Southern Bell Tel. & Tel. Co.
FPSC Docket No. 920260-TL
Staff's 34th Interrogatories
August 18, 1993
Item No. 645 (g)

REQUEST:

Please identify the Company's most recent elasticities for the following services. Please provide these elasticity estimates by class of service to the extent possible. Please indicate: whether these estimates are for the Florida service territory or the BellSouth service region; whether these are short-run, long-run, or one-year average elasticities; and whether these estimates are considered preliminary or final. If preliminary, please indicate the anticipated finalization date of each of the preliminary estimates.

(g) Centrex lines

P R O P R I E T A R Y

RESPONSE:

The following lists the results of the latest ESSX Service elasticity study for the state of Florida:

Florida Specific ESSX® Service Elasticities

	Mileage Band	Small	Medium	Large
26	Less than 2.5 miles from CO:			
	Status:	Final	Prelim	Prelim
	Type:	Short	Short	Short
31	Greater than 2.5 miles from Central Office:			
	Status:	Final	Prelim	Prelim
	Type:	Short	Short	Short
34	Aggregate:			
	Status:	Final	Prelim	Prelim
	Type:	Long	Long	Long

P R O P R I E T A R Y

RESPONSE: (CONTINUED)

Further work in this area is not currently scheduled.

Southern Bell objects to this interrogatory to the extent the information requested is proprietary. Some of the information requested concerns competitive business information which would bring harm to Southern Bell if publicly released. This information is treated as proprietary and confidential business information by Southern Bell. Southern Bell will provide the proprietary data to the Commission Staff under a Request for Confidential Classification to be filed contemporaneously with the serving of Southern Bell's Interrogatory responses.

Nancy B. White

General Attorney

INFORMATION PROVIDED BY: DAVID RITTINER
MANAGER - ECONOMIC ANALYSIS
675 W. PEACHTREE ST., N.E.
ATLANTA, GA 30375

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(k) Inside Wire

P R O P R I E T A R Y

RESPONSE:

Inside Wire - non-recurring and recurring.

21	Non-recurring Inside Wire:	- Regional, Long Run
22	Recurring Inside Wire:	- Regional, Short Run

- Both estimates are considered Final.

Southern Bell objects to this interrogatory to the extent the information requested is proprietary. Some of the information requested concerns competitive business information which would bring harm to Southern Bell if publicly released. This information is treated as proprietary and confidential business information by Southern Bell. Southern Bell will provide the proprietary data to the Commission Staff under a Request for Confidential Classification to be filed contemporaneously with the serving of Southern Bell's Interrogatory responses.

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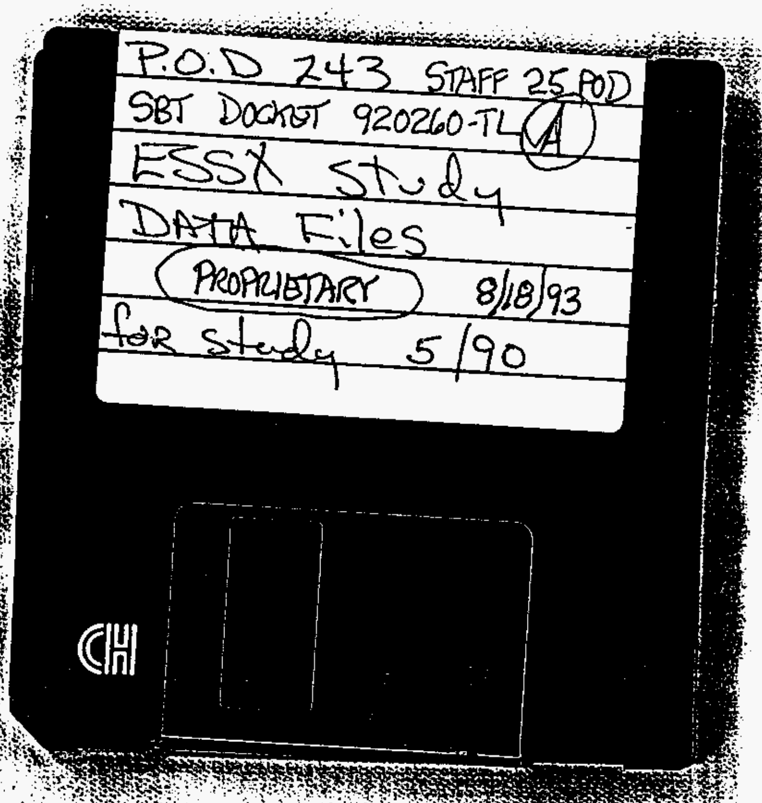
MANAGER - ECONOMIC ANALYSIS
675 W. PEACHTREE ST., N.E.
ATLANTA, GA 30375



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ESSX DATA FILES

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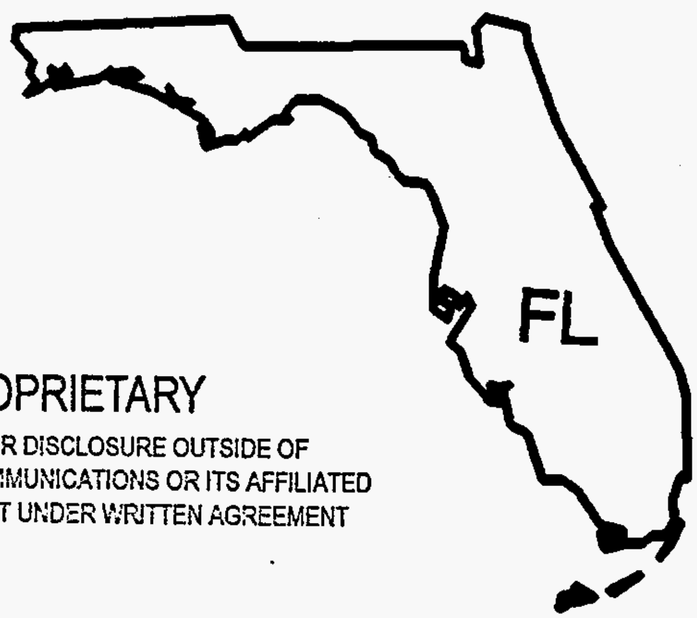
BellSouth Services

PRICING & ECONOMICS

DEMAND ANALYSIS:

ESSX SERVICE DEMAND ANALYSIS
FLORIDA



Demand Analysis
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DEMAND ANALYSIS FOR ESSX SERVICE: FLORIDA

Background and Introduction

ESSX Service provides analog and digital central office based switching capabilities for multi-line business customers. Numerous optional features may be included in the service package with payment plans ranging from monthly to 36, 60, and 84 months. For example, some optional features include call waiting, call forwarding, call restriction, and automatic route selection. ESSX Service's primary competition is the PBX, generally priced under ESSX at this time. Although the PBX price depends on a number of issues related to specific customer configurations, it is not priced on a distance sensitive basis as is ESSX Service.

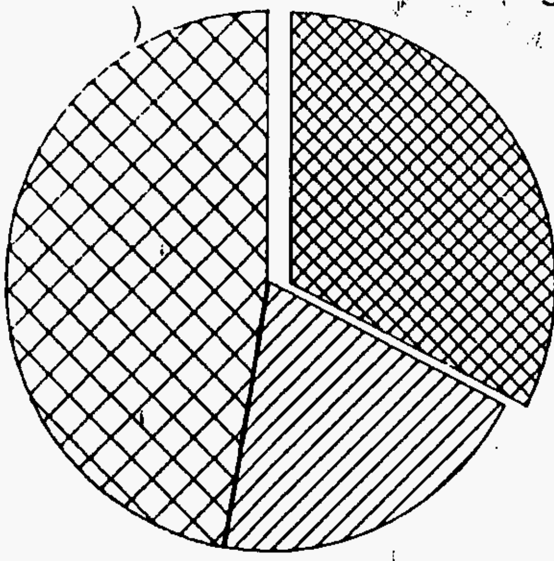
The ESSX market is tariffed into three classes based on a customer's total number of station lines. If the customer has less than 200 lines, they are considered a small subscriber. If they are between 200 and 600, they are categorized as medium subscriber. If the number of station lines are over 600, they are classified as a large customer. Annual revenue potential for the ESSX market is
20 considerable. Over was billed through the distance sensitive rate elements in 1989. About half of this amount originated
22 from the small subscriber class, comprising about of total station lines. Competitive data indicates that the medium and large market prices are considerably below anything we are offering at this time. Current pricing strategies are aimed at better positioning ESSX in the small market - a market where we are best able to compete against PBX's and key systems.

Florida underwent a rate restructure in late 1988 as the

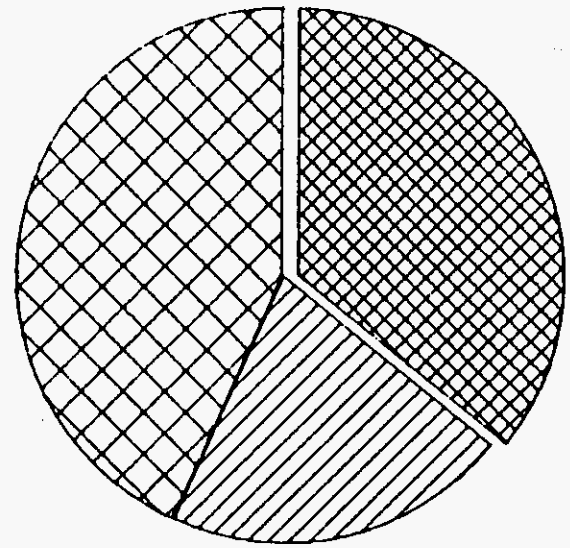
existing 10 mileage band classifications were collapsed into two - the first for those subscribers less than 2.5 miles from the central office, and the second including all customers outside that range. Contractual customers were given the option to "resubscribe" to the newer, possibly lower rate. Total demand in 1988 and 1989 increased
6 over the previous year by respectively. The purpose of this study was to analyze the impacts of that restructure on ESSX demand levels in Florida for the period April 1987 through December 1989. With estimates of historical consumer behavior, inferences about future demand patterns in the ESSX market can be developed.

FLORIDA ESSX: SMALL, MEDIUM, & LARGE

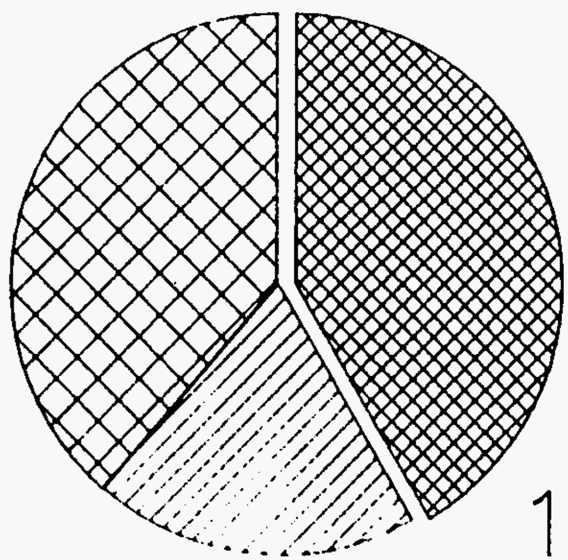
STATION LINE PROFILE BY CLASS



1987



1988



1989

DATA AS OF YEAR END

Methodology in Brief

Single equation econometric models were used to estimate to what extent business demand reacts to changes in the real price of ESSX Service. The models, analyzing demand data from April 1987 to December 1989, are primarily driven by two factors: 1). the real price of ESSX Service and 2). non-agricultural employment. The employment data was used to capture increases in telecommunication requirements over time. Furthermore, the study disaggregates the analysis into ESSX lines within 2.5 miles from the central office and those greater than 2.5 miles. The primary findings of the study are in measures of own-price elasticities which can be applied to base case administrative forecasts under various price scenarios.

Summary of Results

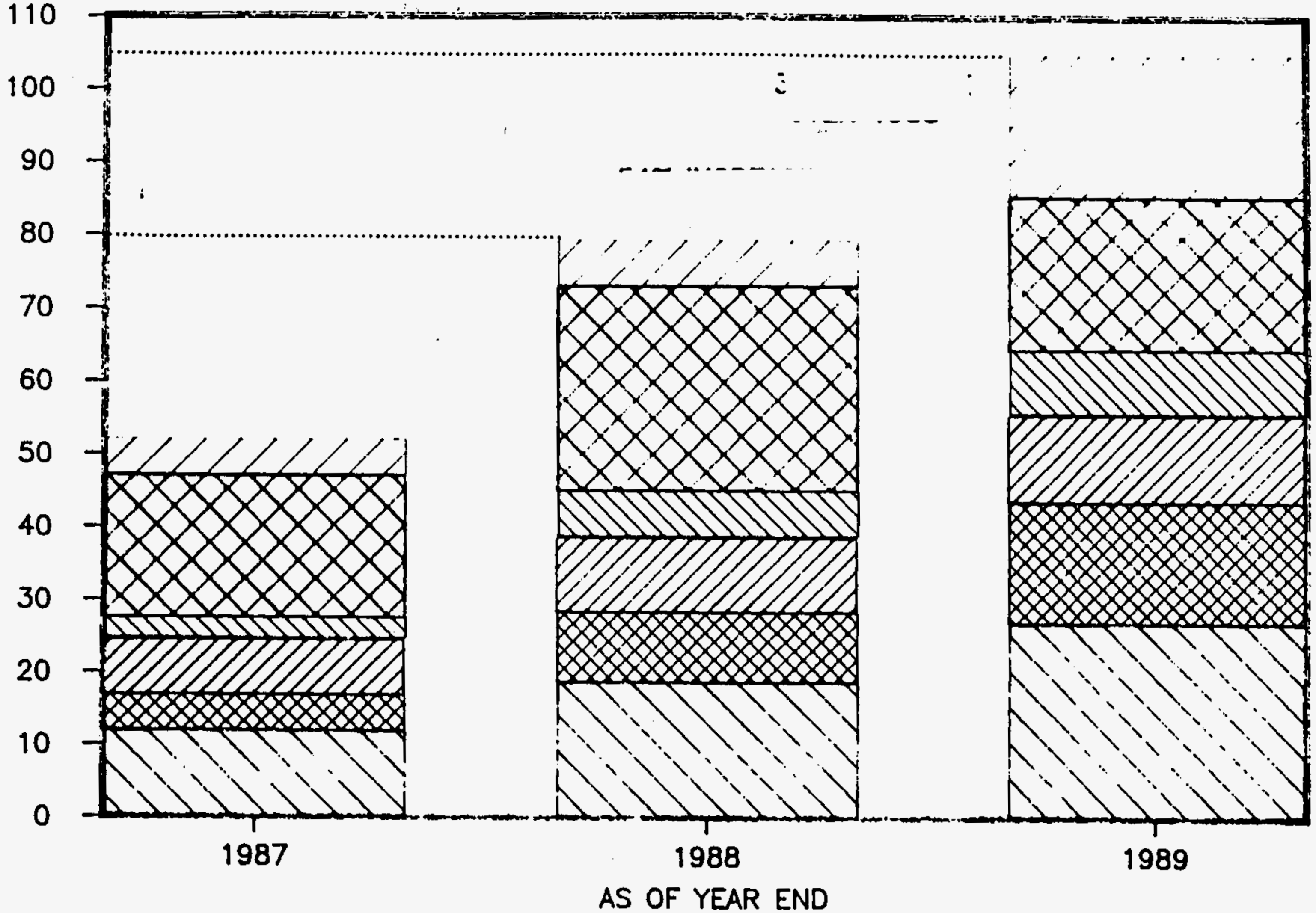
Examination of the percentage of total station lines residing over 2.5 miles from the central office over time reveals a significant jump in the small category coinciding with the tariff changes in late 1988. Smaller, yet discernible increases in this ratio were also found in the medium and large categories, indicating marginal demand shifts in these markets.

The findings of this study support initial speculation that ESSX Service is in a highly competitive market. Where ESSX Service is priced anyway near the PBX price (small market), the short run
11 elasticities were found to be over . In other words, if the average price is reduced by 1%, we may expect demand to increase by
13 about within 1 year. The tariff changes to the medium and large classifications did not show the magnitude of price sensitivity found in the small market. This demand rigidity may reflect the longer time associated in moving from a PBX system to an ESSX network for the more complex subscriber. On the other hand, it may simply be a direct result of being priced significantly above the PBX market.

As expected, the long run implications of a price change significantly differed from the short run. In the contexts of the ESSX market, long run responsiveness would translate into the period of time where all contractual obligations have expired and financial constraints resulting from PBX investment and other equipment become negligible. In the small market, the long run price elasticity was found to be roughly twice the short run measure. Likewise, the
26 analysis of the large market found an elasticity of around
Therefore, it seems that the existence of financial constraints do indeed significantly impact the magnitude of demand responsiveness

over time.

FLORIDA ESSX: SMALL, MEDIUM, & LARGE



Technical Discussion

Data Requirements:

Monthly data from April 1987 to December 1989 was obtained for the number of ESSX lines by mileage band, the corresponding distance sensitive portion of billed revenue, non-agricultural employment for the state, and the consumer price index. Although analog and digital breakdowns of the demand and revenue were available, it was decided to work with an aggregate of two. Since analog to digital conversions have and will continue to occur with significant frequency, separate elasticity models would have to account for these shifts. Moreover, theory suggests little differential in price sensitivity from the consumer's point of view. Even if analog/digital elasticities were developed, the pricing strategy of the product team is towards a single uniform rate.

Short Term / Long Term Responsiveness:

The ESSX market for BellSouth is comprised of a number of tariffed contractual arrangements locking the customer into a set price for various periods. As mentioned earlier, these arrangements vary from month to month, 36 months, 60 months, and 84 months schedules. Financial penalties to discourage early contract termination are more substantial at earlier termination dates. Therefore, such constraints suggest that the short-term reaction to a price change may significantly differ from the long-term. In order to investigate this issue, both short and long run models were developed for the ESSX market.

The short run models utilize two aggregation levels of the mileage band data. The first category was for those customers less than 2.5 miles from the central office. As a histogram plot of the existing demand shows, the majority of ESSX customers reside within a mile from the central office. We would expect this "submarket" to be less sensitive to direct ESSX price changes since they are priced relatively low. A stronger reaction to price decreases would be expected for the outer mileage band customer (i.e. >2.5 miles). The decision to use the 2.5 mile cut-off point was more an empirical constraint imposed by the recent rate restructure rather than by economic or market theory.

Pooled cross-section times series procedures were used to develop the long run models. Elasticity results from pure cross-sectional studies are generally viewed as long term responsiveness measures. That is because the model's scope of analysis does not capture shocks to the time series component. Economic textbooks frequently define "long term" to represent that amount of time where all inputs to factors of production are variable. In the contexts of the ESSX market, this would translate into the period of time where all contractual obligations have expired and financial constraints resulting from PBX investment and other equipment become negligible.

Since Florida has experienced a rate change over the historical study period, it was necessary to exclude that portion of the data from the estimation of the long run regression models to observe pure long run effects. By doing so, we created a pooled cross-section time series model where the time series component was filtered from any direct price effects on demand. Price fluctuations in the time component of these models would then reflect only marginal indirect price movements.

Examination of demand information for the long term analysis indicated significant differences in the number of existing ESSX lines as we move further and further from the central office. Marketing research suggests that businesses are not located equi-distance from the central office. In general, business telecommunication requirements are skewed heavily in favor of the nearer mileage bands. Therefore, price is not the only factor in determining the distributional characteristics of ESSX customers as measured from their central office. The potential number of subscriber lines at each mileage band has to be accounted for in any econometric measure of price sensitivity. The models constructed here make use of differential intercepts to essentially "backcaste" these mileage band differences in order to obtain realistic estimates of price elasticities.

The Price Variables:

The ESSX price variable used throughout the study consisted of the sum of two price variables: 1). the distance-sensitive ESSX rate and 2). a non-distance sensitive user rate. The market was assumed to observe the sum of these ESSX prices on their bill, rather than looking at the mileage sensitive portion only. Values for the distance-sensitive rate were obtained directly from monthly billing revenue by mileage band divided by the number of ESSX station lines. The non-distance sensitive portion of the total ESSX price was derived using a "typical system" configuration for tariffed elements like...

1. CPE RELATED-CO
2. CE & INTERCOM
3. EULC ON NARS
4. FEATURES (ECAS)
5. NARS
6. TERMINATIONS
7. SMDR-P
8. NON-REC
9. CPE

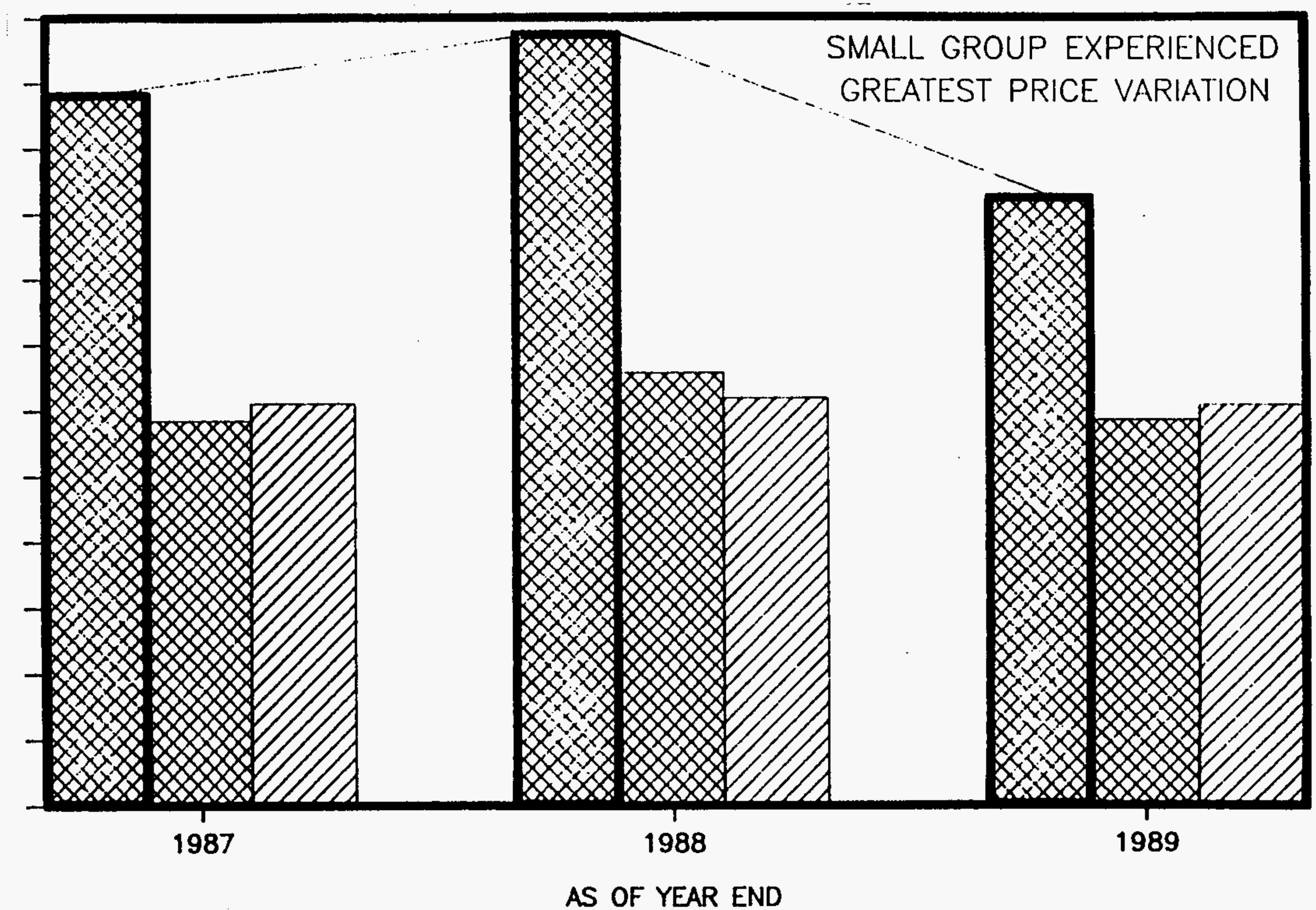
Initial model specifications attempted to capture significant demand fluctuations caused by marginal tariff changes to this "typical system" rate . In some cases, such specifications tended to increase the standard error of the price variable. This finding could result from either the demand not following a stable response to the tariff changes specified in the model or the accuracy level of the constructed "typical system" variable. The final specification employed an average "typical system" rate that remained constant over the historical period.

As done in most time series studies, the aggregate price variable was deflated using the consumer price index. Examination of the nominal loop (distance-sensitive) rate through the end of 1988 shows marginal upward or downward drifts in price. These trends occur, however, not because of direct rate changes, but mileage band distributional shifts as well as the impact of analog to digital conversions. Changes to the tariffed rate appear towards the end of 1988 as the impact of rate restructures begins and customers elect to resubscribe.

Collection of competitive PBX historical prices at an accuracy level needed in this analysis was impossible. Moreover, competitive knowledge would at best indicate a drop in the PBX price of about 6% per year, a trend that is expected to continue over the next few years. Explicitly including a trend component of this nature into the regression model would tend to cause multicollinearity problems with existing highly linear variables, not adding any further explanatory nature to the analysis.

Instead, by dividing the market into the distance sensitive categories mentioned earlier (above and below 2.5 mile locations), relative price considerations were implicitly included. This is simply because ESSX is priced on a distance sensitive basis while PBX systems are not. ESSX in the small class, for example, is competitively priced at lower mileage bands, but well above market price at the outer distances. Market disaggregation would better capture the behavior of those existing or potential ESSX subscribers close enough to the market price to be affected by the range of rate adjustments imposed by the new ESSX tariff.

FLORIDA ESSX: SMALL, MEDIUM, & LARGE



The Small Market:

At the end of 1989, Florida's small ESSX market consisted of 3 approximatel station lines within 2.5 miles of the central 4 office with another residing outside that distance. The demand for lines outside 2.5 miles more than doubled in relative terms, 6 growing from about of total demand in late 1988 to in late 1989. Just prior to the tariff changes, the majority of demand resided in the first mileage band with bands 7-10 showing less than 9 station lines each.

The impact of the 1988 restructure first appeared in November 1988 with demand in the new USOC's associated with the tariff changes. The ESSX nominal loop price decreased at a rather sharp rate at that time and continued throughout 1989. The tariff restructure for ESSX station lines within 2.5 miles from the central office translated into 15 a drop in the average loop rate to $ in 1989. Shifts in the 16 outer mileage bands were quite large, dropping from $32 to $17.

A graphical inspection of the data indicates significant demand gains occurring approximately 8 months after the tariff changes were instituted. This could occur for a variety of reasons such as lead time termination requirements for leased PBX systems, budgetary constraints in major telecommunication decisions, and the time needed by marketing to promote the service to potential customers under a new pricing package. Because indirect price shifts do occur before the restructure, specifying such a long lag did not adequately explain the nature of these particular price drifts.

The short term model for the small market with customers less than 2.5 miles from the central office specified aggregate demand for the first 7 mileage bands as a function of non-agricultural employment and the aggregate real price of ESSX. As the statistics indicate below, the model explained over 99% of the fluctuations in demand over the historical period. A number of lag structures were specified (polynomial lags, 2nd, 4th & 6th period lags), but produced no more explanatory power than the above specification.

Since all models in this study were estimated using a loglinear functional form, the estimated coefficients represent the constant elasticities in the equation. In addition, such a transformation tends to minimize the consequences of heteroscedastic disturbances in the residuals. Both the trend and price variables were found statistically significant. The price elasticity of implies that for every percentage drop in the real aggregate price, demand will increase by .

Further diagnostics were performed as the algorithm adjusting for autocorrelation resulted in a large residual for the first observation of the series. Deleting the first 10 observations one at a time yielded a relatively stable price elasticity , fluctuating around with t-statistics moving as high as -3.3. Specifying 2nd and 4th period lags produced a similar fluctuation as the sample size was decreased. However, dropping the last 10 observations one at a time produced significantly smaller elasticities which eventually proved insignificant. Therefore, additional demand measurements over time may improve the standard error of the price variable as the full impact of the rate restructure evolves.

The short term model for the small market with customers located greater than 2.5 miles from the central office specified aggregate demand for the last 3 mileage bands as a function of non-agricultural employment and the aggregate real price of ESSX. As the statistics indicate , the model explained over 96% of the fluctuations in demand over the historical period. Both the trend and price variables were found statistically significant. Estimated at 6 , the price elasticity in this case is very close to the one in the previous model.

Since the majority of existing ESSX lines are priced quite a bit lower than those found outside the 2.5 mile range, we expected to find a significant difference between the elasticities of the two groups. As mentioned above, the elasticities were not found to significantly differ from one another. Should not the outer mileage band base of potential customers be more sensitive to price changes?

The answer to this question may be found in the assumptions underlying the log-linear functional form of the demand models. Specifying the equation in log form yields parameter estimates for the elasticities that develop an average or constant measure of sensitivity over the entire range of price adjustments. This may be reasonable when the price variations are marginal, as in the case of the smaller mileage band customer base. But the outer mileage band customers experienced about a 25% price reduction. Assuming a constant measure of price sensitivity over the entire range could underestimate the magnitude of the elasticity for those potential subscribers.

The following page shows a graphical representation of the discussion mentioned above. If we estimate the number of ESSX lines based only on data before the price change, we can determine a rough approximation of the elasticity at the low end of the price range. Using a simple time trend to estimate "business as usual" demand, elasticities were developed for both mileage band categories. The lower mileage band subscribers were found to have an elasticity similar to what was estimated by the log-linear models. The outer mileage band subscribers were found to have an elasticity two or three times greater than what was previously estimated. This finding makes more intuitive sense than the elasticity developed by the log-linear model. However, the outer mileage subscriber, as measured in May of 1990, still accounts for less than 10% of the total ESSX lines.

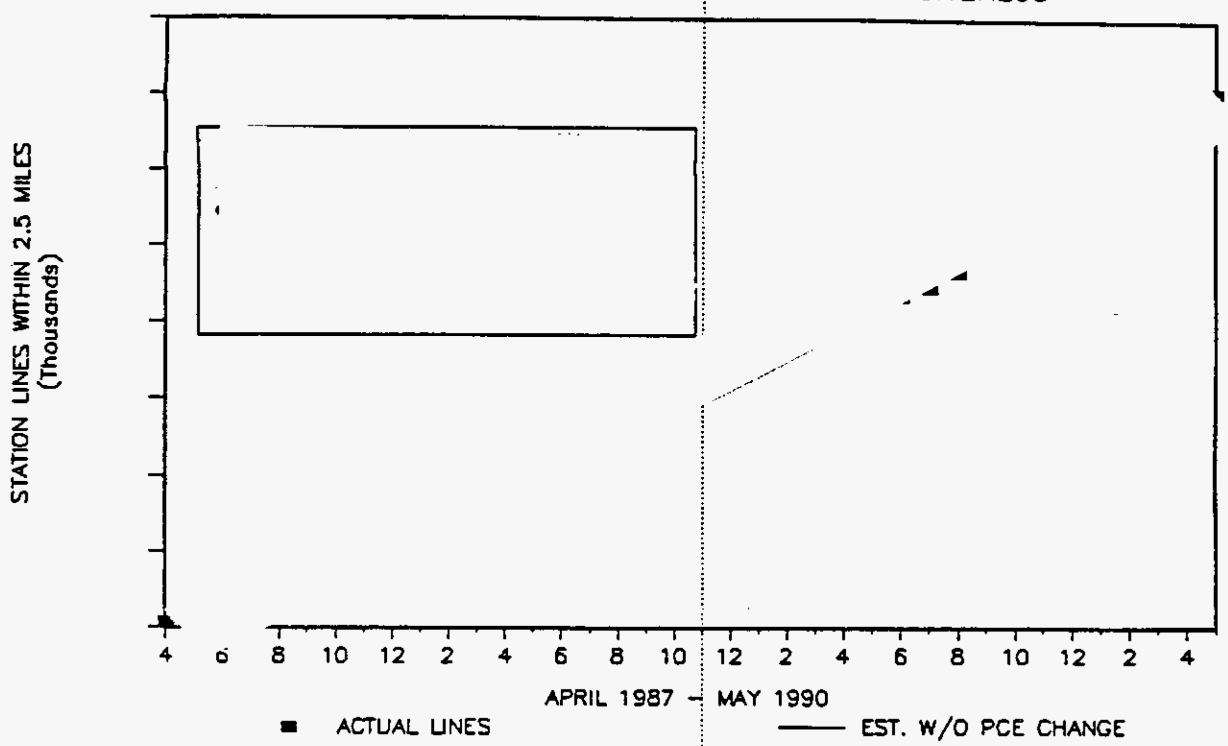
The long term pooled cross-sectional time series model also specified demand as a function of a price variable and non-agricultural employment. However, two distinct differences separate it from the short term models. The first was that the estimation period for the long run analysis ran from April 1987 to October 1988 - a 14 month shorter span. This was necessary to filter out the impact of any direct price changes during that time. The second difference was that the dependent variable used in the pooled model consisted of the 10 different mileage bands comprising the service. Since we know that there is not an equal distribution of potential customers as we move away from our central offices, it was necessary to include differential intercepts in the equation. Along the same lines, differential slope variables were added to the model allowing each mileage band to have different growth estimates.

Because we are now dealing with disaggregated cross-sectional data, there was good reason to believe that our residual term would not be homoscedastic. After all, most of our existing demand is in the nearer mileage bands. Therefore, a generalized least squared procedure was used that estimated separate autoregressive parameters and error variances for each cross-section . Although the inclusion of the slope variables didn't dramatically change the price elasticity, all slope and intercept coefficients were significant. As expected, the results for the long term model showed a greater elasticity than

3 either of the short term specifications

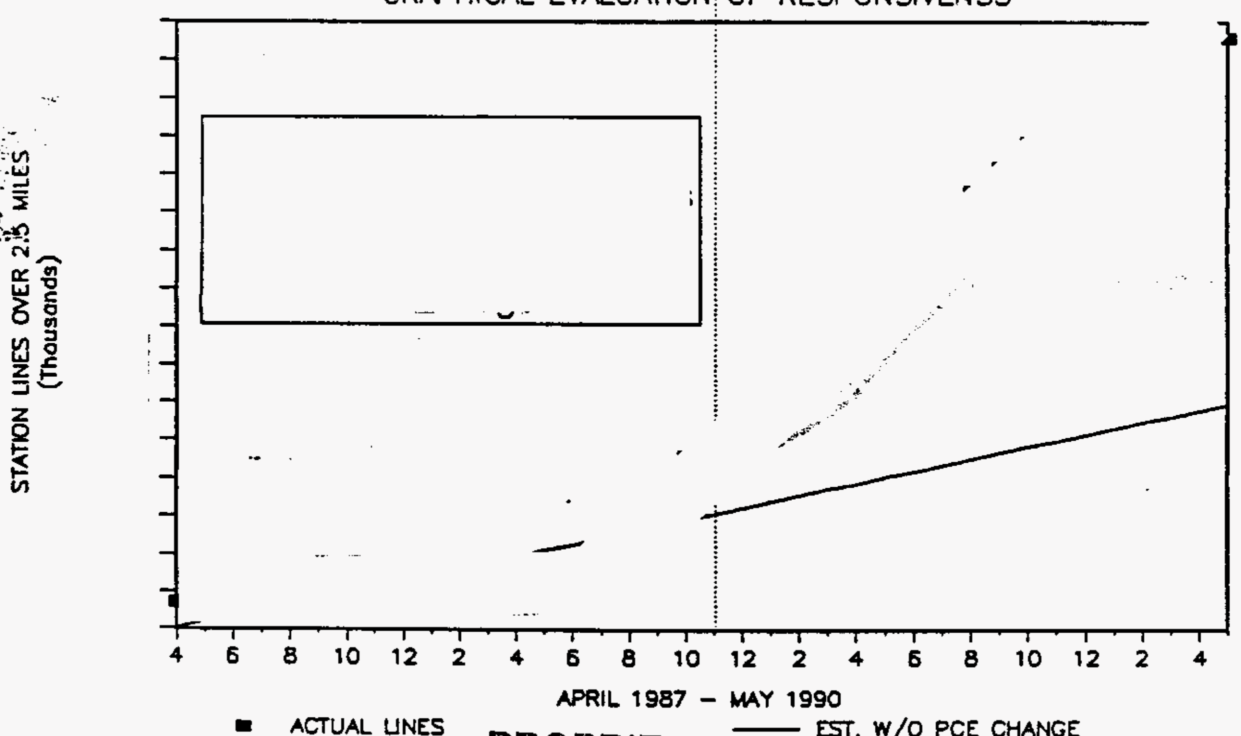
FLORIDA ESSX STATIONS (<2.5 MILES)

GRAPHICAL EVALUATION OF RESPONSIVENESS

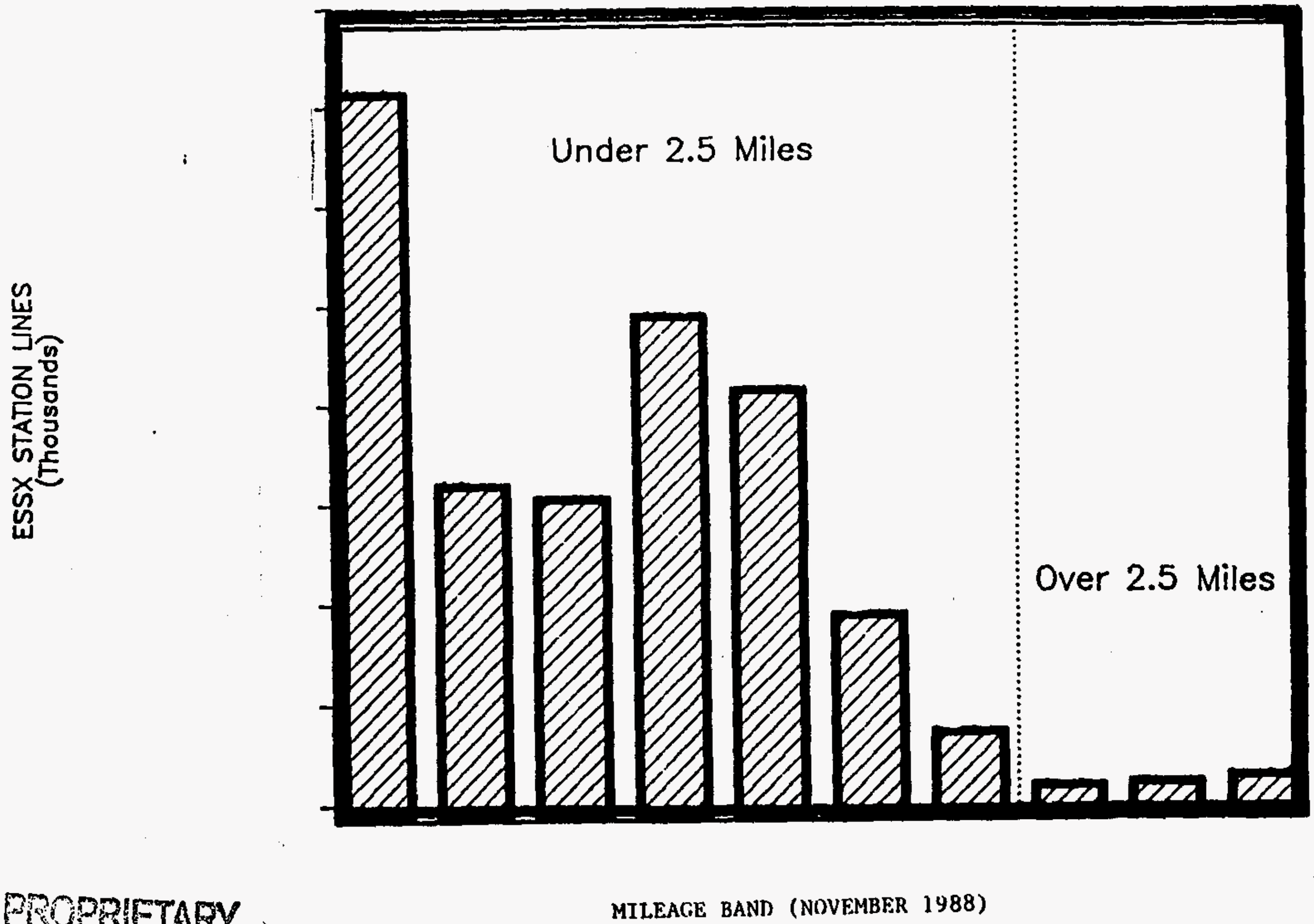


FLORDIA ESSX STATIONS (>2.5 MILES)

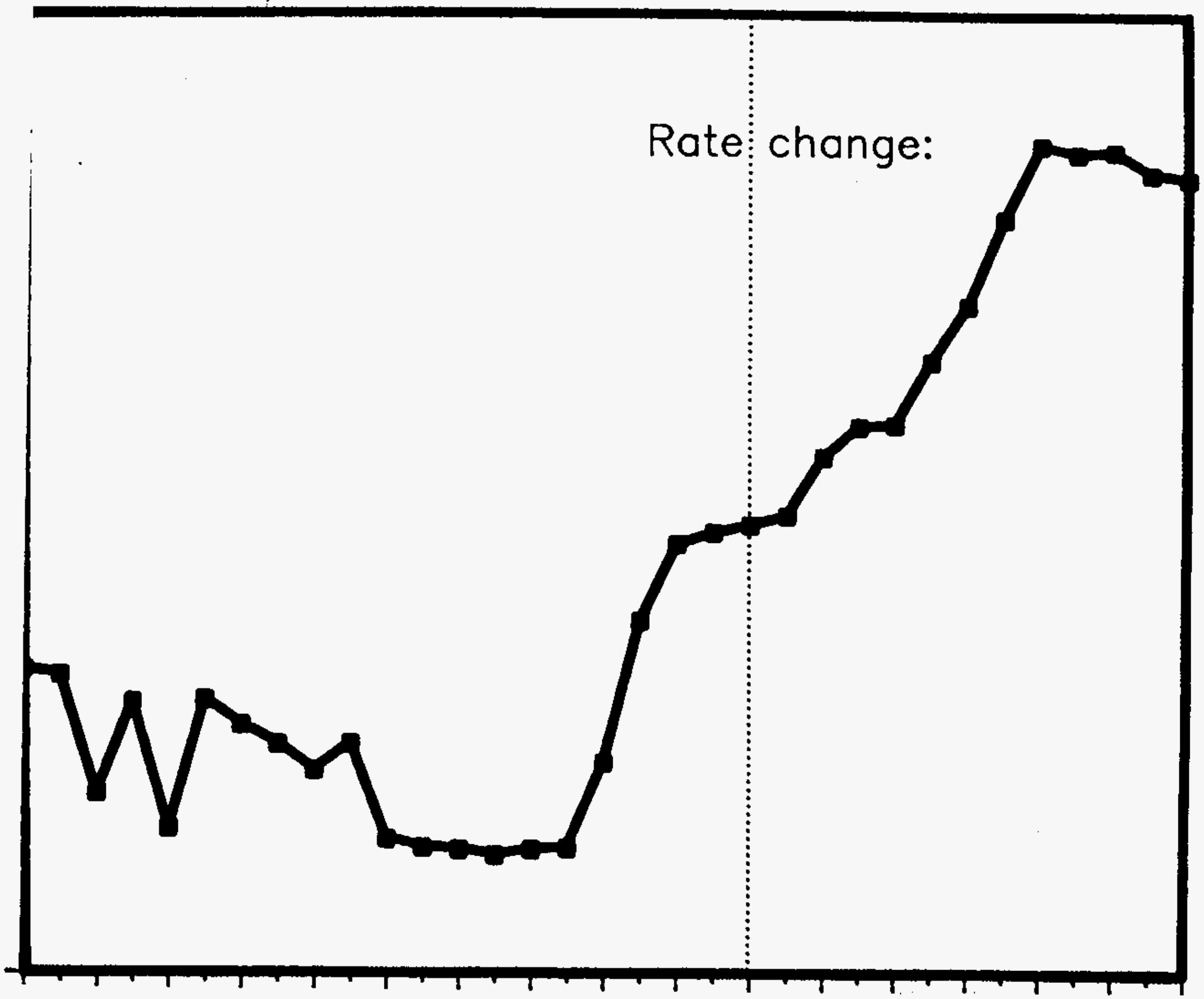
GRAPHICAL EVALUATION OF RESPONSIVENSS



DISTRIBUTION PROFILE BY MILEAGE BAND



ESSX LINES (>2.5 MILES FROM C.O.)



The Medium Market:

At the end of 1989, Florida's medium ESSX market consisted of
3 approximately station lines within 2.5 miles of the central
4 office with another residing outside that distance. The demand for lines outside 2.5 miles did not show a pattern similar to the small category relative to total demand, moving erratically from about
7 of the total in late 1988 to in late 1989. In late 1988, the majority of demand by mileage band resided in the first and fourth mileage bands, comprising over half the number of stations lines at that time.

The effects of the 1988 restructure first appeared in December 1988 with demand in the new USOC's associated with the tariff changes. The tariff restructure for ESSX station lines within 2.5 miles from the central office translated into a drop in the average
15 loop rate . Shifts in the outer mileage bands
16 during 1989 were staggered, dropping from probably as a result of a single subscriber being added. This pattern was not noticeably different than the pre-restructure period.

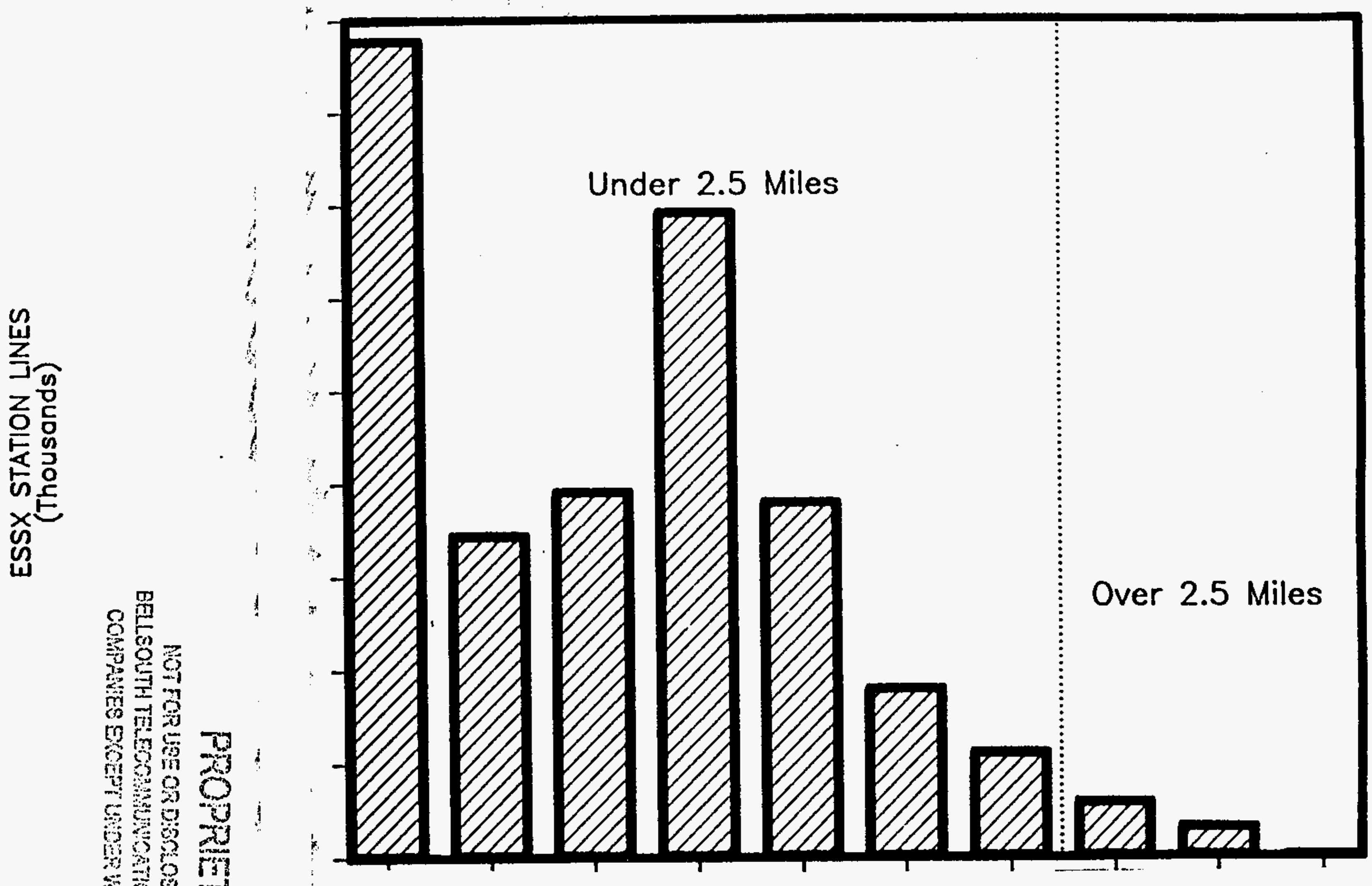
The short term model for the medium market for customers less than 2.5 miles from the central office specified aggregate demand in the first 7 mileage bands as a function of non-agricultural employment and the aggregate real price of ESSX. As indicated below, the model explained over 98% of the fluctuations in demand over the historical period. However, only the trend variable was found statistically
25 significant. The price elasticity of had the correct sign, but a t-statistic of -1.02, well below the acceptable range. Therefore, we may conclude that the price changes experience by the medium market in 1989 were not significant enough to induce much additional demand

for ESSX Service.

The short term model for the medium market with customers greater than 2.5 miles from the central office specified aggregate demand for the last 3 mileage bands as a function of non-agricultural employment and the aggregate real price of ESSX. The model explained over 96% of the fluctuations in demand over the historical period. The trend variable was found marginally significant while the price variables was found very significant with a t-statistic at -4.07. Because of the relatively small number of lines (small number of individual subscriber) changes to demand over time would tend to occur in lumps. This pattern would be difficult to account for with such a specification for state level employment. An attempt was made to filter out this effect by shortening the time period to exclude the
14 large jump of customer at the end of 1989. Estimated at the price elasticity applications for this submarket may tend to be somewhat limited because of the small subscriber base. In addition, because there were no discernible differences between price movements before and after the restructure, the elasticity may represent price sensitivity for indirect price movements as opposed to demand reactions to tariff changes.

Again, a generalized least squared procedure was used for the long term model to estimate separate autoregressive parameters and error variances for each cross-section. As in the small long term model, the sample period was shortened to filter out the effects of direct price changes. The model was estimated using both differential intercepts and slope components. Although the inclusion of the slope variables didn't dramatically change the price elasticity, all slope coefficients were significant. As expected, the results for the long term model were not statistically different than for the small market, but showed a greater elasticity [redacted] than either of the short term specifications for the medium market.

