Economics of Producing Cattle on Forage

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Extension Economist-Livestock

5 THINGS SHAPING MARKETS TODAY

Current Situation

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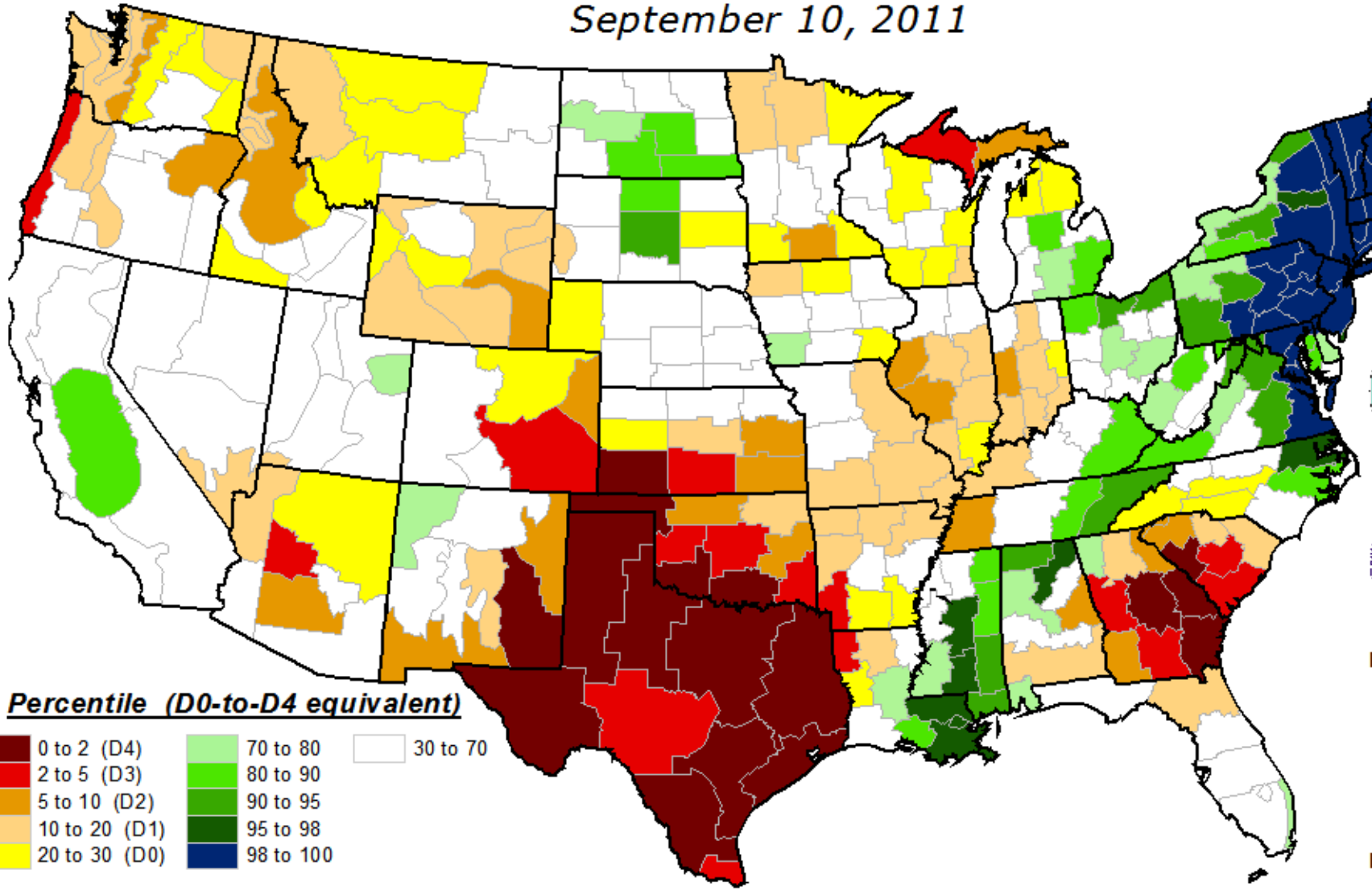
Objective Short-Term Drought Indicator Blend Percentiles

September 10, 2011



Percentile (D0-to-D4 equivalent)

0 to 2 (D4)	70 to 80	30 to 70
2 to 5 (D3)	80 to 90	
5 to 10 (D2)	90 to 95	
10 to 20 (D1)	95 to 98	
20 to 30 (D0)	98 to 100	

NWS / NCEP Climate Prediction Center

NESDIS National Climatic Data Center

Inputs (as percentiles):

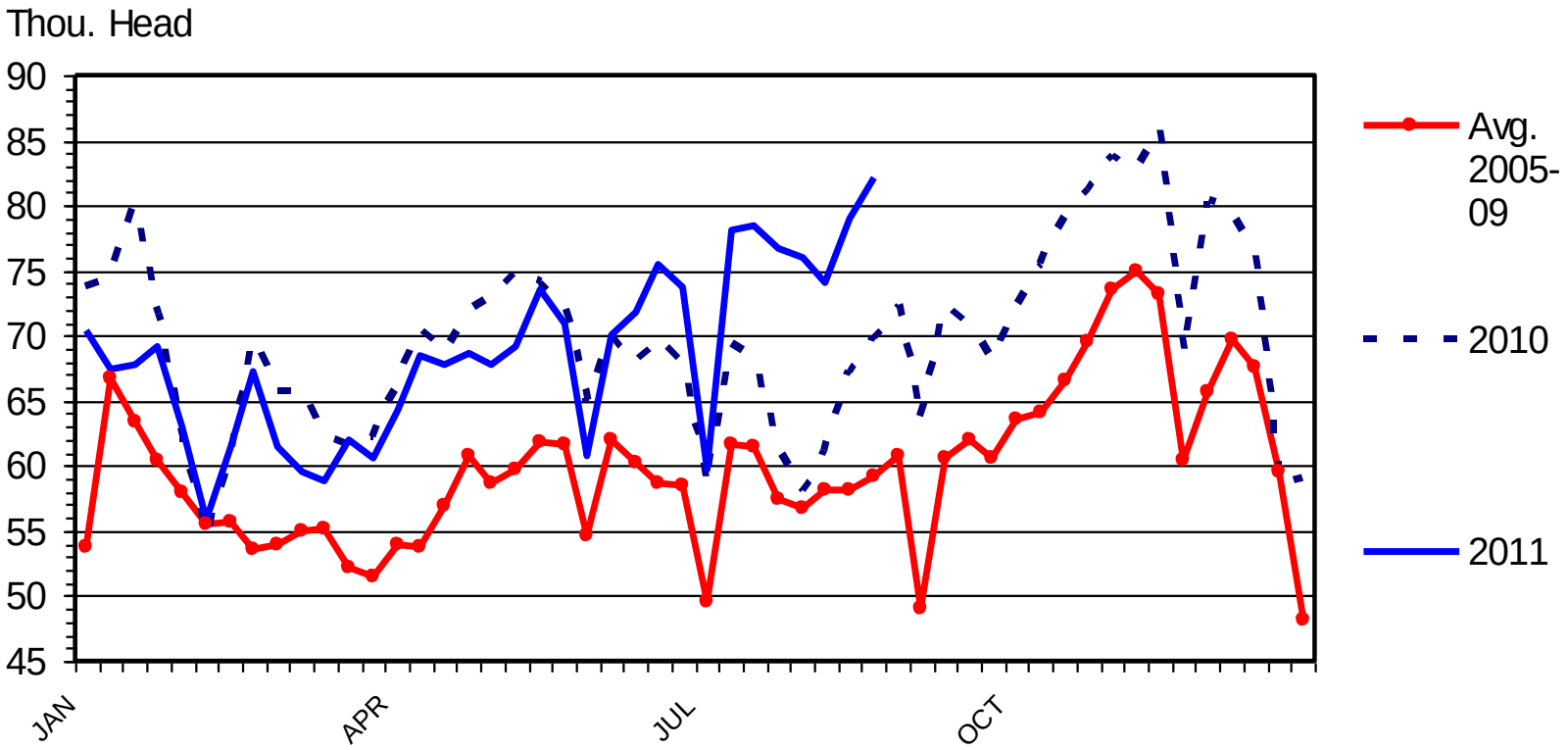
35% Palmer Z-Index
25% 3-Month Precipitation
20% 1-Month Precipitation
13% CPC Soil Moisture Model
7% Palmer Drought Index

This map approximates impacts that respond to precipitation over several days to a few months, such as agriculture, topsoil moisture, unregulated streamflows, and most aspects of wildfire danger. The relationship between indicators and impacts can vary significantly with location and season. Do not interpret this map too literally.

This map is based on preliminary climate division data. Local conditions and/or final data may differ. See the detailed product suite description for more details.

