**Managing Capital Structure**

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All of the assets in a cooperative must be financed by some forms of debt and equity. Those assets include the fixed assets such as the plant, building, equipment and rolling stock as well as the short term assets such as accounts receivable and inventories. When we discuss capital structure we are referring to the choices that the cooperative made in creating the capital to fund all of its assets. Capital structure impacts the profitability and return on investment of the firm and also has major impacts on risk.

**Financial Leverage**

There are two primary sources of funding a business: debt capital and equity. The degree to which the cooperative is funded by debt is measured by either the debt to equity ratio or the debt to asset ratio. Both ratios are measures of financial leverage. A firm that funds a greater portion of its assets with debt is said to be more highly levered. Financial leverage amplifies the effect of profit or loss on the owners return. When the firm is highly leveraged (has a higher portion of debt financing) a profitable situation will result in greater impact on the owners return on investment relative to a similar firm that experienced the same profits but was funded only by equity. On the other hand, when the firm is highly leveraged an unprofitable situation will result in greater losses to the owners relative to that of an unlevered firm. Debt financing also involves obligations to make scheduled principal and interest payments. If the firm is unable to make those payments on schedule the lenders can force the firm into bankruptcy. For those reasons higher leverage (higher ratios of debt to assets) increases the risk of the firm. Debt capital only increases the owners return when the internal rate of return of the cooperative is greater than the interest rate. Cooperatives with higher profits are therefore more likely to have higher leverage.

**Debt Financing**

Debt is money borrowed from a lender with a promise to pay the principal and interest on a set schedule. Almost all loans involve a loan contract which gives the lender certain rights. Failure to make the scheduled payments can result in the lender exercising those rights. The most extreme case would be for the lender to force the firm into bankruptcy and liquidate the assets. In that case the value of the firm would be distributed to the lenders holding claims on the firm, in the order of the priority of those claims. Any residual value would then go to the owners of the firm. It is that structure of debt financing that creates both the returns and risk of leverage. Because debt payments are fixed, if the firm is able to use the funds or project that create profits in excess of the loan payments, then that excess flows to the owners and increased their return. On the other hand, if the firm is not profitable the firm must still pay the lenders at the agreed on schedule and the burden of those payments falls on the owners.

There is generally a rationale for a cooperative, or any other firm, to take on debt financing. First, as described, debt financing creates the opportunity for the owners to increase their return on investment. Second, the owners of the firm often have difficulty in providing the funds to finance all of the firm’s assets. This is particularly true in agricultural cooperatives. The cooperative members are financing their own farming operations. The equity that they provide to the cooperative therefore competes for the funds they need to finance their farming operations. Cooperatives are also unique in that they are usually limited to obtaining equity capital from their user members.

Open membership cooperatives typically create that equity out of the profit stream by distributing a portion of profits in the form of stock. That means that they can only create equity when they are profitable. Closed membership cooperatives create equity by selling membership stock during their formation period. That membership equity is typically linked to a usage right. Equity drives in a closed membership cooperative are complex and costly. Those sources and structures for raising equity in cooperative firms are in contrast to investor owned firms that can sell equity at any time. Most large investor owned firms are publically traded meaning that they can raise equity capital by selling stock on public stock exchanges. It is easy to see that cooperatives do not have unlimited access to equity capital and have a rationale for some degree of debt financing.

A third rationale for debt financing is that interest payments are tax deductible. Cooperatives can reduce their taxable income by issuing cash and qualified stock patronage to members and by redeeming previously issued nonqualified stock. Because of those tools to reduce taxable income, deductible interest expenses are not as important for cooperative firms. Still, most cooperative have non-member business which creates taxable income. When a cooperative has taxable income equal or greater to its interest expense, the interest expense is reduced by the tax savings. For example a cooperative paying 5% interest with a 30% tax rate would have an after tax interest rate of 3.5%

**Cooperative’s Use of Debt**

According to the most recent USDA Agricultural Cooperative Statistics (2017) agricultural cooperatives financed 54% of their total assets with some form of debt. Larger cooperatives tend to have higher portions of debt financing. The smallest category of cooperatives (under $5 in annual sales) had a debt to asset ratio of 36%. For all size categories of cooperatives, short term financing represented more than 50% of total debt. Short term financing is typically used to fund inventories, accounts receivables and other short term assets.

**Sources of Debt**

Commercial Banks

Cooperative banks (discussed below) are an important source of both short term and long term debt financing for cooperatives. Like other firms, cooperatives can also borrow from commercial banks. Historically, banks have not been active in financing cooperatives because they do not understand the business model. Commercial banks have a particularly difficult time in understanding cooperative’s structure of patronage refunds and equity redemption. The dynamic nature of cooperative equity is troubling to bankers that are used to dealing with permanent equity capital.

