

## Welcome to the Fed Cattle Market Simulator

Like a flight simulator, the FCMS is a game that resembles real life. The objective of the game is simple and much like real life in the beef business to make a profit. You will be part of a team that plays the role of one of eight Feedlot Marketing Managers or one of four Packing Plant Order Buyers. The packers and feedlots meet weekly (5-10 minute trading session) to trade pens of finished cattle. They negotiate prices and turn in the buy/sell orders. These orders are scanned into a computer and a profit or loss statement for each team is printed out to summarize the week's activity. Then it is the next week, new cattle are delivered to the feedlots, packers sell boxed beef, and negotiations begin again. We will trade 25-30 weeks in the two-day workshop.

A conceptual overview of the game follows. Feedlots are assumed to buy the available supply of feeder cattle. The total number of pens of feeder cattle placed any one week is inversely related to the price paid for those cattle -- feedlots buy from a feeder cattle demand curve over which they have no control. Interpersonal negotiation occurs between the feedlot marketing manager and the packer order buyer. *These are the only prices and quantities over which participants in the game have control.* Packers take delivery of and provide payment for cattle during the current week, and begin processing the animals into boxed beef. The following week packers sell and receive payment for boxed beef on the wholesale meat market. The price received for boxed beef is inversely related to the total quantity marketed -- packers sell to a meat demand curve. The computer portion of the game keeps track of: purchases, sales, costs, and returns. The game participants will be provided with weekly profit and loss statements so that they can concentrate on the negotiation process for fed cattle.

Two traveling trophies are awarded throughout the game for the most and least profitable teams of the previous month, and prizes are given to the overall most profitable team of the workshop. The FCMS is realistic, educational, competitive, and fun. We look forward to having you with us. Please read the enclosed information before you arrive so you will be ready to roll when the opening bell sounds!

## MEATPACKER INFORMATION

When you play the role of a Meatpacker Order Buyer, in the Fed Cattle Market Simulator, your objective is simple: you buy finished cattle from feedlots, process them into boxed beef, and try to earn a profit. More detail information on the four individual packer's cost structure will be provided at the workshop, but this brief summary will give you an idea of the packer's side of the market.

Feedlots will offer cattle from their show list in five weight groups: 1100#, 1125#, 1150#, 1175#, and 1200# and each weight have different characteristics (Table 1) and discounts (Table 2). All pens of cattle in a weight class are identical. As an order buyer you need to consider managing packing plant costs through the number of pens of cattle purchased. Your plant exhibits declining average costs, up to your low cost capacity, after which your processing costs per pen increase. The physical process of producing boxed beef from finished cattle is straightforward. Packers take delivery of cattle during the current week (week t) and begin processing. Processing is completed in the following week (week t+1), costs are accrued, and meat is sold on the wholesale meat market. To make a profit meatpackers need to price cattle such that the cost of processing is covered. Further, the meatpacking firms' stockholders assess the performance of each firm by returns to equity. *This is measured in the game by total dollar profits as a percent of low-cost capacity.* In other words, it may be better for packers to make more total dollars profit than simply a high dollar per head profit.

Table 1. Cattle Characteristics by Weight Group

Live Weight	Carcass Weight	Dressing Percent	%Choice	%Select	%YG 1-3	%YG 4-5	% Light Carcasses	% Heavy Carcasses
1100	682	62.0	59	41	98.5	1.5	10	0
1125	703	62.5	63	37	97.0	3.0	5	0
1150	724	63.0	67	33	95.5	4.5	0	0
1175	746	63.5	71	29	93.5	6.5	0	5
1200	768	64.0	75	25	91.0	9.0	0	10

Table 2. Price Discounts for Carcass Characteristics

Select quality grade or below	\$ 5.00/cwt.
Yield grade (YG) 4 and 5	\$10.00/cwt.
Light carcasses	\$ 2.00/cwt.
Heavy carcasses	\$ 2.00/cwt.

**Summary:** There are a lot of different discounts associated with purchasing different weight cattle. There are discounts for heavy and light animals, but the discounts rise faster for the lighter animals (heavy animals are a better buy than light because of the additional meat sold).

EXAMPLE BREAK-EVEN PURCHASE PRICE FOR 1150# FED CATTLE

**STEP 1: Compute Adjusted Boxed Beef Price**

Boxed Beef Price (Ch 1-3, 550-700)	\$120/cwt. boxed beef
Less Discounts	
<u>33</u> % Select x <u>\$5.00/cwt.</u> Discount	- (\$1.65/cwt.)
<u>4.5</u> % YG 4-5 x <u>\$10.00/cwt.</u> Discount	- (\$0.45/cwt.)
<u>0</u> % Light/Heavy x <u>\$2.00/cwt.</u> Discount	- (\$0.00/cwt.)
Adjusted Boxed Beef Price	\$117.90/cwt.