BEEF COW SLAUGHTER

Federally Inspected, Weekly



Livestock Marketing Information Center

Data Source: USDA-AMS & USDA-NASS

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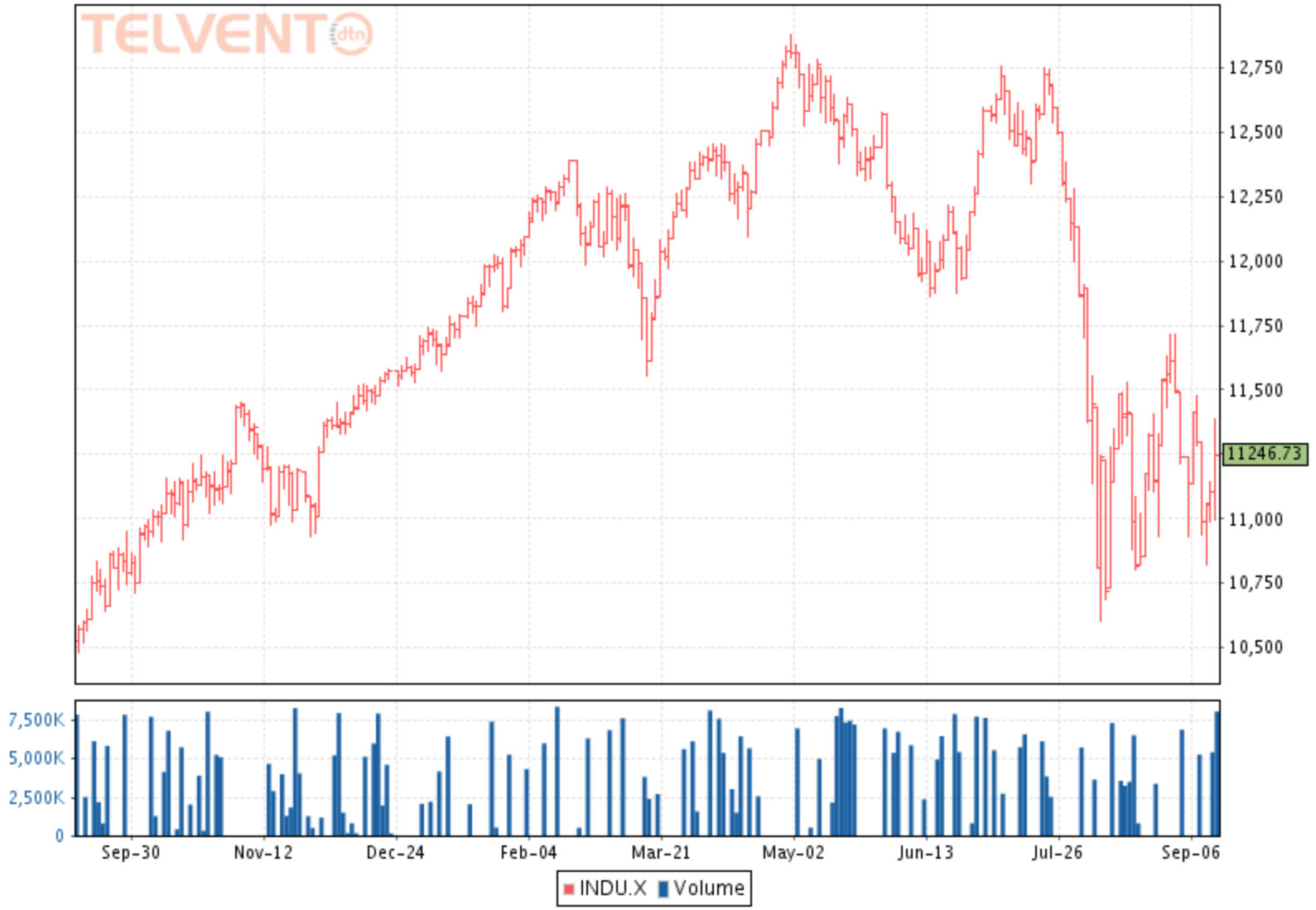
C-S-34
09/09/11



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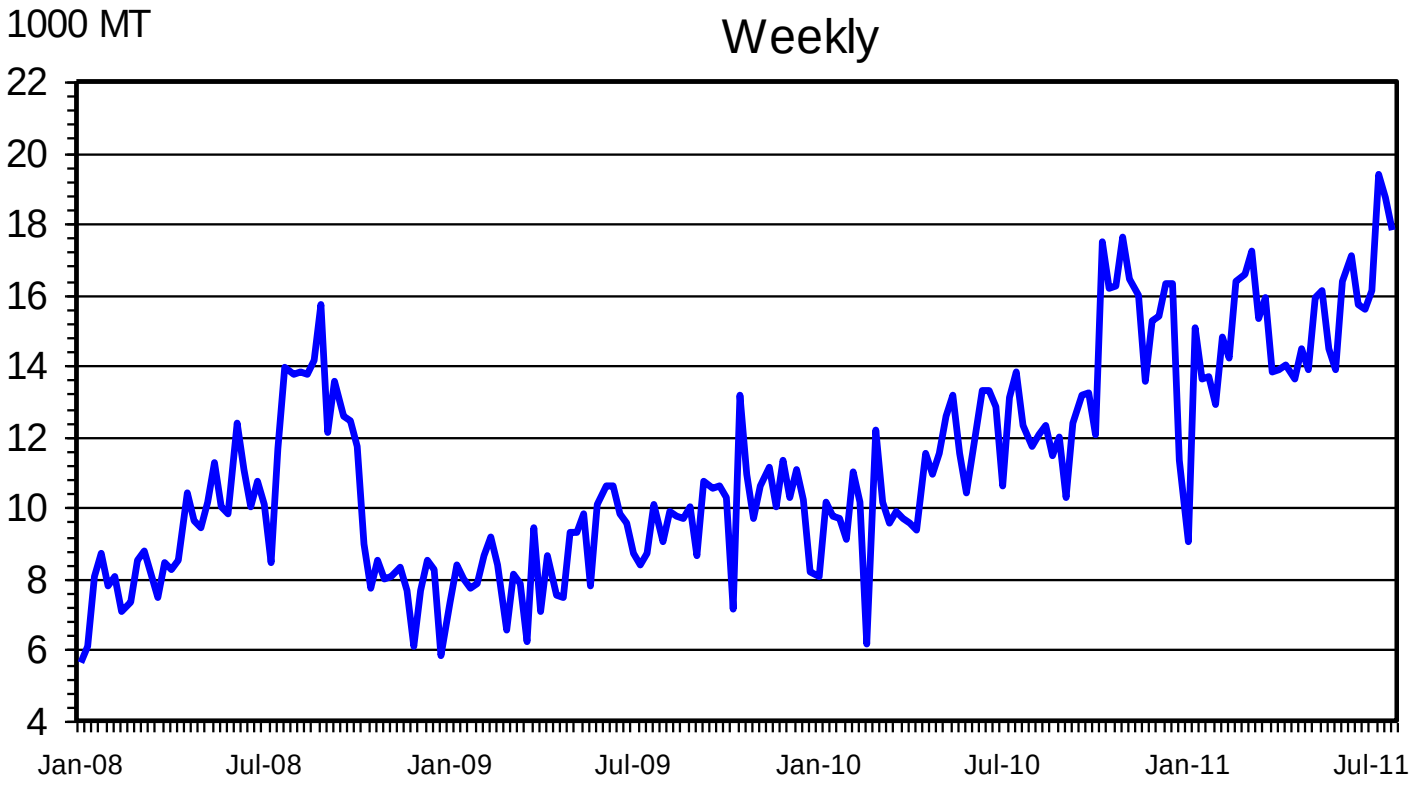
Source: DTN/Telvent