Cooperative Banks

The greatest real advantage cooperatives have in the acquisition of debt capital is that they can borrow from their own cooperative lenders. Agricultural cooperatives have access to CoBank in the Farm Credit System. Non-agricultural cooperatives can use the National Cooperative Bank, and rural utility cooperatives can use Cooperative Finance Corportation. Because these lenders are themselves cooperatives, they understand cooperative finance better than other lenders. CoBank is part of the Farm Credit System (which is itself a cooperative) and has a national charter to serve cooperatives. By its original authorizing legislation, the Farm Credit System had 13 banks for cooperatives that were established regionally around the U.S. In the late 1980s, CoBank was formed through the merger of 11 of the original 13 banks. By mid-1999, all the original banks had joined CoBank which now has the sole Farm Credit charter to serve cooperatives. The funds that CoBank lends cooperatives are borrowed from the government-sponsored-enterprise market through the Farm Credit Funding Corporation. In essence, CoBank sells bonds in national capital markets and then lends those funds to its cooperative borrowers. While the Farm Credit Funding Corporation bonds are not backed by the federal government, the agency is associated the U.S. government. For that reason, investor perceive the bonds to be low risk and will purchase them at slightly lower interest rates, relative to corporate bonds. This source of funding provides a relatively low cost source of financing for cooperatives

CoBank is owned by the cooperatives that borrow from it. When a cooperative obtains

its first loan from CoBank, it must purchase stock just like any member joining a cooperative.

Ultimately, the borrowing cooperative must make an investment in CoBank in proportion to the

size of its loan. The borrowing cooperative most often acquires its equity via retained patronage

refunds. The relationship between CoBank and its member cooperatives is equivalent to that between other cooperatives and their members. For this reason, it also has some of the same challenges in its relationships with borrowers that cooperatives have with their member patrons. Based on the legislation authorizing the Farm Credit System, CoBank has strict policies that regulate borrower eligibility for its loans. In order to eligible to borrow from CoBank a business must:

(10 Do 50% of its business with members,

(2) Have 80% of its equity owned by producers and

(3) Operate on a cooperative basis with respect to voting and profit distribution.

Cooperatives borrowing from CoBank must also meet the financial requirements established by the bank. These requirements vary according to prospects for individual cooperatives. CoBank evaluates applications in much the same way as do other lending agencies. Such factors as repayment ability, collateral, balance sheet, and income statement changes or trends, quality of management, and member support enter into approval of a loan. CoBank makes seasonal and long-term loans. The former are used to finance short-term seasonal needs such as inventories, which, in agribusiness, may represent a relatively large portion of total liabilities at certain times during the year. Long-term loans are used to finance long-lived assets such as land, buildings, and equipment.

The National Cooperative Bank

The National Cooperative Bank (NCB) was established by Congress in 1978 and then was privatized in 1981. NCB serves organizations that are defined as cooperatives, as well as those having similar organizing principles. The scope of its membership is quite large, including independent grocery cooperatives, Employee Stock Ownership Plans, housing cooperatives, purchasing cooperatives, and other similar groups. NCB goes directly to the capital markets for debt financing as well as sells pools of cooperative loans into the market.

The National Rural Utilities Cooperative Finance Corporation

The National Rural Utilities Cooperative Finance Corporation (CFC) is a cooperative banking entity created by rural electric cooperatives in 1969 to supplement government lending programs. Today, CFC offers a full range of financial products and services to member utility cooperatives. Like NCB, CFC is a conduit for its members to the private capital markets. In addition to serving rural electric cooperatives, CFC operates several affiliated organizations—the Rural Telephone Finance Cooperative and the National Cooperative Services Corporation. All of the cooperative banks, CoBank, NCB, and CFC, share one thing in common—they have special insights into the financial needs and challenges of the cooperatives who are their members. Member cooperatives know that they can count on these institutions when other private sources of borrowed capital may not come through with required funds or may not understand the needs of cooperative organizations.

Loans from Members

Cooperative can potentially borrow funds from their members. Member financing raises numerous issues. One question is whether the cooperative will be considered to be selling a security. If so the firm may have to register the offering with the Securities Exchange Committee. That registration process is complex and may cost hundreds of thousands of dollars. Member financing also exposes members to an additional source of risk from the cooperative. The attractive aspect of member financing is that the interest rate that the cooperative is paying is often higher than what members can obtain in their bank savings accounts. That creates the opportunity for the cooperative to obtain funds at a lower interest rate while giving members higher rates, relative to their local bank. Historically, many local cooperatives made the mistake of issuing demand notes to patrons. The notes functioned like certificates of deposit in a local bank except that the members could cash them in at any time. When the economy took a down turn, the members all rushed in to redeem their notes at the exact time the local cooperatives were struggling to obtain funds.

