a cooperative has zero control over member's birthdays and cash outflow if 100% is redeemed at a certain age, such as 65. Third, if the age selected at which equity is redeemed becomes too high, such as age 80, patron's perceived value of ownership equity in the cooperative is reduced. Fourth, this method doesn't maintain an equitable relationship between equity holders and users of a cooperative in terms of investment proportional to use.

2.3.4.3 Age of Patron Prorate

The age of patron prorate method of redemption redeems a percentage of equity on all accounts that have reached or exceeded a set age such as 55 or 65. Using this method, a cooperative's board determines the amount of funds to be used for redemption and all accounts that have reached the qualifying age receive their prorated share. This continues annually until an account is fully redeemed (Barton, Cooperative Finance: Principles and Practices February 16, 2012).

2.3.4.4 Base Capital

The base capital redemption plan allocates a member's equity obligation on two factors. These are the cooperative's need for capital, and the member's use of the cooperative. Base capital redemption focuses on the amount of capital a patron should have in the cooperative based upon their use. The goal of this method is to equitably maintain ownership in the hands of the cooperative's current users proportional to use and in accordance with cooperative principles. A formula is typically used to redeem equity to over-invested patrons while those under invested receive no redemption and continue to build equity. This form of equity management is used primarily by marketing cooperatives (Rathbone and Davidson, Base Capital Financing of Cooperatives 1995).

Advantages of the base capital method include a way to maintain equitable member investment proportional to use, flexibility in acquiring capital, encourages member's equity to be viewed as an investment, requires the cooperative board to focus on financial planning, reasonable return for exiting members, and the possibility for increased loyalty due to fairness and predictability. Disadvantages of the base capital method include higher financial burdens placed upon new members, poor functionality when high member turnover is prevalent, harder to understand, and difficult to manage under certain conditions.

2.3.4.5 Percentage-of-all-Equities

The percentage-of-all-equities method redeems a certain percentage of a cooperative's equity in a given year. This percentage is set by the board which is tasked with balancing the cooperative's capital needs and the expectations of members. This method offers increased flexibility over other redemption methods because the percentage of equity redeemed can be adjusted based upon the cooperative's operating results and financial needs. Another advantage of this method is that it redeems equity faster to new members as redemption is calculated regardless to the equity's age. For example, if a cooperative's total equity is $1,000,000 and the board decides to redeem 10%, $100,000 would be redeemed and a member's portion of the $100,000 would depend upon their percentage of the total equity. In this case, a member with an equity account of $2,000 would receive $200 (10%). The percentage-of-all-equities method is similar to the revolving fund in that the percentage of equity redeemed in a given year is similar to that in a comparable revolving fund cycle. Ten percent equity redemption would approximate a ten year revolving fund cycle. This method is also similar to the age of patron prorate method except that there is no minimum age restriction. A disadvantage of the percentage-of-all-equities method is that it's slower to achieve proportionality of user-owner cooperative principles than the revolving fund method or the base capital method (Rathbone, Managing Your Cooperative's Equity 1997).

2.3.4.6 Revolving Fund

The revolving fund equity redemption method redeems a cooperative's oldest equity first. This first-in, first-out method of equity redemption has various iterations based upon

factors such as the commodity a cooperative handles, a cooperative's financial condition, how equity is acquired, other redemption programs used in conjunction with the revolving fund, or unique practices at a particular cooperative. The most common method of revolving fund redemption is for a cooperative to redeem one year's equity at a time, although, cooperative boards often adopt policies to guide the target revolving period based upon earnings and ability to pay. Advantages of the revolving fund are that the program is easy to understand, it allows for increased flexibility in managing equity, and if revolving periods are short, it keeps member use in proportion to their ownership (Peterson and Cobia, Managing Capital Structure 2000).

Disadvantages of a revolving fund arise with the temptation of a cooperative's board to increasingly extend revolving cycles and the potential for members to develop unrealistic equity redemption expectations. In general, cooperative members favor shorter revolving cycles which return capital to them faster. If members expect a certain redemption schedule to be followed and a cooperative's board is forced to adjust the schedule during a low net income period, conflicts may arise. The board however is tasked with balancing the cooperative's capital needs as well as the membership's expectations (Rathbone, Managing Your Cooperative's Equity 1997).

2.3.5 Qualified and Non-Qualified Equity

Retained patronage refunds can either be distributed in qualified or non-qualified form. Cash patronage is always qualified. Qualified distributions are qualified as deductible from the taxable income of the cooperative. Taxes are paid by the cooperative on non-qualified patronage refunds. When the non-qualified patronage refund is redeemed, members are then required to pay taxes at which point the cooperative receives a deduction from taxable income. Simply, "non-qualified" means that patronage refunds are not deductible from taxable income in the year of distribution but they are deductible in the year of redemption. Taxes on qualified patronage refunds are paid by members and they are deducted from a cooperative's taxable income for tax liability purposes in the year of distribution. Certain regulations must be followed for patronage refunds to qualify for tax deductions. These include a minimum of 20% cash patronage refund, a timely notification that the cooperative intends to qualify the patronage refund, and consent by members to pay

income tax on the entire qualified patronage refund in the year it is received as cash or retained equity (Rathbone, Managing Your Cooperative's Equity 1997).

Most cooperatives qualify their patronage refund that gives immediate tax liability to members and gives the cooperative a higher level of equity financing. Decisions on whether to qualify allocations or not are made by the cooperative's board and generally depend upon the cash needs and tax rates of both members and the cooperative. AVC has historically distributed its patronage refunds in qualified form. However, many cooperatives are using non-qualified distributions in recent years to take advantage of the section 199 DPAD deduction from taxable income, discussed in the next section.

2.4 Section 199

The Section 199 tax deduction was created through the American Jobs Creation Act of 2004 to give an incentive to domestic manufacturers to create more jobs. It is also known as the Domestic Manufacturing Deduction, Domestic Production Activities Deduction (DPAD), or U.S. Production Activities Deduction. The goal of the tax deduction is to make investment in domestic manufacturing more advantageous. In 2010, Section 199 provided manufacturers a nine percent tax deduction on certain manufacturing, production, construction, and services. The 199 deduction is available to farming cooperatives and is allowed on regular and alternative minimum taxes (Merrick and Miller 2010).

Since 2007, AVC has benefited from the Section 199 deduction. For fiscal years 2007 – 2012 (six years), the DPAD deductions total $19,701,533 (Krejdl, Personal Interview 2012). This deduction has enhanced the cooperatives ability to build and improve upon infrastructure and local assets by providing "tax free" equity. Since DPAD reduces taxable income, a cooperative may choose to capture the tax benefit at the cooperative level by increasing taxable income in the year of distribution by either distributing patronage income to unallocated retained earnings or nonqualified retained patronage refunds.

2.5 Summary of Literature Review

The cooperative business model is an important component of the world's agricultural sector. Initially, cooperatives gained their foothold as a mechanism for individuals to

collectively compete in the marketplace. Today, modern cooperatives continue to grow as they provide this same membership value. Successful cooperatives formulate management decisions based upon three cooperative principles; user-owner, user-control, and user-benefit. Users of cooperatives have four distinct roles, customer, patron, owner, and member. Successful cooperatives focus on meeting the cooperative's needs and serving the needs of their customers inside of the cooperative principle framework.

Cooperative boards are tasked with analyzing and managing the cooperative's finances including equity management, which can often be a complex undertaking. According to Barton, financial success relies upon six cornerstones: (1) custom fit a finance strategy consistent to a cooperative's unique circumstances, (2) be competitive, efficient, profitable, and have a strong balance sheet, (3) invest in highly productive assets and eliminate underperformers, (4) distribute profits to owners only after first protecting the cooperative with strong liquidity and solvency, (5) be creative distributing income while considering patron perceptions, (6) manage equity through a strict redemption budget using flexible methods such as revolving fund or base capital (Barton, Cooperative Finance: Principles and Practices February 16, 2012). Profitability from local operations combined with an appropriate balance of allocated and unallocated equity determines the sustainability of equity redemption programs (Houser 2012). Properly managed, an equity redemption program operating with sound cooperative principles has the potential to provide considerable member value.

The main objective of this thesis is to aid AVC's board of directors in the construction of a superior income distribution and equity redemption strategy. The key information provided is a detailed financial analysis and pro forma financial projections. These are accomplished exclusively with expertise and software from Dr. David Barton and Kansas State University's Arthur Capper Cooperative Center.

CHAPTER 3: FINANCIAL DATA

This chapter explores two of our key questions, what is AVC's historical financial performance and how does AVC compare to other Nebraska cooperatives? In chapter four we will explore the final key question, what specific strategies have the potential to increase member value at AVC? Four traditional groupings of financial measures are examined here: profitability, liquidity, solvency, and efficiency. In addition, a group of size measures is examined.

3.1 Financial Profile Data

As noted in previous chapters, data used in this study come from three sources: AVC, Farmland, and CoBank. Thirty-two years worth of data are analyzed with software developed at Kansas State University to construct AVC's Cooperative Performance Profile. It is important to note that data used in this study are extracted from audited financial statements that are subject to errors in interpretation and accumulation. As always, discretion should be used when examining results for this or any study. The Cooperative Performance Profile is designed to identify characteristics associated with high profitability and to allow AVC to examine its historical performance and to compare this performance with industry peers.

3.2 Profitability

The Cooperative Performance Profile includes 12 profitability measures. All twelve are reported in Appendix E. In this section, we selected six for further description and analysis. The six are return on local assets, return on assets, gross margin percentage, farm supply gross margin, grain gross margin, and return on equity.

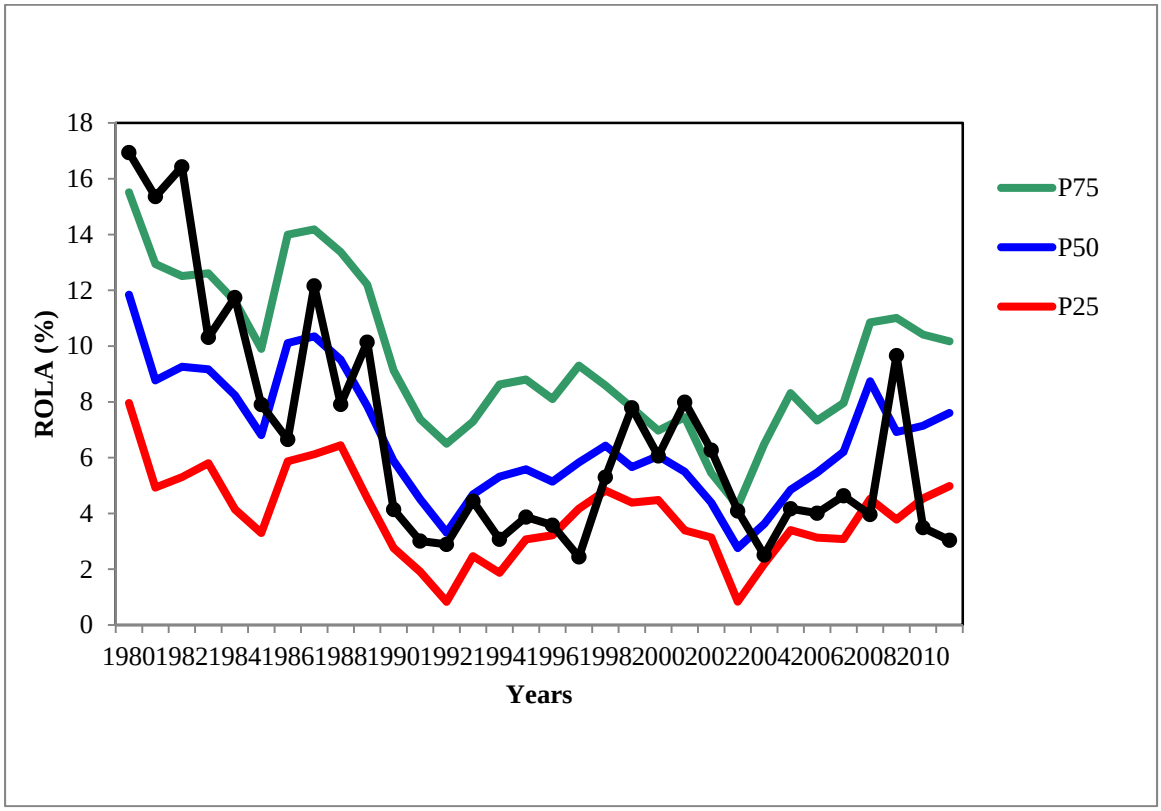
3.2.1 Return on Local Assets (ROLA)

ROLA = Earnings Before Interest and Taxes / Local Assets

Return on local assets is formulated using local returns before interest and taxes. Local assets are used in the denominator. Local Assets are equal to total assets minus other investments. Typically other investments are in regional cooperatives, whose performance is outside of local control, and in joint ventures. Interest and taxes are excluded from

earnings that are most often decided by policy decisions on debt or leverage and on income distribution. Therefore, ROLA is an excellent measure of a cooperative's local operational performance and, even more so, the single best measure of a general manager's performance (Barton, Cooperative Performance Profile 2012).

Figure 3.1 Return on Local Assets Ag Valley and Nebraska Cooperatives Percentiles, 1980-2011



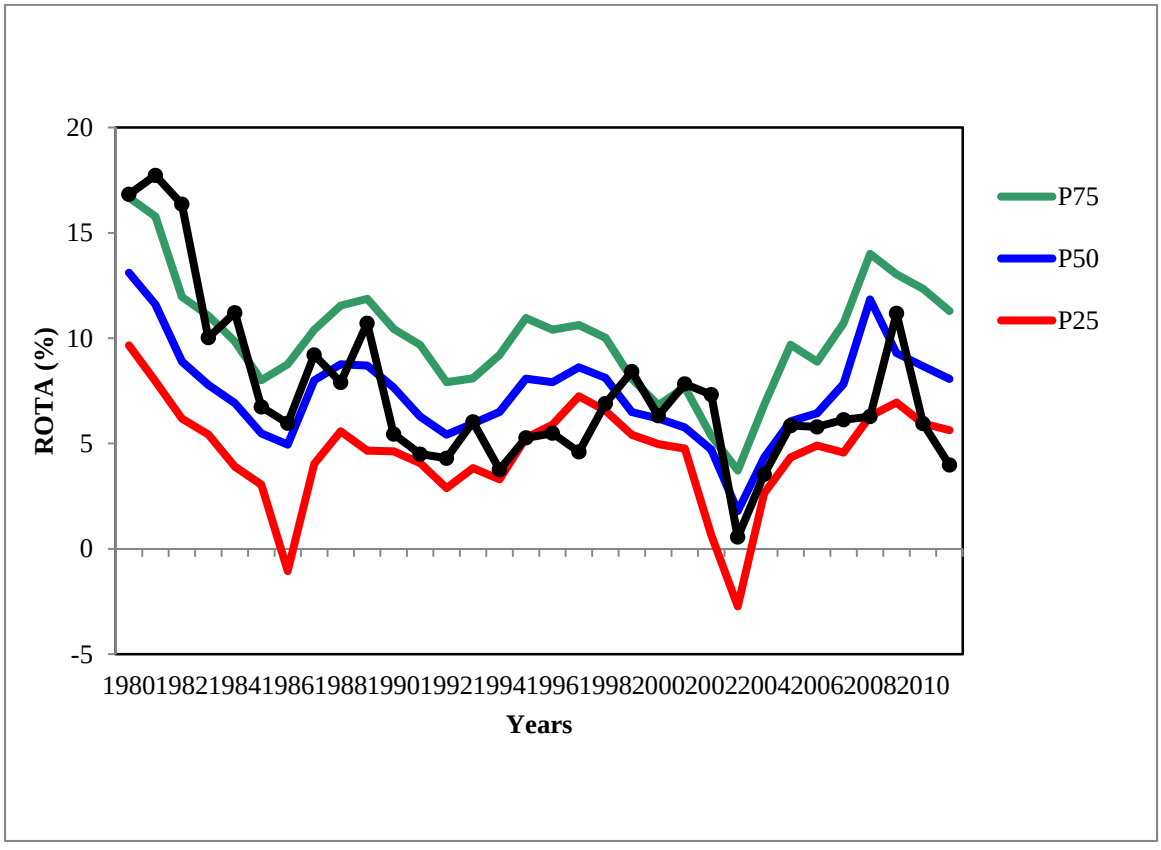
ROLA is used to determine profit groupings since it is the best measure of a company's local operations performance. Historically, AVC has performed with varying results in when comparing ROLA. In the last seven years, AVC has done a poorer job at local operational performance than other Nebraska cooperatives (Figure 3.1). At first glance this appears troubling, but recent investment in local assets has reduced AVC's ROLA percentage. This trend should reverse as the new assets go into operation and produce revenue and a net profit.

3.2.2 Return on Assets (ROA)

ROA = Earnings Before Interest and Taxes / Total Assets

ROA is a measure of overall performance and an indicator of how profitable a cooperative is relative to the resources it has available. This ratio isn't sensitive to the leverage position of a cooperative as it measures return to assets financed by both lender debt and owner equity. It gives the cooperative's owners an idea of how effectively management is in converting available resources into net income and a higher ratio indicates a higher return on assets employed (Penn, DeVille and Eversull 2009).

Figure 3.2 Return on Total Assets Ag Valley and Nebraska Cooperatives Percentiles, 1980-2011



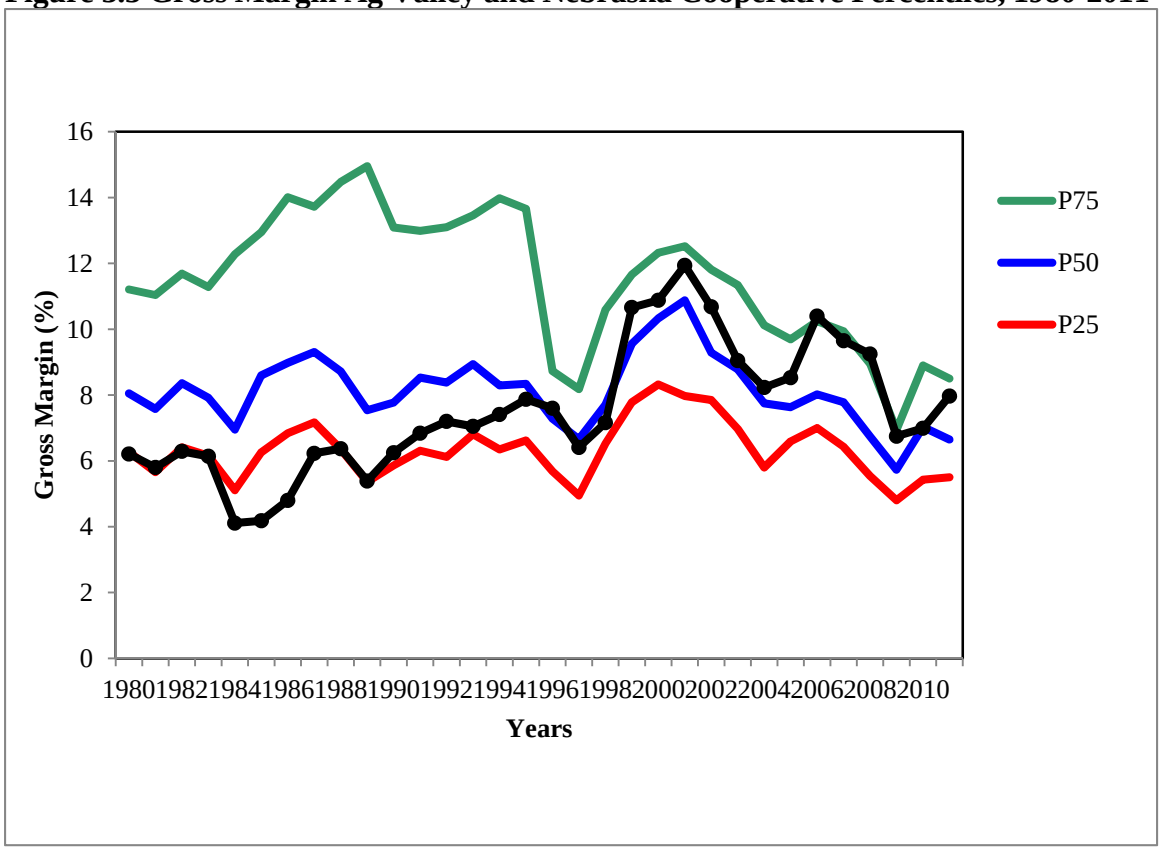
Similar to ROLA, AVC's aggressive approach to building local assets in the last ten years provides below average ROA percentages (Figure 3.2).

