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# Impact of Tax Reform on Agricultural Cooperatives and Members

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**Abstract**

The Tax Cuts and Jobs Act of 2017 (TCJA) created a number of changes to the U.S. tax code. Three of these changes have significant ramifications for U.S. agricultural producers and U.S. agricultural cooperatives: (1) A reduction in the corporate tax rate from a maximum rate of 35% to a flat rate of 21%; (2) Elimination of the Domestic Production Activities Deduction (DPAD) or Section 199; and (3) Creation and subsequent revision of a new tax deduction labeled Section 199A.

Section 199A provided tax benefits for pass-through entities including agricultural cooperatives. The original Section 199A language in the TCJA became controversial because it raised the possibility that a producer who marketed commodities through a cooperative might receive greater tax benefits relative to one who sold to an investor-owned corporation. The situation was described as "The Grain Glitch" in the popular press because it was perceived to give cooperatives an unintended marketing advantage (Jacobs, 2018). This reaction led to a revision of the Section 199A Deduction, which was included in the March 23, 2018 omnibus-spending bill.

This entire process has left cooperative leaders and members with a number of questions related to the TCJA. Producers wonder it now more advantageous to sell to a cooperative or to a non-cooperative business. Cooperative leaders are interested in how the TCJA affected the optimal profit distribution choices of agricultural cooperatives. All of those participants are

interesting in knowing how the TCJA provisions compare to the tax provisions facing cooperatives and members prior to the reform. The purpose of this paper is to analyze and discuss the implications of the TCJA on agricultural producers and cooperatives.

**Key words:**

## Overview of Cooperative Taxation

As background, it is useful to understand the basic concept of cooperative taxation. For federal income tax purposes, a cooperative computes its income similar to any other taxable corporation except that it can exclude certain distributions of members' profits (which are termed patronage refunds) from taxable income. Cooperative members include those distributed profits in their taxable income. This process allows the cooperative's board of directors to achieve a pass-through taxation with respect to the profits from member business. An understanding of a cooperative's alternatives in distributing profits is important for our discussion of the impacts of the TCJA tax reform.

Cooperatives can distribute patronage as both cash and equity. Because there is no market for cooperative equity, it is typically redeemed by the cooperative at face value at some point in time in the future. For this reason, equity created through patronage distributions is referred to as "revolving equity." By distributing profits as revolving equity, the cooperative is able to retain cash to reinvest in infrastructure. The distribution of profits in the form of equity is therefore both a distribution of profits and a retention of cash. The cooperative's board of directors control the amount of patronage to distribute and equity to redeem. Numerous agricultural economists have examined profit distribution and

equity management practices in agricultural cooperatives (Boland and Barton 2013).

In addition to the choice of distributing cash or equity, equity distributions can be qualified or nonqualified tax basis. That distinction relates to the timing of the taxation pass through. Qualified distributions are tax deductible to the cooperative and taxable to the member in the year issued. Cash patronage is always tax deductible to the cooperative and taxable to the member so it is actually also a qualified distribution. If the cooperative elects to distribute profits as a combination of cash and qualified equity, the IRS requires cooperatives to pay at least 20% of the entire qualified, patronage distribution in cash.

While qualified cash and qualified equity patronage distributions have been the historical choice of agricultural cooperatives, cooperatives can also distribute profits as nonqualified equity. For nonqualified distributions, the cooperative pays tax on the profits in the current year and receives a deduction in a future year when the nonqualified equity is redeemed or paid back to the member. Just like qualified equity, nonqualified equity is typically eventually redeemed according to the cooperative's equity retirement plan. The cooperative receives the tax deduction, and the member receives the tax obligation when the equity is redeemed for cash.

In addition to temporarily retaining profits by issuing revolving equity, cooperatives can permanently retain both member-based and non-member-based profits as unallocated retained earnings, also termed unallocated equity. Retained earnings has been a common tool for building capital in investor owned firms but has been less prevalent in cooperatives. Because the cooperative cannot deduct that allocation from taxable income, the profits are taxed at the regular corporate rate. and the after tax portion is retained. Cooperatives typically retain non-member profits as unallocated retained earnings since those profits cannot be

distributed as patronage. Retaining member-based profits as unallocated retained earnings does not achieve pass-through taxation and, in the absence of a tax credit, increases taxes at the cooperative level. For members to receive these retained profits, the cooperative must be liquidated, and these profits would then be distributed to the owners as part of the residual value of the cooperative.