Trade Credit

Just like other business, cooperatives often finance a portion of their current assets with trade credit. When a cooperative purchases fuel, fertilizer and other inventories they often have a short period of time to make the payments. Those obligations show up as accounts payable on the cooperative balance sheet and are a source of financing. Regional cooperatives may be particularly willing to supply trade credit to local cooperatives.

**Cooperative Equity**

Equity is the investment that member-patrons make in the cooperative. According to cooperative principles, members have a key responsibility to provide equity. Cooperative equity can be allocated (issued in the specific name of a member) or unallocated (a general reserve fund that is collectively owned). Cooperative equity can also be revolving, semi-permanent or permanent. Revolving equity can be qualified or nonqualified. The distinction between qualified and nonqualified equity relates to the taxation of the patronage distributed as equity. Both qualified and nonqualified equity are forms of revolving equity and are similar in terms of the cooperative’s capital structure or equity management system.

Because cooperatives distribute profits based on use, and not in proportion to equity ownership, there is little incentive for members to invest equity capital. Open membership cooperatives often create equity out of the profit stream by issuing a portion of patronage in the form of equity. Closed membership cooperatives often link each unit of equity with a usage right. Members hold equity in a closed membership cooperative order to use the cooperative and receive patronage in proportion to their use.

Equity in any firm is risk capital. Equity holders have the right to the residual returns. In other words the owners of any firm have a claim on what is left over after all of the creditors have been paid. When a cooperative is profitable and retains a portion of the profits as equity then the equity value of the cooperative increases. If the cooperative loses money then the equity value of the firm decreases. Lenders like to see a strong equity base because it enhances their collateral position and makes the loan less risky. When a substantial portion of the assets are financed by equity the lender knows that if the cooperative is unable to make the loan commitments and is forced into bankruptcy it is likely that the assets can be sold to generate enough funds to pay off the creditors. The cooperative equity is the basis for its borrowing capacity. Agricultural cooperatives have historically financed between 40% and 50% of their assets with equity.

Direct Investment

Direct investment is equity created when a member makes a cash contribution or investment in exchange for equity. Direct investment is allocated equity since it is held in the names of specific patrons. Direct investment is semi-permanent. It is typically not redeemed by the cooperative until the death of the member. The most common form of direct investment is the membership share of stock that a member must purchase as a condition of joining the cooperative. In an open membership cooperative the membership share is often a nominal amount ranging from $100 to $1,000. In closed membership cooperatives direct investment shares of equity have associated usage rights and members have to purchase shares in proportion to their use of the cooperative. For example, when Dakota Growers Pasta was formed, members bought shares of stock in the cooperative for $3.85 a share. Each share purchased required the member to deliver one bushel of durum wheat each year. The cooperative raised $12.5 million in equity in this manner and secured for itself nearly 3.25 million bushels of durum. For new generation cooperatives, the vast majority of their equity is in the form of direct investment.

Direct investment is usually the only option available to raise the equity to start a cooperative. The equity drive to obtain the direct investment helps to determine if there is enough interest and commitment to establish the cooperative. By raising direct investment the incorporating board can ensure that the cooperative has the proper level of equity. In terms of existing cooperatives, direct investment or membership stock ensures that members have some “skin in the game” before they are granted the right to vote and use the cooperative’s assets. As the amount of direct investment is increased, the cooperative has less need to retain profits as equity and can issue higher portion of cash patronage. The major disadvantage of direct investment is that because cooperative profits are distributed in proportion to use, there is no return linked to investment. In an open membership cooperative equity does not appreciate and it cannot be bought and sold. Because of that, members have little interest in investing in cooperative equity. In a closed cooperative, there may be a limited market for the cooperative equity because of the usage rights. Direct investment is not generally a recurring source of equity capital since it takes a special effort to develop an equity drive and that often requires careful compliance with security laws and regulations/

Retained Patronage Refunds

Retained patronage refunds are portions of the net income allocated to members but paid in the form of equity rather than cash. Retained patronage refunds creates allocated equity since it is held in specific patron accounts. Retained patronage refunds is typically revolving equity meaning that it is eventually redeemed for cash by the cooperative at its original face value. Traditional, open membership cooperatives have traditionally raised the majority of their equity through retained patronage refunds.

