FACTORS THAT AFFECT FEEDER CATTLE PRICES

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INTRODUCTION

Production of feeder cattle requires long range planning in selecting and developing an efficient herd. It is critical in the planning process to have good estimates of the market value of different characteristics of the product of the herd. Feeder cattle are an intermediate product, and the one many ranchers depend on for their income. There are a wide variety of factors that affect the price of feeder cattle. It is clearly evident supply and demand dictates the price level of feeder cattle. In addition to supply and demand there are a number of non-animal characteristics including weather conditions, feed and grain prices, interest rates, season of the year, etc. For the purpose of this paper, we will assume supply and demand encompasses the effect on price from these non-animal characteristics, and these remain constant on a given market day. This will facilitate the evaluation of the effects of certain animal characteristics on price.

A research project was developed to determine how each of the following factors, for a specific time, affect price: weight, sex, frame score, muscle score, condition (finish), degree of fill, breed composition, and age. The project was also designed to analyze the factors that correlate with today's industry as compared to the previous Texas A&M University research by James and Farris in 1971. The specific objectives of this study are:

(1) To document the effect of certain animal characteristics on price. Demonstration of these effects will enable producers to consider the possibility of changing these animal characteristics so that prices received for his product will be favorably influenced. Thus, he can

alter his sire selection, his breeding, and his production strategies to take full advantage of these effects.

(2) To illustrate the effects of these characteristics on price based on current grade standards and market desirability of different breeds of cattle. Previous research at Texas A&M University (James and Farris, 1971) compared prices using the "old" grading standards and only considered English beef breeds and "Okies." In addition, there have been significant changes in the industry that may alter previous effects of these characteristics on price. Shifts in major cattle feeding areas may have influenced factors such as breed. Certain areas of the country have developed special markets and have a need for special types of cattle (for example, the light heifer market in south Texas.) The results of this research should aid ranchers in production and marketing decisions.

PROCEDURE

The research was divided into two separate phases which used different methods to analyze animal characterics. One phase used primary data collected at local auction markets. The other phase of the project was a mail questionnaire sent to a sample of order buyers, livestock dealers, and traders throughout Texas. Order buyers, livestock dealers, and traders are responsible for paying the premiums and discounts for the different animal characteristics.

The auction data was collected to compare prices for animals that varied in weight, age, sex, breed, etc. Individual animals were tabulated as they went through the sale ring of various livestock markets in the central Texas area. The author assigned a frame score, a muscle score, a condition score, and a score for degree of fill to a systema-

tic sample of feeder cattle as they were sold. Moreover, the sex of each animal was recorded along with the age, weight, breed type and price. The frame and muscle scores were assigned according to USDA feeder cattle grading standards. The frame scores in this system are small, medium and large while the muscle scores are one (thick muscled), two (average muscled) and three (thin muscled). Muscle scores were designated as low, medium, and high for each respective numerical value. A condition score was either two (0.06" - 0.15" estimated fat), three (0.16" - 0.25" estimated fat), or four (0.26" or more estimated fat). These scores or fat thicknesses were estimated by visual appraisal. Degree of fill was recorded as empty, average, or full. The age was broken into calves and yearlings while sex was categorized as steers, heifers, and bulls. Breed type was divided into four categories, "Okies" (less than one-eighth Brahman or dairy influence), crossbreds (less than one-half Brahman influence), Brahman crosses (more than one-half Brahman blood), and dairy crosses (over one-half dairy blood). The above variables are further defined in Table 1.

The mail questionnaire asked order buyers to categorize certain attributes into three classifications: (1) essential, (2) convenient to know, and (3) not necessary. The characteristics considered were sex, weight, age, frame size, degree of muscling, degree of finish, conformation, breed and origin. The questionnaire was designed to compare to a survey of feedlot managers by Anderson of Oklahoma State University (1979). In fact, the samples were collected using the same format.

Statistical analysis was used to estimate the extent to which the

Table 1. Subclass variables.