**STEP 2: Convert to Liveweight**

Step 1 x <u>63.0</u> Dressing %	\$74.28/cwt. live animal
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**STEP 3: Add Byproducts Value**

Step 2 + \$8.50 per Liveweight	\$82.78/cwt.
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**STEP 4: Deduct Cost**

<u>\$75.00</u> /head cost , <u>11.50</u> /cwt.	- (\$6.52/cwt.)
(Break Even Price)	\$76.26/cwt.

**Summary:** Break even prices calculated the hard way using a best guess at the boxed beef price, meat discounts, and costs of processing. Notice, to make money you must pay less than the break even. Each packer will be provided an estimated break-even table for their plant to reduce the time needed for detail calculations.

## FEEDLOT INFORMATION

As a Feedlot Cattle Marketing Manager, in the Fed Cattle Market Simulator your job is to sell finished cattle from your feedlot's show list to meatpacking firm order buyers and try to earn a profit. *As a marketing manager, you have no control over feeder cattle purchases*; it is only your job to sell the cattle once they have adequate degrees of finish. You will have varying number of pens of cattle in each weight group on your show list each week. The eight feedlots differ in size, but have the same quality of cattle and similar costs. The physical process of feeding cattle involves the purchase of 700# feeder animals and feeding them for 17 weeks. Cattle are assumed to grow 25# per week. After 17 weeks the cattle will weigh an average of 1100#, and they are placed on the show list for sale. The marketing manager attempts to recover the cost of the feeder animal, the average cost of feed over the feeding period, and make a profit when negotiating a price for the finished animals. Other feedlot marketing managers will be attempting to do the same. If you do not sell cattle during the week which they weight 1200#, you will have to sell them to a packer outside of the game at a serious discount to the market price for 1150# animals. The feeder cattle purchase price is a laid in cost and may seem relatively high, but it includes interest and death loss.

The example below illustrates the break-even calculation for 1150# cattle. A break-even estimation table will be provided to each team at the workshop to reduce calculation time. Cattle have their lowest break-even cost at 1150#. Feed efficiency decreases 8% from 1150# to 1175#, 18% from 1175# to 1200#, and 25% from 1200# to 1225# where they are sold at a discount. Feedlots that hold cattle beyond 1200# are severely penalized.

### EXAMPLE BREAK EVEN PRICE FOR 1150 # FED CATTLE

<b>STEP 1:</b>	<b>Calculate Total Cost of Gain</b>		
	(Out Weight - In Weight) x \$/lb.		
	(1150# - 700#) x \$0.474/lb.	=	\$ 213.30/head
<b>STEP 2:</b>	<b>Calculate Total Feeder Cost</b>		
	700# x \$102.36/cwt.	=	\$ 716.52/head
<b>STEP 3:</b>	<b>Convert to Slaughter Weight</b>		
	(Step 1 + Step 2) / 1150#	=	\$ 80.85/cwt.

There is also a "Game Initialization Sheet" provided to Feedlots that lists the number of pens placed each week, a weekly cost of gain for the feedlot, and an estimated break-even by weight class. This sheet will be updated as needed throughout the game.

GAME INITIALIZATION TABLE: SHOW LIST WEEK #21

Show List Wk	# of Pens Wk	700 lb Feeder Placed	Current Cost of Gain/lb.	Projected BE for 1150#	Actual COG	Actual Break Even Price					
						1100	1125	1150	1175	1200	
1	17	35	\$99.72	0.45	\$78.31	\$0.470	\$80.51	\$79.78	\$79.09	\$79.95	\$81.33
2	18	35	99.72	0.45	78.31	0.472	80.57	79.85	79.15	<u>80.01</u>	.
<u>3</u>	<u>19</u>	<u>36</u>	<u>98.71</u>	<u>0.45</u>	<u>77.69</u>	<u>0.473</u>	79.99	79.28	<u>78.60</u>	.	.
4	20	36	97.94	0.46	77.62		79.57	<u>78.86</u>	.	.	.
5	21	36	99.49	0.46	78.56		<u>80.60</u>	.	.	.	.
6	22	36	97.71	0.46	77.48		.	.	.	.	.

**How to read the chart** marked for placement week 3. Thirty-six pens were placed in total by all feedlots in week 3 and the cattle reach 1100# on week 19 and emerge on show lists. If these cattle are not sold in the next two weeks they will weigh 1150# on week 21. These cattle cost \$98.71/cwt. as feeder cattle and the average cost of gain is the average of weekly COG from week 3 to week 21 ((0.45 x 1 week + 0.46 x 3 weeks + 0.47 x 4 weeks + 0.48 x 12 weeks) / 20 weeks = 0.473). The break even price is \$78.60/cwt. Other cattle currently on the show list include 1100# animals which emerged on the show list at the beginning of week 21, 1125# animals which emerged beginning week 20, 1175# animals which emerged during week 18, and 1200# cattle which emerged in week 17.

**Summary:** The price in the lowest position in each column is the current break even price for each weight group. You will update the "." from the matrix on the following page using the 700 lb feeder price and a best guess at actual COG. Notice, your break even is lowest for 1150# cattle and is relatively higher for lighter and heavier cattle --- this is due to feed efficiencies. You need to consider this when pricing cattle which do not weigh 1150#.