The advantage of retained patronage from the member’s perspectives is that it created from the profit stream and members to not have to make cash investment. Members essentially “earn their way into ownership”. Retained patronage is well suited for supply cooperatives and for grain marketing cooperatives. In those instances, producers have other options for purchasing inputs and selling their commodities. While they might be interested in joining the cooperative in order to be eligible for patronage, they are unlikely to make a large up front direct investment. Retained patronage is a systematic method for the cooperative to build equity and one that it is relatively painless for the member.

The disadvantage of retained patronage from the cooperative’s standpoint is that it is dependent upon the profitability of the cooperative. If the cooperative has a loss year the equity value of the cooperative is reduced. That creates a need for more equity but the cooperative obviously cannot created retained patronage equity until it is profitable. The revolving fund aspect of retained patronage also creates challenges for the cooperative board of directors. When they redeem equity the cooperative is using cash and also reducing (destroying) equity. That creates the need to create more equity and cash through retained patronage. Revolving equity creates a complex balancing act for the board of directors. Another disadvantage of retained patronage and revolving equity is that members may expect the cooperative to revolve equity regardless of its financial condition. Members only realize value for the share of profits distributed in the form of equity when that equity is redeemed for cash. That causes members to want the cooperative to revolve equity as rapidly as possible and to keep the revolving cycle constant or increasing.

Per Unit Capital Retains

Per unit capital retains, also called per unit retains, are equity that is deducted from the member’s commodity payment for each unit of commodity handled. Some marketing cooperative operate as pooling cooperatives. All of the commodity delivered by the patrons are pooled and then processed, packaged and marketed by the cooperative. The patrons often receive an intermediate payment to cover their production expense and then receive a final distribution when all of the commodity is sold and the pool is closed. While one can think of the intermediate payment as a commodity payment and the final payment as patronage there is really no dividing line because there is no defined price for the commodity. Pooling cooperative therefore do not have patronage and cannot make retained patronage distributions (stock patronage). The per-unit retain is an alternative means for the cooperative to create equity. Per-unit retains differ from retained patronage in that they are based solely on the units of commodity handled and not on profits.

Per unit retains create a stable source of equity for the cooperative since they are not based on profitability. The disadvantage of per unit retains from the member’s standpoint is that the cooperative deducts equity even when commodity prices are low. Some members may also feel that the stable source of equity, regardless of profitability, places less pressure on the cooperative to operate profitably and efficiently. Because per unit retains are deducted from the commodity payment, some members perceive that the cooperative is not price competitive. Per unit retains creates allocated equity and it can be allocated as either qualified or nonqualified equity. They are taxed in a similar way to patronage refunds except that a cooperative issuing qualified per unit retains does not have the requirement of issuing at least 20% cash patronage, which is a requirement for qualified patronage refunds.

Unallocated Equity

Unallocated equity, also called unallocated retained earnings is a general reserve fund that is collectively owned by the members but not individually owned. As the name implies unallocated equity is unallocated and it is the only permanent category of equity in a cooperative since it is never revolved or returned to the members. One of the purposes of unallocated equity is to create a reserve fund that can be reduced if the cooperative experiences a loss. In the absence of unallocated equity the cooperative would have to write down the value of the member’s stock in any year that a loss occurred. If the cooperative returned to profitability new retained equity would be created but the value of the stock that was written down would not change. Stock write downs create a member communication challenges and also lead to confusion among members as to the value of their allocated equity. Unallocated equity is often created from the profits on non-member business. In that case, it is logical since non-member profits cannot be allocated to patrons and the cooperative must always pay tax on those profits.

A more controversial source of unallocated equity is when a portion of member profits are retained as unallocated equity. The disadvantage of retained member profits as unallocated equity (from the member perspective) is that unallocated equity are never revolved by the cooperative and the member never receives those profits. If a cooperative is liquidated, the residual value of the firm, after all creditors are paid, is distributed to members in proportion to past use during some defined “look back periods”, typically around 6 years. Active members therefore still have a claim on the assets funded by unallocated equity. However, once a member becomes inactive they eventually leave behind any claim on the unallocated equity. High levels of unallocated equity can therefore create an incentive for members to liquidate a cooperative in order to capture the value of the unallocated equity. That phenomenon is know as “demutualization”. High levels of unallocated equity are rarely the direct cause for members to vote for liquidation, but it can be a contributing factor.

Unallocated equity reduces the member’s return from the cooperative since the profits retained as unallocated equity are never returned to the member. It therefore violates the principle of distributing profits in proportion to use. It may also reduce the member’s sense of ownership in the cooperative since it is not reflected in the stock amounts held in the owners name. Despite those facts the portion of unallocated equity in agricultural cooperatives has been increasing. According to USDA cooperative statistics, allocated equity represented approximately 60% of cooperative equity in 2017 with 40% being unallocated. Many boards of directors are attracted to retaining profits as unallocated equity since it avoids the need for future equity redemption payments.

