PAVING THE WAY FOR NEW LIVESTOCK RISK MANAGEMENT TOOLS: DEVELOPING MARKETS AND REGULATIONS

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Historically livestock has been at least one-half of the receipts in agricultural, but by looking at the USDA crop insurance program you would not know that it was any part of the agricultural community. Until the Agricultural Risk Protection Act of 2000 (known as ARPA), livestock insurance was specifically prohibited from being offered in the government program.

ARPA changed the landscape for agricultural insurance by removing the livestock exclusion and allowing livestock to come under the auspice of the Risk Management Agency (RMA). RMA gained some responsibility and control over the market growth. But the development of livestock products now follows an accepted regulatory structure that protects producers' interests, and the outlook of this new and emerging market is brighter as a result.

In the past, livestock producers indirectly benefited from the RMA program. RMA has had yield based programs that were of value to livestock producers to cover the production risks of their inputs. Programs such as Actual Production History (APH), Crop Revenue Coverage (CRC), and Group Risk Plan (GRP) are of value to the livestock producers who farm their own grain.

The livestock industry has also benefited from programs that support the production of feed-grains since the livestock industry uses approximately 80% of the corn and over 90% of the soybean meal produced. Additionally 20% of the wheat, 55% of the sorghum, 65% of the barley and 75% of the oats produced in the U.S. are used by the feed industry.

There are yield-based products specific to livestock producers, such as the forage production, forage seeding, and rangeland products. The Adjusted Gross Revenue (AGR) program covers general revenue risk for producers that have less than 35% of their total value of production in livestock. With less than $25 million in total premium, these programs are a fairly modest portion of the nearly $3 billion in total premium for the entire portfolio of RMA programs.

Risk Management Agency Products: Summary Information, 2002

Products	Total Premium	Subsidy	Liabilities	Policies	Acres
All Products	$ 2,919,964,239	$ 1,743,111,567	$ 37,336,177,343	1,917,575	215,729,273
APH	$ 1,255,248,094	$ 797,450,570	$ 15,296,232,097	1,181,305	107,720,247
CRC	$ 856,194,187	$ 476,279,571	$ 8,130,670,810	424,506	55,519,363
GRP	$ 32,306,882	$ 18,421,020	$ 992,105,761	15,460	11,167,358
AGR	$ 9,441,490	$ 5,095,197	$ 253,885,892	787	NA

ARPA directed RMA to offer livestock products that specifically dealt with price risk. The legislative changes occurred after 1998, a time when it was obvious that livestock producers were not managing their price risk. Estimates vary, but it is likely that significantly less than 20% of the swine and cattle producers use futures or options. One report on producers from Kansas showed that less than 10% of cattle producers and less than 5% of hog producers use futures or options. What is clear is that the small to medium sized producers are much less likely to use futures or options than large producers. Additionally, though many producers have packer contracts, few of the producers with contracts have true price risk protection.

The market for livestock insurance benefits from the support for and restraint on the development of these products. There has been tremendous support from producers, producer groups, and politicians, asking for the expansion to new states and the development of new products. The efforts to expand the program have been tempered by regulatory controls, which ironically to some should ultimately benefit this market. Regulations are developing with this market, but we can already say that the current guidelines at RMA have yielded tremendous benefits by safeguarding producers' interests, sanctioning developed products, and instilling confidence into this new market.

Current RMA Livestock (and Related) Insurance Products

The Risk Management Agency (RMA) offers three types of programs that are of value to livestock producers.

(1) Yield based policies on inputs such as corn, forage production, forage seeding, and rangeland;
(2) Revenue products based on a historical average of gross revenue as stated on tax returns, specifically Adjusted Gross Revenue (AGR) which can cover producers that have up to 35% of their production in livestock or AGR-Lite which can cover producers with up to 100% livestock (but has a lower liability limit); and
(3) Price based products that protect against movements in livestock prices (or livestock and grain prices).

