PATRON DEMAND DEPOSIT ACCOUNT AND REGIONAL PATRONAGE FINANCING ACTIVITIES OF AGRIBUSINESS COOPERATIVES

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Running head: Financing Agribusiness Cooperatives

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Abstract: This paper investigates agribusiness cooperatives' reliance on patron demand deposit accounts (PDDAs) and regional patronage as sources of capital. Approximately 13% of cooperatives carry PDDAs, typically fruit cooperatives, of which over one-half have no financial protection against large unexpected withdrawals. Cooperatives with PDDAs must be concerned with potential legal conflicts regarding the handling of these accounts, as evidenced by a U.S. Supreme Court case classifying PDDAs as securities. Supply cooperatives are most likely to show investment in other cooperatives as a high percentage of total assets, which could generate insolvency issues for locals.

Key Words: cooperative finance, patron demand deposit accounts, regional patronage.

Introduction

Like all business enterprises, agribusiness cooperatives have some authority to choose which forms of financing activities to use. However, the system of patronage unique to cooperatives creates two options of financing not available to investor-owned-firms (IOFs): patron demand deposit accounts (PDDAs) and regional patronage. Funds remaining as a result of unpaid pool proceeds or deposited into a cooperative patron's accounts, which receive interest payments and are available upon demand of the patron, constitute in large part PDDAs. These arrangements create inexpensive financing for the cooperative and profitable investments for their patron-depositors. Regional patronage financing occurs when local cooperatives rely upon cash patronage and retired equity payments from regional cooperatives to increase net income and/or rely upon retained equity in those regional cooperatives to increase total assets.

There is reason for concern regarding PDDA and regional patronage financing. If a cooperative were to primarily depend upon the use of these funds, there exists a risk that these funds will not be available, causing serious financial strain on the cooperative. For instance, the "demand" characteristic of PDDAs allows patrons to withdraw funds from their PDDAs whenever they choose. If a large amount of funds held in PDDAs were to be withdrawn at one time, the cooperative may run short of operating funds, possibly to the extent that they could not distribute those monies demanded. Under these circumstances, patrons are faced with not knowing if or when they will receive their money. If the cooperative were to fall into bankruptcy, it is then held liable to its patrons for debt financing and accountable under federal securities regulations. In the case of regional patronage financing, a local affiliated cooperative may not receive an annual patronage payment from its regional cooperatives and be forced to look for other financing to support operating funds.

Notwithstanding that PDDA financing has been in use for approximately 20 years, some cooperatives are unaware of the potentially severe implications these funds may bring (Duft 1988, 1998). Local cooperatives have relied upon patronage received from regional cooperatives for several decades. Some cooperatives have grown dependent upon these funds to show a net operating profit. Therefore, an objective of this study was to determine the extent to which PDDA and regional patronage financing activities are relied upon and analyze the implications of using them in order to provide information to cooperatives for their decision-making purposes. Further, we sought to identify the characteristics of agribusiness cooperatives that make them more predisposed to use PDDA and regional patronage financing activities. First, the extent to which cooperatives carry PDDAs was analyzed. Second, factors were identified which affect the likelihood that a particular cooperative will be involved with PDDA financing. Third, we analyzed the severity of local cooperatives' financial dependence upon regional cooperatives. Finally, we analyzed the factors which influence a local cooperative to be financially dependent upon a regional cooperative.

Patron Demand Deposit Accounts

Partly due to record high levels of the prime lending rate, United States agriculture was faced with great financial strain in the late 1970's and early 1980's. As a result, agricultural cooperatives needed lower cost sources of financing than were available through established banking institutions. Additionally, many cooperatives had met their maximum allowed borrowing capacity from banks (Bartsch and Dahigren 1997; Duft 1988). Of course, farmers, who were the members of these cooperatives, were concurrently experiencing financial stress. Additionally, members began to express their unease that cooperatives had continued to retain equity (non-interest-bearing money) which they owned but could not use. The culmination of

these factors in the late 1970's led to the creation of PDDAs in Washington State (Duft 1988, 1998).