DISTRIBUTION PROFILE BY MILEAGE BAND



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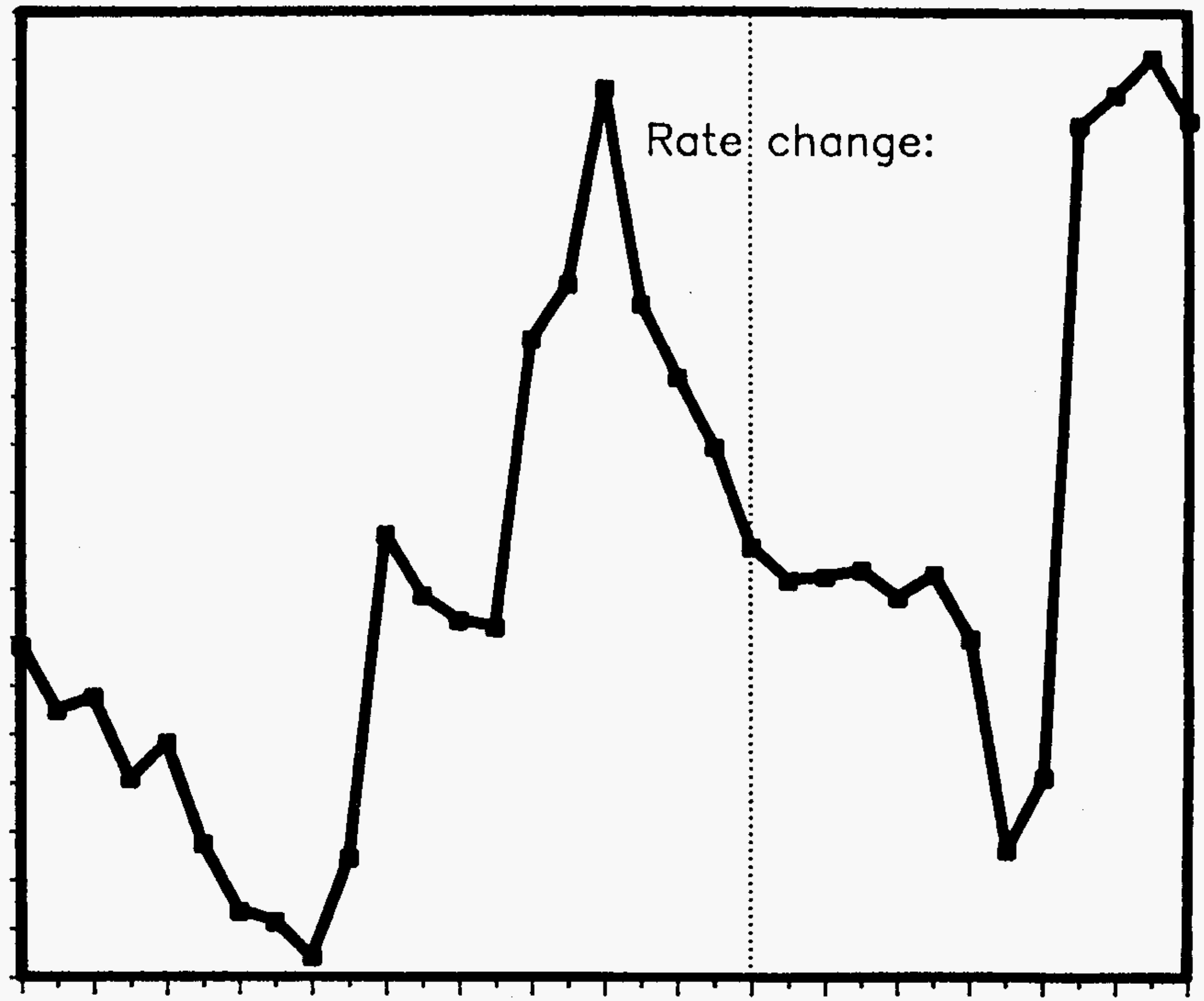
ESSX LINES (>2.5 MILES FROM C.O.)

PERCENTAGE OF TOTAL ESSX STATION LINES



The Large Market:

At the end of 1989, Florida's large ESSX market consisted of
3 approximately station lines within 2.5 miles of the central
4 office with another residing outside that distance. The demand for lines outside 2.5 miles did show a pattern similar to the small
6 category relative to total demand, moving sharply from about of
7 the total in late 1988 to in late 1989. The majority of demand by mileage band resided in the fourth mileage band in November 1988, comprising over one fourth the number of station lines at that time.

The effects of the 1988 restructure first appeared in January 1989 with demand in the new USOC's associated with the tariff changes. The ESSX nominal loop price showed little apparent change coinciding with the restructure in any of the two mileage classifications. The tariff restructure for ESSX station lines within 2.5 miles from the
15 central office translated into fluctuations between in 1989. Shifts in the outer mileage bands during 1989 were staggered,
17 dropping from

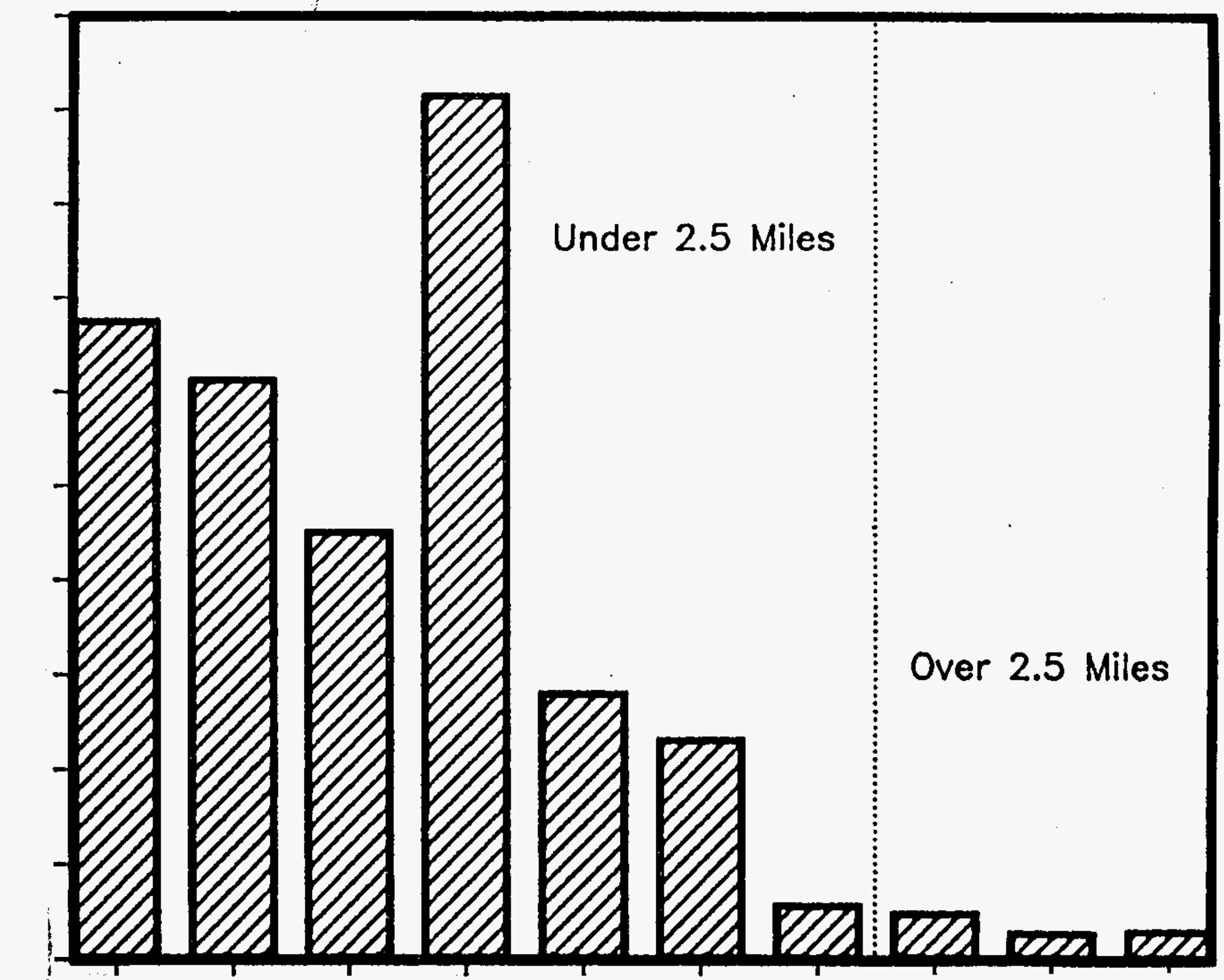
The short term model for subscribers within 2.5 miles from the central office explained over 98% of the fluctuations in demand over the historical period. However, only the trend variable was found statistically significant with a t=10. The price elasticity not only was insignificant, but had the wrong sign. Therefore, we may again conclude that the price changes experience by the large market in 1989 were not sufficient enough to induce additional demand for ESSX Service.

The large market model for customers greater than 2.5 miles

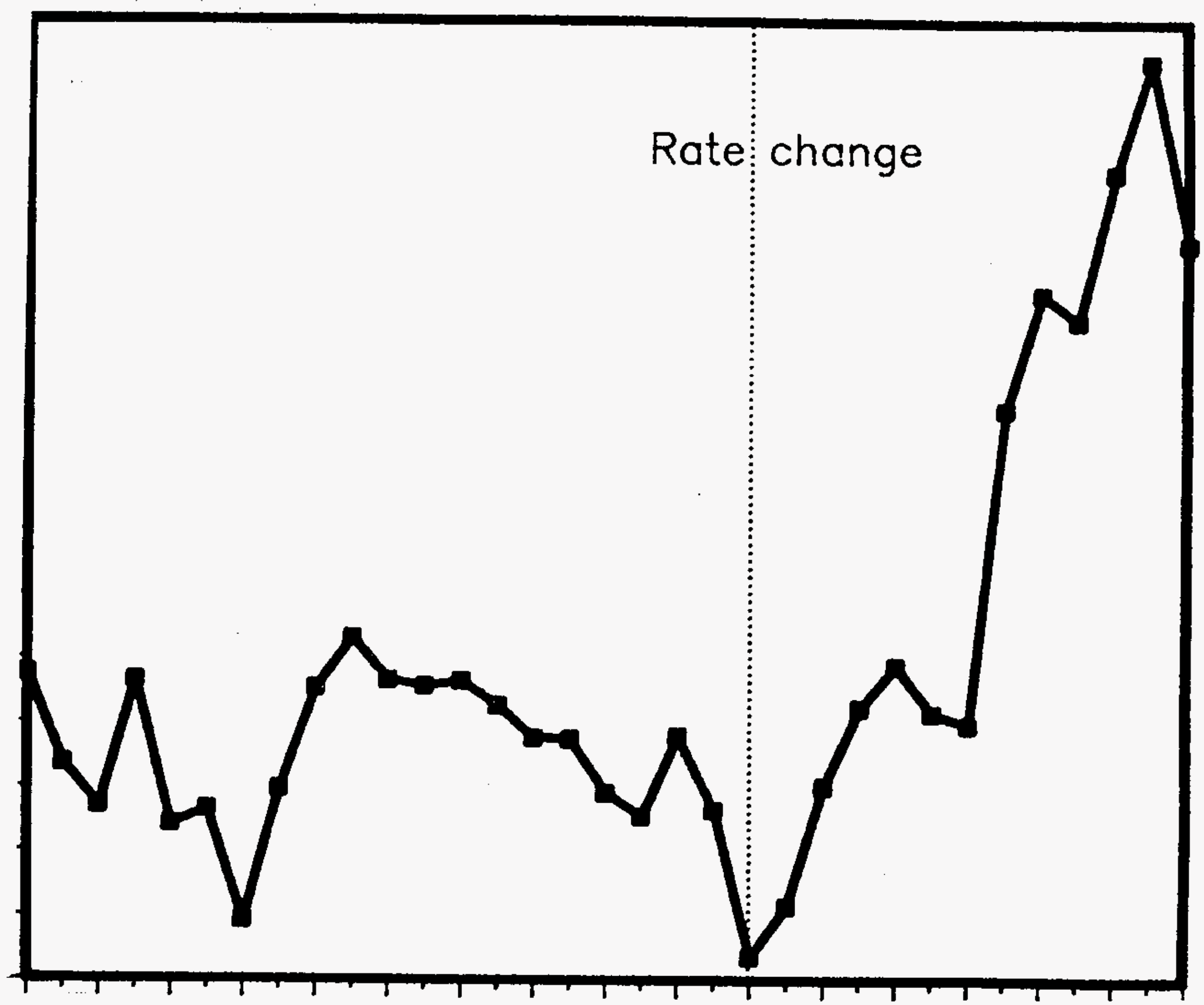
from the central office explained over 98% of the fluctuations in demand over the historical period. The trend and price variable were found significant with t-statistics of 6.4 and -3.6 respectively.
4 Estimated as the price elasticity for this category is relatively smaller than any other group in the analysis.

Again, a generalized least squared procedure was used in the long term elasticity model for the large subscribers. The procedure shortened the sample size and used estimated separate error variances and autoregressive parameters for each cross-section . Although the inclusion of the slope variables didn't dramatically change the price elasticity, most slope coefficients were significant. The model, explaining 99% of the variation in demand over the historical period,
13 estimated an elasticity of with a significant t-statistic of -3.5.

DISTRIBUTION PROFILE BY MILEAGE BAND



ESSX LINES (>2.5 MILES FROM C.O.)



Concluding Remarks

This study provides a structural approach in estimating historical consumer behavior relating to a price change in the ESSX market. Both short and long run measures of price sensitivity were developed and adjusted for the impact of inflation. The full short run impacts of a price change could very well be thought of occurring within the first year of a tariff change. It should be remembered that the consumer behavior measured here was developed in context of specific price range fluctuations. For example, in the small class for those subscribers within 2.5 miles of the central office, aggregate demand responded to approximately a 25% decrease in the average loop price. For the outer band customers, this was more in the range of a 50% drop. Any attempt to extend the application of these estimates significantly beyond these ranges should be done so with caution.

The long run impact of a price change was shown to be potentially greater than for the short run. This may be subjectively translating into periods of four years or more. For the most part, these long term estimates provide an upper bound to the demand responsiveness of the consumer, given negligible levels of contractual obligations and ability to financially move from PBX systems to ESSX Service.

FLORIDA ELASTICITY MODELS

	----- S M A L L -----		
	<2.5	>2.5	LONG TERM
R-SQ	0.9912	0.9626	0.987
STANDARD ERROR	0.036	0.155	1.05
RHO	YES	YES	YES
DURBIN WATSON	1.64	2.22	1.89
DIFFERENTIAL INTERCEPTS	NO	NO	YES
DIFFERENTIAL SLOPES	NO	NO	YES
EMPLOY ELASTICITY	8.56	12.68	N/A
EMPLOY T-STAT	6.6	3.56	N/A
12 ESSX REAL PRICE ELASTICITY			
ESSX REAL PRICE T-STAT	-2.1	-2.85	-16.26

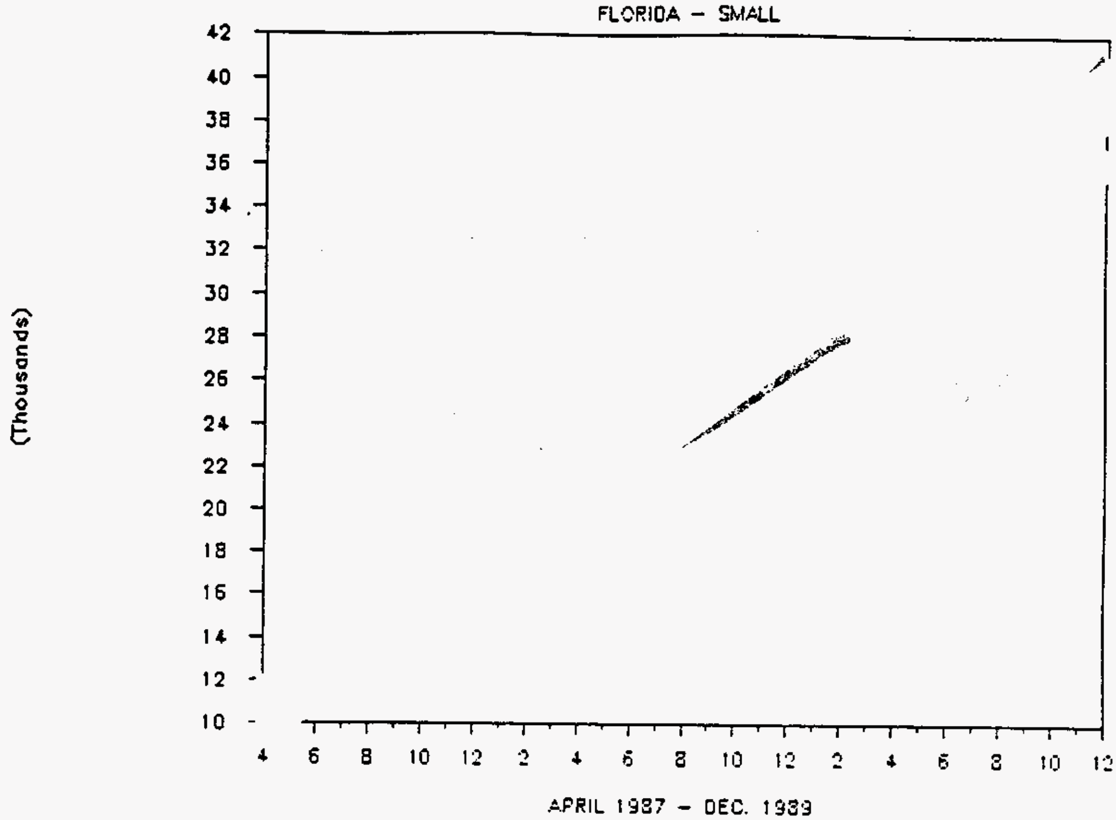
FLORIDA ELASTICITY MODELS

	----- M E D I U M -----		
	<2.5	>2.5	LONG TERM
R-SQ	0.984	0.968	0.977
STANDARD ERROR	0.039	0.069	0.615
RHO	YES	YES	YES
DURBIN WATSON	1.7	1.96	1.7
DIFFERENTIAL INTERCEPTS	NO	NO	YES
DIFFERENTIAL SLOPES	NO	NO	NO
EMPLOY ELASTICITY	8.04	3.95	5.82
EMPLOY T-STAT	7.1	1.86	8.71
25 ESSX REAL PRICE ELASTICITY			
ESSX REAL PRICE T-STAT	-1.02	-4.07	-18.1

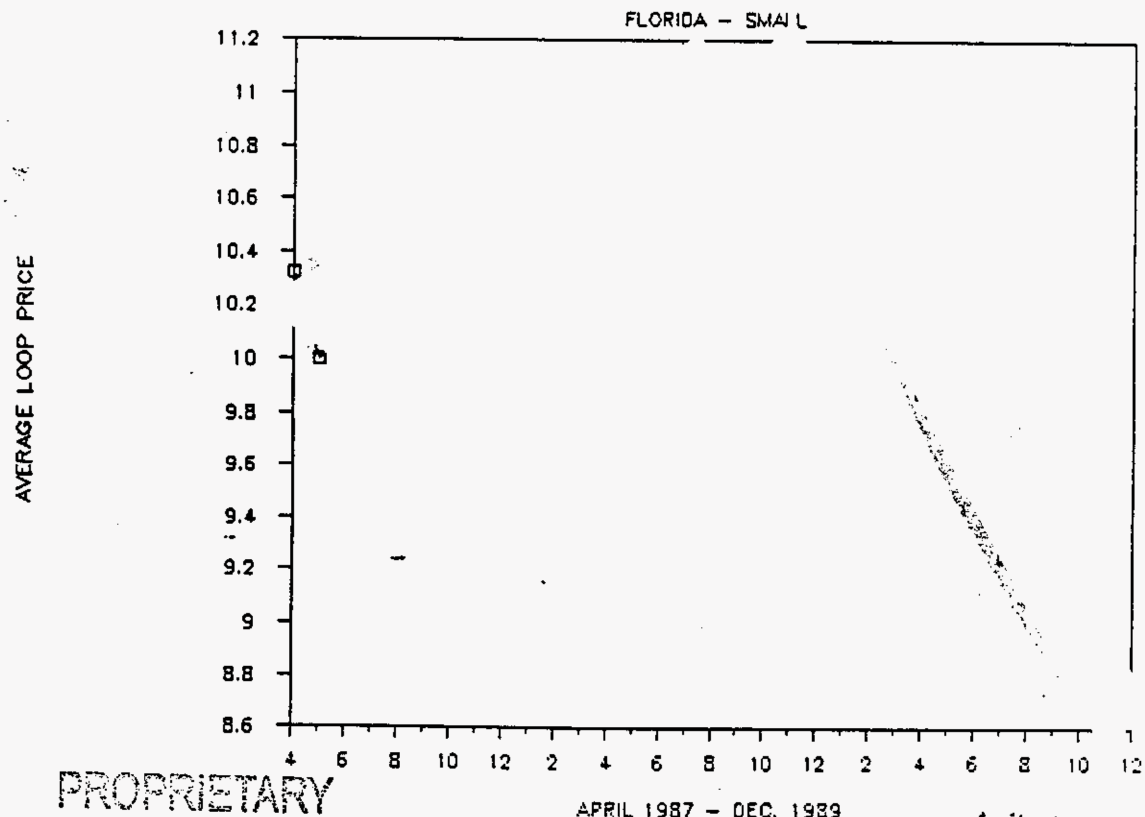
FLORIDA ELASTICITY MODELS

	----- L A R G E -----		
	<2.5	>2.5	LONG TERM
R-SQ	0.971	0.982	0.996
STANDARD ERROR	0.046	0.043	0.588
RHO	YES	YES	YES
DURBIN WATSON	1.7	1.47	1.79
DIFFERENTIAL INTERCEPTS	NO	NO	YES
DIFFERENTIAL SLOPES	NO	NO	NO
EMPLOY ELASTICITY	9.25	6.68	7.87
EMPLOY T-STAT	10.38	6.36	7.88
38 ESSX REAL PRICE ELASTICITY			
ESSX REAL PRICE T-STAT	1.68	-3.57	-3.54

ESSX STATIONS (<2.5 MILES)

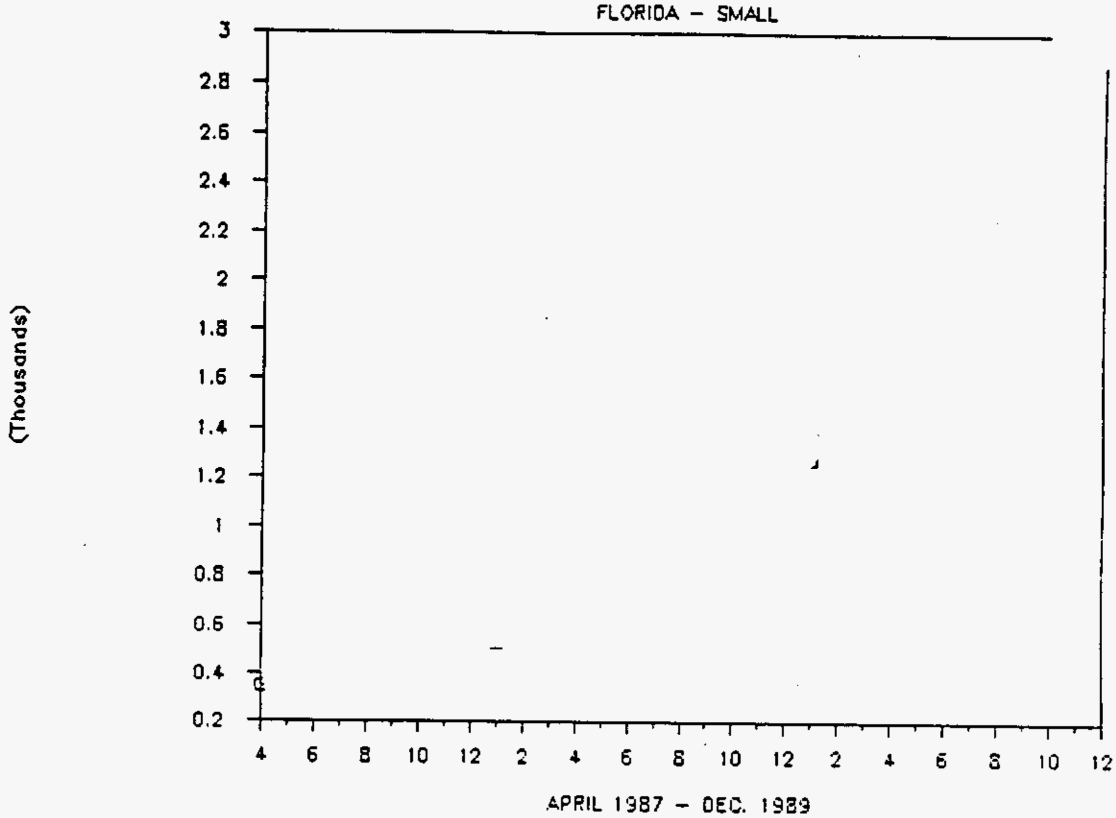


ESSX NOMINAL LOOP PRICE (<2.5 MILES)



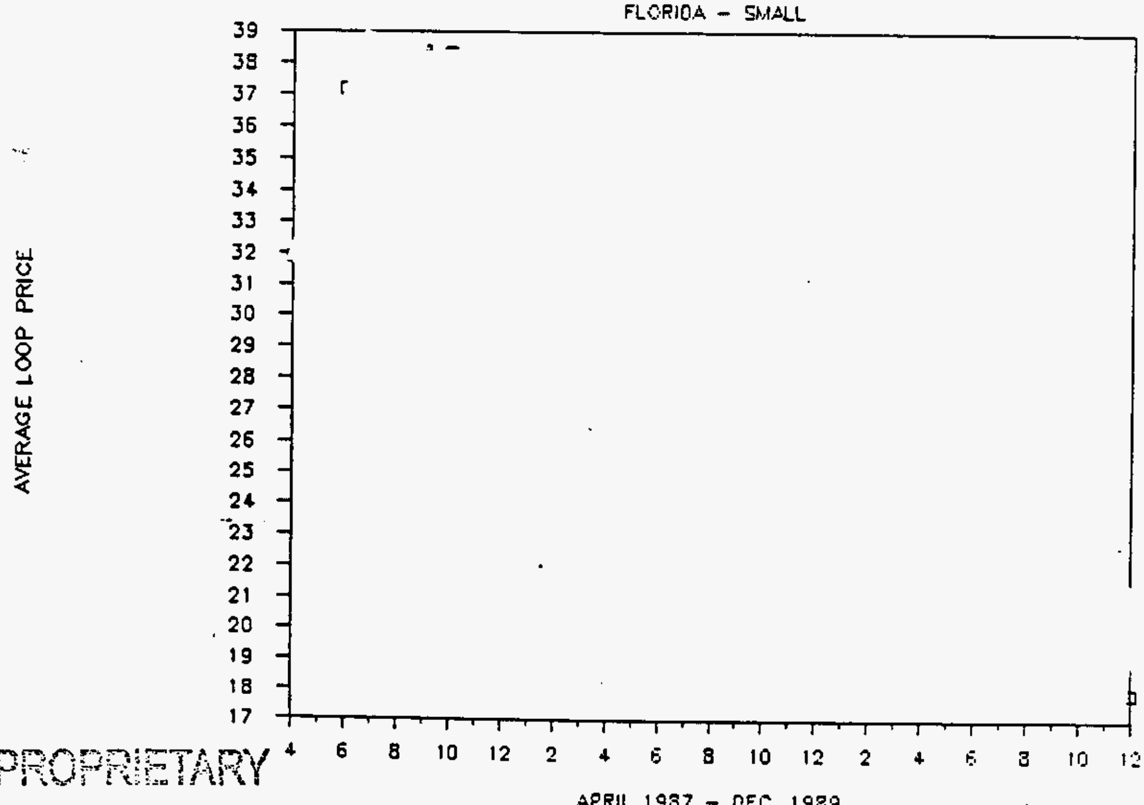
ESSX STATIONS (>2.5 MILES)

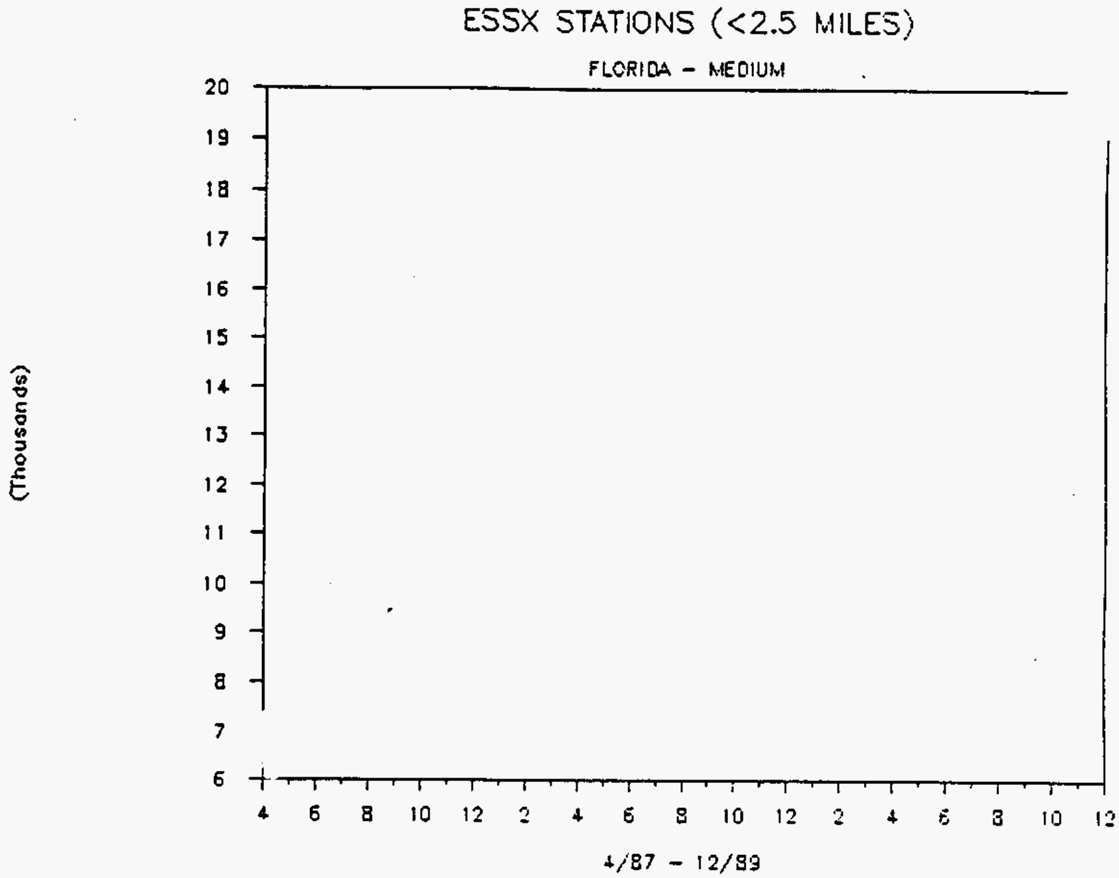
FLORIDA – SMALL

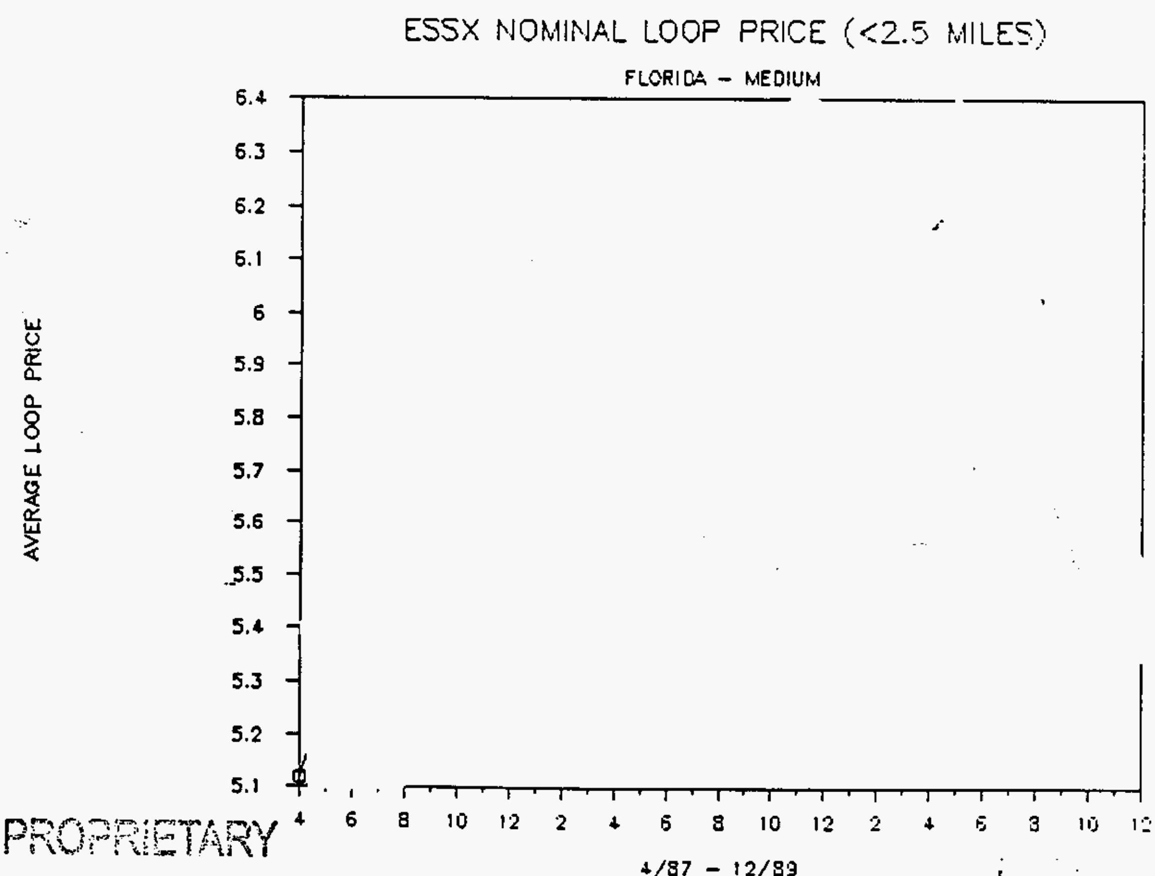


ESSX NOMINAL LOOP PRICE (>2.5 MILES)

FLORIDA – SMALL

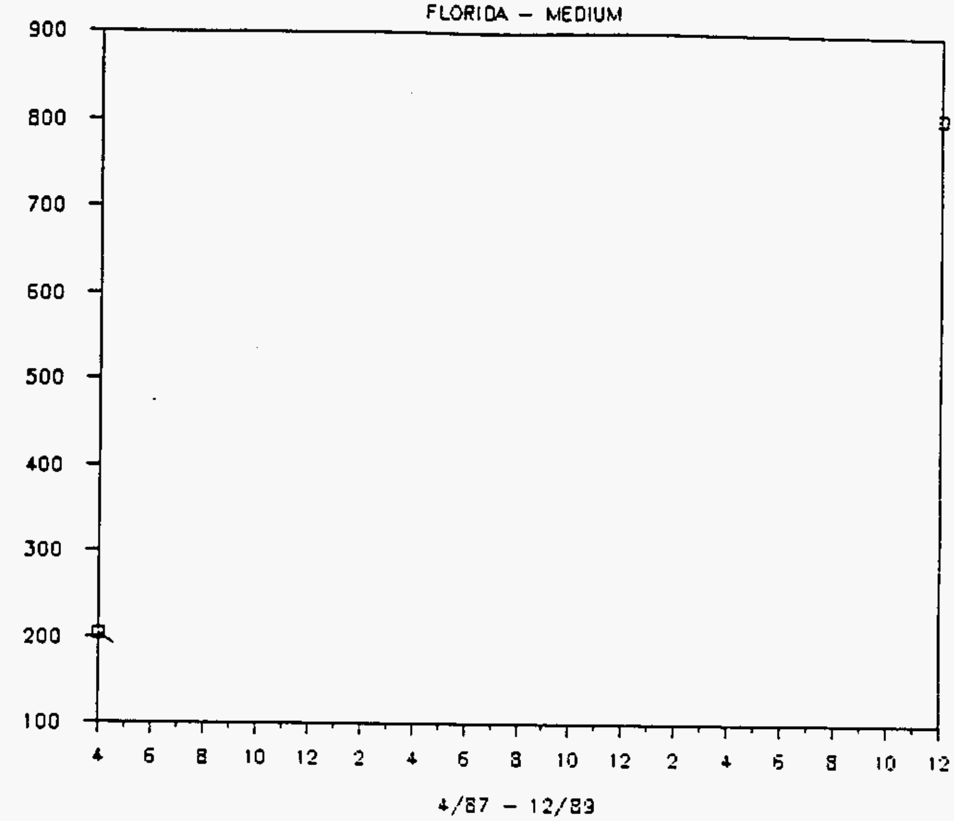



ESSX STATIONS (<2.5 MILES)
FLORIDA – MEDIUM
(Thousands)
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
4 6 8 10 12 2 4 6 8 10 12 2 4 6 8 10 12
4/87 – 12/89


ESSX NOMINAL LOOP PRICE (<2.5 MILES)
FLORIDA – MEDIUM
AVERAGE LOOP PRICE
6.4
6.3
6.2
6.1
6
5.9
5.8
5.7
5.6
5.5
5.4
5.3
5.2
5.1
4 6 8 10 12 2 4 6 8 10 12 2 4 6 8 10 12
4/87 – 12/89

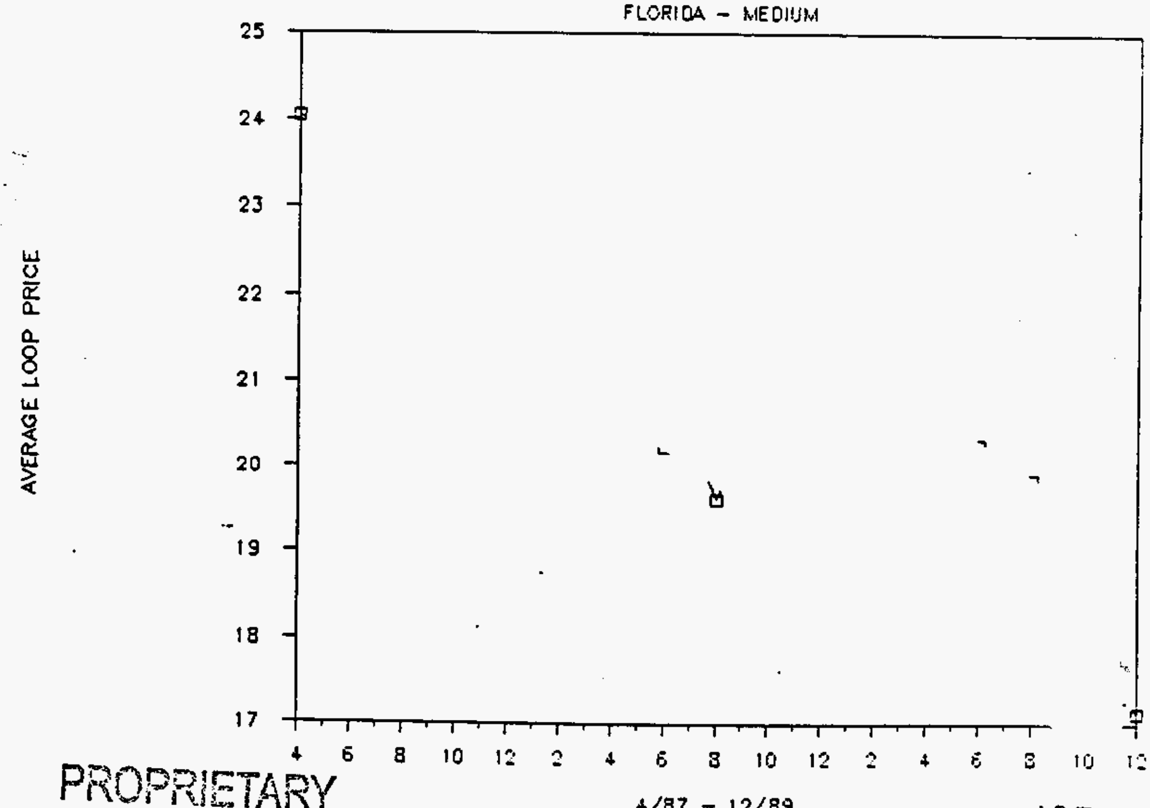
ESSX STATIONS (>2.5 MILES)

FLORIDA – MEDIUM



ESSX NOMINAL LOOP PRICE (>2.5 MILES)

FLORIDA – MEDIUM

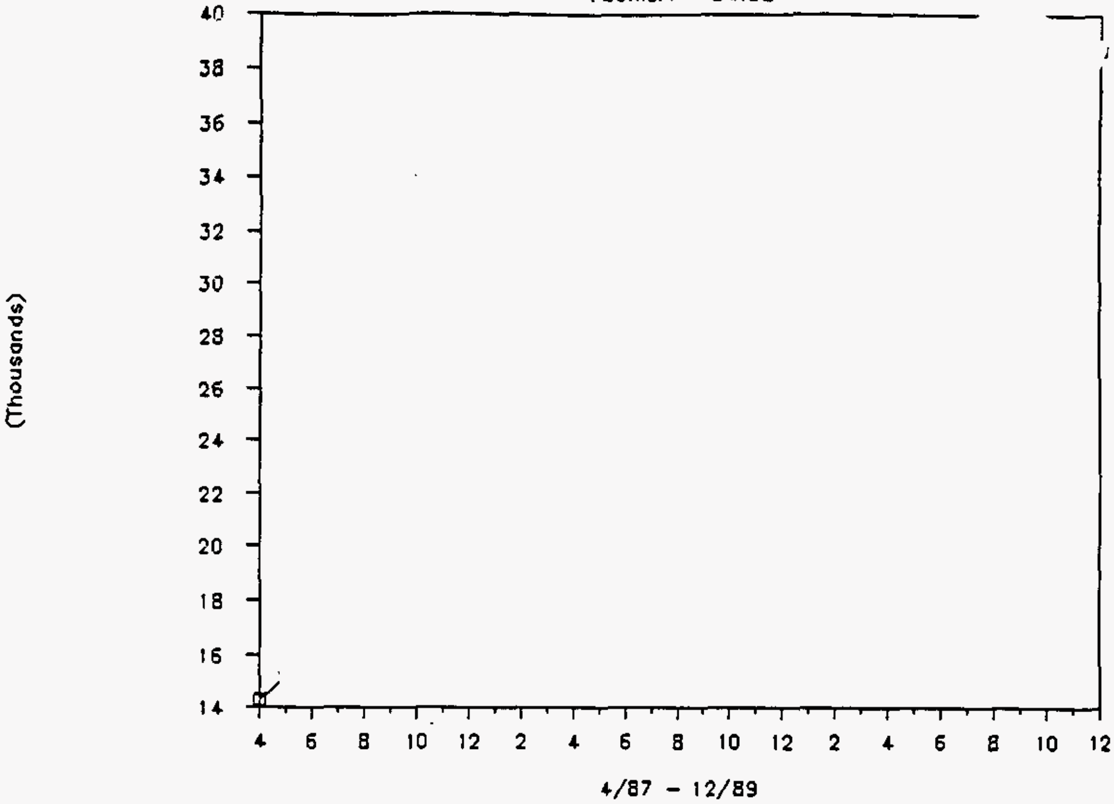


F01B25Z

0000038

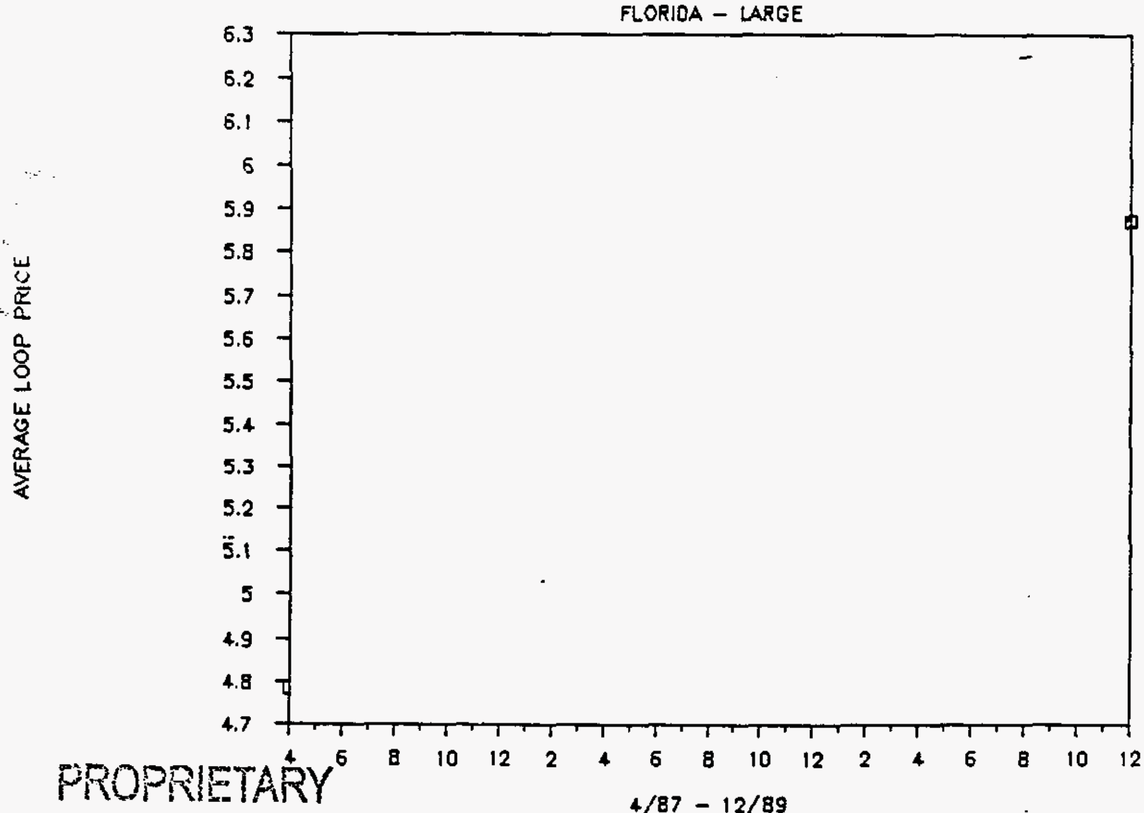
ESSX STATIONS (<2.5 MILES)

FLORIDA – LARGE



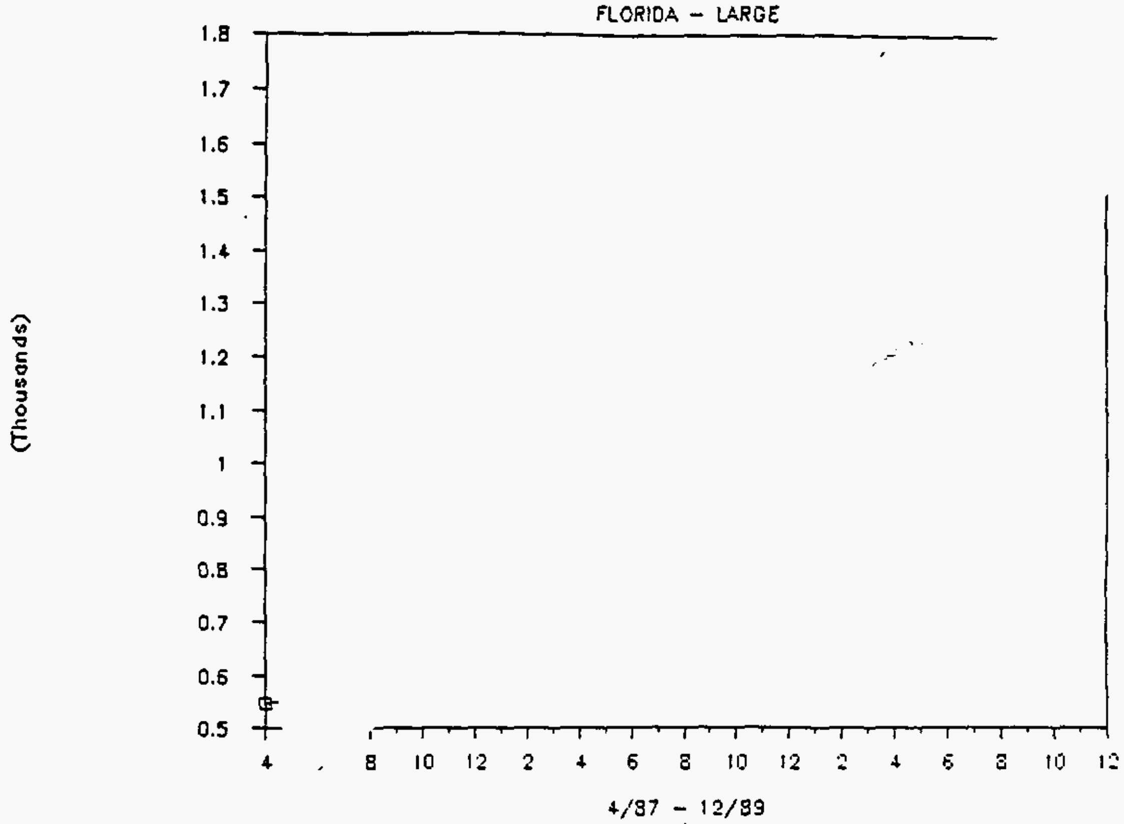
ESSX NOMINAL LOOP PRICE (<2.5 MILES)

FLORIDA – LARGE



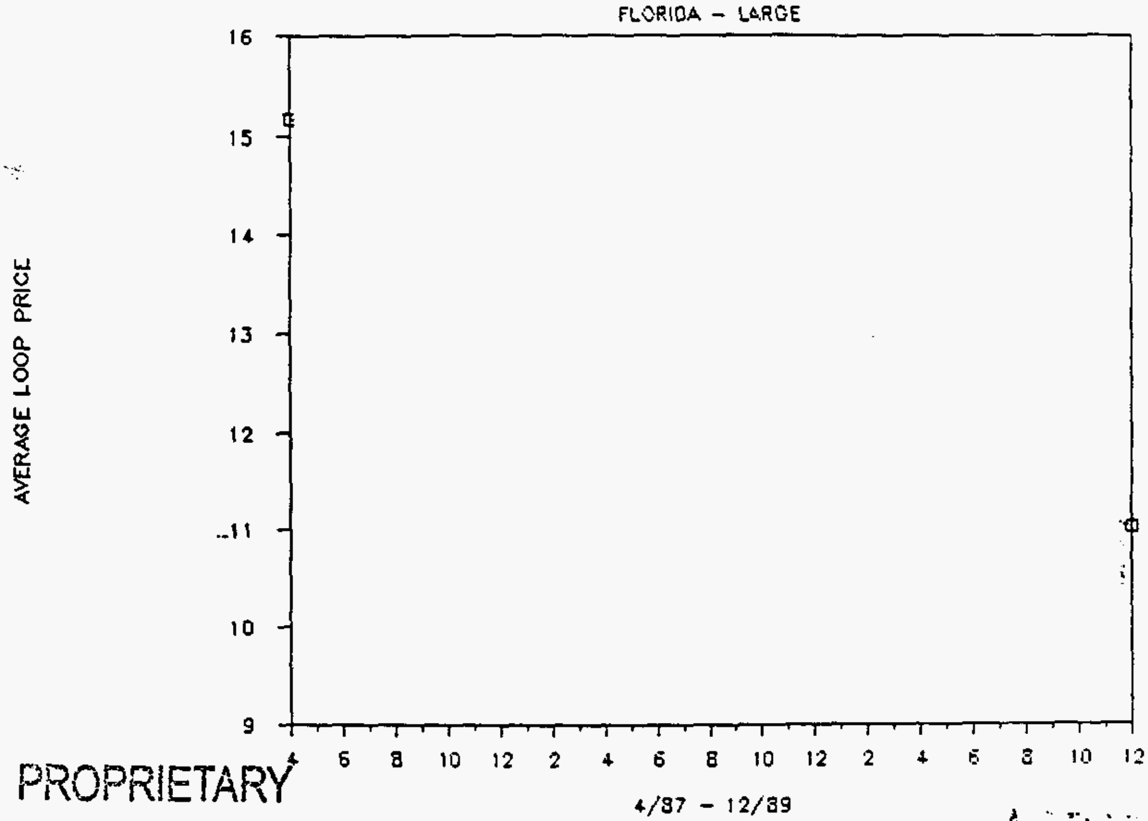
ESSX STATIONS (>2.5 MILES)

FLORIDA – LARGE



ESSX NOMINAL LOOP PRICE (>2.5 MILES)

FLORIDA – LARGE



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SHAZAM - IBM-PC VERSION   SITE NO. 4698IX


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Hello/Bonjour -
Welcome to SHAZAM - Version 6.1  -  JUN 1989 SYSTEM=IBM-PC   PAR=  168
|_*  FLORIDA SMALL ESSX - SHORT RUN  ELASTICITY STUDY
|_*  Comments: Aggregate price variable = mileage sensitive average loop
|_*    price + "typical system" rate obtained from S. Bircheat. Employment
|_*    data produced better fit than time and other trend variables that
|_*    were specified.
|_FILE 4 FLS.PRN
UNIT  4 IS NOW ASSIGNED TO: FLS.PRN
|_FILE 14 SBCPI-EM.PRN
UNIT 14 IS NOW ASSIGNED TO: SBCPI-EM.PRN
|_READ(4) YR MO UNDERDEM UNDERREV OVERDEM OVERREV