Historically, agricultural cooperatives have retained only a small portion of member profits as unallocated retained earnings. In recent years, grain marketing and farm supply cooperatives have been retaining a greater portion of both local profits and regional profits as unallocated retained earnings (Kenkel and Boland, 2017). While there are multiple factors affecting decisions of profit distribution and retention, the DPAD increased the attractiveness of retaining profits as unallocated equity (Kenkel and Boland 2017). Since the recent availability of various tax deductions, retention of member profits as unallocated retained earnings has increased. This practice has raised concern among some cooperative scholars that this profit allocation choice is diminishing the members' sense of ownership in their cooperatives.

Unallocated equity represents a collective ownership by the members, but a member has no individual property rights. At higher proportions of unallocated equity, members have a financial incentive to liquidate the cooperative or convert it to an investor-owned corporation, a process often called demutualization. The incentive to sell the cooperative is that liquidation allows the members to receive the retained profits. While access to these retained profits or unallocated equity balances are generally considered to be a contributing factor to a cooperative demutualizing, it is typically not the driving factor (Kenkel and Boland, 2017). Demutualization in the United States has occurred mostly in mutual insurance companies (Chaddad and Cook 2004). However, there are agricultural examples such as Birds Eye Foods (Amanor –Boadu et al. 2003), CALAVO (Standford and

Hogeland, 2004), Cal-West Seeds (Gigstad, Boland, and Brester 2009), and Diamond Growers (Hardesty 2009) who demutualized. The possibility of demutualization highlights the need for cooperative leaders to consider the impact of their profit distribution choices on their equity structure.

From this discussion of profit distribution/retention alternatives, it is easy to see how cooperatives can, and often do, achieve a pass-through taxation structure. Due to that structure, cooperative firms do not substantially benefit from a reduction in the corporate tax rate. Because the TCJA reduced the tax rates for most corporations from a top rate of 35% to a flat 21% (a 40% reduction), cooperative firms argued that the act should contain some provision for pass-through taxation entities in order for the act to avoid creating a disparity between cooperatives and investor-owned agribusinesses. In particular, the cooperative industry advocated retaining the Section 199 deduction for cooperative firms.

**The Section 199 Deduction**

The Section 199 deduction, also called the Domestic Production Activities Deduction (DPAD) originated out of the American Jobs Creation Act of 2004 and created a tax deduction for domestic manufacturing and production activities. The deduction phased in over time but eventually became equal to the lesser of 9% of qualified production activities income (QPAI) or 50% of the W-2 wages paid by the taxpayer during the year that were allocable to the domestic production gross receipts (DPGR). In the context of agricultural producers and cooperatives, DPGR represented receipts from property manufactured, produced, or grown by the taxpayer within the United States. Qualifying activities included cultivating soil, raising livestock, and fishing as well as the handling and processing of agricultural commodities. Agricultural producers and cooperatives were therefore considered manufacturers and were eligible for the DPAD.

A cooperative engaged in marketing agricultural and horticultural products could also be treated as having produced any of the products that were produced by its patrons and marketed by the cooperative. The DPAD for products sold by a cooperative could therefore be calculated at the cooperative level, and the firm could elect to retain the deduction or pass all or part of it on to its members based on their patronage. When the DPAD is calculated at the cooperative level, the W-2 wage limitation is also calculated at the entity level. The member's share of the DPAD is not limited by either their adjusted gross income or their W-2 wages. Because many producers had little or no W-2 wages, the wage calculation was often the major limiting factor for taking the DPAD at the farm level. For that reason, it was typically more advantageous for the cooperative to take the deduction and then pass on all, or a portion of, the deduction to their members. Like patronage decisions, the choice to receive the DPAD at the cooperative level is made by the cooperative's board of directors.

In calculating the DPAD, a marketing cooperative's QPAI is based on the DPGR from the sale of its member's commodities less the costs of goods sold and other expenses associated with that revenue. The QPAI is not reduced by any patronage distributions or per-unit retain allocations made to members. A per-unit retain allocation is any distribution from the cooperative, or retention of funds by the cooperative based solely on the volume of the commodity handled without respect to the profit of the cooperative. Per-unit allocations are common in cooperatives marketing specialty crops that operate marketing pools. In those situations, there may not be a readily available market price for the commodity handled. Members of pooling cooperatives deliver commodities to the cooperative and receive one or more intermediate payments. The cooperative then eventually markets the entire pool of commodities and distributes the residual amount. Historically (prior to DPAD), grain and oilseed marketing

cooperatives structured member commodity payments as purchases rather than per-unit retain payments. It should be emphasized that both structures of commodity payments are fully consistent with cooperative principles.