3.2.3 Gross Margin Percentage (GMP)

GMP = Gross Margins / Sales

The GMP ratio is a profitability ratio measuring the difference between purchase price and sales price and is a measure of a cooperative's pricing strategy relative to the business model and market it operates within. GMP reflects a cooperative's ability to sell products at a price higher than their purchase price. At first glance, gross margins can be increased in two ways: raise the selling price or decrease the purchase price of products. High gross margins may be a factor of firms that do extremely well at squeezing the last incremental dollars from the market place or excel at purchasing inventories at lower costs. A large GMP is generally considered better than a small GMP. A GMP that is too large can negatively affect a firm's sales whereas a too small GMP leaves valuable profit in the marketplace. Smaller than average GMPs can also be a sign of operational inefficiencies associated with shrink, an often over looked factor effecting the gross margin calculation.

Figure 3.3 Gross Margin Ag Valley and Nebraska Cooperative Percentiles, 1980-2011

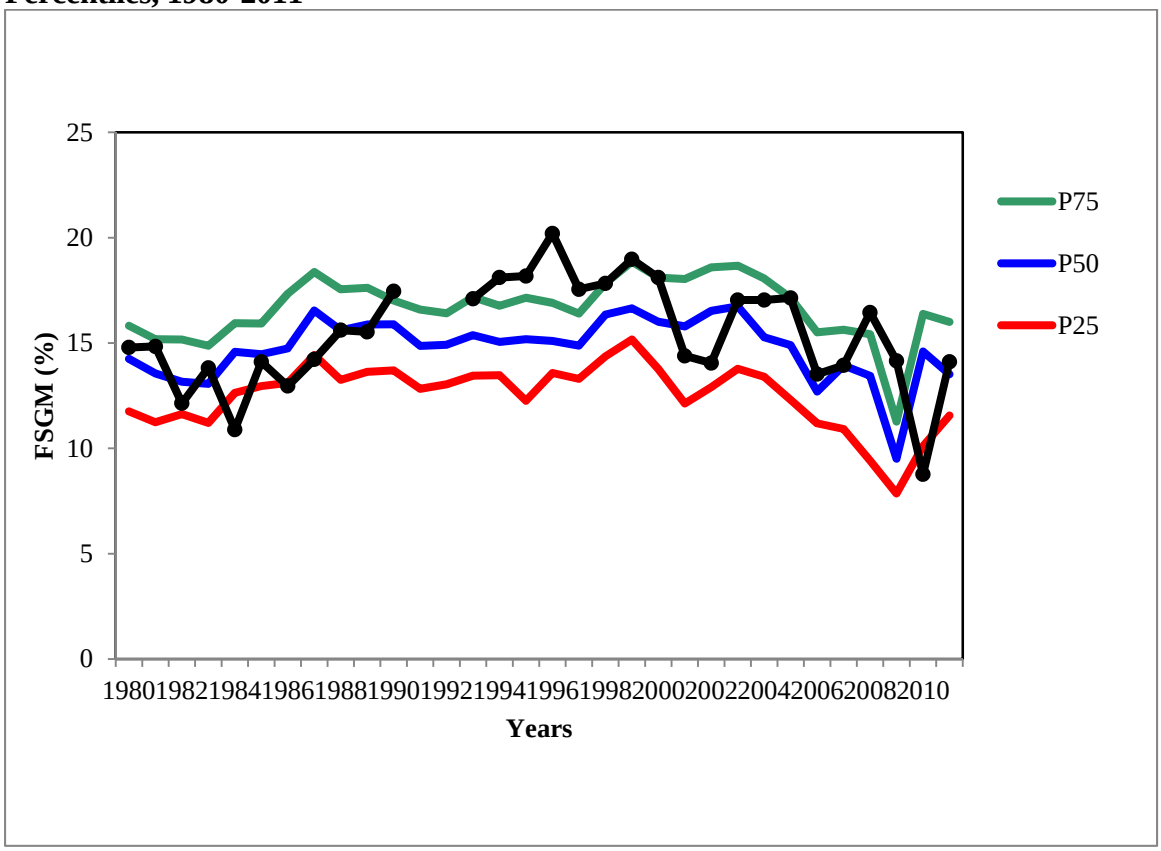


In comparison to other Nebraska cooperatives, AVC has significantly increased its ability to earn margin over the last thirty years, even more so in the last ten (Figure 3.3). Certainly, this is a function of AVC's business model, market mix, and the marketplace in which it operates. But, it's also a result of an experienced, management team with the ability to capitalize on knowledge and expertise to capture increased margins. Recently, AVC has done a better job of capturing grain margin than farm supply margin (Figure 3.4 and Figure 3.5).

3.2.4 Farm Supply Gross Margin

In the last ten years, compared to other Nebraska cooperatives, AVC has earned average margins in its farm supply business: fuel, agronomy, feed, and water resource (Figure 3.4). This may be a function of stiff competition for products and services in AVC's trade territory, pricing strategy, or attempts to gain market share. More likely though, it is a result of fertilizer price declines and subsequent inventory devaluations at AVC. It's interesting to note that the market collapse of 2008 produced similar results for Nebraska cooperatives. AVC was able to produce good farm supply margins before the collapse but was forced to write-off fertilizer losses in succeeding years that greatly affected overall farm supply margins. This market correction has also brought with it new challenges for cooperatives who borrow capital. Lenders are scrutinizing risk management strategies and, in certain cases, requiring reduced risk exposure which can negatively affect margin potential.

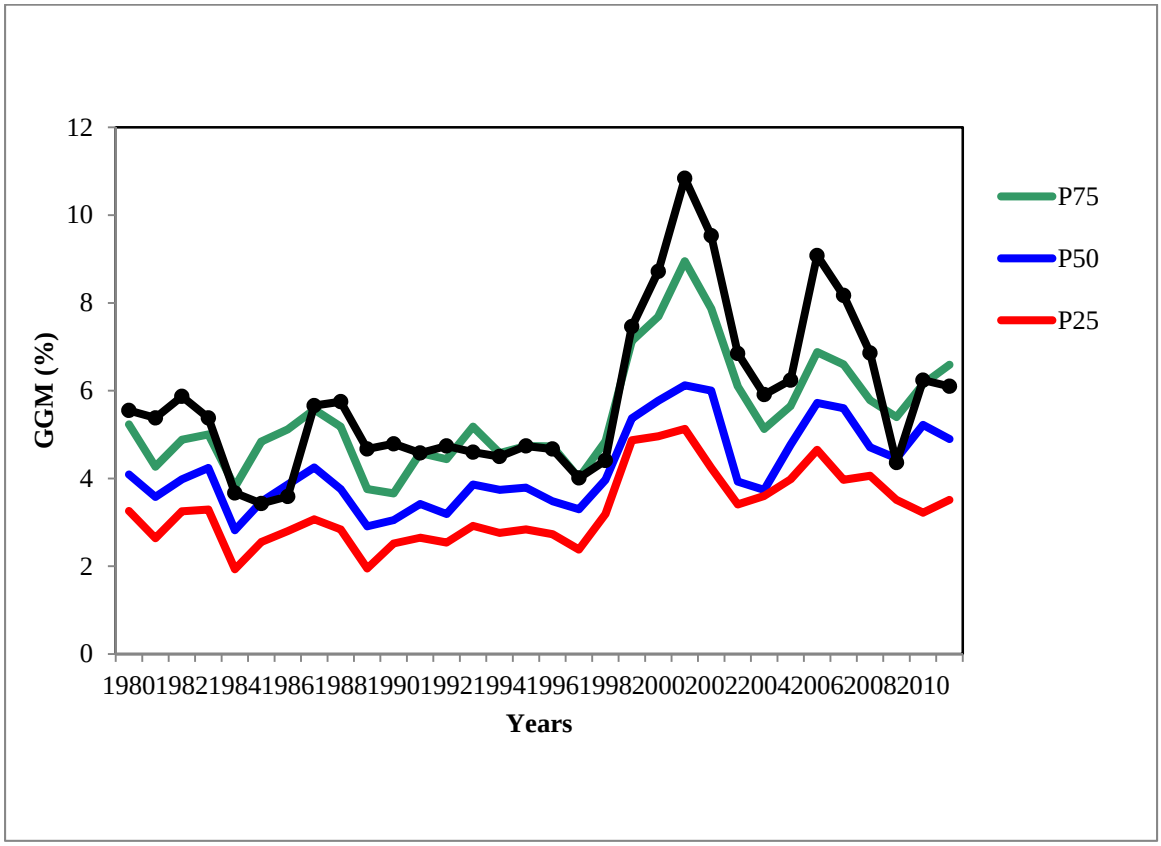
Figure 3.4 Farm Supply Gross Margin Percent Ag Valley and Nebraska Cooperatives Percentiles, 1980-2011



3.2.5 Grain Gross Margin

Market conditions, shuttle loading facilities, and management team expertise have combined to produce increased grain margins for AVC in the last twenty years. Market conditions caused spikes in grain margins around 2000 and again in 2006 (Figure 3.5). During the same time frame, AVC positioned itself with a new shuttle loading facility to capture additional margins. A split-bid structure encouraged grain to flow directly from the farm to AVC's shuttle loading facilities that reduced costs associated with transporting grain internally. Increased efficiencies in grain handling have also allowed AVC to reduce margin robbing shrink. Over the same time frame, according to Tim Goding, Grain Department Manager, responding to increased regulation, personnel, and transportation costs, the grain industry as a whole increased grain margins from an average of twelve cents per bushel to around twenty cents per bushel.

Figure 3.5 Grain Gross Margin Ag Valley and Nebraska Cooperatives Percentiles, 1980-2011



For the most part, AVC historically lacked competition for grain business inside its trade territory. This has allowed the cooperative to extract industry leading margins from the market. As farm numbers shrink and farms become larger, competition for grain business has increased. In attempts to fully integrate their supply chains, multinational grain companies have increased their presence inside AVC's trade territory. This competition will change the way AVC conducts business going forward. To remain profitable, AVC must continue to gain efficiencies, build customer relationships, and provide increasing value in the marketplace.

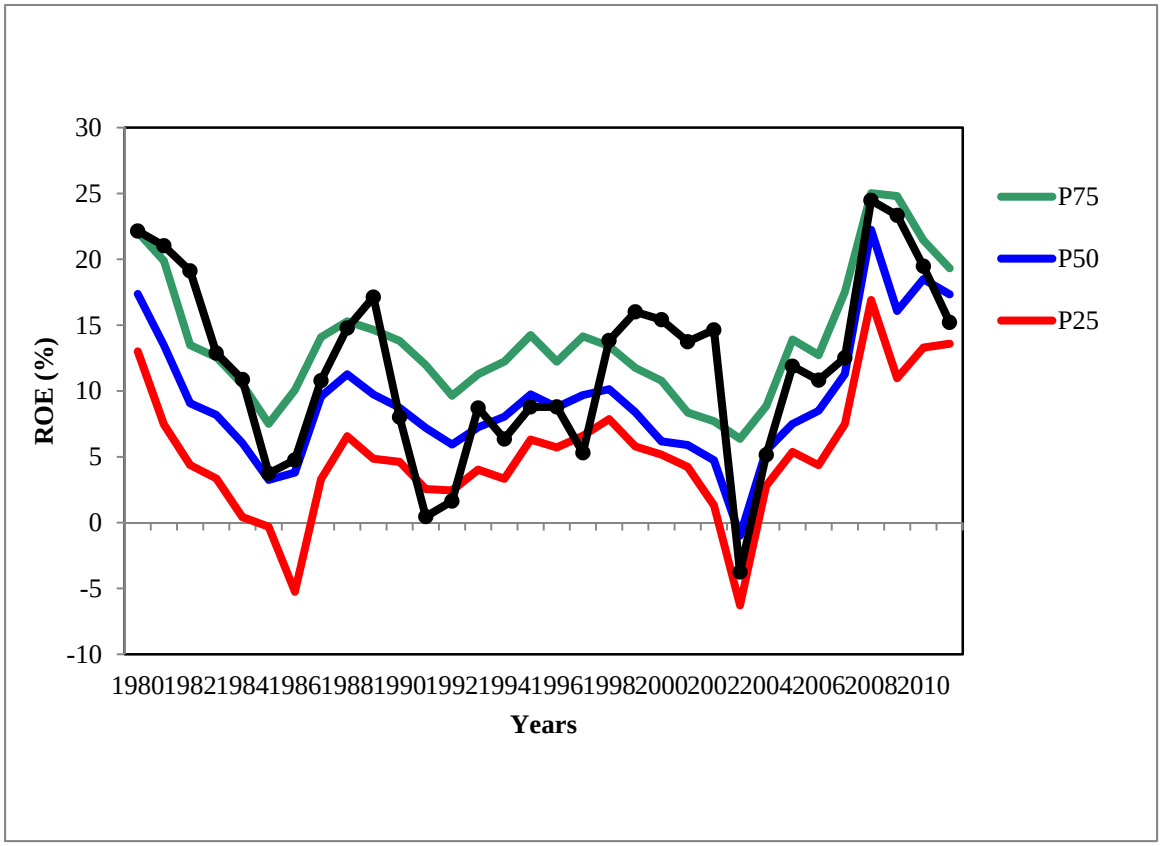
3.2.6 Return on Equity (ROE)

ROE = Net Income / Member's Equity

ROE measures how much shareholders earned for their investment in the cooperative and equals net income divided by average member's equity. It is an important measure of a

cooperative's earnings performance and lets members know how effectively their money is working. "Therefore, it is the best single measure of the board of directors' performance." (Barton, Cooperative Performance Profile 2012) The ratio is sensitive to a cooperative's debt capital. Net earnings represent the source of profits that are paid to patrons through patronage refunds. Hence, a high ratio is generally favorable.

Figure 3.6 Return on Equity Ag Valley and Nebraska Cooperatives Percentiles, 1980-2011



In comparison to other Nebraska cooperatives, AVC has mirrored the 50th percentile with 18.92 percent ROE over the last four years. This reflects average returns for shareholders on their equity in the cooperative. Interestingly, AVC has generally followed historic industry ROE trends. In 1985, the industry wrote off Farmland losses. In 2003, the industry wrote off the second wave of Farmland losses. Also seen in this graph is the commodity price run-up in 2006 and the market collapse in 2008. These events seem to have affected Nebraska cooperatives in a similar fashion (Figure 3.6).

3.3 Liquidity

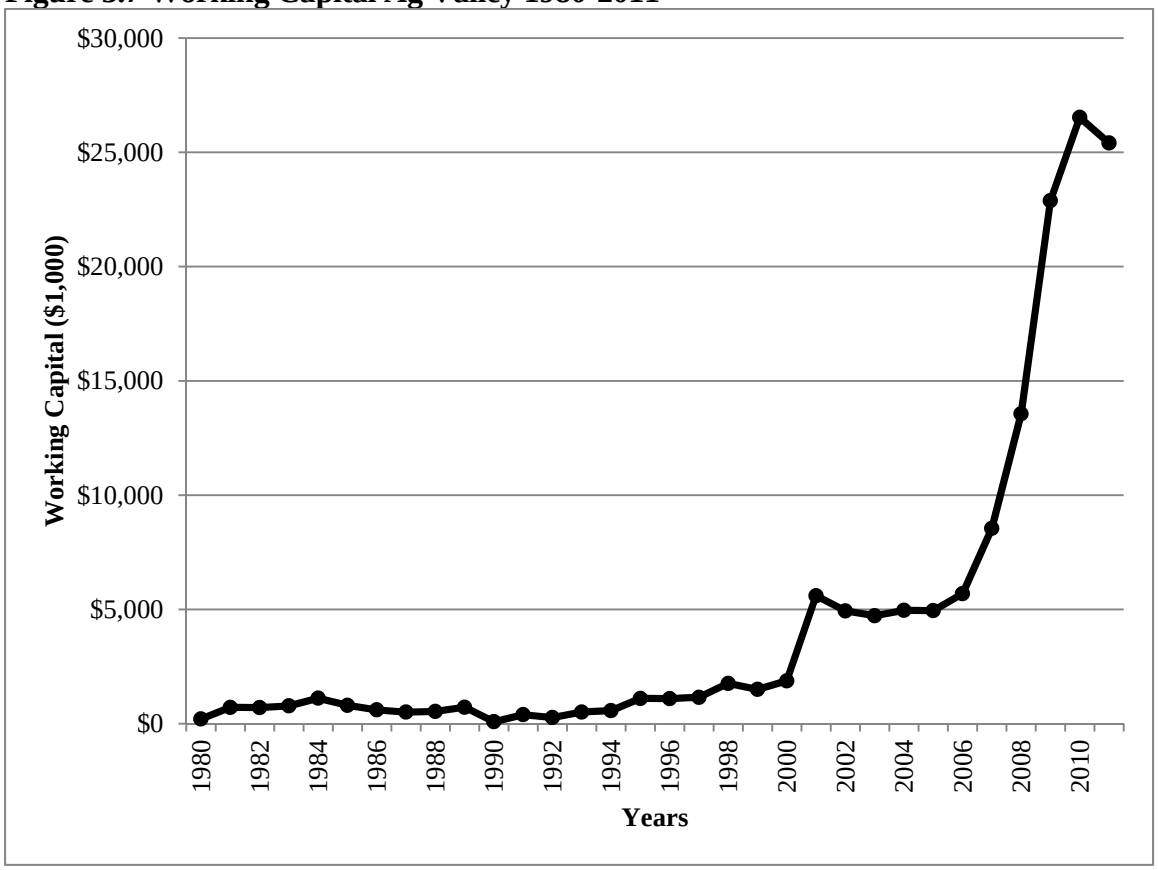
This section describes and analyzes two liquidity measures, working capital and current ratio. The current ratio is reported in the Cooperative Performance Profile found in Appendix E.

3.3.1 Working Capital

Working Capital = Current Assets – Current Liabilities

Working capital is current assets minus current liabilities listed in dollars rather than a percentage. Working Capital is a good summary measurement of a firm's current assets and liabilities and isn't affected by temporary or seasonal movements between the two. Since working capital is primarily dependent upon the size of a cooperative, the measure doesn't lend itself well when comparing to other firms unless expressed as a percentage. Caution must be used when examining working capital as it shouldn't be confused with cash. Inventory and receivables are also included in current assets and each is associated with individual degrees of liquidity and risk (Brealey, Myers and Allen 2008). AVC's working capital limit is primarily set by CoBank, the cooperative's chief lender, and the cooperative is required to operate within its constraints. As AVC has grown, so have its working capital requirements (Figure 3.7).