...SAMPLE RANGE IS NOW SET TO:         1        33
|_READ(14) MO YR CPI FLEMP GAEMP NCEMP SCEMP
   7 VARIABLES AND       33 OBSERVATIONS STARTING AT OBS       1

|_FILE 15 out.txt
UNIT 15 IS NOW ASSIGNED TO: out.txt
|_* -------------------------------------------------------------------
|_GENR TIME=TIME(0)
|_GENR UESSXPCE=((UNDERREV/UNDERDEM)+24.55)/CPI
|_GENR OESSXPCE=((OVERREV/OVERDEM)+24.55)/CPI
|_*  --------------------- LOG OF REGRESSION VARIABLES -----------------
|_GENR LGFLEMP=LOG(FLEMP)
|_GENR LGEXPCU=LOG(UESSXPCE)
|_GENR LGEXPCO=LOG(OESSXPCE)
|_GENR LGOVDEM=LOG(OVERDEM)
|_GENR LGUNDEM=LOG(UNDERDEM)
|_* ----------------------------- REGRESSIONS -------------------------
```

|_AUTO TOTDEM TOTPCE LGFLEMP /M

AGGREGATE STUDY: ALL MILEAGE BANDS

REQUIRED MEMORY IS PAR= 9 CURRENT PAR= 86

DEPENDENT VARIABLE = TOTDEM
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION 33 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	54.6050	0.70597E-01
2	0.61299	63.1972	0.41346E-01
3	0.69090	63.6643	0.39976E-01
4	0.72965	63.8647	0.39361E-01
5	0.75257	63.9761	0.39007E-01
6	0.76688	64.0433	0.38787E-01
7	0.77599	64.0853	0.38648E-01
8	0.78183	64.1119	0.38559E-01
9	0.78559	64.1288	0.38502E-01
10	0.78801	64.1397	0.38465E-01
11	0.78957	64.1466	0.38441E-01
12	0.79058	64.1511	0.38425E-01
13	0.79123	64.1540	0.38415E-01

LOG L.F. = 64.1540 AT RHO = 0.79123

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.79123	0.01133	0.10645	7.43271

R-SQUARE = 0.9925 R-SQUARE ADJUSTED = 0.9920
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.12805E-02
STANDARD ERROR OF THE ESTIMATE-SIGMA = 0.35784E-01
SUM OF SQUARED ERRORS-SSE= 0.38415E-01
MEAN OF DEPENDENT VARIABLE = 10.060
LOG OF THE LIKELIHOOD FUNCTION = 64.1540

MODEL SELECTION TESTS - SEE JUDGE ET.AL.(1985, P.242)
AKAIKE (1969) FINAL PREDICTION ERROR- FPE = 0.13969E-02
(FPE ALSO KNOWN AS AMEMIYA PREDICTION CRITERION -PC)
AKAIKE (1973) INFORMATION CRITERION- LOG AIC = -6.5740
SCHWARZ(1978) CRITERION-LOG SC = -6.4379
MODEL SELECTION TESTS - SEE RAMANATHAN(1989,P.166)
CRAVEN-WAHBA(1979) GENERALIZED CROSS VALIDATION(1979) -GCV= 0.14086E-02
HANNAN AND QUINN(1979) CRITERION -HQ= 0.14616E-02
RICE (1984) CRITERION-RICE= 0.14228E-02
SHIBATA (1981) CRITERION-SHIBATA= 0.13758E-02
SCHWARTZ (1978) CRITERION-SC= 0.15997E-02
AKAIKE (1974)INFORMATION CRITERION-AIC= 0.13962E-02

ANALYSIS OF VARIANCE - FROM MEAN

	SS	DF	MS
REGRESSION	5.0986	2.	2.5493
ERROR	0.38415E-01	30.	0.12805E-02
TOTAL	5.1370	32.	0.16053

ANALYSIS OF VARIANCE - FROM ZERO

	SS	DF	MS
REGRESSION	3344.5	3.	1114.8
ERROR	0.38415E-01	30.	0.12805E-02
TOTAL	3344.6	33.	101.35

VARIABLE ESTIMATED STANDARD T-RATIO PARTIAL STANDARDIZED ELASTICITY

	A	B	C	D	E	F
NAME	COEFFICIENT	ERROR	30 DF	CORR.	COEFFICIENT	AT MEANS
2 TOTPCE			-2.2465	-0.3795 -		
3 LGFLEMP			8.8252	0.8497 (		
4 CONSTANT			-8.5595	-0.8423 (		

VARIANCE-COVARIANCE MATRIX OF COEFFICIENTS

TOTPCE	0.48624		
LGFLEMP	0.60297	1.1701	
CONSTANT	-4.5537	-9.2520	73.415
	TOTPCE	LGFLEMP	CONSTANT

CORRELATION MATRIX OF COEFFICIENTS

TOTPCE	1.0000		
LGFLEMP	0.79938	1.0000	
CONSTANT	-0.76216	-0.99822	1.0000
	TOTPCE	LGFLEMP	CONSTANT

		A	B	C	
	OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL	
17	1			-0.97938E-01	* I
	2			-0.21983E-01	* I
	3			-0.11969E-01	* I
	4			0.28155E-01	I *
	5			0.63662E-02	I*
	6			-0.25450E-01	* I
	7			0.13316E-01	I *
	8			0.10741E-01	I *
	9			0.24516E-02	*
	10			0.88827E-01	I *
	11			-0.14414E-01	* I
	12			0.48879E-01	I *
	13			0.53391E-02	I*
	14			0.28774E-01	I *
	15			0.25306E-01	I *
	16			-0.19419E-01	* I
	17			0.51209E-01	I *
	18			0.24542E-01	I *
	19			-0.43770E-02	*I
	20			-0.82868E-01	* I
	21			0.63054E-01	I *
	22			-0.78608E-02	*I
	23			-0.21996E-01	* I
	24			0.43693E-01	I *
	25			-0.23483E-01	* I
	26			-0.19808E-01	* I
	27			-0.19956E-01	* I
	28			-0.36448E-01	* I
	29			-0.71968E-02	*I
	30			0.54259E-02	I*
	31			0.11071E-01	I *
	32			0.15006E-01	I *
49	33			0.20502E-01	I *

DURBIN-WATSON = 1.9485 VON NEUMANN RATIO = 2.0094 RHO = -0.08776
RESIDUAL SUM = 0.77491E-01 RESIDUAL VARIANCE = 0.14807E-02
SUM OF ABSOLUTE ERRORS= 0.90782
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9914
RUNS TEST: 14 RUNS, 18 POSITIVE, 15 NEGATIVE, NORMAL STATISTIC = -1.2000
COEFFICIENT OF SKEWNESS = -0.3674 WITH STANDARD DEVIATION OF 0.4086
COEFFICIENT OF EXCESS KURTOSIS = 1.4940 WITH STANDARD DEVIATION OF 0.7984

GOODNESS OF FIT TEST FOR NORMALITY OF RESIDUALS - 6 GROUPS

OBSERVED	2.0	1.0	12.0	13.0	4.0	1.0
EXPECTED	0.8	4.5	11.3	11.3	4.5	0.8

CHI-SQUARE = 5.2264 WITH 1 DEGREES OF FREEDOM

|_AUTO TOTDEM TOTPCE(2.2) LGFLEMP /M

AGGREGATE STUDY: ALL MILEAGE BANDS

REQUIRED MEMORY IS PAR= 9 CURRENT PAR= 86

DEPENDENT VARIABLE = TOTDEM
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION 31 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	52.8849	0.59856E-01
2	0.56650	59.8310	0.37763E-01
3	0.64085	60.2466	0.36596E-01
4	0.67658	60.4203	0.36091E-01
5	0.69786	60.5187	0.35798E-01
6	0.71169	60.5812	0.35610E-01
7	0.72109	60.6233	0.35481E-01
8	0.72764	60.6525	0.35392E-01
9	0.73226	60.6731	0.35329E-01
10	0.73557	60.6877	0.35283E-01
11	0.73794	60.6982	0.35251E-01
12	0.73965	60.7058	0.35227E-01
13	0.74089	60.7113	0.35210E-01
14	0.74179	60.7153	0.35197E-01

LOG L.F. = 60.7153 AT RHO = 0.74179

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.74179	0.01451	0.12045	6.15847

R-SQUARE = 0.9910 R-SQUARE ADJUSTED = 0.9904
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.12571E-02
STANDARD ERROR OF THE ESTIMATE-SIGMA = 0.35455E-01
SUM OF SQUARED ERRORS-SSE= 0.35197E-01
MEAN OF DEPENDENT VARIABLE = 10.108
LOG OF THE LIKELIHOOD FUNCTION = 60.7153

MODEL SELECTION TESTS - SEE JUDGE ET.AL.(1985, P.242)
AKAIKE (1969) FINAL PREDICTION ERROR- FPE = 0.13787E-02
(FPE ALSO KNOWN AS AMEMIYA PREDICTION CRITERION -PC)
AKAIKE (1973) INFORMATION CRITERION- LOG AIC = -6.5872
SCHWARZ(1978) CRITERION-LOG SC = -6.4484
MODEL SELECTION TESTS - SEE RAMANATHAN(1989,P.166)
CRAVEN-WAHBA(1979) GENERALIZED CROSS VALIDATION(1979) -GCV= 0.13917E-02
HANNAN AND QUINN(1979) CRITERION -HQ= 0.14416E-02
RICE (1984) CRITERION-RICE= 0.14079E-02
SHIBATA (1981) CRITERION-SHIBATA= 0.13552E-02
SCHWARTZ (1978) CRITERION-SC= 0.15830E-02
AKAIKE (1974)INFORMATION CRITERION-AIC= 0.13779E-02

ANALYSIS OF VARIANCE - FROM MEAN

	SS	DF	MS
REGRESSION	3.8969	2.	1.9484
ERROR	0.35197E-01	28.	0.12571E-02
TOTAL	3.9321	30.	0.13107

ANALYSIS OF VARIANCE - FROM ZERO

	SS	DF	MS
REGRESSION	3171.3	3.	1057.1
ERROR	0.35197E-01	28.	0.12571E-02
TOTAL	3171.3	31.	102.30

VARIABLE SUM OF LAG COEFS STD ERROR T-RATIO MEAN LAG

TOTPCE	7.4989	1.6720	4.4851	-0.47013

A VARIABLE NAME	B ESTIMATED COEFFICIENT	C STANDARD ERROR	D T-RATIO 28 DF	E PARTIAL CORR.	F STANDARDIZED COEFFICIENT	G ELASTICITY AT MEANS
4 TOTPCE			-2.5209	-0.4301		
5 LGFLEMP			8.7774	0.8564		
6 CONSTANT			-8.5277	-0.8497		

VARIANCE-COVARIANCE MATRIX OF COEFFICIENTS

TOTPCE	0.48893		
LGFLEMP	0.59657	1.1134	
CONSTANT	-4.5017	-8.7842	69.554

CORRELATION MATRIX OF COEFFICIENTS

TOTPCE	1.0000		
LGFLEMP	0.80857	1.00000	
CONSTANT	-0.77196	-0.99821	1.0000

OBS. NO.	A OBSERVED VALUE	B PREDICTED VAL	C CALCULATED RESIDUAL	
17 3			-0.96062E-01	* I
4			-0.72230E-02	*I
5			0.16781E-01	I *
6			-0.22578E-01	* I
7			-0.12420E-01	* I
8			0.10450E-01	I*
9			-0.58009E-02	*I
10			0.73361E-01	I *
11			-0.10367E-01	*I
12			0.51702E-01	I *
13			0.62687E-02	I*
14			0.34076E-01	I *
15			0.18707E-01	I *
16			-0.23031E-01	* I
17			0.54506E-01	I *
18			0.30801E-01	I *
19			-0.59169E-02	*I
20			-0.76157E-01	* I
21			0.55989E-01	I *
22			0.58784E-02	I*
23			0.32161E-02	*
24			0.50747E-01	I *
25			-0.11964E-01	* I
26			-0.21835E-01	* I
27			-0.32658E-01	* I
28			-0.40572E-01	* I
29			-0.16231E-01	* I
30			0.28966E-02	*
31			0.76570E-02	I*
32			0.17673E-01	I *
47 33			0.13363E-01	I *

DURBIN-WATSON = 1.8190 VON NEUMANN RATIO = 1.8796 RHO = -0.02637
RESIDUAL SUM = 0.71257E-01 RESIDUAL VARIANCE = 0.14384E-02
SUM OF ABSOLUTE ERRORS= 0.83689
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9898
RUNS TEST: 14 RUNS, 17 POSITIVE, 14 NEGATIVE, NORMAL STATISTIC = -0.8688
COEFFICIENT OF SKEWNESS = -0.4806 WITH STANDARD DEVIATION OF 0.4205
COEFFICIENT OF EXCESS KURTOSIS = 1.0558 WITH STANDARD DEVIATION OF 0.8208

GOODNESS OF FIT TEST FOR NORMALITY OF RESIDUALS - 6 GROUPS

OBSERVED	2.0	1.0	11.0	12.0	4.0	1.0
EXPECTED	0.7	4.2	10.6	10.6	4.2	0.7

CHI-SQUARE = 5.1559 WITH 1 DEGREES OF FREEDOM

```
|_AUTO LGUNDEM LGEXPCU LGFLEMP /M

REQUIRED MEMORY IS PAR=    9 CURRENT PAR=  168

DEPENDENT VARIABLE =  LGUNDEM
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION              33 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

    ITERATION        RHO           LOG L.F.         SSE
        1          0.00000         51.7134       0.84120E-01
        2          0.64625         61.5912       0.45477E-01
        3          0.73371         62.3364       0.43164E-01
        4          0.78307         62.7584       0.41849E-01
        5          0.81477         63.0365       0.40975E-01
        6          0.83501         63.2158       0.40404E-01
        7          0.84753         63.3266       0.40046E-01
        8          0.85509         63.3931       0.39828E-01
        9          0.85958         63.4323       0.39698E-01
       10          0.86223         63.4554       0.39622E-01
       11          0.86379         63.4690       0.39577E-01
       12          0.86470         63.4769       0.39550E-01

 LOG L.F. =    63.4769       AT RHO =     0.86470

                    ASYMPTOTIC  ASYMPTOTIC  ASYMPTOTIC
           ESTIMATE  VARIANCE    ST.ERROR    T-RATIO
RHO         0.86470   0.00765     0.08744    9.88957

 R-SQUARE =   0.9917     R-SQUARE ADJUSTED =   0.9912
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.13183E-02
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.36309E-01
SUM OF SQUARED ERRORS-SSE=  0.39550E-01
MEAN OF DEPENDENT VARIABLE =   10.020
LOG OF THE LIKELIHOOD FUNCTION =  63.4769

MODEL SELECTION TESTS - SEE JUDGE ET.AL.(1985, P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR- FPE =   0.14382E-02
   (FPE ALSO KNOWN AS AMEMIYA PREDICTION CRITERION -PC)
 AKAIKE (1973) INFORMATION CRITERION- LOG AIC =  -6.5449
 SCHWARZ(1978) CRITERION-LOG SC =  -6.4088
MODEL SELECTION TESTS - SEE RAMANATHAN(1989,P.166)
 CRAVEN-WAHBA(1979) GENERALIZED CROSS VALIDATION(1979) -GCV=  0.14502E-02
 HANNAN AND QUINN(1979) CRITERION -HQ=  0.15048E-02
 RICE (1984) CRITERION-RICE=  0.14648E-02
 SHIBATA (1981) CRITERION-SHIBATA=  0.14164E-02
 SCHWARTZ (1978) CRITERION-SC=  0.16470E-02
 AKAIKE (1974)INFORMATION CRITERION-AIC=  0.14375E-02

                   ANALYSIS OF VARIANCE - FROM MEAN
                    SS            DF           MS
REGRESSION        4.7337          2.         2.3668
ERROR           0.39550E-01      30.       0.13183E-02
TOTAL             4.7732         32.        0.14916

                   ANALYSIS OF VARIANCE - FROM ZERO
                    SS            DF           MS
REGRESSION        3317.6          3.         1105.9
ERROR           0.39550E-01      30.       0.13183E-02
TOTAL             3317.7         33.        100.54


VARIABLE    ESTIMATED   STANDARD   T-RATIO     PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR     30 DF        CORR.  COEFFICIENT   AT MEANS
```

	A	B	C	D	E	F
1 LGEXPCU			-2.1054	-0.3588		
2 LGFLEMP			6.6319	0.7710		
3 CONSTANT			-6.3678	-0.7581		

VARIANCE-COVARIANCE MATRIX OF COEFFICIENTS

LGEXPCU	0.70186		
LGFLEMP	0.82449	1.6655	
CONSTANT	-6.1666	-13.192	104.94
	LGEXPCU	LGFLEMP	CONSTANT

CORRELATION MATRIX OF COEFFICIENTS

LGEXPCU	1.0000		
LGFLEMP	0.76259	1.0000	
CONSTANT	-0.71854	-0.99784	1.00000
	LGEXPCU	LGFLEMP	CONSTANT

	OBS. NO.	A OBSERVED VALUE	B PREDICTED VALUE	C CALCULATED RESIDUAL
16	1			-0.12896
	2			-0.18412E-01
	3			0.97333E-02
	4			0.22980E-01
	5			0.27795E-01
	6			-0.40917E-01
	7			0.22954E-01
	8			0.16639E-01
	9			0.10984E-01
	10			0.88074E-01
	11			32797E-02
	12			0.55256E-01
	13			0.49884E-02
	14			0.32594E-01
	15			0.26409E-01
	16			-0.10316E-01
	17			0.39181E-01
	18			0.64538E-02
	19			-0.16177E-01
	20			-0.78349E-01
	21			0.65326E-01
	22			-0.82485E-02
	23			-0.21351E-01
	24			0.40464E-01
	25			-0.17546E-01
	26			-0.22416E-01
	27			-0.21222E-01
	28			-0.36895E-01
	29			-0.82951E-02
	30			0.11565E-01
	31			0.13946E-01
	32			0.19935E-01
48	33			0.22067E-01

DURBIN-WATSON = 1.6435 VON NEUMANN RATIO = 1.6948 RHO = 0.01375
RESIDUAL SUM = 0.11152 RESIDUAL VARIANCE = 0.17329E-02
SUM OF ABSOLUTE ERRORS= 0.96973
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9892
RUNS TEST: 12 RUNS, 20 POSITIVE, 13 NEGATIVE, NORMAL STATISTIC = -1.7649
COEFFICIENT OF SKEWNESS = -0.9921 WITH STANDARD DEVIATION OF 0.4086
COEFFICIENT OF EXCESS KURTOSIS = 3.0533 WITH STANDARD DEVIATION OF 0.7984

GOODNESS OF FIT TEST FOR NORMALITY OF RESIDUALS - 6 GROUPS

OBSERVED	2.0	2.0	9.0	15.0	4.0	1.0
EXPECTED	0.8	4.5	11.3	11.3	4.5	0.8

CHI-SQUARE = 5.2739 WITH 1 DEGREES OF FREEDOM

```
|_AUTO LGOVDEM LGEXPCO LGFLEMP   /M

REQUIRED MEMORY IS PAR=    9 CURRENT PAR=  168

DEPENDENT VARIABLE =  LGOVDEM
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION             33 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

    ITERATION          RHO            LOG L.F.           SSE
        1            0.00000         5.71211           1.3668
        2            0.68168         15.9215           0.72235
        3            0.69351         15.9142           0.72200
        4            0.69474         15.9129           0.72198
        5            0.69487         15.9127           0.72198

 LOG L.F. =     15.9127       AT RHO =      0.69487

                   ASYMPTOTIC  ASYMPTOTIC  ASYMPTOTIC
          ESTIMATE   VARIANCE    ST.ERROR    T-RATIO
RHO        0.69487    0.01567     0.12518    5.55078

 R-SQUARE =   0.9650     R-SQUARE ADJUSTED =   0.9626
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.24066E-01
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.15513
SUM OF SQUARED ERRORS-SSE=  0.72198
MEAN OF DEPENDENT VARIABLE =    6.7148
LOG OF THE LIKELIHOOD FUNCTION =  15.9127

MODEL SELECTION TESTS - SEE JUDGE ET.AL.(1985, P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR- FPE =   0.26254E-01
   (FPE ALSO KNOWN AS AMEMIYA PREDICTION CRITERION -PC)
 AKAIKE (1973) INFORMATION CRITERION- LOG AIC =  -3.6405
 SCHWARZ(1978) CRITERION-LOG SC =  -3.5044
MODEL SELECTION TESTS - SEE RAMANATHAN(1989,P.166)
 CRAVEN-WAHBA(1979) GENERALIZED CROSS VALIDATION(1979) -GCV=  0.26473E-01
 HANNAN AND QUINN(1979) CRITERION -HQ=  0.27470E-01
 RICE (1984) CRITERION-RICE=  0.26740E-01
 SHIBATA (1981) CRITERION-SHIBATA=  0.25856E-01
 SCHWARTZ (1978) CRITERION-SC=  0.30065E-01
 AKAIKE (1974)INFORMATION CRITERION-AIC=  0.26241E-01

                    ANALYSIS OF VARIANCE - FROM MEAN
                     SS          DF            MS
REGRESSION        19.893          2.         9.9465
ERROR            0.72198         30.         0.24066E-01
TOTAL             20.615         32.         0.64422

                    ANALYSIS OF VARIANCE - FROM ZERO
                     SS          DF            MS
REGRESSION        1507.8          3.         502.61
ERROR            0.72198         30.         0.24066E-01
TOTAL             1508.5         33.         45.713

                A          B          C          D          E          F
VARIABLE    ESTIMATED   STANDARD   T-RATIO    PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      30 DF      CORR.  COEFFICIENT  AT MEANS

LGEXPCO                             2.8462    -0.4611
LGFLEMP                             3.5648     0.5455
CONSTANT                           -3.4464    -0.5326

VARIANCE-COVARIANCE MATRIX OF COEFFICIENTS
LGEXPCO    0.48919
```

A B

1 LGFLEMP
2 CONSTANT 895.97

LGEXPCO LGFLEMP CONSTANT

CORRELATION MATRIX OF COEFFICIENTS

LGEXPCO	1.0000		
LGFLEMP	0.78810	1.00000	
CONSTANT	-0.78087	-0.99993	1.00000
	LGEXPCO	LGFLEMP	CONSTANT

OBS. NO.	A OBSERVED VALUE	B PREDICTED VALUE	C CALCULATED RESIDUAL	
11 1			0.92017E-01	I *
2			0.31403E-01	I*
3			-0.13869	* I
4			0.28138	I *
5			-0.30033	* I
6			0.30848	I *
7			0.59988E-02	*
8			0.46072E-02	*
9			-0.56133E-01	* I
10			0.78918E-01	I *
11			-0.37346	* I
12			-0.14471	* I
13			-0.14524	* I
14			-0.16429	* I
15			-0.10260	* I
16			-0.21242	* I
17			0.18513	I *
18			0.25053	I *
19			0.12845	I *
20			-0.33814E-01	*I
21			0.97565E-01	I *
22			0.35499E-01	I*
23			-0.34783E-01	*I
24			0.66641E-01	I *
25			-0.14041	* I
26			0.13893E-01	*
27			0.10384E-01	*
28			0.22274E-01	I*
29			0.61885E-01	I *
30			0.25170E-01	I*
31			0.39105E-01	I*
32			0.33255E-02	*
43 33			0.40281E-01	I*

DURBIN-WATSON = 2.2274 VON NEUMANN RATIO = 2.2970 RHO = -0.12092
RESIDUAL SUM = -0.63940E-01 RESIDUAL VARIANCE = 0.24202E-01
SUM OF ABSOLUTE ERRORS= 3.6298
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9650
RUNS TEST: 15 RUNS, 21 POSITIVE, 12 NEGATIVE, NORMAL STATISTIC = -0.4876
COEFFICIENT OF SKEWNESS = -0.2245 WITH STANDARD DEVIATION OF 0.4086
COEFFICIENT OF EXCESS KURTOSIS = 0.5706 WITH STANDARD DEVIATION OF 0.7984

GOODNESS OF FIT TEST FOR NORMALITY OF RESIDUALS - 6 GROUPS
OBSERVED 1.0 3.0 8.0 17.0 4.0 -0.0
EXPECTED 0.8 4.5 11.3 11.3 4.5 0.8
CHI-SQUARE = 5.2454 WITH 1 DEGREES OF FREEDOM
|_STOP

1m37m< 31mC:\SHAZAM2 37m> 33m33m

```
   SHAZAM - IBM-PC VERSION   SITE NO. 469B1X


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Hello/Bonjour -
Welcome to SHAZAM - Version 6.1  -  JUN 1989 SYSTEM=IBM-PC   PAR=  166
|_* FLORIDA MEDIUM ESSX - SHORT TERM ELASTICITY STUDY
|_FILE 4 FLM.PRN
UNIT  4 IS NOW ASSIGNED TO: FLM.PRN
|_FILE 12 NMP-SB.PRN
UNIT 12 IS NOW ASSIGNED TO: NMP-SB.PRN
|_FILE 14 SBCPI-EM.PRN
UNIT 14 IS NOW ASSIGNED TO: SBCPI-EM.PRN
|_FILE 13 PBX-SB.PRN
UNIT 13 IS NOW ASSIGNED TO: PBX-SB.PRN
|_READ(13) MO YR FLSPBX FLMPBX FLLPBX GASPBX GAMPBX GALPBX NCSPBX NCMPBX &
|         NCLPBX SCSPBX SCMPBX SCLPBX

...SAMPLE RANGE IS NOW SET TO:         1        33
|_READ(4) YR MO UNDERDEM UNDERREV OVERDEM OVERREV
   6 VARIABLES AND       33 OBSERVATIONS STARTING AT OBS       1

|_READ(12) MO YR FLSNMP FLMNMP FLLNMP GASNMP GAMNMP GALNMP NCSNMP NCMNMP &
|         NCLNMP SCSNMP SCMNMP SCLNMP
  14 VARIABLES AND       33 OBSERVATIONS STARTING AT OBS       1

|_READ(14) MO YR CPI FLEMP GAEMP NCEMP SCEMP
   7 VARIABLES AND       33 OBSERVATIONS STARTING AT OBS       1

|_* ---------------------------------------------------------------------
|_GENR TIME=TIME(0)
|_GENR DUMOUTL1=0
|_IF(TIME.EQ.11)DUMOUTL1=1
|_GENR DUMOUTL2=0
|_IF(TIME.EQ.28)DUMOUTL2=1
|_GENR UESSXPCE=((UNDERREV/UNDERDEM)+25.31)/CPI
|_GENR OESSXPCE=((OVERREV/OVERDEM)+25.31)/CPI
|_GENR PBXPCE=FLMPBX/CPI
|_*  --------------------- LOG OF REGRESSION VARIABLES -----------------
|_GENR LGFLEMP=LOG(FLEMP)
|_GENR LGEXPCU=LOG(UESSXPCE)
|_GENR LGEXPCO=LOG(OESSXPCE)
|_GENR LGPBXPCE=LOG(PBXPCE)
|_GENR LGOVDEM=LOG(OVERDEM)
|_GENR LGUNDEM=LOG(UNDERDEM)
|_GENR LGTIME=LOG(TIME)
|_GENR RELPCEU=LGPBXPCE/LGEXPCU
|_GENR RELPCEO=LGPBXPCE/LGEXPCO
|_* ----------------------------- REGRESSIONS --------------------------
```

```
|_AUTO LGUNDEM LGFLEMP  LGEXPCU /LIST

REQUIRED MEMORY IS PAR=   18 CURRENT PAR=  166

DEPENDENT VARIABLE =  LGUNDEM
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION              33 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100
```

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	50.6007	0.89988E-01
2	0.64044	60.2346	0.49393E-01
3	0.71995	60.5414	0.48186E-01
4	0.74910	60.5968	0.47889E-01
5	0.76131	60.6107	0.47787E-01
6	0.76668	60.6150	0.47746E-01
7	0.76909	60.6166	0.47728E-01
8	0.77018	60.6173	0.47720E-01
9	0.77068	60.6176	0.47717E-01

```
LOG L.F. =    60.6176       AT RHO =      0.77068
```

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.77068	0.01230	0.11093	6.94763

```
R-SQUARE =   0.9855     R-SQUARE ADJUSTED =   0.9846
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.15906E-02
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.39882E-01
SUM OF SQUARED ERRORS-SSE=  0.47717E-01
MEAN OF DEPENDENT VARIABLE =    9.4729
LOG OF THE LIKELIHOOD FUNCTION =  60.6176
```

	VARIABLE NAME	A ESTIMATED COEFFICIENT	B STANDARD ERROR	C T-RATIO 30 DF	D PARTIAL CORR.	E STANDARDIZED COEFFICIENT	F ELASTICITY AT MEANS
29	LGFLEMP	[illegible]	1.1243	[illegible]	0.7941		
30	LGEXPCU	- [illegible]	1.1348	- [illegible]	-0.1838	- [illegible]	
31	CONSTANT	- [illegible]	8.4332	- [illegible]	-0.7961		

	OBS. NO.	A OBSERVED VALUE	B PREDICTED VALUE	C CALCULATED RESIDUAL	
34	1	[illegible]	[illegible]	-0.67595E-01	* I
	2	[illegible]	[illegible]	-0.10199	* I
	3	[illegible]	[illegible]	-0.32300E-02	*
	4	[illegible]	[illegible]	0.81975E-02	I*
	5	[illegible]	[illegible]	0.42796E-01	I *
	6	[illegible]	[illegible]	0.34967E-01	I *
	7	[illegible]	[illegible]	0.19279E-01	I *
	8	[illegible]	[illegible]	-0.18018E-02	*
	9	[illegible]	[illegible]	0.43028E-02	I*
	10	[illegible]	[illegible]	0.99386E-01	I *
	11	[illegible]	[illegible]	-0.65366E-02	*I
	12	[illegible]	[illegible]	0.30779E-01	I *
	13	[illegible]	[illegible]	0.10414E-01	I*
	14	[illegible]	[illegible]	-0.10498E-01	*I
	15	[illegible]	[illegible]	0.93698E-02	I*
	16	[illegible]	[illegible]	-0.75831E-01	* I
	17	[illegible]	[illegible]	0.17341E-01	I *
	18	[illegible]	[illegible]	-0.76978E-02	*I
	19	[illegible]	[illegible]	-0.59185E-02	*I
	20	[illegible]	[illegible]	-0.43479E-02	*I
54	21	[illegible]	[illegible]	0.90371E-01	I *

A B C

22				0.99570E-02	I*
23				-0.10496E-01	*I
24				0.35391E-01	I *
25				-0.38640E-02	*
26				-0.19445E-01	* I
27				0.34595E-01	I *
28				-0.27705E-01	* I
29				0.92107E-03	*
30				-0.31333E-01	* I
31				0.62664E-02	I*
32				-0.37474E-01	* I
33				0.13529E-01	I *

DURBIN-WATSON = 1.7224   VON NEUMANN RATIO = 1.7762   RHO = 0.09202
RESIDUAL SUM = 0.52094E-01 RESIDUAL VARIANCE = 0.16810E-02
SUM OF ABSOLUTE ERRORS= 0.88363
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9848
RUNS TEST: 22 RUNS, 17 POSITIVE, 16 NEGATIVE, NORMAL STATISTIC = 1.5986
|_SMPL 1 27

|_AUTO LGOVDEM LGFLEMP LGEXPCO /LIST

REQUIRED MEMORY IS PAR= 17 CURRENT PAR= 166

DEPENDENT VARIABLE = LGOVDEM
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION 27 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	27.7716	0.20206
2	0.64232	34.9979	0.11600
3	0.69647	35.0145	0.11529
4	0.70142	35.0088	0.11528
5	0.70191	35.0082	0.11528

LOG L.F. = 35.0082 AT RHO = 0.70191

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.70191	0.01879	0.13708	5.12064

R-SQUARE = 0.9706 R-SQUARE ADJUSTED = 0.9682
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.48034E-02
STANDARD ERROR OF THE ESTIMATE-SIGMA = 0.69307E-01
SUM OF SQUARED ERRORS-SSE= 0.11528
MEAN OF DEPENDENT VARIABLE = 5.8552
LOG OF THE LIKELIHOOD FUNCTION = 35.0082

		A	B	C	D	E	F
	VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 24 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
25	LGFLEMP			1.8570	0.3545		
26	LGEXPCO			-4.0691	-0.6389 -		
27	CONSTANT			-1.8041	-0.3456		

		A	B	C	
	OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL	
29	1			0.22612E-01	I *
	2			-0.14183	* I
	3			0.22089E-01	I *
	4			-0.38037E-01	* I
	5			0.49962E-01	I *
	6			-0.41499E-01	* I
	7			-0.43036E-01	* I
	8			-0.35102E-01	* I
	9			-0.46486E-01	* I
	10			-0.92681E-02	*I
	11			0.25796	I X
	12			0.23943E-01	I *
	13			0.17344E-01	I*
	14			0.85799E-02	I*
	15			0.27988E-01	I *
	16			0.11108E-01	I*
	17			0.88021E-01	I *
	18			-0.26787E-01	* I
	19			-0.22061E-01	* I
	20			0.36420E-02	*
	21			0.17397E-01	I*
	22			-0.20136E-01	*I
	23			-0.18965E-01	*I
	24			-0.16562E-02	*
53	25			-0.46632E-01	* I

A B C

```
   26                                -0.37562E-01            *  I
   27                                -0.37463E-01            *  I

DURBIN-WATSON = 1.9558    VON NEUMANN RATIO = 2.0310    RHO =  0.01401
RESIDUAL SUM = -0.15872E-01  RESIDUAL VARIANCE =  0.48139E-02
SUM OF ABSOLUTE ERRORS=   1.1172
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9706
RUNS TEST:   10 RUNS,   12 POSITIVE,   15 NEGATIVE, NORMAL STATISTIC =   -1.7231
|_STOP

1m37m< 31mC:\SHAZAM2 37m> 33m33m
```

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Hello/Bonjour -
Welcome to SHAZAM - Version 6.1  -  JUN 1989 SYSTEM=IBM-PC   PAR=  168
|_* THIS IS AGGREGATE MODEL TO PROJECT SHORT-TERM RESONSE: FLORDA-LARGE
|_FILE 4 FLL.PRN
UNIT  4 IS NOW ASSIGNED TO: FLL.PRN
|_FILE 12 NMP-SB.PRN
UNIT 12 IS NOW ASSIGNED TO: NMP-SB.PRN
|_FILE 14 SBCPI-EM.PRN
UNIT 14 IS NOW ASSIGNED TO: SBCPI-EM.PRN
|_FILE 13 PBX-SB.PRN
UNIT 13 IS NOW ASSIGNED TO: PBX-SB.PRN
|_READ(13) MO YR FLSPBX FLMPBX FLLPBX GASPBX GAMPBX GALPBX NCSPBX NCMPBX &
|          NCLPBX SCSPBX SCMPBX SCLPBX

...SAMPLE RANGE IS NOW SET TO:          1        33
|_READ(4) YR MO UNDERDEM UNDERREV OVERDEM OVERREV
   6 VARIABLES AND       33 OBSERVATIONS STARTING AT OBS       1

|_READ(12) MO YR FLSNMP FLMNMP FLLNMP GASNMP GAMNMP GALNMP NCSNMP NCMNMP &
|          NCLNMP SCSNMP SCMNMP SCLNMP
  14 VARIABLES AND       33 OBSERVATIONS STARTING AT OBS       1

|_READ(14) MO YR CPI FLEMP GAEMP NCEMP SCEMP
   7 VARIABLES AND       33 OBSERVATIONS STARTING AT OBS       1

|_* ------------------------------------------------------------------
|_GENR TIME=TIME(0)
|_GENR UESSXPCE=((UNDERREV/UNDERDEM)+22.02)/CPI
|_GENR OESSXPCE=((OVERREV/OVERDEM)+22.02)/CPI
|_GENR PBXPCE=FLLPBX/CPI
|_*  --------------------- LOG OF REGRESSION VARIABLES ----------------
|_GENR LGFLEMP=LOG(FLEMP)
|_GENR LGEXPCU=LOG(UESSXPCE)
|_GENR LGEXPCO=LOG(OESSXPCE)
|_GENR LGPBXPCE=LOG(PBXPCE)
|_GENR LGOVDEM=LOG(OVERDEM)
|_GENR LGUNDEM=LOG(UNDERDEM)
|_GENR LGTIME=LOG(TIME)
|_GENR RELPCEU=LGPBXPCE/LGEXPCU
|_GENR RELPCEO=LGPBXPCE/LGEXPCO
|_* ---------------------------- REGRESSIONS ------------------------
```

|_AUTO LGUNDEM LGFLEMP LGEXPCU /LIST

REQUIRED MEMORY IS PAR=   17 CURRENT PAR= 168

DEPENDENT VARIABLE = LGUNDEM
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION   33 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	49.5728	0.95772E-01
2	0.50490	55.2898	0.67126E-01
3	0.57832	55.6437	0.65477E-01
4	0.60847	55.7613	0.64904E-01
5	0.62292	55.8125	0.64646E-01
6	0.63023	55.8372	0.64520E-01
7	0.63403	55.8497	0.64456E-01
8	0.63602	55.8561	0.64422E-01
9	0.63707	55.8595	0.64405E-01
10	0.63763	55.8613	0.64395E-01

LOG L.F. =   55.8613   AT RHO =   0.63763

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.63763	0.01798	0.13410	4.75490

R-SQUARE =   0.9734   R-SQUARE ADJUSTED =   0.9716
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.21465E-02
STANDARD ERROR OF THE ESTIMATE-SIGMA = 0.46330E-01
SUM OF SQUARED ERRORS-SSE= 0.64395E-01
MEAN OF DEPENDENT VARIABLE =   10.218
LOG OF THE LIKELIHOOD FUNCTION = 55.8613

	VARIABLE NAME	A ESTIMATED COEFFICIENT	B STANDARD ERROR	C T-RATIO 30 DF	D PARTIAL CORR.	E STANDARDIZED COEFFICIENT	F ELASTICITY AT MEANS
30	LGFLEMP		0.89088		0.8845		
31	LGEXPCU		0.97891		0.2930		
32	CONSTANT		6.5829		-0.8787		

```
          A          B            C
   OBS.   OBSERVED   PREDICTED    CALCULATED
   NO.    VALUE      VALUE        RESIDUAL
35  1                             -0.11420        *          I
    2                             -0.10410E-01              *I
    3                             -0.57322E-01         *     I
    4                              0.85061E-01               I        *
    5                              0.67694E-01               I      *
    6                             -0.73314E-02              *I
    7                              0.11792E-01               I*
    8                              0.50694E-01               I    *
    9                              0.49272E-02               I*
   10                              0.37676E-01               I   *
   11                             -0.54098E-02              *I
   12                             -0.42995E-02               *
   13                             -0.22267E-02               *
   14                             -0.70445E-02              *I
   15                              0.13767E-01               I*
   16                             -0.60021E-01         *     I
   17                              0.92061E-01               I         *
   18                              0.20631E-01               I *
   19                              0.31711E-02               *
54 20                             -0.48037E-01          *    I
```

A B C

	A	B	C	
21			0.41411E-01	I *
22			-0.37991E-02	*
23			0.39555E-01	I *
24			0.46546E-01	I *
25			0.11227E-01	I*
26			0.39458E-02	*
27			0.31196E-01	I *
28			-0.93179E-01	* I
29			-0.46771E-01	* I
30			-0.45139E-01	* I
31			-0.20491E-01	* I
32			-0.91149E-02	*I
33			0.46252E-01	I *

DURBIN-WATSON = 1.7015 VON NEUMANN RATIO = 1.7546 RHO = 0.04164
RESIDUAL SUM = 0.72815E-01 RESIDUAL VARIANCE = 0.23232E-02
SUM OF ABSOLUTE ERRORS= 1.1424
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9713
RUNS TEST: 14 RUNS, 17 POSITIVE, 16 NEGATIVE, NORMAL STATISTIC = -1.2339

```
|_AUTO LGOVDEM LGFLEMP  LGEXPCO /LIST

REQUIRED MEMORY IS PAR=   17 CURRENT PAR=  168

DEPENDENT VARIABLE =  LGOVDEM
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION            33 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

    ITERATION          RHO             LOG L.F.           SSE
        1            0.00000          47.3311          0.10971
        2            0.75758          58.1573          0.55470E-01
        3            0.75372          58.1643          0.55470E-01
        4            0.75357          58.1645          0.55470E-01

 LOG L.F. =     58.1645       AT RHO =      0.75357

                  ASYMPTOTIC  ASYMPTOTIC  ASYMPTOTIC
          ESTIMATE   VARIANCE    ST.ERROR     T-RATIO
RHO        0.75357    0.01310     0.11443     6.58516

 R-SQUARE =    0.9831      R-SQUARE ADJUSTED =    0.9820
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.18490E-02
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.43000E-01
SUM OF SQUARED ERRORS-SSE=  0.55470E-01
MEAN OF DEPENDENT VARIABLE =    6.9524
LOG OF THE LIKELIHOOD FUNCTION =  58.1645
                  A          B          C          D          E          F
VARIABLE    ESTIMATED   STANDARD    T-RATIO    PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      30 DF       CORR.  COEFFICIENT  AT MEANS

24 LGFLEMP                '.0488                 0.7582
25 LGEXPCO               0.40340                -0.5459 -
26 CONSTANT               8.5785                -0.7413
                 A            B           C
     OBS.    OBSERVED    PREDICTED   CALCULATED
      NO.      VALUE       VALUE      RESIDUAL
29     1                            -0.12046E-01           *I
       2                            -0.13947E-01          * I
       3                            -0.35714E-01        *   I
       4                             0.37215E-01            I   *
       5                             0.46062E-02            I*
       6                            -0.29105E-01         *  I
       7                            -0.36824E-01        *   I
       8                             0.82456E-01            I        *
       9                             0.41478E-01            I    *
      10                             0.47469E-01            I     *
      11                            -0.10199E-01           *I
      12                            -0.76701E-02           *I
      13                            -0.14230E-01          * I
      14                            -0.30174E-01        *   I
      15                             0.64828E-03            *
      16                            -0.44196E-01       *    I
      17                             0.19160E-01            I *
      18                            -0.28161E-01          * I
      19                             0.84159E-02            I*
      20                            -0.70153E-01    *       I
      21                            -0.67648E-01    *       I
      22                            -0.19446E-01          * I
      23                             0.55624E-01            I     *
      24                             0.41320E-01            I    *
      25                            -0.34864E-02            *
54    26                            -0.54177E-01       *    I
```

F01B25Z 0000058

A B C

27	-0.69614E-02	*I
28	0.28727E-01	I *
29	-0.19817E-01	* I
30	-0.39518E-01	* I
31	0.63992E-01	I *
32	0.10055	I *
33	0.20888E-01	I *

DURBIN-WATSON = 1.4715 VON NEUMANN RATIO = 1.5175 RHO = 0.26107
RESIDUAL SUM = 0.90772E-02 RESIDUAL VARIANCE = 0.18517E-02
SUM OF ABSOLUTE ERRORS= 1.0960
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9832
RUNS TEST: 16 RUNS, 14 POSITIVE, 19 NEGATIVE, NORMAL STATISTIC = -0.4062
|_STOP

```
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Hello/Bonjour -
Welcome to SHAZAM - Version 6.1  -  JUN 1989 SYSTEM=IBM-PC   PAR=  162
|_* FLORIDA SMALL ESSX - POOLED LONG TERM ELASTICITY STUDY
|_FILE 11 dummy.prn
UNIT 11 IS NOW ASSIGNED TO: dummy.prn
|_READ(11) YR MO TIME D1 D2 D3 D4 D5 D6 D7 D8 D9 D10

...SAMPLE RANGE IS NOW SET TO:          1       330
|_FILE 4 FLSpool.prn
UNIT  4 IS NOW ASSIGNED TO: FLSpool.prn
|_READ(4) MILE YR MO DEMAND REV
   5 VARIABLES AND      330 OBSERVATIONS STARTING AT OBS       1

|_FILE 12 PLCPI-SB.PRN
UNIT 12 IS NOW ASSIGNED TO: PLCPI-SB.PRN
|_READ(12) MO YR CPI FLEMP GAEMP NCEMP  SCEMP
   7 VARIABLES AND      330 OBSERVATIONS STARTING AT OBS       1

|_GENR PRICE=((REV/DEMAND)+24.55)/CPI
|_GENR LOGPCE=LOG(PRICE)
|_GENR LOGDEM=LOG(DEMAND)
|_GENR LOGTIME=LOG(TIME)
|_GENR LGFLEMP=LOG(FLEMP)
|_* ------ generating slope dummies for empl trend ------
|_GENR TD1=D1*LGFLEMP
|_GENR TD2=D2*LGFLEMP
|_GENR TD3=D3*LGFLEMP
|_GENR TD4=D4*LGFLEMP
|_GENR TD5=D5*LGFLEMP
|_GENR TD6=D6*LGFLEMP
|_GENR TD7=D7*LGFLEMP
|_GENR TD8=D8*LGFLEMP
|_GENR TD9=D9*LGFLEMP
|_GENR TD10=D10*LGFLEMP
|_* ----------------------------------------------------
|_SET NOWARNSKIP
|_SKIPIF(YR.EQ.1989)
|_SKIPIF((YR.EQ.1988).AND.(MO.EQ.11))
|_SKIPIF((YR.EQ.1988).AND.(MO.EQ.12))
```

```
|_OLS LOGDEM LGFLEMP LOGPCE  / RS

REQUIRED MEMORY IS PAR=  105 CURRENT PAR=  162
OLS ESTIMATION
     190 OBSERVATIONS     DEPENDENT VARIABLE = LOGDEM
...NOTE..SAMPLE RANGE SET TO:    1,  330

 R-SQUARE =    0.8278     R-SQUARE ADJUSTED =    0.8259
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.36838
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.60694
SUM OF SQUARED ERRORS-SSE=   68.887
MEAN OF DEPENDENT VARIABLE =   6.7900
LOG OF THE LIKELIHOOD FUNCTION = -173.215
```

	A	B	C	D	E	F
VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 187 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
14 LGFLEMP			4.2437	0.2964		
15 LOGPCE			-29.242	-0.9058		
16 CONSTANT			-4.1138	-0.2881		

```
DURBIN-WATSON = 0.2403    VON NEUMANN RATIO = 0.2416    RHO =  0.88397
RESIDUAL SUM =  0.17569E-11  RESIDUAL VARIANCE =  0.36838
SUM OF ABSOLUTE ERRORS=   97.649
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.8278
RUNS TEST:    17 RUNS,    85 POSITIVE,   105 NEGATIVE, NORMAL STATISTIC =  -11.4676
```

```
|_AUTO LOGDEM LGFLEMP LOGPCE  / RS

REQUIRED MEMORY IS PAR=  107 CURRENT PAR=  162

DEPENDENT VARIABLE =  LOGDEM
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION           190 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

    ITERATION          RHO            LOG L.F.          SSE
        1            0.00000         -173.215         68.887
        2            0.88397         -32.0915         15.471
        3            0.89028         -32.0997         15.468
        4            0.89064         -32.1011         15.468

 LOG L.F. =    -32.1011       AT RHO =      0.89064

                  ASYMPTOTIC  ASYMPTOTIC  ASYMPTOTIC
          ESTIMATE   VARIANCE    ST.ERROR     T-RATIO
RHO        0.89064    0.00109     0.03299    26.99895

 R-SQUARE =    0.9613     R-SQUARE ADJUSTED =    0.9609
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.82715E-01
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.28760
SUM OF SQUARED ERRORS-SSE=   15.468
MEAN OF DEPENDENT VARIABLE =   6.7900
LOG OF THE LIKELIHOOD FUNCTION = -32.1011
```

	A	B	C	D	E	F
VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 187 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
24 LGFLEMP			7.3099	0.4714	(	
25 LOGPCE			-9.9219	-0.5873	-(	
26 CONSTANT			-7.2109	-0.4664	(	

```
DURBIN-WATSON = 2.5360    VON NEUMANN RATIO = 2.5494    RHO = -0.26920
RESIDUAL SUM =  0.49438E-03  RESIDUAL VARIANCE =  0.82715E-01
SUM OF ABSOLUTE ERRORS=   27.006
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9614
RUNS TEST:    55 RUNS,    94 POSITIVE,    96 NEGATIVE, NORMAL STATISTIC =    -5.9638
```

|_POOL LOGDEM LGFLEMP LOGPCE D1 D2 D3 D4 D5 D6 D7 D8 D9 /NC=10 FULL RS
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
10 CROSS-SECTIONS AND 19 TIME-PERIODS
DEPENDENT VARIABLE = LOGDEM

OLS COEFFICIENTS

11.947	-1.7277	1.9731	1.3833	1.3222
1.9605	1.8718	1.0860	1.0220	-0.57972
-0.70883	-97.514			

RHO VECTOR

0.75085	0.92074	0.49295	0.85164	0.64105
0.92697	0.56900	0.61922	0.35022	0.92493

CONSTANT RHO = 0.47265
VARIANCES

0.65216E-02	0.55161E-02	0.98733E-02	0.48639E-02	0.97955E-02
0.33436E-01	0.34434E-01	0.46065E-01	1.1641	0.24280E-01

FINAL COEFFICIENTS
17
18
19 -
FINAL SSE = 68.367

LOG-LIKELIHOOD FUNCTION = 185.672
BUSE R-SQUARE = 0.9821 BUSE RAW-MOMENT R-SQUARE = 0.9991
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.38409
STANDARD ERROR OF THE ESTIMATE-SIGMA = 0.61975
SUM OF SQUARED ERRORS-SSE= 68.367
MEAN OF DEPENDENT VARIABLE = 6.7900
LOG OF THE LIKELIHOOD FUNCTION = 185.672

		A	B	C	D	E	F
	VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 178 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
30	LGFLEMP		0.72006		0.7273		
	LOGPCE		0.30951		0.6709		
	D1		0.27313		0.1936		
	D2		0.24232		0.0876		
	D3		0.24477		0.1134		
	D4		0.22618		0.3630		
	D5		0.21811		0.4138		
	D6		0.33527		0.1712		
	D7		0.16670		0.4745		
	D8		0.21009		-0.1135		
	D9		0.30936		-0.1048		
41	CONSTANT		6.0358		-0.7220		

DURBIN-WATSON = 1.8051 VON NEUMANN RATIO = 1.8146 RHO = 0.03294
RESIDUAL SUM = -2.6099 RESIDUAL VARIANCE = 0.38409
SUM OF ABSOLUTE ERRORS= 91.129
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9989
RUNS TEST: 87 RUNS, 92 POSITIVE, 98 NEGATIVE, NORMAL STATISTIC = -1.2968
|_* ---
|_* -- Introducing slope dummies
|_* ---

```
|_POOL LOGDEM LOGPCE D1 D2 D3 D4 D5 D6 D7 D8 D9 TD1 TD2 TD3 TD4 TD5 TD6 &
|              TD7 TD8 TD9 TD10 /NC=10 FULL RS
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    10 CROSS-SECTIONS AND     19 TIME-PERIODS
DEPENDENT VARIABLE = LOGDEM
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

OLS COEFFICIENTS
  -3.4702      -127.86      -111.88      -134.65      -130.57
  -156.85      -239.49      -93.970      -152.34      -177.99
   9.5423       7.6110       10.292       9.9045       13.006
   22.644       5.5885       12.270       15.277      -5.5750
   50.372

RHO VECTOR
  0.55851      0.78486      0.56192      0.87513      0.37858
  0.67779      0.30532      0.64584      0.39944      0.61966
CONSTANT RHO =  0.42654
VARIANCES
  0.25577E-02  0.10519E-02  0.31705E-02  0.12710E-02  0.35299E-02
  0.12521E-01  0.75489E-02  0.14053E-01  0.40750      0.67315E-02
FINAL COEFFICIENTS
21  -4.3644
22  -173.66
23   9.1963
24   19.928
25   76.687
FINAL SSE =    186.51

LOG-LIKELIHOOD FUNCTION =    207.628
BUSE R-SQUARE = 0.9870      BUSE RAW-MOMENT R-SQUARE = 0.9998
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.1036
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.0505
SUM OF SQUARED ERRORS-SSE=    186.51
MEAN OF DEPENDENT VARIABLE =    6.7900
LOG OF THE LIKELIHOOD FUNCTION =  207.628
```