Preferred Stock

Most cooperative bylaws permit the cooperative to sell preferred stock to either members or non-members. Preferred stock owners do not have voting rights. If the cooperative is liquidated, the preferred stock holders have a claim on the residual value ahead of the common stockholders. That is the origin of the term ‘preferred”. There is typically no market for preferred stock in a cooperative and, as we know, cooperative profits are distributed based on use, not stock ownership. Because of those facts, cooperative preferred stock typically carries a dividend rate. The maximum dividend is often limited by law to 8%. The board has discretion not to pay the dividend if the cooperative does not have the financial resources. That is what makes preferred stock equity and not debt. However, the board cannot pay patronage unless the preferred dividends have been paid. Because there is no public market for cooperative preferred stock, cooperative typically establish some system where members can petition the board to have the preferred stock redeemed.

In recent years, some progressive cooperative have redeemed revolving equity by converting it to preferred stock. The effect is that after some period of time, the cooperative begins to pay dividends on patron equity. That can be beneficial to the cooperative since they don’t have to expend the cash to revolve the equity (only to make the dividend payment). Many members may also be happy to hold the equity since they are receiving a dividend. The cooperative can also use the profits from non-member business to pay the dividend payment. The preferred stock dividend is often higher than the cooperative’s interest rate. It is therefore not a cost effective alternative for the cooperative, but since the funds are going to members and to outside lenders it may still be considered to be in the member’s interest.

Nonmember Sources of Equity

One limitation of the cooperative business model is that it generally does not lend itself to raising capital from nonmember investors. Cooperatives can sell preferred stock to non-members. As mentioned previously the dividends on cooperative equity are often limited to 8% either by law or by the cooperative’s bylaws. In low interest rate periods of time cooperative preferred stock could be attractive to nonmembers. However when interest rate rise investors have alternative investment choices which would be considered lower risk and providing a higher rate of return. Regional cooperatives are able to justify the security registration costs and issue preferred stock that is publically traded on stock exchanges. Local cooperatives cannot justify that process which means that there is no formal market for their preferred stock. That makes the preferred stock an illiquid investment which also limits the interest from nonmember investors.

The hybrid member-investor cooperative form has two classes of members. Investor members receive a share of profits based on their ownership while user members receive a share of profits based on patronage. That creates a direct incentive for nonmember investment and addresses some of the limitation in raising nonmember equity. However, unless the cooperative is large enough to afford to register with the Security Exchange Commission there will probably not be a formal market for the investor member stock. The investor members may also be concerned that the user members will manipulate the price paid for commodities or charged for inputs such that the users benefit while reducing the profits paid to the investors. For those reasons, the member-investor model has not been particularly successful as a vehicle for attracting nonmember investment.

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| Classification of Cooperative Equity | | | |
|  | Allocated or Unallocated | Revolving, semi-permanent or permanent | Qualified or non-qualified |
| Direct investment | Allocated | Semi-permanent | NA |
| Retained patronage | Allocated | Revolving | Can be either |
| Per Unit Retains | Allocated | Revolving | Can be either |
| Preferred stock | Allocated | Semi-permanent | NA |
| Unallocated Retained Earnings | Unallocated | Permanent | NA |

**Equity Redemption**

Equity redemption is the process of returning cash to members who had been previously issued equity patronage. Equity redemption is unique to cooperatives. Because cooperatives distribute profits in proportion to use there is no direct rationale for holding equity. Because of that there is no market for cooperative equity. (The exception would be if the cooperative equity has an associated usage right.) Because cooperative equity typically has no market value, the cooperative must establish a system to eventually redeem the equity for cash. It is only through equity redemption that the member realized any benefit from the patronage distributed as equity. Due to the time value of money the member’s return is increased when the cooperative revolves equity more rapidly. Shorter equity revolving periods reduce the cooperative’s cash flow and thus create another tradeoff between the cooperative’s financial stability and member benefit.

The process of equity redemption, or equity management is also important to keep the member’s investment proportional to their use of the cooperative. If a cooperative fails to revolve equity or has a long equity revolving period, many older members may have high equity balances but have slowed or discontinued use of the cooperative. Those members are over-invested in the cooperative. On the other hand, younger members may be using the cooperative but have relatively little equity and hence be underinvested. Ideally, a cooperative board would like to manage equity so that equity investment is roughly proportional to use. Failing to redeem equity reduces the member’s return from the cooperative and also results in members perceiving little or no value on stock patronage. State statues generally require a cooperative to redeem equity if the patron dies. A systematic system of equity redemption therefore helps the cooperative to avoid the unpredictable timing of estate settlements.