The fresh fruit and grain cooperative industries of the State of Washington have similar systems of paying their member-growers for commodities. Upon delivery of the product, the grower is paid a portion of the expected pool value. Subsequent pool payments are made to the grower throughout the following months as portions of the product are sold by the cooperative. By spring, payments begin overlapping with grower supply purchases and storage payments to the cooperative. In some grower-cooperative relationships, it was suggested that those later payments simply be credited to the member-grower's account, against which purchases or payments could be made, or funds withdrawn if needed, by the member (Duft 1988, 1998).

At this point, cooperatives recognized that they were being allowed access to capital at no cost, and members saw that they were providing the cooperative with capital, at no cost. From this realization, a modest rate of interest was then paid to the grower for the amount of funds in their accounts. This rate was set to fall in the window above that which the member could gain from placing that money in a savings or related deposit account at the local bank and below the rate paid by the cooperative for borrowing operating funds from a banking institution (Duft 1988, 1998; Hanson et al. 1999).

It also appears that some of the payments made to grain producers were kept as credit balances in order to delay payment until the next tax year for the purpose of a tax benefit to the grower. In these cases, the member may have been paid a similar rate of interest for the time in which the payment was deferred (Duft 1988).

The use of PDDAs spread rapidly from Washington State throughout the Northwest and into other regions of the country. In fact, in Washington alone, funds in PDDAs grew from

approximately three million dollars in the early 1980's to around 100 million dollars in 1986 (Duft 1988, 1998). This exponential increase in PDDAs brought about concern, which led to the discovery of several potential problems. One drawback with PDDAs is that members are allowed to deposit additional funds in their grower demand accounts that may or may not be patronage related. These monies were sometimes personal funds generated from function other than agricultural production. Occasionally, funds were also being accepted from the general public. Allowing these situations to occur could be destructive to cooperative principals, such as non-appreciating stock value, limited return on patrons' invested capital, and equal access to services by all patrons (Duft 1988, 1998).

Second, a conflict of interest arose when the individuals who set the rate paid on such funds (the cooperative's management and the Board of Directors) were allowed to leave large sums of money in PDDAs. Another discrepancy arose when there was a drastic decrease in the prime rate, e.g. the cooperative's Board of Directors may not have been able to meet in a timely manner to lower the interest rate paid, so that it reflected the prime rate change (Duft 1988, 1998). As a result, the cooperative would sometimes be paying a higher rate of interest on PDDAs than on their commercial loans.

Third, the tax treatment of interest paid on PDDAs came into question. It was not clear whether the Internal Revenue Service would consider it to be the cost of debt, investment earnings of patrons, or patronage allocations to members (Duft 1988, 1998; Hanson et al. 1999).

Finally, there are legal questions with the use of PDDAs. Funds in PDDAs are available to the member upon their demand. If a large quantity of these funds were to be requested by members at once, the cooperative may have invested those monies elsewhere, or simply not have the available capital at that time to comply with the requests. Cooperatives are not held responsible to provide

security for their equity holders with the FDIC or a similar organization, as banks are (Duft 1988, 1998). Beyond a cooperative's line of credit being available through a bank to cover large PDDA withdrawals, there is therefore no security protection for account holders against those funds in PDDAs. Additionally, if a cooperative were to go bankrupt, the limited liability of cooperatives may be challenged insofar as the member losses could exceed member investment.

This situation arose in *Reeves v. Ernst and Young,* which resulted from the bankruptcy of Farmer's Cooperative of Arkansas and Oklahoma. Farmer's cooperative sold demand notes to its patrons, a version of PDDAs, without clear disclosure as to the risks involved. It went into bankruptcy and was unable to repay the patron demand notes. Note holders and the cooperative's bankruptcy trustee sued individuals of decision-making authority in the cooperative and the cooperative's accounting firm (Baarda 1989). The result was personal liability of directors, accountants, lawyers, and other individuals, in addition to the decision that demand notes were in fact "securities" (Baarda 1990). The cooperative was held accountable to antifraud provisions of securities laws.