	A	B	C	D	E	F
VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 169 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
36 LOGPCE			-16.255	-0.7810		
D1			-7.6543	-0.5074		
D2			-6.4298	-0.4433		
D3			-6.6428	-0.4550		
D4			-5.9790	-0.4179		
D5			-8.0183	-0.5250		
D6			-7.2211	-0.4856		
D7			-4.6696	-0.3381		
D8			-6.3666	-0.4398		
D9			-2.7263	-0.2052		
TD1			8.9717	0.5680		
TD2			5.9469	0.4160		
TD3			7.6375	0.5065		
TD4			6.0197	0.4202		
TD5			12.671	0.6980		
TD6			7.1507	0.4820		
TD7			2.6550	0.2001		
TD8			4.8631	0.3504		
TD9			1.9474	0.1481		
TD10			-3.9344	-0.2897		
56 CONSTANT			4.0779	0.2993		

```
DURBIN-WATSON = 1.8933    VON NEUMANN RATIO = 1.9033    RHO = -0.00232
RESIDUAL SUM =    2.7859      RESIDUAL VARIANCE =    1.1036
```

```
SUM OF ABSOLUTE ERRORS=   150.52
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9995
RUNS TEST:   84 RUNS,   94 POSITIVE,   96 NEGATIVE, NORMAL STATISTIC =   -1.7444
|_STOP
```

```
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Hello/Bonjour -
Welcome to SHAZAM - Version 6.1  -  JUN 1989 SYSTEM=IBM-PC   PAR=  166
|_* FLORIDA MEDIUM ESSX - POOLED LONG TERM ELASTICITY STUDY
|_* pooled data with 10 cross-sections
|_FILE 11 dummy.prn
UNIT 11 IS NOW ASSIGNED TO: dummy.prn
|_READ(11) YR MO TIME D1 D2 D3 D4 D5 D6 D7 D8 D9 D10

...SAMPLE RANGE IS NOW SET TO:        1       330
|_FILE 4 FLMpool.prn
UNIT  4 IS NOW ASSIGNED TO: FLMpool.prn
|_READ(4) MILE YR MO DEMAND REV
   5 VARIABLES AND      330 OBSERVATIONS STARTING AT OBS       1

|_FILE 12 PLCPI-SB.PRN
UNIT 12 IS NOW ASSIGNED TO: PLCPI-SB.PRN
|_READ(12) MO YR CPI FLEMP GAEMP NCEMP  SCEMP
   7 VARIABLES AND      330 OBSERVATIONS STARTING AT OBS       1

|_GENR TIME=TIME(0)
|_GENR PRICE=((REV/DEMAND)+25.31)/CPI
|_GENR LOGPCE=LOG(PRICE)
|_GENR LOGDEM=LOG(DEMAND)
|_GENR LOGTIME=LOG(TIME)
|_GENR LGFLEMP=LOG(FLEMP)
|_* ------ generating slope dummies for empl trend ------
|_GENR TD1=D1*LGFLEMP
|_GENR TD2=D2*LGFLEMP
|_GENR TD3=D3*LGFLEMP
|_GENR TD4=D4*LGFLEMP
|_GENR TD5=D5*LGFLEMP
|_GENR TD6=D6*LGFLEMP
|_GENR TD7=D7*LGFLEMP
|_GENR TD8=D8*LGFLEMP
|_GENR TD9=D9*LGFLEMP
|_GENR TD10=D10*LGFLEMP
|_* --------------------------------------------------
|_SET NOWARNSKIP
|_SKIPIF(YR.EQ.1989)
|_SKIPIF((YR.EQ.1988).AND.(MO.EQ.11))
|_SKIPIF((YR.EQ.1988).AND.(MO.EQ.12))
```

```
|_POOL LOGDEM LGFLEMP LOGPCE D1 D2 D3 D4 D5 D6 D7 D8 D9 /NC=10 FULL CORCOEF LIST
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    10 CROSS-SECTIONS AND     19 TIME-PERIODS
DEPENDENT VARIABLE = LOGDEM

OLS COEFFICIENTS
   7.4687     -4.9506      2.5968      2.2525      2.0520
   3.0919      2.4232      2.4645      2.5251      1.6070
   2.4756     -65.202

RHO VECTOR
  0.73121     0.88317     0.85279     0.85916     0.93809
  0.95838     0.46065     0.86140     0.97630     0.76630
CONSTANT RHO =  0.85554
VARIANCES
  0.89873E-02 0.27416E-01 0.47125E-01 0.38275E-02 0.67841E-01
  0.74867E-02 0.43784E-01 0.22118     0.58779E-02 0.24436
FINAL COEFFICIENTS
17 :
18 :
19 :
FINAL SSE =   67.318

LOG-LIKELIHOOD FUNCTION =    160.555
BUSE R-SQUARE = 0.9769      BUSE RAW-MOMENT R-SQUARE = 0.9988
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.37819
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.61497
SUM OF SQUARED ERRORS-SSE=   67.318
MEAN OF DEPENDENT VARIABLE =    6.0957
LOG OF THE LIKELIHOOD FUNCTION =  160.555
```

	VARIABLE NAME	A ESTIMATED COEFFICIENT	B STANDARD ERROR	C T-RATIO 178 DF	D PARTIAL CORR.	E STANDARDIZED COEFFICIENT	F ELASTICITY AT MEANS
30	LGFLEMP			8.7073	0.5465		
	LOGPCE			-18.106	-0.8051		
	D1			10.843	0.6307		
	D2			7.8770	0.5084		
	D3			6.3527	0.4299		
	D4			11.503	0.6530		
	D5			5.3243	0.3706		
	D6			8.3618	0.5311		
	D7			9.5909	0.5837		
	D8			2.4579	0.1812		
	D9			8.6786	0.5453		
41	CONSTANT			-8.8862	-0.5543		

	OBS. NO.	A OBSERVED VALUE	B PREDICTED VALUE	C CALCULATED RESIDUAL	
44	1			0.43338E-01	*
	2			-0.70884	* I
	3			-0.65342	* I
	4			0.82341E-01	*
	5			-0.27642	*I
	6			-0.16953	*I
	7			1.5271	I *
	8			0.49554	I *
	9			0.86741	I *
	10			-0.43502	* I
	11			0.22900	I*
	12			0.63931E-01	*
	13			0.29196	I*
	14			-0.34673	* I
58	15			0.67008E-02	*

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A	B	C
16		0.67624E-01
17		-0.99086E-01
18		-1.2692
19		0.21664
34		-0.33720
35		0.60377
36		-0.62061E-01
37		0.51471
38		2.0901
39		0.36562
40		0.45093
41		0.20020
42		0.26410E-01
43		-0.22347
44		-0.73907
45		-0.19620
46		0.12014
47		-0.18598E-01
48		-0.83326
49		-0.56813
50		-0.25476
51		-0.59342E-01
52		-0.37673E-01
67		-0.25140
68		-0.33346
69		-0.38453
70		-0.38257
71		0.25140
72		-0.15677E-01
73		0.37759
74		0.74628E-02
75		-0.22645
76		1.9235
77		-0.42606
78		-0.59536
79		0.66249
80		0.61916
81		-0.26408
82		0.63865
83		0.24978
84		-0.34160
85		-0.82410
100		-0.33909
101		-0.86679
102		0.88056
103		-0.63666
104		0.21841
105		1.3720
106		0.32943
107		0.15036
108		-0.14220
109		-0.34358E-01
110		-0.26560
111		-0.81748
112		-0.39100
113		-0.48028
114		0.75599
115		0.15549
116		0.22740
117		-0.13860
118		0.97403
133		-0.55488
134		-0.71278
135		-0.17939E-01
136		0.88034
137		-0.21299E-03

A B C

138	0.68284	I *
139	-0.21364	*I
140	-0.32727E-01	*
141	0.57953	I *
142	1.0616	I *
143	-0.47484E-01	*
144	1.1990	I *
145	-0.17050	*I
146	-0.16082	*I
147	0.57311	I *
148	-1.2019	* I
149	-0.12855	*I
150	0.21210	I*
151	-0.20793	*I
166	0.29858	I *
167	-0.30840	* I
168	-0.11980	*I
169	0.14879	I*
170	0.35114	I *
171	0.29249	I*
172	-0.51796E-01	*
173	0.79145E-01	*
174	0.13899	I*
175	-0.84866	* I
176	-0.21784	*I
177	-0.18988	*I
178	-0.54744E-01	*
179	-0.94555E-01	*
180	1.2151	I *
181	0.31510	I *
182	0.11493	I*
183	-0.66257E-01	*
184	-1.9239	* I
199	-0.43679	* I
200	-0.28753	*I
201	-0.23491	*I
202	1.6508	I *
203	0.64780E-01	*
204	-0.15141	*I
205	-0.19680	*I
206	-0.12216	*I
207	-0.23853	*I
208	0.30956	I *
209	-0.60977E-01	*
210	-0.80915	* I
211	-0.73200	* I
212	-0.60987	* I
213	0.62306E-01	*
214	1.0814	I *
215	0.55528	I *
216	0.16692	I*
217	0.27860	I*
232	-0.18978	*I
233	-0.46983	* I
234	0.21308	I*
235	-0.50394	* I
236	1.1834	I *
237	-0.32484	* I
238	-0.33493	* I
239	-0.14991	*I
240	-0.25946	*I
241	0.16920	I*
242	2.0119	I *
243	-0.12481	*I
244	-0.56184E-01	*
245	-0.91754E-01	*

A B C

```
246          0.60953E-01        *
247         -0.24328           *I
248          0.44449            I *
249         -0.29454          * I
250         -0.17959           *I
265          0.46767            I *
266          0.49829            I  *
267          1.2231             I      *
268         -0.36392          * I
269         -0.29614          * I
270         -0.45040          * I
271         -0.35342          * I
272         -0.58399E-01        *
273         -0.22968           *I
274          0.54782            I  *
275         -0.67726         *  I
276         -0.56380         *  I
277         -0.36231          * I
278         -0.41768          * I
279          0.59558E-01        *
280         -0.76345        *   I
281         -0.35304          * I
282         -0.96377       *    I
283         -0.48950          * I
298          1.3326             I       *
299         -1.6074      *      I
300         -0.10487           *I
301          0.37514E-01        *
302         -0.76365E-01        *
303         -0.44896          * I
304         -0.20309           *I
305         -0.17756           *I
306         -0.19703           *I
307         -0.16060           *I
308         -0.27806           *I
309         -0.27033           *I
310         -0.28450           *I
311         -0.29699          * I
312         -1.1569       *     I
313         -0.60560         *  I
314          0.13969            I*
315          0.52093            I  *
316         -0.21801           *I
```

DURBIN-WATSON = 1.7108   VON NEUMANN RATIO = 1.7198   RHO = 0.07982
RESIDUAL SUM = -3.0226   RESIDUAL VARIANCE = 0.37819
SUM OF ABSOLUTE ERRORS= 81.582
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9981
RUNS TEST: 78 RUNS, 75 POSITIVE, 115 NEGATIVE, NORMAL STATISTIC = -2.0997
|_STOP

```
SHAZAM - IBM-PC VERSION   SITE NO. 46981X


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Hello/Bonjour -
Welcome to SHAZAM - Version 6.1  -  JUN 1989 SYSTEM=IBM-PC   PAR=  162
|_* FLORIDA LARGE ESSX - POOLED LONG TERM ELASTICITY STUDY
|_* pooled data with 10 cross-sections (florida-LARGE)
|_FILE 11 dummy.prn
UNIT 11 IS NOW ASSIGNED TO: dummy.prn
|_READ(11) YR MO TIME D1 D2 D3 D4 D5 D6 D7 D8 D9 D10

...SAMPLE RANGE IS NOW SET TO:        1       330
|_FILE 4 FLLpool.prn
UNIT  4 IS NOW ASSIGNED TO: FLLpool.prn
|_READ(4) MILE YR MO DEMAND REV
   5 VARIABLES AND      330 OBSERVATIONS STARTING AT OBS       1

|_FILE 12 PLCPI-SB.PRN
UNIT 12 IS NOW ASSIGNED TO: PLCPI-SB.PRN
|_READ(12) MO YR CPI FLEMP GAEMP NCEMP  SCEMP
   7 VARIABLES AND      330 OBSERVATIONS STARTING AT OBS       1

|_GENR PRICE=((REV/DEMAND)+22.02)/CPI
|_GENR LOGPCE=LOG(PRICE)
|_GENR LOGDEM=LOG(DEMAND)
|_GENR LOGTIME=LOG(TIME)
|_GENR LGFLEMP=LOG(FLEMP)
|_* ------ generating slope dummies for empl trend ------
|_GENR TD1=D1*LGFLEMP
|_GENR TD2=D2*LGFLEMP
|_GENR TD3=D3*LGFLEMP
|_GENR TD4=D4*LGFLEMP
|_GENR TD5=D5*LGFLEMP
|_GENR TD6=D6*LGFLEMP
|_GENR TD7=D7*LGFLEMP
|_GENR TD8=D8*LGFLEMP
|_GENR TD9=D9*LGFLEMP
|_GENR TD10=D10*LGFLEMP
|_* --------------------------------------------------
|_SET NOWARNSKIP
|_SKIPIF(YR.EQ.1989)
```

```
|_POOL LOGDEM LGFLEMP LOGPCE D1 D2 D3 D4 D5 D6 D7 D8 D9 /NC=10 SAME RS
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    10 CROSS-SECTIONS AND     21 TIME-PERIODS
DEPENDENT VARIABLE = LOGDEM

OLS COEFFICIENTS
   12.680      -3.3327      1.5797      1.5409      0.70017
   2.3558       1.1179      1.0201     -0.62080     -0.13628
  -1.6676      -106.06

RHO VECTOR
  0.71254      0.78053      0.72968      0.96640      0.81437
  0.62068      0.75325      0.91712      0.75379      1.0232
CONSTANT RHO =  0.77898
VARIANCES
  0.20560      0.15496E-01  0.10004      0.25034E-01  0.20683E-01
  0.89864E-01  0.13707      0.43133E-01  0.32617      0.49369E-01
FINAL COEFFICIENTS
17
18
19
FINAL SSE =   68.623

LOG-LIKELIHOOD FUNCTION =    101.301
BUSE R-SQUARE = 0.8719      BUSE RAW-MOMENT R-SQUARE = 0.9964
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.34658
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.58871
SUM OF SQUARED ERRORS-SSE=   68.623
MEAN OF DEPENDENT VARIABLE =   7.0821
LOG OF THE LIKELIHOOD FUNCTION =  101.301
                  A          B          C          D          E              F
VARIABLE     ESTIMATED   STANDARD   T-RATIO    PARTIAL  STANDARDIZED  ELASTICITY
  NAME      COEFFICIENT    ERROR     198 DF     CORR.   COEFFICIENT   AT MEANS

30 LGFLEMP                 ----     7.8824     0.4887
LOGPCE                             -3.5371    -0.2438
D1                                  7.1404     0.4525
D2                                  10.867     0.6112
D3                                  5.5574     0.3673
D4                                  15.394     0.7381
D5                                  9.2772     0.5504
D6                                  6.4269     0.4155
D7                                 -0.49270   -0.0350
D8                                  1.4508     0.1026
D9                                 -4.2099    -0.2866
41 CONSTANT                        -7.4944    -0.4701

DURBIN-WATSON = 1.5964    VON NEUMANN RATIO = 1.6041    RHO =  0.06645
RESIDUAL SUM =    11.558      RESIDUAL VARIANCE =  0.34658
SUM OF ABSOLUTE ERRORS=   74.623
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9891
RUNS TEST:    61 RUNS,   120 POSITIVE,    90 NEGATIVE, NORMAL STATISTIC =   -6.0532
|_* -------------------------------------------------------------------------
|_*                  -- Introducing slope dummies
|_* -------------------------------------------------------------------------
```

|_POOL LOGDEM LOGPCE D1 D2 D3 D4 D5 D6 D7 D8 D9 TD1 TD2 TD3 TD4 TD5 TD6 &
| TD7 TD8 TD9 TD10 /NC=10 SAME LIST

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
10 CROSS-SECTIONS AND 21 TIME-PERIODS
DEPENDENT VARIABLE = LOGDEM
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

OLS COEFFICIENTS

-3.8797	-223.85	-121.81	-218.14	-30.488
-92.323	-128.16	-225.37	-21.565	-316.79
22:551	10.563	21.773	-0.60825E-01	7.0573
11.257	22.478	-1.3924	33.089	-3.8966
34.505				

RHO VECTOR

0.75591	0.74629	0.59474	0.73977	0.34010
0.58492	0.44946	0.61467	0.70534	-0.48641

CONSTANT RHO = 0.66662
VARIANCES

0.85698E-01	0.62917E-02	0.39909E-01	0.19486E-03	0.72121E-02
0.42226E-01	0.53955E-01	0.26494E-02	0.11665	0.57166E-02

FINAL COEFFICIENTS

21
22
23
24
25

FINAL SSE = 173.26

LOG-LIKELIHOOD FUNCTION = 176.580
BUSE R-SQUARE = 0.9888 BUSE RAW-MOMENT R-SQUARE = 0.9999
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.91671
STANDARD ERROR OF THE ESTIMATE-SIGMA = 0.95745
SUM OF SQUARED ERRORS-SSE= 173.26
MEAN OF DEPENDENT VARIABLE = 7.0821
LOG OF THE LIKELIHOOD FUNCTION = 176.580

	A	B	C	D	E	F
VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 189 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
36 LOGPCE			-4.6134	-0.3181		
D1			-3.3769	-0.2385		
D2			-3.2230	-0.2283		
D3			-3.9085	-0.2735		
D4			0.22491	0.0164		
D5			-2.8292	-0.2016		
D6			-2.8951	-0.2061		
D7			-3.6718	-0.2580		
D8			-0.17692	-0.0129		
D9			-5.6892	-0.3824		
TD1			3.8741	0.2712		
TD2			5.9930	0.3996		
TD3			4.7346	0.3256		
TD4			4.1698	0.2903		
TD5			5.0229	0.3432		
TD6			3.5909	0.2527		
TD7			4.2548	0.2957		
TD8			1.5925	0.1151		
TD9			5.9449	0.3969		
TD10			0.97071	0.0704		
56 CONSTANT			-0.71549	-0.0520		

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL

	A	B	C
1			-1.8615
2			0.22305
3			-0.89714
4			1.8886
5			1.9018
6			0.40689
7			0.73693
8			0.54659
9			0.36010
10			0.72079
11			0.13525
12			0.16212
13			0.12256
14			0.79491E-01
15			-0.28712E-01
16			-0.63186
17			-0.60931E-01
18			-0.43120
19			-0.42975
20			-0.70135
21			0.59009E-01
34			-0.46940
35			-0.32441
36			-0.85359
37			-0.74164
38			0.52595
39			-0.85862
40			1.6444
41			0.31331
42			0.21734
43			0.41232
44			1.0475
45			0.13010
46			0.85866E-01
47			-0.11287
48			0.20938
49			-0.87733
50			1.1768
51			-0.14303
52			-0.36569
53			-1.1067
54			0.67051
67			-0.71029
68			-0.39928
69			-0.91558
70			-0.42681
71			1.3766
72			-0.43784
73			-0.39179
74			2.0978
75			0.37949
76			0.71234
77			-0.28620
78			-0.11389
79			-0.15485
80			-0.13435
81			-0.79322E-01
82			-0.8865[illegible]
83			1.9864
84			0.24198E-01
85			-0.95701E-01
86			-0.77421
87			0.10762
100			0.23419
101			-0.68622
102			-1.3557

	A	B	C
103			-0.38631
104			-0.29705
105			-1.2979
106			1.9925
107			1.2169
108			-0.19117
109			0.53131
110			0.26921
111			0.13502
112			-0.28296
113			-0.32520
114			-0.30875
115			-1.5179
116			0.34269
117			0.73656
118			0.97812
119			-0.58513
120			0.50836
133			-0.16389
134			0.11482
135			-0.67448
136			3.4196
137			-0.41900E-01
138			-0.19558
139			-0.87477
140			-0.59945
141			-0.26441
142			-1.0601
143			0.87900
144			-0.50639
145			0.36485E-01
146			-0.80432
147			0.66866
148			1.0911
149			-0.96016E-01
150			0.44956E-01
151			-0.40729E-01
152			-0.90929
153			0.17932
166			-2.1679
167			0.70554
168			1.7613
169			0.63188
170			1.5856
171			0.27217
172			0.42653
173			0.35606
174			0.33718
175			0.56240
176			0.26069E-01
177			0.10697
178			0.69340E-01
179			-0.17772E-02
180			-0.10043
181			-0.62220
182			-0.15730
183			-0.13454
184			-0.38830
185			-0.67131
186			0.82079E-01
199			-0.11515
200			-0.76027
201			-0.81152
202			-2.4983
203			1.7788
204			0.48181

A R C

205	0.51050E-01
206	0.33365
207	0.61786
208	0.54915
209	0.48470
210	0.21948
211	0.95475E-01
212	0.31331E-01
213	0.85145
214	-0.28391
215	0.20858
216	-0.16970
217	-0.61075
218	-0.47062
219	0.15921
232	0.87277
233	-0.73577
234	-0.21746
235	-1.6220
236	-0.91256
237	-0.27973
238	-0.61907
239	0.19189
240	0.48311
241	-0.76573E-01
242	0.16615
243	-0.47115E-01
244	-0.45634E-01
245	0.34488E-01
246	0.26865
247	0.59535
248	1.0682
249	0.76772
250	0.50240
251	-1.4331
252	-0.40313E-01
265	-2.2240
266	-1.4552
267	-1.8761
268	5.3374
269	0.82394
270	0.15117
271	0.46174E-01
272	2.2951
273	0.75511
274	1.4113
275	0.16406
276	0.33069
277	0.29766
278	0.83969E-01
279	-0.26473E-01
280	-0.79233
281	-0.60373E-01
282	-0.65266
283	-0.14521
284	-1.4980
285	-0.21765
298	-0.69787
299	0.89666
300	0.24478
301	0.46801
302	0.54458
303	0.14611E-01
304	0.80656E-01
305	-0.46934
306	0.74960

A B C

307	0.37720	I *
308	0.31250	I *
309	0.19293	I*
310	-0.13605	*I
311	-0.53621	* I
312	0.48078	I *
313	-0.26806	*I
314	0.16196	I*
315	-0.17087	*I
316	-0.13860	*I
317	1.3263	I *
318	-2.5711	* I

DURBIN-WATSON = 1.7929 VON NEUMANN RATIO = 1.8014 RHO = 0.03979
RESIDUAL SUM = 9.0257 RESIDUAL VARIANCE = 0.91671
SUM OF ABSOLUTE ERRORS= 129.22
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9998
RUNS TEST: 70 RUNS, 109 POSITIVE, 101 NEGATIVE, NORMAL STATISTIC = -4.9666
|_STOP

Florida Small ESSX Data: by mileage band

	A		B	C
year	month	band	demand	revenue
87	4	A		
87	5	A		
87	6	A		
87	7	A		
87	8	A		
87	9	A		
87	10	A		
87	11	A		
87	12	A		
88	1	A		
88	2	A		
88	3	A		
88	4	A		
88	5	A		
88	6	A		
88	7	A		
88	8	A		
88	9	A		
88	10	A		
88	11	A		
88	12	A		
89	1	A		
89	2	A		
89	3	A		
89	4	A		
89	5	A		
89	6	A		
89	7	A		
89	8	A		
89	9	A		
89	10	A		
89	11	A		
89	12	A		
87	4	B		
87	5	B		
87	6	B		
87	7	B		
87	8	B		
87	9	B		
87	10	B		
87	11	B		
87	12	B		
88	1	B		
88	2	B		
88	3	B		
88	4	B		
88	5	B		
88	6	B		
88	7	B		
88	8	B		
88	9	B		
88	10	B		
88	11	B		
88	12	B		
89	1	B		

A B C

89	2	B
89	3	B
89	4	B
89	5	B
89	6	B
89	7	B
89	8	B
89	9	B
89	10	B
89	11	B
89	12	B
87	4	C
87	5	C
87	6	C
87	7	C
87	8	C
87	9	C
87	10	C
87	11	C
87	12	C
88	1	C
88	2	C
88	3	C
88	4	C
88	5	C
88	6	C
88	7	C
88	8	C
88	9	C
88	10	C
88	11	C
88	12	C
89	1	C
89	2	C
89	3	C
89	4	C
89	5	C
89	6	C
89	7	C
89	8	C
89	9	C
89	10	C
89	11	C
89	12	C
87	4	D
87	5	D
87	6	D
87	7	D
87	8	D
87	9	D
87	10	D
87	11	D
87	12	D
88	1	D
88	2	D
88	3	D
88	4	D
88	5	D
88	6	D
88	7	D

A B C

88	2	F
88	3	F
88	4	F
88	5	F
88	6	F
88	7	F
88	8	F
88	9	F
88	10	F
88	11	F
88	12	F
89	1	F
89	2	F
89	3	F
89	4	F
89	5	F
89	6	F
89	7	F
89	8	F
89	9	F
89	10	F
89	11	F
89	12	F
87	4	G
87	5	G
87	6	G
87	7	G
87	8	G
87	9	G
87	10	G
87	11	G
87	12	G
88	1	G
88	2	G
88	3	G
88	4	G
88	5	G
88	6	G
88	7	G
88	8	G
88	9	G
88	10	G
88	11	G
88	12	G
89	1	G
89	2	G
89	3	G
89	4	G
89	5	G
89	6	G
89	7	G
89	8	G
89	9	G
89	10	G
89	11	G
89	12	G
87	4	H
87	5	H
87	6	H
87	7	H

	A		B	C
87	8	H		[illegible]
87	9	H		
87	10	H		
87	11	H		
87	12	H		
88	1	H		
88	2	H		
88	3	H		
88	4	H		
88	5	H		
88	6	H		
88	7	H		
88	8	H		
88	9	H		
88	10	H		
88	11	H		
88	12	H		
89	1	H		
89	2	H		
89	3	H		
89	4	H		
89	5	H		
89	6	H		
89	7	H		
89	8	H		
89	9	H		
89	10	H		
89	11	H		
89	12	H		
87	4	J		
87	5	J		
87	6	J		
87	7	J		
87	8	J		
87	9	J		
87	10	J		
87	11	J		
87	12	J		
88	1	J		
88	2	J		
88	3	J		
88	4	J		
88	5	J		
88	6	J		
88	7	J		
88	8	J		
88	9	J		
88	10	J		
88	11	J		
88	12	J		
89	1	J		
89	2	J		
89	3	J		
89	4	J		
89	5	J		
89	6	J		
89	7	J		
89	8	J		
89	9	J		
89	10	J		

A B C

89	11	J	
89	12	J	
87	4	K	
87	5	K	
87	6	K	
87	7	K	
87	8	K	
87	9	K	
87	10	K	
87	11	K	
87	12	K	
88	1	K	
88	2	K	
88	3	K	
88	4	K	
88	5	K	
88	6	K	
88	7	K	
88	8	K	
88	9	K	
88	10	K	
88	11	K	
88	12	K	
89	1	K	
89	2	K	
89	3	K	
89	4	K	
89	5	K	
89	6	K	
89	7	K	
89	8	K	
89	9	K	
89	10	K	
89	11	K	
89	12	K	
88	12	N	
89	1	N	
89	2	N	
89	3	N	
89	4	N	
89	5	N	
89	6	N	
89	7	N	
89	8	N	
89	9	N	
89	10	N	$.
89	11	N	$.
89	12	N	$.
88	12	O	
89	1	O	
89	2	O	
89	3	O	
89	4	O	
89	5	O	
89	6	O	
89	7	O	
89	8	O	
89	9	O	
89	10	O	
89	11	O	

A B C

89 12 0

Florida Medium ESSX Data: by mileage band

	A		B	C
year	month	band	demand	revenue
87	4	A		
87	5	A		
87	6	A		
87	7	A		
87	8	A		
87	9	A		
87	10	A		
87	11	A		
87	12	A		
88	1	A		
88	2	A		
88	3	A		
88	4	A		
88	5	A		
88	6	A		
88	7	A		
88	8	A		
88	9	A		
88	10	A		
88	11	A		
88	12	A		
89	1	A		
89	2	A		
89	3	A		
89	4	A		
89	5	A		
89	6	A		
89	7	A		
89	8	A		
89	9	A		
89	10	A		
89	11	A		
89	12	A		
87	4	B		
87	5	B		
87	6	B		
87	7	B		
87	8	B		
87	9	B		
87	10	B		
87	11	B		
87	12	B		
88	1	B		
88	2	B		
88	3	B		
88	4	B		
88	5	B		
88	6	B		
88	7	B		
88	8	B		
88	9	B		
88	10	B		
88	11	B		
88	12	B		
89	1	B		

A B C

89	2	B
89	3	B
89	4	B
89	5	B
89	6	B
89	7	B
89	8	B
89	9	B
89	10	B
89	11	B
89	12	B
87	4	C
87	5	C
87	6	C
87	7	C
87	8	C
87	9	C
87	10	C
87	11	C
87	12	C
88	1	C
88	2	C
88	3	C
88	4	C
88	5	C
88	6	C
88	7	C
88	8	C
88	9	C
88	10	C
88	11	C
88	12	C
89	1	C
89	2	C
89	3	C
89	4	C
89	5	C
89	6	C
89	7	C
89	8	C
89	9	C
89	10	C
89	11	C
89	12	C
87	4	D
87	5	D
87	6	D
87	7	D
87	8	D
87	9	D
87	10	D
87	11	D
87	12	D
88	1	D
88	2	D
88	3	D
88	4	D
88	5	D
88	6	D
88	7	D

	A		B	C
88	8	D		
88	9	D		
88	10	D		
88	11	D		
88	12	D		
89	1	D		
89	2	D		
89	3	D		
89	4	D		
89	5	D		
89	6	D		
89	7	D		
89	8	D		
89	9	D		
89	10	D		
89	11	D		
89	12	D		
87	4	E		
87	5	E		
87	6	E		
87	7	E		
87	8	E		
87	9	E		
87	10	E		
87	11	E		
87	12	E		
88	1	E		
88	2	E		
88	3	E		
88	4	E		
88	5	E		
88	6	E		
88	7	E		
88	8	E		
88	9	E		
88	10	E		
88	11	E		
88	12	E		
89	1	E		
89	2	E		
89	3	E		
89	4	E		
89	5	E		
89	6	E		
89	7	E		
89	8	E		
89	9	E		
89	10	E		
89	11	E		
89	12	E		
87	4	F		
87	5	F		
87	6	F		
87	7	F		
87	8	F		
87	9	F		
87	10	F		
87	11	F		
87	12	F		
88	1	F		

A B C

88	2	F
88	3	F
88	4	F
88	5	F
88	6	F
88	7	F
88	8	F
88	9	F
88	10	F
88	11	F
88	12	F
89	1	F
89	2	F
89	3	F
89	4	F
89	5	F
89	6	F
89	7	F
89	8	F
89	9	F
89	10	F
89	11	F
89	12	F
87	4	G
87	5	G
87	6	G
87	7	G
87	8	G
87	9	G
87	10	G
87	11	G
87	12	G
88	1	G
88	2	G
88	3	G
88	4	G
88	5	G
88	6	G
88	7	G
88	8	G
88	9	G
88	10	G
88	11	G
88	12	G
89	1	G
89	2	G
89	3	G
89	4	G
89	5	G
89	6	G
89	7	G
89	8	G
89	9	G
89	10	G
89	11	G
89	12	G
87	4	H
87	5	H
87	6	H
87	7	H

	A		B	C
87	8	H		
87	9	H		
87	10	H		
87	11	H		
87	12	H		
88	1	H		
88	2	H		
88	3	H		
88	4	H		
88	5	H		
88	6	H		
88	7	H		
88	8	H		
88	9	H		
88	10	H		
88	11	H		
88	12	H		
89	1	H		
89	2	H		
89	3	H		
89	4	H		
89	5	H		
89	6	H		
89	7	H		
89	8	H		
89	9	H		
89	10	H		
89	11	H		
89	12	H		
87	4	J		
87	5	J		
87	6	J		
87	7	J		
87	8	J		
87	9	J		
87	10	J		
87	11	J		
87	12	J		
88	1	J		
88	2	J		
88	3	J		
88	4	J		
88	5	J		
88	6	J		
88	7	J		
88	8	J		
88	9	J		
88	10	J		
88	11	J		
88	12	J		
89	1	J		
89	2	J		
89	3	J		
89	4	J		
89	5	J		
89	6	J		
89	7	J		
89	8	J		
89	9	J		
89	10	J		

A B C

89	11	J
89	12	J
87	4	K
87	5	K
87	6	K
87	7	K
87	8	K
87	9	K
87	10	K
87	11	K
87	12	K
88	1	K
88	2	K
88	3	K
88	4	K
88	5	K
88	6	K
88	7	K
88	8	K
88	9	K
88	10	K
88	11	K
88	12	K
89	1	K
89	2	K
89	3	K
89	4	K
89	5	K
89	6	K
89	7	K
89	8	K
89	9	K
89	10	K
89	11	K
89	12	K
88	11	N
88	12	N
89	1	N
89	2	N
89	3	N
89	4	N
89	5	N
89	6	N
89	7	N
89	8	N
89	9	N
89	10	N
89	11	N
89	12	N
89	9	O
89	10	O
89	11	O
89	12	O

Florida Large ESSX Data: by mileage band

	A		B	C
year	month	band	demand	revenue
87	4	A		
87	5	A		
87	6	A		
87	7	A		
87	8	A		
87	9	A		
87	10	A		
87	11	A		
87	12	A		
88	1	A		
88	2	A		
88	3	A		
88	4	A		
88	5	A		
88	6	A		
88	7	A		
88	8	A		
88	9	A		
88	10	A		
88	11	A		
88	12	A		
89	1	A		
89	2	A		
89	3	A		
89	4	A		
89	5	A		
89	6	A		
89	7	A		
89	8	A		
89	9	A		
89	10	A		
89	11	A		
89	12	A		
87	4	B		
87	5	B		
87	6	B		
87	7	B		
87	8	B		
87	9	B		
87	10	B		
87	11	B		
87	12	B		
88	1	B		
88	2	B		
88	3	B		
88	4	B		
88	5	B		
88	6	B		
88	7	B		
88	8	B		
88	9	B		
88	10	B		
88	11	B		
88	12	B		
89	1	B		

A	B	C
89	2	B
89	3	B
89	4	B
89	5	B
89	6	B
89	7	B
89	8	B
89	9	B
89	10	B
89	11	B
89	12	B
87	4	C
87	5	C
87	6	C
87	7	C
87	8	C
87	9	C
87	10	C
87	11	C
87	12	C
88	1	C
88	2	C
88	3	C
88	4	C
88	5	C
88	6	C
88	7	C
88	8	C
88	9	C
88	10	C
88	11	C
88	12	C
89	1	C
89	2	C
89	3	C
89	4	C
89	5	C
89	6	C
89	7	C
89	8	C
89	9	C
89	10	C
89	11	C
89	12	C
87	4	D
87	5	D
87	6	D
87	7	D
87	8	D
87	9	D
87	10	D
87	11	D
87	12	D
88	1	D
88	2	D
88	3	D
88	4	D
88	5	D
88	6	D
88	7	D

A B C

88	8	D
88	9	D
88	10	D
88	11	D
88	12	D
89	1	D
89	2	D
89	3	D
89	4	D
89	5	D
89	6	D
89	7	D
89	8	D
89	9	D
89	10	D
89	11	D
89	12	D
87	4	E
87	5	E
87	6	E
87	7	E
87	8	E
87	9	E
87	10	E
87	11	E
87	12	E
88	1	E
88	2	E
88	3	E
88	4	E
88	5	E
88	6	E
88	7	E
88	8	E
88	9	E
88	10	E
88	11	E
88	12	E
89	1	E
89	2	E
89	3	E
89	4	E
89	5	E
89	6	E
89	7	E
89	8	E
89	9	E
89	10	E
89	11	E
89	12	E
87	4	F
87	5	F
87	6	F
87	7	F
87	8	F
87	9	F
87	10	F
87	11	F
87	12	F
88	1	F

	A		B	C
88	2	F		
88	3	F		
88	4	F		
88	5	F		
88	6	F		
88	7	F		
88	8	F		
88	9	F		
88	10	F		
88	11	F		
88	12	F		
89	1	F		
89	2	F		
89	3	F		
89	4	F		
89	5	F		
89	6	F		
89	7	F		
89	8	F		
89	9	F		
89	10	F		
89	11	F		
89	12	F		
87	4	G		
87	5	G		
87	6	G		
87	7	G		
87	8	G		
87	9	G		
87	10	G		
87	11	G		
87	12	G		
88	1	G		
88	2	G		
88	3	G		
88	4	G		
88	5	G		
88	6	G		
88	7	G		
88	8	G		
88	9	G		
88	10	G		
88	11	G		
88	12	G		
89	1	G		
89	2	G		
89	3	G		
89	4	G		
89	5	G		
89	6	G		
89	7	G		
89	8	G		
89	9	G		
89	10	G		
89	11	G		
89	12	G		
87	4	H		
87	5	H		
87	6	H		
87	7	H		

A B C

87	8	H
87	9	H
87	10	H
87	11	H
87	12	H
88	1	H
88	2	H
88	3	H
88	4	H
88	5	H
88	6	H
88	7	H
88	8	H
88	9	H
88	10	H
88	11	H
88	12	H
89	1	H
89	2	H
89	3	H
89	4	H
89	5	H
89	6	H
89	7	H
89	8	H
89	9	H
89	10	H
89	11	H
89	12	H
87	4	J
87	5	J
87	6	J
87	7	J
87	8	J
87	9	J
87	10	J
87	11	J
87	12	J
88	1	J
88	2	J
88	3	J
88	4	J
88	5	J
88	6	J
88	7	J
88	8	J
88	9	J
88	10	J
88	11	J
88	12	J
89	1	J
89	2	J
89	3	J
89	4	J
89	5	J
89	6	J
89	7	J
89	8	J
89	9	J
89	10	J

A B C

89	11	J
89	12	J
87	4	K
87	5	K
87	6	K
87	7	K
87	8	K
87	9	K
87	10	K
87	11	K
87	12	K
88	1	K
88	2	K
88	3	K
88	4	K
88	5	K
88	6	K
88	7	K
88	8	K
88	9	K
88	10	K
88	11	K
88	12	K
89	1	K
89	2	K
89	3	K
89	4	K
89	5	K
89	6	K
89	7	K
89	8	K
89	9	K
89	10	K
89	11	K
89	12	K
89	1	N
89	2	N
89	3	N
89	4	N
89	5	N
89	6	N
89	7	N
89	8	N
89	9	N
89	10	N
89	11	N
89	12	N
89	2	O
89	3	O
89	4	O
89	5	O
89	6	O
89	7	O
89	8	O
89	9	O
89	10	O
89	11	O
89	12	O

AGGREGATE DATA
FILE=FLS.PRN

		A	B	C	D
YR	MO	<2.5 D	<2.5 R	>2.5 D	>2.5 R
87	4				
87	5				
87	6				
87	7				
87	8				
87	9				
87	10				
87	11				
87	12				
88	1				
88	2				
88	3				
88	4				
88	5				
88	6				
88	7				
88	8				
88	9				
88	10				
88	11				
88	12				
89	1				
89	2				
89	3				
89	4				
89	5				
89	6				
89	7				
89	8				
89	9				
89	10				
89	11				
89	12				

FILE=FLM.PRN   MEDIUM ESSX

		A	B	C	D
yr	mo	<2.5 D	<2.5 r	>2.5 D	>2.5 r
87	4				
87	5				
87	6				
87	7				
87	8				
87	9				
87	10				
87	11				
87	12				
88	1				
88	2				
88	3				
88	4				
88	5				
88	6				
88	7				
88	8				
88	9				
88	10				
88	11				
88	12				
89	1				
89	2				
89	3				
89	4				
89	5				
89	6				
89	7				
89	8				
89	9				
89	10				
89	11				
89	12				

AGGREGATE DATA
FILE=FLL.PRN LARGE ESSX

YR	MO	A <2.5 D	B <2.5 R	C >2.5 D	D >2.5 R
87	4				
87	5				
87	6				
87	7				
87	8				
87	9				
87	10				
87	11				
87	12				
88	1				
88	2				
88	3				
88	4				
88	5				
88	6				
88	7				
88	8				
88	9				
88	10				
88	11				
88	12				
89	1				
89	2				
89	3				
89	4				
89	5				
89	6				
89	7				
89	8				
89	9				
89	10				
89	11				
89	12				

HISTORICAL INFORMATION ON NON-AGRICULTURAL EMPLOYMENT
NONFARM EMPLOYMENT (000)

SOUTHERN BELL

mo	yr	cpi	NONFARM SEAS ADJ FL
1	1987	111.2	4723
2	1987	111.6	4747
3	1987	112.1	4766
4	1987	112.7	4796
5	1987	113.1	4814
6	1987	113.5	4843
7	1987	113.8	4871
8	1987	114.4	4879
9	1987	115.0	4907
10	1987	115.3	4930
11	1987	115.4	4941
12	1987	115.4	4960
1	1988	115.7	4950
2	1988	116.0	4988
3	1988	116.5	5007
4	1988	117.1	5021
5	1988	117.5	5039
6	1988	118.0	5059
7	1988	118.5	5108
8	1988	119.0	5107
9	1988	119.8	5130
10	1988	120.2	5151
11	1988	120.3	5209
12	1988	120.5	5194
1	1989	121.1	5213
2	1989	121.6	5229
3	1989	122.3	5216
4	1989	123.1	5231
5	1989	123.8	5247
6	1989	124.1	5261
7	1989	124.4	5287
8	1989	124.6	5297
9	1989	125.0	5313
10	1989	125.4	5322
11	1989	125.8	5332
12	1989	126.2	5342

INSIDE WIRE - RECURRING DATA FILES

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0000100

BellSouth Telecommunications
ECONOMIC ANALYSIS

DEMAND ANALYSIS:
INSIDE WIRE MONTHLY PLANS
Book 1 of 2

jsm
4/29/93

PROPRIETARY

F01B25Z 0000101

Contents

THE DEMAND FOR INSIDE WIRE: BELLSOUTH TELECOMMUNICATIONS, INC

Purpose:

This study was developed to estimate the demand for Inside Wire monthly plans for all nine BellSouth states over a five year period (1993-1997). These projections, based upon "business as usual conditions", will be used by the Pricing organization as inputs to a cost study to assist in evaluating pricing decisions in the upcoming months. Provided in this study are the following:

1). Monthly In-Service WMR quantities (Actual & Forecasted)
2). Monthly In-Service WMQ quantities (Actual & Forecasted)
3). Monthly In-Service SEQ1X quantities (Actual & Forecasted)
4). Year-end cumulative Inward Movement quantities for all plans (Actual & Forecasted)
5). Mutual Subscription percentages for Florida, Georgia, and South Carolina
6). Graphs of each plan over time (Actual & Forecasted)
7). Full statistical output for all Econometric models
8). Price Scenarios

History:

Approximately nine demand studies have been developed for Inside Wire monthly plans since 1988. Projections were made based on the results of econometric models which captured and quantified the impact of historical price changes on the demand for this service. In Southern Bell, models were developed to estimate the demand for the new SEQ1X plan. In the Southern Bell states, residential and business subscription were NOT analyzed separately. These earlier models used Florida's migration pattern as a surrogate for the acceptance of the SEQ1X plans in the other Southern bell states. As soon as the SEQ1X plans were introduced, no other subscribers could be added to the WMR and WMQ plans. Since customers could subscribe to both the WMR & WMQ plans, Information Systems was contacted to produce a quarterly report showing mutual subscriptions.

On the South Central Bell side, residential and business subscriptions were evaluated separately. This was necessary because the rates were different between classes of service. Unlike in the Southern Bell analysis, a more homogeneous offering of the SEQ1X plan allowed for the estimation of a pooled Generalized Least Squares econometric model. Such models were used in subsequent log-linear studies to estimate [Almon Lag] price elasticities in the range of -.01 to -.04.

Current Methodology:

Forecasts for Southern Bell were developed through a variety of techniques. Data was collected for each plan from January 1987 to February 1993. Also collected were the historical rates associated with each plan over time. Examination of the historical data indicated that some WMR adjustments were necessary to reflect accounting revisions. For example, an adjustment was made in the Georgia WMR data in late 1990 by calculating the average first difference values for the 3 month period prior to the anomaly. This number was subtracted from the adjustment month's first difference value for a retroactive adjustment constant of 64,943. In other words, 64,943 In-service plans were subtracted from every month prior to the 1990 accounting revision. Similar adjustments were applied to North Carolina & South Carolina. No adjustments were necessary for the WMQ plans. The enormous drop in North Carolina's WMQ plans were the result <u>not</u> of accounting revisions, but from a manual, lump sum conversion of WMQ plans to SEQ1X.

Univariate time series models were chosen as the vehicle to produce forecasts for the WMR and WMQ plans. Since the price changes associated with these plans occurred relatively early in the
15 data (prior to 2/1/91) and because the impact was extremely small (elasticity methods such as Exponential Smoothing and Box-Jenkins (ARIMA) would still produce reliable results. Furthermore, it was not necessary to link future telecommunication activity to a service that has been prohibited from future subscription. Once these forecasts were developed, they were used as exogenous or "input variables" in the Southern Bell SEQ1X regression models.

Regression models were constructed for each state in order to econometrically forecast the demand for SEQ1X. The differences between states were so dramatic as to preclude the use of the "Pooling" approach sometimes used in the past. The demand for SEQ1X was specified as a function of the total number of access lines in-service (residence + business main), the SEQ1X monthly price, the number of WMR (adjusted) and WMQ plans in-service. Because of serious autocorrelation problems, it was necessary to include a Cochran-Orcutt correction to account for those underlying patterns in the data that were not adequately captured by the exogenous variables. The t-statistics associated with the WMR and WMQ plans were low as expected because they entered the equation separately instead of being added together. This finding is the result of multicollinearity and in no way impacts the forecasting ability of the equations. Forecasts for the SEQ1X plans were obtained by applying these estimates to the future values of total access lines (residence + business main) developed by EPS9212. Price levels were assumed to remain at 1993 levels over the forecast horizon.

Pricing considerations made it necessary to model Residential and Business SEQ1X plans separately for the South Central Bell states. For the residential sector, residential access lines were used to link the movements of the plans to the health of the telecommunications industry. For the business sector, business main lines were used. Both types of models were developed on a state by state basis and included variables to capture seasonality. Also included were Cochran-Orcutt corrections to minimize the impact of autocorrelation in the residuals. Finally, the SEQ1X monthly rate was included to account for market adjustments resulting from price changes. Price levels were again assumed to remain at 1993 levels over the forecast horizon.

ANNUAL FORECASTS

ANNUAL SUMMARY OF SOUTHERN BELL MONTHLY PLANS

		A	B	C	D	E	F	G	H
		FL	FL	FL	FL	FL	FL	FL	FL
		In-Srv	In-Srv	In-Srv	Inw-M %	Inw-M	In-Srv	In-Srv	In-Srv
		WMR	WMQ	SEQ1X	SEQ1X	SEQ1X	WMR Chg	WMQ Chg	SEQ1X Chg
	YR	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS
ACTUAL	1989								
ACTUAL	1990								
ACTUAL	1991								
ACTUAL	1992								
FCST	1993								
FCST	1994								
FCST	1995								
FCST	1996								
FCST	1997								

		GA	GA	GA	GA	GA	GA	GA	GA
		In-Srv	In-Srv	In-Srv	Inw-M %	Inw-M	In-Srv	In-Srv	In-Srv
		WMR	WMQ	SEQ1X	SEQ1X	SEQ1X	WMR Chg	WMQ Chg	SEQ1X Chg
	YR	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS
ACTUAL	1989								
ACTUAL	1990								
ACTUAL	1991								
ACTUAL	1992								
FCST	1993								
FCST	1994								
FCST	1995								
FCST	1996								
FCST	1997								

		NC	NC	NC	NC	NC	NC	NC	NC
		In-Srv	In-Srv	In-Srv	Inw-M %	Inw-M	In-Srv	In-Srv	In-Srv
		WMR	WMQ	SEQ1X	SEQ1X	SEQ1X	WMR Chg	WMQ Chg	SEQ1X Chg
	YR	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS
ACTUAL	1989								
ACTUAL	1990								
ACTUAL	1991								
ACTUAL	1992								
FCST	1993								
FCST	1994								
FCST	1995								
FCST	1996								
FCST	1997								

		SC	SC	SC	SC	SC	SC	SC	SC
		In-Srv	In-Srv	In-Srv	Inw-M %	Inw-M	In-Srv	In-Srv	In-Srv
		WMR	WMQ	SEQ1X	SEQ1X	SEQ1X	WMR Chg	WMQ Chg	SEQ1X Chg
	YR	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS	RES+BUS
ACTUAL	1989								
ACTUAL	1990								
ACTUAL	1991								
ACTUAL	1992								
FCST	1993								
FCST	1994								
FCST	1995								
FCST	1996								
FCST	1997								

ANNUAL SUMMARY OF SOUTH CENTRAL BELL PLANS

YR	A AL In-Srv SEQ1X RESID	B AL Inw-M % SEQ1X RESID	C AL Inw-M SEQ1X RESID	D AL In-Srv SEQ1X BUSIN	E AL Inw-M % SEQ1X BUSIN	F AL Inw-M SEQ1X BUSIN	G AL In-Srv SEQ1X Chg RESID	H AL In-Srv SEQ1X Chg BUSIN
1989								
1990								
1991								
1992								
1993								
1994								
1995								
1996								
1997								

YR	KY In-Srv SEQ1X RESID	KY Inw-M % SEQ1X RESID	KY Inw-M SEQ1X RESID	KY In-Srv SEQ1X BUSIN	KY Inw-M % SEQ1X BUSIN	KY Inw-M SEQ1X BUSIN	KY In-Srv SEQ1X Chg RESID	KY In-Srv SEQ1X Chg BUSIN
1989								
1990								
1991								
1992								
1993								
1994								
1995								
1996								
1997								

YR	LA In-Srv SEQ1X RESID	LA Inw-M % SEQ1X RESID	LA Inw-M SEQ1X RESID	LA In-Srv SEQ1X BUSIN	LA Inw-M % SEQ1X BUSIN	LA Inw-M SEQ1X BUSIN	LA In-Srv SEQ1X Chg RESID	LA In-Srv SEQ1X Chg BUSIN
1989								
1990								
1991								
1992								
1993								
1994								
1995								
1996								
1997								

YR	MS In-Srv SEQ1X RESID	MS Inw-M % SEQ1X RESID	MS Inw-M SEQ1X RESID	MS In-Srv SEQ1X BUSIN	MS Inw-M % SEQ1X BUSIN	MS Inw-M SEQ1X BUSIN	MS In-Srv SEQ1X Chg RESID	MS In-Srv SEQ1X Chg BUSIN
1989								
1990								
1991								
1992								
1993								
1994								
1995								
1996								
1997								

YR	A TN In-Srv SEQ1X RESID	B TN Inw-M % SEQ1X RESID	C TN Inw-M SEQ1X RESID	D TN In-Srv SEQ1X BUSIN	E TN Inw-M % SEQ1X BUSIN	F TN Inw-M SEQ1X BUSIN	G TN In-Srv SEQ1X Chg RESID	N TN In-Srv SEQ1X Chg BUSIN
1989								
1990								
1991								
1992								
1993								
1994								
1995								
1996	1							
1997	1							

MUTUAL SUBSCRIBERS

4/27/93
JSM

		A	B	C
		4/5/93 FL	2/20/92 GA	4/5/93 SC
6 GRAND TOTAL (WMR QTY)	=			
less QTY WMR ONLY	=			
WMR & WMQ subscribers	=			
GRAND TOTAL(WMQ QTY)	=			
less WMR & WMQ	=			
14 WMQ ONLY subscribers	=			
% WMR ONLY	=	64%	66%	45%
% WMQ ONLY	=	6%	10%	7%

NO CHANGE IN PERCENTAGES SINCE 2/20/92

Price Scenarios:

The projections which follow were developed using the test rates stated below. The elasticity value of -.04 was used to calculate a conservative impact of these rate adjustments. The rates for the WMQ plans were assumed to remain at 1993 levels over the forecast period.