The structure of the DPAD with respect to per-unit retains led many marketing cooperatives to reconsider how they characterized their payments to members for the members' commodities. Instead of purchasing commodities, which had the effect of increasing the cooperative's cost of goods sold and reduced their QPAI, cooperatives sought to structure member payments as per-unit payments, which were not considered in the QPAI calculation. Several cooperatives asked for and received private letter rulings from the IRS concerning the structure of their member commodity payments. In multiple rulings, the IRS agreed that the payments that the cooperative made to its members for their commodities could be classified as per-unit retain payments in money (PURPIM).

Consequently, the cooperative does not have to deduct PURPIM payments from their QPAI. which results in a significantly higher QPAI and a higher DPAD that the cooperative could retain or elect to pass through to its members. As an example, one can consider a grain cooperative that purchased its member's grain for $3.60/bushel and sold it for $4.00/bushel with $.30/bushel in expenses. Under a purchase structure, its QPAI was $.10/bushel, while structuring the commodity payment at a PURPIM results in a QPAI of $3.70/bushel.

**The Section 199A Deduction**

The TCJA eliminated the Section 199 deduction for most firms to offset the revenue loss from the reduction in the corporate tax rate. In recognition of the fact that the TCJA did not benefit cooperatives or their farmer members, the act created the Section 199A deduction. The original version of Section 199A allowed cooperative members to deduct 20% of both patronage and per-unit retain payments from a cooperative. Various analysts quickly realized that this created a

significant advantage to marketing through a cooperative since the producer would receive a tax deduction equal to 20% of their commodity value. This situation, described by the popular press as "The Grain Glitch," was very controversial. The controversy over the potential disparity between cooperatives and investor-owned agribusinesses led to the eventual revision of Section 199A. The revised Section 199A language eliminated the 20% deduction on profits and the ability of producers to receive a 20% tax deduction of their PURPIM commodity value. The revision to the Section 199A deduction became law in the March 23, 2018 omnibus spending bill.

Similar to the previous DPAD, the revised Section 199A language provides a deduction at the cooperative level and a deduction at the producer level. The major difference in the revised Section 199A relative to the DPAD is an offsetting reduction for producers who marketed through a cooperative. The revised Section 199A provides all producers, except those farming as a C-corporation, with a 20% pass through deduction. Farmers marketing through a cooperative face a reduction in their pass-through deduction. Presumably, that offset was designed to account for the pass-through deduction that a cooperative patron might receive from their cooperative.

*Cooperative Level Section 199A Deduction*

Under the revised Section 199A, an agricultural cooperative can receive a deduction equal to 9% of its qualified production income, less the costs of goods sold and other expenses associated with that income. However, the deduction is limited to 50% of the cooperative's W-2 wages associated with producing that qualified production income. The definition of qualified production income is complex but basically involves the revenue from commodity sales less the costs of goods sold and expenses related to those sales.

As with the DPAD, cooperatives can structure payments to producers for commodities as PURPIMs that are not considered costs of goods sold. In that case, the effective deduction is often limited to 50% of the cooperative's W-2 wages tied to those commodity sales. The cooperative has the option of retaining the deduction or passing some or all of it on to their patrons. As mentioned previously, the revised Section 199A deduction is essentially identical to the previous DPAD at the cooperative level but is substantially different at the producer level.

Subsequent references to Section 199A will refer to the revised law.

*Producer Level Section 199A Deduction*

All producers farming as pass-through businesses, which include sole proprietorships, partnerships, LLC's and S-corporations, can receive a business deduction equaling 20% of their net income from commodity sales but not exceeding their taxable income. The deduction is restricted when the taxable income exceeds $157,000 for individuals or $315,000 on a joint return. If the producer markets commodities through the cooperative, there is a potential offset. The 20% deduction is offset or reduced by the lesser of 9% of the producers' qualified business income or 50% of the W-2 wages paid by the farmer to employees who help produce qualified commodity sales. For example, if the farmer has no W-2 wages, then the offset is $0.

The offset is not related to the amount of Section 199A deduction passes on to the producer by the cooperative. A producer who received no pass-through from the cooperative could still potentially face an offset due to marketing through a cooperative. For this to occur, the producer would have to have some W-2 wages. Additionally, it is important to note that while the calculations are similar at the cooperative and producer level they use different bases. A producer's share of the cooperative level deduction, which is based on 9% of the

cooperative QPAI or 50% of its W-2 wages, may be greater or lesser than the producer's offset, which is based on 9% of the farm QPAI or 50% of the farm's W-2 wages.

**Financial Comparison of Marketing Commodities through Cooperatives or Independents**

As discussed, agricultural producers operating in any structure other than a C-corporation receive a 20% deduction on their income from commodity sales subject to taxable income limits. Producers who market commodities through a cooperative face both a possible reduction in that deduction and a possibility of the cooperative passing through some of their Section 199A deduction. The advantage or disadvantage of marketing commodities through a cooperative depends on the balance of a potential reduction and potential increase to the producer's Section 199A deduction.

