Futures, Options, LRP Compared

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The software demonstrated today can be downloaded/used at the web site below.
http://www.montana.edu/softwaredownloads/livestockdownloads.html

RMA

UNIVERSITY OF WYOMING

Profitable & Sustainable AGRICULTURAL SYSTEMS
UW Cooperative Extension Service

RIGHTRISK

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Livestock Risk Protection

- Feeder Cattle
- Fed Cattle
- Swine
- Lamb
- All these types of livestock are covered by LRP in all Montana and Wyoming counties.

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Relevant Comparison: Futures, Options, LRP

- Compare as equal a price level as possible
  - The objective is to compare the costs of down side price protection with these products.
  - Start off with a set of initial conditions provided by the Futures and Options markets.
    - These determine the LRP Coverage level available.
    - Futures versus Strike Price versus LRP Coverage Level
  - If you change any one of these initial conditions, it implies a change in the information provided by the other markets.

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Examples are Using Livestock Risk Protection for Feeder Cattle

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Example Initial Conditions

- October Feeder Futures as of **3-8-2013** was $153.00
  - + $6.50 expected basis, minus $**.35** brokerage and interest = **$159.15** Local net cash price
- October Put Options: used $152.00 Strike price
  - + $6.50 expected basis minus $4.83 premium minus $.34 brokerage and interest = **$153.33** Local cash price
- LRP Coverage price **Steers Weight 1**: 34 weeks out was **$166.35**
  - LRP coverage ends **11-1-2013**
  - Premium is $5.99 ($5.21 with 13%, subsidy)
  - Total Premium and trading cost are $5.43
  - Estimated Floor price with LRP is **$160.92**
    - $166.35 – ($5.21 + $.22)
- Producer still subject to Basis Risk (Cash – Futures)

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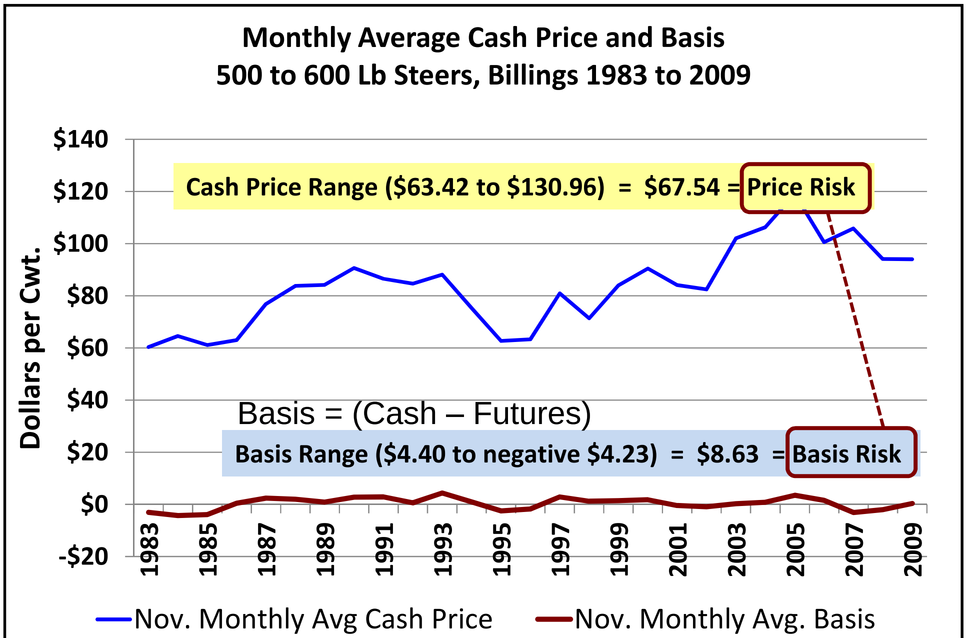

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Comparing Pricing Alternatives

- All three are based on the futures markets
- All three use very similar information
- All three have their own specific requirements
- All three provide coverage for a single peril, price risk
- None eliminate other risks such as
  - Basis, Sickness, dead loss, disasters, etc.