SEQ1X RATES

STATE	CURRENT	1/1/94	1/1/95
AL	1.5	2.25	2.8
FL	2.5	2.8	2.8
GA	2	2.8	2.8
KY	2	2.8	2.8
LA	2	2.8	2.8
MS	2	2.8	2.8
NC	2.5	2.8	2.8
SC	2	2.8	2.8
TN	1.25	2	2.8

WMR RATES

STATE	CURRENT	1/1/94	1/1/95
AL	N/A	N/A	N/A
FL	1.5	1.8	1.8
GA	1	1.8	1.8
KY	N/A	N/A	N/A
LA	N/A	N/A	N/A
MS	N/A	N/A	N/A
NC	1.5	1.8	1.8
SC	1	1.8	1.8
TN	N/A	N/A	N/A

ANNUAL SUMMARY OF SOUTHERN BELL MONTHLY PLANS: SCENARIO WITH ELASTICITY = -0.04

			A	B	C	D	E	F	G	H
			FL In-Srv WMR RES+BUS	FL In-Srv WMQ RES+BUS	FL In-Srv SEQ1X RES+BUS	FL Inw-M % SEQ1X RES+BUS	FL Inw-M SEQ1X RES+BUS	FL Destim. WMR Chg RES+BUS	FL Destim. WMQ Chg RES+BUS	FL Destim. SEQ1X Chg RES+BUS
		OLD PCE	$1.50	$1.00	$2.50	N/A	N/A	N/A	N/A	N/A
	1/1/94	NEW PCE	$1.80	$1.00	$2.80	N/A	N/A	N/A	N/A	N/A
		CHG PCE	20.00%	0.00%	12.00%	N/A	N/A	N/A	N/A	N/A
		YR END								
10	FORECAST	1994								
	FORECAST	1995								
	FORECAST	1996								
13	FORECAST	1997								

			GA In-Srv WMR RES+BUS	GA In-Srv WMQ RES+BUS	GA In-Srv SEQ1X RES+BUS	GA Inw-M % SEQ1X RES+BUS	GA Inw-M SEQ1X RES+BUS	GA In-Srv WMR Chg RES+BUS	GA In-Srv WMQ Chg RES+BUS	GA In-Srv SEQ1X Chg RES+BUS
		OLD PCE	$1.00	$1.00	$2.00	N/A	N/A	N/A	N/A	N/A
	1/1/94	NEW PCE	$1.80	$1.00	$2.80	N/A	N/A	N/A	N/A	N/A
		CHG PCE	80.00%	0.00%	40.00%	N/A	N/A	N/A	N/A	N/A
		YR END								
22	FORECAST	1994								
	FORECAST	1995								
	FORECAST	1996								
25	FORECAST	1997								

			NC In-Srv WMR RES+BUS	NC In-Srv WMQ RES+BUS	NC In-Srv SEQ1X RES+BUS	NC Inw-M % SEQ1X RES+BUS	NC Inw-M SEQ1X RES+BUS	NC In-Srv WMR Chg RES+BUS	NC In-Srv WMQ Chg RES+BUS	NC In-Srv SEQ1X Chg RES+BUS
		OLD PCE	$1.50	$1.00	$2.50	N/A	N/A	N/A	N/A	N/A
	1/1/94	NEW PCE	$1.80	$1.00	$2.80	N/A	N/A	N/A	N/A	N/A
		CHG PCE	20.00%	0.00%	12.00%	N/A	N/A	N/A	N/A	N/A
		YR END								
34	FORECAST	1994								
	FORECAST	1995								
	FORECAST	1996								
37	FORECAST	1997								

			SC In-Srv WMR RES+BUS	SC In-Srv WMQ RES+BUS	SC In-Srv SEQ1X RES+BUS	SC Inw-M % SEQ1X RES+BUS	SC Inw-M SEQ1X RES+BUS	SC In-Srv WMR Chg RES+BUS	SC In-Srv WMQ Chg RES+BUS	SC In-Srv SEQ1X Chg RES+BUS
		OLD PCE	$1.00	$1.00	$2.00	N/A	N/A	N/A	N/A	N/A
	1/1/94	NEW PCE	$1.80	$1.00	$2.80	N/A	N/A	N/A	N/A	N/A
		CHG PCE	80.00%	0.00%	40.00%	N/A	N/A	N/A	N/A	N/A
		YR END								
46	FORECAST	1994								
	FORECAST	1995								
	FORECAST	1996								
49	FORECAST	1997								

ANNUAL SUMMARY OF SOUTH CENTRAL BELL PLANS: SCENARIO WITH ELASTICITY = -0.04

		A	B	C	D	E	F	G	H
		AL	AL	AL	AL	AL	AL	AL	AL
		In-Srv	Inw-M %	Inw-M	In-Srv	Inw-M %	Inw-M	Destim.	Destim.
		SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X Ch
	YR	RESID	RESID	RESID	BUSIN	BUSIN	BUSIN	RESID	BUSIN
	OLD PCE	$1.50	N/A	N/A	$1.50	N/A	N/A	N/A	N/A
1/1/94	NEW PCE	$2.25	N/A	N/A	$2.25	N/A	N/A	N/A	N/A
	CHG PCE	33.33%	N/A	N/A	33.33%	N/A	N/A	N/A	N/A

9 FORECAST 1994
FORECAST 1995
FORECAST 1996
12 FORECAST 1997

		KY	KY	KY	KY	KY	KY	KY	KY
		In-Srv	Inw-M %	Inw-M	In-Srv	Inw-M %	Inw-M	In-Srv	In-Srv
		SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X Chg	SEQ1X Ch
	YR	RESID	RESID	RESID	BUSIN	BUSIN	BUSIN	RESID	BUSIN
	OLD PCE	$2.00	N/A	N/A	$2.00	N/A	N/A	N/A	N/A
1/1/94	NEW PCE	$2.80	N/A	N/A	$2.80	N/A	N/A	N/A	N/A
	CHG PCE	28.57%	N/A	N/A	28.57%	N/A	N/A	N/A	N/A

20 FORECAST 1994
FORECAST 1995
FORECAST 1996
23 FORECAST 1997

		LA	LA	LA	LA	LA	LA	LA	LA
		In-Srv	Inw-M %	Inw-M	In-Srv	Inw-M %	Inw-M	In-Srv	In-Srv
		SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X Chg	SEQ1X Ch
	YR	RESID	RESID	RESID	BUSIN	BUSIN	BUSIN	RESID	BUSIN
	OLD PCE	$2.00	N/A	N/A	$2.00	N/A	N/A	N/A	N/A
1/1/94	NEW PCE	$2.80	N/A	N/A	$2.80	N/A	N/A	N/A	N/A
	CHG PCE	28.57%	N/A	N/A	28.57%	N/A	N/A	N/A	N/A

31 FORECAST 1994
FORECAST 1995
FORECAST 1996
34 FORECAST 1997

		MS	MS	MS	MS	MS	MS	MS	MS
		In-Srv	Inw-M %	Inw-M	In-Srv	Inw-M %	Inw-M	In-Srv	In-Srv
		SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X	SEQ1X Chg	SEQ1X Ch
	YR	RESID	RESID	RESID	BUSIN	BUSIN	BUSIN	RESID	BUSIN
	OLD PCE	$2.00	N/A	N/A	$2.00	N/A	N/A	N/A	N/A
1/1/94	NEW PCE	$2.80	N/A	N/A	$2.80	N/A	N/A	N/A	N/A
	CHG PCE	28.57%	N/A	N/A	28.57%	N/A	N/A	N/A	N/A

42 FORECAST 1994
FORECAST 1995
FORECAST 1996
45 FORECAST 1997

	YR	TN In-Srv SEQ1X RESID	TN Inw-M % SEQ1X RESID	TN Inw-M SEQ1X RESID	TN In-Srv SEQ1X BUSIN	TN Inw-M % SEQ1X BUSIN	TN Inw-M SEQ1X BUSIN	TN In-Srv SEQ1X Chg RESID	TN In-Srv SEQ1X Ch BUSIN
	OLD PCE	$1.25	N/A	N/A	$1.25	N/A	N/A	N/A	N/A
1/1/94	NEW PCE	$2.00	N/A	N/A	$2.00	N/A	N/A	N/A	N/A
	CHG PCE	37.50%	N/A	N/A	37.50%	N/A	N/A	N/A	N/A

8 FORECAST 1994 1
9 FORECAST 1995 1
10 FORECAST 1996 1
11 FORECAST 1997 1

ANNUAL SUMMARY OF SOUTH CENTRAL BELL PLANS: SCENARIO WITH ELASTICITY = -0.04

	YR	A AL In-Srv SEQ1X RESID	B AL Inw-M % SEQ1X RESID	C AL Inw-M SEQ1X RESID	D AL In-Srv SEQ1X BUSIN	E AL Inw-M % SEQ1X BUSIN	F AL Inw-M SEQ1X BUSIN	G AL Destim. SEQ1X RESID	H AL Destim. SEQ1X Ch BUSIN
	OLD PCE	$1.50	N/A	N/A	$1.50	N/A	N/A	N/A	N/A
1/1/95	NEW PCE	$2.80	N/A	N/A	$2.80	N/A	N/A	N/A	N/A
	CHG PCE	46.43%	N/A	N/A	46.43%	N/A	N/A	N/A	N/A

9 FORECAST 1995
FORECAST 1996
11 FORECAST 1997

	YR	KY In-Srv SEQ1X RESID	KY Inw-M % SEQ1X RESID	KY Inw-M SEQ1X RESID	KY In-Srv SEQ1X BUSIN	KY Inw-M % SEQ1X BUSIN	KY Inw-M SEQ1X BUSIN	KY In-Srv SEQ1X Chg RESID	KY In-Srv SEQ1X Ch BUSIN
	OLD PCE	$2.00	N/A	N/A	$2.00	N/A	N/A	N/A	N/A
1/1/95	NEW PCE	$2.80	N/A	N/A	$2.80	N/A	N/A	N/A	N/A
	CHG PCE	28.57%	N/A	N/A	28.57%	N/A	N/A	N/A	N/A

19 FORECAST 1995
FORECAST 1996
21 FORECAST 1997

	YR	LA In-Srv SEQ1X RESID	LA Inw-M % SEQ1X RESID	LA Inw-M SEQ1X RESID	LA In-Srv SEQ1X BUSIN	LA Inw-M % SEQ1X BUSIN	LA Inw-M SEQ1X BUSIN	LA In-Srv SEQ1X Chg RESID	LA In-Srv SEQ1X Ch BUSIN
	OLD PCE	$2.00	N/A	N/A	$2.00	N/A	N/A	N/A	N/A
1/1/95	NEW PCE	$2.80	N/A	N/A	$2.80	N/A	N/A	N/A	N/A
	CHG PCE	28.57%	N/A	N/A	28.57%	N/A	N/A	N/A	N/A

29 FORECAST 1995
FORECAST 1996
31 FORECAST 1997

	YR	MS In-Srv SEQ1X RESID	MS Inw-M % SEQ1X RESID	MS Inw-M SEQ1X RESID	MS In-Srv SEQ1X BUSIN	MS Inw-M % SEQ1X BUSIN	MS Inw-M SEQ1X BUSIN	MS In-Srv SEQ1X Chg RESID	MS In-Srv SEQ1X Ch BUSIN
	OLD PCE	$2.00	N/A	N/A	$2.00	N/A	N/A	N/A	N/A
1/1/95	NEW PCE	$2.80	N/A	N/A	$2.80	N/A	N/A	N/A	N/A
	CHG PCE	28.57%	N/A	N/A	28.57%	N/A	N/A	N/A	N/A

39 FORECAST 1995
FORECAST 1996
41 FORECAST 1997

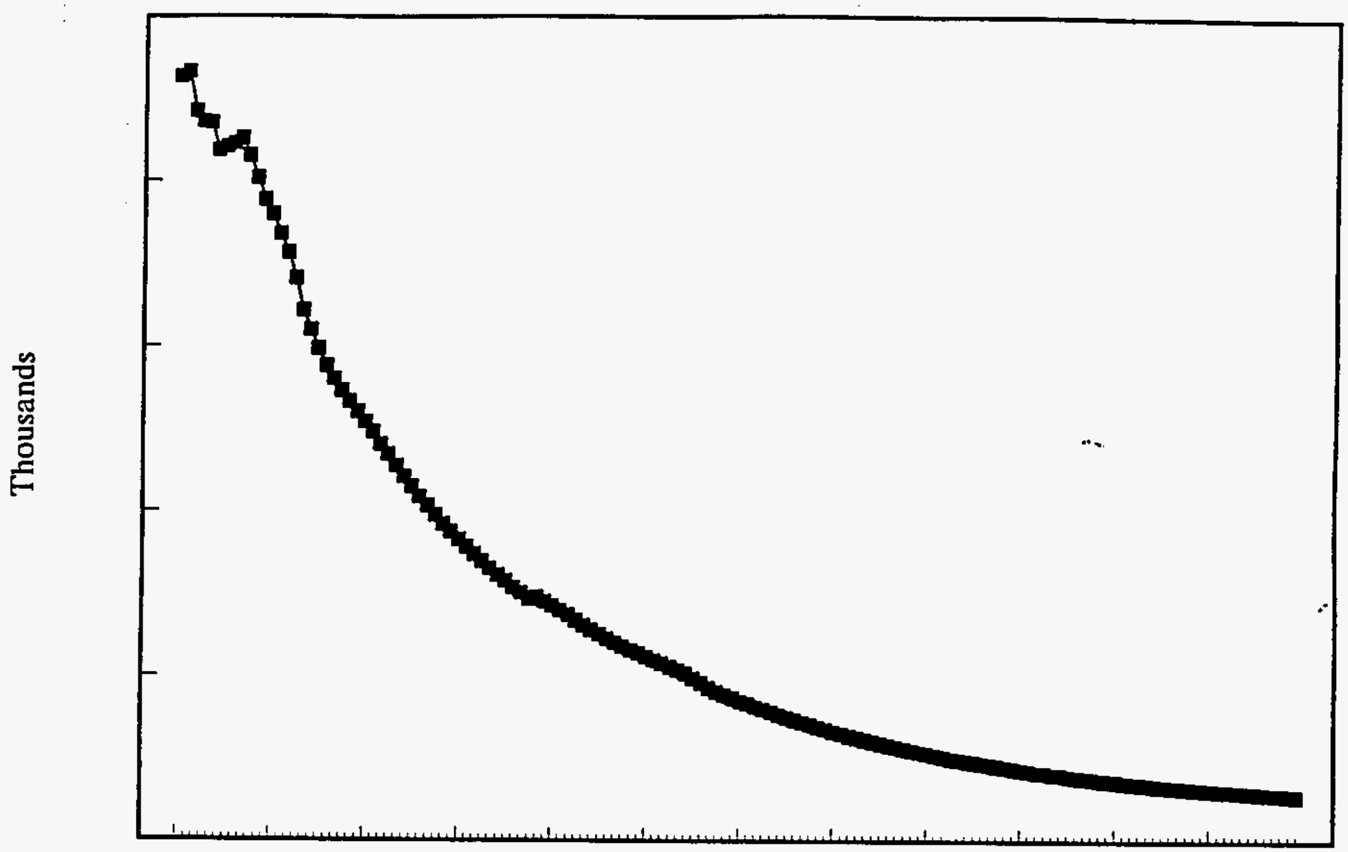
	YR	TN In-Srv SEQ1X RESID	TN Inw-M % SEQ1X RESID	TN Inw-M SEQ1X RESID	TN In-Srv SEQ1X BUSIN	TN Inw-M % SEQ1X BUSIN	TN Inw-M SEQ1X BUSIN	TN In-Srv SEQ1X Chg RESID	TN In-Srv SEQ1X Ch BUSIN
	OLD PCE	$1.25	N/A	N/A	$1.25	N/A	N/A	N/A	N/A
1/1/95	NEW PCE	$2.80	N/A	N/A	$2.80	N/A	N/A	N/A	N/A
	CHG PCE	55.36%	N/A	N/A	55.36%	N/A	N/A	N/A	N/A