Date	D1 - October 5, 1984
	D2 - October 10, 1984
	D3 - October 12, 1984
	*D4 - October 13, 1984
	D5 - November 24, 1984
Age.	A1 - Calves
	A2 - Yearlings
Frame Score	F1 - Large frame
	*F2 - Medium frame
	F3 - Small frame
Muscle Score	M1 - Number one (thick)
	M2 - Number two (average)
	*M3 - Number three (thin)
Fill	L1 - Empty
	*L2 - Average
	L3 - Full
Condition	C2 - 0.05 - 0.15" fat
	*C3 - 0.15 - 0.25" fat
	C4 - 0.26" of fat or more
Sex	*S1 - Steer
	S2 - Heifer
	S3 - Bull
Breed	B1 - Okies
	*B2 - Crossbreds
	B3 - Brahman crosses
	B4 - Dairy crosses

*Denotes trait used as basis for comparison between classes.

selected attributes in the auction data contribute to price variation in feeder cattle. Linear regression and analysis of the variance was used to estimate these effects. The effects of these attributes on the price (P) variation in feeder cattle are illustrated by the following general statistical model:

$$P = b_0 + b_1D + b_2S + b_3F + b_4M + b_5C + b_6L + b_7A + b_8W + E + G + H + I + J + R.$$

Variables are defined in Table 2.

One hundred questionnaires were mailed to order buyers, traders and dealers. Forty-seven percent were answered and returned. The survey of order buyers, traders, and dealers was tabulated and percentages were computed. This allowed comparisons to be drawn with the feedlot managers survey by Anderson in 1979.

RESULTS AND DISCUSSION

The survey results from the mail questionnaire are summarized in Table 3. Surprisingly, sex and weight were not reported as the most essential characteristics but ranked sixth and third with 61% and 72%, respectively. On the other hand, sex and weight were the most important factors in Anderson's survey with 95% and 92%, respectively. This contrast could, in part, be explained by the inclusion of livestock dealers and traders in this survey who are not always concerned with filling particular orders but hope to purchase cattle at a given price and resell in the near future at a profit. This does not require the purchase of a specific number of animals of a certain weight and sex. Instead, traders and dealers may purchase any individual or group of individuals that have an unusually low price. These cattle will be sold at a later date, hopefully at a higher price. Conversely,

Table 2. General statistical model.

$$P=b_0 + b_1D + b_2S + b_3F + b_4M + b_5C + b_6L + b_7A + b_8W + E + G + H + I + J + R$$

where:

P = price
b = regression coefficients
D = date
S = sex
F = framescore
M = muscle score
C = condition
L = fill
A = age
W = weight
E = interaction between sex and weight
G = interaction between fill and weight
H = interaction between age and weight
I = interaction between sex and frame
J = interaction between fill and condition
R = error term

Table 3. Survey response from order buyers, livestock dealers and traders*.

	Essential (Percent)	Convenient (Percent)	Not Necessary (Percent)
Sex	64	15	21
Weight	72	26	2
Age	60	38	2
Frame	74	24	2
Muscling	68	28	4
Finish	83	17	0
Conformation	79	15	6
Breed	43	40	17
Origin	43	40	17

*47 responses were receive out of 100.

feedlots usually desire animals of a certain sex and weight grouping.

Specific frame size and degree of finish vary slightly between this survey of buyers and the former survey of feeders. The survey of buyers revealed that the attributes of frame and finish were considered essential by 74% and 83% of those surveyed while 80% of the feedlot managers considered both attributes essential. This may indicate that both buyers and feeders feel that frame size and degree of finish have a large effect on growthiness and feedlot gain and therefore are essential to explaining price variation. Thickness of muscling and conformation were the attributes that displayed the most variation between surveys. Conformation was the second most important characteristic according to the buyers with 79% considering it essential. However, only 53% of feedlot managers considered it essential. Muscling was also considered more essential to buyers (68%) than to feeders (32%). However, in both cases well over 90% of those surveyed felt these attributes were at least convenient to know. This suggests that these characteristics certainly merit consideration but are not as significant as the previously mentioned factors.

Age yielded somewhat similar results in both surveys with 60% of buyers and 48% of feeders considering it essential and well over 90% seeing age as at least convenient to know. Age, therefore, has a significant effect on price but is not as important as some traits.

Breed and origin of the cattle were rated very similarly in both surveys with 43% of the buyers considering each trait essential while 46% of the feeders rating breed essential and 44% rating origin essential. These traits and their effects may be affected by personal preference as much as anything. These factors certainly do affect price

yet do not display the significance of the traits that normally have more effect on animal performance.