Equity Redemption Systems

For the reasons just mentioned, equity redemption is important to maintain the member’s return from the cooperative, to help keep equity in proportion to use and to eliminate unpredictable outflows to estates. On the other hand, equity redemption reduces the cooperative’s cash flow and also reduces equity which increases its debt to equity ratio. Equity redemption is therefore a complex balancing act for the cooperative board of directors. An equity redemption system is an established plan for redeeming equity. Most cooperative have systematic systems which include age of stock, age of patron, percentage of all equities and base capital. The cooperative can also have a nonsystematic program such as having members petition for equity redemption in the case of hard ship. Estate settlements are also often categorized as a non-systematic program.

Factors Affecting the Choice of Equity Redemption Systems

Cooperative boards consider a number of factors when selecting an equity redemption system.

1. They would like the system to be fair to members. In general, that means that the system keeps equity investment proportional to the use of the capital. It is logical that cooperatives that are using the cooperative to a greater extent should have higher levels of equity investment and that the cooperative should redeem the equities of inactive or low volume members.
2. The equity management system should encourage members to contribute equity or at least support the structures which create equity. Members are more likely to support equity management systems that redeem equity more rapidly and on a consistent basis.
3. The cooperative needs to consider if it has the cash flow to support the plan. A cooperative needs a high level of profits to be able to consistently revolve equity under a rapid cycle. A cooperative’s profit and cash flow also change year-to-year due to weather and other conditions. The cooperative board must consider if the equity redemption system provides enough flexibility for the cooperative to adjust redemption payments according to available funds.
4. Local cooperatives would like the equity management system to be compatible with that of the federated cooperative. When the local cooperative receives patronage from the regional cooperative that patronage is a combination of cash and regional cooperative stock. That become part of the local cooperative’s profits which are passed on to members in a combination of cash and stock. In essence the cooperative is issuing stock patronage to the members some of which is really pass through stock patronage from the regional cooperative. The local cooperative already faces cash flow issues if the cash and stock percentage does not match that of the regional cooperative. The same issue occurs when the local cooperative redeems equity. If the local cooperative redeems equity more rapidly than the regional cooperative then it is issuing its members cash for regional equity which it is still holding on the balance sheet. Similar problems occur if the local cooperative is on a different equity management system relative to the regional cooperative.
5. Fifth, and finally, the cooperative would like the equity redemption system to meet the requirement of the lenders. The cooperative’s creditors require it to maintain a minimum equity to asset ratio and also a minimum cash balance. Redeeming equity reduces both cash and equity. Equity redemption programs that are not tied to the cooperative’s financial condition can therefore hinder a cooperative’s ability to repay loans and limit future borrowing ability. Ideally, the cooperative board would develop an equity redemption budget that is based on the cooperative’s financial situation. They would then apply that budget to the specific equity management program. In reality, some types of equity management systems are more compatible with the concept of a redemption budget relative to others.

Age of Stock (revolving fund)

Under an age of stock plan, also called a revolving fund, the cooperative redeems the oldest equity on a first-in, first out basis. For example if the cooperative was on a ten year age of stock plan it would redeem the equity that it issued in 2009 in the year 2019. Cooperatives using an age of stock plan can attempt to maintain a fixed revolving schedule or can accelerate or slow the cycle according the financial condition of the cooperatives. Cooperatives can also revolve part of a year or multiple years. For example if the cooperative was very profitable in 2009 and issues a large amount of stock patronage they might have to revolve that year over a 2 or 3 year period. At other times they might have the funds to revolve two or three previous years in a single year.

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| Illustration of an Age of Stock (revolving fund) Plan | | | | |
| Year | Beginning equity | Patronage refund retained | Amount redeemed | Years redeemed |
| 1 | 0 | 500 | 0 |  |
| 2 | 500 | 500 | 0 |  |
| 3 | 1000 | 500 | 0 |  |
| 4 | 1500 | 500 | 500 | 1 |
| 5 | 1500 | 1000 | 100 | 2 and 3 |
| 6 | 1500 | 500 | 500 | 4 |
|  |  |  |  |  |

Percentage of all Equities

Under the percentage of all equity system the cooperative redeems a percentage of every patron’s equity balance each year. The board would establish the percentage based on the financial condition and balance sheet goals for the cooperative. For example the cooperative might consider how much new equity is was creating through equity patronage and establish a percentage to redeem such that the total equity in the cooperative remained constant. The percentage of all equities programs rewards new members because every member with an equity balance receives some redemption. One problem with the percentage of all equities program is that it delays the time for a new, under invested member to build equity in proportion with their use. Some rural electric cooperatives use a percentage of all equities programs because they feel it helps new members understand how the equity system will work. When the new member receives a small redemption payment after one year, they may see how the redemption payments will increase as they build equity. The percentage of all equities program never completely retires equity since the member only receives a portion of the balance each year. It therefore often needs to be combined with some sort of lump sum payment to close out the balance.