8 FORECAST 1995
9 FORECAST 1996
10 FORECAST 1997

GRAPHS BY PLAN

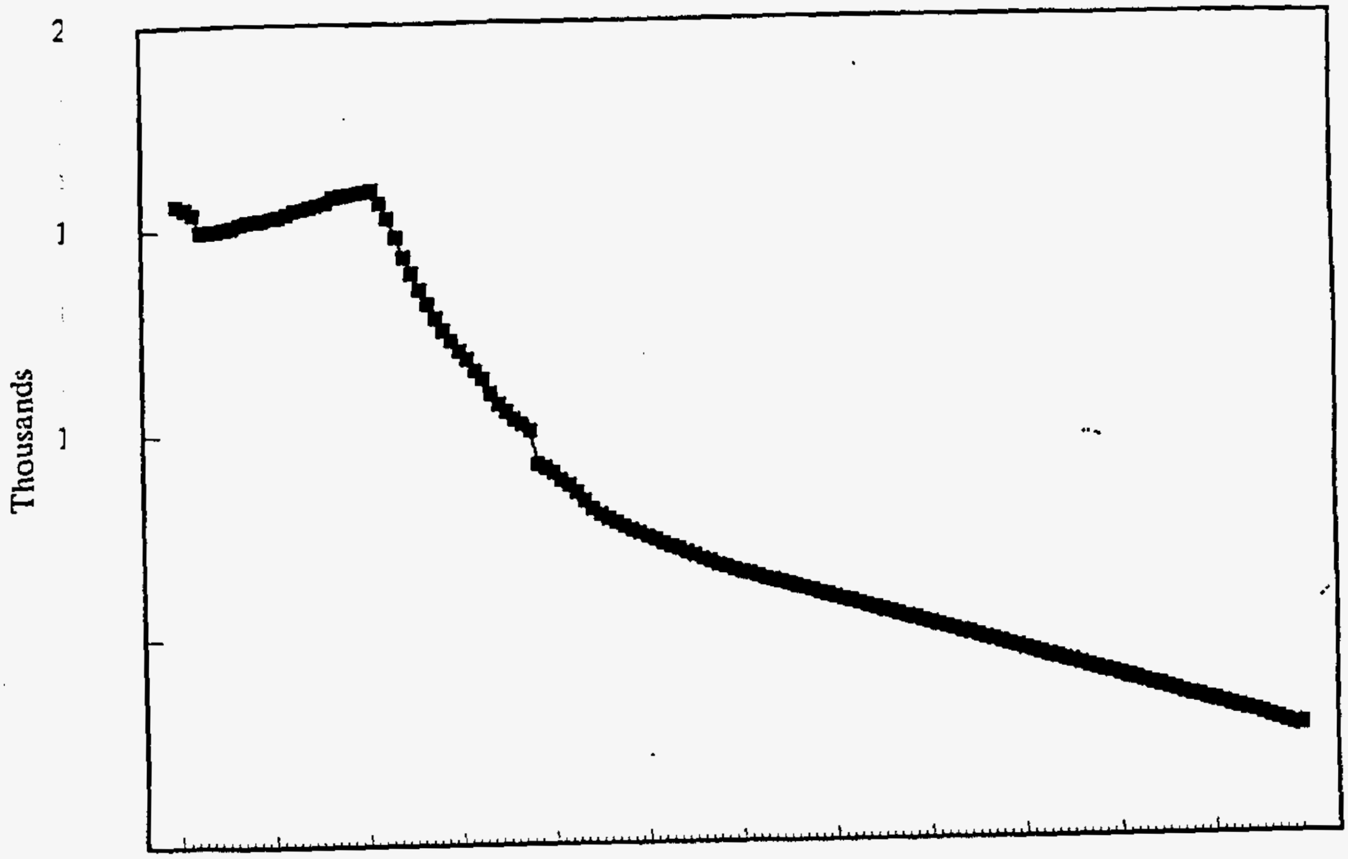
RESIDENCE + BUSINESS WMR

FLORIDA



RESIDENCE + BUSINESS WMR

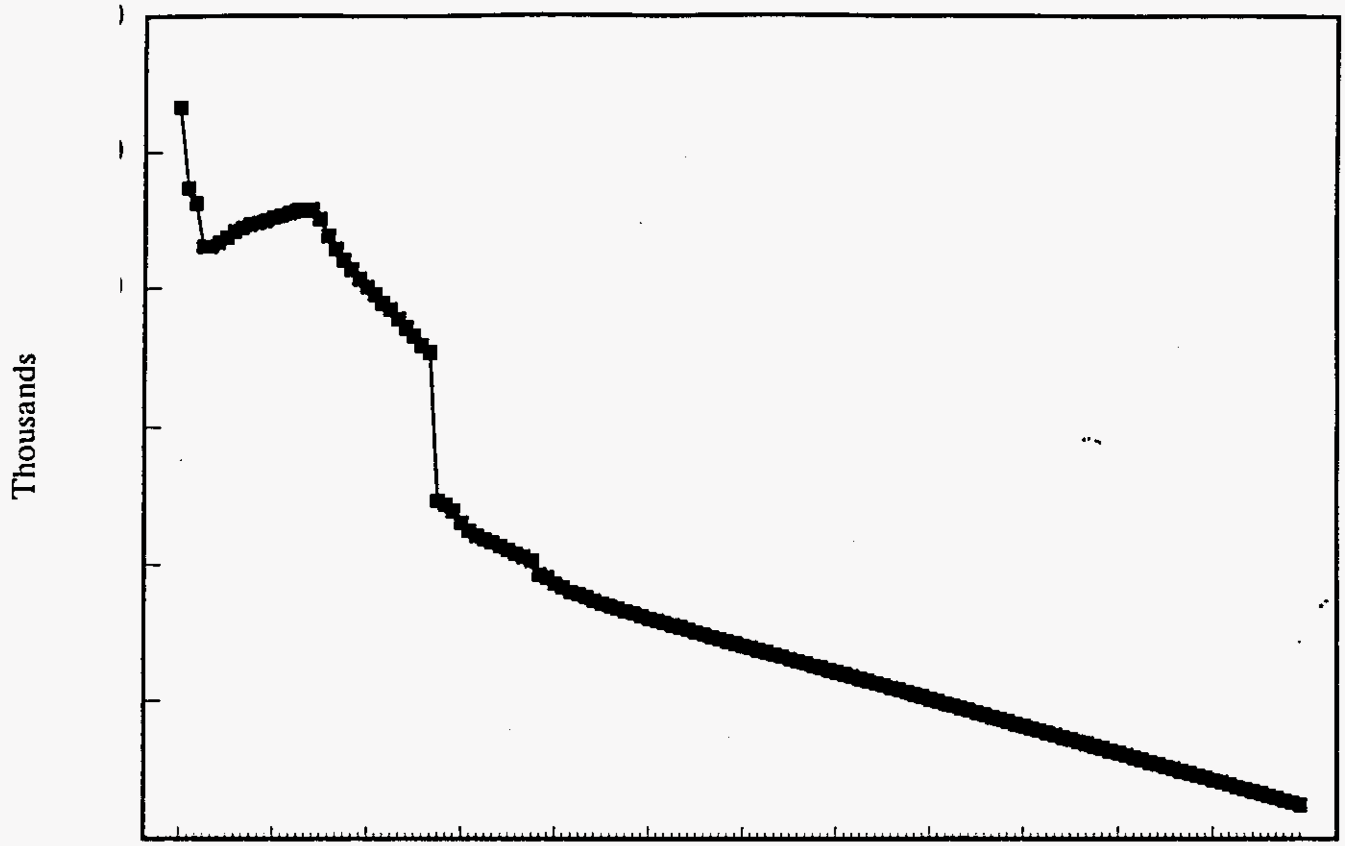
GEORGIA



F01B25Z 0000118

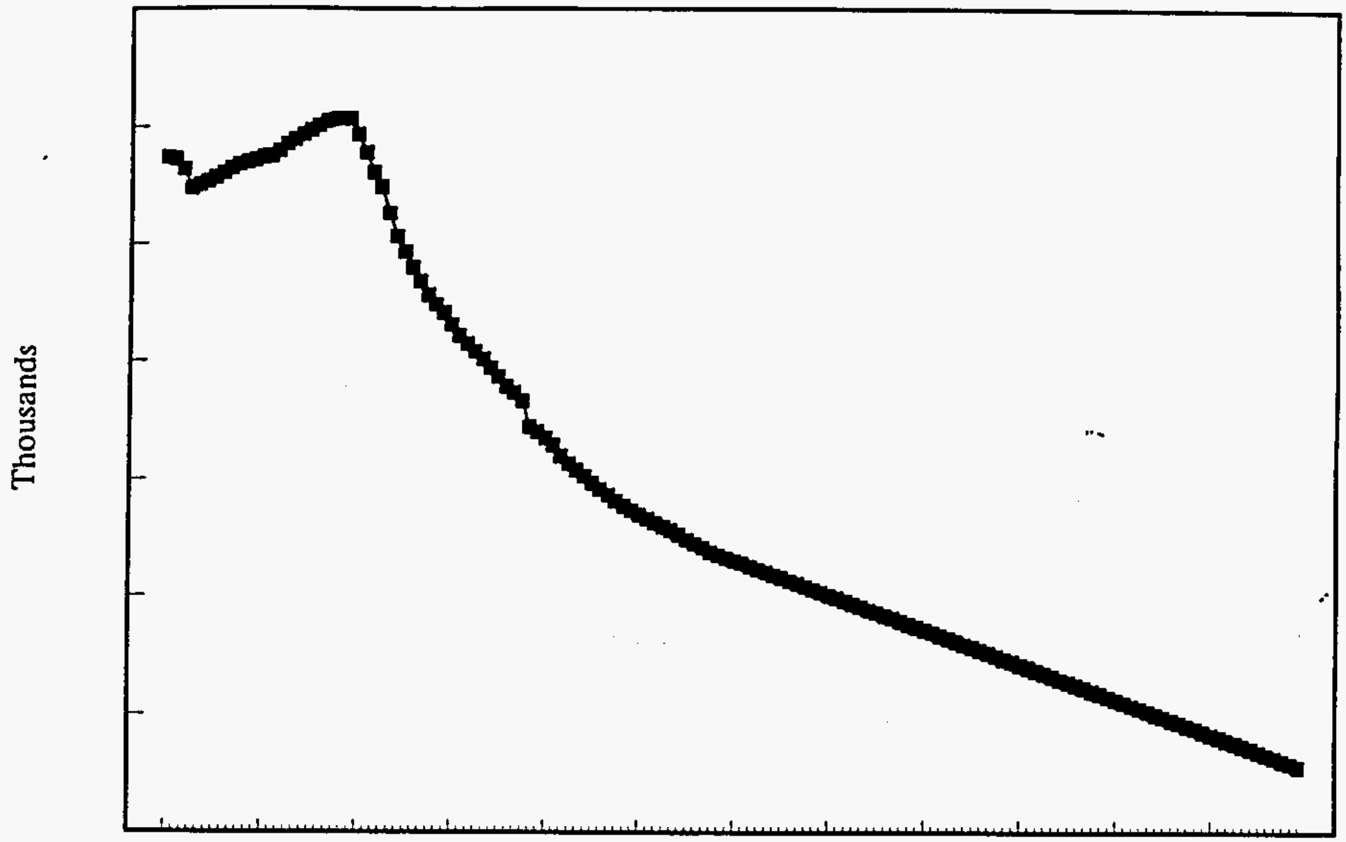
RESIDENCE + BUSINESS WMR

NORTH CAROLINA



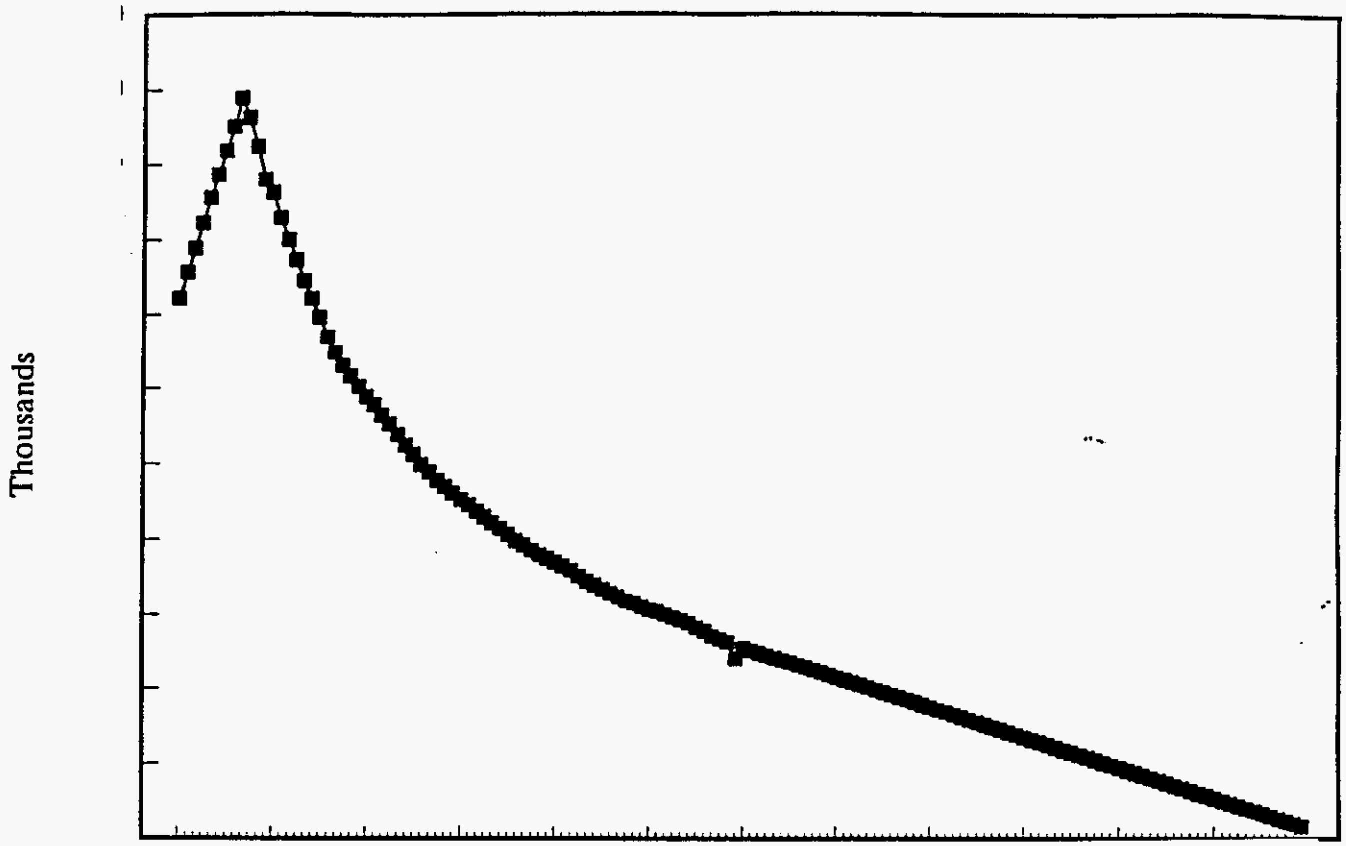
RESIDENCE + BUSINESS WMR

SOUTH CAROLINA



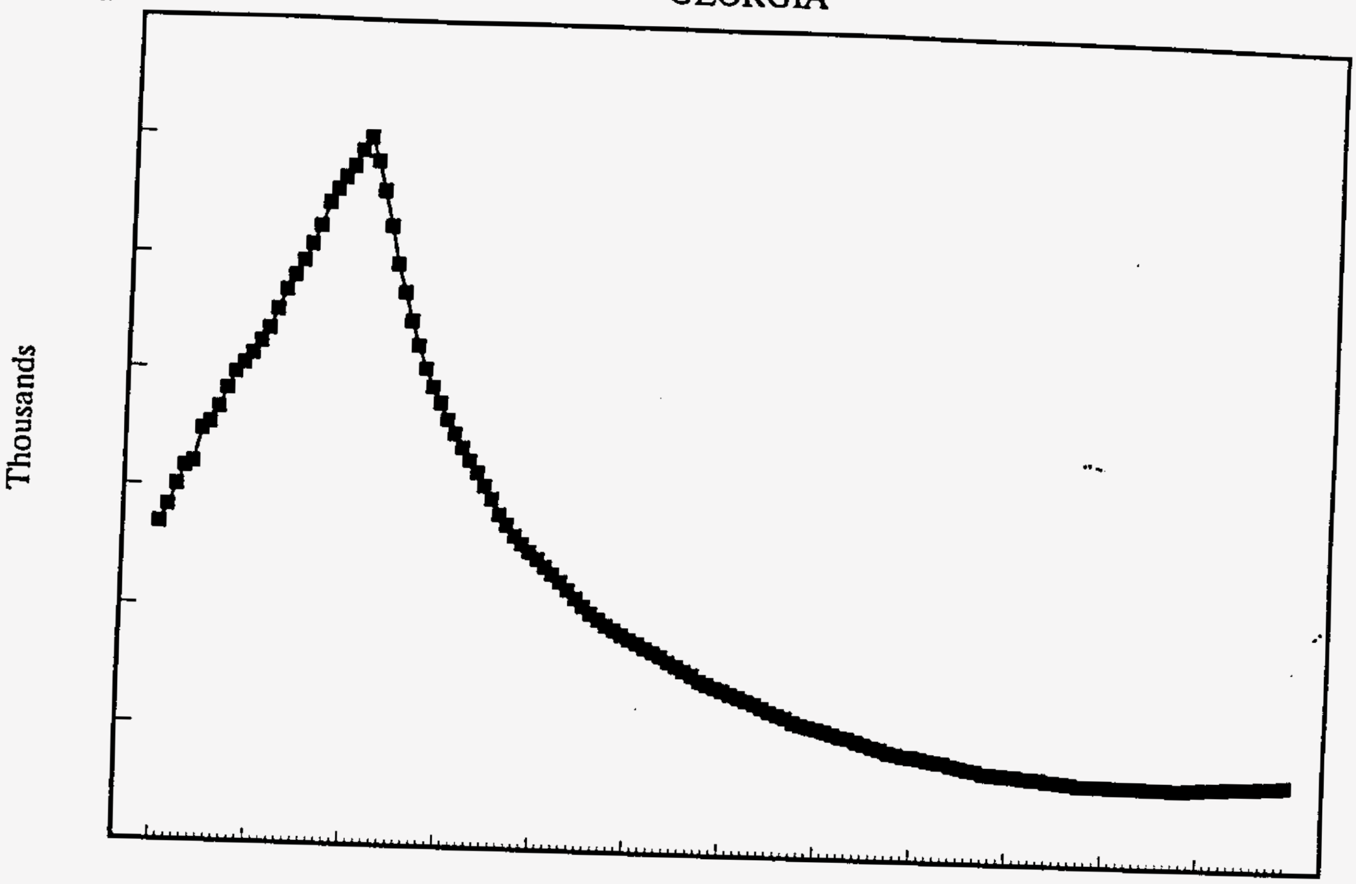
RESIDENCE + BUSINESS WMQ

FLORIDA



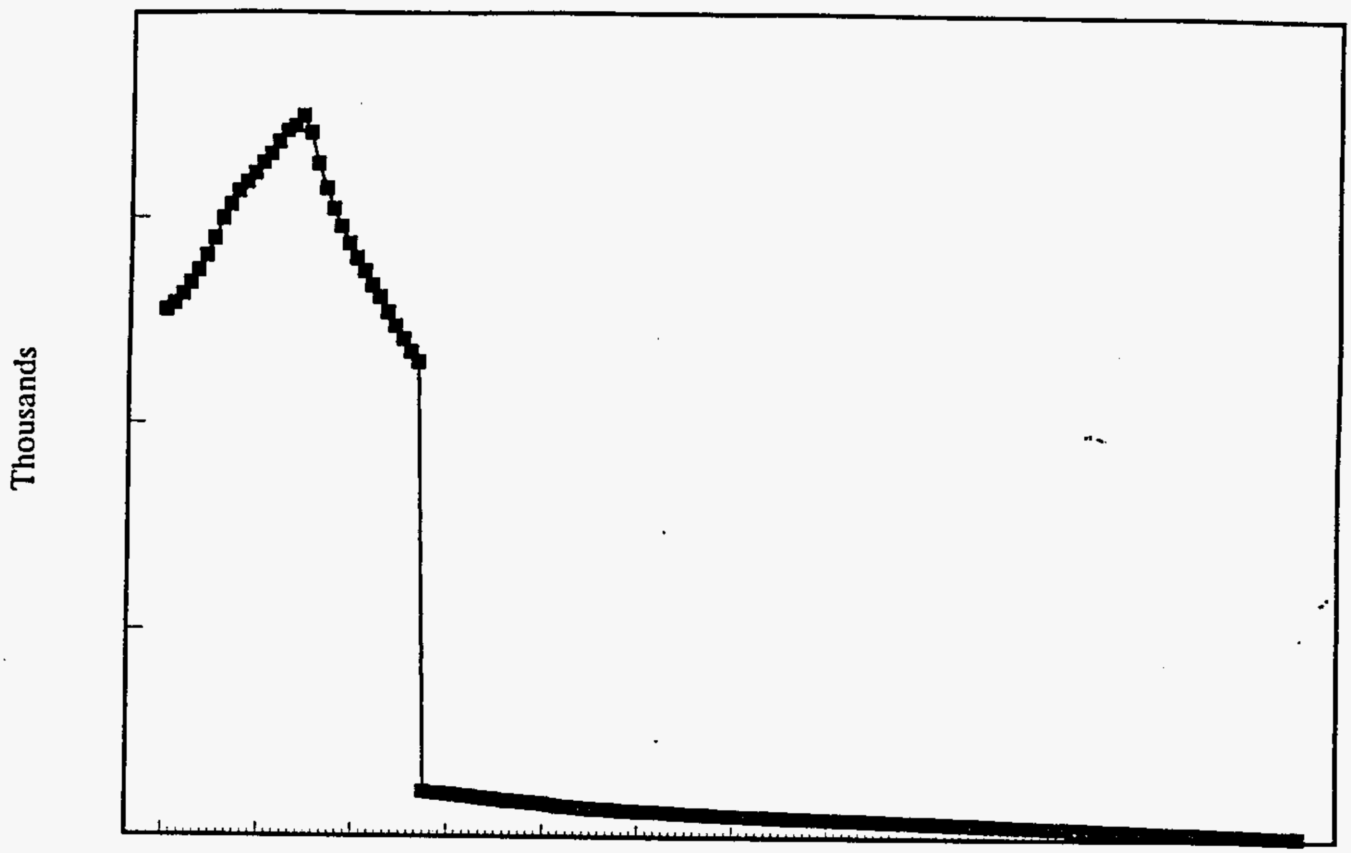
RESIDENCE + BUSINESS WMQ

GEORGIA



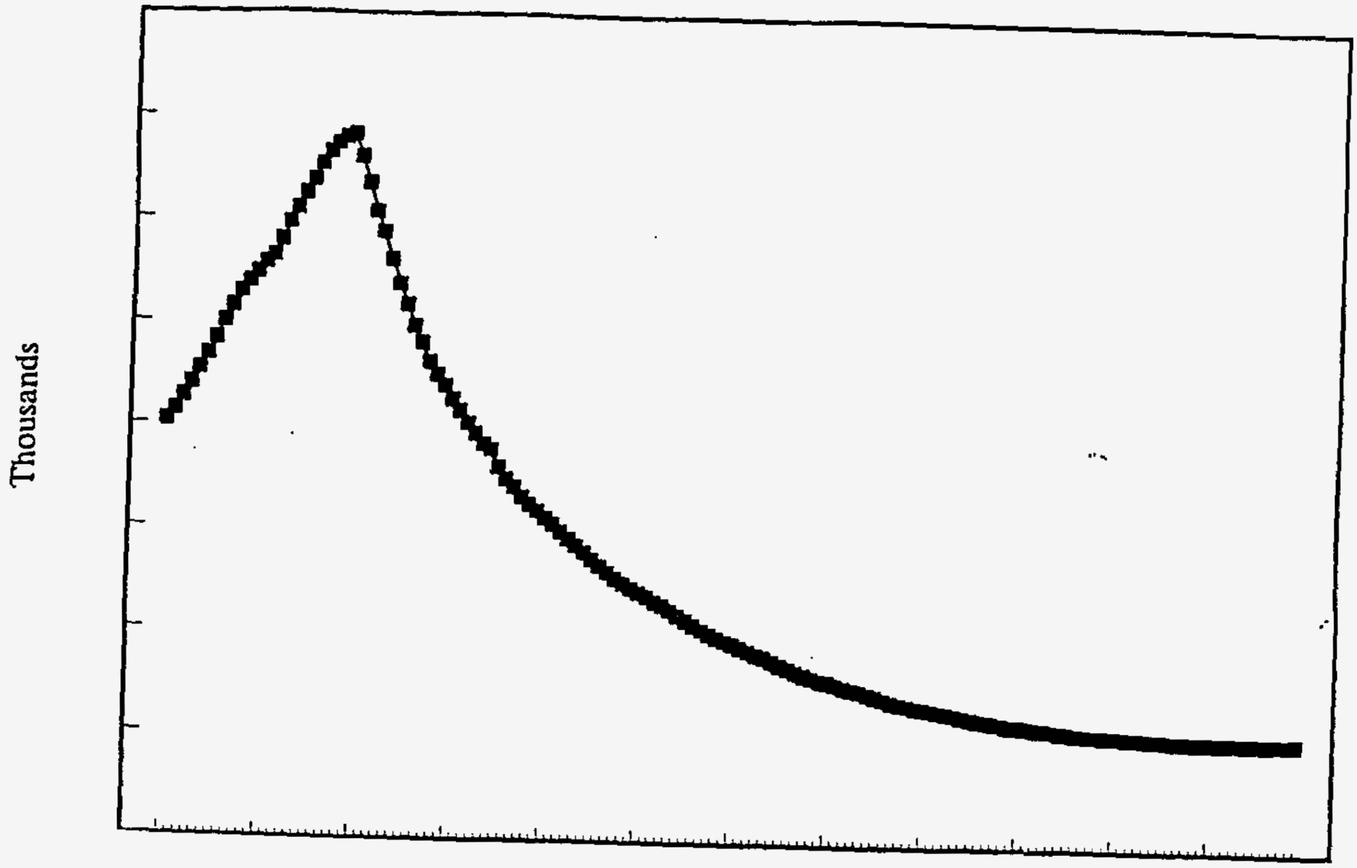
RESIDENCE + BUSINESS WMQ

NORTH CAROLINA



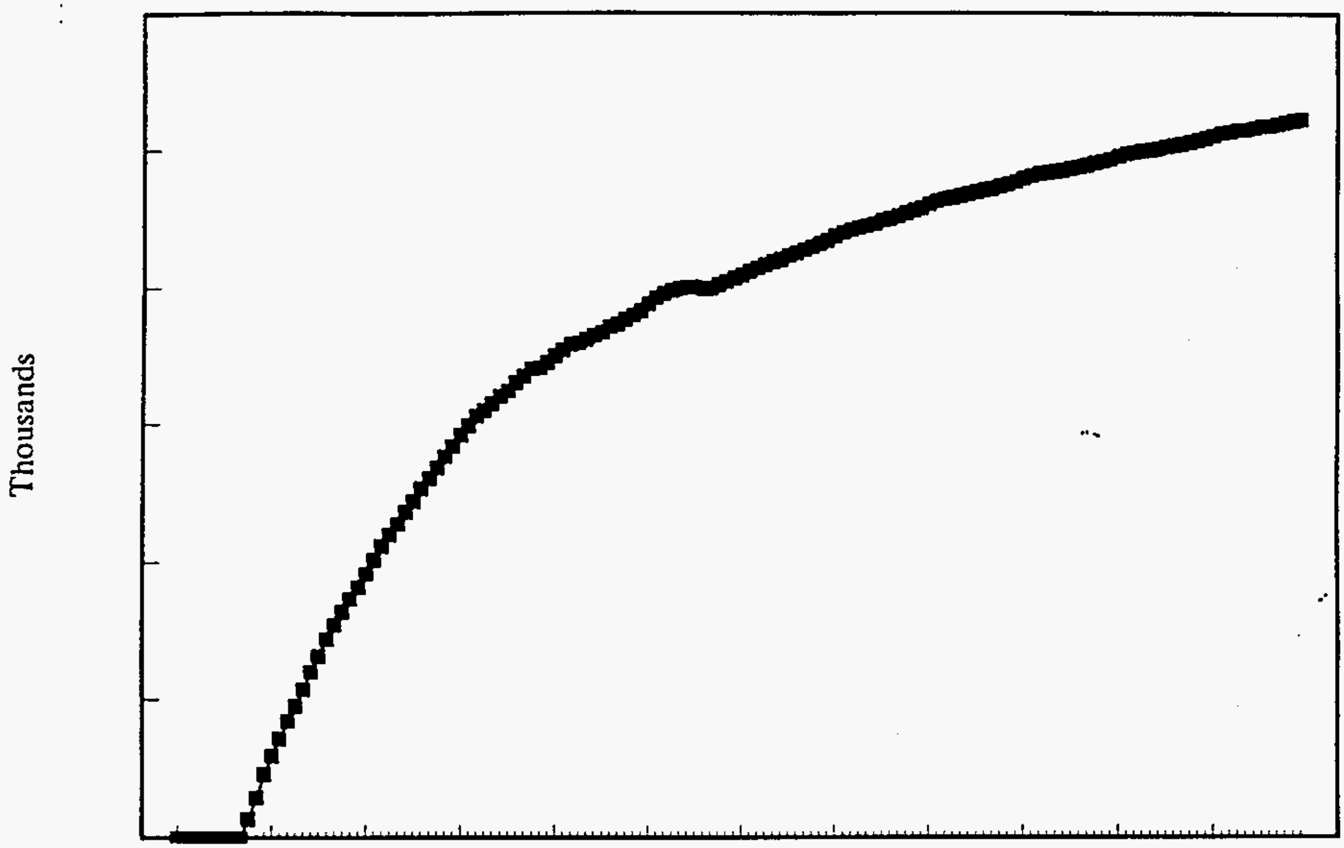
RESIDENCE + BUSINESS WMQ

SOUTH CAROLINA



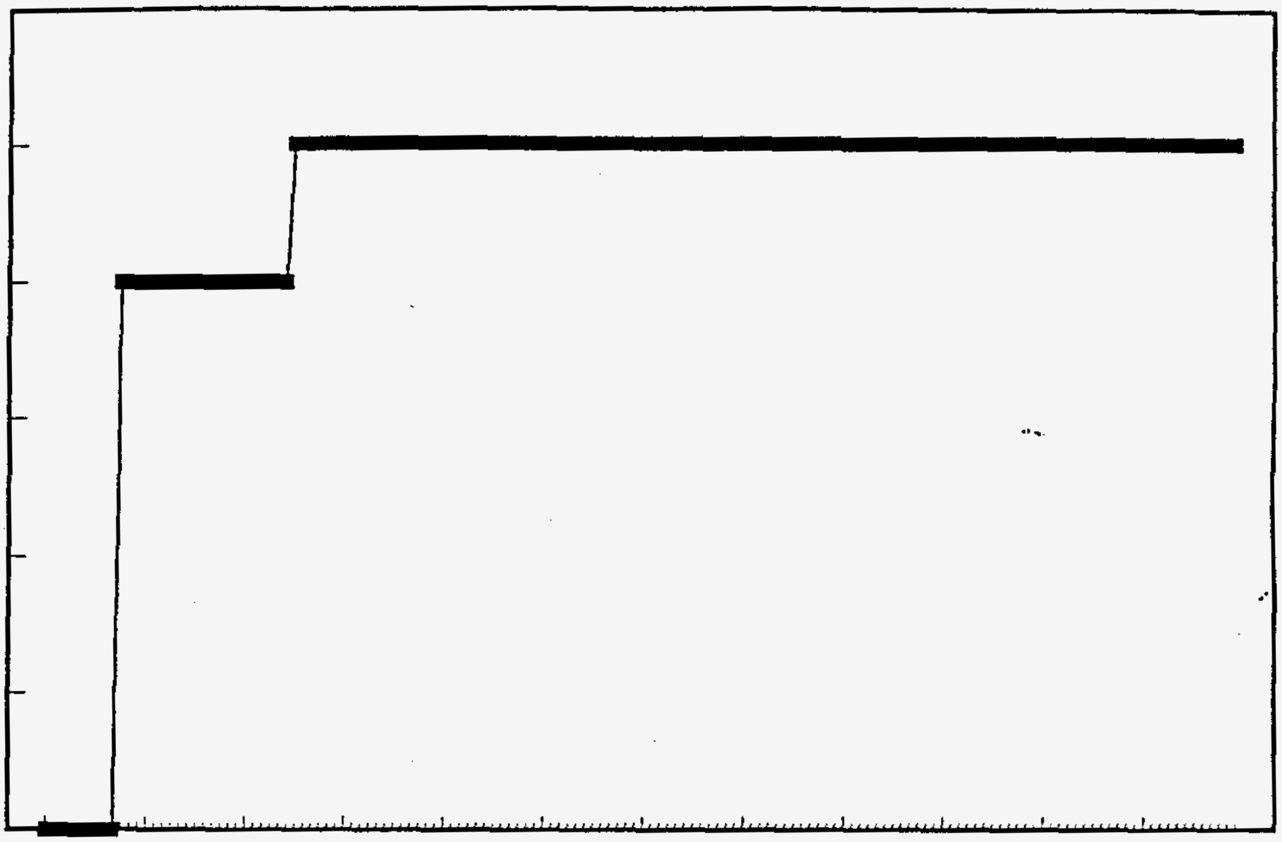
RESIDENCE + BUSINESS SEQ1X

FLORIDA



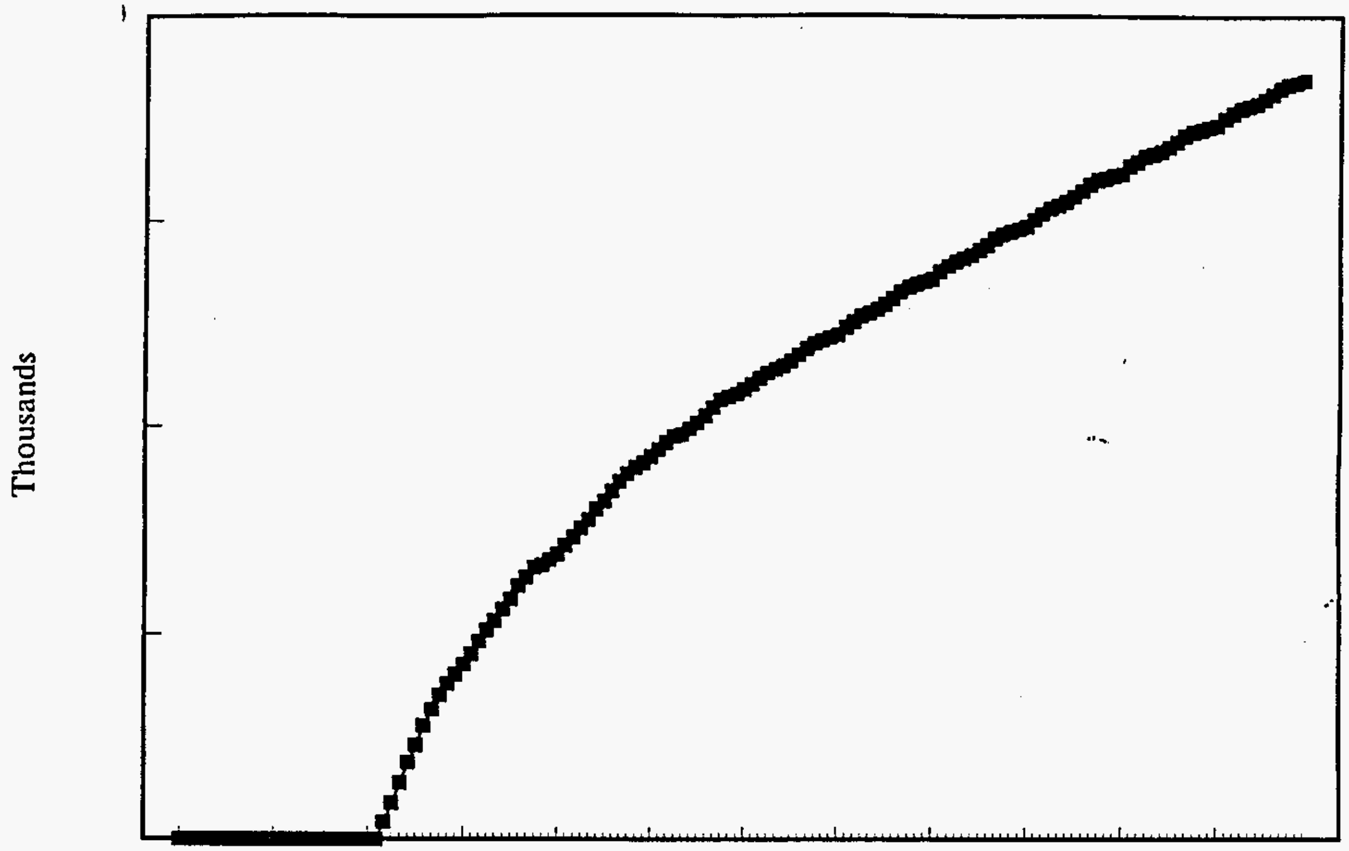
RESIDENCE + BUSINESS SEQ1X

FLORIDA MONTHLY CHARGE



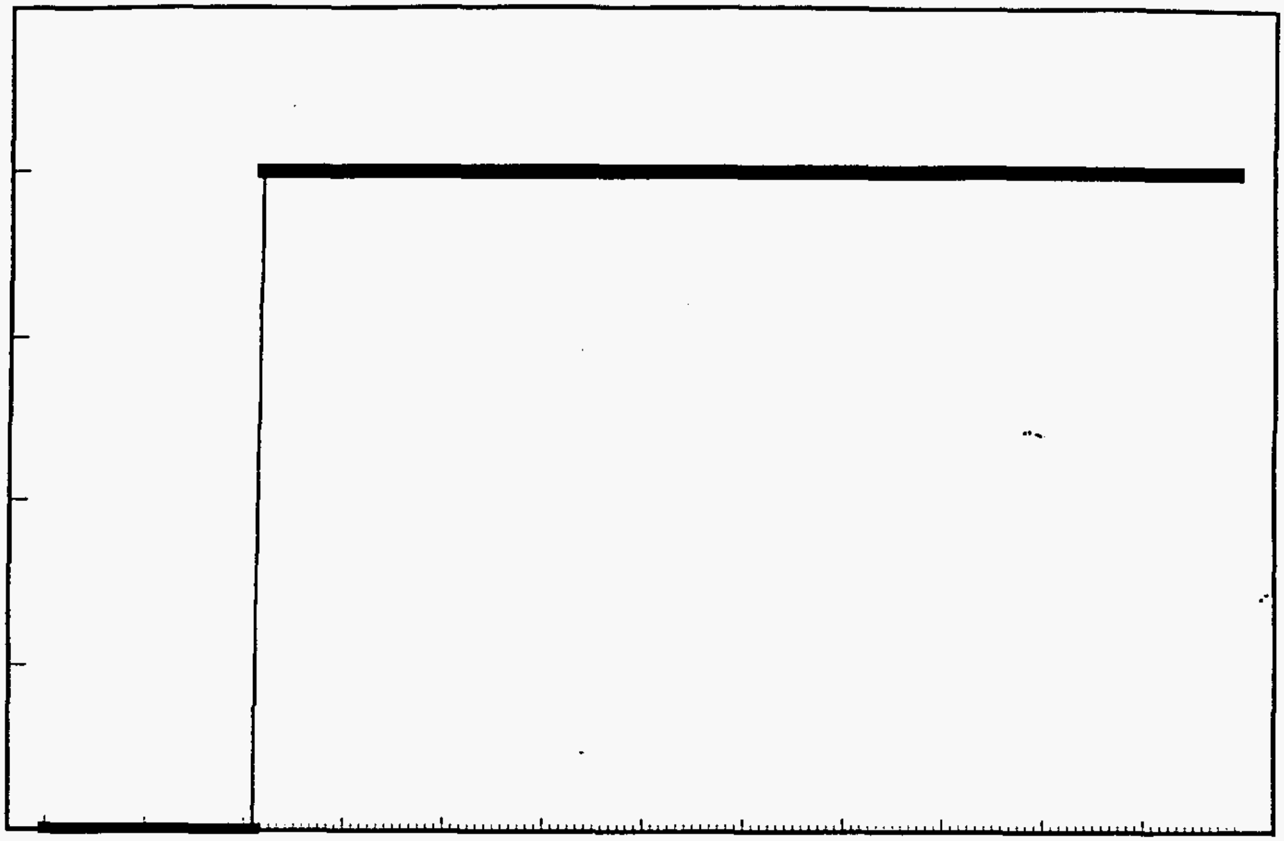
RESIDENCE + BUSINESS SEQ1X

GEORGIA



RESIDENCE + BUSINESS SEQ1X

GEORGIA MONTHLY CHARGE

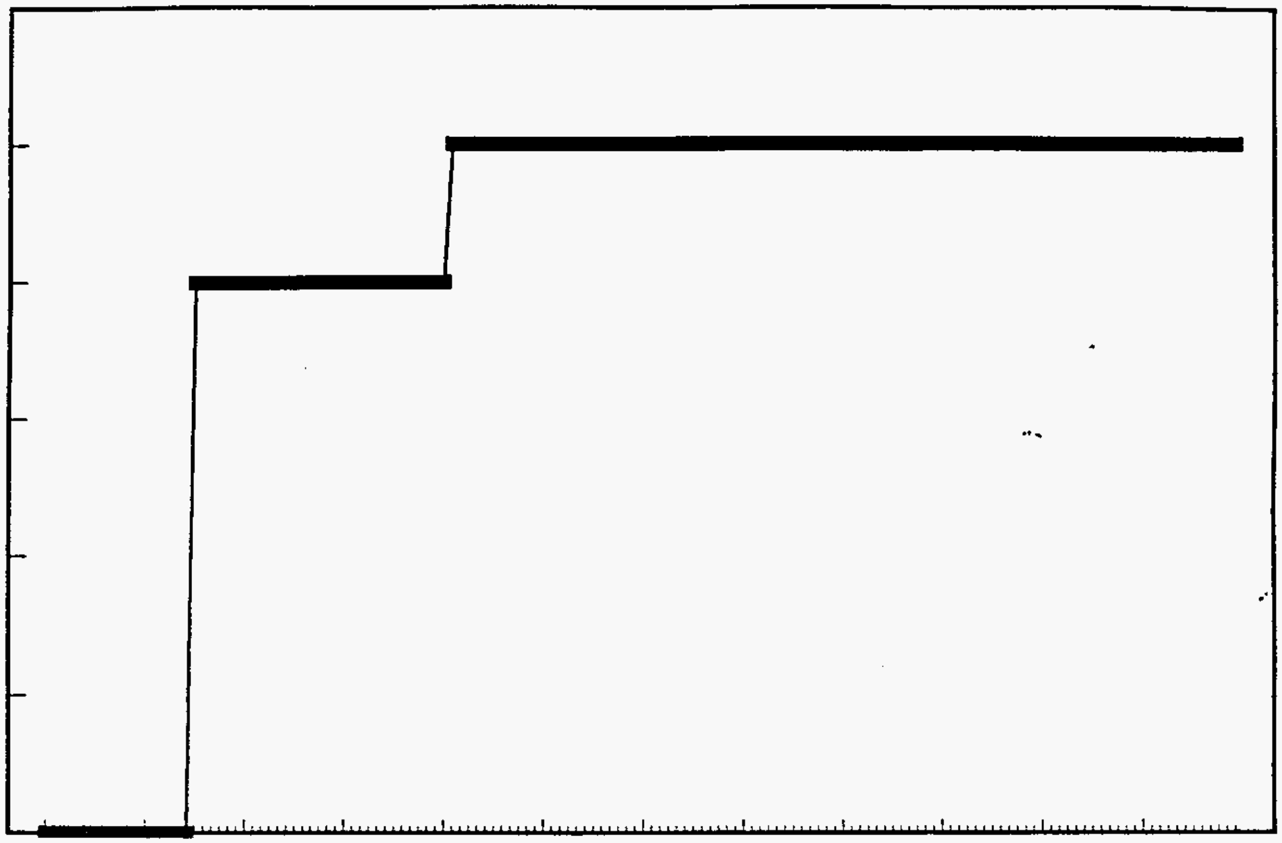


RESIDENCE + BUSINESS SEQ1X

NORTH CAROLINA

RESIDENCE + BUSINESS SEQ1X

NORTH CAROLINA MONTHLY CHARGE

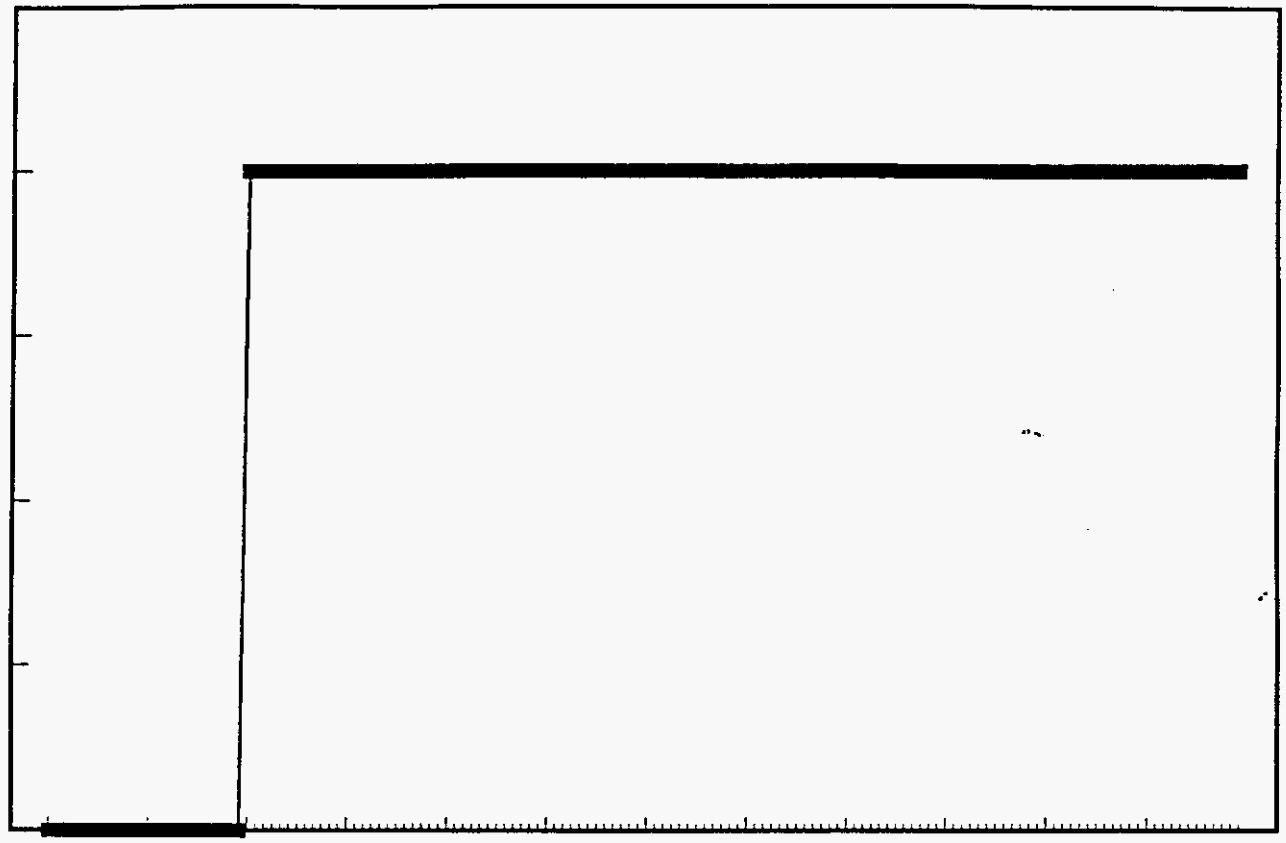


RESIDENCE + BUSINESS SEQ1X

SOUTH CAROLINA

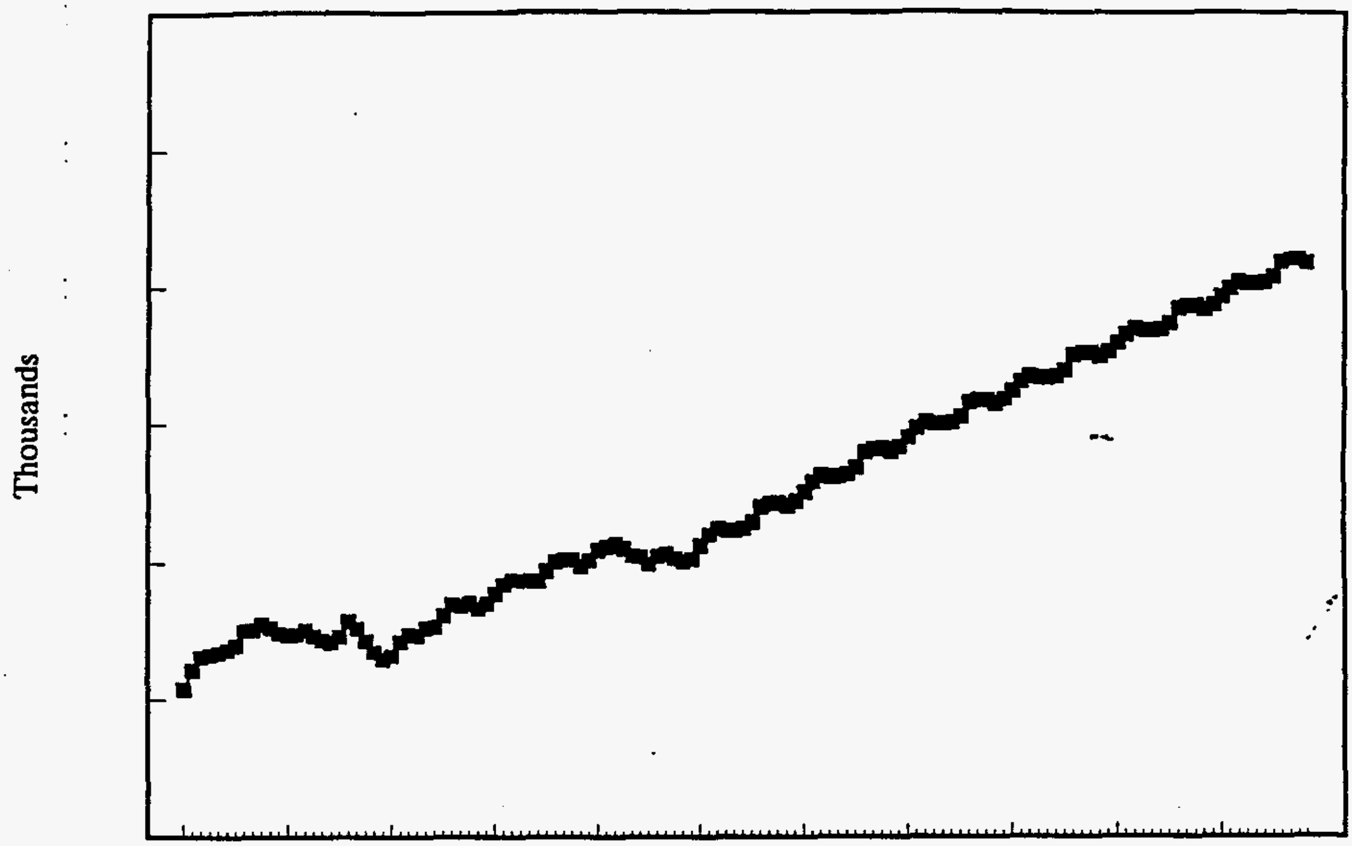
RESIDENCE + BUSINESS SEQ1X

SOUTH CAROLINA MONTHLY CHARGE



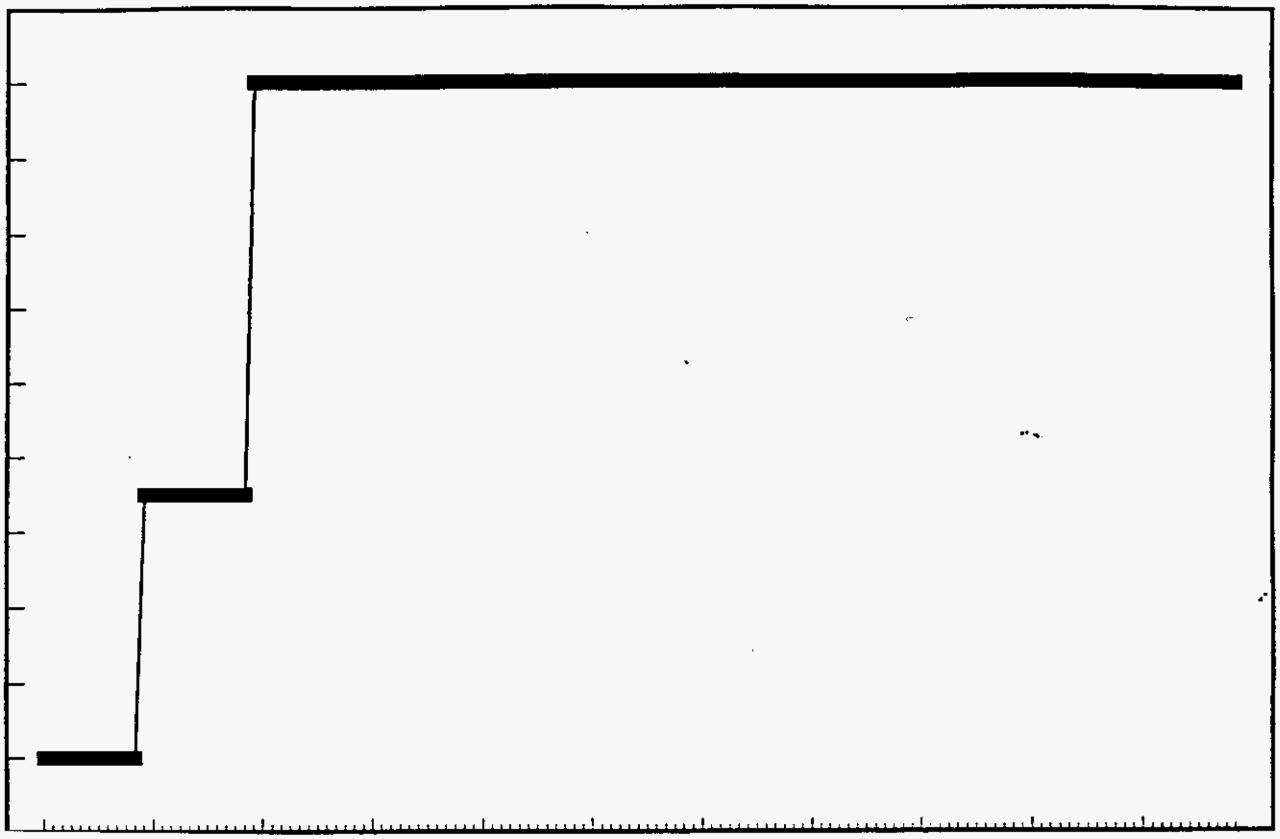
RESIDENCE SEQ1X

ALABAMA



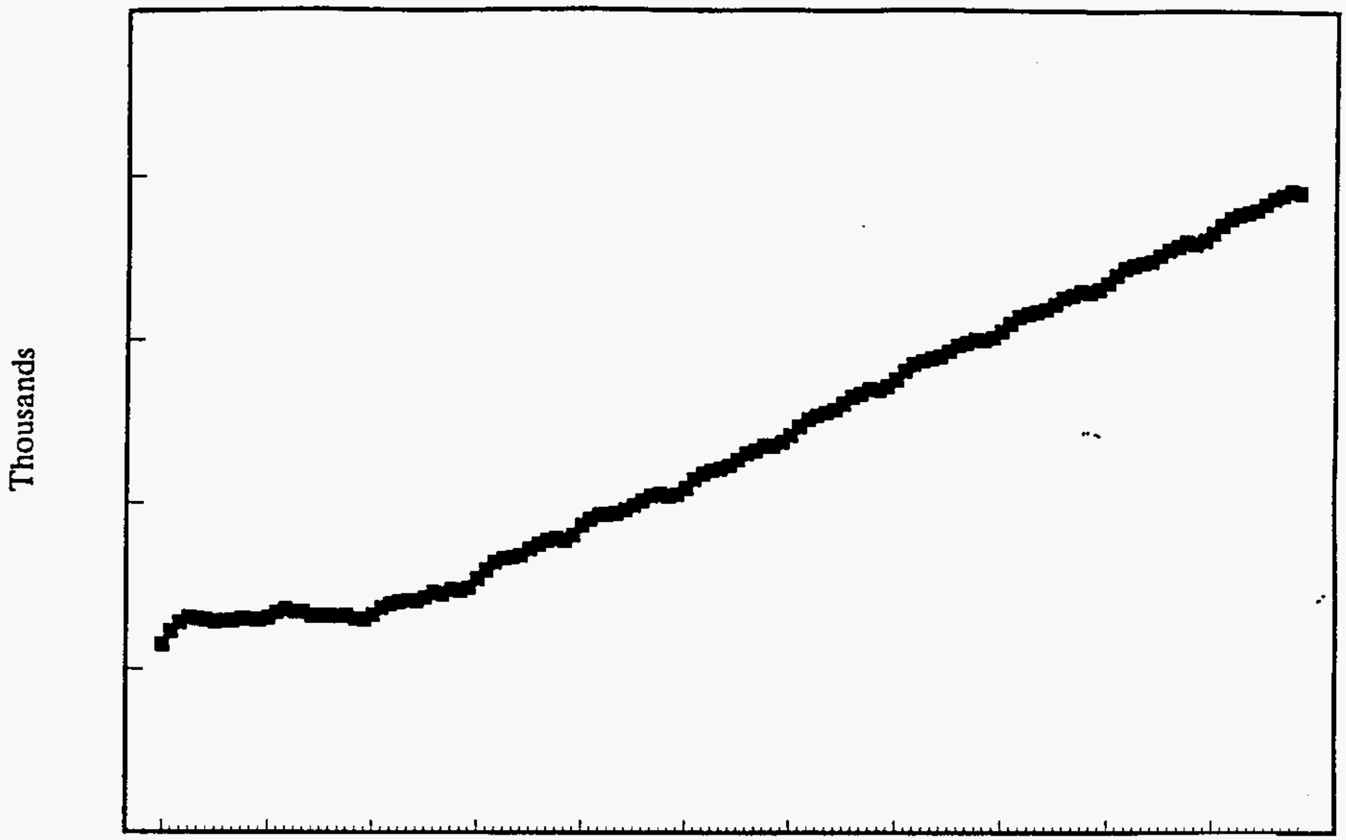
RESIDENCE SEQ1X

ALABAMA MONTHLY CHARGE



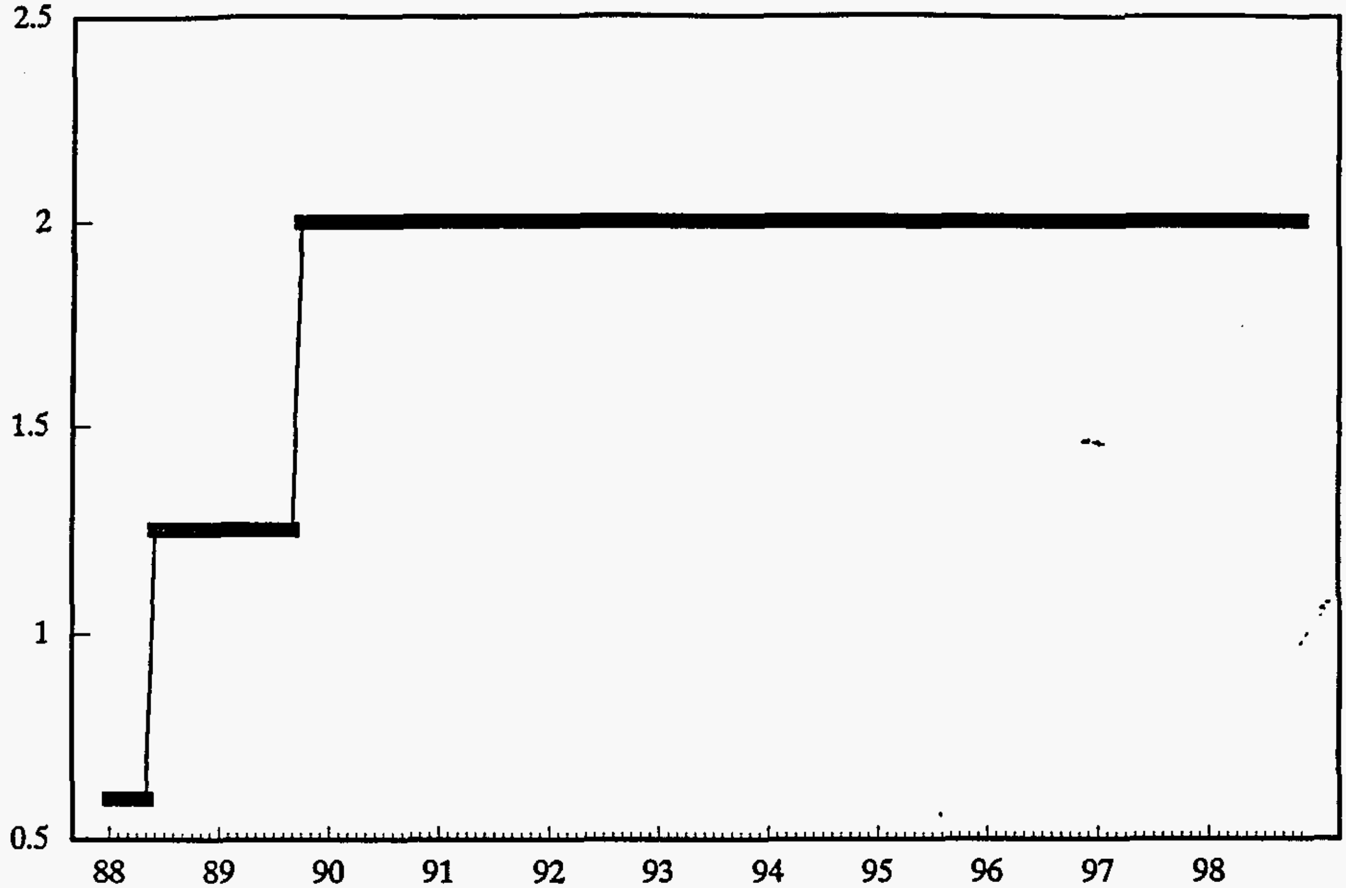
RESIDENCE SEQ1X

KENTUCKY



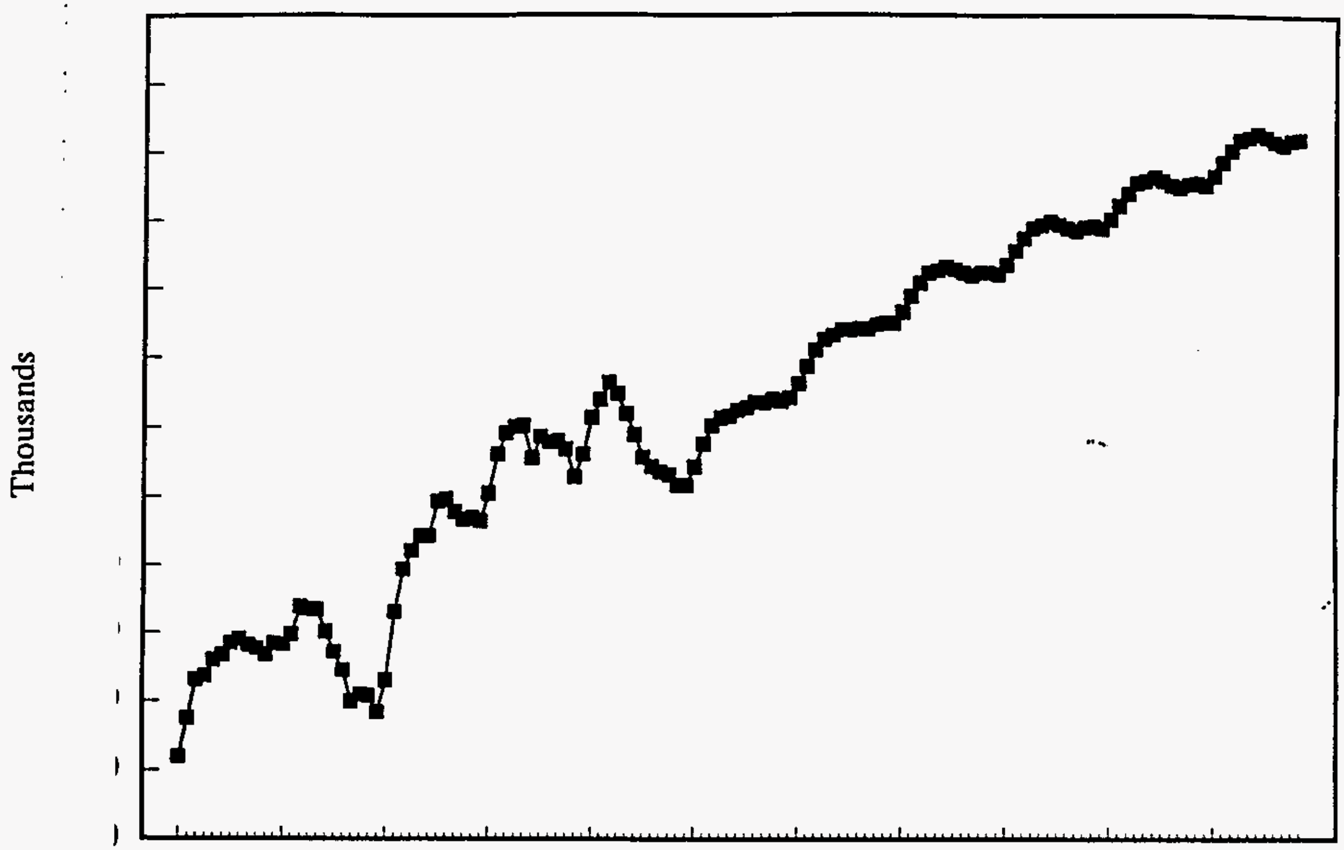
RESIDENCE SEQ1X

KENTUCKY MONTHLY CHARGE



RESIDENCE SEQ1X

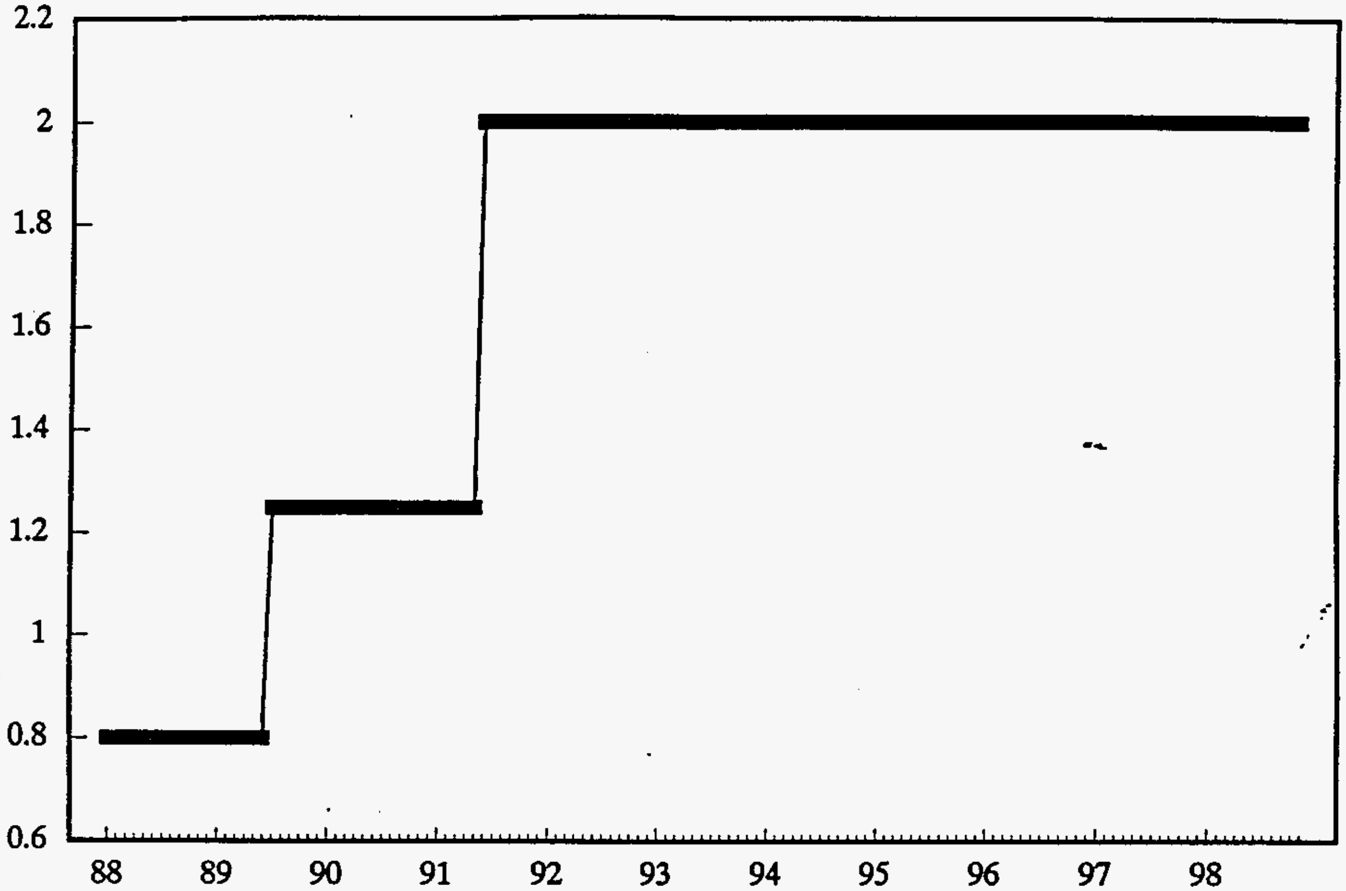
LOUISIANA



PROPRIETARY
NOT FOR USE OR DISCLOSURE OUTSIDE OF BELLSOUTH TELECOMMUNICATIONS OR ITS AFFILIATED COMPANIES EXCEPT UNDER WRITTEN AGREEMENT

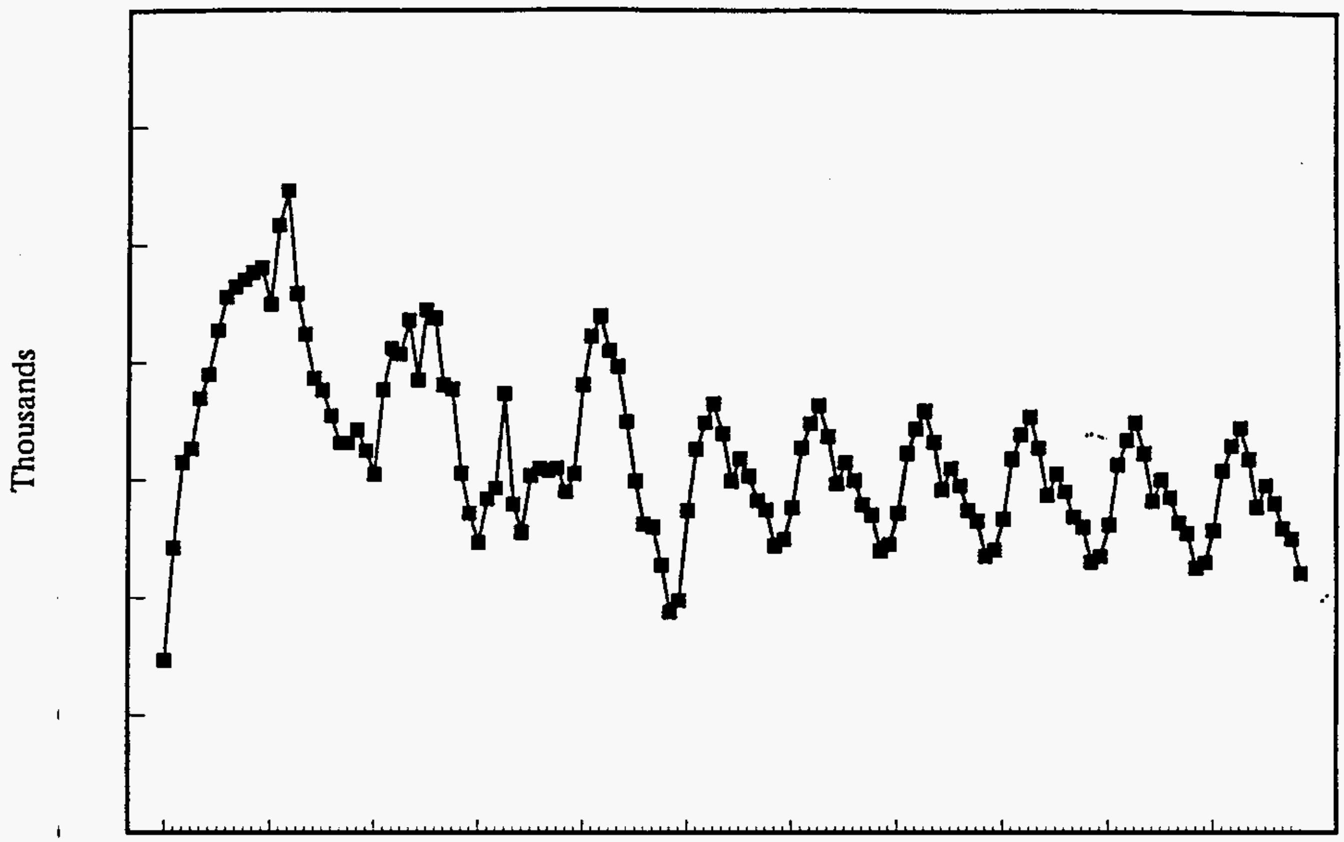
RESIDENCE SEQ1X

LOUISIANA MONTHLY CHARGE



RESIDENCE SEQ1X

MISSISSIPPI



PROPRIETARY

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COMPANIES EXCEPT UNDER WRITTEN AGREEMENT

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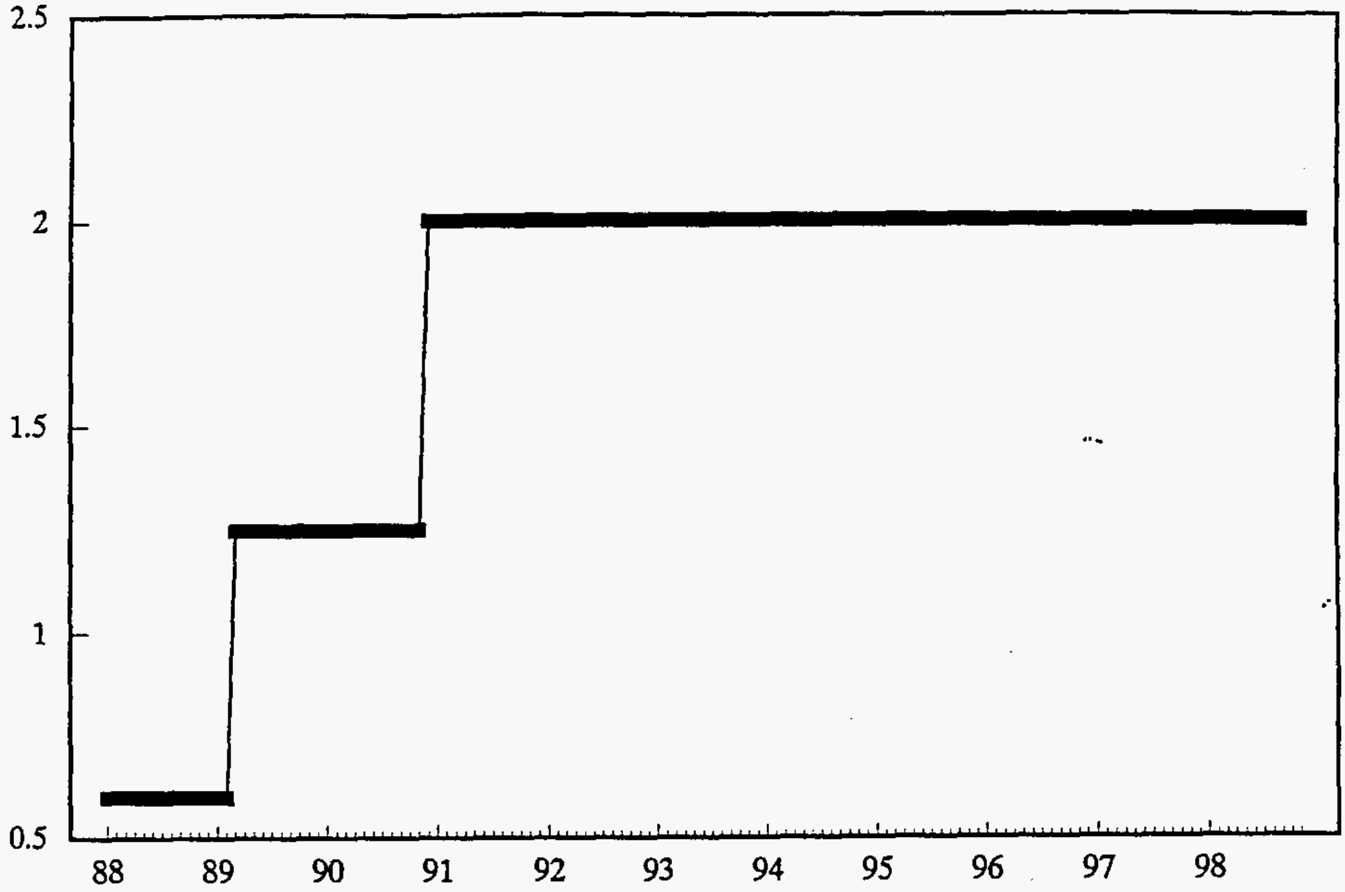
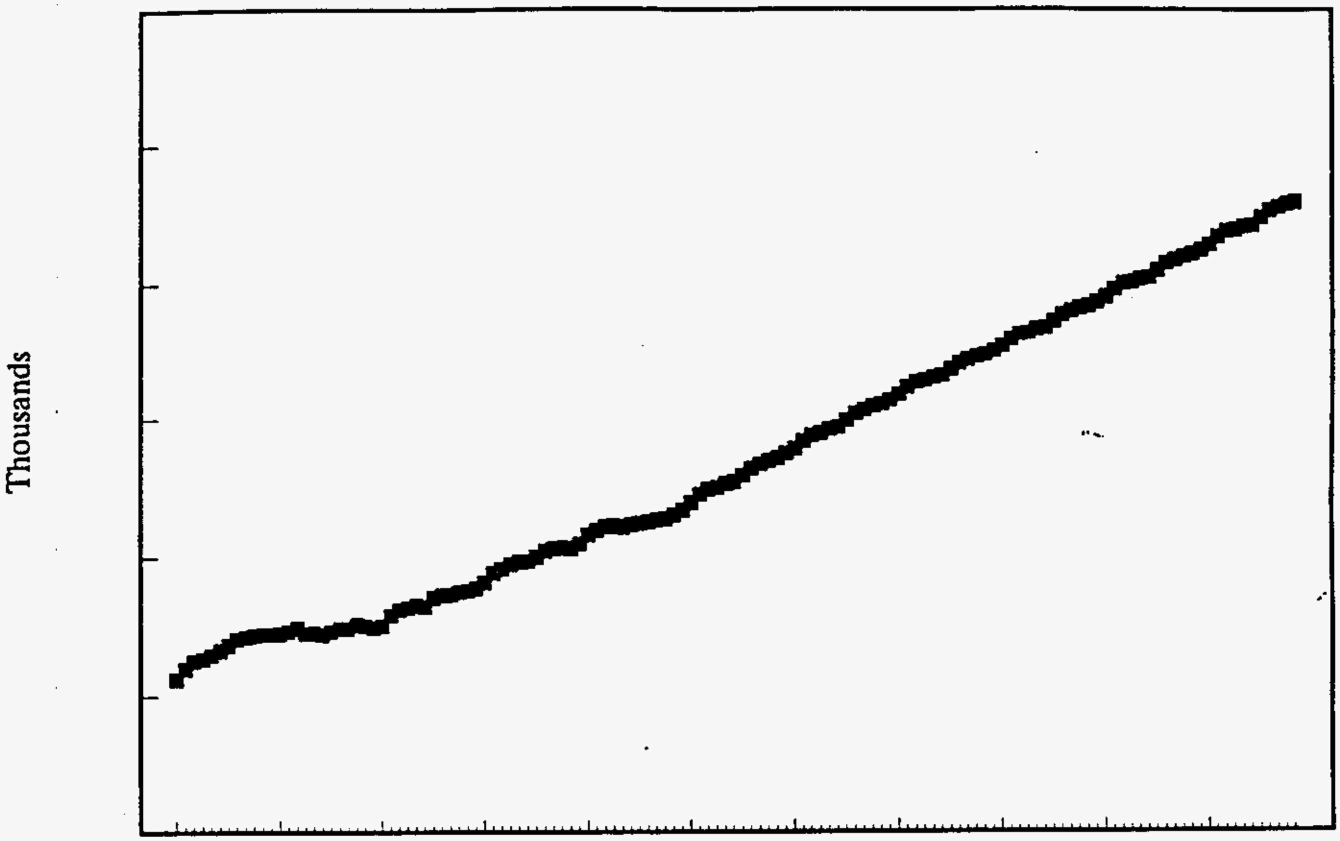
RESIDENCE SEQ1X