Regional Patronage Dependency

As the agricultural cooperative trend developed in the mid-1900's, some very successful cooperatives grew to be recognized statewide, regionally, and even nationally. The benefits to being a member of a cooperative enticed several small cooperatives to become members of larger regional federated cooperatives. Over time, these member cooperatives built up large equities in the affiliated regionals. Just as members of local cooperatives often wait for several years to receive retired equity allocated to them for a certain year's patronage, the local cooperatives must also often wait many years to receive membership equity from the regional cooperatives. If a strong financial dependency is present, there exists the risk that business failure at the regional level will be detrimental to the

financial viability of the local member cooperatives.

Previous Studies

Over the past two decades, research of agricultural cooperatives has been based on four main topics: equity redemption, capital structure, developments in cooperative theory, and comparisons between cooperatives and IOFs. Only six papers have been published in relation to PDDA financing between 1988 and 1999. Of these, four have been strictly directed to the legal aspects of PDDAs (Baarda 1989, 1990; Bartsch and Dahigren 1997; Hanson et al. 1999). The remaining two papers dealt with the background and characteristics of PDDAs (Duft 1988, 1998). Additionally, two papers analyzed federated patronage dependency of local cooperatives (Cobia, Ingalsbe, and Royer 1989; Royer and Smith 1982).

Royer and Smith (1982) studied the intensity of member cooperatives equity in the affiliated regionals. Using 1976 data, Royer and Smith calculated that regional annual patronage refunds accounted for 27.9% of net income and losses for locals. Investment in other cooperatives was found to represent 8.5% of total assets and 24.2% of local patrons' equity. In 1989, Cobia, Ingalsbe, and Royer emphasized the fact that local cooperatives have great limitations when they are not receiving cash flow in the form of equity redemption and cash patronage from regional cooperatives.

Data

The cooperatives that were surveyed in this data set were identified from two sources, the Washington State Council of Farmer Cooperatives and the USDA Rural Business - Cooperative Service. The group was limited to exclude cooperatives that do not handle patronage in any way and those that function strictly as bargaining associations. Seafood related marketing or processing cooperatives and those that would soon be dissolving were also eliminated. Sixty-eight out the seventy-two remaining agricultural cooperatives in the State of Washington voluntarily participated

in the survey for this study. The interviews were conducted in-person in order to obtain a higher response rate and facilitate better understanding of the survey than could have been possible with phone interviews or mail surveys. The survey was designed to gather data on the cooperative's demographics (type of cooperative and its structure), factors to determine existence and characteristics of PDDAs, and presence and handling of regional patronage received. In addition, 1998 financial statements were collected.

The statistical characteristics of the sample can be found in Table 1. Grain handling/marketing cooperatives constituted 29.4% of the industry, 45.6% were farm supply cooperatives, 20.6% handled and marketed fruits and vegetables, 1.5% dealt with products of the dairy industry, and the remaining 2.9% provided strictly financial products. Almost all of the cooperatives (95.6%) were locally owned by farmers and ranchers, whereas the remainder were owned by larger cooperative structures, the regional or federated cooperatives. As expected, 92.7% of cooperatives were financially dependent upon regional patronage, with an average of 2.7% regional cooperatives providing patronage payments to each of the independent locals. The cooperatives in our data set held retained equity for 13.3 years before retiring these funds to the allocated members, with a range of zero to 34 years. Finally, the average age (length of operation) of the cooperatives in our sample is 60 years. Considering recent mergers and acquisitions, this ranged from two to 93 years.

Findings: Patron Demand Deposit Accounts

In general, PDDAs are no longer common in Washington State. The lack of PDDAs may be caused by the fact that if cooperatives get into financial trouble and cannot cover their PDDAs, the legal reprimands can be severe. We also found that many local cooperatives are dependent upon their investments in other cooperatives to represent a large portion of total assets and the annual

patronage payments from regional cooperatives to support higher net returns.