Figure 3.7 Working Capital Ag Valley 1980-2011



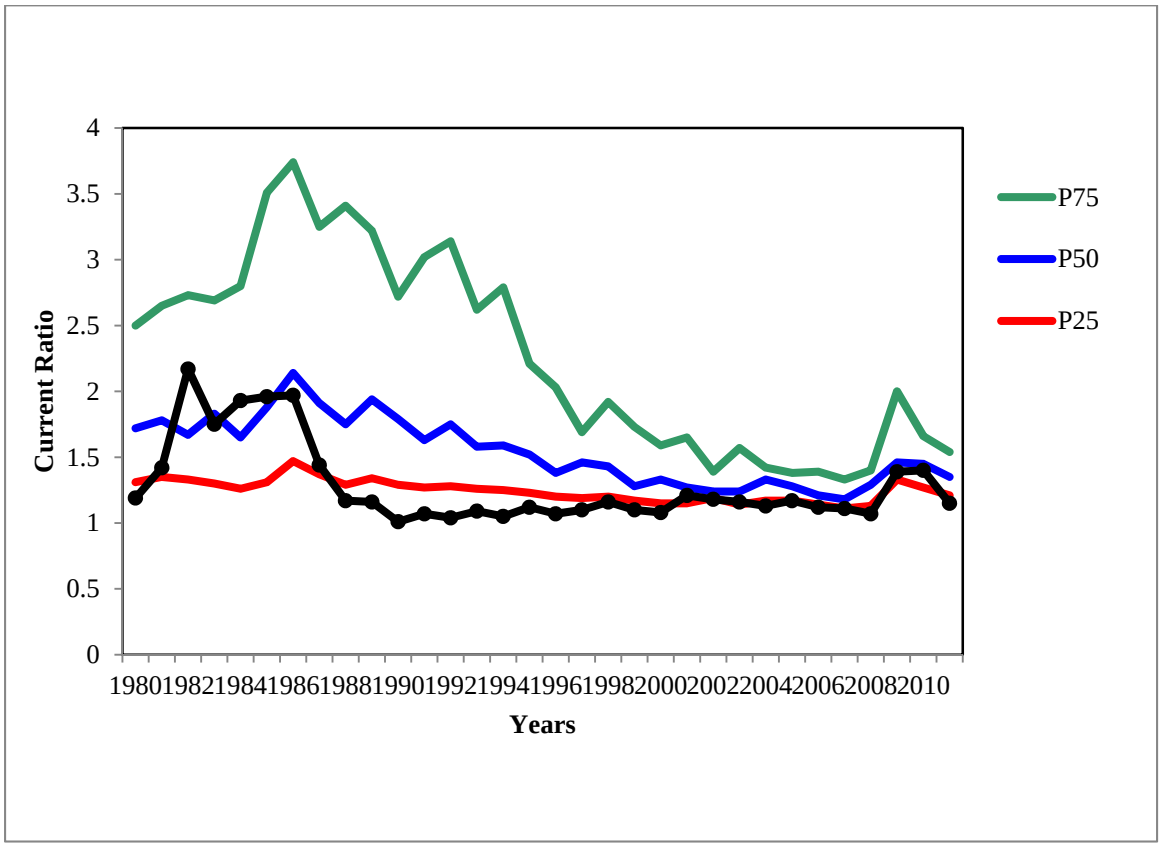
3.3.2 Current Ratio (CR)

CR = Current Assets / Current Liabilities

The CR is a key measure of a cooperative's ability to meet short-term obligations and is computed as a ratio of current assets to current liabilities. The CR is useful when evaluating among organizations as well as to oneself. It measures the margin of liquidity and reflects a cooperative's ability to meet short-term financial obligations as well as being positioned to take advantage of purchasing opportunities in the marketplace. Particular care must be used when examining the CR as a firm may be substituting long-term debt for short-term debt that would increase the ratio. (Barton, Cooperative Performance Profile 2012). A CR less than one signifies a firm with low liquidity, higher ratios signify a firm with the ability to more easily pay for short-term debt. Data in this study suggest that higher current ratios correlate with higher profitability which makes sense because the

more profitable firms have a greater potential to benefit from extra cash and reduced current liability (Figure 5-26 in Appendix E).

Figure 3.8 Current Ratio Ag Valley and Nebraska Cooperatives Percentiles, 1980-2011



AVC's average current ratio over the thirty-two year period in this study is 1.28, low in comparison to other Nebraska cooperatives. This means that for every $1.28 of current assets, AVC has one dollar of current liabilities. It's interesting to note that data in this study shows a convergence of current ratios in Nebraska cooperatives (Figure 3.8). One reason for this could be that increasing competition in the marketplace has forced cash-rich cooperatives to put their excess assets to work. Cooperative's may no longer be able to hold onto excessive cash positions if they plan to grow and remain viable in the future. AVC's current ratio follows its tendency to use a high leverage position in both the long and short term. This certainly could be a function of AVC's growth strategy. The comparatively low current ratio isn't necessarily a bad thing if AVC is able to meet its short term obligations. It does require, though, acute attention to details. In general, in recent

years, the combination of a more efficient banking system using better information technology and lines of credit and more skilled finance professionals in cooperatives has allowed cooperatives to operate with less working capital and a lower current ratio than in the past.

3.4 Solvency

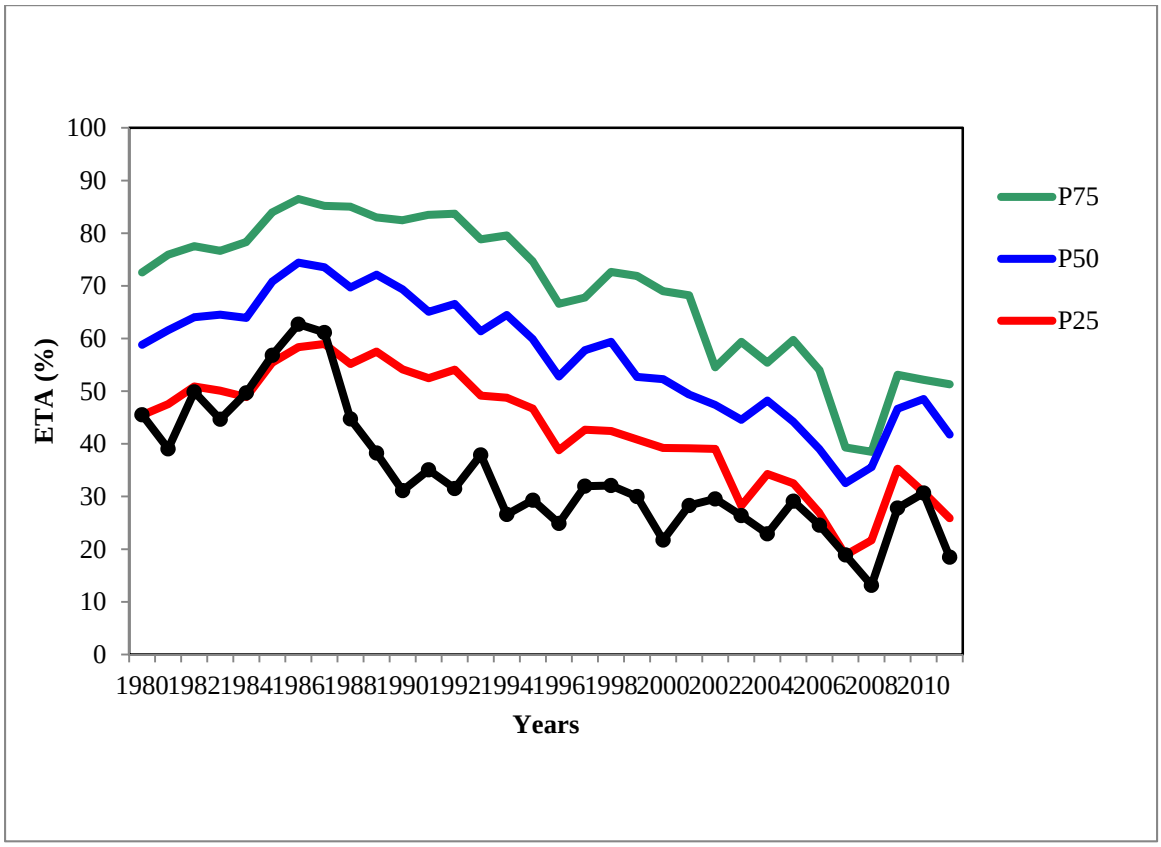
The Cooperative Performance Profile includes three solvency measures. All three are reported in Appendix E. In this section we selected equity to assets and adjusted equity to assets for further description and analysis.

3.4.1 Equity to Assets

Equity to Assets = Total Equity / Total Assets

Equity to assets is an important measure of the solvency and long-term financial strength of a cooperative. It measures assets that are financed by owner's equity and is simply a proportion of total equity to total assets. Determining the correct percentage can be complicated. First, equity acts as a safety net in turbulent economic conditions and allows a cooperative to take advantage of unanticipated opportunities. A cooperative needs to maintain a certain level of cushion, financing this cushion with equity is one alternative. But, there is opportunity costs associated with the equity that owners are required to supply. They could use these funds to support their own farming operations. Successfully implemented, equity management would provide both perceived value to owners as well as an acceptable level of solvency. According to Barton, "In general, equity financing should be increased if the cost of equity is less than the cost of debt. It should be decreased if the opposite is true. . . . A general guideline for grain marketing and farm supply cooperatives is to maintain equity to assets of at least 50 percent but no more than 75 percent with 60-65 percent the recommended range." Since high commodity prices in the last ten years have driven up current asset values, current wisdom is to maintain equity to assets of at least 40 percent with 50-55 percent the recommended range.

Figure 3.9 Equity to Assets Ag Valley and Nebraska Cooperatives Percentiles, 1980-2011



Historically, AVC finances a lower percentage of its total assets with equity than other Nebraska cooperatives. In the last ten years, a higher equity to assets ratio is positively correlated with higher profits (Figure 5-28 in Appendix E). More profitable Nebraska cooperatives are asking their owners to finance more of their assets. This makes sense as theoretically these firms would have lower debt costs if assets are being financed with equity.

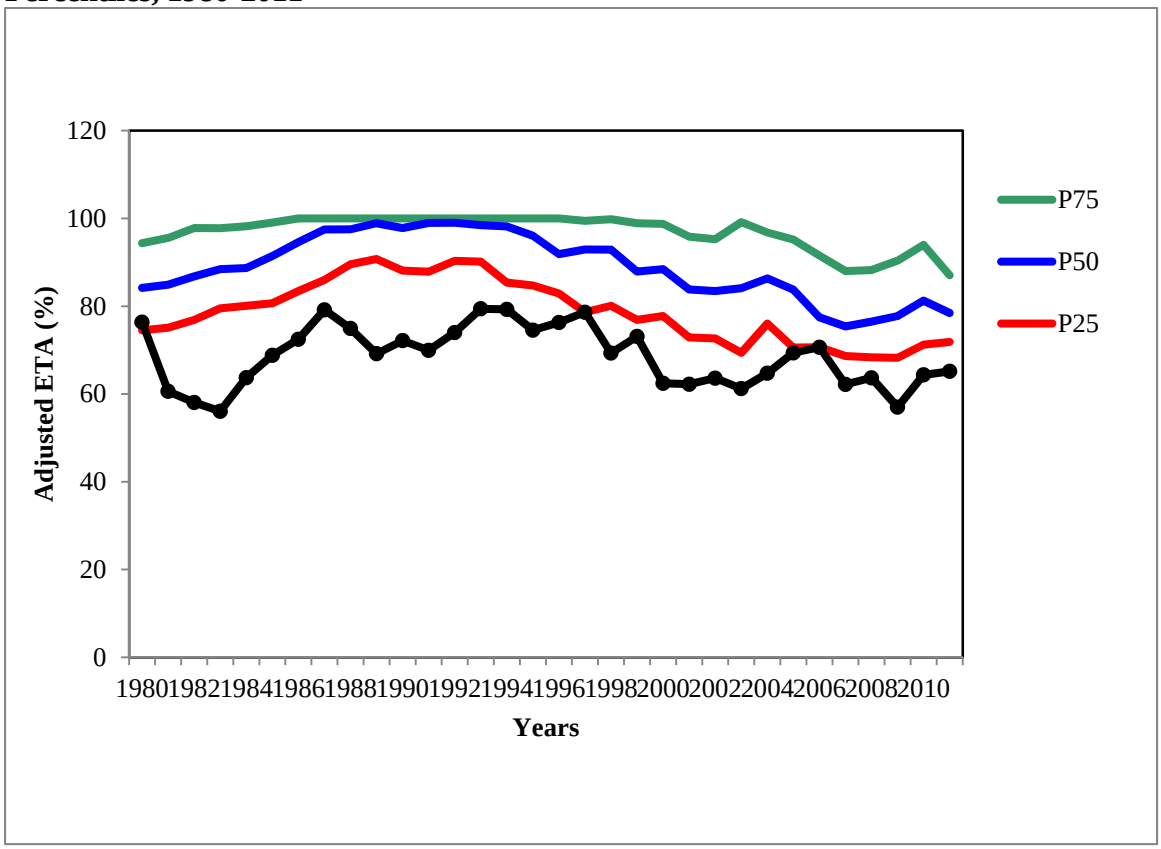
3.4.2 Adjusted Equity to Assets

Adjusted Equity to Assets = Total Equity / (Total Assets – Current Liabilities)

Adjusted equity to assets ratio reflects total equity divided by total assets minus current liabilities. Subtracting current liabilities from assets leaves long-term debt and total equity

in the equation that reflects the relative use of long-term debt and total equity to finance the cooperative. A higher adjusted equity to assets ratio indicates a greater use of equity financing in the cooperative which is also an indication of increased solvency. In general, as a cooperative's asset size increases so does its relative use of long-term debt (Eversull, Cooperative Financial Profile, 2008 2011).

Figure 3.10 Adjusted Equity to Assets Ag Valley and Nebraska Cooperatives Percentiles, 1980-2011



As size increases so does the use of long-term debt. AVC is one of the larger cooperatives in Nebraska (Figure 3.13). This may explain a portion of AVC's relatively lower solvency ratios. Over the last four years, compared to other Nebraska cooperatives, AVC averaged an adjusted equity to assets percentage of 62.39 versus the 50th percentile average of 79.37. Another explanation may be a strategy of AVC's board to use higher levels of long-term debt to finance assets as opposed to equity. Similar to the equity to assets ratio, maintaining the proper balance of equity to assets is one of the most important financial decisions that a cooperative's board is tasked with.

3.5 Efficiency

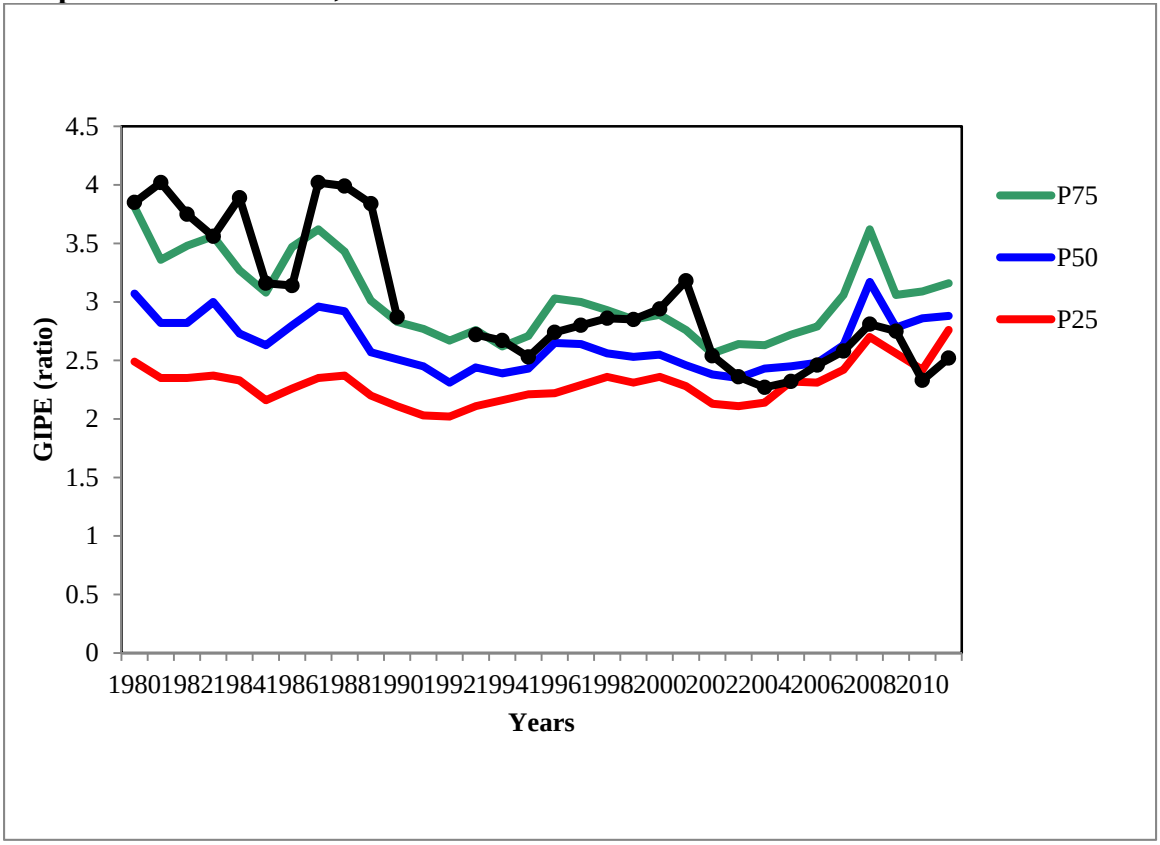
The Cooperative Performance Profile includes nine efficiency measures. All nine are reported in Appendix E. In this section we selected two for further description and analysis. They are gross income to personnel expense and gross income to depreciation expense.

3.5.1 Gross Income to Personnel Expense (GIPE)

GIPE = Gross Income / Personnel Expense

The GIPE ratio is one of the most important efficiency ratios as it is highly correlated to profitability. Data in the Cooperative Performance Profile suggest high GIPE values correlate with high profit margins (Figure 5-36 in Appendix E). Labor is most often the largest controllable expense on a cooperative's income statement and all firms have a responsibility to stakeholders to maintain optimal levels of labor in relation to gross income. Greater labor efficiency results in greater profit potential. This ratio measures the dollars of gross income generated for each dollar of personnel expense and reflects a management team's efficient use of labor in operations. Relatively lower GIPE ratios indicate excessive labor costs. A cooperative's business model and facilities should be considered when comparing GIPE. Particular departments in a cooperative require lower levels of labor relative to income generated (grain) whereas others are labor intensive (retail convenience stores). Also, a cooperative's overall volume and facilities affect the GIPE ratio. Modern facilities generally require less labor than older ones because they substitute capital for labor. Therefore, GIPE should be evaluated in combination with gross income to depreciation expense.

Figure 3.11 Gross Income to Personnel Expense Ag Valley and Nebraska Cooperatives Percentiles, 1980-2011



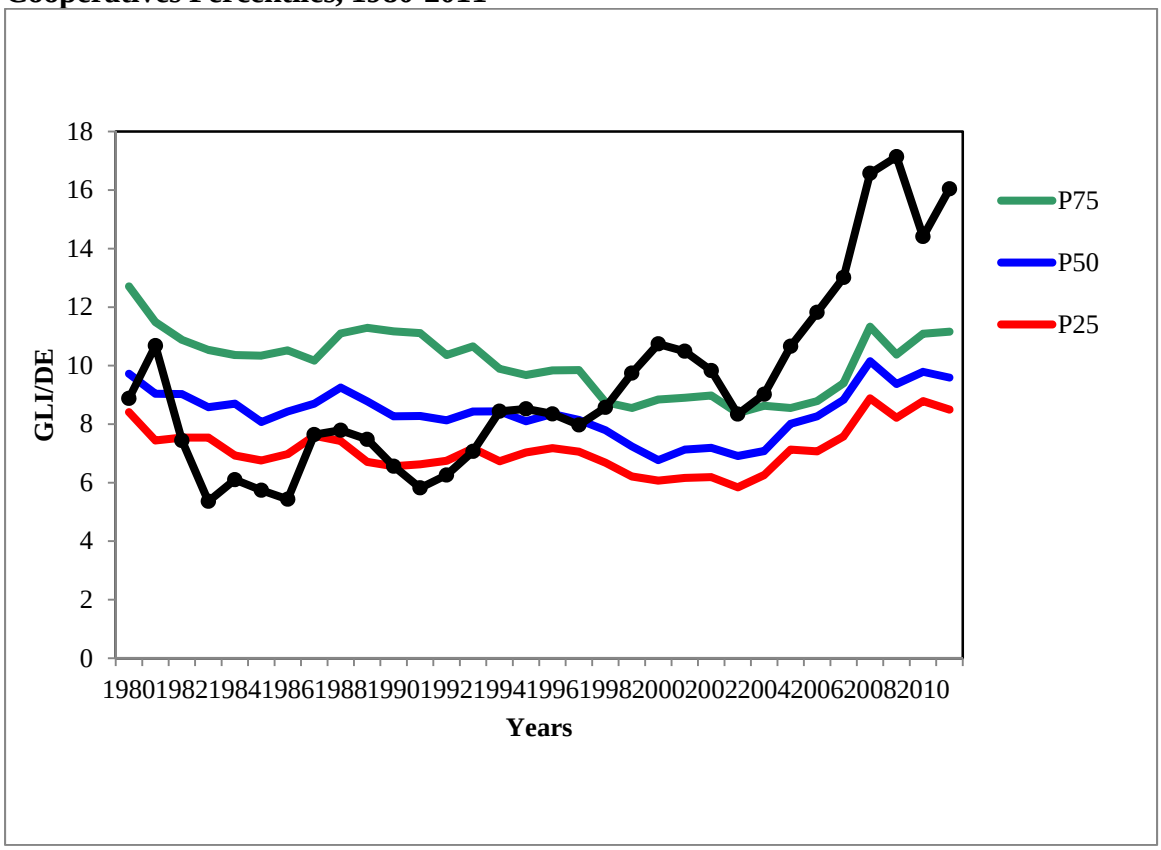
In comparison to other Nebraska cooperatives, AVC's labor force generates lower levels gross income per dollar of labor (Figure 3.11). This trend may be the function of AVC's business model, facilities, employee compensation and benefits, or workforce productivity – it very well is a combination of all of these factors. As previously stated, AVC is a grain marketing and farm supply cooperative. Supply cooperatives typically have higher labor costs than marketing cooperatives. Although AVC recently allocated considerable resources to modernize its facilities, many are older and less labor efficient. Worker productivity, compensation, and benefit package each contribute to the GIPE ratio and deserve further assessment. Regardless, going forward, improvements in labor efficiency is a key challenge facing AVC.