MISSISSIPPI MONTHLY CHARGE



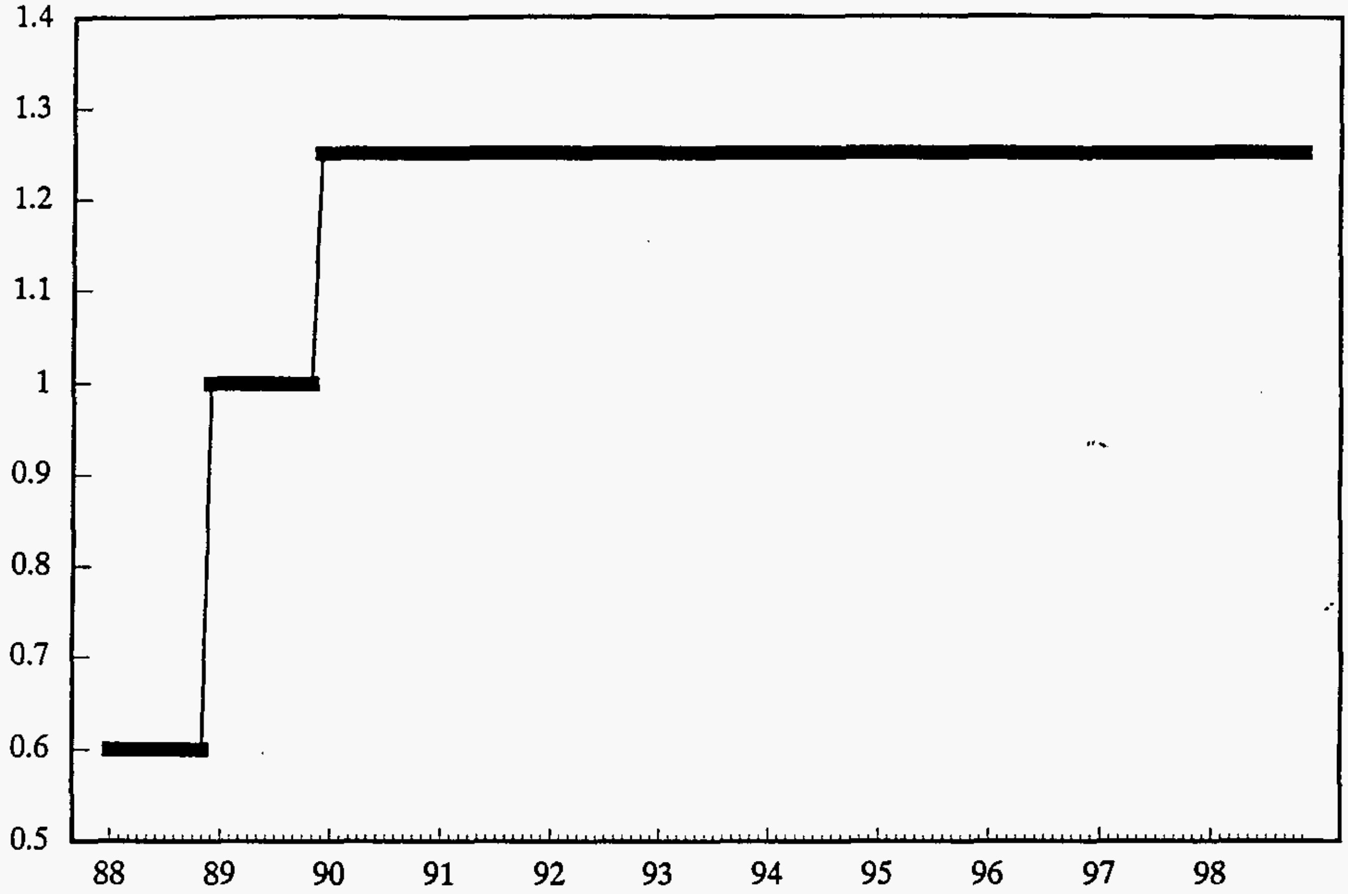
RESIDENCE SEQ1X

TENNESSEE



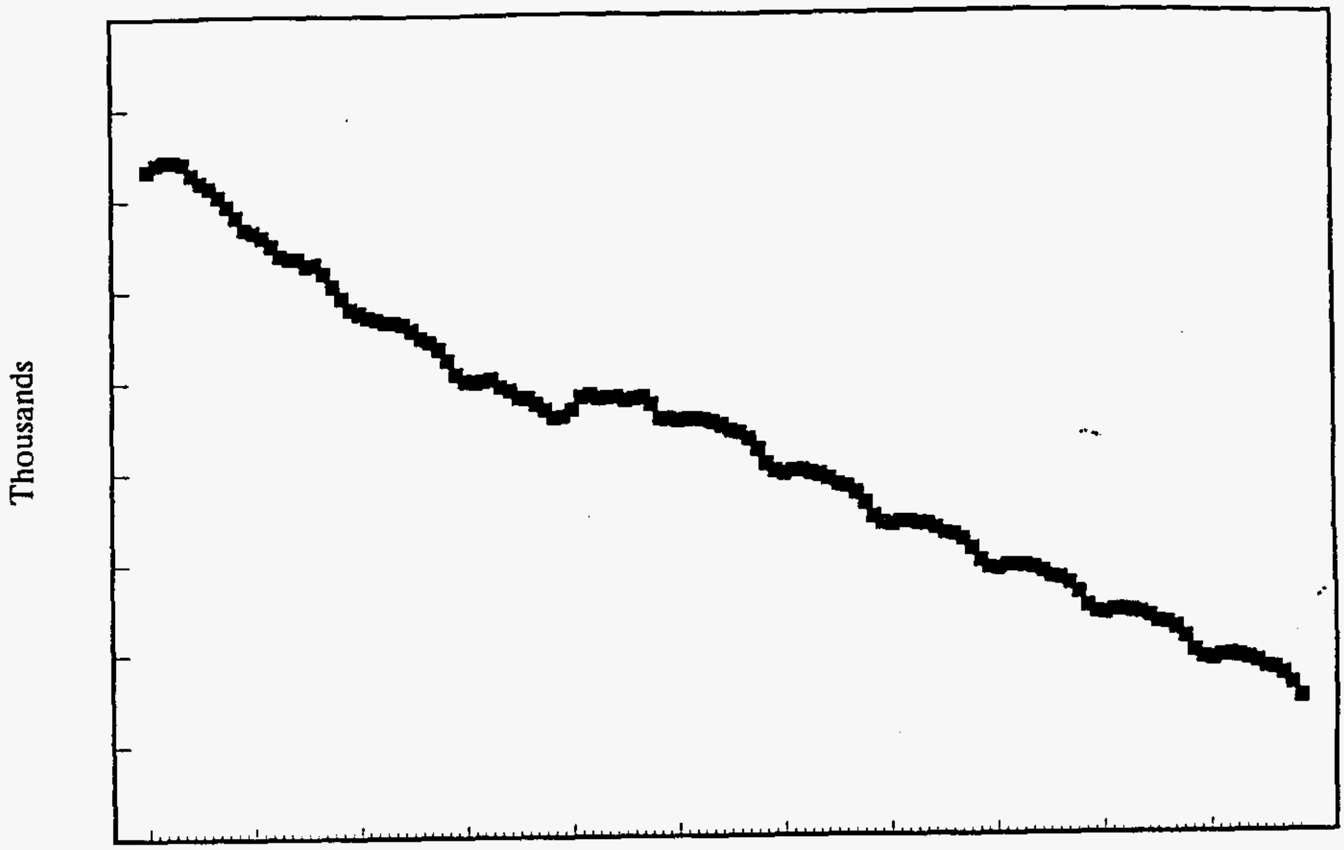
RESIDENCE SEQ1X

TENNESSEE MONTHLY CHARGE



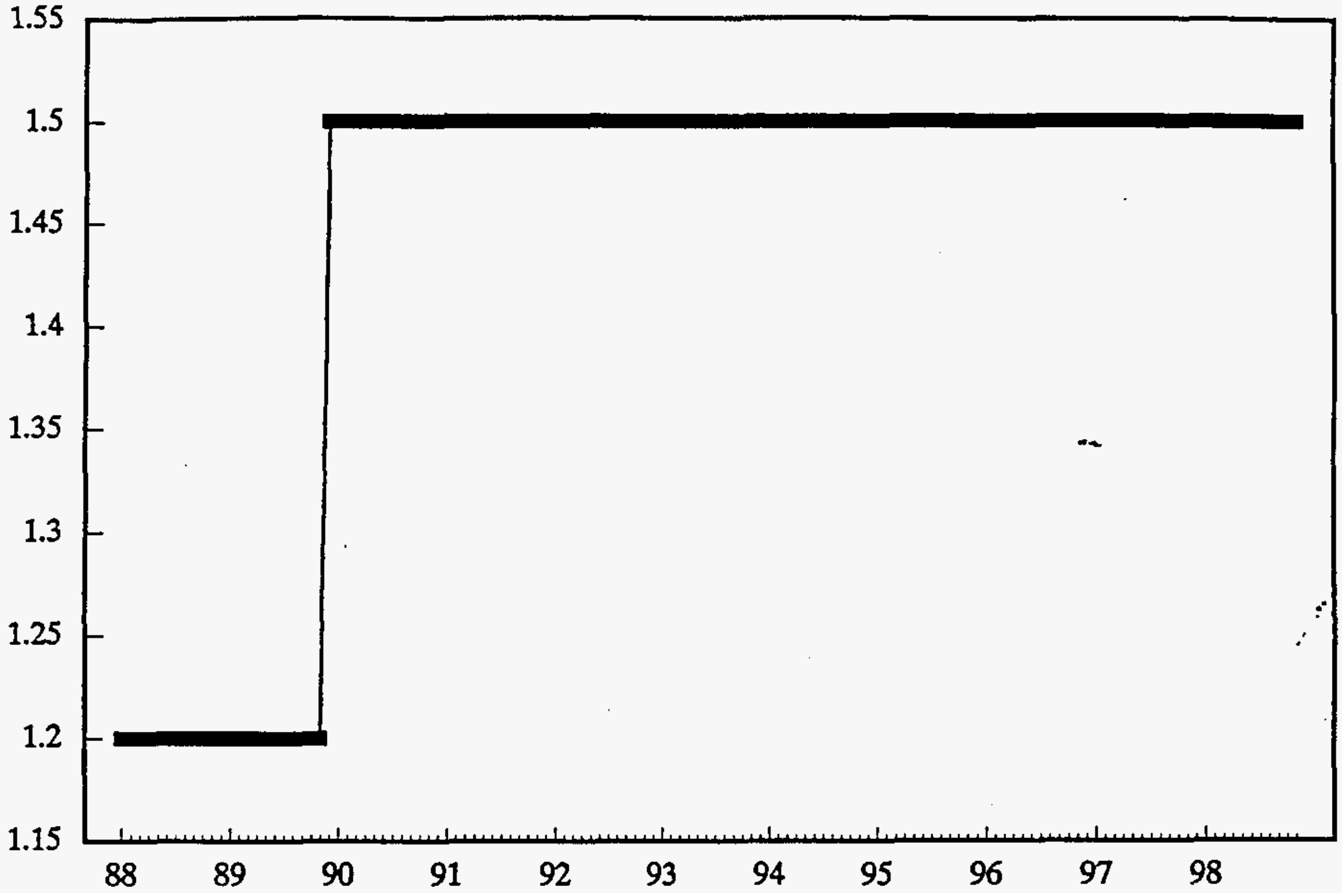
BUSINESS SEQ1X

ALABAMA



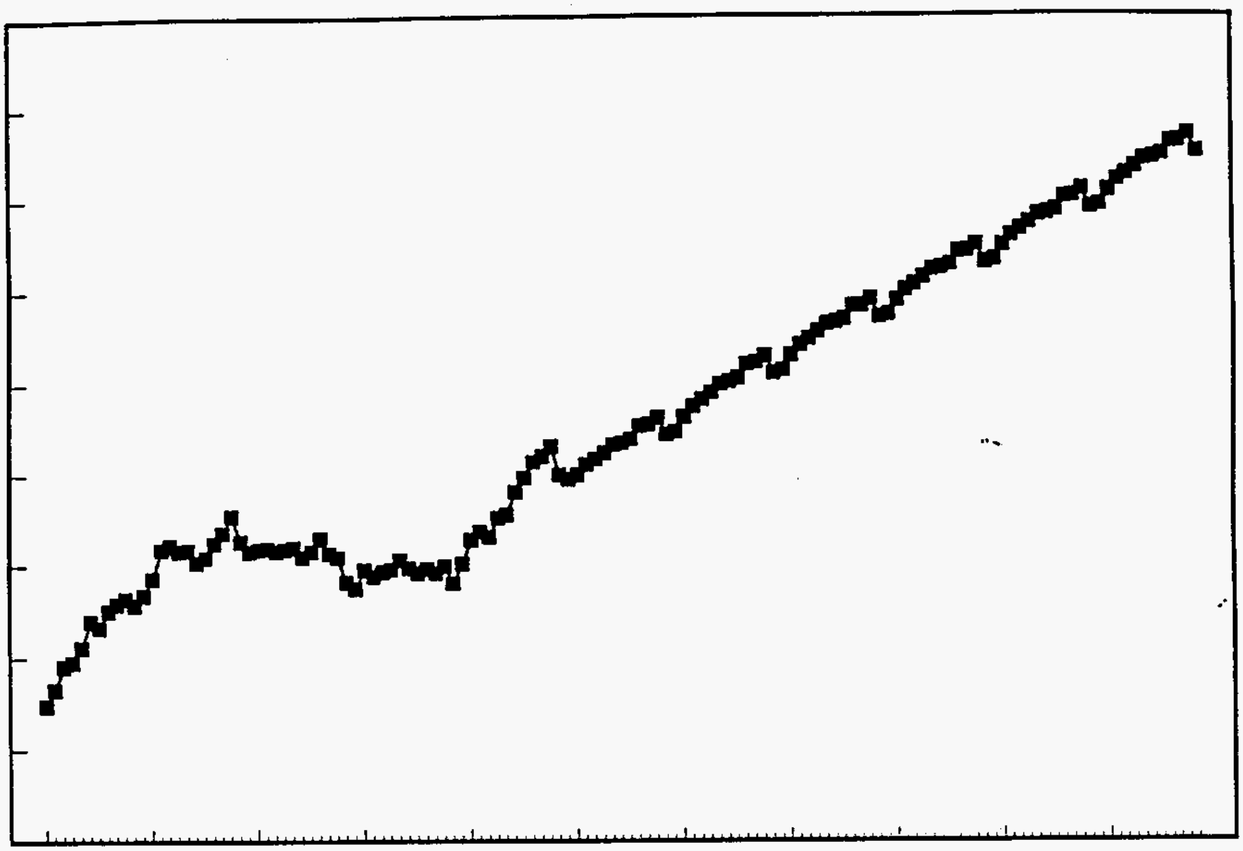
BUSINESS SEQ1X

ALABAMA MONTHLY CHARGE



BUSINESS SEQ1X

KENTUCKY



PROPRIETARY

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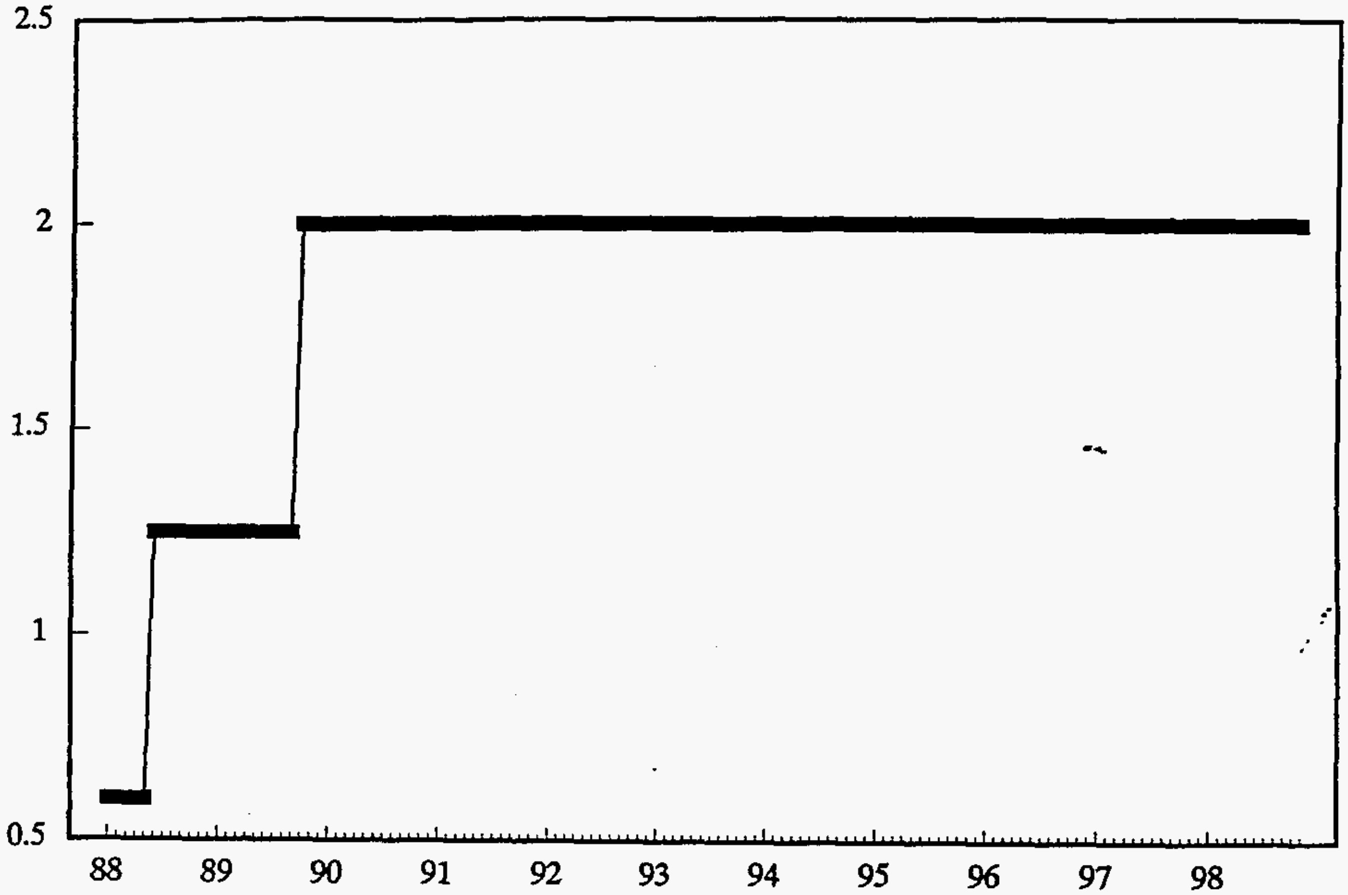
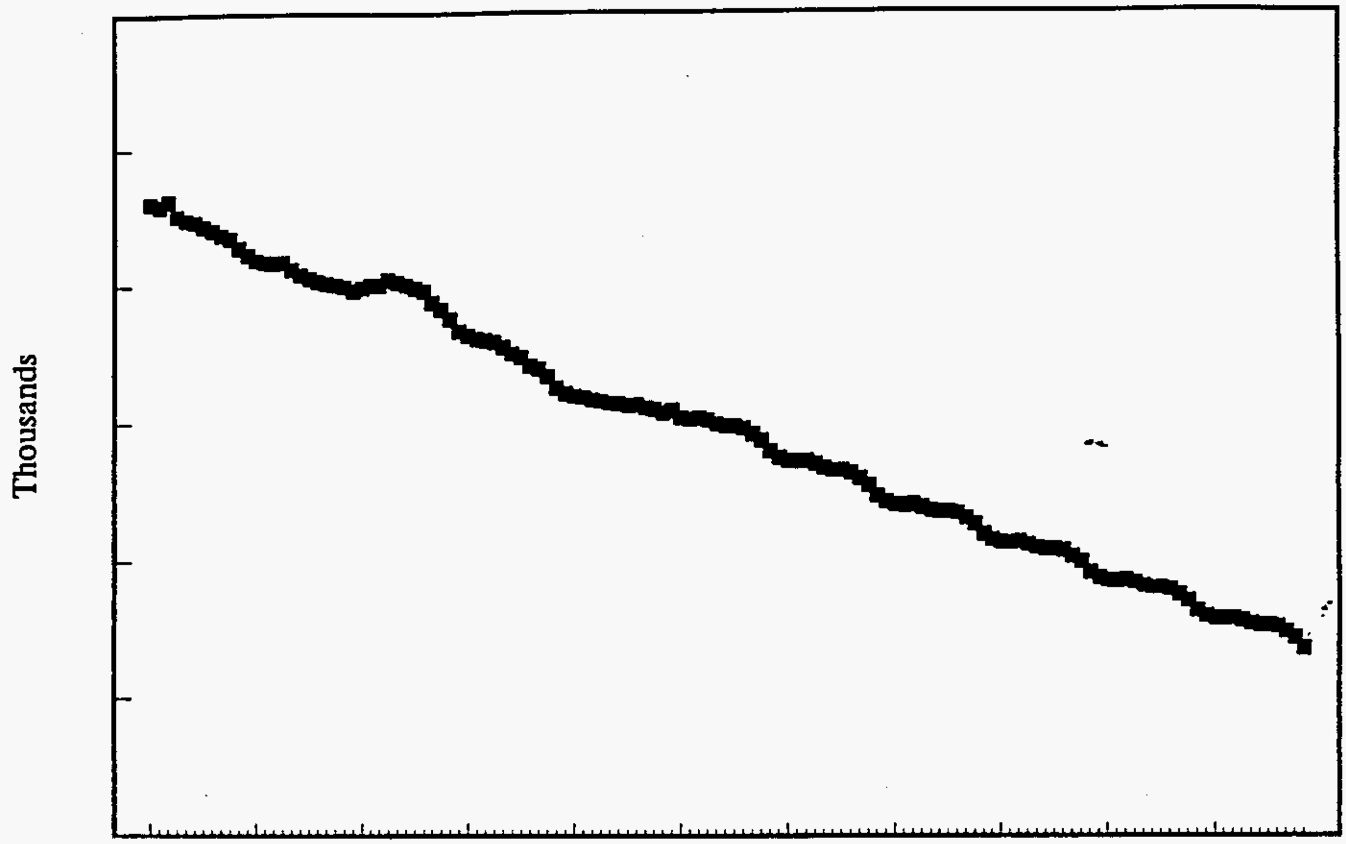
BUSINESS SEQ1X

KENTUCKY MONTHLY CHARGE



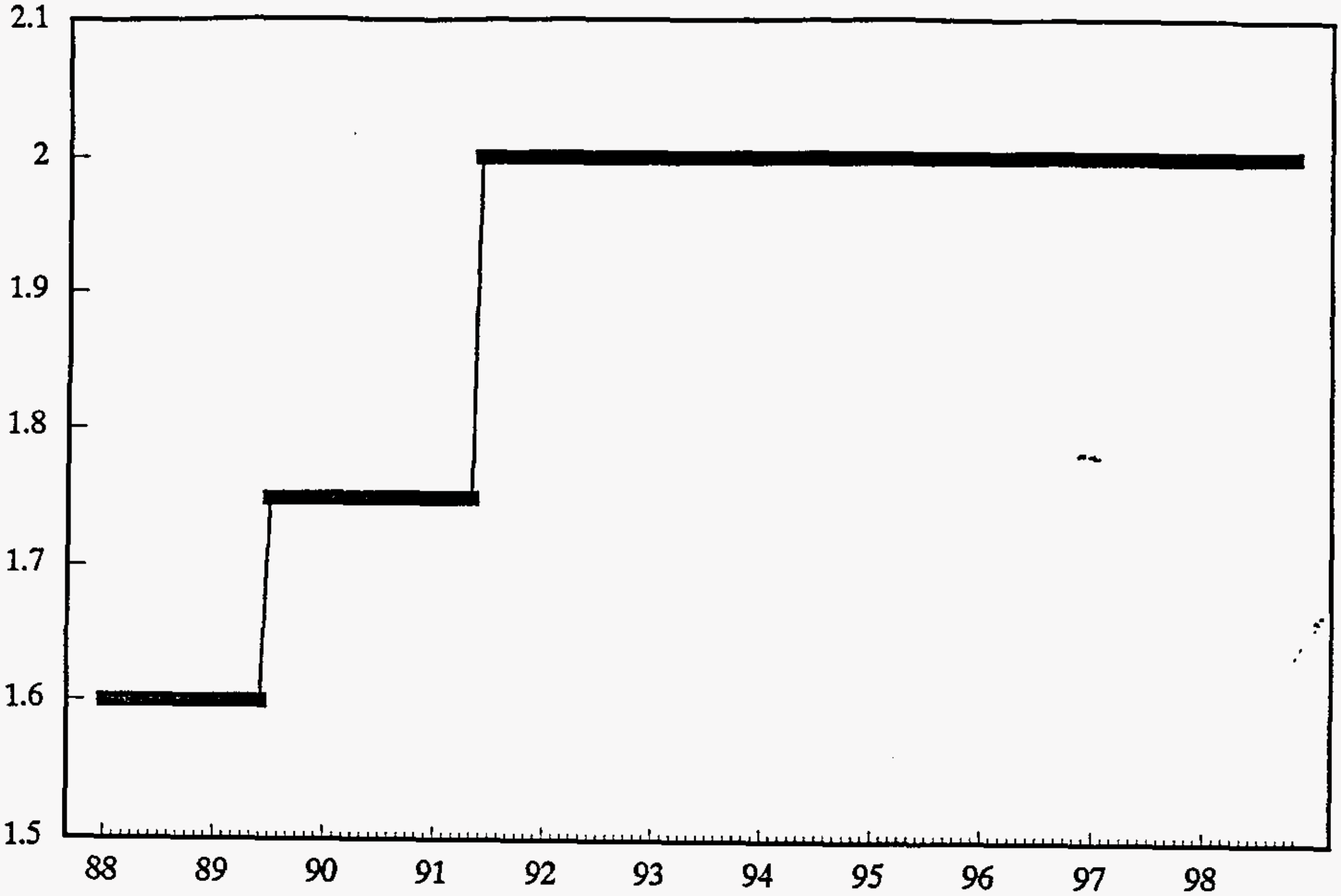
BUSINESS SEQ1X

LOUISIANA



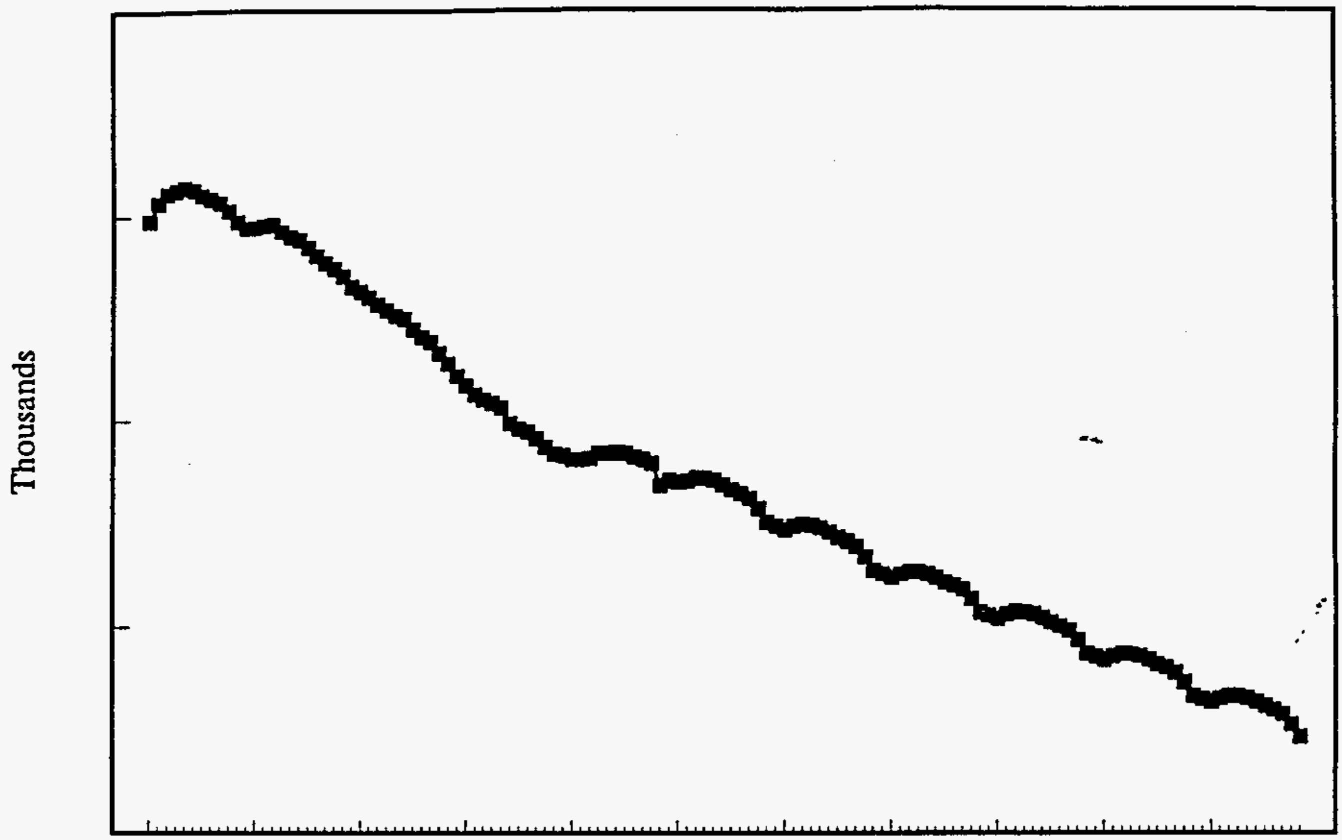
BUSINESS SEQ1X

LOUISIANA MONTHLY CHARGE



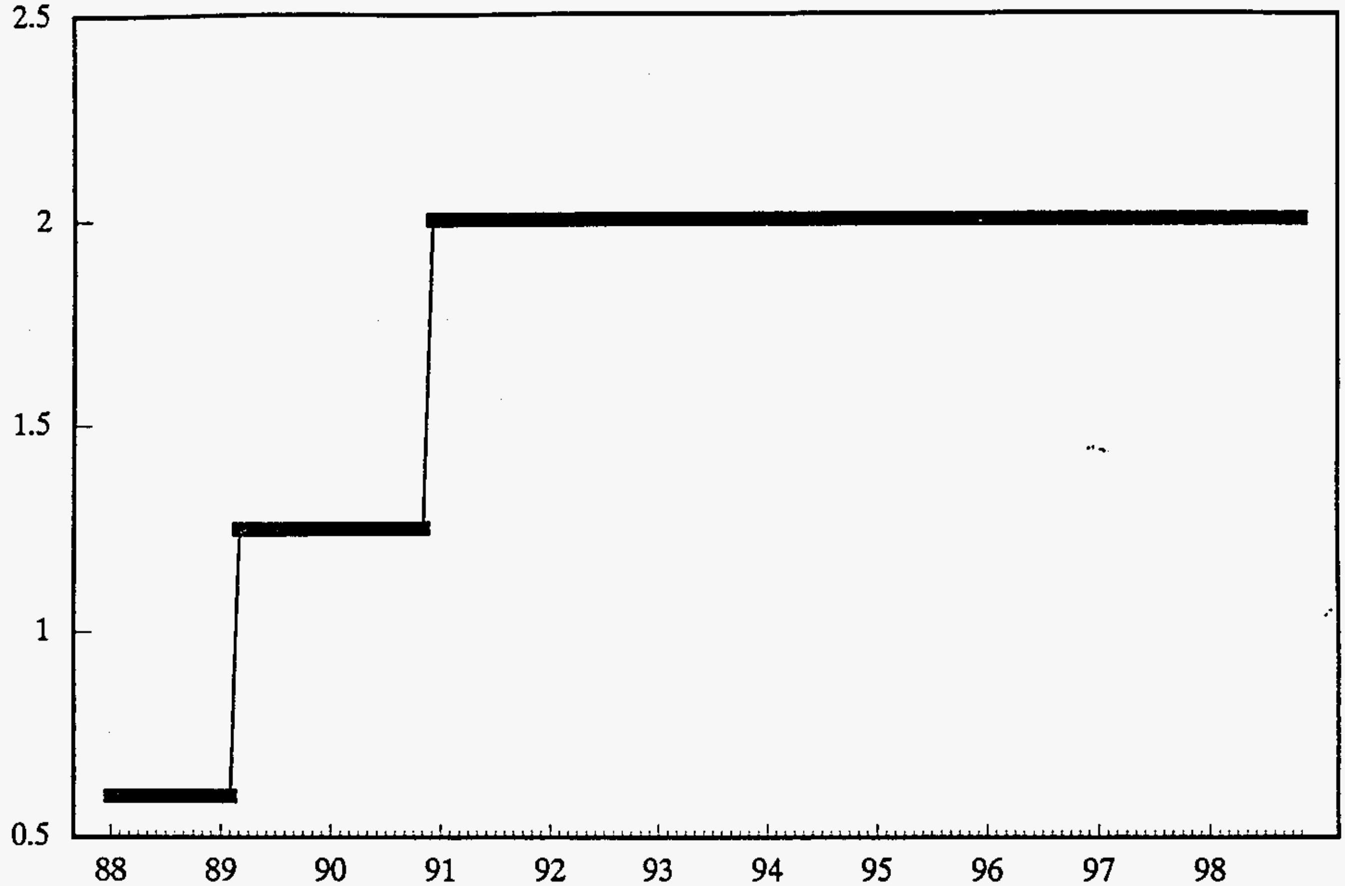
BUSINESS SEQ1X

MISSISSIPPI



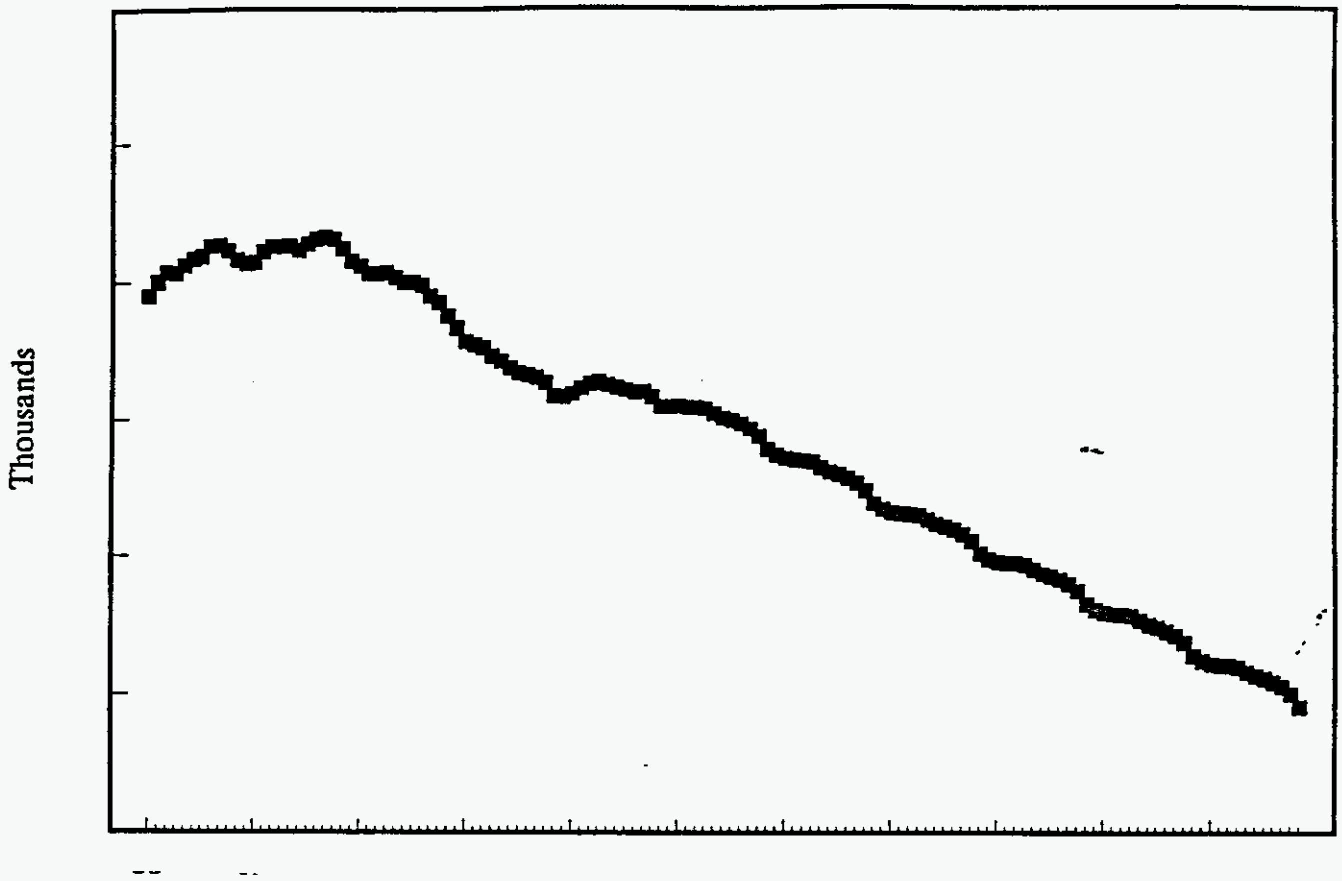
BUSINESS SEQ1X

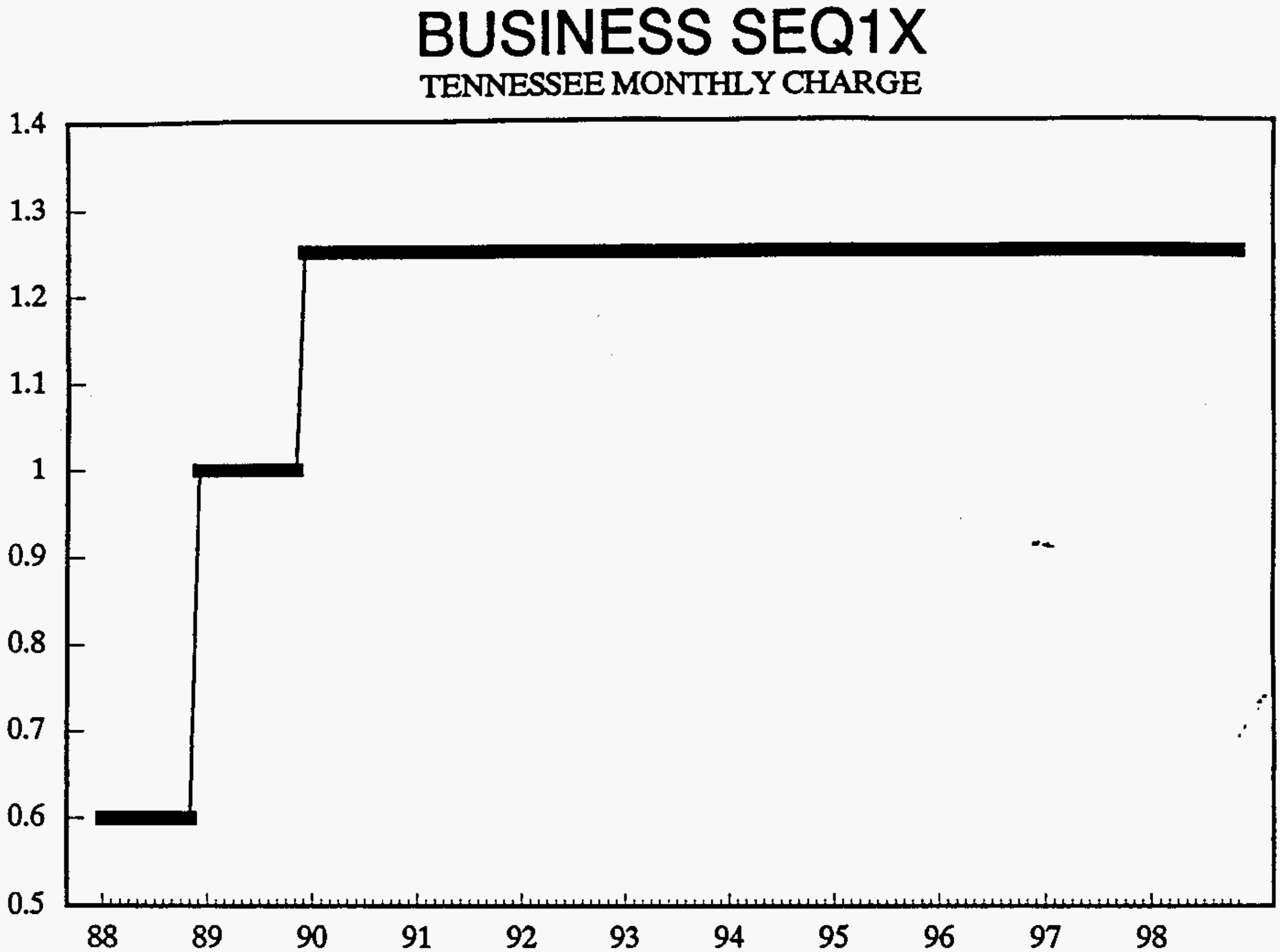
MISSISSIPPI MONTHLY CHARGE



BUSINESS SEQ1X

TENNESSEE




BUSINESS SEQ1X
TENNESSEE MONTHLY CHARGE
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
88
89
90
91
92
93
94
95
96
97
98

SOUTHERN BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SOUTHERN R&B WMR	B ADJUST R&B WMR	C SOUTHERN R&B WMQ	D SOUTHERN R&B SEQ1X	E PRICE R&B SEQ1X	F RESID IN-SRV	G B-MAIN IN-SERV	H TOTAL LINES
1	FL	87	1					0			
2	FL	87	2					0			
3	FL	87	3					0			
4	FL	87	4					0			
5	FL	87	5					0			
6	FL	87	6					0			
7	FL	87	7					0			
8	FL	87	8					0			
9	FL	87	9					0			
10	FL	87	10					2			
11	FL	87	11					2			
12	FL	87	12					2			
13	FL	88	1					2			
14	FL	88	2					2			
15	FL	88	3					2			
16	FL	88	4					2			
17	FL	88	5					2			
18	FL	88	6					2			
19	FL	88	7					2			
20	FL	88	8					2			
21	FL	88	9					2			
22	FL	88	10					2			
23	FL	88	11					2			
24	FL	88	12					2			
25	FL	89	1					2			
26	FL	89	2					2			
27	FL	89	3					2			
28	FL	89	4					2			
29	FL	89	5					2			
30	FL	89	[illegible]					2			
31	FL	89	[illegible]					2.5			
32	FL	89	[illegible]					2.5			
33	FL	89	[illegible]					2.5			
34	FL	89	1					2.5			
35	FL	89	1					2.5			
36	FL	89	1					2.5			
37	FL	90						2.5			
38	FL	90						2.5			
39	FL	90						2.5			
40	FL	90						2.5			
41	FL	90						2.5			
42	FL	90						2.5			
43	FL	90						2.5			
44	FL	90						2.5			
45	FL	90						2.5			
46	FL	90						2.5			
47	FL	90						2.5			
48	FL	90						2.5			
49	FL	91						2.5			
50	FL	91						2.5			
51	FL	91						2.5			
52	FL	91						2.5			
53	FL	91						2.5			
54	FL	91						2.5			
55	FL	91						2.5			
56	FL	91						2.5			
57	FL	91						2.5			
58	FL	91						2.5			

SOUTHERN BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SOUTHERN R&B WMR	B ADJUST R&B WMR	C SOUTHERN R&B WMQ	D SOUTHERN R&B SEQ1X	E PRICE R&B SEQ1X	F RESID IN-SRV	G B-MAIN IN-SERV	H TOTAL LINES
59	FL	91	11					2.5			
60	FL	91	12					2.5			
61	FL	92	1					2.5			
62	FL	92	2					2.5			
63	FL	92	3					2.5			
64	FL	92	4					2.5			
65	FL	92	5					2.5			
66	FL	92	6					2.5			
67	FL	92	7					2.5			
68	FL	92	8					2.5			
69	FL	92	9					2.5			
70	FL	92	10					2.5			
71	FL	92	11					2.5			
72	FL	92	12					2.5			
73	FL	93	1					2.5			
74	FL	93	2					2.5			
75	FL	93	3					2.5			
76	FL	93	4					2.5			
77	FL	93	5					2.5			
78	FL	93	6					2.5			
79	FL	93	7					2.5			
80	FL	93	8					2.5			
81	FL	93	9					2.5			
82	FL	93	10					2.5			
83	FL	93	11					2.5			
84	FL	93	12					2.5			
85	FL	94	1					2.5			
86	FL	94	2					2.5			
87	FL	94	3					2.5			
88	FL	94	4					2.5			
89	FL	94	5					2.5			
90	FL	94	6					2.5			
91	FL	94	7					2.5			
92	FL	94	8					2.5			
93	FL	94	9					2.5			
94	FL	94	10					2.5			
95	FL	94	11					2.5			
96	FL	94	12					2.5			
97	FL	95	1					2.5			
98	FL	95	2					2.5			
99	FL	95	3					2.5			
100	FL	95	4					2.5			
101	FL	95	5					2.5			
102	FL	95	6					2.5			
103	FL	95	7					2.5			
104	FL	95	8					2.5			
105	FL	95	9					2.5			
106	FL	95	10					2.5			
107	FL	95	11					2.5			
108	FL	95	12					2.5			
109	FL	96	1					2.5			
110	FL	96	2					2.5			
111	FL	96	3					2.5			
112	FL	96	4					2.5			
113	FL	96	5					2.5			
114	FL	96	6					2.5			
115	FL	96	7					2.5			
116	FL	96	8	0Y3300	0Y3300			2.5			

SOUTHERN BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SOUTHERN R&B WMR	B ADJUST R&B WMR	C SOUTHERN R&B WMQ	D SOUTHERN R&B SEQ1X	E PRICE R&B SEQ1X	F RESID IN-SRV	G B-MAIN IN-SERV	H TOTAL LINES
117	FL	96	9					2.5			
118	FL	96	10					2.5			
119	FL	96	11					2.5			
120	FL	97	12					2.5			
121	FL	97	1					2.5			
122	FL	97	2					2.5			
123	FL	97	3					2.5			
124	FL	97	4					2.5			
125	FL	97	5					2.5			
126	FL	97	6					2.5			
127	FL	97	7					2.5			
128	FL	97	8					2.5			
129	FL	97	9					2.5			
130	FL	97	10					2.5			
131	FL	97	11					2.5			
132	FL	97	12					2.5			
133	FL	98	1					2.5			
134	FL	98	2					2.5			
135	FL	98	3					2.5			
136	FL	98	4					2.5			
137	FL	98	5					2.5			
138	FL	98	6					2.5			
139	FL	98	7					2.5			
140	FL	98	8					2.5			
141	FL	98	9					2.5			
142	FL	98	10					2.5			
143	FL	98	11					2.5			
144	FL	98	12					2.5			
1	GA	87	1					0			
2	GA	87	2					0			
3	GA	87	3					0			
4	GA	87	4					0			
5	GA	87	5					0			
6	GA	87	6					0			
7	GA	87	7					0			
8	GA	87	8					0			
9	GA	87	9					0			
10	GA	87	10					0			
11	GA	87	11					0			
12	GA	87	12					0			
13	GA	88	1					0			
14	GA	88	2					0			
15	GA	88	3					0			
16	GA	88	4					0			
17	GA	88	5					0			
18	GA	88	6					0			
19	GA	88	7					0			
20	GA	88	8					0			
21	GA	88	9					0			
22	GA	88	10					0			
23	GA	88	11					0			
24	GA	88	12					0			
25	GA	89	1					0			
26	GA	89	2					0			
27	GA	89	3					2			
28	GA	89	4					2			
29	GA	89	5					2			
30	GA	89	6					2			

SOUTHERN BELL STATES
DATA (HISTORY THRU 2/93)

				A	B	C	D	E	F	G	H
				SOUTHERN	ADJUST	SOUTHERN	SOUTHERN	PRICE			
				R&B	R&B	R&B	R&B	R&B	RESID	B-MAIN	TOTAL
TIME	S	YR	MO	WMR	WMR	WMQ	SEQ1X	SEQ1X	IN-SRV	IN-SERV	LINES
31	GA	89	7					2			[illegible]
32	GA	89	8					2			
33	GA	89	9					2			
34	GA	89	10					2			
35	GA	89	11					2			
36	GA	89	12					2			
37	GA	90	1					2			
38	GA	90	2					2			
39	GA	90	3					2			
40	GA	90	4					2			
41	GA	90	5					2			
42	GA	90	6					2			
43	GA	90	7					2			
44	GA	90	8					2			
45	GA	90	9					2			
46	GA	90	10					2			
47	GA	90	11					2			
48	GA	90	12					2			
49	GA	91	1					2			
50	GA	91	2					2			
51	GA	91	3					2			
52	GA	91	4					2			
53	GA	91	5					2			
54	GA	91	6					2			
55	GA	91	7					2			
56	GA	91	8					2			
57	GA	91	9					2			
58	GA	91	10					2			
59	GA	91	11					2			
60	GA	91	12					2			
61	GA	92	1					2			
62	GA	92	2					2			
63	GA	92	3					2			
64	GA	92	4					2			
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67	GA	92	7					2			
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76	GA	93	4					2			
77	GA	93	5					2			
78	GA	93	6					2			
79	GA	93	7					2			
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81	GA	93	9					2			
82	GA	93	10					2			
83	GA	93	11					2			
84	GA	93	12					2			
85	GA	94	1					2			
86	GA	94	2					2			
87	GA	94	3					2			
88	GA	94	4					2			

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SOUTHERN BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SOUTHERN R&B WMR	B ADJUST R&B WMR	C SOUTHERN R&B WMQ	D SOUTHERN R&B SEQ1X	E PRICE R&B SEQ1X	F RESID IN-SRV	G B-MAIN IN-SERV	H TOTAL LINES
89	GA	94	5					2			
90	GA	94	6					2			
91	GA	94	7					2			
92	GA	94	8					2			
93	GA	94	9					2			
94	GA	94	10					2			
95	GA	94	11					2			
96	GA	94	12					2			
97	GA	95	1					2			
98	GA	95	2					2			
99	GA	95	3					2			
100	GA	95	4					2			
101	GA	95	5					2			
102	GA	95	6					2			
103	GA	95	7					2			
104	GA	95	8					2			
105	GA	95	9					2			
106	GA	95	10					2			
107	GA	95	11					2			
108	GA	95	12					2			
109	GA	96	1					2			
110	GA	96	2					2			
111	GA	96	3					2			
112	GA	96	4					2			
113	GA	96	5					2			
114	GA	96	6					2			
115	GA	96	7					2			
116	GA	96	8					2			
117	GA	96	9					2			
118	GA	96	10					2			
119	GA	96	11					2			
120	GA	97	12					2			
121	GA	97	1					2			
122	GA	97	2					2			
123	GA	97	3					2			
124	GA	97	4					2			
125	GA	97	5					2			
126	GA	97	6					2			
127	GA	97	7					2			
128	GA	97	8					2			
129	GA	97	9					2			
130	GA	97	10					2			
131	GA	97	11					2			
132	GA	97	12					2			
133	GA	98	1					2			
134	GA	98	2					2			
135	GA	98	3					2			
136	GA	98	4					2			
137	GA	98	5					2			
138	GA	98	6					2			
139	GA	98	7					2			
140	GA	98	8					2			
141	GA	98	9					2			
142	GA	98	10					2			
143	GA	98	11					2			
144	GA	98	12					2			
1	NC	87	1					0			
2	NC	87	2					0			

SOUTHERN BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SOUTHERN R&B WMR	B ADJUST R&B WMR	C SOUTHERN R&B WMQ	D SOUTHERN R&B SEQ1X	E PRICE R&B SEQ1X	F RESID IN-SRV	G B-MAIN IN-SERV	H TOTAL LINES
3	NC	87	3					0			
4	NC	87	4					0			
5	NC	87	5					0			
6	NC	87	6					0			
7	NC	87	7					0			
8	NC	87	8					0			
9	NC	87	9					0			
10	NC	87	10					0			
11	NC	87	11					0			
12	NC	87	12					0			
13	NC	88	1					0			
14	NC	88	2					0			
15	NC	88	3					0			
16	NC	88	4					0			
17	NC	88	5					0			
18	NC	88	6					0			
19	NC	88	7					2			
20	NC	88	8					2			
21	NC	88	9					2			
22	NC	88	10					2			
23	NC	88	11					2			
24	NC	88	12					2			
25	NC	89	1					2			
26	NC	89	2					2			
27	NC	89	3					2			
28	NC	89	4					2			
29	NC	89	5					2			
30	NC	89	6					2			
31	NC	89	7					2			
32	NC	89	8					2			
33	NC	89	9					2			
34	NC	89	10					2			
35	NC	89	11					2			
36	NC	89	12					2			
37	NC	90	1					2			
38	NC	90	2					2			
39	NC	90	3					2			
40	NC	90	4					2			
41	NC	90	5					2			
42	NC	90	6					2			
43	NC	90	7					2			
44	NC	90	8					2			
45	NC	90	9					2			
46	NC	90	10					2			
47	NC	90	11					2			
48	NC	90	12					2			
49	NC	91	1					2			
50	NC	91	2					2.5			
51	NC	91	3					2.5			
52	NC	91	4					2.5			
53	NC	91	5					2.5			
54	NC	91	6					2.5			
55	NC	91	7					2.5			
56	NC	91	8					2.5			
57	NC	91	9					2.5			
58	NC	91	10					2.5			
59	NC	91	11					2.5			
60	NC	91	12					2.5			

SOUTHERN BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SOUTHERN R&B WMR	B ADJUST R&B WMR	C SOUTHERN R&B WMQ	D SOUTHERN R&B SEQ1X	E PRICE R&B SEQ1X	F RESID IN-SRV	G B-MAIN IN-SERV	H TOTAL LINES
61	NC	92	1					2.5			
62	NC	92	2					2.5			
63	NC	92	3					2.5			
64	NC	92	4					2.5			
65	NC	92	5					2.5			
66	NC	92	6					2.5			
67	NC	92	7					2.5			
68	NC	92	8					2.5			
69	NC	92	9					2.5			
70	NC	92	10					2.5			
71	NC	92	11					2.5			
72	NC	92	12					2.5			
73	NC	93	1					2.5			
74	NC	93	2					2.5			
75	NC	93	3					2.5			
76	NC	93	4					2.5			
77	NC	93	5					2.5			
78	NC	93	6					2.5			
79	NC	93	7					2.5			
80	NC	93	8					2.5			
81	NC	93	9					2.5			
82	NC	93	10					2.5			
83	NC	93	11					2.5			
84	NC	93	12					2.5			
85	NC	94	1					2.5			
86	NC	94	2					2.5			
87	NC	94	3					2.5			
88	NC	94	4					2.5			
89	NC	94	5					2.5			
90	NC	94	6					2.5			
91	NC	94	7					2.5			
92	NC	94	8					2.5			
93	NC	94	9					2.5			
94	NC	94	10					2.5			
95	NC	94	11					2.5			
96	NC	94	12					2.5			
97	NC	95	1					2.5			
98	NC	95	2					2.5			
99	NC	95	3					2.5			
100	NC	95	4					2.5			
101	NC	95	5					2.5			
102	NC	95	6					2.5			
103	NC	95	7					2.5			
104	NC	95	8					2.5			
105	NC	95	9					2.5			
106	NC	95	10					2.5			
107	NC	95	11					2.5			
108	NC	95	12					2.5			
109	NC	96	1					2.5			
110	NC	96	2					2.5			
111	NC	96	3					2.5			
112	NC	96	4					2.5			
113	NC	96	5					2.5			
114	NC	96	6					2.5			
115	NC	96	7					2.5			
116	NC	96	8					2.5			
117	NC	96	9					2.5			
118	NC	96	10					2.5			

SOUTHERN BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SOUTHERN R&B WMR	B ADJUST R&B WMR	C SOUTHERN R&B WMO	D SOUTHERN R&B SEQ1X	E PRICE R&B SEQ1X	F RESID IN-SRV	G B-MAIN IN-SERV	H TOTAL LINES
119	NC	96	11					2.5			
120	NC	97	12					2.5			
121	NC	97	1					2.5			
122	NC	97	2					2.5			
123	NC	97	3					2.5			
124	NC	97	4					2.5			
125	NC	97	5					2.5			
126	NC	97	6					2.5			
127	NC	97	7					2.5			
128	NC	97	8					2.5			
129	NC	97	9					2.5			
130	NC	97	10					2.5			
131	NC	97	11					2.5			
132	NC	97	12					2.5			
133	NC	98	1					2.5			
134	NC	98	2					2.5			
135	NC	98	3					2.5			
136	NC	98	4					2.5			
137	NC	98	5					2.5			
138	NC	98	6					2.5			
139	NC	98	7					2.5			
140	NC	98	8					2.5			
141	NC	98	9					2.5			
142	NC	98	10					2.5			
143	NC	98	11					2.5			
144	NC	98	12					2.5			
1	SC	87	1					0			
2	SC	87	2					0			
3	SC	87	3					0			
4	SC	87	4					0			
5	SC	87	5					0			
6	SC	87	6					0			
7	SC	87	7					0			
8	SC	87	8					0			
9	SC	87	9					0			
10	SC	87	10					0			
11	SC	87	11					0			
12	SC	87	12					0			
13	SC	88	1					0			
14	SC	88	2					0			
15	SC	88	3					0			
16	SC	88	4					0			
17	SC	88	5					0			
18	SC	88	6					0			
19	SC	88	7					0			
20	SC	88	8					0			
21	SC	88	9					0			
22	SC	88	10					0			
23	SC	88	11					0			
24	SC	88	12					0			
25	SC	89	1					2			
26	SC	89	2					2			
27	SC	89	3					2			
28	SC	89	4					2			
29	SC	89	5					2			
30	SC	89	6					2			
31	SC	89	7					2			
32	SC	89	8					2			

SOUTHERN BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SOUTHERN R&B WMR	B ADJUST R&B WMR	C SOUTHERN R&B WMQ	D SOUTHERN R&B SEQ1X	E PRICE R&B SEQ1X	F RESID IN-SRV	G B-MAIN IN-SERV	H TOTAL LINES
33	SC	89	9					2			
34	SC	89	10					2			
35	SC	89	11					2			
36	SC	89	12					2			
37	SC	90	1					2			
38	SC	90	2					2			
39	SC	90	3					2			
40	SC	90	4					2			
41	SC	90	5					2			
42	SC	90	6					2			
43	SC	90	7					2			
44	SC	90	8					2			
45	SC	90	9					2			
46	SC	90	10					2			
47	SC	90	11					2			
48	SC	90	12					2			
49	SC	91	1					2			
50	SC	91	2					2			
51	SC	91	3					2			
52	SC	91	4					2			
53	SC	91	5					2			
54	SC	91	6					2			
55	SC	91	7					2			
56	SC	91	8					2			
57	SC	91	9					2			
58	SC	91	10					2			
59	SC	91	11					2			
60	SC	91	12					2			
61	SC	92	1					2			
62	SC	92	2					2			
63	SC	92	3					2			
64	SC	92	4					2			
65	SC	92	5					2			
66	SC	92	6					2			
67	SC	92	7					2			
68	SC	92	8					2			
69	SC	92	9					2			
70	SC	92	10					2			
71	SC	92	11					2			
72	SC	92	12					2			
73	SC	93	1					2			
74	SC	93	2					2			
75	SC	93	3					2			
76	SC	93	4					2			
77	SC	93	5					2			
78	SC	93	6					2			
79	SC	93	7					2			
80	SC	93	8					2			
81	SC	93	9					2			
82	SC	93	10					2			
83	SC	93	11					2			
84	SC	93	12					2			
85	SC	94	1					2			
86	SC	94	2					2			
87	SC	94	3					2			
88	SC	94	4					2			
89	SC	94	5					2			
90	SC	94	6					2			