TOTAL U.S. EXPORTS OF BEEF MUSCLE CUTS

Weekly



Livestock Marketing Information Center

Data Source: USDA-FAS

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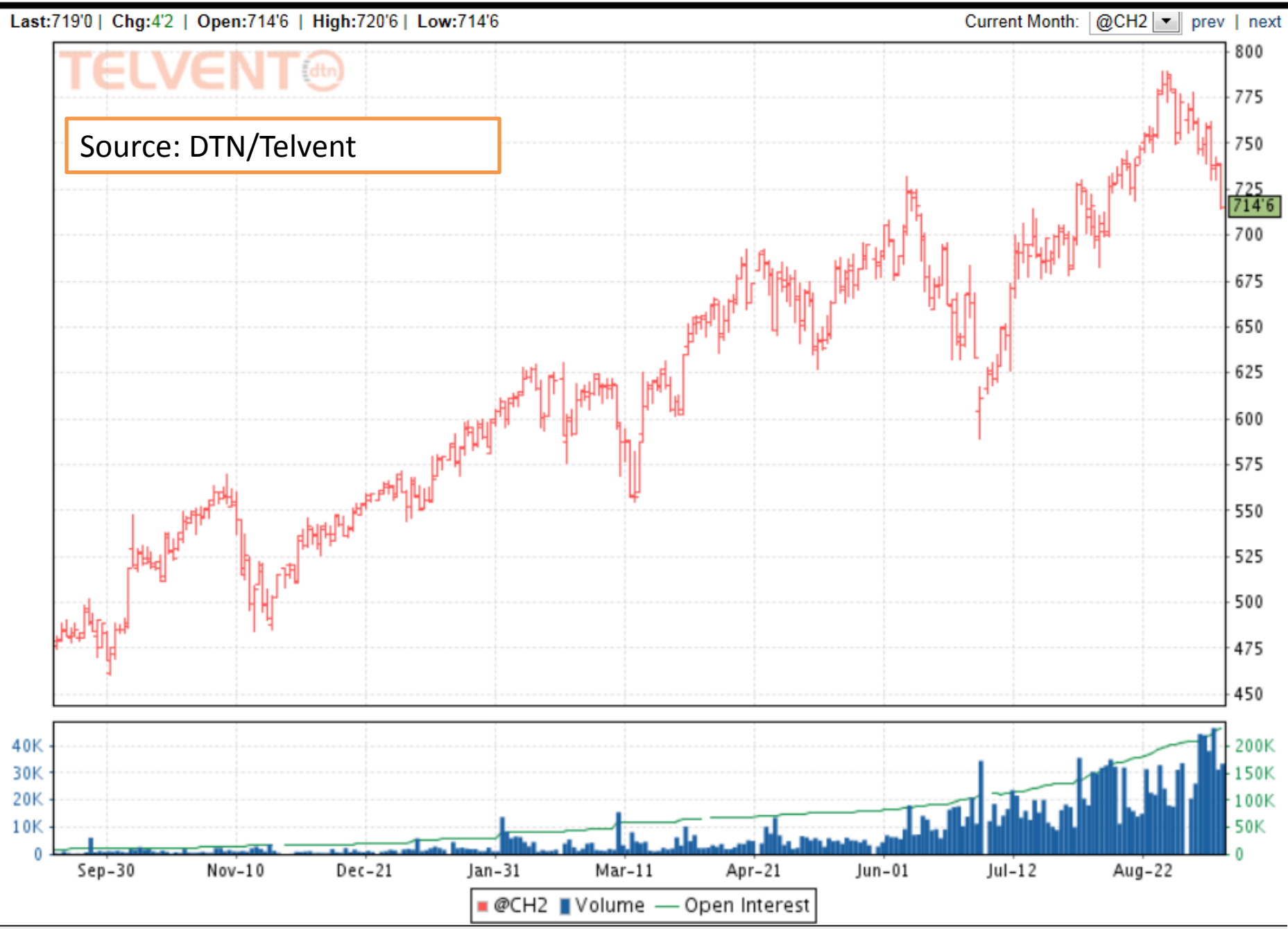
08/04/11


Last:719'0 | Chg:4'2 | Open:714'6 | High:720'6 | Low:714'6
Current Month: @CH2 prev | next
TELVENT dtn
Source: DTN/Telvent
800
775
750
725
714'6
700
675
650
625
600
575
550
525
500
475
450
40K
30K
20K
10K
0
200K
150K
100K
50K
0
Sep-30
Nov-10
Dec-21
Jan-31
Mar-11
Apr-21
Jun-01
Jul-12
Aug-22
@CH2
Volume
Open Interest

What can we expect this year and next?

OUTLOOK FOR 2011

The Economist

AUGUST 6TH–12TH 2011 Economist.com

Another week, another euro crisis

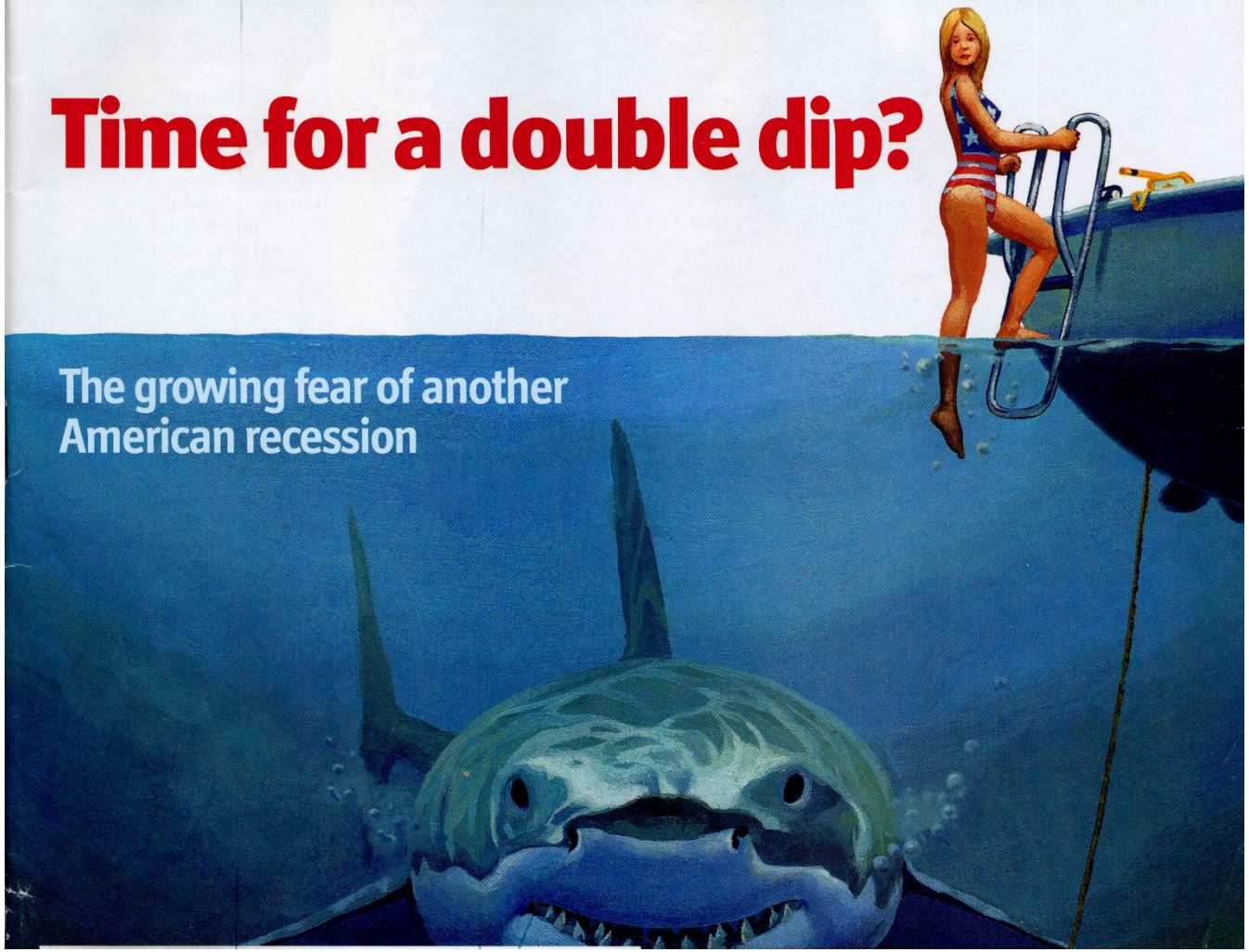
Finding Britain's Bill Gates

Can Islam and democracy coexist?

Catering to Asian fantasies

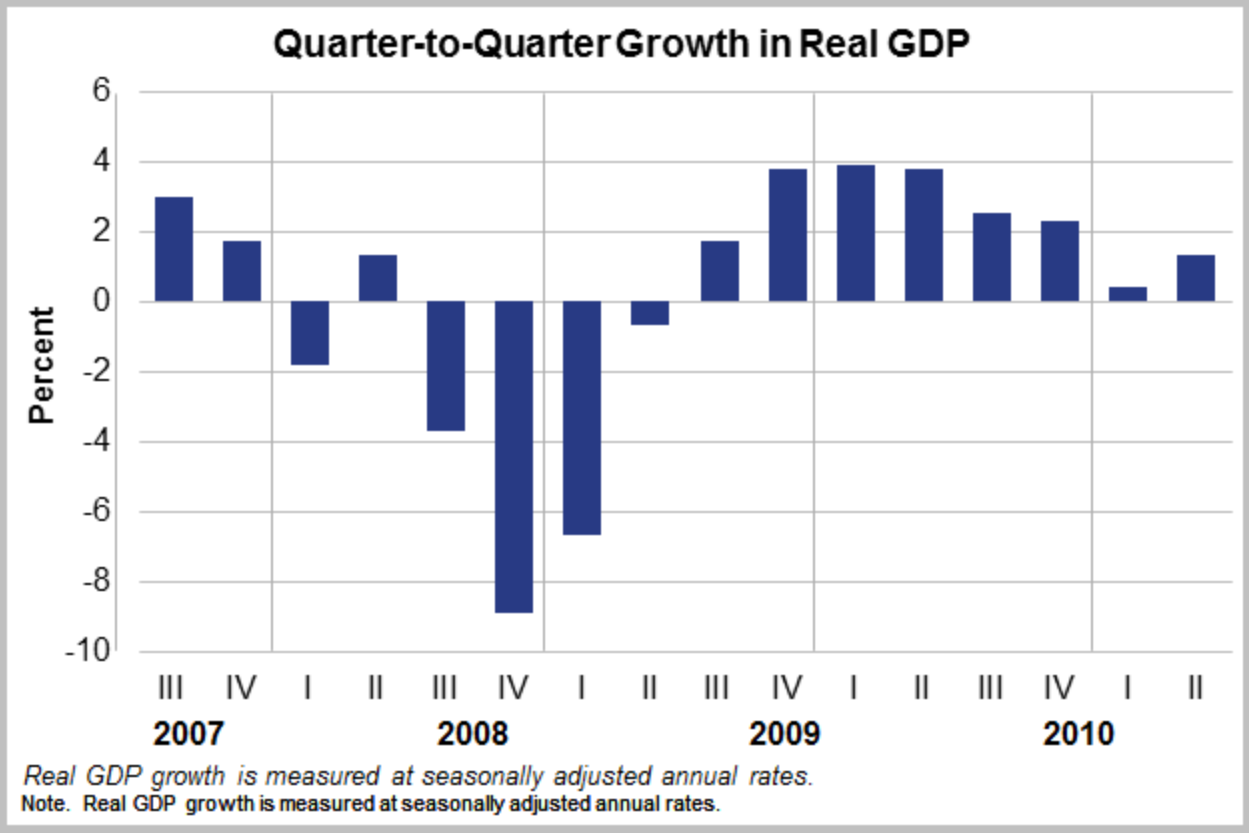
A good man in Kandahar

Time for a double dip?