RMA has addressed the needs of livestock producers with traditional yield based initiatives such as forage production, forage seeding, and rangeland products. There are also a myriad of products covering feed grains and oilseeds that are yield based—valuable for those livestock producers who produce their own feed inputs. The following table shows the program information for RMA's traditional livestock related products for 2002. The AGR premium, subsidy, and liabilities corresponding to livestock are limited to 35% of the totals for the program.

RMA Livestock Related Products: Summary Information, 2002

Products	Total Premium	Subsidy	Liabilities	Policies	Acres
Forage Production	$ 18,025,126	$ 12,503,342	$ 238,018,733	17,975	2,854,843
Forage Seeding	$ 1,959,585	$ 1,187,398	$ 15,525,832	6,392	149,286
Rangeland	$ 2,224,114	$ 1,372,983	$ 46,737,644	956	8,125,740
AGR, @35%	3,304,522	1,783,319	88,860,062	787	NA
Total	$ 25,513,347	$ 16,847,042	$ 389,142,271	26,110	11,129,869

In July of 2002, RMA launched two (2) pilot products that went beyond yield with the price insurance programs of Livestock Risk Protection (LRP) and Livestock Gross Margin (LGM). Both of these programs were available in the state of Iowa. Funding was limited for livestock products to $15 million for FY 2003 and $20 million in FY 2004, as dictated by ARPA. Funding for the AGR-Lite also counts against the livestock limits since the program can provide coverage for operations with 100% in livestock. For the 2003 reinsurance year, there has been over $1 million in total premium for LRP and LGM.

RMA Livestock Price Risk Products: Summary Information, 2002

Products	Total Premium	Subsidy	Liabilities	No. of Head	Policies	Endorsements
LRP	$ 625,663	$ 81,345	$ 10,981,989	160,428	240	501
LGM	$ 567,220	$ -	$ 7,912,503	136,753	117	118
Total	$ 1,192,883	$ 81,345	$ 18,894,492	297,181	357	619

LRP and LGM are both market-based programs. By using the commodity market conditions for establishing coverage and premium rates, these programs maintain the proper incentives for producers. At the same time, these products provide producers greater flexibility than exchange traded instruments (i.e. futures and options). LRP offers a variable end date, indemnifies on a cash price (covering basis risk in part), fixes the coverage prices and premium rates daily, and allows producers to cover any level of production, down to 1 head. By offering sales each business day, the LRP program expands the marketing approach of RMA products. In itself this is a significant development.

As a market based program, LRP establishes pricing from the Chicago Mercantile Exchange (CME) futures and options, and utilizes the CME to manage the program risk. With such a close relationship to the CME, there has been some confusion about how the LRP program differs from the Lean Hog futures and options. The following chart illustrates the difference between LRP and the CME contracts.

	Livestock Risk Protection	Futures Contract	Options on Futures
Protects Against Downside Risk	Yes	Yes	Yes
Upside Price Gain Potential Is…	Unlimited	Limited	Unlimited
Coverage Price Is Based On …	Aggregate Cash Price	Futures Price	Futures Price
Basis Risk Is…	Covered (In part)	Not Covered	Not Covered
Cost of Coverage Is …	Set by Daily Price, Guaranteed	Not Set: Market order or limit order for fill	Not Set: Market order or limit order for fill
At Expiration, There Is a(n)…	Indemnity Paid, if due	Need to Exit Contract, or For Fed Cattle, Deliver	Need to Exit Option or Exercise Option
The Contract Is…	An Insurance Policy	A Derivative Contract	A Derivative Contract
Acceptability by Lenders Is…	Universal	Limited	Limited

LGM provides producers with a policy that covers swine and feed prices simultaneously. The LGM policy is based on the calculation of the gross margin for a hog, the difference between the price of the hog and the cost of the feed for the hog. The gross margins are calculated from the CME and the Chicago Board of Trade (CBOT) futures prices. Coverage under LGM can extend from one to six months within two set insurance periods, February-July and August-December. Falling hog prices and/or rising feed costs can trigger indemnities.

Developing a Regulatory Structure for Market Based Programs

The main regulatory function that RMA provides is the standardization of risk management products. Standardization is a traditional role of government in the development of new markets.