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| Illustration of Percentage of All Equities Program | |
| Beginning Equity | 2000 |
| Retained Patronage | 500 |
| Equity Available | 2500 |
| Target level of Equity | 2300 |
| Equity to be Redeemed (2500- 2300) | 200 |
| Redemption Percentage (200/2000) Redemption divided by beginning balance | 10% |

Age of Member

Under an age of member system, the member has all of their revolving equity redeemed when they reach the specified trigger age. Some cooperative specialist describe the age of member system as a systematic program since it establishes a plan for revolving equity. Some classify as a non-systematic program since an individual member only receives a redemption when a specific even (achieving the trigger age) occurs. Many agricultural cooperatives were formed in the 1930’s and 1940’s. Their memberships tended to be young farmers who saw the need for the cooperative and were content to build equity to fund the cooperative’s growth. The concept that the equity would be redeemed when they reached a retirement age was acceptable. Now that those cooperatives have matured, many of them struggle with the cash flow and equity implications of their age of patron systems. A high percentage of their memberships are now nearing the redemption trigger age creating challenges in meeting the redemption cash flows. Members also often come to expect redemption at a specified age to be a right or a contractual obligation of the cooperative. That makes it very difficult for the board to adjust the trigger age to manage redemptions within a specified budget.

Base Capital

The base capital system is conceptually very simple but can be complex to implement. Under the base capital system the patron’s percentage of the total equity in the cooperative is matched with the patron’s percentage of the cooperative’s business volume. In other words, a patron that did 5% of the cooperative business would be required to hold 5% of the cooperative’s equity. Underinvested members have to invest more equity while over invested members receive equity redemption. The base capital system is therefore the best system for keeping equity investment in proportion to use. A base capital system is not attractive to new members since they would have to make an immediate investment to bring their equity balance up to the required level. A beginning farmer may not have the funds to invest the equity required under a base capital system.

In practice, many cooperative using base capital do not require an under invested member to make a direct investment but instead eliminate their cash patronage until they build the required equity level. Because those cooperative do not instantaneously receive equity from under invested members they also cannot instantaneously redeem the equity of over invested members. They therefore do not keep equity in exact proportion to use but keep equity balances adjusting towards that level.

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| Illustration of Base Capital Plan | | | | | |
| Member | Beginning equity | Patronage (5 year average) | Share of business | Equity Obligation | Over invested (-redemption) or under invested +paid in |
| A | 1685 (9.2%) | 120,208 | 11% | 2035 | -$350 |
| B | 3345 (18.3%) | 207,631 | 19% | 3515 | -$170 |
| C | 2805 (15.4%) | 152,991 | 14% | 2590 | +$215 |
| D | 5515 (30.2%) | 327,839 | 30% | 5550 | -$35 |
| E | 4550 (24.9%) | 284,127 | 26% | 4810 | -$260 |
| F | 350 (0%) | == | -- | 0 | 0 |
| TOTAL | 18250 | 1,092,796 | 100% | 18250 | $0 |
|  |  |  |  |  |  |

Nonsystematic Methods

A nonsystematic plan, also called a specialized plan, is one where equity is redeemed only if a special situation occurs. One special situation, that has already been mentioned, is the death of the member. Less frequent situations would be when the member moves away or is in a hardship situation. Aside from estate settlements which are often required by statute, cooperative board consider special situations on a case by case basis. Relying on a nonsystematic system would have a low financial burden for the cooperative. However, they provide a poor financial return to members and result in unpredictable cash outflows. They also do a poor job of keeping equity in proportion to use. Nonsystematic or specialized systems generally do not meet any of the goals of a desirable equity management system. They tend to occur as the end result of not implementing a systematic program.

|  |  |  |
| --- | --- | --- |
| Advantages and Disadvantages of Equity Redemption Systems | | |
| System | Advantages | Disadvantages |
| Age of Stock (revolving fund) | Easy to understand, moderately proportional if revolving period is short, easy to match to the budget by extending or shortening the revolving period | Length of revolving period tends to creep upward and members place low value on stock if revolving period is long |
| Percentage of all Equities | Rewards new members, easy to understand | New members are already underinvested and percentage redemptions expand the time period for them to become adequately invested |
| Base Capital | Most Proportion, only method that forces under invested members to contribute additional capital | Difficult to explain and complex to implement, new members may be unable to meet equity obligations |
| Age of Member | Seemed logical when new cooperatives were being formed and all members were young and a similar age, Some cooperatives sell the concept as retirement income | Not attractive to young producers, difficult to manage within a redemption budget, members expect redemption regardless of cooperative’s financial condition |

**Alternatives to Redemption**

While redeeming revolving equity is the method by which a member receives value for their stock patronage, it does create management challenges for the cooperative board. It is also difficult to design an equity management program that is attractive to the members and meets the cooperative’s needs for financial stability. Cooperatives have experimented with alternatives to equity redemption.