A valid comparison can be made by using the best information on a "representative cooperative" and "representative producer." The most recent (2016) United States Department of Agriculture (USDA) Agricultural Cooperative Statistics can be used to determine the sales, margin, labor expense, local savings, and potential Section 199A pass through for the "average" grain marketing cooperative. The most recent (2013) Economic Research Service (ERS) report on wheat production costs can be used to determine the total revenue, W-2 wage expense, and yield of an "average" wheat farm in the Southern Plains (Vocke, and Ali, 2013). These data make it possible to complete all the necessary calculations for the Section 199A deduction and patronage at the cooperative level and the possible tax deduction offset at the producer level. Table 1 shows these effects on a "per bushel" basis, which provides a very simple and understandable comparison.

The "representative" wheat cooperative has a labor expense of just under $0.15/bushel (Table 1-line 7), which means that the 50% of W-2 wages is the binding constraint on their Section 199A deduction. The cooperative would generate a $0.073/bushel total Section 199A deduction (Table 1-line 17), which could be retained at the cooperative level or passed on to the producer. The cooperative would also generate $0.072/bushel of patronage that would translate to $0.036/bushel cash patronage assuming a 50% cash/qualified stock distribution (Table 1-line 13). The "representative" producer's reduction to their pass thru entity deduction is also limited by their W-2 wage level and is $0.061/bushel (Table 1-line 33).

The "representative cooperative" needs to pass through 75% of their Section 199A deduction to offset the producer's reduction. In that case, the producer delivering to a cooperative will receive an equivalent benefit as if this producer delivered to a non-cooperative (Table 1-line 36). And the cooperative delivering producer would be $0.036/bushel better off if cash patronage is considered (Table 1-line 37). If cash patronage is factored in, the cooperative would only need to pass through 40% of its Section 199A deduction to keep the cooperative-delivering producer equivalent to the producer marketing through a non-cooperative.

The worst-case scenario for the cooperative-delivering producer is 0% Section 199A distributed and 0% patronage. That scenario results in a disadvantage of $0.061/bushel. The best-case scenario for the cooperative-delivering producer is 100% Section 199A and 50% cash patronage, which results in an advantage of $0.05/bushel. The cooperative-delivering producer advantage would obviously be higher at more than 50% cash patronage, but that is probably not sustainable on the cooperative level because of the increase in cash flow demands.

*Importance of Producer W-2 Wages*

How much of a Section 199A deduction a cooperative-delivering producer will receive is heavily influenced by how much W-2 wages the producer pays. Remember that if a producer sells to a cooperative, their 20% 199A deduction will be reduced by the lessor of 9% of qualified business activity income or 50% of W-2 wages. So, it is possible that a high W-2 wage paying producer could have their 20% 199A reduction decreased by a maximum of 9%. This possibility is important for producers to consider when they are making their decisions about marketing their grain.

Producers who deliver to a cooperative and have a W-2 wage expense of less than $0.15/bushel ($4.79/acre at the assumed average yield of 39 bushels/acre) would face a lower reduction in their Section 199A 20% deduction. A producer with no W-2 wages would maintain the full 20% deduction, and any Section 199A pass through or patronage from the cooperative would place them at an advantage over a producer delivering to a non-cooperative. Conversely, producers with higher W-2 wages would have a greater potential reduction in their 20% deduction and a greater need of a Section 199A pass through and patronage from the cooperative in order to maintain equivalence with the producer delivering to a non-cooperative.

On the cooperative side, a cooperative with higher labor expenses and the same profitability (an unlikely combination) would be able to generate a higher Section 199A pass through with the same cash patronage. A cooperative with higher profitability would be able to distribute a greater level of cash patronage. For comparison purposes, our “average” wheat marketing cooperative has a return on assets of 4.6% and a return on allocated equity of 18.26%.

In the context of Section 199A, a “high” wage farmer is one with sufficient labor expenses such that 50% of their W2 wages exceed 9% of their

qualified business income. At that point, 9% of qualified business income becomes the binding factor in the offset to the 20% Section 199A deduction when selling to a cooperative. This result effectively reduces their deduction for operating a pass-through entity from 20% of net income from commodities to 11%.