3.5.2 Gross Income to Depreciation (GID)

GID = Gross Income / Depreciation Expense

The GID ratio is a measure of how efficiently a cooperative is using its fixed assets (Smarsh 2010). Since depreciation expense is a function of a cooperative's fixed assets, viewed over time, more productive cooperatives generate higher GID ratios. For example, a cooperative with a higher GID produces more revenue from a piece of application equipment than one with a lower GID. This could be a function of covering more acres with the same piece of equipment or being able to produce additional income while covering the same acreage; either way, efficiencies are displayed with higher GID ratios implying the cooperative's efficient utilization of available assets.

Figure 3.12 Gross Income to Depreciation Expense Ag Valley and Nebraska Cooperatives Percentiles, 1980-2011



In comparison to other Nebraska cooperatives, AVC excels in fixed asset utilization (Figure 3.12). This, quite possibly, is the result AVC's recent growth and its utilization of depreciated older equipment. The cooperative makes use of older facilities and often purchases used equipment to minimize depreciation expenses. On the other end of the depreciation schedule are AVC's updated grain facilities in Bartley, Edison, and North Platte. These new facilities increased depreciation expenses but have also allowed for offsetting increases in gross income opportunities.

3.6 Size

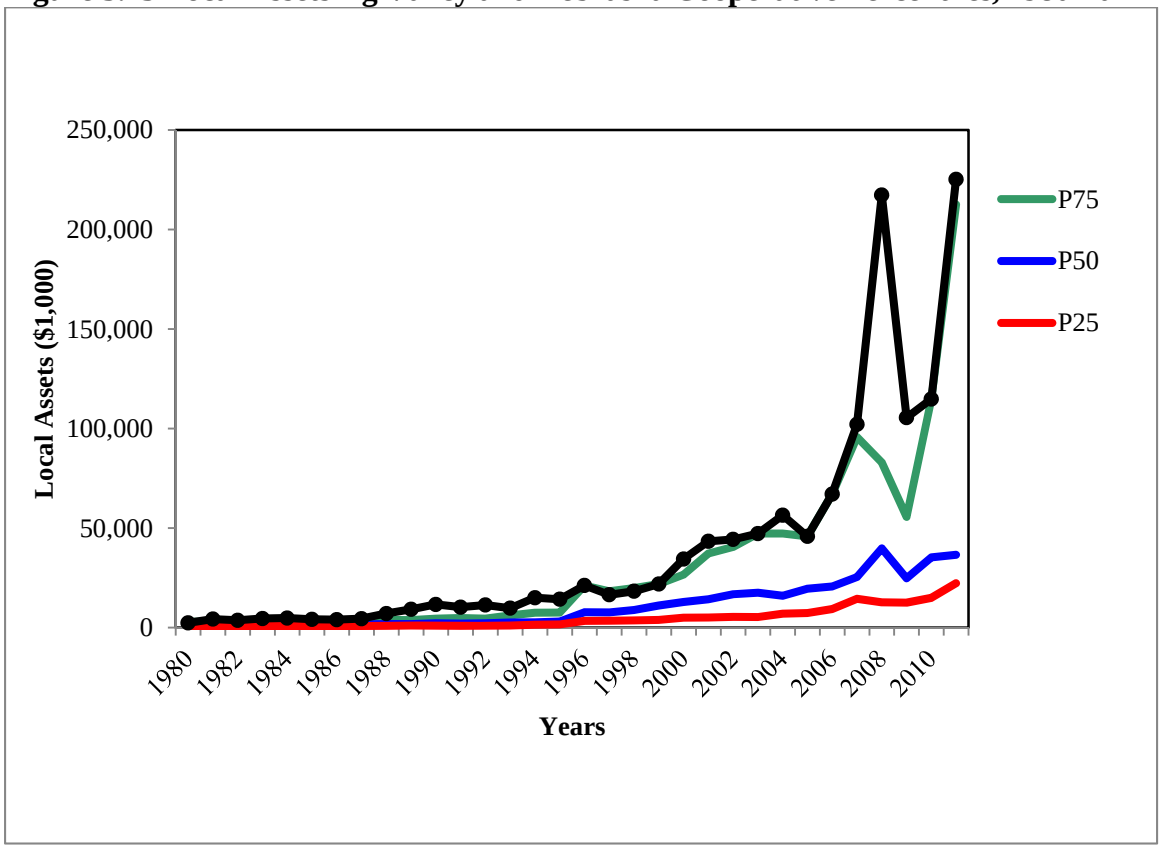
Many economists believe that economies of size result in larger profits for larger firms. Between the years of 2007 and 2011, the largest 100 cooperatives in the United States increased revenues by $88 billion almost doubling total revenues of the same cooperatives over the previous 27 years (Hovey 2012). A boom in the agricultural sector beginning in 2006 has spawned the growth. Most commodity prices have more than doubled in that time frame increasing incomes for Nebraska farmers. "When farmers prosper, cooperatives owned by farmers prosper" (Hovey 2012). The increase in revenue has allowed AVC to upscale its grain and fertilizer handling facilities. This has allowed the cooperative to offer an attractive price point on fertilizer and bid competitively for grain when competing against the larger multinational companies like Cargill and ConAgra. The Cooperative Performance Profile reports nine measures of size. All nine are reported in Appendix E. In this section we selected two for further description and analysis: local assets and local earnings.

3.6.1 Local Assets

Local Assets is often considered to be the best measure of a cooperative's size. The measure excludes investments which are most often regional cooperative investments. Larger Nebraska cooperatives have grown significantly in the last six years and AVC has followed this trend. Over the last four years, AVC's average local assets equal the 75th percentile of Nebraska cooperatives at $148,540,130 (Figure 3.13). Amazingly, AVC's local assets have increased $158,109,830 in the last six years (Table 5-35 in Appendix E). It's interesting to note though that larger local assets doesn't necessarily correlate positively with large profits (Table 5-70 in Appendix E). The data seem to suggest that since 2002

cooperatives that have significantly increased the size of their local assets have conversely seen reduced returns on local assets. This may be that recent growth has led to higher depreciation expenses including "bonus" depreciation which overstates costs over the useful life of the asset in the early years. This may also point to a lower gross margin "Walmart" type of strategy being used by the larger cooperatives whereas the focus has shifted to increased volumes and larger, more efficient fixed assets.

Figure 3.13 Local Assets Ag Valley and Nebraska Cooperative Percentiles, 1980-2011

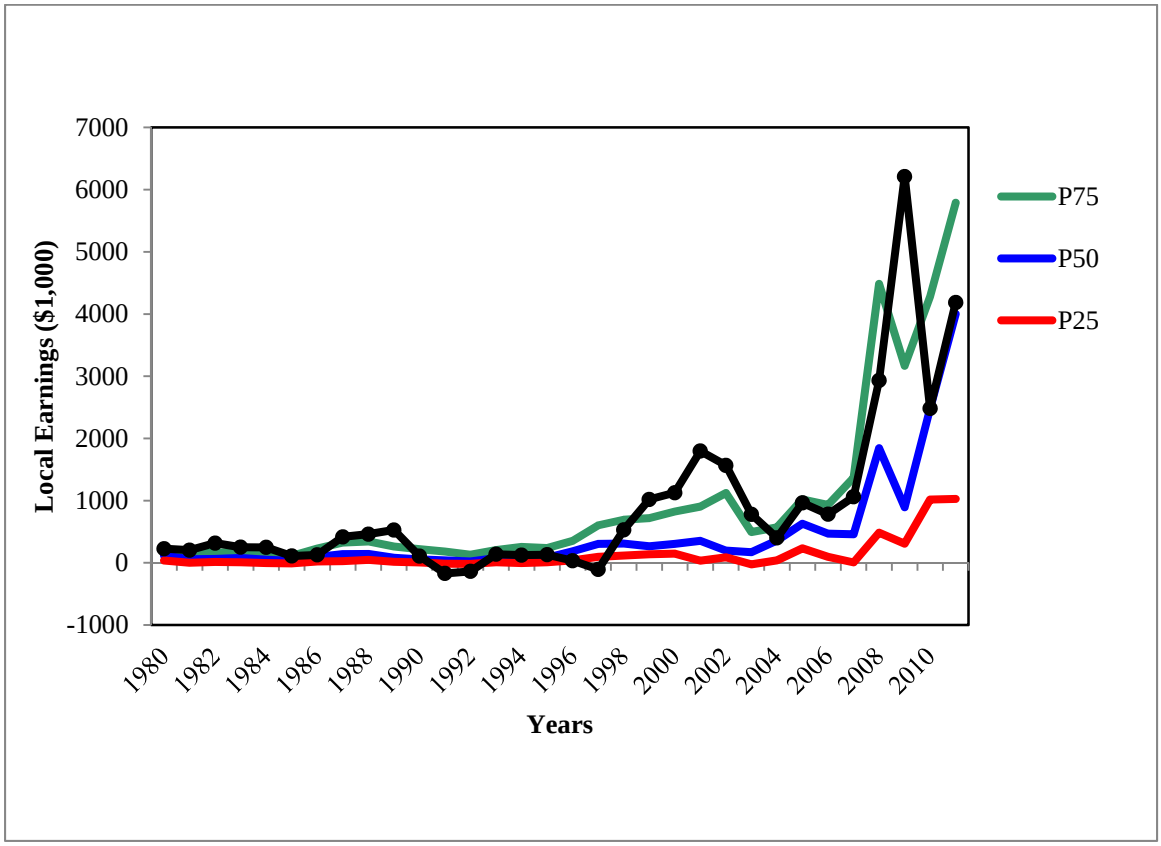


3.6.2 Local Earnings

Local Earnings is a measure of the size and profitability of a cooperative. It measures the earnings from local operations and leaves out interest and income tax expenses as these are primarily board decisions. The data in this study suggest that high local earnings are positively correlated to high profitability (Figure 5-80 in Appendix E). Historically, AVC has performed well in comparison to other to other Nebraska cooperatives in earnings generated from local operations (Figure 3.14). Over the last four years, AVC has

outperformed most Nebraska cooperatives with average annual local earnings of $4,292,420. Strong local earnings are a driver of growth. AVC's debt holders pay close attention local earnings and are more likely to continue conducting business with the cooperative if it maintains strong local earnings.

Figure 3.14 Local Earnings Ag Valley and Nebraska Cooperatives Percentiles, 1980-2011



3.7 Summary of Financial Profile

AVC acts similarly to other Nebraska cooperatives in regards to industry trends. It is one of the larger agricultural cooperatives in Nebraska and therefore is positioned to take advantage of recent market growth. AVC has used increased revenues to update key infrastructure and position itself for future success. The cooperative is in a growth mode and recent investments in local assets gives the appearance in certain financial measures that AVC may be underperforming. Given time, the new assets should improve AVC's financial performance.

AVC has historically earned high margins, especially in the grain department. Comparing data with other Nebraska cooperatives, AVC may want to look at a high volume, low margin approach in the grain department. This may include closing smaller, less efficient facilities and concentrating on regional grain facilities with the ability to handle larger volumes of grain more efficiently.

In terms of liquidity and solvency, AVC has historically used a highly leveraged position. In one aspect, this means the cooperative has its assets hard at work. Another side of this is it reveals a cooperative that may not be able to take advantage of certain opportunities as they arise. Finally, the financial analysis conducted in this chapter reveals opportunities for AVC to improve upon its operational and labor efficiencies.

CHAPTER 4: STRATEGIC EQUITY MANAGEMENT

Managing a cooperative involves a multitude of interrelated financial considerations. One of them is managing equity which, logically, should occur after the board ensures sound financial operations and profitability. The next finance decision cooperative boards make is the method of distributing income. Owners of a cooperative typically have an interest in how a board decides to distribute income to equity. Strategically managing equity involves decisions about asset investments, financial targets, equity structure, and redemption strategies. Chapter 4 examines four different strategies for managing AVC's equity. Strategies are designated by the letter "S" (Strategy) and the numbers 0, 1, 2, and 3. S0 describes AVC's trajectory if the cooperative continues to conduct business as usual. The remaining strategies impose balance sheet management constraints. S1 adds a revolving fund component to the equity redemption policy while S2 and S3 build upon S1 by phasing out age of patron redemption. S3 examines the use of non-qualified patronage refunds. The chapter defines two income distribution models used in these strategies, ID1 and ID2. This chapter highlights key assumptions and outcomes of each strategy. A complete set of financial projections can be found in Appendix F.

4.1 Equity Structure and Key Assumptions

Beginning equity accounts were collected from AVC's accounting software, Agris. Agris was implemented by AVC in 2002 at which time patron names, birthdates, and equity balances were entered into the system. For this study, AVC's equity is grouped into seven classes: Common Stock (Membership, Participating Stock, and Stock Credits), Retained Patronage Regional, Retained Patronage Cambridge, Retained Patronage Members Equity Credits Qualified, Retained Patronage Members Equity Credits Non-Qualified, Retained Earnings Member Retained Earnings, and Retained Earnings Nonmember Retained Earnings.

Common Stock (CS: Mem, PS, SC) includes the $100 investment owners make in the cooperative. Membership and participating stock are included in this group as well as stock credits that are accumulated retained patronage refunds for patrons that haven't earned their $100 membership fee or participating stock requirement. When a patron's stock credit account reaches $100 equity is transferred into either the voting membership or

non-voting participating stock class. These three are grouped together in projections because they are the same type of equity. The values don't change in S0-S3 projections because the amount is relatively small and changes little as old patrons leave and new ones enter.

Retained Patronage Regional equity (RP: Regional) is a class of allocated equity set up to protect the AVC's balance sheet from a loss at the regional cooperative level. Current AVC policy reclassifies 18% of Retained Patronage Members Equity Credits Qualified at the time of redemption, age of patron age 76, and transfers it to this regional equity class. It is then redeemed with the estate equity redemption method.

Retained Patronage Cambridge (RP: Cambridge) is equity that was added to the cooperative's balance sheet when AVC merged with Cambridge Cooperative Oil Company in 2006. It is held in a separate equity class as a condition of the merger and is scheduled for redemption when a patron dies as an estate settlement.

Retained Patronage Members Equity Credits Qualified (RP: MEC-Q) is the equity class this study primarily focuses on. About 35% of AVC's equity is held here. AVC retains this equity to fund current operations and is obligated to redeem this at a future date. Patrons assume tax liability on Retained Patronage Members Equity Credits Qualified in the year of distribution.

Retained Patronage Members Equity Credits Non-Qualified (RP: MEC-NQ) is allocated equity in which AVC assumes the tax liability in the year of distribution and patrons assume tax liability in the year it is redeemed with AVC receiving a corresponding taxable income deduction. AVC has not used non-qualified equity in the past. Strategy S3 examines the potential benefits of using this equity class.

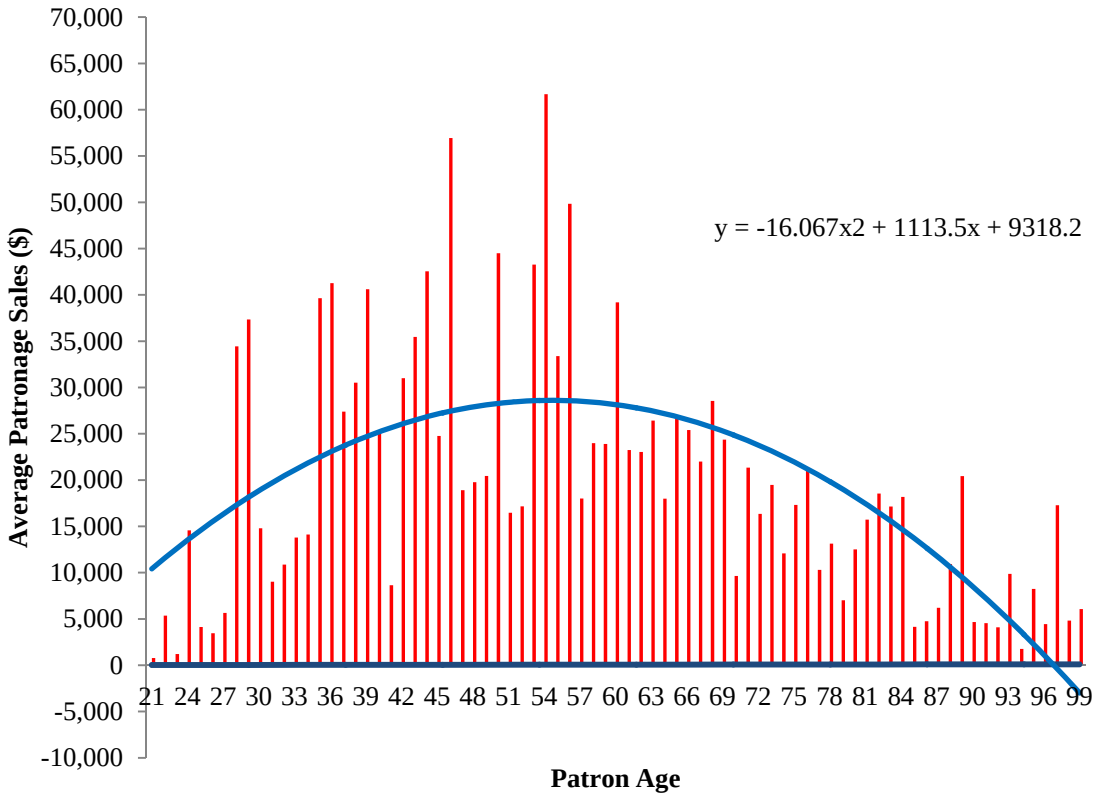
Retained Earnings Member Retained Earnings (RE: MRE) is AVC's largest equity class, with 62% of the cooperative's equity held in this class. This unallocated equity is retained by AVC to fund the cooperative's assets and operations and is often referred to as retained earnings. It is obtained by retaining patronage income in unallocated form.

Retained Earnings Nonmember Retained Earnings (RE: NMRE) are non-patronage retained earnings. AVC is a 521, exempt, cooperative and as such all business is treated as patronage. Most cooperatives aren't 521 eligible and they have customers who are non-patrons and are not eligible for patronage refunds. RE: NMRE is included in the FINPLAN analysis but AVC doesn't distribute to this equity class. It could be used to evaluate the impact of moving from 521 to non-521 taxable status.

Patron equity amounts were lumped into the patron equity accounts as year retained 2002 even though most of the equity was retained in years prior to 2002. Since that time, equity additions have been accurately posted in the accounting software.

Using patronage sales data for five fiscal years, 2008-2012, a patron life cycle was constructed to reflect the age at which the average patron acquires equity at AVC. The curve of a graph reflecting average patronage sales in dollars on the y axis and patron age on the x axis produces the quadratic equation $y = -16.067x^2 + 1113.5x + 93182$ (Figure 4.1). Equitably restructuring AVC's patron equity lumped in the year 2002 would require redistribution based upon this formula. The aggregate result of restructuring patron's equity doesn't have a major effect on projections as RP: MEC-Q is completely redeemed in ten years or less in all of the strategies and equity earned after 2002 is redeemed with current, accurate records. In our projections, estate redemptions are conducted with a mortality table that reached 100% at age 100 (Table 3-11-S0 in Appendix F).