The growing fear of another American recession

It is all about the economy,… mostly



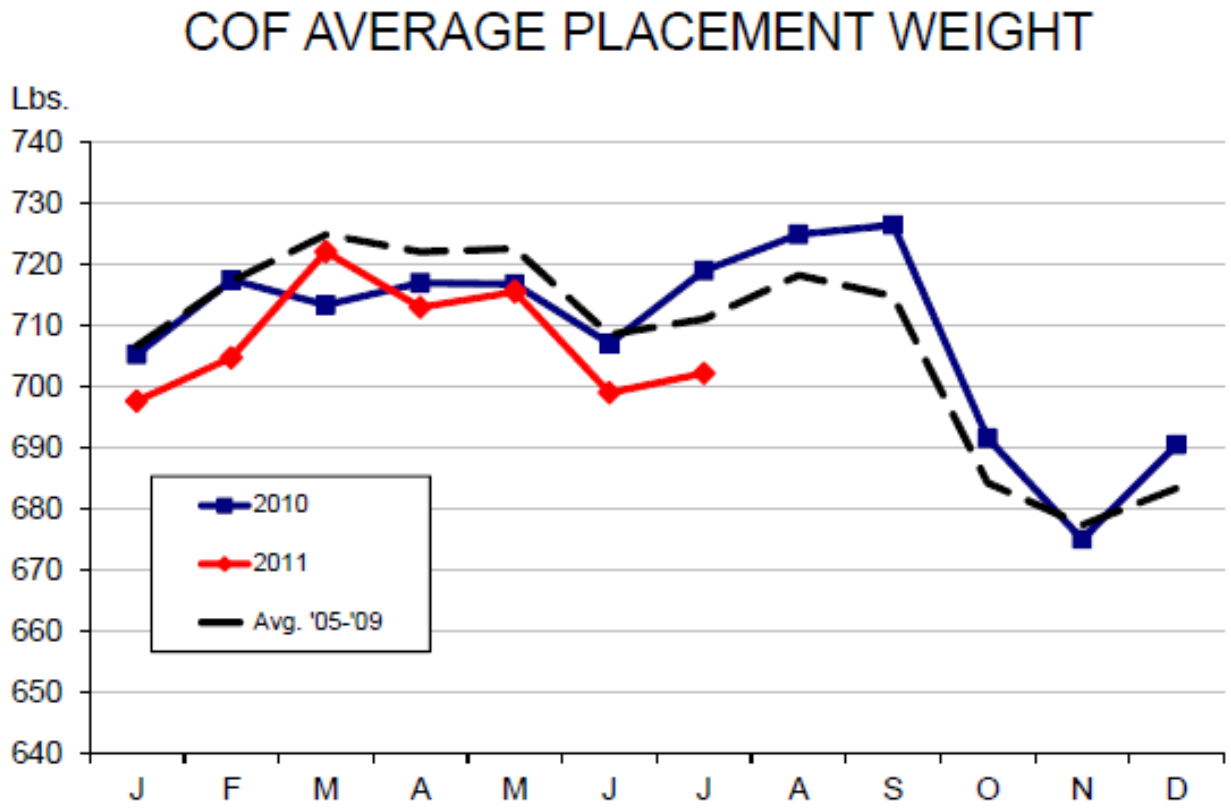
COF report = bullish?

USDA Cattle on Feed Report Summary --- August 2011

	Thous. Hd.		2011 as Pct. of 2010		
	2010	2011	Actual	Esti-mate*	Differ-ence
On Feed, August 1	9,880	10,626	107.6	107.5	0.1
Placed on Feed in July	1,758	2,153	122.5	116.9	5.6
Fed Cattle Marketed, July	1,901	1,908	100.4	96.3	4.1

Data published by USDA-NASS and compiled by Daily Livestock Report

COF report = bullish??



Data published by USDA-NASS and compiled by Daily Livestock Report

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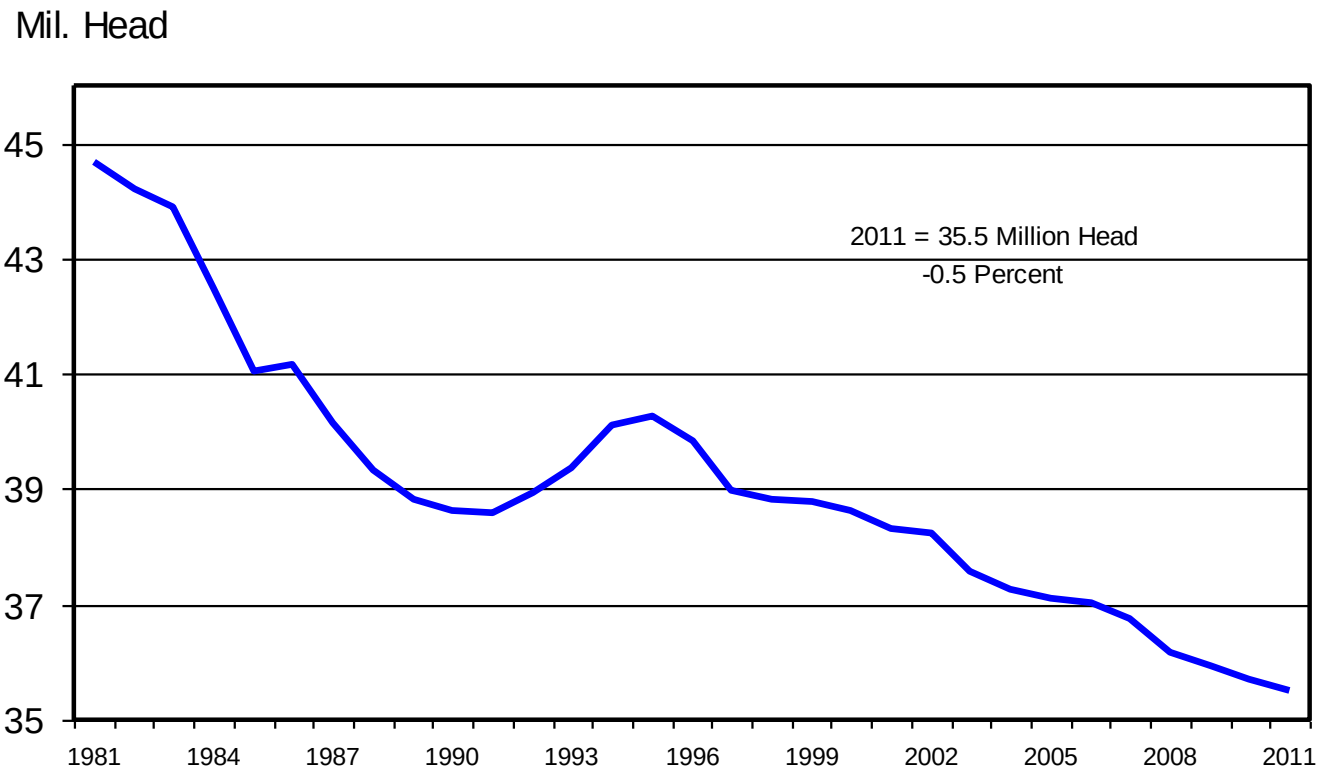
CALF CROP