Farmers with "high" W2 wages tend to be large, non-corporate producers. According to the Kansas Farm Management Association (KFMA), which has collected data on Kansas agricultural producers each year since 1980, about 20% of Kansas producers have had sufficient hired labor expense to result in 50% of W-2 wages exceeding 9% of farm income (Figure 1). While this is a proxy for the actual calculation (hired labor expense" is assumed to equal W2 wage, and net farm income is assumed to equal qualified business income), one can gather some additional insights. These "high" wage producers have an average total labor expense equal to about $75,000. On average, these operations have nearly $1 million in value of farm production and over $4 million in assets. Eighty nine percent of the "high wage" producers qualifiy for the Section 199A deduction since 11 percent of the farming operations are C-corporations.

**Impact of TCJA on Optimal Profit Distribution**

In order to estimate the effect of the tax reform package on a cooperative's choices for profit distribution, a simulation model of a hypothetical grain marketing cooperative is constructed using a time series of data from a case study cooperative and a cooperative financial simulator developed at Oklahoma State University (Kenkel and Holcomb, 2005). The case study cooperative has $280 million total sales, which are primarily from grain; 85% member business; 5% annual asset growth; 24% debt-to-asset ratio; a 15 year revolving equity retirement plan; and an allocation of 44%. In keeping with the previous analysis,

the cooperative was assumed to retain 25% of its Section 199A deduction and pass the remainder on to the members.

A ten-year time series of audited financial statements augmented by information obtained from the cooperative CEO and CFO is used to model the case study cooperative. Sales volumes and margins for grain and farm supplies are estimated based on historical 10-year averages. Overhead costs including depreciation, insurance, and repairs and maintenance are modeled using historical relationships with fixed asset values. Personnel expense and the beginning balance sheet values are based on the most recent fiscal year. Regional patronage, both cash and equity, are based on historic relationships with farm supply sales. No attempt is made to model redemption payments for equity held in regional cooperatives, because many regional cooperatives are transitioning to base capital plans that do not retire equity unless the local cooperative's business volume decreases. The profile of allocated equity with respect to issue date is used to project equity redemption payments.

The output of the simulation program includes a 30-year time series of pro-forma financial statements. The long period for projections is necessary to reflect the impacts of revolving equity. In addition to pro-forma profit and cash flow projections, the members' internal rate of return (IRR) is calculated using the total allocated equity as the initial investment and the cash patronage and equity revolving payments as the annual future net cash flow. The case study example is selected, instead of the previously described "representative cooperative", because the detailed information needed with respect to equity revolvement payments, commodity purchases, regional patronage, non-member business, and other financial details could not be inferred from the USDA cooperative averages.

Three tax scenarios are applied to the simulation model. The first is the "Baseline" tax scenario prior to the availability of DPAD. Here the cooperative is

assumed to not use DPAD, have a 41% corporate tax rate (federal and state), and have a membership with a tax rate equal to 35% (federal, state, and self-employment). The second scenario is similar to the Baseline, except the cooperative is assumed to utilize DPAD and retain it at the cooperative level. The third scenario shows the outcome under TCJA with the cooperative retaining 25% of the cooperative level Section 199A deduction. In the TCJA scenario, the cooperative's corporate tax rate is 27% (21% federal and 6% state) and the member tax rate remains at 35%. In order to provide a fair comparison, the cash patronage distributions are adjusted to keep the cooperative's cash flow constant across the profit distribution choices and between the scenarios.

In considering the impacts of alternative profit distribution on the members' IRR, it should be noted that the 15-year equity revolving cycle has somewhat muted the effects. For the first 15 years of the simulation, the case study cooperative is revolving its previously issued qualified equity. While both differences in cash patronage and equity retirement payments impacts the members' IRR, the impact from changing the structure of retained profits is reduced by the time delay between the change in profit distribution choice and the eventual impact on revolving equity payments.

*Profit Distribution Results*

Prior to DPAD, members received the highest return when the cooperative distributed qualified patronage, which has been the historical choice of agricultural cooperatives. Table 2 shows that the baseline scenario of 50% cash and 50% qualified equity provides the cooperative with just over $4.5M in cash flow and necessitates only paying taxes on its non-member income. Members receive cash patronage of about $3.7M with an after tax annual cash flow of nearly $1.4M. These figures result in an internal rate of return for the members of 23.5% over the simulated 30-year lifespan of cooperative usage. Because the

cooperative is issuing allocated qualified equity, the ratio of allocated equity to total equity increases from the beginning level of 44% to 69% by year 10. Alternative profit distribution choices result in lower returns to members because the cooperative must reduce cash patronage to 15% keep its cash flow constant.

Table 3 provides the same comparison of profit distribution choices under the assumption that the cooperative takes full advantage of DPAD and retains the deduction. Comparing the results in Table 3 to those in Table 2, one can see that DPAD essentially removes the tax impact on the cooperative from retaining member profits as nonqualified equity or unallocated retained earnings. DPAD therefore allowes the cooperative to keep its cash patronage payments at the baseline level of 50% when retaining profits in those forms. Distributing profits as 50% cash and 50% nonqualified equity yield the highest member IRR of 37.5%.