By providing uniform definition and terms, agents and producers are better able to understand the program coverage and costs.

A second benefit of RMA's role is to ensure that products are offered at an appropriate cost, and that products provide valuable coverage. New products undergo a review process with very specific actuarial and underwriting guidelines. The reviewers are internal and external to RMA, and are actuaries or otherwise experts in agricultural insurance. Once these requirements are met, then a board of directors considers the program for approval. The process is meant to ensure that producers can assume that their interests are protected, and that any product offered is "fair."

State insurance laws provide another layer of regulation to the crop insurance system. The National Association of Insurance Commissioners (NAIC) helps establish these and other regulations. The main regulations that apply concern the accounting issues of an insurance company rather than rating issues of a product. Such accounting matters establish the maximum level of written premium as a ratio of company surplus and the manner of treating the exchange traded instruments as assets.

Additionally, the Commodity Futures Trading Commission (CFTC) regulates the actual trading of the futures and options contracts at the CME and CBOT.

The following agencies, institutions, and acts provide the complete regulatory structure of the RMA livestock insurance products.

Agencies, Institutions, and Corporations

- The Risk Management Agency (RMA)
- Insurance and Reinsurance Companies
- State Insurance Commissioners
- National Association of Insurance Commissioners (NAIC)
- Chicago Mercantile Exchange (CME) / Chicago Board of Trade (CBOT)
- Commodity Futures Trading Commission (CFTC)

Acts and Regulations

- The Federal Crop Insurance Act
- Livestock Reinsurance Agreement

Livestock Product Reviewers

- Contracted Actuary (by Submitter)
- Five (5) Independent Actuarial and Underwriting Experts
- RMA Staff
- Office of General Counsel
- FCIC Board of Directors (for Approval)

With all of the program reviews and regulatory agencies involved, livestock insurance can be considered to be more regulated (and producer's interests more protected) than any other livestock risk management tool.

The Outlook for Livestock Risk Management Tools

Even with the new insurance products, livestock is an under-served commodity in the RMA program. The potential market for livestock insurance is tremendous since livestock producers face significant risks, even after the new price risk products.

Empirically price risk is the largest of the risks that producers face, particularly in terms of the frequency of events. But price risk takes many forms. Just as crop producers in different parts of the country face different yield risks, livestock producers in different locations face different price risks. So while we often talk about the systemic nature of price risk, one product does not fit all.

The keys to the future developments in the livestock insurance market are the risks that producers would have even after the available products are utilized. This would include expansion of the products to cover new classes of livestock, and to include new locations.

The LRP program was recently expanded to include two categories of cattle; the LRP-Feeder Cattle (750 lb. cattle) and the LRP-Fed Cattle (1100 lb. cattle) programs. While the current LRP-Swine program is offered in Iowa only, the Feeder Cattle pilot has 10 states (CO, IA, KS, NE, NV, OK, SD, TX, UT, and WY) and the Fed Cattle pilot has 3 states (IL, IA, and NE).

The current products are likely to act as "base products", with add-on products created to address the secondary or less dominant risks of a livestock operation. There may also be new products developed that replicate much of the coverage that the current products offer.

Potential products can be generally described by understanding the price and production risks that producers absorb. The profit function of livestock producers includes price, weight conversion, feed-grain and forage yield, and feed and forage prices. Each one of these can be seen as risks. Empirically, however, livestock (the output) and feed (the input) price risks are greater than weight conversion or grain production risks.

