A Price Discovery Analysis Using NETBIO and Sulphur Springs Livestock Auction Data

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Introduction

This study will conduct a price discovery and price determination analysis by using data from the Northeast Texas Beef Improvement Organization (NETBIO) and Sulphur Springs Livestock Auction (SSLA). The NETBIO regularly conducts auctions for the preconditioned feeder livestock in order to get better quality of beef in the industry. This study will provide a better understanding of the price differences, how demand and supply interact to determine the market price, and the process of how buyers and sellers agree on one a transaction price.

Data

Seven-year data was gathered from the local Sulphur Springs Livestock and Dairy auction, and the NETBIO past sales. The data consists of gender, weight, and price per pound.

The Hedonic Model

This study will use a hedonic econometric model, where the independent variables are related to quality and the dependent variable is the difference between the futures market and the spot market (basis). The Mean absolute percentage error (MAPE) and the root mean square error (RMSE) will be used as indicators to predict the sale price based on descriptive variables.

The Hedonic Model

Basis = f (herd size, avg. weight,, gender, and a random error).

Motivation

The aim of this study is to help determine price differences in local auctions. This will help buyers and sellers understand the market mechanism for bidding and settlement process, and the use of information from the futures market and other related markets to predict the price differences, and reduce the price risk and uncertainty.

STEERS

Descriptions	WEIGHT	AVERAGE	PRICES
BLACK & BLK BALDY	14854	531.6	180.1
BRAHA	4669.2	557.6	122
BRANGUS	20733.3	575	173.5
CHAR	15533.2	551.6	179.8
CROSSBRED	24201.5	552.2	163.8
OKIE	11984	519	165
DAIRY	9580	529	100
LONGHORN	9215.3	514.3	114.7
HOLSTEIN	13819.4	622.6	116.7
FEEDER	35957.6	884	132.2

PRICES

HEIFERS

Descriptions	WEIGHT	AVERAGE	PRICES
BLACK & BLK BALDY	20100	562.3	158.5
BRAHA	3099.5	571.5	144.5
BRANGUS	5466	630.8	151.8
CHAR	14719.8	518	167.9
CROSSBRED	24723.6	557	143.3
EXOTIC	38171	640	146.8
OKIE HFS	32117	582.3	145.7
TIGER STRIPE	3104	658.3	170.3
LONGHORN	9978	428.5	109.8
BRADFORD	397	397	180
FEEDER	20523	933	116.8

PRICES