Seven out of the nine cooperatives carrying PDDAs were fruit cooperatives; the remaining two were grain cooperatives. Of the nine cooperatives with PDDAs, four stated that they did have a financial support system in place to protect themselves in the event that a large portion of funds in PDDAs were suddenly demanded in withdrawals by the respective members. These support systems included an operating line of credit that would cover all or a percentage of the funds tied up in PDDAs and/or an agreement with the bank to cover these large withdrawals if they should unexpectedly occur. Agreements with the banking institutions verified that the banks were aware of the practice of PDDA financing being in use at the cooperatives and the risks involved. It appears that the five cooperatives not supported by available credit are either ignorant of the risks involved with PDDAs or are knowledgeable of that risk but do not consider it to be potentially hazardous to their continued business operations.

For those cooperatives carrying PDDAs, a ratio was calculated of dollars in PDDAs to total liabilities (see Table 1). This ratio averaged 0.135, ranging from 0.035 to 0.241. Although the actual dollar amounts held in PDDAs may be very significant, it appears that the quantity of these funds in relation to total liabilities is not extremely significant.

It was determined that two of these cooperatives held not only grower demand deposits, but also grower debenture deposits, which carried time limitations within which the member could not withdraw funds. These debenture funds are considered long-term liabilities in their financial statements, as opposed to demand deposit funds, which are short-term liabilities. At fiscal year end 1998, one of these cooperatives relied strictly upon grower debenture deposits for long-term debt financing.

Of the 20 grain cooperatives surveyed, 16 allowed deferred payment contracts upon request

of their members. Two of the 16 pay interest on these funds for the duration of the contract. Three of the 16 stated that they pay a premium on grain on which payment is deferred. Under these premiums, the cooperative is safeguarded, as they are not paying interest to the member and are therefore not involved with PDDAs. Of the 14 fruit and vegetable cooperatives surveyed, three carried late season pool payments as member account balances, on which one paid interest. Member-patrons deposited funds as investment at three fruit cooperatives. None of the cooperatives accepted deposits as investment from non-member patrons or public investors.

In cases where interest was paid on member accounts, the rate characteristics were fairly consistent. Any one or a combination of the chief financial officer, controller, manager, or board of directors are responsible for setting the interest rates. Such rates are determined according to either CoBank lending rates, the prime rate, money market rates, demand deposit rates, or local bank rates accessible for grower loans. In all cases the rate was adjusted monthly, except for one cooperative applying a 5% flat rate.

With reference to the background of PDDAs, this study found a contradiction to previous beliefs of the use of these funds. It was found that fruit and grain cooperatives typically do not provide supply products to their members. The general implication of the managers interviewed was that any funds receiving interest payments were not used as member account credit balances against which to purchase products.

Factors Affecting the Choice to Use Patron Demand Deposit Accounts

Univariate logit models can be used to analyze the factors affecting choices. We use a standard binary choice model in which the cooperative chooses whether or not to use PDDA financing.

Formally,

(1) $$V(y, z) = b\, z + e$$

and

(2) $$y = 1,\ if \quad V(.) \geq 0 \ \ or\ e \geq -zb,$$

$$y = 0,\ if \quad V(.) < 0,$$

where V(.) is an unobserved latent response variable, $ is a vector of unknown parameters to be estimated, *z* is a vector of explanatory variables, e denotes the error terms which are assumed to have a logistic distribution; and *y* is the dependent variable representing the observed outcome of a binary choice. The choice equation (whether to use PDDAs) can be written as:

(3) $$y = b'z + e,$$

where

$$y = \begin{cases} 1 & if\ PDDAsareused \\ 0 & otherwise \end{cases}$$

The conditional probability that a particular cooperative, given *z*, will use PDDAs is given by:

(4) $$P(y = 1 \mid z) = P(b'z + e \geq 0 \mid z$$

The estimated logit equation was formulated as follows:

(5) $$y = b_1\, fruit + b_2\, years + b_3 othercoops + e$$

where:

y = patron demand deposit accounts (0 = no, I = yes)

fruit = fruit cooperative (0 = no, I = yes)

years = number of years the cooperative has been in existence

othercoops = total dollars invested in all other cooperatives

Other variables such as other types of cooperatives (grain, supply, dairy, and financial) were excluded from this formulation of the logit equation because they were not statistically significant in predicting PDDA presence.

