CORNELL
AGRICULTURAL ECONOMICS
STAFF PAPER

A Comparison of the Cash and Accrual Methods of Reporting Income: The Macro Impact on Egg Production*

by

Olan D. Forker

*Prepared and presented as a discussion paper to the Egg Marketing Study Team, established by the Secretary of Agriculture, USDA in 1972

January 1973 73-8

Department of Agricultural Economics
New York State College of Agriculture
A Statutory College of the State University
Cornell University, Ithaca, New York

A Comparison of the Cash and Accrual Methods of Reporting Income: The Macro Impact on Egg Production

by

Olan D. Forker

Many leaders of the poultry industry allege that the cash method of reporting income results in overexpansion of egg production and thus generates instability in egg production prices. Some also allege that the deferral possibilities under this method result in inequities among producers in terms of their ability to compete.

Much has been written concerning the tax shelters in agriculture as it relates to beef breeding herds and beef feedlot operations.[1/] However, little has been written concerning eggs.[2/]

Charles Davenport, a Professor of Law at the University of California, Davis, testified before the Migratory Labor Subcommittee of the Senate Committee on Labor and Public Welfare that the tax losses provided under the current code results in "overproduction of products which yield the tax subsidy." He cited the situation of citrus and almonds production as examples.[3/]

1/ Hoy F. Carmen, "Income Tax Planning for Farmers", American Journal of Agricultural Economics, Vol. 51 No. 5, December 1969, pp. 1543-1547.

Hoy F. Carmen, "Tax Shelters in Agriculture: An Example for Beef Breeding Herds", American Journal of Agricultural Economics, Vol. 50 No. 5, December 1968, pp. 1591-1595.

Hoy F. Carmen, "The Impact of Selected Income Tax Provisions on Agricultural Investments and Management", American Agricultural Economics Association, Carbondale, Illinois, August 16, 1971, (mimeo-29 pages).

Virden L. Harrison and W. Fred Woods, "Farm and Non-Farm Investment in Commercial Beef Breeding Herds: Incentives and Consequences of the Tax Law", ERS-497, April 1972.

Hoy F. Carmen, "Tax Loss Cattle Investments", California Agriculture, December 1971, pp. 6-7.

2/ An article by Ralph Baker, Ohio State University, is an exception.

Recent changes in the tax law now require capitalization of orchard development costs where before 1969 these were considered as cash costs.4/

Under the cash method producers can defer taxes two ways: by postponing receipt of income or incurring expenses in the current taxable year for items that will actually be used in the next year.5/ On the income side, it may be possible for an egg producer to make some sort of an arrangement with customers to withhold payment until after the end of the tax year. Although the tax courts say this is not legal under the cash method, it is conceivably possible that one might arrange to begin to extend credit for 60 to 90 days beyond the normal period.6/ For an egg producer, this procedure could be used to defer about 1/6 (17%) of his income.

On the expense side, it would be possible for a producer to legally purchase and pay for replacement chicks or started pullets in one tax year and receive them the next tax year. For a 12,000 hen operation this could amount to an additional $4,000 in deductible expenses in the current tax year.

3/Charles Davenport, Statement before the Migratory Labor Subcommittee of the Senate Committee on Labor and Public Welfare, January 11, 1972, page 5.

4/Tax Reform Act of 1969, Act Section 216 PL91-172.

5/The information herein was developed in conversation with Professor Robert Smith, Professor of Farm Finance and Taxation at Cornell University. Farm accounts records of poultrymen were used to provide a basis for evaluating the significance of this provision.

6/The tax court has ruled that if the money is available, the seller must take it. Furthermore, an uncashed check in the possession of the payee is considered cash.

Prepayment of labor has been considered illegal by the tax courts and, therefore, does not provide an opportunity to defer taxes.

Early purchase of feed or pre-payment of feed is the most talked about method of deferring taxes. Pre-payment when questioned by IRS has in most cases not been allowed as a tax deduction.[1/] However, there may be some flexibility here. Such prepayments are considered deposits, not payments, unless the feed is in the physical possession of the purchaser or can be readily identifiable. Through various accounting techniques or through the operation of an open account, a producer could conceivably end up with a six-month swing in terms of his ability to pay for feed supplies in advance of actual use.

Another expense item which could be prepaid by an egg producer is vaccines. This would be a difficult one for the IRS to trace and conceivably a producer could buy a year's supply of vaccine before he uses it.

If an egg producer also grows his own feed, he could purchase in advance of use one year's supply of fertilizer, lime, seeds and pesticide sprays.

Equipment purchases are capital investments and are to be treated as such in reporting income.

Interest costs can be prepaid for a period of up to twelve months; however, some tax cases have ruled that such prepayment may not be allowed if it materially distorts income. However, it is considered possible to pre-pay twelve months interest.

[1/] The Russell Mann Case (1972) would appear to place significant restrictions on the amount that could be prepaid. Although Mann entered into a binding contract and made payment, he did not take delivery that year, he did not specify the exact amount and kind of feed, there was no evidence that the feed was in existence at the time of purchase, and there was no business advantage for the prepayment. The deduction was not allowed.

In the area of taxes and insurance there appears to be no way that the portion prepaid can be declared as a cash cost.

In summary, it appears that for a particular poultry operation, it is possible to declare or defer an amount equal to 37% of gross expense and 17% of gross income. The total swing relative to gross income could be as much as 46%.

If the accrual method of accounting were used, all of the costs incurred in prepayment or early purchase or expansion would show up in inventory. The cost would thus be offset by a change in the value of inventory which would then be treated as income. Since the price of eggs now varies dramatically, it is possible that the cash method results in a more stable income pattern than would the accrual method.