Figure 4.1 Average Patronage Sales by Patron Age in 2012



(Barton, Mickelsen and Barrett, Financial Planning Project Report 2012)

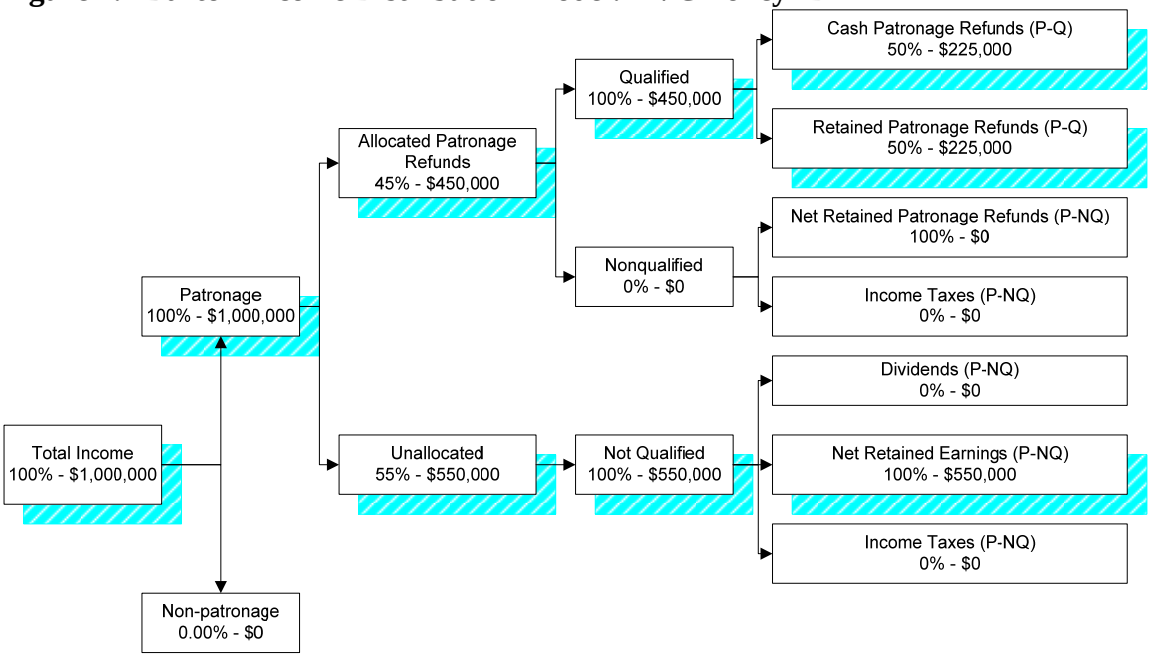
Several key assumptions are made that apply to each strategy for the ten year projection, 2013-2022. First, AVC's annual sales are projected to grow at a rate of 5%. This assumes that AVC keeps its current trade area and doesn't plan on any mergers or acquisitions as this would have significant impact on the balance sheet, and possibly equity in the case of a merger. This is higher than normally seen in other cooperatives that average around 3%. AVC's history seems to justify the higher growth rate. Second, gross margins are projected to be 7.92% in 2013 and remain constant thereafter. Third, it is assumed that AVC continues to take advantage of section 199 DPAD tax deductions and the DPAD program continues in its current form. Fourth, new fixed asset investment is set at $10,000,000 for the first three years, 2013 – 2015, $5,500,000 in 2016 and increased 5% annually after that. This is considered to be a high growth rate for new fixed assets the first three years and a moderate rate thereafter. Fifth, working capital is set at $30,000,000 in 2013 and grows at 5% annually paralleling sales growth. Sixth, cash targets are set at $1,200,000 for all years.

Seventh, regional income, a major driver in AVC's bottom line profitability and regional investment, is projected to be around 0.8% return on sales. Finally, FINPLAN attempts to minimize the cost of capital including equity and debt. Debt comes from two sources, seasonal loans and term loans. Equity is priced at 5% and seasonal loans are priced at 2.75%. Term loans, priced at 3.0%, are increased to achieve minimum liquidity targets. A complete set of key assumptions for each strategy are found in Appendix F.

4.2 Income Distribution Strategy

Income distribution policies are set by the cooperative's board. Historically, AVC has used a variety of income distributions programs. Two alternative policies were evaluated, ID1 and ID2. They are described using the Barton Income Distribution Model. AVC Policy ID1 (ID1) reflects the income distribution policy most recently used by AVC. Figure 4.2 illustrates the model per $1,000,000 of before tax total income. In 2012, AVC distributed 55% of its total income to net retained earnings through unallocated distributions. The remaining 45% of AVC's patronage was evenly split between cash patronage refunds and retained patronage refunds as qualified equity. Income distribution policy ID1 is used in projections S0, S1, and S2.

Figure 4.2 Barton Income Distribution Model: AVC Policy ID1

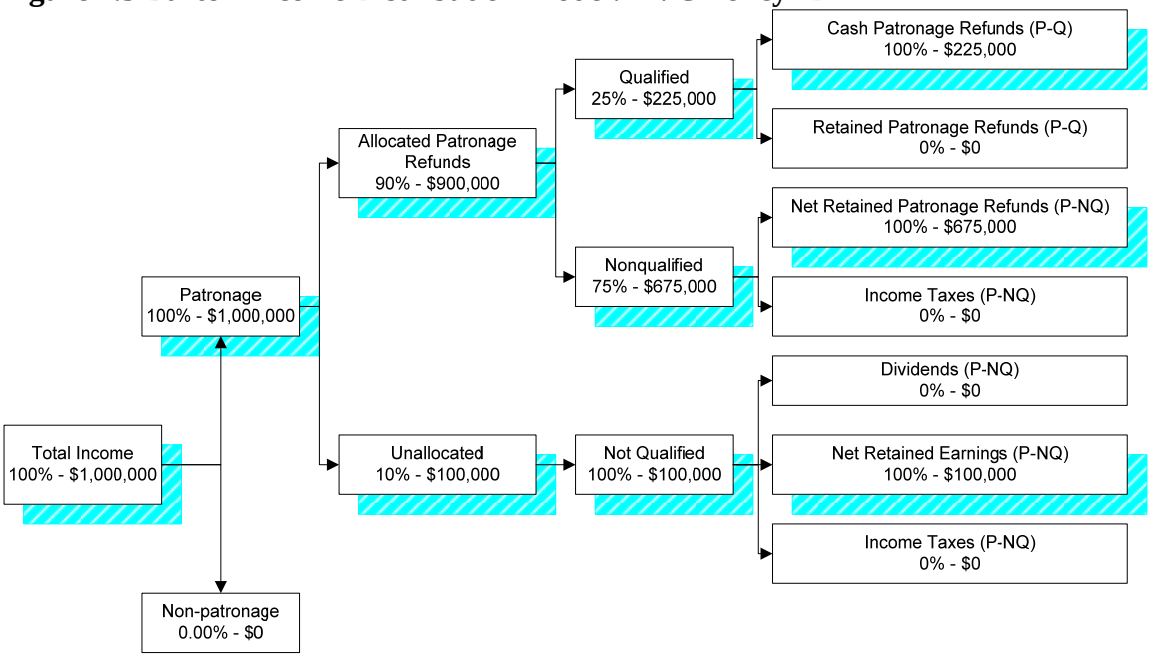


(Barton, Mickelsen and Barrett, Financial Planning Project Report 2012)

Policy ID2 reflects a shift away from AVC's current policy of qualified patronage refunds. There are strong arguments for the use of nonqualified patronage refunds. One is that nonqualified distributions allow cooperatives to fully used DPAD at the cooperative level. ID2 shifts allocated patronage refunds robustly to nonqualified distributions, 90%. This seems reasonable given AVC's past practice of distributing a large amount of patronage as unallocated. One consideration of using splits suggested in ID2 is to distribute the same dollar amount of cash patronage as ID1, $225,000. As with Figure 4.2, Figure 4.3 illustrates the model per $1,000,000 of before tax total income. Income distribution policy ID2 is used in projection S3.

DPAD was also projected for AVC and exceeded total taxable income, resulting in a zero percent effective tax rate. Therefore, the effective tax rate in these decisions is shown as zero percent even though the statutory rate is around 40%.

Figure 4.3 Barton Income Distribution Model: AVC Policy ID2



(Barton, Mickelsen and Barrett, Financial Planning Project Report 2012)

4.3 Equity Redemption Strategy

Managing a cooperative's equity should involve the formulation and alignment of strategies for each class of equity. A successful strategy provides the right balance of simplicity, proportionality of investment, and cash flow to patron-owners. In this study, estate redemption is given priority over other redemption methods. This has been AVC's tradition, redeeming a patron's equity at death has political benefits and displays good will on behalf of the cooperative. Age of patron receives second priority in each strategy and in S1, S2, and S3 revolving fund receives third priority. Strategy S3 adds the RP: MEC-NQ equity class to the projection. It is redeemed with estate settlements and with a revolving fund as fourth priority once the RP: MEC-Q balance is zero. The Revolving fund method is modeled in FINPLAN to redeem to the fewest years possible within the redemption budget.

This study projects AVC's financial performance for ten years using four different redemption scenarios, S0-S3. The income distribution policy, solvency target (equity to assets), and age of patron redemption policy for each strategy is detailed in Table 4.1. A

revolving fund method is used in strategy S1 to redeem any excess redemption budget whereas in strategies S2 and S3 revolving fund use is increasingly applied as age of patron is phased out.

Table 4.1 S0-S3 Strategy Assumptions for Income Distribution, Solvency and AP/O76 Phase-Out Rate

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
S0 Income Distribution Policy	ID1	ID1	ID1	ID1	ID1	ID1	ID1	ID1	ID1	ID1
S0 Solvency: None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AP/O76 PO Rate: None	82%	82%	82%	82%	82%	82%	82%	82%	82%	82%
S1 Income Distribution Policy	ID1	ID1	ID1	ID1	ID1	ID1	ID1	ID1	ID1	ID1
S1 Solvency: Moderate	35.0 %	35.0 %	35.0 %	35.0 %	35.5 %	36.0 %	36.5 %	37.0 %	37.5 %	38.0 %
AP/O76 PO Rate: None	82%	82%	82%	82%	82%	82%	82%	82%	82%	82%
S2 Income Distribution Policy	ID1	ID1	ID1	ID1	ID1	ID1	ID1	ID1	ID1	ID1
S2 Solvency: Moderate	35.0 %	35.0 %	35.0 %	35.0 %	35.5 %	36.0 %	36.5 %	37.0 %	37.5 %	38.0 %
AP/O76 PO Rate: Moderate	100%	90%	80%	70%	60%	50%	35%	20%	5%	0%
S3 Income Distribution Policy	ID2	ID2	ID2	ID2	ID2	ID2	ID2	ID2	ID2	ID2
S3 Solvency: Moderate	33.5 %	34.0 %	35.0 %	35.5 %	36.0 %	36.5 %	37.0 %	37.5 %	38.%	38.5 %
AP/O76 PO Rate: Moderate	100%	90%	80%	70%	60%	50%	35%	20%	5%	0%

(Barton, Mickelsen and Barrett, Financial Planning Project Report 2012)

4.3.1 Strategy S0 Continue Business as Usual

The first base plan projection completed in this study is designated S0 which projects where AVC will end up if it continues operating with the same financial and equity management practices. It uses AVC's base income distribution policy, ID1, and the base equity redemption program, ERP1 (Table 4.2). Strategy S0 uses AVC's traditional equity investment policy requiring $100 of capital stock investment with additional investments accumulating in MEC-Q. In this strategy, all allocated equity classes are scheduled for redemption at the time of a patron's death as an estate settlement. In Strategies S0-S3 estate settlements weren't calculated for the common stock equity class as these equities remain relatively stable over time and as patrons leave, they are generally replaced by new ones. Normally, this equity would be redeemed with estate settlements. In S0, 82% of MEC-Q is redeemed using the age of patron method at 76 years of age. At that time 18% is traditionally transferred to the regional class. Two liquidity targets were imposed on the strategy S0 model, $1,200,000 cash and working capital of $30,000,000 in 2013 growing at

5%. Strategy S0 achieves these liquidity targets. Reasonable returns were achieved in strategy S0 and solvency increased in this base model throughout the ten year projection (Table 4.3). MEC-Q continues to grow in strategy S0 and RE: MRE increases at an increasing rate (Figure 4.4). This base strategy grows total cash flow to patrons to $4,817,000 in 2022 (Figure 4.5).

Table 4.2 S0 AVC Equity Classes and Equity Redemption Program ERP1

Equity Class and Description (R: Restructured)	Beginning Equity: 2013		Equity Redemption Policy: Claim on Redemption Budget Residual (Outside or Inside) and Priority by Method (P:M)						
	Amount	Percent	Category	ES Inside	AP/O Age & % Inside	AP/P Inside	RF Inside	BC In	PP In
CS: Mem, PS, SC	$381,612.13	0.74%	Fixed	1:ES					
RP: Regional	$802,205.69	1.55%	Fixed	1:ES					
RP: Cambridge	$612,517.31	1.19%	Fixed	1:ES					
RP: MEC-Q	$17,829,056.00	34.53%	Fixed	1:ES	2:age 76 (82%)				
RP: MEC-NQ	$0.00	0.00%	N/A						
RE: MRE	$32,003,900.00	61.99%	N/A						
RE: NMRE	$0.00	0.00%	N/A						
TOTAL:	**$51,629,291.13**	**100.00%**							

(Barton, Mickelsen and Barrett, Financial Planning Project Report 2012)

Table 4.3 Financial targets and results projection S0 (Selected Years)

	Balance Sheet ($1,000)					
	2012	2013	2014	2015	2019	2022
Financial Targets						
Liquidity: Cash		1,200	1,200	1,200	1,200	1,200
Liquidity: Working Capital		30,000	31,500	33,075	40,203	46,540
Financial Results						
Liquidity: Cash	1,201	1,201	1,201	1,202	1,203	1,205
Liquidity: Current Ratio	1.321	1.399	1.407	1.417	1.401	1.453
Liquidity: Working Capital	28,358	30,001	31,939	34,101	40,206	50,568
Solvency: Equity to Assets (%)	30.48	35.42	36.9	38.26	47.47	54.39
Profitability: Return on Local Assets (%)	6.4	5.4	5.0	4.8	5.3	5.7

Figure 4.4 Cumulative Equity Balances by Equity Class S0

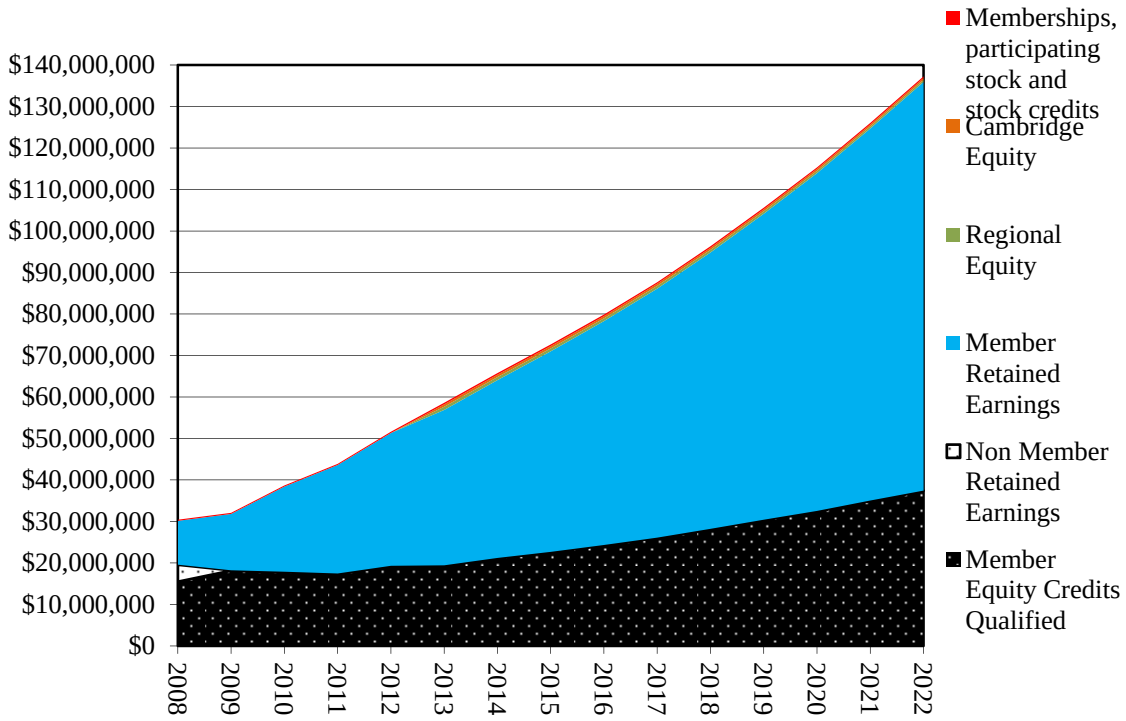
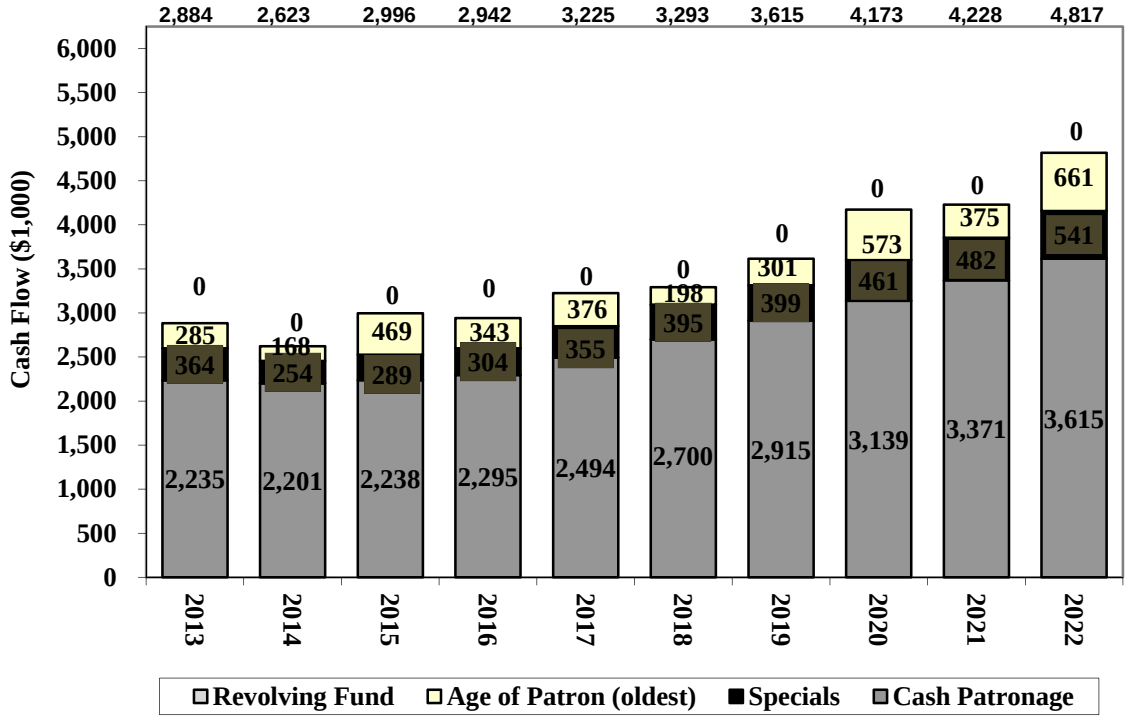


Figure 4.5 Total Cash Flow to Patrons by Source S0



4.3.2 Strategy S1

Strategy S1 adds a revolving fund and implements a more comprehensive balance sheet management to include a solvency target. It uses income distribution policy ID1 and equity redemption program ERP2 (Table 4.4). A revolving fund for RP: MEC-Q is used in this model to redeem any excess redemption budget remaining after redeeming estates and age of patron. Sales, fixed asset growth, and current assets in strategy S1 are identical to S0. Strategy S1 imposes a solvency target, equity to assets, of 35% in years 2013-2016 which is increased thereafter at 0.5% per year. The use of a solvency target results in the creation of an equity redemption budget upper limit. The solvency target increases bank loans and interest expenses as extra debt is needed to finance growth and conform to balance sheet management constraints compared to S0. Strategy S1 achieves the liquidity and solvency targets imposed in this model. Returns in strategy S1 appear to be reasonable (Table 4.5). Conforming to this model redeems all of AVC's MEC-Q by the year 2022 resulting in a revolving fund length of zero. At that time the only allocated equity owners have in AVC is their $100 of common stock and very small amounts of regional and Cambridge equity (Figure 4.6). The revolving fund becomes the major method of distributing equity in this model (Figure 4.7). Since the RP: MEC-Q equity class is redeemed to a zero balance in 2022, it is not possible to achieve the liquidity and solvency targets in 2022.