Matrix of the Livestock Insurance Products and the Potential Market

Peril	Output (Cows, Pigs, etc.)	Inputs: Intensive Crops (Corn, Soy, etc.)	Inputs: Extensive Crops (Pasture, Forage, Hay)
Yield (Growth)	Possibly Not Feasible	APH, GRP	Forage APH; GRP for Rangeland and Forage; Continuing Research
Price	LRP, LGM	Options, Futures, LGM	Limited, If Any
Revenue	AGR, AGR-Lite Pilots; Possibly Not Feasible	RA, CRC	Unknown
Mortality: Accidents & Named Perils	Available From Private Market	Hail Available From Private Market	Unknown
Death Or Loss Due To Disease, Terrorism	Research Underway	Research Underway	Research Underway
Quarantine	Research Underway	Research Underway	Research Underway
Loss of Markets Due To Terrorism	Research Underway	Research Underway	Research Underway

A large part of producers' price risk is addressed with the LRP and LGM products, including some portion of the basis risk in the case of LRP. Basis risk is the risk that the local market price loses its relationship to national prices (like the CME futures price), becoming disproportionately low in historical terms. Basis risks have not been completely addressed since the prices that producers receive may differ from the USDA reported cash prices used for indemnities. Many have speculated that basis risk may even be larger than the overall price risk that would be covered by futures and options. Therefore, there are still tremendous opportunities to cover basis risk beyond the current products, especially considering the price variations due to geographical location and the effects of animal weights and grades.

Weight conversion is another area of opportunity in this market that has not been fully addressed. There are obvious relationships with weather and extensive crop availability, and while weather derivatives have gained much attention in recent years, there has not been a wide offering of related insurance products that would match producers' needs.

Livestock whole farm and revenue products (such as Adjusted Gross Revenue) would offer tremendous potential for producers if there is a significant negative correlation between livestock prices and weight conversion, or if there is a positive correlation between livestock prices and feed prices. These products have been well supported politically, but they have experimental underwriting features that require more oversight than other programs. Ultimately the added administration may limit their development or marketability.

The Potential Market

The market for livestock insurance products could ultimately be constrained by current government regulation. For the LRP-Swine program, producers are limited to 10,000 head per endorsement and 32,000 head annually. The program itself has been limited to $3 million in government costs, which amounts to about $8 million in premium. Livestock product sales at RMA has been limited by legislative funding that allows up to $20 million annually in government costs, which is about $50 million to $80 million depending on the allocation of sales among the current livestock price and revenue insurance products (LRP, LGM, and AGR-Lite).

While the livestock insurance market is developing, the products have yet to approach the funding milestones set by Congress. New livestock price and revenue products (such as LRP-Fed Cattle and LRP-Feeder Cattle) have been approved and are being finalized. Other products will be submitted to RMA for approval this year. By the end of 2003, there will likely be at least 16 state-livestock program combinations for livestock price and revenue products.

The long-term outlook for the livestock insurance market may depend on the research projects that are currently underway. One project that is worth mentioning, and has generated tremendous interest (in the U.S. and abroad), addresses foreign animal diseases for livestock. The Animal and Plant Health Inspection Service (APHIS) is assessing the potential for livestock insurance as a risk management tool to work in conjunction with APHIS quarantine and depopulation policies.

When a disease outbreak occurs, APHIS may quarantine and depopulate diseased and exposed animals. The Agency indemnifies for the animals they depopulate, i.e., pays compensation to the owners. This process is highly uncertain and does not cover indirect costs or business interruption costs, either for the owners of the depopulated animals or other producers affected by quarantines and movement restrictions.

The goal is a more comprehensive program that would combine regulatory indemnification programs with private insurance to better protect the animal and aquaculture industries from business losses.

Summary

While the RMA has had products relevant to livestock producers for some time, the new livestock price insurance products open a new world for both producers and regulators. The livestock price insurance products offer greater flexibility and benefits than the corresponding exchange traded instruments. These products are thoroughly reviewed and well regulated through the traditional federal crop insurance regulations and institutions, ensuring producers fairness and value.

With a strong regulatory structure in place, the market is ready for even more livestock related products. The LRP and LGM products will likely become "base" products for the next year or two, with the main developments coming in terms of expansion into new commodities and geographical areas. There has already been an expansion of LRP into feeder cattle and fed cattle.

The potential for livestock insurance products is larger than the current legislative funding allows. The time frame for reaching the program limits is uncertain however. What is certain is that new livestock insurance products are currently being developed and will be submitted to the Risk Management Agency for approval. The success of this developing industry will depend as much on the developments in the regulation of these products as the number of products that are developed.