Table 3 also shows that members receive a higher after-tax cash flow because members no longer have a tax obligation from qualified equity. Distributing profits as 50% cash and 50% unallocated retained earnings yield a member IRR of 37.1%, which is only slightly less than the nonqualified equity choice. Profits retained as unallocated retained equity are never revolved to the member, so one would expect that distribution choice to yield a lower member IRR relative to nonqualified equity. The 15-year delay before that change affects the member leads to the minimal difference in IRR. The major impact of retaining profits as unallocated equity is the dramatic reduction in the ratio of allocated equity to total equity which falls to just 5.3% by the $10^{th}$ year of the simulation. Note that the cooperative still has a small tax liability from non-member income.

The impact of the TCJA with the cooperative utilizing the Section 199A(g) deduction can be seen by comparing the Table 4 results with the previous 2 tables. Due to a lower corporate tax rate on non-member business, the cooperative is able to increase the cash patronage percentage to 57% when

distributing cash and qualified equity. The Section 199A deduction also allows the cooperative to maintain that cash patronage percentage for the other profit distribution options. The preferred choice, in terms of member returns, is a combination of 57% cash patronage and 43% nonqualified equity. Retaining profit as unallocated retained earnings is again a close second choice, but drastically decreases the portion of allocated equity on the cooperative's balance sheet.

*Sensitivity*

This analysis uses a case study cooperative, and a time series audited financial data and a representative cooperative, created from aggregate data from USDA Cooperative Service Statistics, along with a representative wheat farm, created from ERS wheat production cost information. Because of that approach, it is not possible to perform conventional sensitivity analysis, incrementally changing individual financial characteristics. Revenues, expenses, capital structure, profit distribution, and equity management in the cooperative firm are inter-related making it difficult to examine changes in individual factors. As a simple example, the case study cooperative does not generate sufficient cash flow to maintain a shorter equity revolving period. It would therefore not be meaningful to examine the effect of a shorter revolving period.

It is possible to make some general observations as to the factors influencing the effects of the TCJA and Section 199A on individual cooperatives. First, the relative advantage or disadvantage of qualified versus nonqualified equity distribution is a function of the differential tax rates between the cooperative and the member. When the cooperative's tax rate is lower than the member's tax rate, members receive a benefit from the cooperative distributing nonqualified, rather than qualified equity.

Second, the member advantage of receiving nonqualified equity rather than having the cooperative retain funds as unallocated retained earnings is impacted by the equity revolving period and the discount rate. The member's benefit from receiving nonqualified equity does not occur until that equity is redeemed. The member advantage of nonqualified equity over unallocated retained earnings increases as the length of the equity revolving period decreases.

Finally, both the cooperative's Section 199A tax credit and the members' pass-through entity offset increases as the respective W-2 wage levels of the cooperative and farm operation increase. As the cooperative's W-2 wages increase, it is able to generate a larger Section 199A deduction and could have more deduction available to pass through to the members. As the producers W-2 wages increase, their pass-through entity deduction offset increases, which implies a need for a greater pass through from the cooperative. The appropriate balance of retaining and passing through the Section 199A deduction likely varies across different types of marketing cooperatives and depends on the wage expense structure of their typical member.

**Summary and Conclusions**

Our analysis has several important conclusions and observations. Our first observation is that the TCJA appears to be beneficial for agricultural cooperatives and their patron members. The reduction in the corporate tax rate should allow cooperatives to increase their cash patronage rates slightly while maintaining the same cash flow. The revised Section 199A provision of the TCJA provides a deduction at the cooperative level. While that aspect of the TCJA is complex, we conclude that a typical cooperative will need to pass on around 75% of their Section 199A credit to their members to keep them on an equivalent basis with producers not marketing through cooperatives.

This determination leads to our second conclusion. Marketing cooperatives should still have sufficient tax deductions to allow them to distribute patronage as nonqualified equity without increased tax payments or reduced cash flow. Our results suggest that distributing profits in a combination of cash and nonqualified revolving equity maximizes the member's return.

Our final conclusion relates to the impact on a cooperative's balance sheet when it retains member profits as unallocated retained earnings. Our analysis indicates that retaining profits as unallocated retained earnings is not as desirable as distributing nonqualified revolving equity under both the previous DPAD and the currently available Section 199A. We note that many cooperatives did retain profit as unallocated retained earnings when DPAD became available. If marketing cooperatives continue that strategy under Section 199A, they are likely to transition from a historical structure of allocated revolving equity to unallocated non-revolving equity. Some evidence suggests that structures with high levels of unallocated equity increase the risk of demutualization.