July 1 Estimates, U.S., Annual



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Data Source: USDA-NASS

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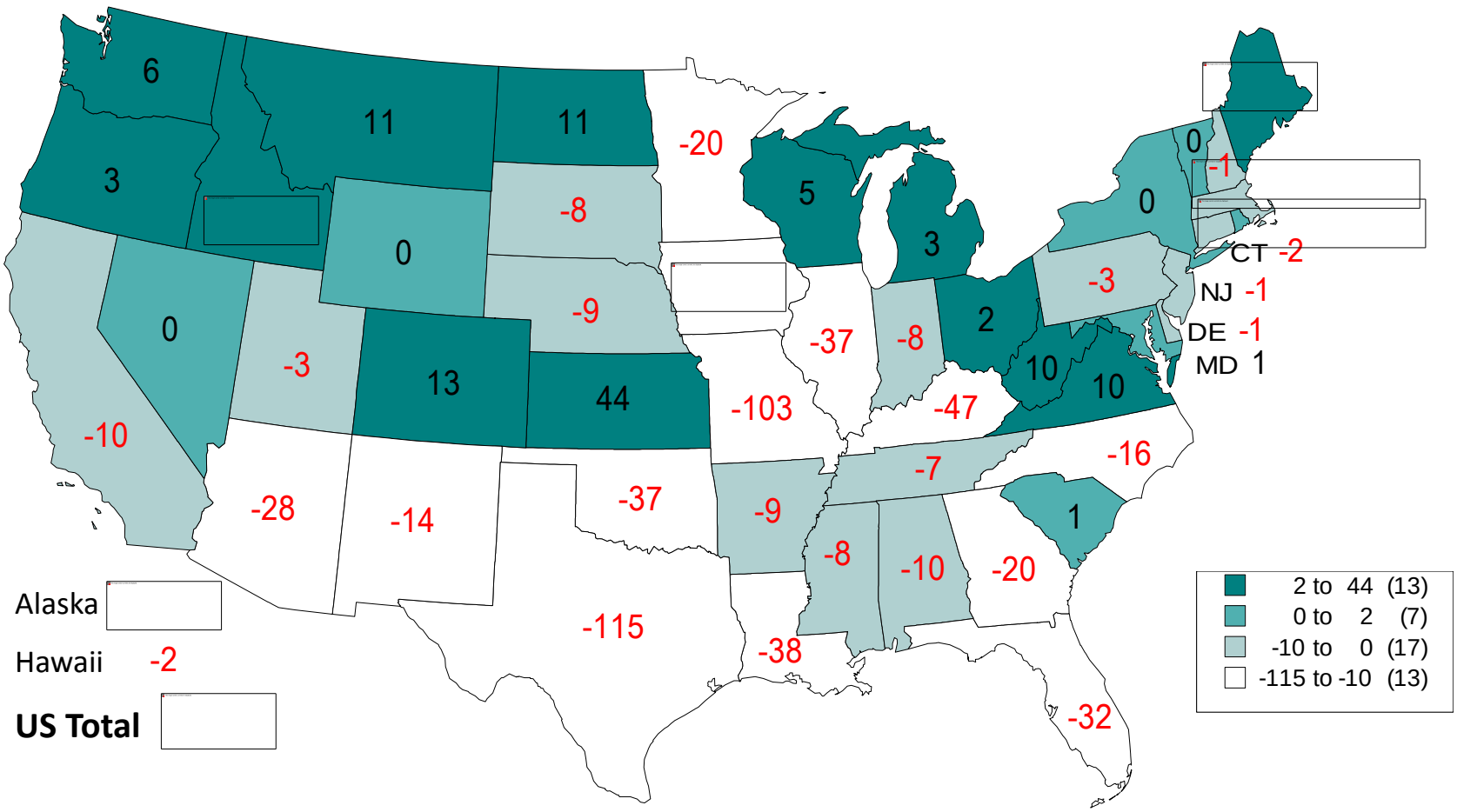
C-N-18B
07/22/11

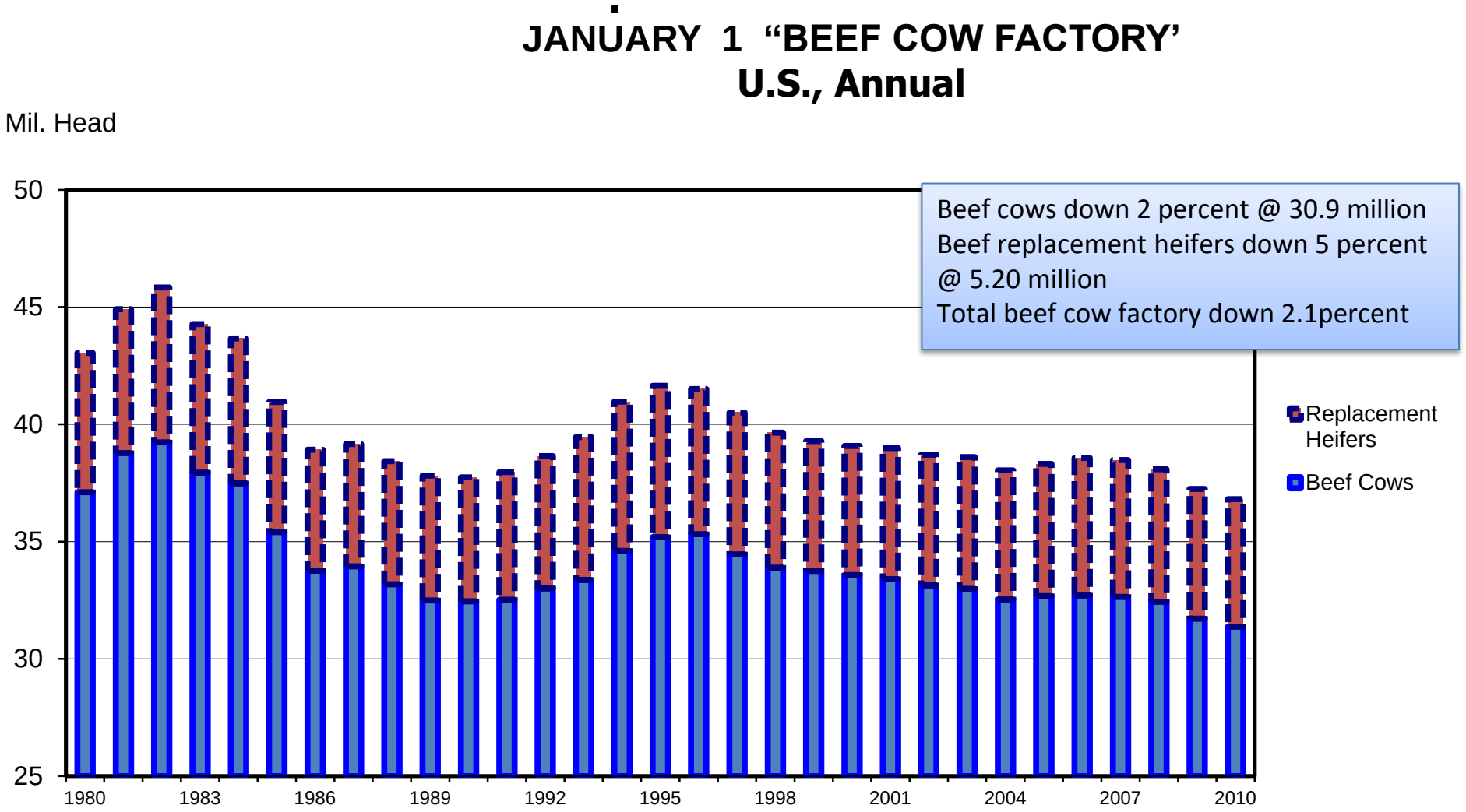
CHANGE IN BEEF COW NUMBERS
JANUARY 1, 2010 TO JANUARY 1, 2011
(1000 Head)



Livestock Marketing Information Center

Data Source: USDA/NASS

Declining cow numbers reflect lack of profitability in the



Meat supplies will be slightly larger in 2011 but lower in 2012

Commodity	2010	2011 Projected	2012 Forecast	11 vs 10	12 vs 11
	BILLION POUNDS			PERCENT CHANGE	
Beef	26.30	26.33	25.17	0.11%	-4.63%
Pork	22.44	22.64	22.96	0.86%	1.43%
Total Red Meat*	**49.04**	**49.26**	**48.42**	**0.45%**	**-1.73%**
Broilers	36.91	36.99	37.77	0.22%	2.07%
Total Poultry**	**43.06**	**43.22**	**43.25**	**0.36%**	**0.07%**
Total RedMeat & Poultry	**92.10**	**92.48**	**91.67**	**0.41%**	**-0.88%**