Table 4.4 S1 AVC Equity Classes and Equity Redemption Program ERP2

Equity Class and Description (R: Restructured)	Beginning Equity: 2013		Equity Redemption Policy: Claim on Redemption Budget Residual (Outside or Inside) and Priority by Method (P:M)						
	Amount	Percent	Category	ES Inside	AP/O Age & % Inside	AP/P Inside	RF Inside	BC In	PP In
CS: Mem, PS, SC	$381,612.13	0.74%	Fixed	1:ES					
RP: Regional	$802,205.69	1.55%	Fixed	1:ES					
RP: Cambridge	$612,517.31	1.19%	Fixed	1:ES					
RP: MEC-Q	$17,829,056.00	34.53%	Fixed	1:ES	2:age 76 (82%)		3:X years		
RP: MEC-NQ	$0.00	0.00%	N/A						
RE: MRE	$32,003,900.00	61.99%	N/A						
RE: NMRE	$0.00	0.00%	N/A						
TOTAL:	**$51,629,291.13**	**100.00%**							

(Barton, Mickelsen and Barrett, Financial Planning Project Report 2012)

Table 4.5 Financial targets and results projection S1 (Selected Years)

	Balance Sheet ($1,000)					
	2012	2013	2014	2015	2019	2022
Financial Targets						
Liquidity: Cash		1,200	1,200	1,200	1,200	1,200
Liquidity: Working Capital		30,000	31,500	33,075	40,203	46,540
Solvency: Equity to Assets (%)		35.00	35.00	35.00	36.50	38.00
Financial Results						
Liquidity: Cash	1,201	1,201	1,201	1,201	1,201	2,889
Liquidity: Current Ratio	1.321	1.399	1.399	1.4	1.401	2.156
Liquidity: Working Capital	28,354	30,001	31,501	33,076	40,203	88,050
Solvency: Equity to Assets (%)	30.48	35.00	35.00	35.00	36.50	38.73
Profitability: Return on Local Assets (%)	6.4	5.4	5.0	4.8	5.3	5.7

Figure 4.6 Cumulative Equity Balances by Equity Class S1

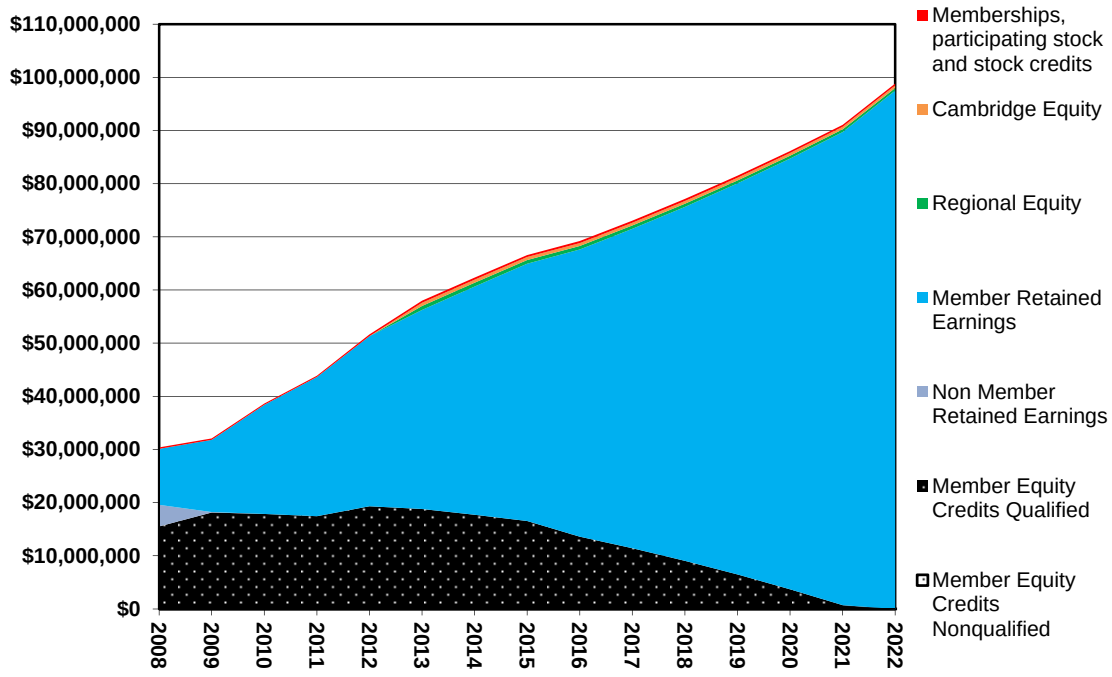
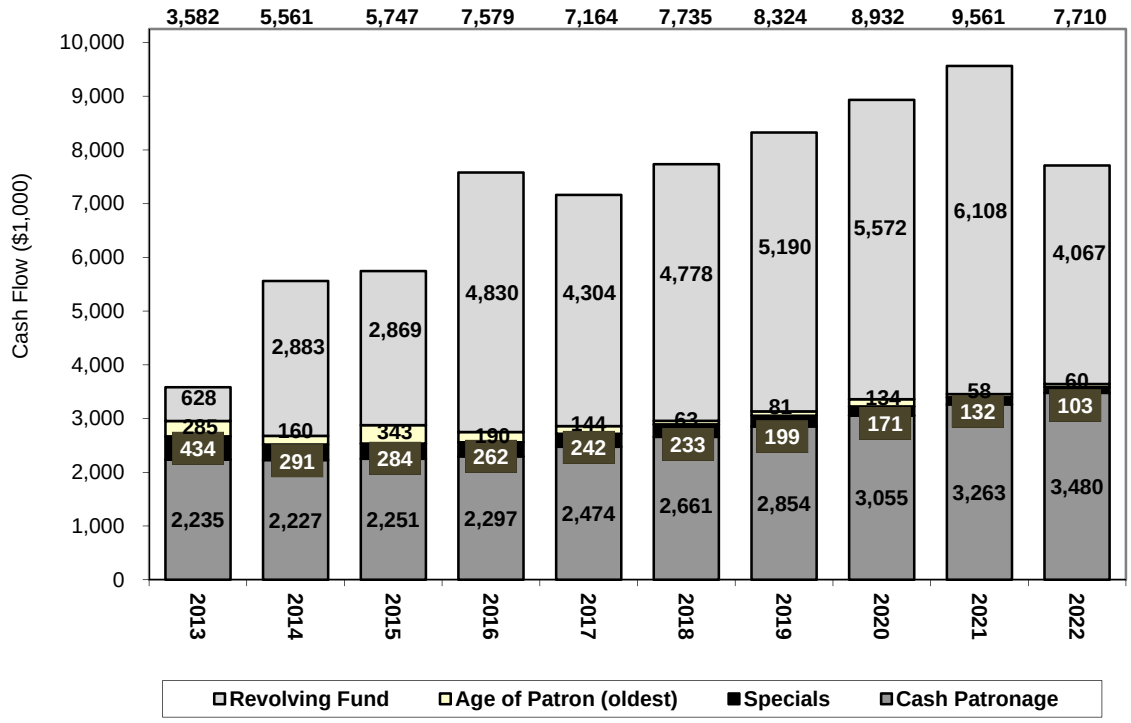


Figure 4.7 Total Cash Flow to Patrons by Source S1



4.3.3 Strategy S2

Equity redemption strategy S2 is the same as S1 except that age of patron is phased out by the year 2022 on a ten year schedule, reducing the amount redeemed on this schedule: 100%, 90%, 80%, 70%, 60%, 50%, 35%, 20%, 5%, and 0%. Strategy S2 uses the equity redemption model ERP3 (Table 4.6) and income distribution policy ID1. As in Strategy S1, liquidity and solvency targets are met and reasonable returns are achieved (Table 4.7). Phasing out age of patron has no real effect on the cumulative equity balances or total cash flow to patrons when compared to strategy S1 (Figure 4.8, Figure 4.9). S2 also discontinues use of the split into "regional" equity at a rate of 18%.

Table 4.6 S2 AVC Equity Classes and Equity Redemption Program ERP3

Equity Class and Description (R: Restructured)	Beginning Equity: 2013		Equity Redemption Policy: Claim on Redemption Budget Residual (Outside or Inside) and Priority by Method (P:M)						
	Amount	Percent	Category	ES Inside	AP/O Age & % Inside	AP/P Inside	RF Inside	BC In	PP In
CS: Mem, PS, SC	$381,612.13	0.74%	Fixed	1:ES					
RP: Regional	$802,205.69	1.55%	Fixed	1:ES					
RP: Cambridge	$612,517.31	1.19%	Fixed	1:ES					
RP: MEC-Q	$17,829,056.00	34.53%	Fixed	1:ES	2:age 76 (phase out)		3: X years4		
RP: MEC-NQ	$0.00	0.00%	N/A						
RE: MRE	$32,003,900.00	61.99%	N/A						
RE: NMRE	$0.00	0.00%	N/A						
TOTAL:	**$51,629,291.13**	**100.00%**							

(Barton, Mickelsen and Barrett, Financial Planning Project Report 2012)

Table 4.7 Financial targets and results projection S2 (Selected Years)

	Balance Sheet ($1,000)					
	2012	2013	2014	2015	2019	2022
Financial Targets						
Liquidity: Cash		1,200	1,200	1,200	1,200	1,200
Liquidity: Working Capital		30,000	31,500	33,075	40,203	46,540
Solvency: Equity to Assets (%)		35.00	35.00	35.00	36.50	38.00
Financial Results						
Liquidity: Cash	1,201	1,201	1,201	1,201	1,201	2,889
Liquidity: Current Ratio	1.321	1.399	1.399	1.400	1.401	2.156
Liquidity: Working Capital	28,354	30,001	31,501	33,076	40,203	88,050
Solvency: Equity to Assets (%)	30.48	35.00	35.00	35.00	36.50	38.73
Profitability: Return on Local Assets (%)	6.4	5.4	5.0	4.8	5.3	5.7

Figure 4.8 Cumulative Equity Balances by Equity Class S2

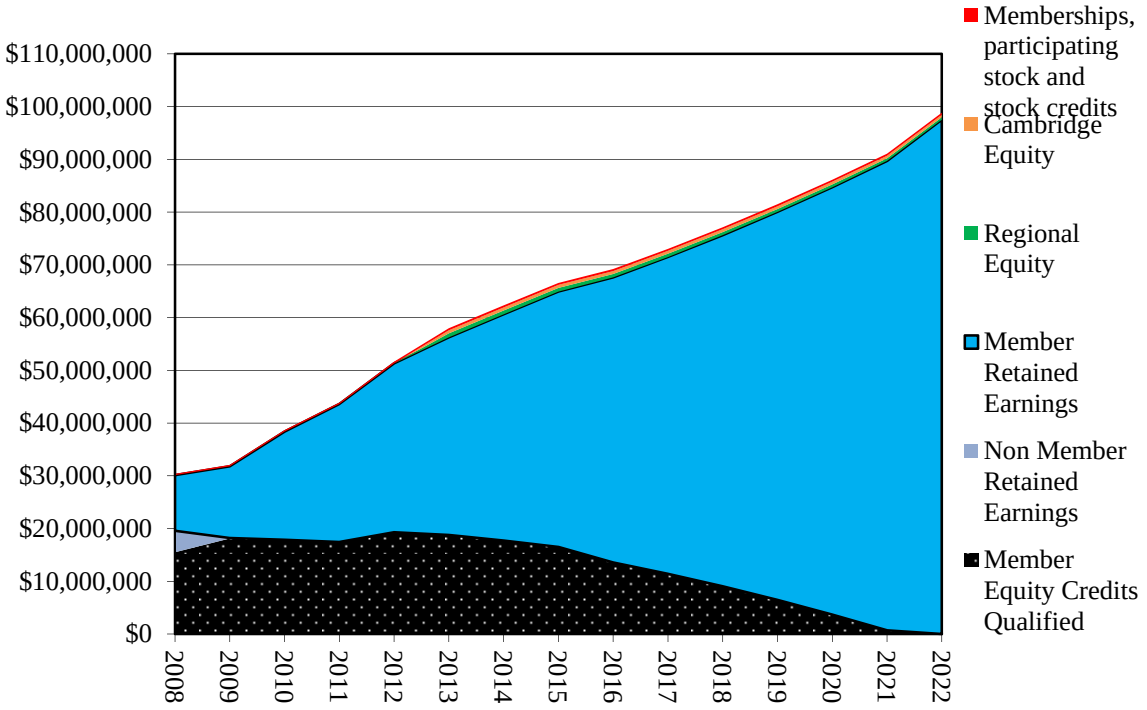
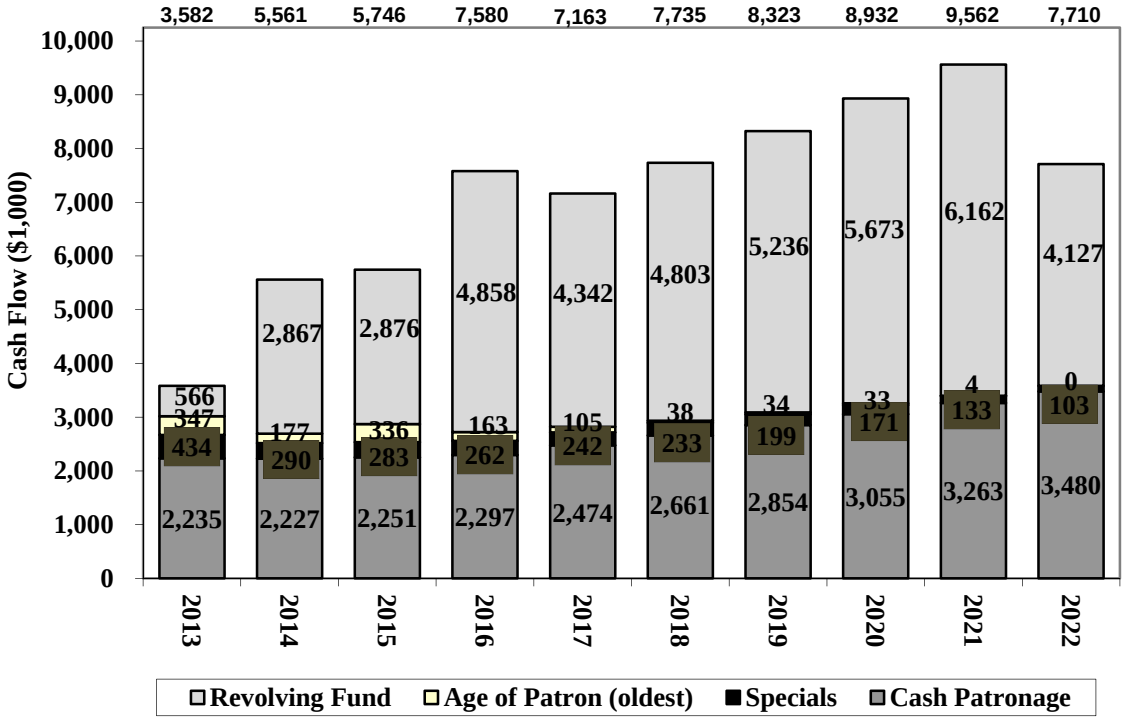


Figure 4.9 Total Cash Flow to Patrons by Source S2



4.3.4 Strategy S3

In Strategy S3 the use of nonqualified patronage refunds are introduced and distribution follows the ID2 schedule. ID2 decreases patronage income flowing to unallocated earnings from 55% in ID1 to 10% and increases patronage refunds distributions from 45% in ID1 to 90%. Equity is redeemed following the ERP4 program which phases out RE: MEC-Q equity class and adds an estate settlement and revolving fund redemption method for nonqualified equity RP: MEC-NQ (Table 4.8). Strategy S3 met liquidity and solvency targets and resulted in reasonable returns (Table 4.9). In strategy S3, around the year 2018, RP: MEC-Q is completely redeemed at which time RP: MEC-NQ comprises most all of the allocated equity (Figure 4.10). Cash patronage in strategy S3 is identical to the previous three strategies while the revolving fund continues to distribute RP: MEC-Q as age of patron is phased out (Figure 4.11).

Table 4.8 S3 AVC Equity Classes and Equity Redemption Program ERP4

Equity Class and Description [1] (R: Restructured)	Beginning Equity: 2013		Equity Redemption Policy: Claim on Redemption Budget Residual (Outside or Inside) and Priority by Method (P:M)						
	Amount	Percent	Category	ES[2] Inside	AP/O Age & % Inside	AP/P Inside	RF Inside	BC In	PP In
CS: Mem, PS, SC	$381,612.13	0.74%	Fixed	1:ES					
RP: Regional	$802,205.69	1.55%	Fixed	1:ES					
RP: Cambridge	$612,517.31	1.19%	Fixed	1:ES					
RP: MEC-Q	$17,829,056.00	34.53%	Fixed	1:ES	2:age 76 (phase out)3		3: X years4		
RP: MEC-NQ	$0.00	0.00%	N/A	1: ES			4: X years5		
RE: MRE	$32,003,900.00	61.99%	N/A						
RE: NMRE	$0.00	0.00%	N/A						
TOTAL:	**$51,629,291.13**	**100.00%**							

(Barton, Mickelsen and Barrett, Financial Planning Project Report 2012)

Table 4.9 Financial targets and results projection S3 (Selected Years)

	Balance Sheet ($1,000)					
	2012	2013	2014	2015	2019	2022
Financial Targets						
Liquidity: Cash		1,200	1,200	1,200	1,200	1,200
Liquidity: Working Capital		30,000	31,500	33,075	40,203	46,540
Solvency: Equity to Assets (%)		33.50	34.00	34.50	36.50	38.00
Financial Results						
Liquidity: Cash	1,201	1,200	1,201	1,201	1,200	1,200
Liquidity: Current Ratio	1.321	1.399	1.399	1.400	1.401	1.401
Liquidity: Working Capital	28,354	30,000	31,501	33,076	40,203	46,540
Solvency: Equity to Assets (%)	30.48	33.50	34.00	34.50	36.50	38.00
Profitability: Return on Local Assets (%)	6.4	5.4	5.0	4.8	5.3	5.7