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Pros for **Futures**

- Can minimize transactions costs, *if everything goes as planned*, (actual results equal expected results)
- Trades daily so provides widest selection of price protection levels to choose from
- Allows implementation of "automatic" transactions when working with a broker
  - Automatic marketing orders for sell or buy
  - Eases worry about the need for constant contact with markets and broker
- Provides an opportunity to get to know your lender **very well**
- Maybe long conversations with your spouse

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Cons for **Futures**

- Lumpy – Contract Size (Feeders = 50,000 lbs)
- Margin calls and additional transaction costs
- Broker's knowledge of specific markets and commodities, grains vs livestock
- Locks in Price Both Ways
  - Eliminates capturing benefits of advantageous price moves
- Producer still subject to **Basis Risk**
  - Basis is (Local Cash price – Futures price)

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Pros for **Options** (Puts and Calls)

- Locks in price in only one direction
  - Put = price floor = protects against falling prices
  - Call = price ceiling = protects against rising prices
- Eliminates margin call worries
- Paying premium and brokerage fees is a one time transactions costs
- Interaction with broker minimal
  - Option expires worthless, no need to talk to broker
  - Tell broker to exercise/offset option if it has value

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Cons for **Options**

- Coverage is Lumpy by contract size (50,000 lbs)
- Price protection alternatives are less

Nov. 2011 Feeder Cattle Put Options

Strike	Session										
	Open	High	Low	Last	Time	Sett	Chg	Vol	Sett	OpInt	Date
future	-	127.250	127.000	127.100	Jan 21, 16[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1240	-	4.900	4.900	4.800	Jan 21, 16.15	4.800	-0.100	-	4.900	2	
1260	-	5.550	5.550	5.450	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
1280	-	-	-	7.000 *	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

Futures trading at $127.10

Strike Prices lower than $127.10

- May not be available when you need it
  - Not trading out far enough
- Producer subject to **Basis Risk**
  - **Basis = (Cash – Futures)**

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Pros for **LRP**

- Can cover small number of head
- Not lumpy like futures and options contracts
- Insurance coverage can be transferred to a new owner if livestock are sold before the end date.
  - New owner must meet eligibility requirements
- Can purchase this insurance daily after markets close
  - 3:00 pm until 9:00 am the following morning
- One time only transaction at purchase
- Settles to daily ***CME Cash Feeder Cattle Index*** **adjusted by RMA Price Adjustment Factors (PAFs)**

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Adjustment Factors Built In To LRP Coverage Levels

	Price Adjustment Factors (PAFs)			
Weight Range	**Steers**	**Heifers**	**Predominantly Brahman**	**Predominantly Dairy**
< 6.0 Cwt	**110%**	**100%**	**100%**	**85%**
6.0 to 9.0 Cwt	**100%**	**90%**	**90%**	**80%**

These factors are applied to the Futures/Options prices the RMA uses to produce the daily LRP price coverage levels listed on the web.

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Partial LRP Report – 3-8-2013

Endorsement Length	Type	Crop Year	Exp. End Value	Coverage Price	Coverage Level	Rate	Cost Per CWT	End Date
13	809 Steers Weight 1	2013	160.321	$159.72	0.9963	0.030854	4.928	6/7/2013
21	809 Steers Weight 1	2013	165.045	$160.04	0.9697	0.023837	3.815	8/2/2013
21	809 Steers Weight 1	2013	165.045	$153.44	0.9297	0.011592	1.779	8/2/2013
34	809 Steers Weight 1	2013	169.294	$166.35	0.9826	0.036011	5.99	11/1/2013
34	809 Steers Weight 1	2013	169.294	$164.15	0.9696	0.030363	4.984	11/1/2013
34	809 Steers Weight 1	2013	169.294	$153.15	0.9046	0.011793	1.806	11/1/2013

Pros for LRP, cont.

- Do not have to do anything in the markets at termination of insurance period
- Receive Indemnity payment when **Adjusted *CME Cash Feeder Cattle Index*** is less than **LRP Coverage price**
  - Price adjustments by type and weight are built in to LRP coverage levels listed on the web
  - File claim within 60 days on end date
- Widely available from insurance agents, **but…**
- 13% Subsidy provided by RMA
- Do not have to sell your livestock at the end of the insurance period
  - Can reinsure livestock that are held over for another period.