A significant percentage of those surveyed considered sex, breed, and origin "not necessary." Breed and origin tabulated 17% not necessary in the order buyer survey compared to 15% each in the feeder survey. This may indicate that buyers and feeders have some preference of what type of cattle they like and where they come from but neither factor greatly affects performance or profitability. Sex, on the other hand, was considered essential or convenient by all feeders surveyed while 21% of the buyers felt it was not necessary (Table 3). This is somewhat surprising because sex has a dramatic effect on prices paid for livestock. Sex may be less important to buyers, dealers, and traders because it affects the level of price but may not hinder their ability to buy and sell the cattle and still make a profit.

Statistical Analysis

Analysis of variance was used to evaluate the effect of each trait (class) on price. Interactions between the classes were also analyzed. Analyses revealed that all classes (age, sex, weight, frame score, muscle score, condition, fill, breed, and date) have a statistically significant effect on price. In addition, the test for interactions between the classes exhibited significant interaction between sex and weight, fill and weight, age and weight, sex and frame, as well as fill and condition (Table 4).

Regression analysis was performed on the same data set. However, this test was used to evaluate sub-classes. Each class was subdivided according to the variables listed in Table 1.

The sub-class interaction test was only performed on those classes

Table 4. Analysis of the variance of the entire data set.

DEPENDENT VARIABLE: PRICE

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	41	24414.60408472	595.47814841	26.06	0.0001	0.738702	7.9948
ERROR	378	8636.07389147	22.84675633		ROOT MSE		PRICE MEAN
CORRECTED TOTAL	419	33050.67797619			4.77982806		59.78690476

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE III SS	F VALUE	PR > F
DATE	4	2632.57195946	28.81	0.0001	4	1045.19651980	11.44	0.0001
SEX	2	10735.05511211	234.94	0.0001	2	2385.44502834	52.21	0.0001
FRSC	2	1150.65951445	25.18	0.0001	2	87.05800519	1.91	0.1502
MUSC	7	2542.86455869	15.90	0.0001	7	570.67608021	3.57	0.0011
COND	4	756.42138914	8.28	0.0001	4	61.88442741	0.68	0.6081
FILL	2	823.80501728	18.03	0.0001	2	63.82081057	1.40	0.2487
BREED	3	425.27473388	6.20	0.0005	3	174.90575958	2.55	0.0543
AGE	1	1292.74982879	56.58	0.0001	1	278.84032949	12.20	0.0005
WT	1	2056.23606283	90.00	0.0001	1	881.79585589	38.60	0.0001
ISW	1	117.83605674	5.16	0.0237	1	25.61822676	1.12	0.2903
IFW	1	43.71078950	1.91	0.1674	1	46.18430087	2.02	0.1559
IMW	1	9.98089004	0.44	0.5090	1	101.94316000	4.46	0.0353
ILW	1	339.96377853	14.88	0.0001	1	321.99070559	14.09	0.0002
IBW	1	24.19753029	1.06	0.3041	1	0.00086157	0.00	0.9951
IAW	1	1074.39718551	47.03	0.0001	1	655.62855580	28.70	0.0001
ISF	1	132.84522793	5.81	0.0164	1	98.44771266	4.31	0.0386
ISM	1	1.02141859	0.04	0.8327	1	2.52305520	0.11	0.7398
IFM	1	15.27170446	0.67	0.4141	1	81.66177829	3.57	0.0594
IFB	1	58.51681345	2.56	0.1103	1	73.90525554	3.23	0.0729
IFA	1	44.76262656	1.96	0.1624	1	32.07319713	1.40	0.2368
IMB	1	36.05723711	1.58	0.2098	1	48.04678775	2.10	0.1478
IMA	1	10.16219205	0.44	0.5052	1	10.78924987	0.47	0.4924
IMC	1	11.31372486	0.50	0.4820	1	18.34298145	0.80	0.3708
ILC	1	78.92873247	3.45	0.0638	1	78.92873247	3.45	0.0638

which had significant interaction in the analysis of variance (sex and weight, fill and weight, age and weight, sex and frame, frame and breed, and fill and condition). Interaction between muscle and condition was also considered.

Although date is not an animal characteristic, it must be considered as a dummy variable to remove price variability due to different market days. It should be noted a drought in central Texas ended after D1 and D2 price levels were recorded and the price level increased significantly.

