



# Western Beef Development Centre

## YOUR CAIS REFERENCE MARGIN MAY BE LARGER THAN YOU THINK!!!

### Introduction

Two of the least discussed but most important issues facing cattlemen as they apply for CAIS support payments and select protection levels is to understand their reference margins may be increased if :

- (i) they file their past five years of margin using the modified accrual accounting option (MAAO) vs. the cash option; and
- (ii) the size of their operation has been expanding in the past five years

Part I of this article describes how a reference margin is calculated. Part II then discusses how filing your past five years of margin using the Modified Accrual Accounting Option (MAAO) vs. the cash option can potentially make your reference margin larger. Finally, Part III discusses how increasing the size of your farming operation in the past five years can also result in a larger reference margin and thus greater support levels from the CAIS program.

### Part I - Calculating the Reference Margin

Let's discuss this with an example. Bob is a cow-calf producer from Manitoba who has been expanding his cowherd over the past five years. Similar to his cowherd, his acreage used for hay and pasture production has also been increasing. For simplicity sake, this article will only focus on Bob's expanding cowherd and will not discuss his acreage and production of hay and pasture. The number of cows that have calved in his operation over the past six years are listed below in Table 1.

**Table 1. Number of Bob's Cows Calving 1998 – 2003**

Year	1998	1999	2000	2001	2002	2003
# of Cows Calving	58	78	128	176	212	264

In 2003 Bob had a tough year financially and is now applying for a CAIS payment to lessen the blow of drought and the BSE crisis. Bob received a CAIS 2003 options notice indicating his estimated margins from 1998 – 2002 are as follows:

1998: \$20,381; 1999: \$26,552; 2000: \$32,667; 2001: \$31,543 2002: \$24,554

These margins were calculated using the cash accounting option (given Bob filed his NISA applications using the cash option), meaning CAIS eligible cash expenses were subtracted from CAIS eligible cash income with no consideration of inventory changes.

Bob's reference margin for 2003 is based on his margins for the five years prior to 2003 (1998 – 2002). The high and low margin years are removed and the three remaining years of margin summed and divided by three. Thus the 2003 options notice sent to Bob would have indicated his estimated 2003 reference margin was \$27,550.

## Part II – Modified Accrual Accounting Option (MAAO)

If Bob were to file each of his past five margins (1998-2002) using MAAO it may increase his 2003 reference margin beyond the original \$27,550, given MAAO recognizes the increased inventory from beginning to end of each year as his herd expanded. Recognition of the increased inventory is important as it offsets the expansion costs of purchasing additional breeding stock or lost income from retaining heifers.

### Calculating the MAAO Benefit for an Expanding Operation

#### Step #1

In order for Bob to file each of his margins from 1998-2002 using MAAO, he must have a record of beginning and ending inventories for all of his cattle, feed, purchased inputs, etc., as well as changes in accounts payable and receivable. Bob must also have a record of land base and cowherd production for all five of these years. As mentioned in Part I, we will not discuss Bob's land production and expanded acreage of forages and therefore will only focus on his expanded cowherd from 1998-2002. We will also assume Bob's feed and purchased inputs as well as accounts receivables and payables have remained constant throughout 1998-2002.

Bob has traditionally sold all of his weaned calves in the fall and thus only has ending inventories each year of bred cows and breeding bulls. Bob has expanded his breeding herd from 58 cows calving in 1998 to 264 cows calving in 2003 by purchasing bulls and bred cows in the fall each year after the weaned calves have been sold. Listed below in Table 2 are Bob's cattle inventories and changes in herd inventory values from 1998 – 2002.

For most producers, CAIS pre-determines the inventory values of their cattle for each individual year as described in the MAAO price list. CAIS does not recognize changes in the market value of cattle from beginning to end of year, rather they multiply the change in quantity of inventory from beginning to end of year by a year-end price. In Bob's example, CAIS uses the December year-end price for each year, given his year-end is December 31<sup>st</sup>.