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Cons for LRP

- Limited coverage time slots
  - 13, 17, 21, 26, 30, 34, 39, 43, 47, or 52-week periods
- Can not sell **or** transfer ownership prior to 30 days before the end of the "Specific Coverage Endorsement"
  - **A forward contract is not selling or transferring ownership**
- Limited selection of coverage levels
- Producer Must establish eligibility at the time insurance is purchased
  - Ownership, number of head, type of livestock, finish date
- Limit of 1,000 head per endorsement & 2000 head annually
- No Off-setting Transactions allowed
  - Offset LRP position in the futures and/or options market
  - Offset = Buying a Call Option

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LRP—Feeders, Steers Weight 1

Contract Data	Value	Calculation
Number of Steers	100 hd	Producer
Expected Weight	5.80 lb	Producer
Current Date	March 8, 2013	Producer
Marketing Date	November 1	Producer
Insurance Period	34 weeks	Producer
Expected Ending Value	$169.294 cwt	RMA
Coverage Level	98.26%	Producer
Coverage Price	**$166.35/cwt**	**RMA**

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LRP—Feeders Steers Weight 1

Feeders, July 13, 2011		
Contract Data	**Value**	**Source**
Insured Value	$96,483	100 hd x 5.80 cwt/hd x **$166.35**/cwt
Premium Rate	0.036011	RMA
Total Premium	$3,474.20	$96,483 x 0.036011
Subsidy Rate	13%	RMA
Subsidy Amount	$451.65	$3,474 x 0.13
Producer Premium	$3,022	$3,474 – $452

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LRP Steers Weight 1

- Suppose the producer actually sells 100, 580 pound steers on Nov. 1, for $168.00/Cwt
- The **Unadjusted** CME Feeder Cattle Cash Settlement Index ending value was $150.00/cwt.
- **Adjusted** CME Index Value is $165.00
- Will the producer receive an indemnity?

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LRP Example-Steers Weight 1

- Yes, $165.000 is less then $166.350
- Indemnity calculation
  - 100 head x 5.80 cwt/head x $1.35 = $783.00
    - $1.35 =($166.35 - $165.00)
- Revenue from calves
  - 100 x 5.80 cwt/head x $168.00 = $97,440.00
  - Plus indemnity of: + 783.00
  - Less producer premium of: - 3,023.00
  - Less transaction costs (.22*5.80*100) - 127.60
  - Net revenue (rounded): =$95,072.00

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Summary LRP vs Options,

- LRP & Put Options both protect against downside price risk.
  - For LRP, the selected “coverage price” minus the premium and interest/transaction costs is the producer’s price floor.
  - For Options, the selected “strike price” minus the premium minus trading cost is the producer’s price floor.
- Both LRP & Options require the payment of a premium.
  - LRP—premium is paid to an insurance agent.
  - Option—premium is paid to a broker.
- Both LRP & Options have transactions costs

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Summary LRP vs Options

- Payouts are received when the **CME Feeder Cattle Cash Settlement Price Index (Adjusted by the PAFs)** declines below the RMA coverage level selected
  - LRP- Contact your Agent to claim Indemnity
- Options- Option premium increases in value when Futures is trading below the Strike price selected
  - Have your broker offset or exercise the option
- LRP and Options are subject to basis risk.

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Summary LRP vs Options

- Neither product protects the producer from a decline in the producer's *cash sale price*.
  - Producer is subject to ***basis risk*.**
- Subsidies are not available for option premiums.
- No price adjustments for varying weights built into Options
  - LRP uses Price Adjustment Factors (PAFs)
  - Basis accounts for weight differences in the futures/options markets

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Summary LRP vs Options

- Advantages of Options relative to LRP:
  - A producer may buy higher price coverage levels than LRP if they purchase an In-the-Money Option.
  - LRP coverage levels always "out-of-the-money"
    - Coverage level less than current futures price
  - Option has more timing flexibility
    - Producer may sell an option prior to expiration.
    - Producer can re-purchase an option at any time

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Livestock Gross Margin (LGM)

- Another insurance product available to insurance Finished animals
- Insures both the value of the animal and the feeding costs of the animal
- More information is available if you are interested

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Futures Options LRP Comparative Analysis March 2013

Information Sources

- Futures and Options
  - TFC Charts – Third party
    - http://tfc-charts.w2d.com/menu.html
  - CME and CBT
    - http://www.cmegroup.com/trading/commodities/
  - KCBT –Kansas City Board of Trade
    - http://www.kcbt.com/index.asp
- LRP Daily Coverage Prices
  - RMA= Risk Management Agency
  - http://www3.rma.usda.gov/apps/livestock_reports/
- Software
- http://www.montana.edu/softwaredownloads/livestockdownloads.html

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Questions

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