Regression - Total Sample

The sub-class variables that deviate significantly from the bases are, for the most part, the variables expected to be different. Heifers (S2) were significantly less than steers as indicated by an adjusted price discount of $10.00 per hundredweight. Bulls (S3) had an adjusted price discount of $6.85 per hundredweight. Small frame cattle (F3) deviated significantly from medium frame cattle with a price discount of $8.93 per hundredweight while large frame cattle had a small premium ($.86) not statistically significant. Thick (M1) and average (M2) muscled cattle displayed significant deviation from thin (M3) muscled cattle with $19.60 and $16.56 per hundredweight premiums, respectively. "Full" filled cattle had a significant deviation from "average" filled cattle with an adjusted price discount of $4.02 per hundredweight. Statistically speaking, dairy crosses (B4) were the only breed that deviated significantly from crossbreds with an adjusted price discount of $7.81 per hundredweight. However, Brahman crosses had an adjusted price discount of $2.48 per hundredweight but it was not statistically significant. Cattle sold on October 5, 1984 and

Table 5. Comparison of estimates from total sample with steers only.

	Total Sample	Steers Only
R^2	.65	.55
DFE	401	205
Variable	(dollars per cwt.)	
Intercept	60.38	56.26
Weight	- 0.0287	- 0.0318
Steers	.00	-
Heifers	- 10.00	-
Bulls	- 6.85	-
Large frame	0.86 N.S.	0.21 N.S.
Medium frame	.00	.00
Small frame	- 8.93	- 7.97
Thick muscle	19.60	24.93
Average muscle	16.56	23.08
Thin muscle	.00	.00
Thin condition	0.47 N.S.	1.42 N.S.
Average condition	.00	.00
Heavy condition	0.22 N.S.	- 1.67 N.S.
Empty	- 0.55 N.S.	- 1.78 N.S.
Average	.00	.00
Full	- 4.02	- 3.40
Okies	- 0.42 N.S.	- 0.10 N.S.
Crossbreds	.00	.00
> ½ Brahman	- 2.18 N.S.	- 2.73 N.S.
Dairy	- 7.81	- 13.49

N.S. = not statistically different from the base subclass at the 90 percent confidence level.

October 10, 1984 had adjusted price discounts of $2.00 and $2.81 per hundredweight when compared to October 13, 1984. On the other hand, cattle sold on October 12, 1984 and November 24, 1984 had adjusted premiums of $1.45 and $1.54 per hundredweight, respectively. Weight displayed a price decrease of $2.87 per hundredweight when weight increased by 100 pounds (Table 5).

The second regression analysis was performed on a data set containing only steers. This removed some of the interactions associated with sex. The results of the steer sample are listed in Table 5. Also, the original data results are listed to allow comparisons. A more detailed summary of these regressions are listed in Appendix A.

Comparison of the steer sample with the total sample revealed some interaction between sex and muscle. Thick muscled (M1) steers had a premium of $5.33 per hundredweight over thick muscled cattle from the total sample. Average muscled (M2) steers had a premium of $6.52 per hundredweight over average muscled cattle from the total sample. It should be noted the premium for thick verses average muscled cattle from the total sample is larger and more pronounced than the premium for thick verses average muscled steers. The comparison further revealed interaction between sex and "dairy-influenced" cattle. Dairy steers had a larger price discount compared to the total sample. The increased discount of $5.68 per hundredweight indicates a significant amount of interaction between sex and dairy cattle. Furthermore, this comparison indicates very little price difference between medium and large frames, average and thick muscling, and "okies" and crossbreds. Evidently, the market recognizes small differences in growthiness and profitability. Price differences may only occur because of personal

preference, the area of the country the cattle will be fed in, and the season of the year.

A more homogenous data set was used to develop estimates with fewer interaction problems. A data set was created to contain only steers that were large or medium frame, average or thick muscled, and were either "okies" , crossbreds, or Brahman crosses. This data set was created to contain those animals that resemble most feeder cattle produced in this area of the country. This should provide more accurate estimates on those factors critical to selection and management.

Large framed cattle (F1) displayed an adjusted price premium of $1.14 per hundredweight but did not deviate significantly from medium frame cattle according to the statistical analysis. Thick muscled cattle (M1) displayed a significant premium over average muscled cattle (M2) at $1.96 per hundredweight. Thin conditioned cattle (C2) had a significant premium over average conditioned cattle (C3) of $1.75 per hundredweight, while heavy conditioned cattle (C4) had a significant discount from average conditioned cattle of $4.48 per hundredweight. Crossbreds (B2) averaged a premium of $.45 per hundredweight over "okies" (B1) but it was not statistically significant. Brahman crosses however, had an adjusted price discount of $3.20 per hundredweight compared to crossbreds. Weight, the continuous variable, showed that for each increase of 100 pounds there was a discount of $3.44 per hundredweight (Table 6). Each separate market sample was analyzed but none of these samples provided stable estimates. This was probably due to small sample size.