**Table 2. Bob's Change in Herd Inventory Values 1998 –2002**

Year: 1998	A	B	C = B -A	D	E = C X D
Category	Beginning Quantity	Ending Quantity	Quantity Change	CAIS Value \$/Head	Inventory Value Change
Bred Cows	58	78	20	\$1,050	\$21,000
Breeding Bulls	3	4	1	\$1,800	<u>\$ 1,800</u>
				<b>Total</b>	<b>\$22,800</b>
Year: 1999	A	B	C = B -A	D	E = C X D
Category	Beginning Quantity	Ending Quantity	Quantity Change	CAIS Value \$/Head	Inventory Value Change
Bred Cows	78	128	50	\$1,150	\$57,500
Breeding Bulls	4	5	1	\$1,900	<u>\$ 1,900</u>
				<b>Total</b>	<b>\$59,400</b>
Year: 2000	A	B	C = B -A	D	E = C X D
Category	Beginning Quantity	Ending Quantity	Quantity Change	CAIS Value \$/Head	Inventory Value Change
Bred Cows	128	176	48	\$1,300	\$62,400
Breeding Bulls	5	6	1	\$1,900	<u>\$ 1,900</u>
				<b>Total</b>	<b>\$64,300</b>
Year: 2001	A	B	C = B -A	D	E = C X D
Category	Beginning Quantity	Ending Quantity	Quantity Change	CAIS Value \$/Head	Inventory Value Change
Bred Cows	176	212	36	\$1,350	\$48,600
Breeding Bulls	6	8	2	\$2,100	<u>\$ 4,200</u>
				<b>Total</b>	<b>\$52,800</b>
Year: 2002	A	B	C = B -A	D	E = C X D
Category	Beginning Quantity	Ending Quantity	Quantity Change	CAIS Value \$/Head	Inventory Value Change
Bred Cows	212	264	52	\$1,200	\$62,400
Breeding Bulls	8	10	2	\$2,200	<u>\$ 4,400</u>
				<b>Total</b>	<b>\$66,800</b>

## Step #2

Now to calculate each of Bob's MAAO margins from 1998-2002, his annual change in herd inventory values (Column E of Table 2) will be added to the cash margins CAIS originally calculated in his options notice. Column C of Table 3 depicts this calculation.

**Table 3. Bob's Modified Accrual Accounting Option Margins 1998 -2002**

Year	A Cash Margins	B Herd Inventory Value Changes	A + B = C MAAO Margins
1998	\$20,381	\$22,800	\$43,181
1999	\$26,552	\$59,400	\$85,952
2000	\$32,667	\$64,300	\$96,967
2001	\$31,543	\$52,800	\$84,343
2002	\$24,554	\$66,800	\$91,354

## Step #3

Now CAIS applies the Olympic average rule (i.e. the high margin and low margin are removed and the three remaining margins are summed and divided by 3). The newly adjusted 2003 MAAO reference margin for Bob is now \$87,216, which is significantly larger than the \$27,550 calculated on his original 2003 CAIS options notice. In Bob's case, this new margin of \$87,216 will also further increase once CAIS considers the change in productive capacity of his operation during the past five years.

## Part III - Changes in Productive Capacity

CAIS refers to the expansion or downsizing of a farming operation as a change in the operation's **productive capacity**. CAIS monitors changes in productive capacity of the operation because it attempts to simulate each of the producer's past five years of margin to have the same level of productive capacity as the claim year (2003 in this example).

There are indicators CAIS uses to monitor changes in the productive capacity of the farming operation. For cow-calf producers, some of these indicators include seeded acres of crops and forages, as well as the number of cows & bred heifers calving during the year. For those purchasing and selling feeder cattle, CAIS also recognizes sales of feeder cattle above and below 900 lbs/head. Changes in productive capacity are measured by what is called a **structure calculator**.

## Calculating Changes in Productive Capacity (Structure Calculator)

### Step#4

When Bob sends in his claim for 2003, CAIS will compare his productive capacity from 1998 – 2002 vs. 2003, to determine if there have been any changes. In Bob's case there has been a change in the productive capacity as the number of cows calving has increased each year. Listed below are the changes in the number of cows calving in 2003 vs. each year from 1998 – 2002. Refer back to Table 1 for the number of cows calving each year.