Figure 4.10 Cumulative Equity Balances by Equity Class S3

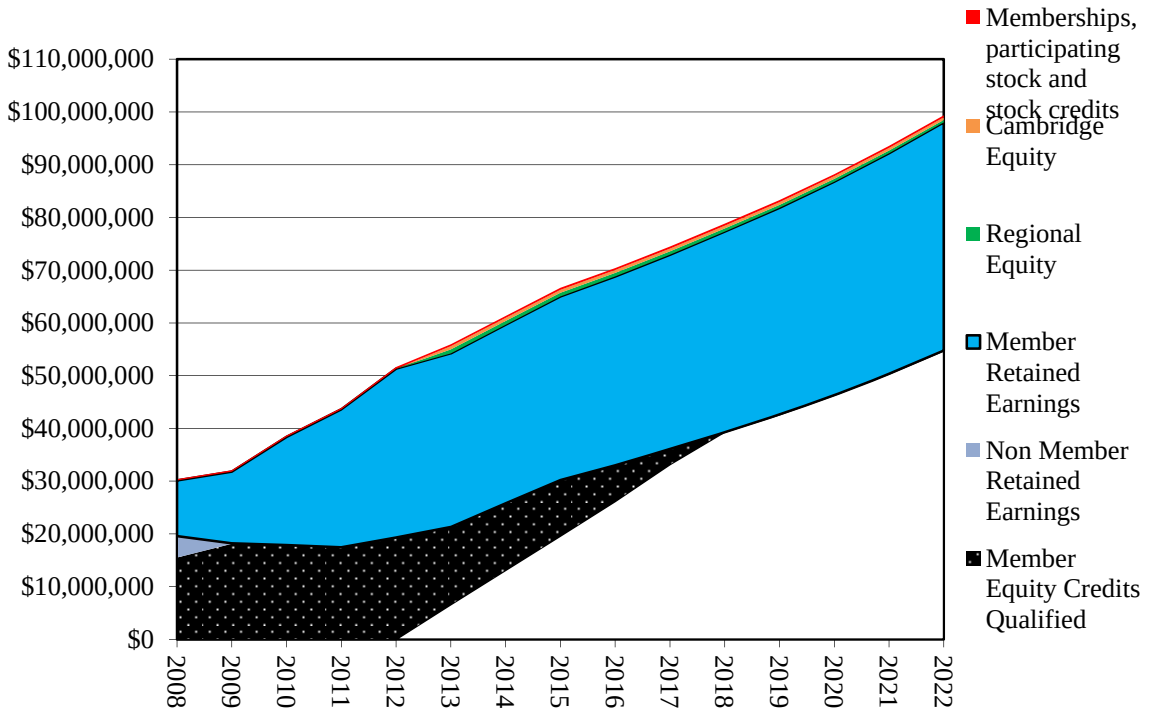
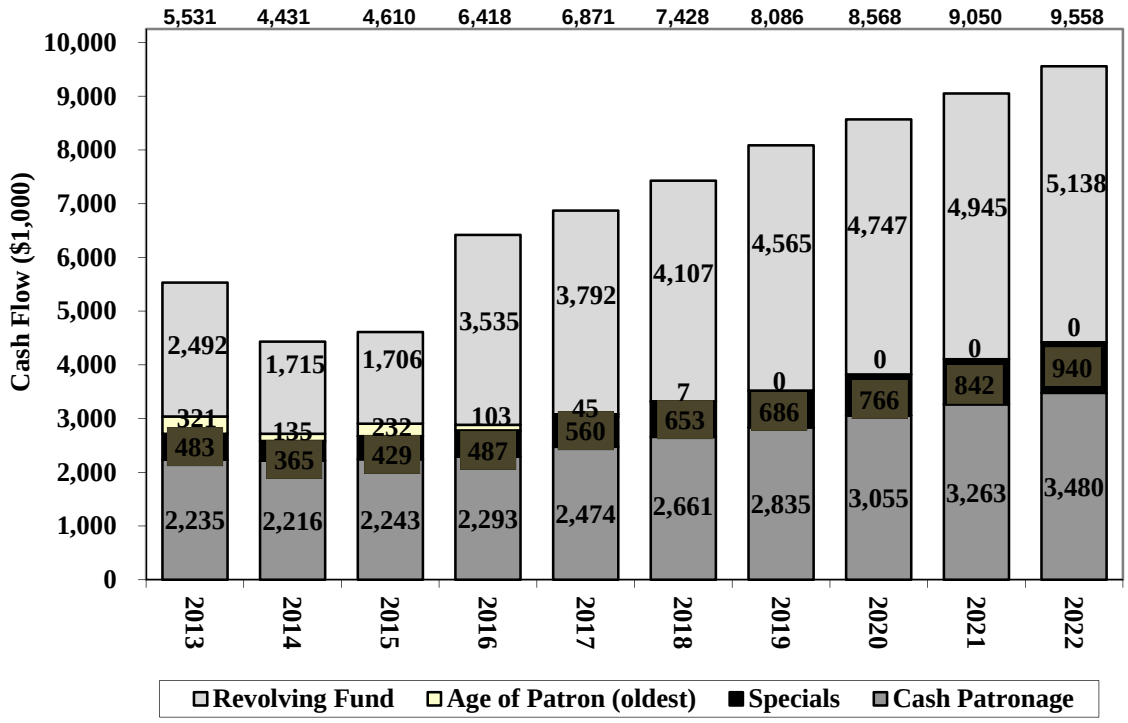


Figure 4.11 Total Cash Flow to Patrons by Source S3



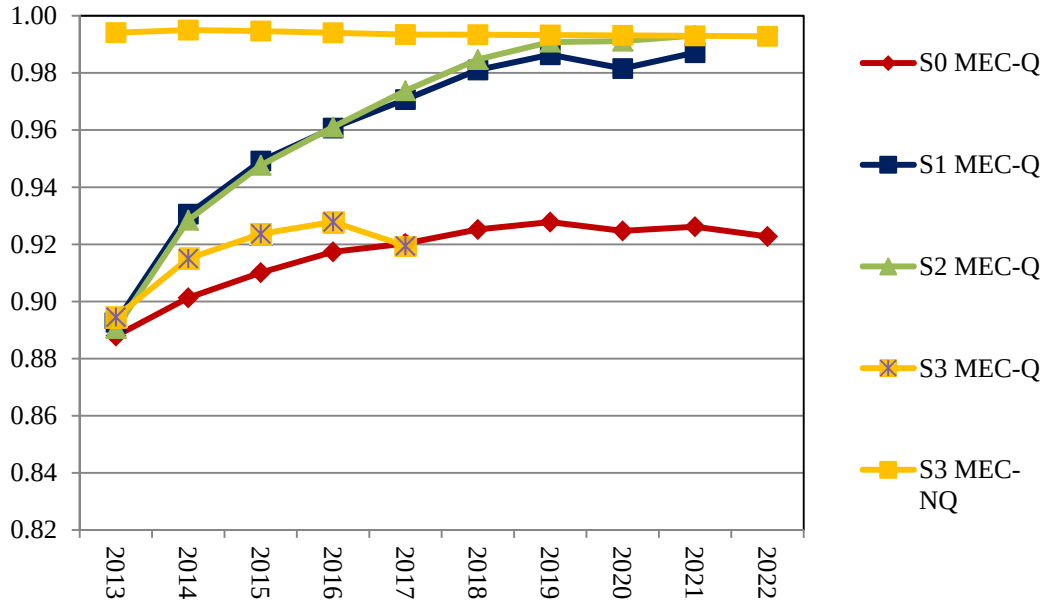
4.4 Comparison of Strategies

Evaluating different equity redemption strategies should include a patron's perspective of each strategy. There will be winners and losers and trade-offs if AVC decides to change strategies. The cooperative's goal should be to implement a redemption policy that best serves the needs of the cooperative while distributing equity to patrons in a fair and equitable manner. Younger patrons typically want better prices and high cash patronage rates while older, less active, owners want higher redemptions. Transitioning from the current equity redemption program to one that uses nonqualified distributions, revolving fund redemptions, and stricter solvency targets may create challenges for AVC. Patrons will undoubtedly have concerns about changes made to their equity accounts. Four economic measures can be helpful when addressing these concerns, proportionality, cash flow to patrons, revolving fund length, and equity turnover.

4.4.1 Proportionality

A fundamental cooperative principle is that patrons should finance the cooperative proportional to their use of the cooperative. A board is challenged with keeping the cooperative's equity investment in the hands of active patron-owners. The proportionality index is one method of measuring this. An index ratio of 1.0 means the selected strategy provides equity financing in exact proportion to patron's use. When comparing proportionality indexes for each strategy we find that strategy S0 is significantly lower (Figure 4.12). This implies that the age of patron redemption method isn't as effective as a revolving fund in achieving proportionality, granted, a larger amount of cash flows to patrons in strategies S1-S3 which slants the argument against S0. That said, adding a revolving fund, solvency target, and redemption budget resulted in patrons financing AVC more proportional to use in strategies S1-S3.

Figure 4.12 Proportionality Index 2013-2022, S0-S3, Members Equity Credits



4.4.2 Cash flow to Patrons

Another method of comparison is to consider the total cash each strategy places in the hands of patrons. Presumably, patrons receive greater satisfaction with more cash. In our study, strategy S0 returns the least cash flow to patrons through 2022 (Figure 4.13). This makes sense as the age of patron method only redeems equity at age 76 and AVC's older

equity is relatively small. Strategies S1 – S3 return similar amounts to patrons, though with different tax consequences (Figure 4.14). Strategy S3's use of nonqualified distributions has advantages after the year 2016. At this time S3 has redeemed the majority of its qualified equity and the nonqualified is taxed at the patron level only when it is redeemed. Strategies S0-S2 requires patrons to pay taxes on deferred equity, some of which is redeemed when the patron dies.

Figure 4.13 Total Cash Flow to Patrons

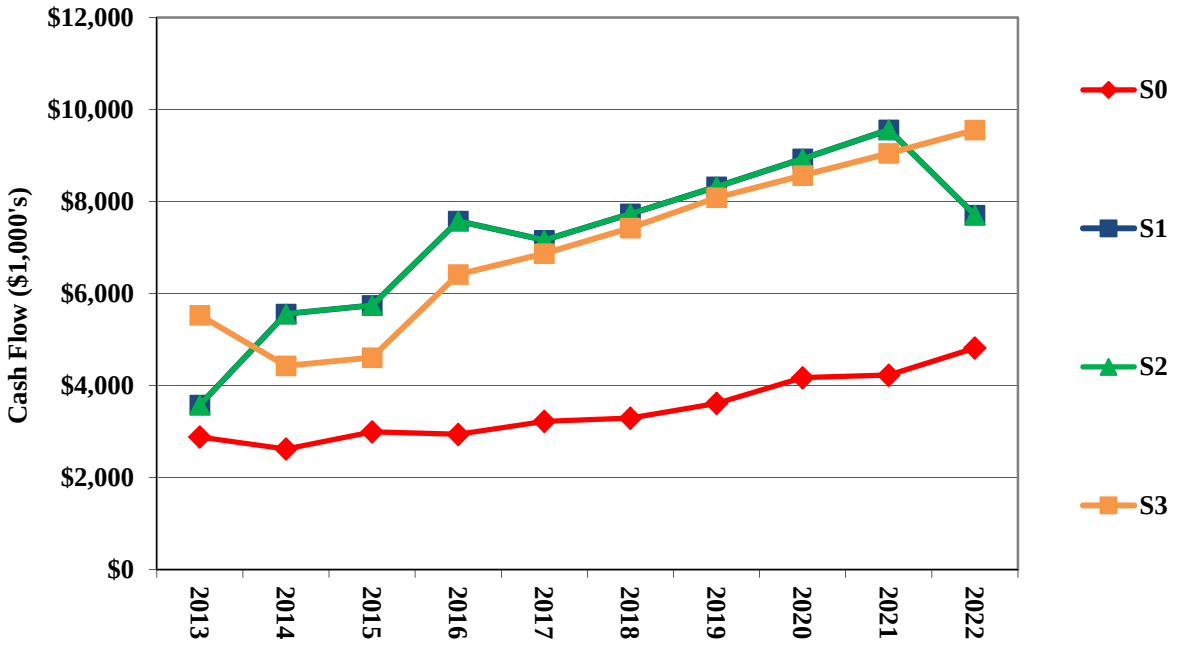
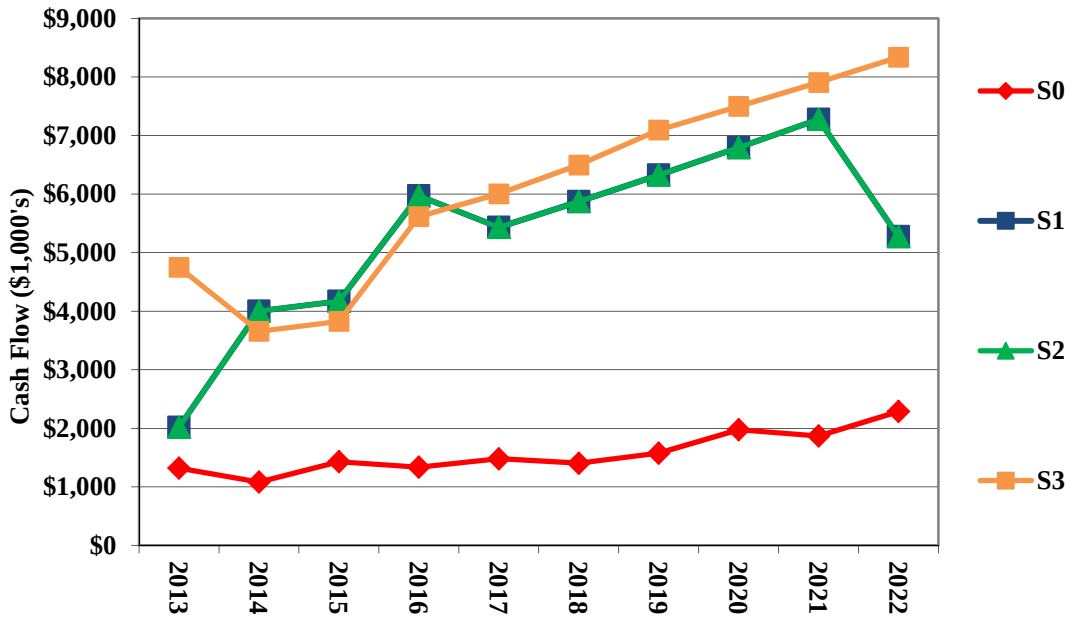


Figure 4.14 After Tax Cash Flow to Patrons



4.4.3 Revolving Fund Length

Strategies S1, S2, and S3 implement a revolving fund redemption method. Strategy S1 incorporates a revolving fund to distribute excess equity budget while strategies S2 and S3 phase out age of patron over a ten year period. A shorter revolving fund period returns equity to patrons quicker. This may not always be the desired strategy as a short revolving fund may deprive the cooperative of needed equity financing and create other ownership concerns. AVC's preferred revolving fund length may be around ten years as this presumably would project value to patrons while providing flexibility for the cooperative's financial needs. But, using a solvency target like used in S2-S3 protects the cooperative's balance sheet and redeems the surplus equity. Strategies S1-S3 results in a revolving fund length of zero for RP: MEC-Q within the study's ten year projection (Figure 4.15). This scenario may not be the best avenue for AVC to pursue because when most of a cooperative's allocated equity is redeemed, other ownership and income distribution concerns are presented. Strategy S3 replaces RP: MEC-Q with RP: MEC-NQ and results

in a revolving fund that is seven years in length. In addition to the tax benefits received by patrons in S3, a seven year revolving fund appears to be a positive scenario.

Figure 4.15 Revolving Fund Length for RP: MEC-Q, 2013-2022

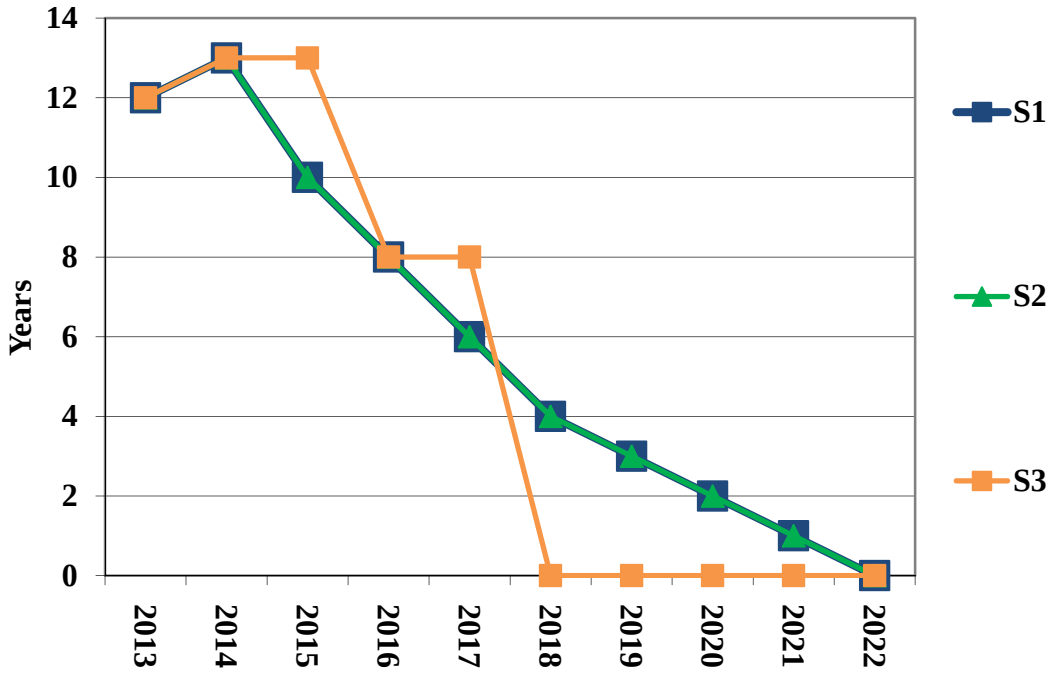
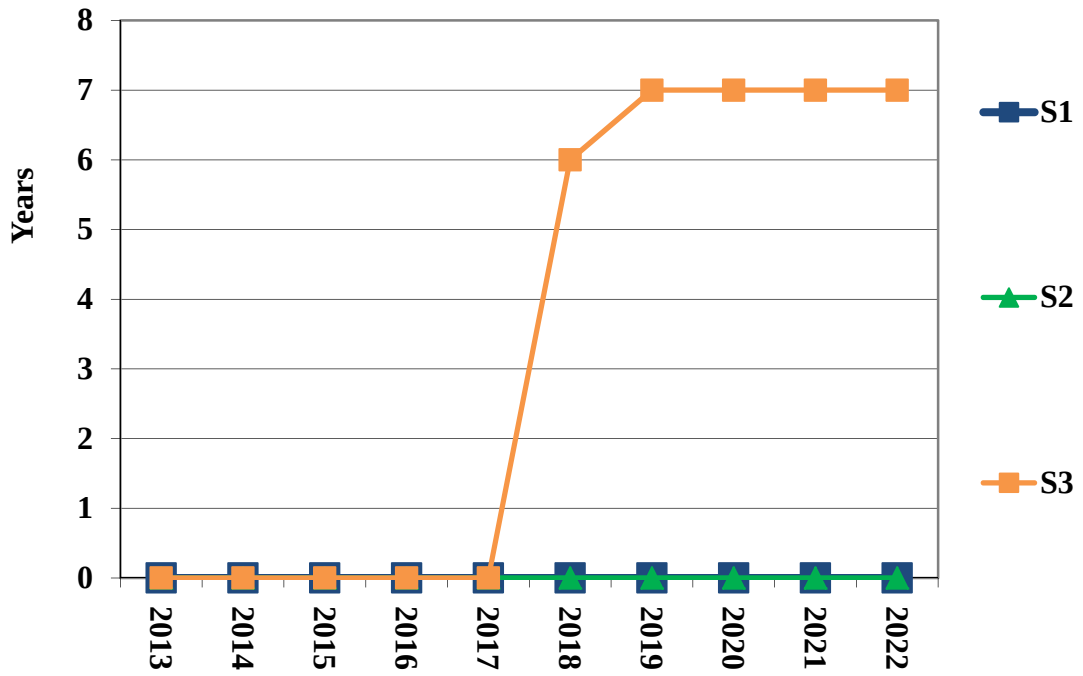


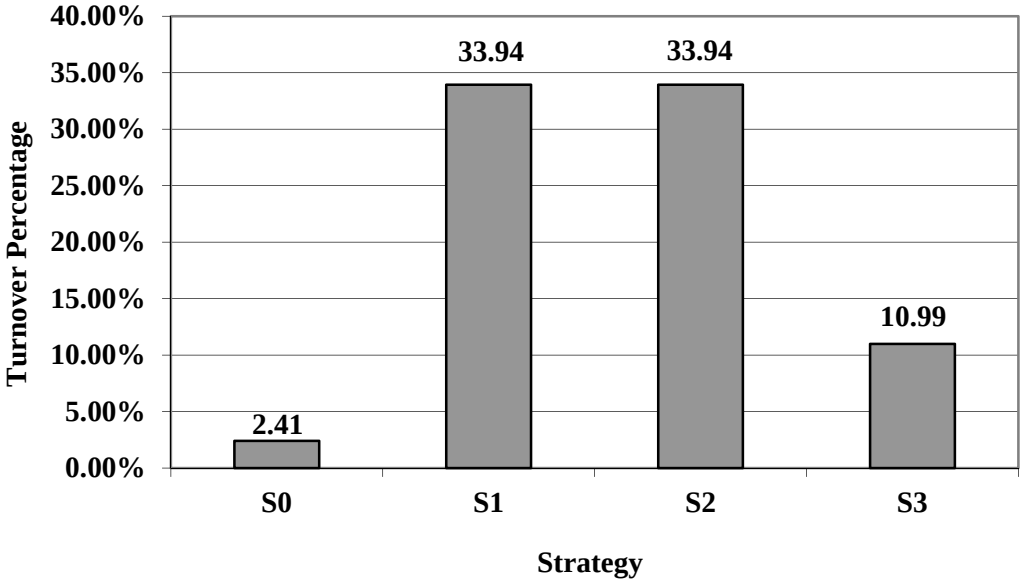
Figure 4.16 Revolving Fund Length for RP: MEC NQ, 2013-2022



4.4.4 Equity Turnover

Equity turnover percentage measures the rate at which equity is redeemed to patrons. A higher equity turnover percentage equates to faster turnaround of a patron's equity. After considering the needs of the cooperative, in terms of patron value, a board should strive to return equity as quickly as possible. Quick redemption provides capital that patrons can use in their operations. Figure 4.17 shows that strategy S0 is by far the poorest method of returning equity to patrons in a timely manner with an equity turnover percentage of 2.41. Strategies S1 and S2 provide the highest equity turnover percentage of 33.94, but as previously noted, RP: MEC-Q is completely redeemed using these two methods within the ten year projection timeline. Strategy S3 returns a superior equity turnover percentage of 10.99 when compared to strategy S0 because, in these strategies, the revolving fund returns equity faster than age of patron does.