As was expected, the statistical analysis showed a significant dif-

Table 6.

MODEL: MODELO1		SSE	3274.246	F RATIO	21.17
		DFE	192	PROB>F	0.0001
DEP VAR: PRICE		MSE	17.053366	R-SQUARE	0.5482
VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T RATIO	PROB>|T|
INTERCEPT	1	80.169335	1.740171	46.0698	0.0001
F1	1	1.140572	1.962215	0.5813	0.5617
M1	1	1.955405	0.716288	2.7299	0.0069
C2	1	1.749312	0.722921	2.4198	0.0165
C4	1	-4.482696	1.663711	-2.6944	0.0077
B1	1	-0.449263	0.681519	-0.6592	0.5106
B3	1	-3.195452	1.222905	-2.6130	0.0097
D1	1	-2.820140	1.164149	-2.4225	0.0163
D2	1	-3.873392	0.789856	-4.9039	0.0001
D3	1	1.181193	0.854814	1.3818	0.1686
D5	1	2.057745	0.924714	2.2253	0.0272
WT	1	-0.034409	0.003363803	-10.2293	0.0001

ference of heifers from steers because the unadjusted mean price difference is $11.31/cwt. The adjusted difference was $10.00 (Table 7). Small framed cattle should be discounted because of their decreased performance from medium framed cattle and their "less-desirable" end-weights. Thick and average muscled cattle are significantly more desirable than thin muscled cattle. Most "Okie" and crossbred cattle fall in the average and thick muscle category while most thin muscled cattle are those that have some dairy influence. Price discounts are expected on the "full" filled cattle because these cattle will have more shrink. All breeds had a deviation from the crossbreds. However, the only important difference in price was found in the predominantly dairy breeds, as evidenced by the unadjusted price difference (Table 8).

There were several classes that had significant interaction (i.e. sex and weight). The subclass variables of these particular class interactions were tested for significance in price variation. Significant interaction was found between S2 (heifers) and weight, L1 ("empty" fill) and weight, L3 ("full" fill) and weight, A2 (yearlings) and weight, S2 (heifers) and F3 (small frames), S3 (bulls) and F3 (small frames), M1 (thick muscle) and C2 (0.05" - 0.15" fat) and L1 ("empty" fill) and C2 (0.05" - 0.15" fat).

Contribution to Price Variation

The stepwise method of analysis was used with regression to determine which subclasses had the most effect on price. Price differences of heifers from steers accounted for 33% of the price variation, the largest percentage of the variables considered. Next, was the difference between medium framed (F2) and small framed (F3) cattle; it accounted for 7.6% of price variation. The continuous variable,

Table 7. Comparison of unadjusted and adjusted mean prices by sex.

Sex	Unadjusted Price	Adjusted[a] Price
Steers	$ 64.64/cwt	$ 59.79/cwt
Heifers	53.33/cwt	49.79/cwt
Bulls	58.96/cwt	52.94/cwt

[a] Price by sex adjusted to a mean weight, frame score, muscle score, etc. based on total sample.

Table 8. Comparison of unadjusted and adjusted mean prices by breed.

Breed Type	Unadjusted Price	Adjusted[a] Price
Okies	$ 59.16/cwt	$ 59.37/cwt
Crossbreds	60.69/cwt	59.79/cwt
Brahman and Brahman crosses	61.97/cwt	57.61/cwt
Dairy and dairy crosses	46.00/cwt	51.98/cwt

[a] Price by breed adjusted to a mean weight, frame score, muscle score, etc. based on total sample.

weight, accounted for 6.2% of price variation. The difference between crossbreds (B2) and dairy crosses (B4) accounted for 4.2% of the variation followed by the interaction between F3 and S3, which accounted for 4.1% of price variation. Average muscled cattle (M2) accounted for 3.2% of the variation while thick muscled cattle (M1) accounted for 2.1% of the price variation. Yearlings (A2) accounted for 2.1% of the variation followed by bulls (S3) and D2 (October 10, 1984) with 1.8% of the price variation. "Full" filled cattle (L3) accounted for 1.7% of the variation, and D1 (October 5, 1984) accounted for 1.2%. The remaining sub-class variables and subclass interactions accounted for less than 1% of the variation in price.