<b>1998:</b>	264 - 58 = 206 difference in cows calving between 1998 vs. 2003
<b>1999:</b>	264 - 78 = 186 difference in cows calving between 1999 vs. 2003
<b>2000:</b>	264 - 128 = 136 difference in cows calving between 2000 vs. 2003
<b>2001:</b>	264 - 176 = 88 difference in cows calving between 2001 vs. 2003
<b>2002:</b>	264 - 212 = 52 difference in cows calving between 2002 vs. 2003

### Step #5

CAIS then multiplies each year's difference in cows calved by a Benchmark Per Unit (BPU). The benchmark per unit is the average margin earned by cow-calf producers in Manitoba for each year from 1998-2002. There are BPUs calculated for all provinces and for all indicators recognized by CAIS (some are calculated on a regional scope and some on a provincial scope). In Manitoba the BPUs per cow calved are listed in Table 4.

**Table 4. Manitoba Benchmark Per Cow Calved**

Year	1998	1999	2000	2001	2002
BPU Per Cow Calved	\$207.13	\$276.37	\$348.00	\$320.78	\$274.83

**Step #6**

The difference in cows calved multiplied by the BPU per cow is then added to the MAAO margin calculated for Bob in each individual year. Therefore, the following calculations in Table 5 are applied to each of Bob's margins from 1998-2002. Column E of Table 5 indicates Bob's new margins for each year after the MAAO option has been chosen and the structural calculations applied. Remember, structural calculations are applied because CAIS wants each of the past five years of margin to simulate the same level of productive capacity as experienced by Bob in 2003 (i.e. 264 cows calving).

**Table 5. Bob's Adjusted Margins After Considering Productive Capacity Changes**

Year	A MAAO Margins	B Difference in Cows Calved vs. 2003	C BPU/ Birthed Cow	D = B X C Structural Adjustment	E = A + D Adjusted Margins
1998	\$43,181	206	\$207.13	\$42,668.78	\$85,849.78
1999	\$85,952	186	\$276.37	\$51,404.82	\$137,356.82
2000	\$96,967	136	\$348.00	\$47,328.00	\$144,295.00
2001	\$84,343	88	\$320.78	\$28,228.64	\$112,571.64
2002	\$91,354	52	\$274.83	\$14,291.16	\$105,645.16

**Step #7**

CAIS again applies the Olympic average rule (i.e. the high margin and low margin are removed, and the three remaining margins are summed and divided by 3). The newly adjusted 2003 reference margin for Bob is now \$118,254.54, after the MAAO margin has been used and changes in productive capacity recognized.

**Step #8**

Finally, if CAIS detects more than a 5% change and \$1,000 difference between the structurally adjusted reference margin (in this case \$118,254.54) and the MAAO margin of \$87,216, the structure calculation is applied. In this case, the structure calculation would be applied and Bob would have a much larger reference margin and greater support than he originally thought.

**Closing**

The structure calculator and MAAO options can significantly increase or decrease your reference margin depending on whether or not you have been expanding or decreasing the size of your operation in the past few years. The disappointing part of all this is the MAAO, structure calculator and corresponding price lists are not understood by the majority of accountants and were not available to producers when they had to make their decision as to (i) whether or not to participate in the program and (ii) the level of protection they desired. One can only hope the rules of CAIS become finalized for the 2004 program year very soon.

**Don't forget the deadline for applying for 2003 CAIS benefits is September 30, 2004.**

**Note:** If you have already applied for a 2003 CAIS claim and wish to re-file your margins from 1998-2002 using the MAAO, you have 90 days from the date CAIS processes your original claim and corresponding "Calculation of Programs Benefit Notice." Current CAIS rules indicate once you switch to filing your CAIS claim using the MAAO, you cannot switch back to using the cash option for the duration of CAIS. *Tim Highmoor is an economist with the Western Beef Development Centre in Saskatoon, SK. You can reach him by phone @ (306) 966-2627 or by email at [thighmoor@wfdc.sk.ca](mailto:thighmoor@wfdc.sk.ca). To find out more about the structure calculator, modified accrual accounting option, and price lists, etc. check out [www.agr.gc.ca/caisprogram](http://www.agr.gc.ca/caisprogram) and look under the publications & forms and calculators and tools links.*