The estimation results from the choice equation (5) are presented in Table 2. All of the explanatory variables have the expected sign and are significant. We find that fruit cooperatives are likely to have PDDAs. The explanation for the positive effect is that as the pool payments in fruit cooperatives are distributed over nearly half of the year, overlapping the time when grower payments are made to the cooperative; whereas other cooperatives do not typically have this type of payment system. Grain cooperatives use similar deferred payments; however they are usually requested by the producer to serve as a tax benefit.

We find that a higher number of years that the cooperative has been in operation makes the cooperative less likely to carry PDDAs. This is logical in that newer cooperatives would be more likely to venture into diverse financing activities. Further, younger cooperatives would have been faced with the financial agricultural hardships of the late 1970's and 1980's, having not had much equity built up to carry them through this time. Compared with the more stable, older cooperatives, these younger cooperatives had a greater need to find more efficient financing resources.

Finally, the results indicate that total investment in other cooperatives has a negative effect on the probability that a cooperative will use PDDAs. This indicates that a local cooperative with little investment in regional cooperatives is more likely to be active in PDDA financing than locals

with larger regional equity stores. This is logical in that receiving a lesser amount of patronage from other cooperatives would bring about the need for obtaining operating funds from some other source, for example, through PDDAs.

Findings: Regional Patronage Dependency

The ratio of patronage received from other cooperatives to net income is a measure of intensity or severity of a cooperative's dependency upon regional patronage. This ratio averaged 0.219, and ranged from -6.569 to 4.044 (see Table 1). It is apparent that some local cooperatives are in fact significantly dependent upon regional patronage payments for profitability. Additionally, we found that seven local cooperatives show a net operating loss if it were not for the patronage received from other cooperatives. From the financial data, these cooperatives show a net loss before receiving regional patronage and a net income if regional patronage payments added. If this situation were to take place over a period of several consecutive years, long-run viability of the local cooperative is potentially being misrepresented to its member-patrons.

In a cooperative's financial statements, investment in other cooperatives is listed under non-current assets. When investment in other cooperatives accounts for a significant percentage of total assets, the cooperative's ability to remain solvent is decreased, as these funds can only be made available at the discretion of all other cooperatives in which equity is held. The following linear regression model uses a ratio of investment in other cooperatives to total assets (HOC/TA) as the dependent variable. Of the cooperatives surveyed, their IIOC/TA ratio averaged 0.146, ranging from 0.0 to 0.551 (see Table 1). This indicates that some of Washington's agribusiness cooperatives are heavily invested in other cooperatives and have a significant potential for insolvency conflicts.

In order to analyze the relationship between certain cooperative characteristics and investment-in other-cooperatives-to-total-assets ratio, we estimated the following equation:

(6) $$IIOC/TA = b_0 + b_1 supply + retire + e$$

where:

supply = supply cooperative (0 = no, I = yes)

retire = number of years for local cooperative to retire local certificates of equity

e = white noise error term

The estimation results from the choice equation (6) are presented in Table 3. Other types of cooperatives (grain, fruit, dairy, and financial) were excluded from this model because they are not statistically significant. The coefficients for both of the explanatory variables are positive and highly significant. The supply cooperatives have higher investment-in other-cooperatives-to-total-assets ratio. This can be explained by the fact that most supply cooperatives are members of Cenex/Harvest States, one of the largest regional cooperatives in the United States. They obtain a large portion of their products from Cenex/Harvest States and therefore hold large equities in this particular regional cooperative. Fruit, grain, dairy, and financial cooperatives tend to be more diversified in the equity they hold in other cooperatives. For instance, these types of cooperatives would be patrons to a number of smaller, more specialized regional or local cooperatives, resulting in a less significant total equity in other cooperatives.