Redemption at a Discounted Rate

Under certain circumstances, some cooperative have redeemed a member’s equity before they would have otherwise received a payment but redeemed the equity at a discounted rate. In essence they paid the member the present value of the equity and not the future value. One situation for discounted redemption would be when a member of a cooperative with an age of stock program dies. In that case the estate could wait and receive the equity over a number of years as each year of stock becomes eligible. In order to close the estate, the executor may ask if the cooperative could pay the future redemption payments immediately but at a discounted rate to reflect the time value of money. If the equity balance is not large the cooperative may be interesting in complying in order to simplify recordkeeping. Establishing a fair discount rate for discounted redemptions can be difficult and some members do not understand the concept of the time value of money and may consider the payment unfair. Most cooperatives describe the face value of the retained patronage as a benefit flowing to the member. They are therefore reluctant to discuss the present value of the revolving equity since it would be perceived as diminishing the value of stock patronage. A cooperative that was implementing discounting would obviously want to carefully specify the procedures and limitations in the bylaws or policies since it would not have the funds to retire everyone equity.

Conversion to Preferred Stock

As discussed previously, one alternative to redemption is to convert the equity to a dividend-paying preferred stock. That reduces the cooperative’s immediate cash outflow and the member may be content to hold the equity since they receive dividend payments. Unless the dividends can be paid with non-member profits the cooperative is reducing patronage based profit distribution to distribute a portion of profits to the preferred stock holders. The cooperative must also establish some system to eventually redeem the preferred stock or allow it to be sold to another member. Otherwise they will eventually have to redeem the equity as an estate settlement.

Exchange of Equity among Members

Closed membership cooperatives often allow members to sell their equity an associated usage rights to another eligible producer. The price for the equity is negotiated between buyer and seller although the cooperative board typically has to approve that the buyer is eligible for membership.Under that structure the value for the equity and usage rights is determined by the anticipated amount of future patronage. It therefore tracks the profitability of the cooperative. The possibility of exchange between members creates the potential for cooperative equity to appreciate in value. It also increases its liquidity since a member may have the opportunity to sell it at any time. Of course by selling the equity the member loses the right to use the cooperative. Also, since the exchange is limited to other qualifying members the market for the equity might be thin and not result in a fair price.

A few open membership cooperatives have experimented with equity exchange between members. Similar to the concept of discounting, a member who desires immediate redemption could sell his equity to another member at a privately negotiated discounted rate. Again, another problem is that the market for the equity is thin. The member purchasing the equity also bears the risk that the cooperative expands the revolving period or writes down the value of the equity due to a loss.

**Summary**

A cooperative capital structure refers to its mix of debt and equity. Debt financing can increase the members rate of return in times when the cooperatives IRR is greater than the interest rate but will decrease owners return when the IRR falls below the interest rate. CoBank and other cooperative banks are major providers of debt capital to agricultural cooperatives.

Cooperatives have unique methods of acquiring equity capital. Open membership cooperatives tend to concentrate on retain patronage that becomes revolving equity. Closed membership cooperatives concentrate on direct investment that is linked to a usage right and obtained during a formal equity drive. All cooperatives face constraints on obtaining equity capital since they can only obtain capital from user-patrons.

Cooperative equity can be allocated or unallocated. Direct investment, retained patronage, per unit retains and preferred stock are all allocated since they are held in the name of particular patrons. Unallocated retained earnings is unallocated. Cooperative equity can also be revolving, semi-permanent or permanent. Retained patronage and per unit retains are revolving equity, direct investment and preferred stock are semi-permanent since they are typically redeemed at the death of the member. Unallocated retained earnings is the only category of permanent equity since it is never redeemed.

Cooperative must manage equity in order to keep it proportion to use and to allow the patron to realize a return from the retained patronage The most common equity management systems are age of stock, age of patron, percentage of all equities and base capital. There are also non-systematic or special situation systems. Ideally a cooperative would have a system that is fair to the members, attractive to new members, easy to manage within the cooperative’s cash flow, compatible with the regional cooperative’s system, and acceptable to their lenders. In practice, it is difficult to develop a system that meets all of those criteria. Among the systems, percentage of all equities is the most attractive to new members while base capital keeps equity most closely proportion to use.