Source: USDA-WASDE, September 2011 Report

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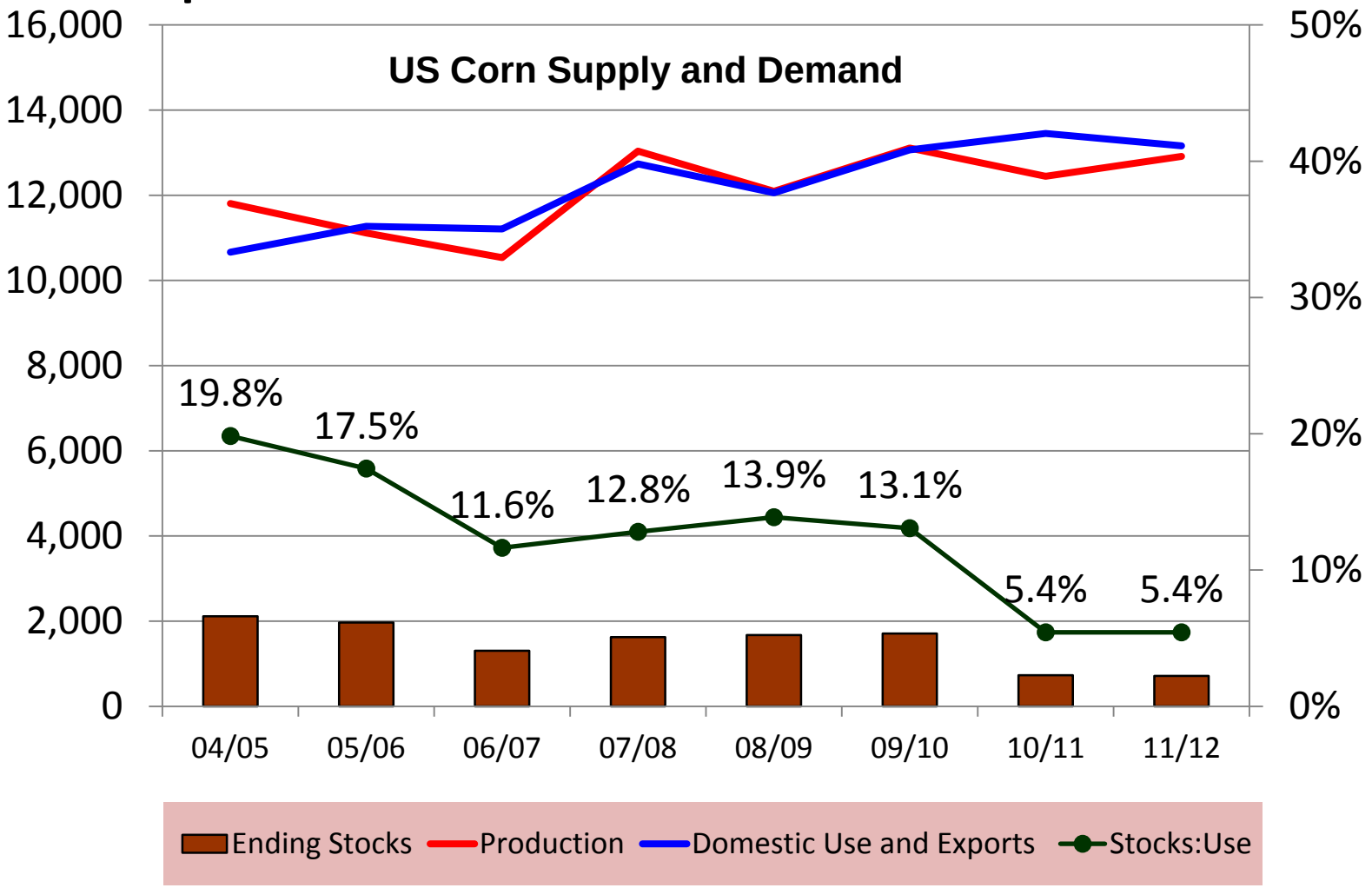
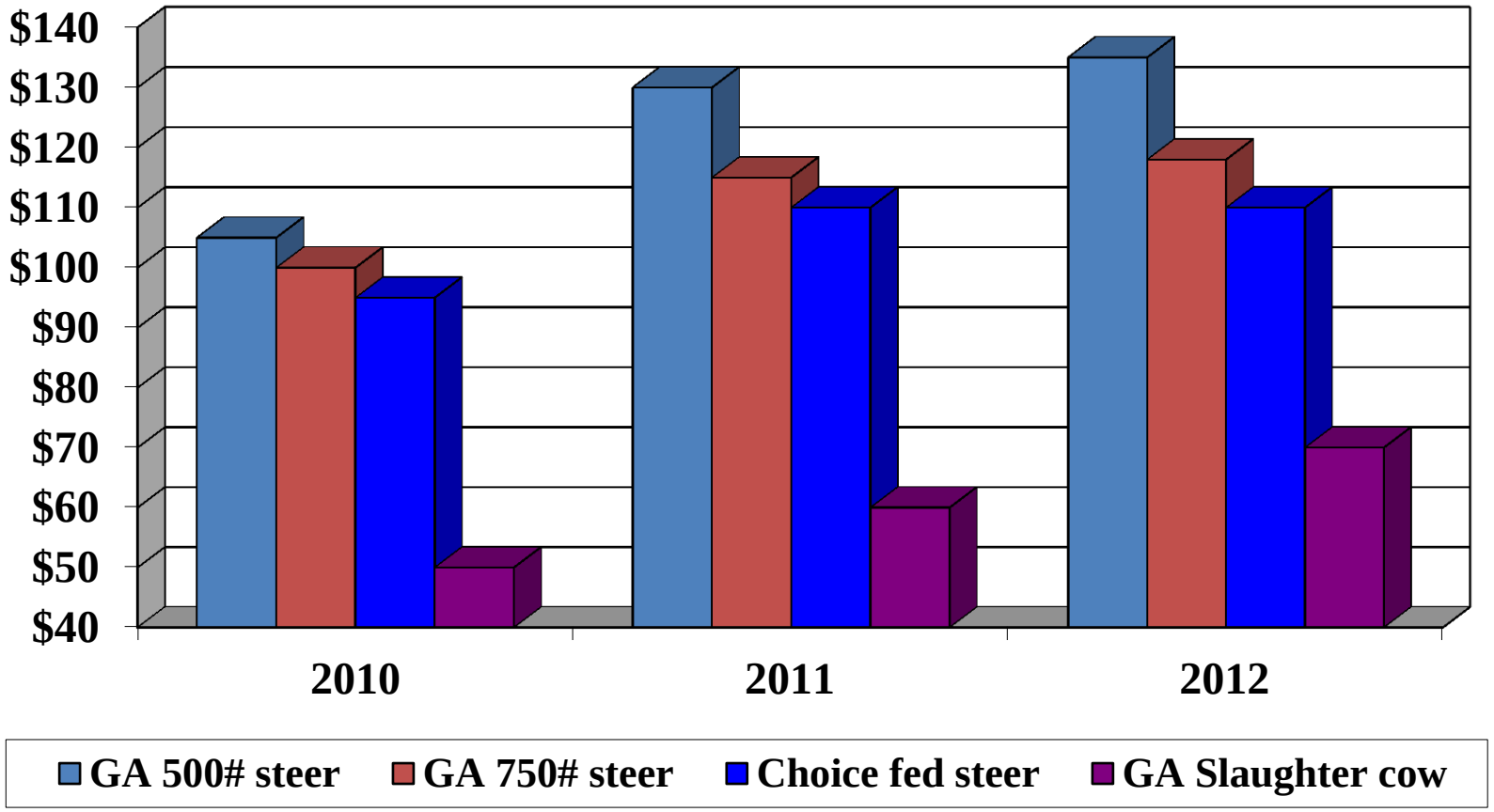
Tight Stocks Since 1995 in Feed Crops Despite Large Crops



Projected Prices 2011 and Beyond



Source: USDA, LMIC and UGA

MANAGING FOR PROFITS 2012

Let's state the obvious

- Feeding cows (much) is not profitable
- Expensive fertilizer makes it hard to want to fertilize pastures.
- The trick is to find ways to reduce costs and maintain or improve production
- General suggestions
  - Add as many pounds on grass as you can economically
  - Find ways to reduce costs

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A model for reducing costs

1. Determine the total cost
2. Arrange individual costs from largest to smallest
3. Begin by finding ways to reduce the largest costs first
   →Saving 10% on $500 = 50% of $100
4. Work your way through the list focusing on ways to reduce all items

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Two Places to Save Money

- Replacement females
- Reducing forage costs AKA maximizing the utilization of forages

HEIFER ECONOMICS

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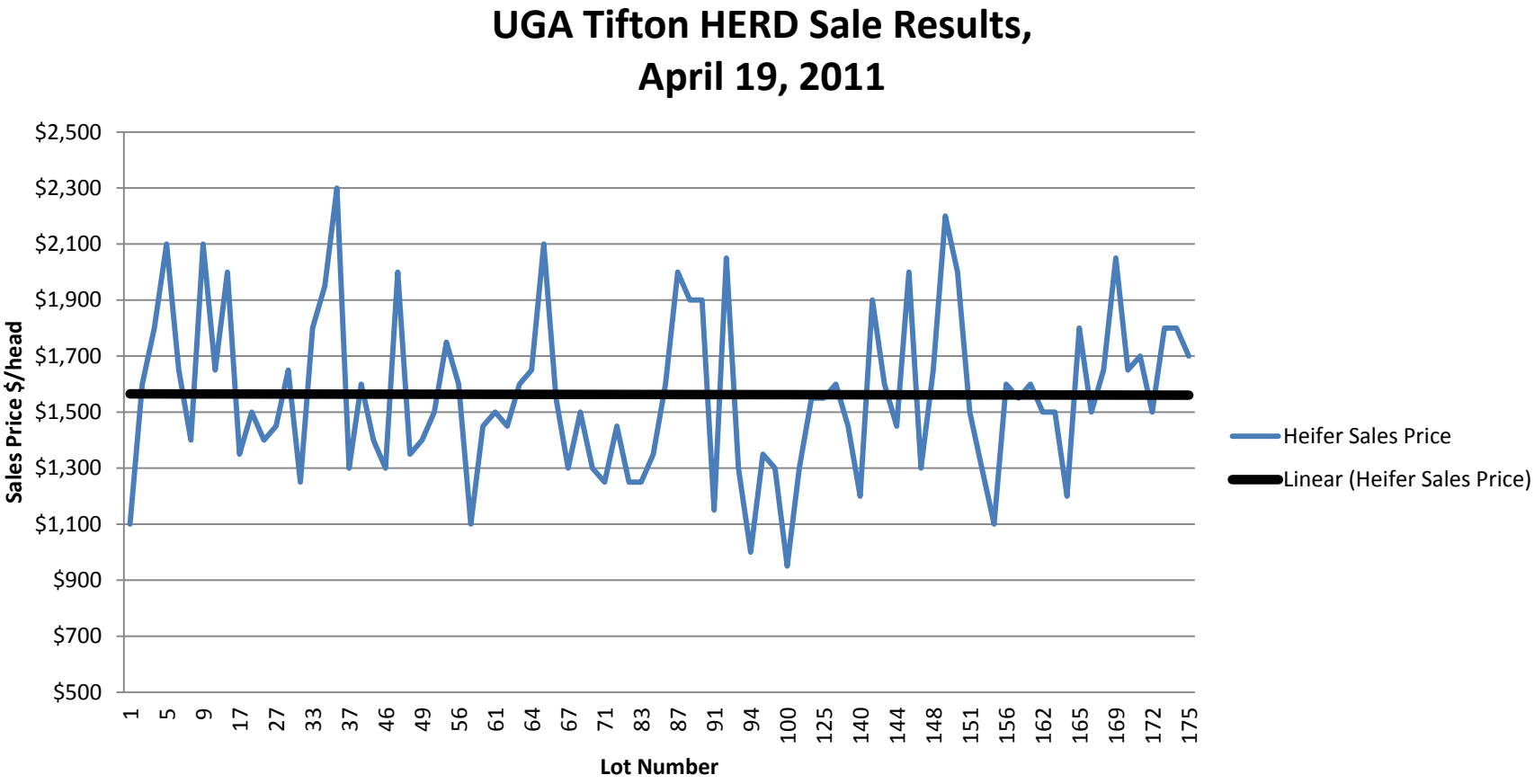
How much is too much for a heifer?