Given these conclusions, cooperative board of directors need to carefully consider the implications of their decisions regarding distribution of member profits. The TCJA of 2017 appears to have provided benefits to agricultural producers and agricultural cooperatives.

Distributing profits in a combination of cash and nonqualified equity may be the most desirable choice in terms of the members' return.

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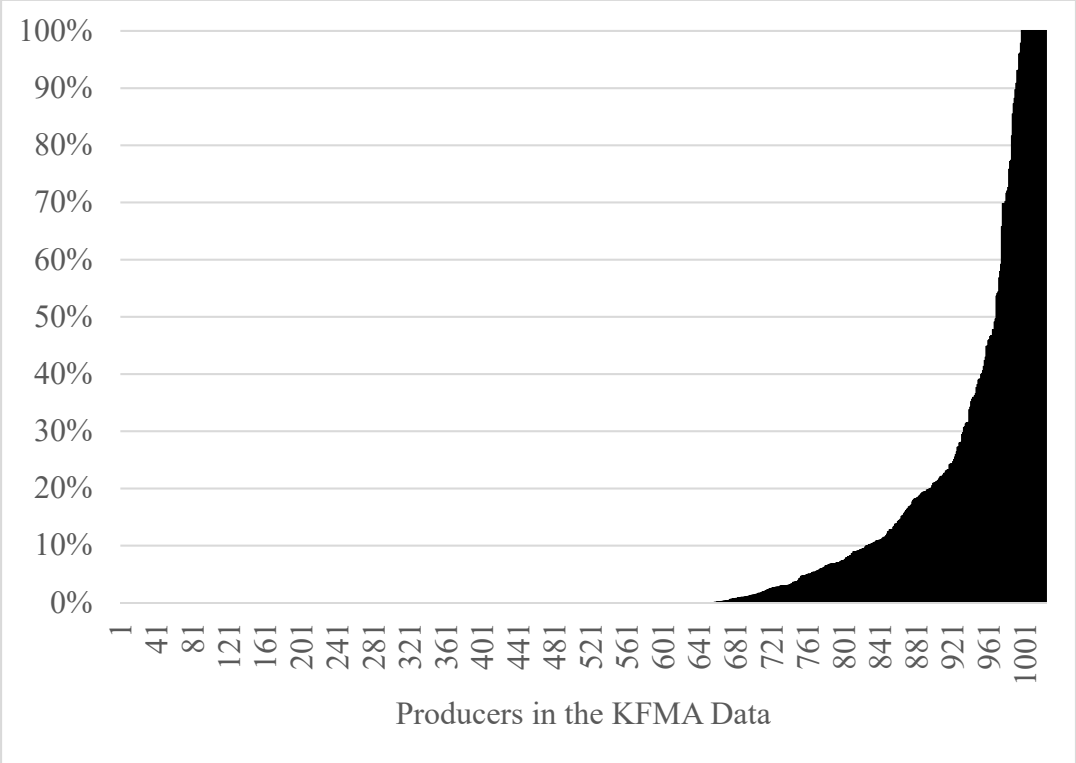


**Figure 1. Histogram of 50% Hired Labor Expense to Net Farm Income Ratio for Producers in the Kansas Farm Management Association Data – 2016**
*Note: The ratio is capped at 100%*

**Table 1. Section 199A Effect on a Representative Producer Delivering Grain to a Representative Wheat Cooperative**

| Cooperative Level | Based on USDA Cooperative Statistics |
|---|---|
| 1. Bushels | 1,000,000 |
| 2. Sales Price | $4.00 |
| 3. Sales | $4,000,000 |
| 4. Margin per bushel | $.38 |
| 5. Cost of Goods Sold | $3,620,800 |
| 6. Labor | $145,600 |
| 7. Labor/bushel | $0.15 |
| 8. Other Expenses | $160,800 |
| 9. Other Expenses per bushel | $0.16 |
| 10. Net Savings | $72,800 |
| 11. Net Savings per bushel | $0.073 |
| 12. Cash Patronage percentage | 50% |
| 13. Cash Patronage per bushel | $0.036 |
| 14. Qualified Production Income | $3,693,600 |
| 15. 9% of QPI | $332,424 |
| 16. 9% of QPI per bushel | $0,33 |
| 17. 50% of W-2 Wages per bushel | $0.073 |
| 18. Binding Limit | W-2 Wages |
| 19. Percent of Section 199 deduction distributed | 75% |
| 20. Section 199 Pass Through per bushel | $0.055 |