Figure 4.17 Average Turnover Percentage, 2013-2011: All Allocated Equity



CHAPTER 5: SUMMARY

Delivering value to customers is a cornerstone of every successful business. Cooperative customers, like all customers, share their limited resources with businesses that provide the highest perceived value. The cooperative business model has advantages over other forms of business in that customers own the company. Customer owners have a stake in the cooperative's success. Agricultural cooperatives are an extension of the farm and when farmers make money so do cooperatives. Equally, when cooperatives make money, they have the opportunity to return some of it to the farmer. Redeeming patronage with a properly constructed redemption program gives cooperatives an incredible opportunity to create value for patrons.

In Chapter 3 we focused on AVC's current financial performance and compared it with historic trends and the cooperative's peers. We found that AVC's capital works hard and that the cooperative is in a growth mode. We also discovered potential for increased labor efficiencies.

Chapter 4 examined alternative redemption strategies and found that AVC's current redemption program has opportunity for improvement. A properly crafted revolving fund has the potential to return patron's money equitably and in accordance to cooperative principles. Economically, patrons perceive greater value when receiving patronage refunds sooner, especially before they die. Projections reveal that implementing a revolving fund along with balance sheet management automatically phases out the cooperative's current age of patron redemption method. We also find that implementing a nonqualified class of allocated equity boosts after tax patron cash flows without changing the cooperative's overall financial performance. AVC's practice of moving 18% of a patron's equity to the regional class when they turn 76 years of age was found to add an unneeded level of complexity to the redemption program which neither adds value or has measurable effect on the cooperative's financial performance. Comparing the four strategies, S3 is recommended because it best achieves this study's main goal, increasing patron value.

5.1 Recommendations

The question that remains is what decisions need to be made now? Suggestions for AVC's board of directors from the analysis conducted in this study are listed here. Projections show that the two key drivers to financial performance are profitability and growth. AVC should continue to focus on sustainable growth and explore opportunities for increased profitability. To increase the value of AVC's equity, the cooperative should take steps to implement balance sheet management with strict liquidity and solvency targets. The cooperative should simplify its redemption policy by discontinuing the practice of moving 18% to regional equity when a patron turns 76 years of age. AVC should continue to redeem equity through estates though because of the goodwill it generates. The benefits of redistributing patron accounts and phasing out age of patron are outweighed by the simple addition of a revolving fund to distribute excess equity budget. Therefore, it is recommended that AVC implement a revolving fund on new equity and that any excess equity budget be redeemed in this manner. Finally, a revolving fund that redeems equity in around ten years or less would provide value to patrons while providing management flexibility for the cooperative.

5.2 Limitations of the Study

Results of this study are limited by the available data. We compared AVC to other Nebraska cooperatives. More accurate measures may be obtained with data from firms more similar to AVC. Also, variables and assumptions made in each strategy were developed using the best educational estimates of Dr. David Barton and AVC's CEO and CFO. Time constraints didn't allow for additional assumptions to be explored that may have resulted in other favorable outcomes.

5.3 Future Research

The Cooperative Performance Profile conducted in this project has offered insight for additional research projects. One area deserving additional attention is labor efficiency. AVC has shown potential for increased profitability in this area. A study designed to measure labor efficiencies by department, location, facilities, equipment, or product mix could bring additional value to the cooperative. In addition, the study could focus on the relationship between labor efficiency and various human resource metrics such as

employee engagement, selection, training, compensation, or motivation. Additional research could focus on benchmarking AVC's labor efficiency with other agribusiness firms outside of the cooperative sector.

In this study, we didn't restructure each patron's account prior to 2002 to reflect the date at which equity was acquired. The reason for this was that the pro forma analysis revealed all of the older equity would be redeemed inside of the first ten years in each strategy. Further research on the effects of restructuring each patron account based upon the patron life cycle developed in Chapter 4 would give a more exact picture of equity account redemptions and the winners and losers of each strategy.

This study focuses on three alternative strategies to AVC's current equity redemption program. Each alternative examines switching to the revolving fund method as this appears to be AVC's preferred method. Additional research could very well be performed in the same manner using other redemption methods or combinations of several redemption methods. Additionally, this research could include other income distribution policies.

The strategic variables, financial targets, and projected performance used in this study are the best estimation of AVC's managers and Arthur Capper Cooperative Center's staff. Certainly, additional research should be conducted in a pro forma manner to test other scenarios. These may include variations to growth, profitability, solvency, or other financial measures. In the end, increasing customer value should be the main goal of future research.

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APPENDIX A

CONSUMERS COOPERATIVE ASSOCIATION
AUDITING AND ANALYSIS SERVICE
P.O. Box No. 2359

HOWARD A COWDEN
PRESIDENT

KANSAS CITY 42, MISSOURI

June 11, 1955

Board of Directors
Edison Non-Stock Cooperative Association
Edison, Nebraska

Gentlemen:

Pursuant to your request we have completed an examination of the accounting records and supporting evidence of the Edison Non-Stock Cooperative Association, Edison, Nebraska, from the inception of your corporation until the end of your fiscal year, May 31, 1955. Actual business operations took place from November 1, 1954 to May 31, 1955. We include, herewith, our complete report consisting of a balance sheet at May 31, 1955, an operating statement for the seven-month period ending that date, and other schedules and statements as listed in the index.

Our examination was directed primarily toward the verification of balance sheet accounts at May 31, 1955. We reviewed the operating accounts in sufficient detail, employing tests and methods of the type and to the extent we deemed necessary to satisfy ourselves of their general correctness.

It is our opinion that the financial condition as presented on the balance sheet is stated in accordance with accepted principles of good accounting; however, we must qualify our statement of opinion to this extent: Inventories were accepted as presented by management but extensions and additions were verified and nothing was discovered to indicate the inventory was not correctly counted and accurately priced. Receivables were not confirmed by direct contact.

Financial

Your financial condition is sufficiently strong but is not very current. Operating capital is low but should improve as you continue business operations and be cautious in your disbursements. Grain operations, of course, are financed by your regional terminal finance plan.

Because you have only recently organized and have heavy investments in new facilities, you have sizeable long-term liabilities. The greatest amount of liabilities is to your membership, which is a healthy situation.

Your operating capital is so low you can ill-afford to carry accounts receivable. The bulk of your accounts are represented in one account, that of Harold Dunn. It is understood from your attorney that this account will be settled by the Grain Exporter Bonding Company about July 1, 1955. Make every effort to operate in the future on a strictly cash basis.

Operations

Because you have been in operation less than a year and have not been in operation during a harvest season it is difficult to analyze and appraise your operations. From the evidence on hand you have maintained satisfactory gross margins. An analysis of expenses reveals but little information of value. Just starting out you have some expenses such as office supplies and legal fees which are abnormally high, and other expenses such as property taxes and auditing have not, so far, been included in your operations.

The volume report indicates confusion in accounting for wheat and corn. Total grain shrink, however, is well within normal limits.

Comments

1. The bulk of your insurance policies are on file with the Omaha Bank for Cooperatives and were not available for analysis and accrual by your auditor-analyst. You should request your insurance companies to provide you with duplicate copies of all policies for your files.

2. You have constructed wonderful facilities at a sizeable investment by the association, principally from borrowed capital. You have exercised your right to amortize these facilities on a 60-month basis. This means your depreciation expense will total approximately $27,000.00 per year. The only way you can meet this expense is to keep your storage facilities filled to capacity.

3. You should make an effort to keep your office and elevator neat and as clean as possible. Appearance means much to your members, especially the ladies.

With these comments we conclude our report. It has been a pleasure to serve your association. We wish to thank you for the courtesies and cooperation extended to our representative by you and your employes during the course of this examination.

Respectfully submitted,

H. P. Hayes, Jr., Auditor-Analyst

HPH:ca
6-20-55

EDISON NON-STOCK COOPERATIVE ASSOCIATION
EDISON, NEBRASKA
BUSINESS ANALYSIS

Factor	5-31-55
Ratio Current Assets to Current Liabilities	1.1 to 1
Ratio Cash to Current Liabilities	0.4 to 1
Ratio of Net Fixed Assets to Fixed Liabilities	1.1 to 1
Percent of Equity in Total Assets	14 %
Ratio of Equity to Net Fixed Assets	0.2 to 1
Percent of Equity in Receivables	32.2%
Percent of Retail Sales in Receivables	4.1%
Percent of Receivables over 30 days old	88.4%
Percent of Current Assets in Receivables	21.9%
Ratio of Sales to Average Inventory	29.7 to 1
Ratio of Sales to Cost of Fixed Assets	1.3 to 1
Percent of Business with Members	Est. 90 %
Does Board Review Monthly Reports	Yes
Do they have an Educational Committee	No
No. of Educational Meetings Held	0
No. of Employes attending Training School	0
No. of years Manager Employed as Manager	½
Number of Members	184
Number of Members Last Year	0
Number of Members Gained	184
Number of Members Lost	0
Net Membership Increase	184

EDISON NON-STOCK COOPERATIVE ASSOCIATION
EDISON, NEBRASKA
BALANCE SHEET
May 31, 1955

ASSETS

Current Assets:			
Cash on Hand	$ 43.00		
Cash in Bank	13,760.33	$ 13,803.33	
Accounts Receivable		7,402.73	
Grain Storage and Handling Receivable		6,516.82	
Merchandise Inventory		6,037.83	
Total Current Assets			$ 33,760.71
Investments:			
Shares in Other Cooperatives			3,000.00

Fixed Assets:	Cost	Depreciation	Present Value	
Land	$ 150.00	$	150.00	
Buildings	131,910.34	5,440.19	126,470.15	
Office Equipment	429.53	52.19	377.34	
Totals	$132,489.87	$ 5,492.38		
Total Net Fixed Assets				126,997.49
TOTAL ASSETS				$163,758.20

LIABILITIES AND MEMBERS EQUITY

Current liabilities:			
Accounts Payable		$ 10,778.00	
Accrued Payroll Taxes		104.00	
Accrued Interest Payable		1,309.43	
Notes Payable		12,000.00	
Finance Station Account Payable		6,000.00	
Total Current Liabilities			$ 30,191.43
Other Liabilities:			
Notes Payable		48,000.00	
Certificates of Indebtedness	$26,100.00		
Cert. of Indebt. & Storage	36,500.00	62,600.00	
Total Other Liabilities			110,600.00
Members Equity:			
Memberships		18,400.00	
Net Savings to 5-31-55		4,566.77	
Total Members Equity			22,966.77
TOTAL LIABILITIES AND MEMBERS EQUITY			$163,758.20

EDISON NON-STOCK COOPERATIVE ASSOCIATION
EDISON, NEBRASKA
OPERATING STATEMENT
November 1, 1954 to May 31, 1955

	Inventory 11-1-54	Purchases	Total	Inventory 5-31-55	Cost of Sales	Sales	Gross Savings	% of Sales
Wheat	$	$ 74,522.71	$ 74,522.71	$1,886.50	$ 72,636.21	$ 74,403.26	$ 1,767.05	2.37
Corn		82,740.23	82,740.23	1,313.28	81,426.95	83,434.34	2,007.39	2.40
Milo		14,651.17	14,651.17	436.80	14,214.37	14,903.34	688.97	4.62
Feed		5,913.36	5,913.36	1,544.95	4,368.41	4,925.11	556.70	11.29
Misc. Merchandise		2,385.59	2,385.59	856.30	1,529.29	3,084.34	1,555.05	50.42
Totals		$180,213.06	$180,213.06	$6,037.83	$174,175.23	$180,750.39	6,575.16	3.63
Grain Storage & Handling							10,162.76	5.62
Total Gross Savings							$16,737.92	9.25

Expenses:		
Salaries		$ 2,250.00
Extra Labor		318.50
Rent		20.00
Office Supplies and Postage		432.63
Utilities		345.12
Telephone and Telegraph		232.97
Plant Supplies		101.87
Taxes: Social Security	$ 56.25	
Corporation	1.00	57.25
Licenses and Fees		45.50
Insurance and Bonds		355.34
Interest		1,919.84
Legal Expense		260.10
Bank Service		18.72
Advertising		44.23
Subscriptions and Dues		26.50
Fumigant		250.20
Depreciation		5,492.38
Total Expenses		12,171.15 6.73
NET OPERATING SAVINGS		$ 4,566.77 2.52

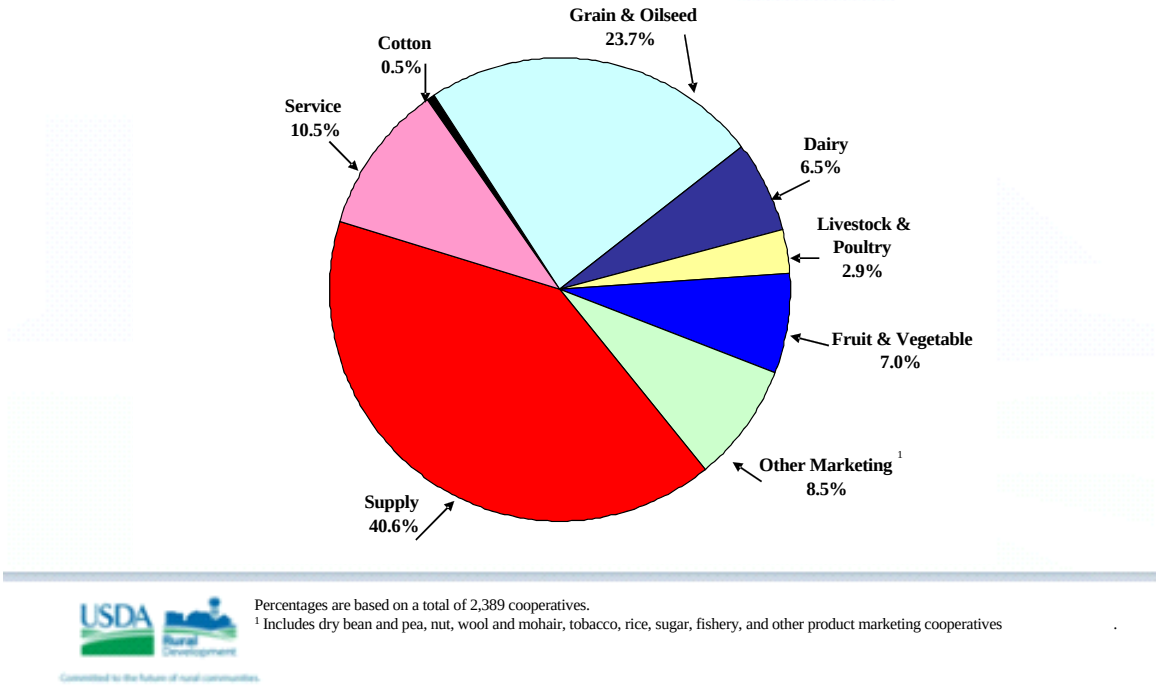
APPENDIX B

Number of cooperatives and memberships, by major business activity, 2009		
Major business activity	Cooperatives	Memberships
	Number	Thousands
Bean and pea, dry edible	6	1.7
Cotton	12	29.2
Dairy	154	53.3
Fish	37	5.3
Fruit and vegetable	167	32.2
Grain and oilseed[1]	566	437.3
Livestock	57	73.3
Nuts	20	16.2
Poultry[2]	11	0.5
Rice	14	11.6
Sugar[3]	32	10.9
Tobacco	9	65.1
Wool and mohair	58	10
Other marketing	26	6.5
Total marketing	**1169**	**753**
Supply	**970**	**1390.2**
Artificial insemination	13	61.2
Cotton ginning	168	26
Other services	44	16.7
Rice dryers	4	0.2
Storage	6	0.1
Transportation	15	0.5
Total Service	**250**	**104.7**
Total	**2389**	**2247.8**
1 Cooperatives primarily handling grains and oilseeds, excluding cottonseed.		
2 Cooperatives primarily handling eggs, turkeys, ratite, squab, and related products.		
3 Cooperatives primarily handling sugar beets, sugarcane, honey, and related products.		

Source: (USDA, USDA Rural Development Business and Cooperative Programs n.d.)

APPENDIX C

Distribution of Cooperatives by Type, 2009



Source: (USDA, USDA Rural Development Business and Cooperative Programs n.d.)

APPENDIX D

Cooperatives and memberships, by gross business volume, 2009[1]

	Cooperatives		Dollar volume		Memberships[2]	
Sales volume group(million $)	Number	Percent of total	Gross[3] (million $)	Percent of total	Number (1,000)	Percent of total
Less than 5.0	823	34.4	1,489	0.9	273	12.2
5 - 9.9	338	14.1	2,453	1.4	175	7.8
10 - 14.9	211	8.8	2,609	1.5	117	5.2
15 - 24.9	237	9.9	4,604	2.7	160	7.1
25 - 49.9	270	11.3	9,470	5.6	242	10.8
50 - 99.9	201	8.4	13,410	7.9	197	8.8
100 - 199.9	119	5.0	16,794	9.9	205	9.1
200 - 499.9	137	5.7	23,204	13.6	326	14.5
500 - 999.9	35	1.5	23,716	13.9	151	6.7
1,000 and more	18	0.8	72,494	42.6	402	17.9
Total[4]	2,389	100.0	170,243	100.0	2,248	100.0

[1] Business volume includes revenues from marketing plus the value of products bargained for or handled on a commission basis, supply sales, service receipts, and other income.

[2] Includes number of farmers, ranchers, and fishermen eligible to vote for directors. Does not include memberships held by other cooperatives, such as local cooperative

[3] Includes inter-cooperative business volume.

[4] Total may not add due to rounding.

Source: (USDA, USDA Rural Development Business and Cooperative Programs n.d.)

APPENDIX E

Cooperative Performance Profile (Electronically Submitted Attachment)

APPENDIX F

S0, S1, S2, S3 Financial Projections (Electronically Submitted Attachment)

APPENDIX G

Year	Total_Current_Assets	Total_Current_Liabilities	Working_Capital
1980	$1,300,425.00	$1,096,747.00	$203,678.00
1981	$2,405,206.00	$1,694,886.00	$710,320.00
1982	$1,297,538.00	$598,556.00	$698,982.00
1983	$1,817,045.00	$1,041,019.00	$776,026.00
1984	$2,307,547.00	$1,195,933.00	$1,111,614.00
1985	$1,636,089.00	$833,571.00	$802,518.00
1986	$1,224,323.00	$622,432.00	$601,891.00
1987	$1,647,023.00	$1,143,469.00	$503,554.00
1988	$3,575,460.00	$3,043,961.00	$531,499.00
1989	$5,075,454.00	$4,358,723.00	$716,731.00
1990	$7,288,229.00	$7,203,135.00	$85,094.00
1991	$5,901,985.00	$5,509,199.00	$392,786.00
1992	$7,347,806.00	$7,082,069.00	$265,737.00
1993	$6,195,570.00	$5,689,027.00	$506,543.00
1994	$11,365,035.00	$10,799,225.00	$565,810.00
1995	$10,611,130.00	$9,509,308.00	$1,101,822.00
1996	$16,592,065.00	$15,499,561.00	$1,092,504.00
1997	$12,256,216.00	$11,104,280.00	$1,151,936.00
1998	$12,902,185.00	$11,142,308.00	$1,759,877.00
1999	$15,974,188.00	$14,474,815.00	$1,499,373.00
2000	$26,173,474.00	$24,299,272.00	$1,874,202.00
2001	$32,100,046.00	$26,502,689.00	$5,597,357.00
2002	$31,688,545.00	$26,757,252.00	$4,931,293.00
2003	$33,727,814.00	$29,006,476.00	$4,721,338.00
2004	$44,011,675.00	$39,055,313.00	$4,956,362.00
2005	$34,185,467.00	$29,242,407.00	$4,943,060.00
2006	$53,282,805.00	$47,597,644.00	$5,685,161.00
2007	$84,843,878.00	$76,297,325.00	$8,546,553.00
2008	$196,897,837.00	$183,340,613.00	$13,557,224.00
2009	$81,967,473.00	$59,085,023.00	$22,882,450.00
2010	$92,541,179.00	$66,008,987.00	$26,532,192.00
011	$195,389,961.00	$169,977,838.00	$25,412,123.00