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Two Major Questions

1. How much does it cost?
2. How can I lower my cost?

Heifer Development Budget				
Item	***Unit***	***Cost/unit***	***Quantity***	***Item cost***
Heifer	cwt.	$ 125.00	5	$ 625.00
Winter Pasture	ac	$ 150.00	0.67	$ 100.00
Coastal Pasture	ac	$ 150.00	0.67	$ 100.50
Other Pasture	ac	$ -	0.67	$ -
Hay	ton	$ 75.00	1.65	$ 123.75
Feed - Developing Heifer	lbs	$ 0.13	540	$ 67.50
Feed - Pregnant Heifer	lbs	$ 0.13	300	$ 39.00
Feed - 1st Calf Heifer	lbs	$ -		$ -
Other Feed	lbs	$ -		$ -
Mineral	hd	$ 18.20	1	$ 18.20
Ear Tags	hd	$ 2.80	1	$ 2.80
Vet & Med - Vaccinations	hd	$ 6.12	1	$ 6.12
Vet & Med - Preg check	hd	$ 3.00	1	$ 3.00
Labor	hrs	$ 10.00	1.5	$ 15.00
Total Variable Costs	**hd**			**$ 1,100.87**
Interest	hd	8.00%	$ 550.44	$ 44.03
Bull Costs	hd	$ 19.20	$ 1.00	$ 19.20
Non-breeders	percent	15.00%	$ 1,144.90	$ 171.74
Total Costs of Retaining Heifers	**hd**			**$ 1,335.84**
Adjustment for cull heifer sales	hd	$ 105.00	800	$ 126.00
Total net costs for retaining heifer				***$ 1,209.84***

Doesn't include land or management!!

What are the major costs?

1. Opportunity cost of the heifer - $625
2. Pasture + Feed = $431
3. Cull costs = $46
4. Interest = $44
5. Vet + Mineral = $30
6. Bulls = $19
7. Labor = $15

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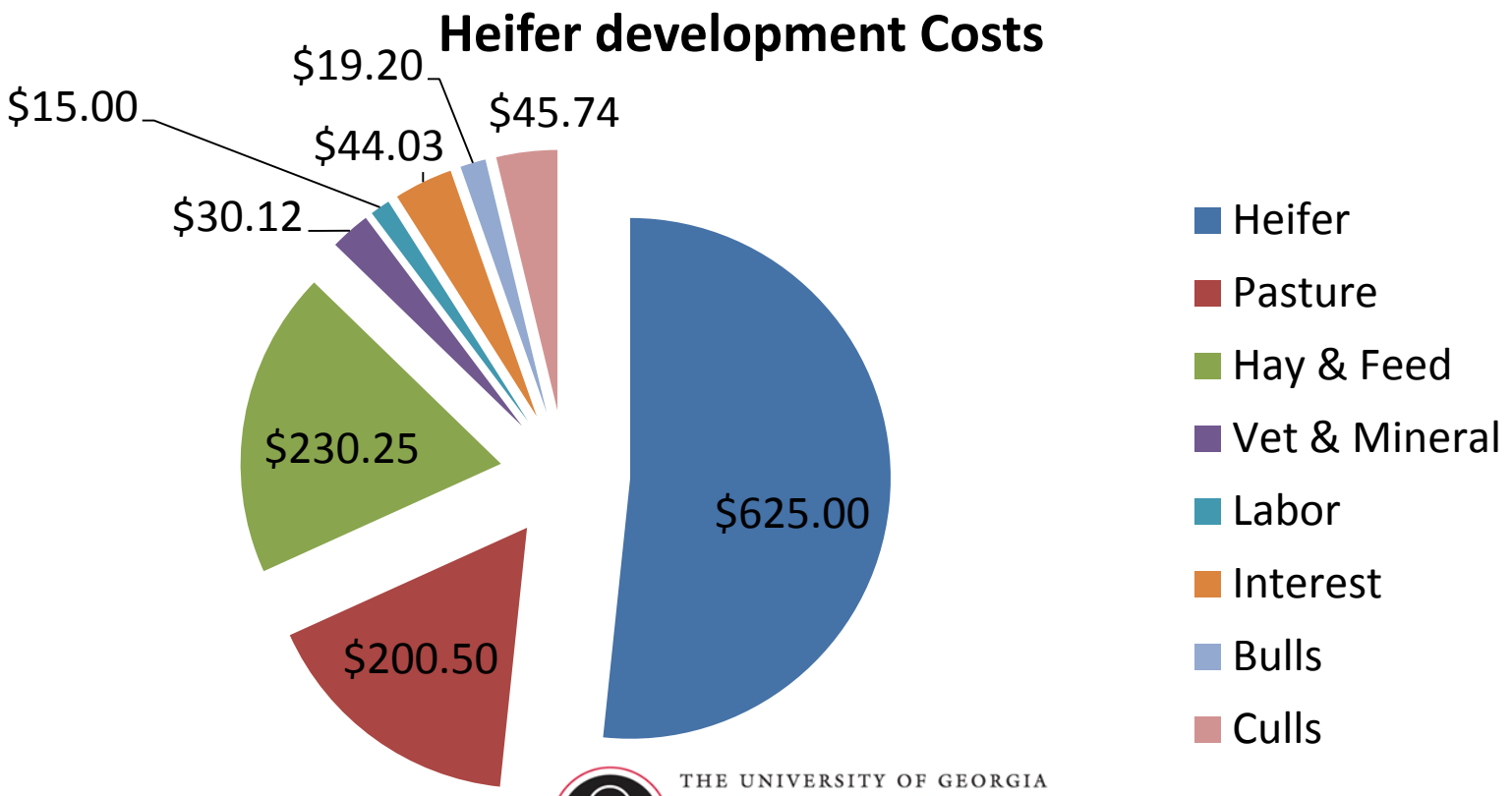
Heifer development cost



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Ways to reduce costs

1. Opportunity cost on the heifer - $625
    1. Use call options or feeder cattle futures to minimize “purchase price”
    2. Retain fewer heifers when prices are high
2. Pasture + Feed = $431
3. Cull costs = $46
4. Interest = $44
5. Vet + Mineral = $30
6. Bulls = $19
7. Labor = $15

Ways to reduce costs

1. Opportunity cost of the heifer - $625
2. Pasture + Feed = $431
    1. Match female needs to resources →do you need to adjust your calving season?
    2. Get more from your pastures → high quality forages, rotational grazing, legumes, etc.
    3. Reduce purchased forage needs → conserve hay, stockpiling, baleage, etc.
    4. Manage the feed bill --> supply only their needs, use seasonalities to make feed purchases, consider buying in bullk, learn about feeding by-products
    5. Consider getting someone else to grow them for you
3. Cull costs = $46
4. Interest = $44
5. Vet + Mineral = $30
6. Bulls = $19
7. Labor = $15

Ways to reduce costs

1. Opportunity cost of the heifer - $625
2. Pasture + Feed = $431
3. Cull costs = $46
    1. Don't have many culls → BSE for bulls, evaluate synchronizing and AI
    2. Don't skimp on the groceries → there is a difference in minimizing feed costs and skimping on nutrition
    3. Consider alternative markets for cull heifers → freezer beef, retained ownership, somebody just looking for a cow, etc.
4. Interest = $44
5. Vet + Mineral = $30
6. Bulls = $19
7. Labor = $15

Ways to reduce costs

1. Opportunity cost of the heifer - $625
2. Pasture + Feed = $431
3. Cull costs = $46
4. Interest = $44
    1. Reducing other costs will reduce interest costs
    2. Reducing development time will also reduce interest costs
5. Vet + Mineral = $30
6. Bulls = $19
7. Labor = $15

Ways to reduce costs

1. Opportunity cost of the heifer - $625
2. Pasture + Feed = $431
3. Cull costs = $46
4. Interest = $44
5. Vet + Mineral = $30
    1. Consider alternative sources of supplies
    2. Consider purchasing in bulk or with other producers
    3. Maintain adequate nutrition of heifers
    4. Evaluate purchasing mineral in bulk
    5. Others???
6. Bulls = $19
7. Labor = $15

Ways to reduce costs

1. Opportunity cost of the heifer - $625
2. Pasture + Feed = $431
3. Cull costs = $46
4. Interest = $44
5. Vet + Mineral = $30
6. Bulls = $19
    1. Can you use the same bull for cows and heifers?
    2. Can you lease a bull?
    3. Can you and a neighbor share a bull?
7. Labor = $15

Ways to reduce costs

1. Opportunity cost of the heifer - $625
2. Pasture + Feed = $431
3. Cull costs = $46
4. Interest = $44
5. Vet + Mineral = $30
6. Bulls = $19
7. Labor = $15
    1. Locate heifers closer to the labor
    2. Schedule intensive feeding and management activities around existing labor slack times.
    3. Is day labor cheaper than year-round labor?