**Table 1. Section 199A Effect on a Representative Producer Delivering Grain to a Representative Wheat Cooperative (cont)**

| Producer | Based on ERS Wheat Production Report |
|---|---|
| 21. Bushels | 100,000 |
| 22. Price Received | $3.62 |
| 23. Gross Income | $363,080 |
| 24. Labor/harvested acre | $4.79 |
| 25. Total W-2 Wages | $12.270 |
| 26. W-2 Wages per bushel | $0.12 |
| 27. Patronage received | $3,640 |
| 28. Patronage received per bushel | $0.036 |
| 29. Receipts plus Patronage | $365,720 |
| 30. 9% of Receipts plus Patronage | $32,915 |
| 31. 50% of W-2 Wages | $6,135 |
| 32. Binding Reduction | W-2 Wages |
| 33. Reduction per Bushel | $0.061 |
| 34. Pass Through from Cooperative | $5,460 |
| 35. Pass Through per Bushel | $0.055 |
| | |
| 36. Net Change in Tax Deduction | $0 |
| 37. Net Tax Change + Patronage | $0.03 |

**Table 2: Simulation Model Results of a Grain and Farm Supply Cooperative Baseline Tax Scenario-41% Corporate Tax Rate, 35% Member Tax Rate, No DPAD**

| Member Profit Distribution | Cooperative Year 1 Cash Flow | Cooperative Year 1 Tax | Member Year 1 Cash Patronage | Member Year 1 After Tax Cash Flow | Member IRR | Cooperative Allocated Equity to Total Equity in Year 10 |
|---|---|---|---|---|---|---|
| 50% Cash-50% Qualified Equity | $4,523,660 | $532,960 | $3,683,057 | $1,379,401 | 23.5% | 68.9% |
| 15% Cash-85% Non-Qualified Equity | $4,523,660 | $3092,501 | $1,123,333 | $1,004,290 | 20.2% | 78.4.% |
| 15% Cash -85% Retained Earnings | $4,523,660 | $3092,501 | $1,123,333 | $1,004,290 | 16.3% | 5.3% |

Note: Member Year 1 After Tax Cash Flow includes cash and equity retirement payment to members. Cash patronage rates are adjusted to keep the cooperative's cash flow equivalent with the base line qualified equity scenario.

**Table 3: Simulation Model Results of a Grain and Farm Supply Cooperative**
**Baseline Tax Scenario-41% Corporate Tax Rate, 35% Member Tax Rate, 100% DPAD Retained**

| Member Profit Distribution | Cooperative Year 1 Cash Flow | Cooperative Year 1 Tax | Member Year 1 Cash Patronage | Member Year 1 After Tax Cash Flow | Member IRR | Cooperative Allocated Equity to Total Equity in Year 10 |
|---|---|---|---|---|---|---|
| 50% Cash-50% Qualified Equity | $4,523,660 | $532,960 | $3,683,057 | $1,379,041 | 23.5% | 68.9% |
| 50% Cash-15% Non-Qualified Equity | $4,523,660 | $532,960 | $3,683,057 | $2,68,111 | 37.5% | 64.5.% |
| 50% Cash -50% Retained Earnings | $4,523,660 | $532,960 | $3,683,057 | $2,68,111 | 37.2% | 5.3% |

Note: Member Year 1 After Tax cCash Flow includes cash and equity retirement payment to members. Cash patronage rates are adjusted to keep the cooperative's cash flow equivalent with the base line qualified equity scenario.

**Table 4: Simulation Model Results of a Grain and Farm Supply Cooperative**
**Baseline Tax Scenario-27% Corporate Tax Rate, 35% Member Tax Rate, 25% Section 199A Retained by the Cooperative**

| Member Profit Distribution | Cooperative Year 1 Cash Flow | Cooperative Year 1 Tax | Member Year 1 Cash Patronage | Member Year 1 After Tax Cash Flow | Member IRR | Cooperative Allocated Equity to Total Equity in Year 10 |
|---|---|---|---|---|---|---|
| 57.2% Cash-42.8% Qualified Equity | $4,523,660 | $350,974 | $3,867,210 | $1,563,194 | 25.2% | 65.7% |
| 57.2% Cash-42.8% Non-Qualified Equity | $4,523,660 | $350,974 | $3,867,210 | $3,867,210 | 38.7% | 65.7% |
| 57.2% Cash - 42.8% Retained Earnings | $4,523,660 | $350,974 | $3,867,210 | $3,867,210 | 38.4% | 5.3% |

Notes: Member Year 1 After Tax Cash Flow includes cash and equity retirement payment to members. Cash patronage rates are adjusted to keep the cooperative's cash flow equivalent with the base line qualified equity scenario.