The Incentive for Expansion

The cash method of accounting may contribute to overexpansion in egg production. A large portion of the egg producer's earnings in a good price year will be lost in the form of taxes. Purchases of inputs to be used next year or to expand under the cash method, can be declared as costs and thus reduce tax liability for the current year. In a particular good year, egg producers have an incentive to invest their earnings in more facilities, feed and birds and thus expand production. Since the additional cost of the birds and feed can be considered as a cash expenditure, the net cost of expansion is reduced in an amount proportionate to the tax bracket in which the producer finds himself during that particular year.

The cash method of reporting income may result in unduly encouraging expansion in good price years because through expansion the operator can in essence ask the government to share in the cost of expansion and obtain an interest-free loan from the government. To demonstrate the impact of the cash method relative to the accrual method of reporting income, I have

developed a hypothetical situation. Actual cash flow data from a specific farm have been used to calculate the comparative impact on revenue, tax liability, and after tax income. To determine the impact or make a comparison for larger size operations, I have developed two more hypothetical operations. One is ten times as large as the original and the other one hundred times larger. It is specified that each operator doubles his operation during the tax year. The summary data and comparative statistics are presented in Table I.

This method provides a reasonable comparison because it holds all else constant except scale. It compares the impact of the tax provision under constant costs and returns to scale. In the calculation of tax liability it is assumed that each of the three operations are owned by sole proprietors and each has five dependents.

The difference in after tax income under the two methods is quite dramatic. For the 12,000 hen operation the cash method results in $5,569 more in after tax income. This represents 5% greater total cash receipts and a 59% increase in after tax income. For this size operation this amount of tax benefit would pay for 28% of the cost of additional birds necessary for expansion.

For the larger size operations the impact is even more dramatic. For the 120,000 hen operation, the difference is $125,000, an amount equal to 11% of cash receipts. The percentage increase in after tax income is not calculatable as the amount is negative for the accrual method and positive for the cash method. Under the accrual method, the 120,000 hen producer would have to borrow $41,530 to expand. Under the cash method, he has $84,000 left after he pays for the additional hens. The proportion of the bird cost paid for by the tax savings is 63%. The proportion for the 1,200,000 hen flock is just about the same with 64% of the cost of the birds

being paid for by the tax savings.

This depicts the size of the incentive for expansion under the cash method when compared to the accrual method. Since it is relatively easy to expand production in the egg industry, it is reasonable to assume that such a tax provision, does, in fact, result in more rapid expansion in production than would result under an accrual method. Although this may not be bad in itself, it does generate some equity problems in that those large enough to take advantage of this situation could expand and compete at an advantage over smaller operations.

If the accrual method were required of all egg producers, it appears that the small to medium size operators would have some sort of an advantage in expansion relative to large operators because they are likely to have a larger after tax income relative to gross income than the larger operators.

The percentage difference in after tax income relative to cash receipts (Line 17 Table 1) indicates the degree of incentive provided under the cash method relative to that that would be provided under the accrual method. In this example, the effective average revenue for eggs is 5% higher for small operators and up to 11% higher for large operators.[7/] This would have the same impact as a 5% and 11% higher price on producer supply response. Therefore, it is no doubt true that the cash method generates a more rapid and larger expansion than would occur under the accrual method of reporting income. But how much?

7/ This assumes that the cash flow position of the hypothetical operation is somewhat reasonable.

A cursory observation of the nature of supply response in egg production indicates a historic gross relationship of a 1% increase in production for each 4% increase in egg prices the previous year. If the difference in effective after tax revenue from accrual as compared to cash is 5% to 11% as calculated, then the macro effect of cash accounting could be as much as 1% to 3% different.

Let's assume that the macro effect on the effective price is 8%. Under the cash accounting, a 12% price increase in one year would likely be followed by a 3% increase in production the next. Under mandatory accrual, the 12% would appear to decision makers to be the same as a 4% increase. Under mandatory accrual, the likely next year expansion would be a 1% rather than the 3% expected under cash accounting.

Although the estimates given above are very rough and based on some rather heroic assumptions, they are reasonable enough, I think, to demonstrate that the investment and expansion effect under cash accounting is substantial.

TABLE 1.

Comparison of After Tax Net Income Under Two Methods of Reporting Income, Different Size Flocks, Under a Situation Where the Operator Doubles Flock Size

		12,000 Hens	120,000 Hens	1,200,000 Hens
A.	Cash Method			
1.	Cash Receipts	114,000	1,140,000	11,400,000
2.	Cash Expenses	77,000	770,000	7,700,000
3.	Net	37,000	370,000	3,700,000
4.	Cash Cost Birds to Expand	19,800	198,000	1,980,000
5.	Taxable Income	17,200	172,000	1,720,000
6.	Tax Liability	2,194	88,000	1,171,130
7.	After Tax Income	15,006	84,000	548,870
B.	Accrual Method			
8.	Net (same as 3)	37,000	370,000	3,700,000
9.	Cash Cost Birds to Expand	19,800	198,000	1,980,000
10.	Net (Same as 5)	17,200	172,000	1,720,000
11.	Inventory Increase	18,000	180,000	1,800,000
12.	Taxable Income	35,200	352,000	3,520,000
13.	Cash Position Before Taxes	17,200	172,000	1,720,000
14.	Tax Liability	7,763	213,530	2,431,130
15.	After Tax Income	9,437	-41,530	-711,130
16.	Difference Two Methods (7÷15)	5,569	125,530	1,260,000
17.	Difference Compared to Cash Receipts (%) (16 ÷ 1) x 100	5%	11%	11%
18.	Percentage Difference in After Tax Income (7÷15x100)	59%	- to +	- to +
19.	Proportion of Bird Costs Paid for by Tax Savings (16 ÷ 4 x 100)	28%	63%	64%