SUMMARY

The results of the mail survey and the various statistical analyses allow us to determine the most desired animal in the marketplace. Those animals that receive the highest premiums are large and medium framed (F1 & F2), thick muscled (M1), crossbred (B2) steers that have a condition score of 2 (0.05" to 0.15" estimated fat), are less than one year of age, and have a degree of fill of average or empty.

The "most desirable" animal recognized by the market should give producers a goal to strive for in beef cattle production. It should encourage producers to alter their management and selection strategies in an attempt to produce the most desirable product. However, producers must analyze the economics of selecting animals that will produce large framed, thick muscled cattle with limited fleshiness. It should be noted that medium frame, "okie" steers receive premiums that are similar to our "most desirable" animal. The results of this research imply producers should provide the market with large, growthy cattle

that are not carrying large amounts of finish. Finally, these results indicate the "most desirable" animal, but each producer must analyze the economic feasibility of producing this animal.

This research generally agrees with the previous research of James and Farris, although all the variables were not comparable. The previous research analyzed cattle of different breed type and used different grading criteria. The sex comparisons revealed that heifers have a larger discount today based on percentage of average price. Heifers in the James and Farris survey realized a discount of approximately 10% while heifers in the author's survey had a discount of approximately 15%.

Certainly supply and demand dictates the price level of feeder cattle. Since today's market pays premiums for larger, growthier, faster gaining cattle, producers should alter their management and genetic improvement strategies to take advantage of these premiums.

Appendix A. Total sample.

MODEL: MODELO1		SSE	11471.29	F RATIO	41.91
		DFE	401	PROB>F	0.0001
DEP VAR: PRICE		MSE	28.606697	R-SQUARE	0.6529

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T RATIO	PROB>|T|
INTERCEPT	1	60.377914	3.217593	18.7649	0.0001
D1	1	-1.992667	0.877967	-2.2696	0.0238
D2	1	-2.806630	0.762644	-3.6801	0.0003
D3	1	1.452178	0.809158	1.7947	0.0735
D5	1	1.541706	0.870924	1.7702	0.0775
S2	1	-9.995237	0.593222	-16.8491	0.0001
S3	1	-6.850736	0.995454	-6.8820	0.0001
F1	1	0.863000	2.005384	0.4303	0.6672
F3	1	-8.934425	1.202209	-7.4317	0.0001
M1	1	19.597577	2.925148	6.6997	0.0001
M2	1	16.559689	2.866001	5.7780	0.0001
C2	1	0.478853	0.699875	0.6842	0.4942
C4	1	0.217562	1.178921	0.1845	0.8537
L1	1	-0.551770	1.243514	-0.4437	0.6575
L3	1	-4.016945	0.852738	-4.7106	0.0001
B1	1	-0.424420	0.623171	-0.6811	0.4962
B3	1	-2.183986	1.448168	-1.5081	0.1323
B4	1	-7.813214	1.805745	-4.3269	0.0001
WT	1	-0.028657	0.00279465	-10.2541	0.0001

Appendix A. Steers only.

MODEL: MODELO1		SSE	5234.526	F RATIO	15.46
		DFE	205	PROB>F	0.0001
DEP VAR: PRICE		MSE	25.534271	R-SQUARE	0.5468

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T RATIO	PROB>|T|
INTERCEPT	1	56.259260	6.531898	8.6130	0.0001
D1	1	-3.229360	1.309879	-2.4654	0.0145
D2	1	-3.859479	0.964619	-4.0010	0.0001
D3	1	0.852122	1.017312	0.8376	0.4032
D5	1	2.372074	1.118400	2.1210	0.0351
F1	1	0.205872	2.404032	0.0856	0.9318
F3	1	-7.967571	1.763657	-4.5176	0.0001
M1	1	24.932942	6.274177	3.9739	0.0001
M2	1	23.084801	6.242100	3.6982	0.0003
C2	1	1.420519	0.921982	1.5407	0.1249
C4	1	-1.666500	2.026796	-0.8222	0.4119
L1	1	-1.775122	1.557601	-1.1397	0.2558
L3	1	-3.395955	1.198672	-2.8331	0.0051
B1	1	-0.101880	0.828501	-0.1230	0.9023
B3	1	-2.726041	1.499351	-1.8181	0.0705
B4	1	-13.486727	3.689197	-3.6557	0.0003
WT	1	-0.031756	0.003765027	-8.4345	0.0001

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