Can you buy them cheaper than you can raise them?

Raise Heifers

- Biosecurity
- Known genetics
- Utilize excess labor or other resources

Purchase Heifers

- Genetic progress
- Lack of land, labor, management.
- Quicker herd expansion

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UGA REPLACEMENT FEMALE CALCULATOR

REDUCING FORAGE COSTS

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Ingredients	$/ton	$/lb CP	$/lb TDN
Bermudagrass Hay, Good	$ 100	$ 0.490	$ 0.101
Bermudagrass Hay, Average	$ 100	$ 0.588	$ 0.111
Bermudagrass Hay, Poor	$ 100	$ 0.980	$ 0.120
Small Grains Pasture - $175/acre	$ 11	$ 0.139	$ 0.036
Ann. Ryegrass Pasture - $175/acre	$ 8	$ 0.091	$ 0.025
Corn Gluten Feed	$ 225	$ 0.500	$ 0.151
Soybean Hulls	$ 225	$ 1.042	$ 0.160
50:50 CGF:SH	$ 225	$ 0.694	$ 0.156
Whole Cottonseed	$ 390	$ 0.867	$ 0.228
Corn	$ 325	$ 2.257	$ 0.201

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UGA Basic Balancer Program

Feed Library

Feed Cost Analyzer

Brood Cows

Bulls

Heifers

Stockers

Analyzer

Stockpiling

- Stockpile - A supply of material saved for future use.
- Why
- Types
  - Silage
  - Hay
  - “Stockpiled forage”

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Stockpiling

Stockpiling forages refers to standing forages that are allowed to grow until after frost when they are then grazed.

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Stockpiling vs. Feeding hay

Stockpiling

- Lower fertilizer cost.
- Requires a little more management.
- VERY weather dependent.
- Can be a way to “mow” permanent pasture in preparation for winter annual planting.
- Can reduce total feed bill.

Feeding Hay

- Usually readily available.
- Transportable.
- Can be expensive.
- Either have to dedicate land to hay production or purchase hay.

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Recommended steps for Grazing stockpiling bermudagrass (limpo grass?)

1. Measure the amount of stockpiled forage available.
2. Obtain a clipped sample for forage quality analysis.
3. Allow livestock to strip graze the stockpiled grass → DO NOT CONTINUOUS GRAZE
4. Supplement with grain or by-products based on forage-test and animal needs.
5. Repeat steps 1-4 until the stockpiled forage is utilized.

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Economics of Stockpiling

- How much forage do I need?
  - Animal class
  - Consumption
- Cost of stockpiling
  - Fertilizer
  - Harvesting
  - Labor

Demonstration data from Americus and Plains

Americus – 2009/2010

- 8 acres (4.5 bermuda +3.5 mixed) clipped late Aug
- 60 units N applied.
- 22 dry beef cows grazed on stockpiled pastures for 55 days beginning early Nov.
- Hay fed for 74 d in 2009-2010
- 2008-2009, no stockpiling, hay fed 114 days

Plains – UGA SWGA REC - 2004

- Compared stockpiling to feeding hay
- 13 acre hay field mowed late Aug.
- 80 units N Applied
- 20 dry beef cows grazed for 70 days on 13 acres beginning early Nov .
- Cows without stockpiling hay fed 1,786 lbs. per cow.
- No statistical difference in BCS between groups.

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Results from Americus, 2008 vs. 2009, Jimmy Carter PMC

STOCKPILE SUMMARY						
Item	**Cost**	**Cows**	**$/Cow**	**Days**	**$/Cow/day**	**$/Cwt**
Bermuda	$ 166.50	22	$ 7.57	30	$ 0.25	
Mixed	$ 129.50	22	$ 5.89	25	$ 0.24	
Total Stockpile cost	$ 296.00	22	$ 13.45	55	$ 0.24	
HAY COST	$ 1,367.52	22	$ 62.16	74	$ 0.84	
TOTAL WINTER Cost	**$ 1,663.52**	**22**	**$ 75.61**	**129**	**$ 0.59**	**$ 16.80**
HAY ONLY SUMMARY						
Total Cost	**$ 2,125.20**	**22**	**$ 96.60**	**115**	**$ 0.84**	**$ 21.47**
Savings from stockpiling	**$ 461.68**		**$ 20.99**		**$ 0.25**	**$ 4.66**

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Results from Plains, 2004
UGA SWGA REC

STOCKPILE SUMMARY						
Item	**Cost**	**Cows**	**$/Cow**	**Days**	**$/Cow/ day**	**$/Cwt**
Bermuda	$ 305.50	10	$ 30.55	70	$ 0.44	
Mixed	$ -	22	$ -	0	$ -	
Total Stockpile cost	$ 305.50	10	$ 30.55	70	$ 0.44	
HAY COST	$ -	10	$ -	0	$ -	
TOTAL WINTER Cost	$ 305.50	10	$ 30.55	70	$ 0.44	$ 6.79
HAY ONLY SUMMARY						
Total Cost	$ 625.10	10	$ 62.51	70	$ 0.89	$ 13.89
Savings from stockpiling	**$ 319.60**		**$ 31.96**		**$ 0.46**	**$ 7.10**

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What is the breakeven on stockpiling vs. hay?

	TOTAL SAVINGS FROM STOCKPILING UNDER VARIOUS SCENARIOS					
	Cost of Feeding Hay ($/ton)					
Cost of Stockpiling ($/acre)	$ 50.00	$ 60.00	$ 70.00	$ 80.00	$ 90.00	$ 100.00
$ 37.50	$28.36	$91.89	$155.42	$218.95	$282.48	$346.01
$ 45.00	$ (29.50)	$34.03	$97.56	$161.09	$224.62	$288.15
$ 50.00	$ (68.07)	$ (4.54)	$58.99	$122.52	$186.05	$249.58
$ 52.50	$ (87.35)	$ (23.82)	$39.71	$103.24	$166.76	$230.29
$ 62.50	$ (164.50)	$ (100.97)	$ (37.44)	$26.09	$89.62	$153.15
	$/CWT. DIFFERENCES IN STOCKPILED VS. HAY					
	Cost of Feeding Hay ($/ton)					
Cost of Stockpiling ($/acre)	$ 50.00	$ 60.00	$ 70.00	$ 80.00	$ 90.00	$ 100.00
$ 37.50	$0.57	$1.84	$3.11	$4.38	$5.65	$6.92
$ 45.00	$ (0.59)	$0.68	$1.95	$3.22	$4.49	$5.76
$ 50.00	$ (1.36)	$ (0.09)	$1.18	$2.45	$3.72	$4.99
$ 52.50	$ (1.75)	$ (0.48)	$0.79	$2.06	$3.34	$4.61
$ 62.50	$ (3.29)	$ (2.02)	$ (0.75)	$0.52	$1.79	$3.06

How much forage will I need to grow to make this work?

	Cost of Feeding Hay ($/ton)					
Lbs. forage/ac produced	**$ 50.00**	**$ 60.00**	**$ 70.00**	**$ 80.00**	**$ 90.00**	**$ 100.00**
$ 1,000.00	$ (15.78)	$ (10.93)	$ (6.09)	$ (1.25)	$ 3.60	$ 8.44
$ 1,500.00	$ (3.67)	$ 3.60	$ 10.87	$ 18.13	$ 25.40	$ 32.66
$ 2,000.00	$ 8.44	$ 18.13	$ 27.82	$ 37.51	$ 47.20	$ 56.89
$ 2,500.00	$ 20.55	$ 32.66	$ 44.78	$ 56.89	$ 69.00	$ 81.11
$ 3,000.00	$ 32.66	$ 47.20	$ 61.73	$ 76.26	$ 90.80	$ 105.33

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Grazing vs. Haying vs. Baleage

- Grazing is the best way to harvest grass.
- Smaller producers (less than 100 cows) are better off buying their hay.
- Intermediate size (100-300 cows) indeterminate
- Larger producers can economically raise hay.
- HOWEVER, adding baleage to the system makes economic sense.

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Summary

- The next several years will feature favorable cattle prices.
- However, higher production costs will not make it easy.
- There are numerous ways to reduce costs including managing heifer costs, stockpiling forages and managing the feed bil.

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Economics of Producing Cattle on Forage

Dr. Curt Lacy
Extension Economist-Livestock

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