The results also indicate that the number of years that it takes the local cooperative to retire local certificates of equity has a positive correlation with investment-in other-cooperatives-to-total-assets ratio. This is relevant in that regional cooperatives may not revolve equity in those years of difficult financial circumstances, subsequently accumulating higher values investment-in other-cooperatives-to-total-assets ratio for the local member cooperatives (Cobia, Ingalsbe, and Royer 1989). The resulting decreased cash flow in regional patronage makes it more difficult to distribute

local equity stores to members, prolonging the number of years it takes for the local cooperative to retire certificates of equity to its members.

During the interview process, managers were asked how regional patronage received was accounted for and distributed to local members. In theory, it can be done one of two ways. First, a regional patronage check (current cash patronage plus the previous year's retired equity) may be deposited in the local cooperative's general fund and accounted for as a portion of net income, which is then allocated to local members as the current year's patronage equity. Second, a regional patronage payment may be deposited and recorded separately as the current year's cash patronage and retired equity from a specific year's allocation. The local cooperative's extensive equity records system would immediately distribute the regional retired equity funds to the patrons who were allocated local equity in that same fiscal year. In other words, regional retired equity would not be given to current local patrons; rather, it would be passed directly to those members who funded local cooperative operations in the year of the earlier regional equity allocation.

We found that all cooperatives used the first method. Therefore, local cooperatives are relying heavily upon regional patronage payments to provide a greater amount of operating capital. More specifically, net income is higher because regional retired equity is kept with regional cash patronage, as opposed to the second option above. This higher level of net income leaves a greater amount of funds to be allocated as the current year's local cash patronage or retained equity, the later creating operating capital. If local cooperatives were to use the second option described earlier, they would be retiring a greater amount of local equity. This would result in decreasing the length of time equity is held, creating a more satisfied membership, and eventually decreasing the financial dependence upon regional cooperatives.

We found that many local cooperatives have equity stored in regional cooperatives that was

allocated to them several years previous. Some local managers were not aware of how many years' worth of equity their cooperative had built-up in the regional cooperatives. Recently, with mergers of the larger regional cooperatives, for example, the Cenex/Harvest States/Land 0' Lakes merger of 1998, equity distribution is being slowed further to facilitate higher than normal capital requirements.

Conclusions

During the period of financial difficulty in agriculture of the late 1970's and 1980's, agricultural cooperatives and producers began looking for more efficient methods of financing. The benefits of reserving patronage-sourced funds as operating capital, with the cost of interest paid to the respective patrons, became widely used in Washington State. This practice became known as PDDA financing. Secondly, local cooperatives increasingly began to rely on patronage received from regional cooperatives to support local annual net income.

This study analyzed these two forms of financing. Using a survey of agribusiness cooperatives in the State of Washington, we found that nine of the 68 cooperatives carried PDDAs and 63 received annual patronage payments from regional cooperatives. Fruit cooperatives are most likely to be active in PDDA financing. Additionally, newer cooperatives and those with a lower investment in other cooperatives are more likely to carry PDDAs. Of the cooperatives involved with PDDA financing, approximately half have anticipated the possibility of financial failure due to a sudden, large withdrawal of such funds. These cooperatives have secured operating lines of credit and/or other agreements with their banking institutions to protect their financial position if such an event should occur. However, the outcome of *Reeves v. Ernst and Young*, which classifies patron demand notes as securities, indicates that there is sufficient cause for concern for all cooperatives paying interest to their member-patrons-depositors for the use of their funds.

The results from a linear regression model allow us to conclude that supply cooperatives are most likely to be dependent upon regional patronage received. We also found that the greater the number of years that local cooperatives retain equity with a greater level of investment in other cooperatives. Results from a ratio of investment in other cooperatives to total assets indicate that some local cooperatives could face insolvency difficulties with this ratio being as high as 0.551. From their financial data, we noted that seven out of 65 cooperatives relied upon regional patronage payments to show a net income rather than a net loss in 1998. Given these findings, we conclude that some local cooperatives are becoming too dependent on their investment earnings in other cooperatives for their financial status to be acceptable to their local patrons.

The purpose of a cooperative is to best serve its members. When regional patronage is not being redeemed to its members (local cooperatives), then local cooperatives are not able to redeem local patronage as efficiently to their members (producers). Therefore, regional cooperatives are not serving their membership as effectively as possible.

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Table 1. Descriptive Statistics

Variable	Mean	Std. Dev.	Min.	Max.	Cases
PDDA (patron demand deposit accounts, 0=no 1=yes)	0.132	0.341	0	1	9
GRAIN (grain cooperative, 0=no 1=yes)	0.294	0.459	0	1	20
SUPPLY (supply cooperative, 0=no 1=yes)	0.456	0.502	0	1	31
FRUIT (fruit cooperative, 0=no 1=yes)	0.206	0.407	0	1	14
DAIRY (dairy cooperative, 0=no 1=yes)	0.015	0.121	0	1	1
FINCL (financial cooperative, 0=no 1=yes)	0.029	0.170	0	1	2
LOCAL (locally owned by farmers, 0=no 1=yes)	0.956	0.207	0	1	65
RPD (regional patronage dependent, 0=no 1=yes) (no. of regional cooperatives providing patronage)	0.926	0.262	0	1	63
YEARS (years in existence)	60.0	20.5	2	93	68
RETIRE (years to retire local equity)	13.3	8.3	0	34	68
PATREC (patronage payments received from other cooperatives)	$183,511	724,672	0	$5,876,000	65
NI (net income)	$4,450,974	21,475,258	-$919,359	$150,203,000	65
IIOC (investment in other cooperatives)	$4,227,880	28,380,028	0	$229,446,000	65
TA (total assets)	$366,327,544	2,486,823,570	$122,659	$19,914,914,000	65

Table 1. Descriptive Statistics (cont'd)

Variable	Mean	Std. Dev.	Min.	Max.	Cases
PDDADOL (quantity of funds in PDDAs)	$4,516,126	8,341,623	$391,256	$23,310,000	7
TL (total liabilities)	$320,079,216	2,295,252,080	$46,431	$18,465,332,000	65
PE (patrons' equity)	$46,105,419	224,681,575	$220,747	$1,449,582,000	65
PRE/PE (regional patronage payments received/patrons' equity)	0.033	0.033	0.001	0.157	58
PREC/NI (regional patronage payments received/net income)	0.219	1.240	-6.569	4.044	59
IIOC/PE (investment in other cooperatives/patrons' equity)	0.233	0.192	0.011	0.846	59
IIOC/TA (investment in other cooperatives/total assets)	0.146	0.145	0.000	0.551	65
PDLRS/TL (funds in PDDAs/total liabilities)	0.135	0.090	0.035	0.241	7

Table 2. Discrete Choice Model Estimation Results. Dependent variable: Use of PDDAs

Variable Name	Coefficients	t-statistics	Marginal Effects
Fruit	2.02*	2.67	0.437E-2
Years	-0.03*	-3.40	-0.612E-4
Other coops	-1.20E-6*	-.203	-0.248E-8
Correct Predictions	83.08%		

*The coefficient is significant at "=-.01

Table 3. Estimation Results: Relationship of Cooperative Characteristics to Investment-in other-cooperatives-to-total-assets ratio.

Variable	Coefficient	t-statistics
Constant	0.616	0.31
Supply	0.215*	9.83
Retire	0.003*	2.49
$R^2 = 0.68$		

*The coefficient is significant at " = 0.01