SOUTHERN BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SOUTHERN R&B WMR	B ADJUST R&B WMR	C SOUTHERN R&B WMQ	D SOUTHERN R&B SEQ1X	E PRICE R&B SEQ1X	F RESID IN-SRV	G B-MAIN IN-SERV	H TOTAL LINES
91	SC	94	7					2			
92	SC	94	8					2			
93	SC	94	9					2			
94	SC	94	10					2			
95	SC	94	11					2			
96	SC	94	12					2			
97	SC	95	1					2			
98	SC	95	2					2			
99	SC	95	3					2			
100	SC	95	4					2			
101	SC	95	5					2			
102	SC	95	6					2			
103	SC	95	7					2			
104	SC	95	8					2			
105	SC	95	9					2			
106	SC	95	10					2			
107	SC	95	11					2			
108	SC	95	12					2			
109	SC	96	1					2			
110	SC	96	2					2			
111	SC	96	3					2			
112	SC	96	4					2			
113	SC	96	5					2			
114	SC	96	6					2			
115	SC	96	7					2			
116	SC	96	8					2			
117	SC	96	9					2			
118	SC	96	10					2			
119	SC	96	11					2			
120	SC	97	12					2			
121	SC	97	1					2			
122	SC	97	2					2			
123	SC	97	3					2			
124	SC	97	4					2			
125	SC	97	5					2			
126	SC	97	6					2			
127	SC	97	7					2			
128	SC	97	8					2			
129	SC	97	9					2			
130	SC	97	10					2			
131	SC	97	11					2			
132	SC	97	12					2			
133	SC	98	1					2			
134	SC	98	2					2			
135	SC	98	3					2			
136	SC	98	4					2			
137	SC	98	5					2			
138	SC	98	6					2			
139	SC	98	7					2			
140	SC	98	8					2			
141	SC	98	9					2			
142	SC	98	10					2			
143	SC	98	11					2			
144	SC	98	12					2			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
1	AL	87	1	0	0	0	0			
2	AL	87	2	0	0	0	0			
3	AL	87	3	0	0	0	0			
4	AL	87	4	0	0	0	0			
5	AL	87	5	0	0	0	0			
6	AL	87	6	0	0	0	0			
7	AL	87	7	0	0	0	0			
8	AL	87	8	0	0	0	0			
9	AL	87	9	0	0	0	0			
10	AL	87	10	0	0	0	0			
11	AL	87	11	0	0	0	0			
12	AL	87	12	0	0	0	0			
13	AL	88	1	0	0	0	0			
14	AL	88	2	[illegible]	0.6		1.2			
15	AL	88	3	[illegible]	0.6		1.2			
16	AL	88	4	[illegible]	0.6		1.2			
17	AL	88	5	[illegible]	0.6		1.2			
18	AL	88	6	[illegible]	0.6		1.2			
19	AL	88	7	[illegible]	0.6		1.2			
20	AL	88	8	[illegible]	0.6		1.2			
21	AL	88	9	[illegible]	0.6		1.2			
22	AL	88	10	[illegible]	0.6		1.2			
23	AL	88	11	[illegible]	0.6		1.2			
24	AL	88	12	[illegible]	0.6		1.2			
25	AL	89	1	[illegible]	0.95		1.2			
26	AL	89	2	[illegible]	0.95		1.2			
27	AL	89	3	[illegible]	0.95		1.2			
28	AL	89	4	[illegible]	0.95		1.2			
29	AL	89	5	[illegible]	0.95		1.2			
30	AL	89	6	[illegible]	0.95		1.2			
31	AL	89	7	[illegible]	0.95		1.2			
32	AL	89	8	[illegible]	0.95		1.2			
33	AL	89	9	[illegible]	0.95		1.2			
34	AL	89	10	[illegible]	0.95		1.2			
35	AL	89	11	[illegible]	0.95		1.2			
36	AL	89	12	[illegible]	0.95		1.2			
37	AL	90	1	[illegible]	1.5		1.5			
38	AL	90	2	[illegible]	1.5		1.5			
39	AL	90	3	[illegible]	1.5		1.5			
40	AL	90	4	[illegible]	1.5		1.5			
41	AL	90	5	[illegible]	1.5		1.5			
42	AL	90	6	[illegible]	1.5		1.5			
43	AL	90	7	[illegible]	1.5		1.5			
44	AL	90	8	[illegible]	1.5		1.5			
45	AL	90	9	[illegible]	1.5		1.5			
46	AL	90	10	[illegible]	1.5		1.5			
47	AL	90	11	[illegible]	1.5		1.5			
48	AL	90	12	[illegible]	1.5		1.5			
49	AL	91	1	[illegible]	1.5		1.5			
50	AL	91	2	[illegible]	1.5		1.5			
51	AL	91	3	[illegible]	1.5		1.5			
52	AL	91	4	[illegible]	1.5		1.5			
53	AL	91	5	[illegible]	1.5		1.5			
54	AL	91	6	[illegible]	1.5		1.5			
55	AL	91	7	[illegible]	1.5		1.5			
56	AL	91	8	[illegible]	1.5		1.5			
57	AL	91	9	[illegible]	1.5		1.5			
58	AL	91	10	[illegible]	1.5		1.5			
59	AL	91	11	[illegible]	1.5		1.5			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
60	AL	91	12		1.5		1.5			
61	AL	92	1		1.5		1.5			
62	AL	92	2		1.5		1.5			
63	AL	92	3		1.5		1.5			
64	AL	92	4		1.5		1.5			
65	AL	92	5		1.5		1.5			
66	AL	92	6		1.5		1.5			
67	AL	92	7		1.5		1.5			
68	AL	92	8		1.5		1.5			
69	AL	92	9		1.5		1.5			
70	AL	92	10		1.5		1.5			
71	AL	92	11		1.5		1.5			
72	AL	92	12		1.5		1.5			
73	AL	93	1		1.5		1.5			
74	AL	93	2		1.5		1.5			
75	AL	93	3		1.5		1.5			
76	AL	93	4		1.5		1.5			
77	AL	93	5		1.5		1.5			
78	AL	93	6		1.5		1.5			
79	AL	93	7		1.5		1.5			
80	AL	93	8		1.5		1.5			
81	AL	93	9		1.5		1.5			
82	AL	93	10		1.5		1.5			
83	AL	93	11		1.5		1.5			
84	AL	93	12		1.5		1.5			
85	AL	94	1		1.5		1.5			
86	AL	94	2		1.5		1.5			
87	AL	94	3		1.5		1.5			
88	AL	94	4		1.5		1.5			
89	AL	94	5		1.5		1.5			
90	AL	94	6		1.5		1.5			
91	AL	94	7		1.5		1.5			
92	AL	94	8		1.5		1.5			
93	AL	94	9		1.5		1.5			
94	AL	94	10		1.5		1.5			
95	AL	94	11		1.5		1.5			
96	AL	94	12		1.5		1.5			
97	AL	95	1		1.5		1.5			
98	AL	95	2		1.5		1.5			
99	AL	95	3		1.5		1.5			
100	AL	95	4		1.5		1.5			
101	AL	95	5		1.5		1.5			
102	AL	95	6		1.5		1.5			
103	AL	95	7		1.5		1.5			
104	AL	95	8		1.5		1.5			
105	AL	95	9		1.5		1.5			
106	AL	95	10		1.5		1.5			
107	AL	95	11		1.5		1.5			
108	AL	95	12		1.5		1.5			
109	AL	96	1		1.5		1.5			
110	AL	96	2		1.5		1.5			
111	AL	96	3		1.5		1.5			
112	AL	96	4		1.5		1.5			
113	AL	96	5		1.5		1.5			
114	AL	96	6		1.5		1.5			
115	AL	96	7		1.5		1.5			
116	AL	96	8		1.5		1.5			
117	AL	96	9		1.5		1.5			
118	AL	96	10		1.5		1.5			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
119	AL	96	11		1.5		1.5			
120	AL	97	12		1.5		1.5			
121	AL	97	1		1.5		1.5			
122	AL	97	2		1.5		1.5			
123	AL	97	3		1.5		1.5			
124	AL	97	4		1.5		1.5			
125	AL	97	5		1.5		1.5			
126	AL	97	6		1.5		1.5			
127	AL	97	7		1.5		1.5			
128	AL	97	8		1.5		1.5			
129	AL	97	9		1.5		1.5			
130	AL	97	10		1.5		1.5			
131	AL	97	11		1.5		1.5			
132	AL	97	12		1.5		1.5			
133	AL	98	1		1.5		1.5			
134	AL	98	2		1.5		1.5			
135	AL	98	3		1.5		1.5			
136	AL	98	4		1.5		1.5			
137	AL	98	5		1.5		1.5			
138	AL	98	6		1.5		1.5			
139	AL	98	7		1.5		1.5			
140	AL	98	8		1.5		1.5			
141	AL	98	9		1.5		1.5			
142	AL	98	10		1.5		1.5			
143	AL	98	11		1.5		1.5			
144	AL	98	12		1.5		1.5			
1	KY	87	1		0		0			
2	KY	87	2		0		0			
3	KY	87	3		0		0			
4	KY	87	4		0		0			
5	KY	87	5		0		0			
6	KY	87	6		0		0			
7	KY	87	7		0		0			
8	KY	87	8		0		0			
9	KY	87	9		0		0			
10	KY	87	10		0		0			
11	KY	87	11		0		0			
12	KY	87	12		0		0			
13	KY	88	1		0		0			
14	KY	88	2		0.6		0.6			
15	KY	88	3		0.6		0.6			
16	KY	88	4		0.6		0.6			
17	KY	88	5		0.6		0.6			
18	KY	88	6		0.6		0.6			
19	KY	88	7		1.25		1.25			
20	KY	88	8		1.25		1.25			
21	KY	88	9		1.25		1.25			
22	KY	88	10		1.25		1.25			
23	KY	88	11		1.25		1.25			
24	KY	88	12		1.25		1.25			
25	KY	89	1		1.25		1.25			
26	KY	89	2		1.25		1.25			
27	KY	89	3		1.25		1.25			
28	KY	89	4		1.25		1.25			
29	KY	89	5		1.25		1.25			
30	KY	89	6		1.25		1.25			
31	KY	89	7		1.25		1.25			
32	KY	89	8		1.25		1.25			
33	KY	89	9		1.25		1.25			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
34	KY	89	10		1.25		1.25			
35	KY	89	11		2		2			
36	KY	89	12		2		2			
37	KY	90	1		2		2			
38	KY	90	2		2		2			
39	KY	90	3		2		2			
40	KY	90	4		2		2			
41	KY	90	5		2		2			
42	KY	90	6		2		2			
43	KY	90	7		2		2			
44	KY	90	8		2		2			
45	KY	90	9		2		2			
46	KY	90	10		2		2			
47	KY	90	11		2		2			
48	KY	90	12		2		2			
49	KY	91	1		2		2			
50	KY	91	2		2		2			
51	KY	91	3		2		2			
52	KY	91	4		2		2			
53	KY	91	5		2		2			
54	KY	91	6		2		2			
55	KY	91	7		2		2			
56	KY	91	8		2		2			
57	KY	91	9		2		2			
58	KY	91	10		2		2			
59	KY	91	11		2		2			
60	KY	91	12		2		2			
61	KY	92	1		2		2			
62	KY	92	2		2		2			
63	KY	92	3		2		2			
64	KY	92	4		2		2			
65	KY	92	5		2		2			
66	KY	92	6		2		2			
67	KY	92	7		2		2			
68	KY	92	8		2		2			
69	KY	92	9		2		2			
70	KY	92	10		2		2			
71	KY	92	11		2		2			
72	KY	92	12		2		2			
73	KY	93	1		2		2			
74	KY	93	2		2		2			
75	KY	93	3		2		2			
76	KY	93	4		2		2			
77	KY	93	5		2		2			
78	KY	93	6		2		2			
79	KY	93	7		2		2			
80	KY	93	8		2		2			
81	KY	93	9		2		2			
82	KY	93	10		2		2			
83	KY	93	11		2		2			
84	KY	93	12		2		2			
85	KY	94	1		2		2			
86	KY	94	2		2		2			
87	KY	94	3		2		2			
88	KY	94	4		2		2			
89	KY	94	5		2		2			
90	KY	94	6		2		2			
91	KY	94	7		2		2			
92	KY	94	8		2		2			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
93	KY	94	9		2		2			
94	KY	94	10		2		2			
95	KY	94	11		2		2			
96	KY	94	12		2		2			
97	KY	95	1		2		2			
98	KY	95	2		2		2			
99	KY	95	3		2		2			
100	KY	95	4		2		2			
101	KY	95	5		2		2			
102	KY	95	6		2		2			
103	KY	95	7		2		2			
104	KY	95	8		2		2			
105	KY	95	9		2		2			
106	KY	95	10		2		2			
107	KY	95	11		2		2			
108	KY	95	12		2		2			
109	KY	96	1		2		2			
110	KY	96	2		2		2			
111	KY	96	3		2		2			
112	KY	96	4		2		2			
113	KY	96	5		2		2			
114	KY	96	6		2		2			
115	KY	96	7		2		2			
116	KY	96	8		2		2			
117	KY	96	9		2		2			
118	KY	96	10		2		2			
119	KY	96	11		2		2			
120	KY	97	12		2		2			
121	KY	97	1		2		2			
122	KY	97	2		2		2			
123	KY	97	3		2		2			
124	KY	97	4		2		2			
125	KY	97	5		2		2			
126	KY	97	6		2		2			
127	KY	97	7		2		2			
128	KY	97	8		2		2			
129	KY	97	9		2		2			
130	KY	97	10		2		2			
131	KY	97	11		2		2			
132	KY	97	12		2		2			
133	KY	98	1		2		2			
134	KY	98	2		2		2			
135	KY	98	3		2		2			
136	KY	98	4		2		2			
137	KY	98	5		2		2			
138	KY	98	6		2		2			
139	KY	98	7		2		2			
140	KY	98	8		2		2			
141	KY	98	9		2		2			
142	KY	98	10		2		2			
143	KY	98	11		2		2			
144	KY	98	12		2		2			
1	LA	87	1		0		0			
2	LA	87	2		0		0			
3	LA	87	3		0		0			
4	LA	87	4		0		0			
5	LA	87	5		0		0			
6	LA	87	6		0		0			
7	LA	87	7		0		0			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
8	LA	87	8	0	0	0	0			
9	LA	87	9	0	0	0	0			
10	LA	87	10	0	0	0	0			
11	LA	87	11	0	0	0	0			
12	LA	87	12	0	0	0	0			
13	LA	88	1	0	0	[illegible]	0			
14	LA	88	2		0.8		1.6			
15	LA	88	3		0.8		1.6			
16	LA	88	4		0.8		1.6			
17	LA	88	5		0.8		1.6			
18	LA	88	6		0.8		1.6			
19	LA	88	7		0.8		1.6			
20	LA	88	8		0.8		1.6			
21	LA	88	9		0.8		1.6			
22	LA	88	10		0.8		1.6			
23	LA	88	11		0.8		1.6			
24	LA	88	12		0.8		1.6			
25	LA	89	1		0.8		1.6			
26	LA	89	2		0.8		1.6			
27	LA	89	3		0.8		1.6			
28	LA	89	4		0.8		1.6			
29	LA	89	5		0.8		1.6			
30	LA	89	6		0.8		1.6			
31	LA	89	7		0.8		1.6			
32	LA	89	8		1.25		1.75			
33	LA	89	9		1.25		1.75			
34	LA	89	10		1.25		1.75			
35	LA	89	11		1.25		1.75			
36	LA	89	12		1.25		1.75			
37	LA	90	1		1.25		1.75			
38	LA	90	2		1.25		1.75			
39	LA	90	3		1.25		1.75			
40	LA	90	4		1.25		1.75			
41	LA	90	5		1.25		1.75			
42	LA	90	6		1.25		1.75			
43	LA	90	7		1.25		1.75			
44	LA	90	8		1.25		1.75			
45	LA	90	9		1.25		1.75			
46	LA	90	10		1.25		1.75			
47	LA	90	11		1.25		1.75			
48	LA	90	12		1.25		1.75			
49	LA	91	1		1.25		1.75			
50	LA	91	2		1.25		1.75			
51	LA	91	3		1.25		1.75			
52	LA	91	4		1.25		1.75			
53	LA	91	5		1.25		1.75			
54	LA	91	6		1.25		1.75			
55	LA	91	7		2		2			
56	LA	91	8		2		2			
57	LA	91	9		2		2			
58	LA	91	10		2		2			
59	LA	91	11		2		2			
60	LA	91	12		2		2			
61	LA	92	1		2		2			
62	LA	92	2		2		2			
63	LA	92	3		2		2			
64	LA	92	4		2		2			
65	LA	92	5		2		2			
66	LA	92	6		2		2			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
67	LA	92	7		2		2			
68	LA	92	8		2		2			
69	LA	92	9		2		2			
70	LA	92	10		2		2			
71	LA	92	11		2		2			
72	LA	92	12		2		2			
73	LA	93	1		2		2			
74	LA	93	2		2		2			
75	LA	93	3		2		2			
76	LA	93	4		2		2			
77	LA	93	5		2		2			
78	LA	93	6		2		2			
79	LA	93	7		2		2			
80	LA	93	8		2		2			
81	LA	93	9		2		2			
82	LA	93	10		2		2			
83	LA	93	11		2		2			
84	LA	93	12		2		2			
85	LA	94	1		2		2			
86	LA	94	2		2		2			
87	LA	94	3		2		2			
88	LA	94	4		2		2			
89	LA	94	5		2		2			
90	LA	94	6		2		2			
91	LA	94	7		2		2			
92	LA	94	8		2		2			
93	LA	94	9		2		2			
94	LA	94	10		2		2			
95	LA	94	11		2		2			
96	LA	94	12		2		2			
97	LA	95	1		2		2			
98	LA	95	2		2		2			
99	LA	95	3		2		2			
100	LA	95	4		2		2			
101	LA	95	5		2		2			
102	LA	95	6		2		2			
103	LA	95	7		2		2			
104	LA	95	8		2		2			
105	LA	95	9		2		2			
106	LA	95	10		2		2			
107	LA	95	11		2		2			
108	LA	95	12		2		2			
109	LA	96	1		2		2			
110	LA	96	2		2		2			
111	LA	96	3		2		2			
112	LA	96	4		2		2			
113	LA	96	5		2		2			
114	LA	96	6		2		2			
115	LA	96	7		2		2			
116	LA	96	8		2		2			
117	LA	96	9		2		2			
118	LA	96	10		2		2			
119	LA	96	11		2		2			
120	LA	97	12		2		2			
121	LA	97	1		2		2			
122	LA	97	2		2		2			
123	LA	97	3		2		2			
124	LA	97	4		2		2			
125	LA	97	5		2		2			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
126	LA	97	6	--	2		2			
127	LA	97	7		2		2			
128	LA	97	8		2		2			
129	LA	97	9		2		2			
130	LA	97	10		2		2			
131	LA	97	11		2		2			
132	LA	97	12		2		2			
133	LA	98	1		2		2			
134	LA	98	2		2		2			
135	LA	98	3		2		2			
136	LA	98	4		2		2			
137	LA	98	5		2		2			
138	LA	98	6		2		2			
139	LA	98	7		2		2			
140	LA	98	8		2		2			
141	LA	98	9		2		2			
142	LA	98	10		2		2			
143	LA	98	11		2		2			
144	LA	98	12		2		2			
1	MS	87	1		0		0			
2	MS	87	2		0		0			
3	MS	87	3		0		0			
4	MS	87	4		0		0			
5	MS	87	5		0		0			
6	MS	87	6		0		0			
7	MS	87	7		0		0			
8	MS	87	8		0		0			
9	MS	87	9		0		0			
10	MS	87	10		0		0			
11	MS	87	11		0		0			
12	MS	87	12		0		0			
13	MS	88	1		0		0			
14	MS	88	2		0.6		0.6			
15	MS	88	3		0.6		0.6			
16	MS	88	4		0.6		0.6			
17	MS	88	5		0.6		0.6			
18	MS	88	6		0.6		0.6			
19	MS	88	7		0.6		0.6			
20	MS	88	8		0.6		0.6			
21	MS	88	9		0.6		0.6			
22	MS	88	10		0.6		0.6			
23	MS	88	11		0.6		0.6			
24	MS	88	12		0.6		0.6			
25	MS	89	1		0.6		0.6			
26	MS	89	2		0.6		0.6			
27	MS	89	3		0.6		0.6			
28	MS	89	4		1.25		1.25			
29	MS	89	5		1.25		1.25			
30	MS	89	6		1.25		1.25			
31	MS	89	7		1.25		1.25			
32	MS	89	8		1.25		1.25			
33	MS	89	9		1.25		1.25			
34	MS	89	10		1.25		1.25			
35	MS	89	11		1.25		1.25			
36	MS	89	12		1.25		1.25			
37	MS	90	1		1.25		1.25			
38	MS	90	2		1.25		1.25			
39	MS	90	3		1.25		1.25			
40	MS	90	4		1.25		1.25			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
41	MS	90	5	[illegible]	1.25		1.25			
42	MS	90	6		1.25		1.25			
43	MS	90	7		1.25		1.25			
44	MS	90	8		1.25		1.25			
45	MS	90	9		1.25		1.25			
46	MS	90	10		1.25		1.25			
47	MS	90	11		1.25		1.25			
48	MS	90	12		1.25		1.25			
49	MS	91	1		2		2			
50	MS	91	2		2		2			
51	MS	91	3		2		2			
52	MS	91	4		2		2			
53	MS	91	5		2		2			
54	MS	91	6		2		2			
55	MS	91	7		2		2			
56	MS	91	8		2		2			
57	MS	91	9		2		2			
58	MS	91	10		2		2			
59	MS	91	11		2		2			
60	MS	91	12		2		2			
61	MS	92	1		2		2			
62	MS	92	2		2		2			
63	MS	92	3		2		2			
64	MS	92	4		2		2			
65	MS	92	5		2		2			
66	MS	92	6		2		2			
67	MS	92	7		2		2			
68	MS	92	8		2		2			
69	MS	92	9		2		2			
70	MS	92	10		2		2			
71	MS	92	11		2		2			
72	MS	92	12		2		2			
73	MS	93	1		2		2			
74	MS	93	2		2		2			
75	MS	93	3		2		2			
76	MS	93	4		2		2			
77	MS	93	5		2		2			
78	MS	93	6		2		2			
79	MS	93	7		2		2			
80	MS	93	8		2		2			
81	MS	93	9		2		2			
82	MS	93	10		2		2			
83	MS	93	11		2		2			
84	MS	93	12		2		2			
85	MS	94	1		2		2			
86	MS	94	2		2		2			
87	MS	94	3		2		2			
88	MS	94	4		2		2			
89	MS	94	5		2		2			
90	MS	94	6		2		2			
91	MS	94	7		2		2			
92	MS	94	8		2		2			
93	MS	94	9		2		2			
94	MS	94	10		2		2			
95	MS	94	11		2		2			
96	MS	94	12		2		2			
97	MS	95	1		2		2			
98	MS	95	2		2		2			
99	MS	95	3		2		2			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
100	MS	95	4		2		2			
101	MS	95	5		2		2			
102	MS	95	6		2		2			
103	MS	95	7		2		2			
104	MS	95	8		2		2			
105	MS	95	9		2		2			
106	MS	95	10		2		2			
107	MS	95	11		2		2			
108	MS	95	12		2		2			
109	MS	96	1		2		2			
110	MS	96	2		2		2			
111	MS	96	3		2		2			
112	MS	96	4		2		2			
113	MS	96	5		2		2			
114	MS	96	6		2		2			
115	MS	96	7		2		2			
116	MS	96	8		2		2			
117	MS	96	9		2		2			
118	MS	96	10		2		2			
119	MS	96	11		2		2			
120	MS	97	12		2		2			
121	MS	97	1		2		2			
122	MS	97	2		2		2			
123	MS	97	3		2		2			
124	MS	97	4		2		2			
125	MS	97	5		2		2			
126	MS	97	6		2		2			
127	MS	97	7		2		2			
128	MS	97	8		2		2			
129	MS	97	9		2		2			
130	MS	97	10		2		2			
131	MS	97	11		2		2			
132	MS	97	12		2		2			
133	MS	98	1		2		2			
134	MS	98	2		2		2			
135	MS	98	3		2		2			
136	MS	98	4		2		2			
137	MS	98	5		2		2			
138	MS	98	6		2		2			
139	MS	98	7		2		2			
140	MS	98	8		2		2			
141	MS	98	9		2		2			
142	MS	98	10		2		2			
143	MS	98	11		2		2			
144	MS	98	12		2		2			
1	TN	87	1	0	0	0	0			
2	TN	87	2	0	0	0	0			
3	TN	87	3	0	0	0	0			
4	TN	87	4	0	0	0	0			
5	TN	87	5	0	0	0	0			
6	TN	87	6	0	0	0	0			
7	TN	87	7	0	0	0	0			
8	TN	87	8	0	0	0	0			
9	TN	87	9	0	0	0	0			
10	TN	87	10	0	0	0	0			
11	TN	87	11	0	0	0	0			
12	TN	87	12	0	0	0	0			
13	TN	88	1	0	0	0	0			
14	TN	88	2	1112032	0.6	79525	0.6			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
15	TN	88	3		0.6		0.6			
16	TN	88	4		0.6		0.6			
17	TN	88	5		0.6		0.6			
18	TN	88	6		0.6		0.6			
19	TN	88	7		0.6		0.6			
20	TN	88	8		0.6		0.6			
21	TN	88	9		0.6		0.6			
22	TN	88	10		0.6		0.6			
23	TN	88	11		0.6		0.6			
24	TN	88	12		0.6		0.6			
25	TN	89	1		1		1			
26	TN	89	2		1		1			
27	TN	89	3		1		1			
28	TN	89	4		1		1			
29	TN	89	5		1		1			
30	TN	89	6		1		1			
31	TN	89	7		1		1			
32	TN	89	8		1		1			
33	TN	89	9		1		1			
34	TN	89	10		1		1			
35	TN	89	11		1		1			
36	TN	89	12		1		1			
37	TN	90	1		1.25		1.25			
38	TN	90	2		1.25		1.25			
39	TN	90	3		1.25		1.25			
40	TN	90	4		1.25		1.25			
41	TN	90	5		1.25		1.25			
42	TN	90	6		1.25		1.25			
43	TN	90	7		1.25		1.25			
44	TN	90	8		1.25		1.25			
45	TN	90	9		1.25		1.25			
46	TN	90	10		1.25		1.25			
47	TN	90	11		1.25		1.25			
48	TN	90	12		1.25		1.25			
49	TN	91	1		1.25		1.25			
50	TN	91	2		1.25		1.25			
51	TN	91	3		1.25		1.25			
52	TN	91	4		1.25		1.25			
53	TN	91	5		1.25		1.25			
54	TN	91	6		1.25		1.25			
55	TN	91	7		1.25		1.25			
56	TN	91	8		1.25		1.25			
57	TN	91	9		1.25		1.25			
58	TN	91	10		1.25		1.25			
59	TN	91	11		1.25		1.25			
60	TN	91	12		1.25		1.25			
61	TN	92	1		1.25		1.25			
62	TN	92	2		1.25		1.25			
63	TN	92	3		1.25		1.25			
64	TN	92	4		1.25		1.25			
65	TN	92	5		1.25		1.25			
66	TN	92	6		1.25		1.25			
67	TN	92	7		1.25		1.25			
68	TN	92	8		1.25		1.25			
69	TN	92	9		1.25		1.25			
70	TN	92	10		1.25		1.25			
71	TN	92	11		1.25		1.25			
72	TN	92	12		1.25		1.25			
73	TN	93	1		1.25		1.25			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

TIME	S	YR	MO	A SCB RESID SEQ1X	B SCB RES SE PCE	C SCB BUS SEQ1X	D SCB BUS SEQ PCE	E RESID IN-SERV	F B-MAIN IN-SERV	G TOTAL LINES
74	TN	93	2		1.25		1.25			
75	TN	93	3		1.25		1.25			
76	TN	93	4		1.25		1.25			
77	TN	93	5		1.25		1.25			
78	TN	93	6		1.25		1.25			
79	TN	93	7		1.25		1.25			
80	TN	93	8		1.25		1.25			
81	TN	93	9		1.25		1.25			
82	TN	93	10		1.25		1.25			
83	TN	93	11		1.25		1.25			
84	TN	93	12		1.25		1.25			
85	TN	94	1		1.25		1.25			
86	TN	94	2		1.25		1.25			
87	TN	94	3		1.25		1.25			
88	TN	94	4		1.25		1.25			
89	TN	94	5		1.25		1.25			
90	TN	94	6		1.25		1.25			
91	TN	94	7		1.25		1.25			
92	TN	94	8		1.25		1.25			
93	TN	94	9		1.25		1.25			
94	TN	94	10		1.25		1.25			
95	TN	94	11		1.25		1.25			
96	TN	94	12		1.25		1.25			
97	TN	95	1		1.25		1.25			
98	TN	95	2		1.25		1.25			
99	TN	95	3		1.25		1.25			
100	TN	95	4		1.25		1.25			
101	TN	95	5		1.25		1.25			
102	TN	95	6		1.25		1.25			
103	TN	95	7		1.25		1.25			
104	TN	95	8		1.25		1.25			
105	TN	95	9		1.25		1.25			
106	TN	95	10		1.25		1.25			
107	TN	95	11		1.25		1.25			
108	TN	95	12		1.25		1.25			
109	TN	96	1		1.25		1.25			
110	TN	96	2		1.25		1.25			
111	TN	96	3		1.25		1.25			
112	TN	96	4		1.25		1.25			
113	TN	96	5		1.25		1.25			
114	TN	96	6		1.25		1.25			
115	TN	96	7		1.25		1.25			
116	TN	96	8		1.25		1.25			
117	TN	96	9		1.25		1.25			
118	TN	96	10		1.25		1.25			
119	TN	96	11		1.25		1.25			
120	TN	97	12		1.25		1.25			
121	TN	97	1		1.25		1.25			
122	TN	97	2		1.25		1.25			
123	TN	97	3		1.25		1.25			
124	TN	97	4		1.25		1.25			
125	TN	97	5		1.25		1.25			
126	TN	97	6		1.25		1.25			
127	TN	97	7		1.25		1.25			
128	TN	97	8		1.25		1.25			
129	TN	97	9		1.25		1.25			
130	TN	97	10		1.25		1.25			
131	TN	97	11		1.25		1.25			
132	TN	97	12		1.25		1.25			

SOUTH CENTRAL BELL STATES
DATA (HISTORY THRU 2/93)

				A	B	C	D	E	F	G
TIME	S	YR	MO	SCB RESID SEQ1X	SCB RES SE PCE	SCB BUS SEQ1X	SCB BUS SEQ PCE	RESID IN-SERV	B-MAIN IN-SERV	TOTAL LINES
133	TN	98	1		1.25		1.25			
134	TN	98	2		1.25		1.25			
135	TN	98	3		1.25		1.25			
136	TN	98	4		1.25		1.25			
137	TN	98	5		1.25		1.25			
138	TN	98	6		1.25		1.25			
139	TN	98	7		1.25		1.25			
140	TN	98	8		1.25		1.25			
141	TN	98	9		1.25		1.25			
142	TN	98	10		1.25		1.25			
143	TN	98	11		1.25		1.25			
144	TN	98	12		1.25		1.25			

I N T E R O F F I C E   M E M O R A N D U M

Date:	03-May-1993 02:28pm EDT
From:	Ben Jordan
	JORDAN_BEN AT A1 AT ALPR
Dept:	Pricing
Tel No:	(205)977-0454

TO: MORRISON, JEFF 1 (MORRISON_SJ @ A1 @ GAMD)

Subject: REVISED TEST RATES

JEFF,

SORRY,THIS IS LATE. BUT,HERE ARE THE TEST RATES FOR WMR AND WMQ.THE WMQ RATES WILL REMAIN CONSTANT THRU THE STUDY PERIOD.

ALSO, THE TEST PERIOD FOR THE FLORIDA SETTLEMENT SHOULD BEGIN AUG. 1, 1992.

BEN

	CURRENT SEQ1X RATE	1-1-94 TEST RATE	1-1-95 TEST RATE
AL	$1.50	$2.25	$2.80
FL	2.50	2.80	2.80
GA	2.00	2.80	2.80
KY	2.00	2.80	2.80
LA	2.00	2.80	2.80
MS	2.00	2.80	2.80
NC	2.50	2.80	2.80
SC	2.00	2.80	2.80
TN	1.25	2.00	2.80

	CURRENT WMR RATE	1-1-94 TEST RATE	1-1-95 TEST RATE
AL	NA	NA	NA
FL	1.50	1.80	1.80
GA	1.00	1.80	1.80
KY	NA	NA	NA
LA	NA	NA	NA
MS	NA	NA	NA
NC	1.50	1.80	1.80
SC	1.00	1.80	1.80
TN	NA	NA	NA

	CURRENT WMQ RATE	1-1-94 TEST RATE	1-1-95 TEST RATE
AL	NA	NA	NA
FL	1.00	1.00	1.00
GA	1.00	1.00	1.00
KY	NA	NA	NA
LA	NA	NA	NA
MS	NA	NA	NA
NC	1.05	1.05	1.05
SC	1.00	1.00	1.00
TN	NA	NA	NA

SOUTH CENTRAL BELL ELASTICITY

STUDY: SEQ1X

The following procedure (Almon Lags- with constraints) was used to capture the cumulative price impact of rate changes in the South Central Bell market over time. By simply summing the
5 elasticity values at their means, the overall elasticity for SEQ1X can be determined:

SCB ELASTICITY MODEL: RESIDENTIAL SEQ1X

```
Date:04/29/93 Time:09:48:33.85
METHOD: POOLING
**********************************************************************
Hello/Bonjour/Aloha/Howdy/G Day/Kia Ora/Konnichiwa/Buenos Dias/Nee Hau
Welcome to SHAZAM - Version 6.2  -  AUG 1991 SYSTEM=OS386    PAR= 5555
|_* ----------------------------------------------------------------------
|_*                     INSIDE WIRE MONTHLY PLANS (SEQ1X)
|_* ----------------------------------------------------------------------
|_*     Data:   1/87 - 12/98; SEQ1X DATA BEGINS ON 2/88 & ENDS ON 2/93
|_*     Total Observations = 144 Per State
|_* ----------------------------------------------------------------------
|_DIM PREDA 1200 PREDK 1200 PREDL 1200 PREDM 1200 PREDT 1200
|_SET NODELETE
|_FILE 4 SCB.PRN
UNIT  4 IS NOW ASSIGNED TO: SCB.PRN
|_* ------------
|_FILE 11 ALR.OUT
UNIT 11 IS NOW ASSIGNED TO: ALR.OUT
|_FILE 12 KYR.OUT
UNIT 12 IS NOW ASSIGNED TO: KYR.OUT
|_FILE 13 LAR.OUT
UNIT 13 IS NOW ASSIGNED TO: LAR.OUT
|_FILE 14 MSR.OUT
UNIT 14 IS NOW ASSIGNED TO: MSR.OUT
|_FILE 15 TNR.OUT
UNIT 15 IS NOW ASSIGNED TO: TNR.OUT
|_* ------------
|_FILE 16 ALB.OUT
UNIT 16 IS NOW ASSIGNED TO: ALB.OUT
|_FILE 17 KYB.OUT
UNIT 17 IS NOW ASSIGNED TO: KYB.OUT
|_FILE 18 LAB.OUT
UNIT 18 IS NOW ASSIGNED TO: LAB.OUT
|_FILE 19 MSB.OUT
UNIT 19 IS NOW ASSIGNED TO: MSB.OUT
|_FILE 20 TNB.OUT
UNIT 20 IS NOW ASSIGNED TO: TNB.OUT
|_* ---------------------------------------------------
|_READ(4) TIME  STATE YR MO RSEQ RSEQR BSEQ BSEQR  &
|         RLINES IRLINES BLINES IBLINES TLINES ITLINES

...SAMPLE RANGE IS NOW SET TO:         1       720
|_* ----------------------------------------------------------------------
|_*  SINCE DATA STARTS AT 2/88 (TIME=14), SKIP DATA BEFORE THAT TIME...
|_* ----------------------------------------------------------------------
|_SET NOWARNSKIP
|_SKIPIF(TIME.LT.14)
|_SKIPIF(YR.GT.92)
|_GENR TOTOBS=TIME(0)
|_* ----------------------------------------------------------------------
|_* CREATING SEASONAL DUMMIES
|_* ----------------------------------------------------------------------
|_GENR JAN=0
|_GENR FEB=0
|_GENR MAR=0
|_GENR APR=0
|_GENR MAY=0
```

```
|_GENR JUN=0
|_GENR JUL=0
|_GENR AUG=0
|_GENR SEP=0
|_GENR OCT=0
|_GENR NOV=0
|_GENR DEC=0
|_IF(MO.EQ.1)JAN=1
|_IF(MO.EQ.2)FEB=1
|_IF(MO.EQ.3)MAR=1
|_IF(MO.EQ.4)APR=1
|_IF(MO.EQ.5)MAY=1
|_IF(MO.EQ.6)JUN=1
|_IF(MO.EQ.7)JUL=1
|_IF(MO.EQ.8)AUG=1
|_IF(MO.EQ.9)SEP=1
|_IF(MO.EQ.10)OCT=1
|_IF(MO.EQ.11)NOV=1
|_IF(MO.EQ.12)DEC=1
|_* ---------------------------------------------------
|_*  CREATING  STATE DUMMIES
|_* ---------------------------------------------------
|_GENR AL=0
|_GENR KY=0
|_GENR LA=0
|_GENR MS=0
|_GENR TN=0
|_IF(STATE.EQ.1)AL=1
|_IF(STATE.EQ.4)KY=1
|_IF(STATE.EQ.5)LA=1
|_IF(STATE.EQ.6)MS=1
|_IF(STATE.EQ.9)TN=1
|_* ------------------------------------------------------------------
|_* Creating Slope dummies for POOLED ANALYSIS Residential Access Lines
|_* ------------------------------------------------------------------
|_GENR RSAL=0
|_GENR RSKY=0
|_GENR RSLA=0
|_GENR RSMS=0
|_GENR RSTN=0
|_IF(STATE.EQ.1)RSAL=RLINES
|_IF(STATE.EQ.4)RSKY=RLINES
|_IF(STATE.EQ.5)RSLA=RLINES
|_IF(STATE.EQ.6)RSMS=RLINES
|_IF(STATE.EQ.9)RSTN=RLINES
|_* ------------------------------------------------------------------
|_* Creating Slope dummies for POOLED ANALYSISBusiness Main Access Lines
|_* ------------------------------------------------------------------
|_GENR BSAL=0
|_GENR BSKY=0
|_GENR BSLA=0
|_GENR BSMS=0
|_GENR BSTN=0
|_IF(STATE.EQ.1)BSAL=BLINES
|_IF(STATE.EQ.4)BSKY=BLINES
|_IF(STATE.EQ.5)BSLA=BLINES
|_IF(STATE.EQ.6)BSMS=BLINES
|_IF(STATE.EQ.9)BSTN=BLINES
|_* ---------------------------------------------------------------------
```

```
|_POOL RSEQ JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV RLINES RSEQR(0.3,2,3) &
|     RSAL RSKY RSLA  /NCROSS=5 CORCOEF LIST RS
 LAG FOR RSEQR   RANGE =  0  3 ORDER= 2 ENDCON=3
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     5 CROSS-SECTIONS AND     56 TIME-PERIODS
    280 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = RSEQ

OLS COEFFICIENTS
   1465.0      -976.50      634.74       1893.6       2508.2
   2017.8       1605.8      892.19       712.59       880.07
   672.20      0.75331     -3633.3      -5450.0      -5450.0
  -3633.3      0.22467E-01 -0.23463    -0.10760E-01  82393.


RHO VECTOR
  0.97576      0.98310      0.68209      0.94052      0.95268

CONSTANT RHO =  0.93792
VARIANCES
  0.28392E+07  0.31101E+07  0.56340E+07  0.49585E+07  0.62374E+07


PHI MATRIX
  0.28392E+07
 -0.38244E+06  0.31101E+07
 -0.15288E+07  0.23000E+06  0.56340E+07
  0.72227E+06  0.23532E+06  0.77327E+06  0.49585E+07
  0.13082E+07  0.18894E+06 -0.21313E+06  0.17167E+07  0.62374E+07

FINAL COEFFICIENTS
  -364.39      0.00000      0.00000      0.00000      1.0000
  0.00000      0.00000      0.00000      0.00000      0.00000
   1.0000      0.14772E+07  1.2500       1.2500       1.2500
   1.2500      0.00000      0.00000      0.00000      1.0000

FINAL SSE =   192.18
BUSE R-SQUARE = 0.9993       BUSE RAW-MOMENT R-SQUARE = 0.9999
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.73074
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.85483
SUM OF SQUARED ERRORS-SSE=   192.18
MEAN OF DEPENDENT VARIABLE =  0.82461E+06
LOG OF THE LIKELIHOOD FUNCTION = -2490.07
```

	VARIABLE	SUM OF LAG COEFS	STD ERROR	T-RATIO	MEAN LAG
37	RSEQR	-12899.	786.48	-16.401	1.5000

		A	B	C	D	E	F
	VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 263 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
41	JAN			-0.93452	-0.0575		
	FEB			0.26677	0.0164		
	MAR			2.3983	0.1463		
	APR			3.7955	0.2279		
	MAY			4.3029	0.2565		
	JUN			3.6265	0.2182		
	JUL			2.9721	0.1803		
	AUG			1.8667	0.1143		
49	SEP			1.4793	0.0908		

A B C D E F

1	OCT		1.7090	0.1048
	NOV		1.7571	0.1077
	RLINES		219.61	0.9973
	RSEQR		-16.401	-0.7111
	RSEQR		-16.401	-0.7111
	RSEQR		-16.401	-0.7111
	RSEQR		-16.401	-0.7111
	RSAL		4.3471	0.2589
	RSKY		-60.155	-0.9655
	RSLA		-12.151	-0.5996
10	CONSTANT		21.963	0.8045

	OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL	
14	17	[illegible]	[illegible]	0.58691E-01	*
	18	[illegible]	[illegible]	1.4660	I *
	19	[illegible]	[illegible]	1.0425	I *
	20	[illegible]	[illegible]	0.89401	I *
	21	[illegible]	[illegible]	0.14053	I*
	22	[illegible]	[illegible]	0.11560E-01	*
	23	[illegible]	[illegible]	0.31660E-01	*
	24	[illegible]	[illegible]	-0.31270	* I
	25	[illegible]	[illegible]	-0.32203	* I
	26	[illegible]	[illegible]	0.44464E-02	*
	27	[illegible]	[illegible]	-0.54801	* I
	28	[illegible]	[illegible]	-1.0238	* I
	29	[illegible]	[illegible]	-0.49271	* I
	30	[illegible]	[illegible]	-0.72088	* I
	31	[illegible]	[illegible]	-0.56136	* I
	32	[illegible]	[illegible]	-1.0036	* I
	33	[illegible]	[illegible]	-0.76195	* I
	34	[illegible]	[illegible]	-0.47829E-01	*
	35	[illegible]	[illegible]	-0.18982	*I
	36	[illegible]	[illegible]	0.54846	I *
	37	[illegible]	[illegible]	-0.61057	* I
	38	[illegible]	[illegible]	-1.3482	* I
	39	[illegible]	[illegible]	-1.4430	* I
	40	[illegible]	[illegible]	-0.41245	* I
	41	[illegible]	[illegible]	0.81984E-01	*
	42	[illegible]	[illegible]	0.14698	I*
	43	[illegible]	[illegible]	-0.15017	*I
	44	[illegible]	[illegible]	-1.5866	* I
	45	[illegible]	[illegible]	0.68064	I *
	46	[illegible]	[illegible]	-0.24325	*I
	47	[illegible]	[illegible]	-0.11278	*I
	48	[illegible]	[illegible]	-0.54829	* I
	49	[illegible]	[illegible]	-0.61562	* I
	50	[illegible]	[illegible]	-0.32983	* I
	51	[illegible]	[illegible]	-0.15869	*I
	52	[illegible]	[illegible]	-0.42826	* I
	53	[illegible]	[illegible]	-0.51009	* I
	54	[illegible]	[illegible]	-0.87676	* I
	55	[illegible]	[illegible]	-1.0017	* I
	56	[illegible]	[illegible]	-0.60687	* I
	57	[illegible]	[illegible]	0.33000	I *
	58	[illegible]	[illegible]	-0.44023	* I
	59	[illegible]	[illegible]	0.19133E-01	*
	60	[illegible]	[illegible]	-0.41968	* I
	61	[illegible]	[illegible]	-0.81011	* I
	62	[illegible]	[illegible]	-0.61473	* I
60	63	[illegible]	[illegible]	-0.40346	* I

	A	B	C	
64			-0.73129	
65			-0.85610	
66			-1.4173	
67			-1.3707	
68			-1.0609	
69			-0.49214	
70			-1.0965	
71			-1.7144	
72			-1.7999	
161			-3.2535	X
162			-0.87529	
163			-0.72208	
164			-1.2672	
165			1.4891	
166			1.2139	
167			1.2041	
168			-0.39439	
169			0.48762	
170			0.94735	
171			1.1801	
172			0.60607	
173			-0.15179	
174			-0.67639E-01	
175			-0.41013	
176			-0.52786	
177			-0.84427	
178			-0.83603	
179			-0.77286	
180			-0.61877	
181			0.20548E-01	
182			-0.10499E-01	
183			-0.45698	
184			-0.61681E-01	
185			0.81760	
186			1.4098	
187			1.2854	
188			0.77544	
189			-0.53325	
190			-0.49287	
191			-0.17537	
192			0.14801	
193			0.19793	
194			0.44974	
195			0.45546	
196			0.49593E-01	
197			0.42464	
198			0.29540	
199			0.21597	
200			0.14722	
201			-0.25755	
202			-0.17275	
203			0.17290E-01	
204			0.14322	
205			0.42862	
206			0.59577	
207			0.42479	
208			0.21599	
209			0.16768	
210			0.16430	
211			0.34876	

	A	B	C	
212			0.10883	I*
213			-0.47823	* I
214			-0.46778	* I
215			-0.24028	*I
216			0.34831	I *
305			-1.3507	* I
306			-0.14518	*I
307			-0.25193	*I
308			-0.20411	*I
309			-0.18569	*I
310			-0.26543	*I
311			-3.9117	X I
312			0.89563	I *
313			1.0394	I *
314			1.1020	I *
315			0.81668	I *
316			0.72318	I *
317			0.99632	I *
318			0.90645	I *
319			0.74814	I *
320			0.84287	I *
321			1.0095	I *
322			1.0858	I *
323			0.70241	I *
324			0.47058	I *
325			0.57131	I *
326			0.66905	I *
327			0.47314	I *
328			0.89012	I *
329			-0.17192	*I
330			-0.30311	* I
331			-0.22921	*I
332			1.0970	I *
333			0.30863	I *
334			-0.19465	*I
335			0.53630E-01	*
336			0.18594	I*
337			0.23437	I*
338			0.35470	I *
339			0.47351	I *
340			0.52378	I *
341			0.55171	I *
342			0.40904	I *
343			0.26087	I*
344			0.36211	I *
345			0.69281	I *
346			0.30547	I *
347			0.62084	I *
348			0.34873	I *
349			0.39239	I *
350			0.68349	I *
351			0.55300E-01	*
352			-0.16788	*I
353			0.79358	I *
354			1.0531	I *
355			0.84734	I *
356			0.17686	I*
357			0.27230	I*
358			-0.34951	* I
359			-0.89309E-01	*

	A	B	C
360			-0.59166
449			-0.36279
450			-0.54774
451			-0.42363
452			-0.99813
453			-1.4784
454			-1.2012
455			-1.2740
456			-0.82815
457			-0.82755
458			2.6745
459			1.0980
460			0.89995
461			0.81502
462			0.37685
463			0.28628
464			0.30178
465			0.14565
466			0.60289E-01
467			0.15938
468			0.36080
469			0.20080
470			-0.29934
471			-0.36104
472			-0.23917
473			-0.22243
474			0.36417
475			0.51142
476			-0.28658
477			-0.32154
478			-0.36551
479			0.13113
480			0.13538
481			-0.41640
482			-0.63617
483			-2.3210
484			-0.71856
485			-0.50965
486			-0.25103
487			-0.44680
488			-0.31872
489			-0.51624
490			-0.77419
491			-0.49198
492			-0.97907
493			-0.56457
494			-0.81568E-01
495			-0.14712
496			-0.42636
497			1.2207
498			-2.4779
499			-1.1306
500			-0.81755
501			-0.73548
502			-0.93870
503			-0.79293
504			-0.55049
593			-2.4380
594			-0.71215
595			-1.1430

	A	B	C
596	[illegible]	[illegible]	-1.1924
597	[illegible]	[illegible]	-0.89499
598	[illegible]	[illegible]	-0.53121
599	[illegible]	[illegible]	-0.96494
600	[illegible]	[illegible]	-1.3986
601	[illegible]	[illegible]	-1.2324
602	[illegible]	[illegible]	-1.1321
603	[illegible]	[illegible]	-1.0063
604	[illegible]	[illegible]	-0.96330
605	[illegible]	[illegible]	1.4657
606	[illegible]	[illegible]	1.0147
607	[illegible]	[illegible]	0.54614
608	[illegible]	[illegible]	0.25081
609	[illegible]	[illegible]	-0.22082
610	[illegible]	[illegible]	-0.26326
611	[illegible]	[illegible]	-0.14817
612	[illegible]	[illegible]	-0.19254
613	[illegible]	[illegible]	-0.31451
614	[illegible]	[illegible]	-0.55289
615	[illegible]	[illegible]	-0.64737
616	[illegible]	[illegible]	-0.48520
617	[illegible]	[illegible]	-0.51469
618	[illegible]	[illegible]	-0.57865
619	[illegible]	[illegible]	-0.52361
620	[illegible]	[illegible]	-1.1129
621	[illegible]	[illegible]	-0.80703
622	[illegible]	[illegible]	-0.33740
623	[illegible]	[illegible]	-0.22255
624	[illegible]	[illegible]	-0.30940
625	[illegible]	[illegible]	2.3556
626	[illegible]	[illegible]	-0.80083E-01
627	[illegible]	[illegible]	-0.20685
628	[illegible]	[illegible]	-0.85527
629	[illegible]	[illegible]	-0.87897
630	[illegible]	[illegible]	-0.62619
631	[illegible]	[illegible]	-0.79767
632	[illegible]	[illegible]	-1.0134
633	[illegible]	[illegible]	-0.82842
634	[illegible]	[illegible]	-0.86793
635	[illegible]	[illegible]	-0.60864
636	[illegible]	[illegible]	-0.65301
637	[illegible]	[illegible]	-0.76774
638	[illegible]	[illegible]	-0.66199
639	[illegible]	[illegible]	-0.36356
640	[illegible]	[illegible]	-0.84499
641	[illegible]	[illegible]	-0.72918
642	[illegible]	[illegible]	-0.95969
643	[illegible]	[illegible]	-1.0865
644	[illegible]	[illegible]	-0.87272
645	[illegible]	[illegible]	-0.62667
646	[illegible]	[illegible]	-0.69230
647	[illegible]	[illegible]	-1.6101
648	[illegible]	[illegible]	0.31012

DURBIN-WATSON = 0.8516 VON NEUMANN RATIO = 0.8547 RHO = 0.51566
RESIDUAL SUM = -54.322 RESIDUAL VARIANCE = 0.73074
SUM OF ABSOLUTE ERRORS= 180.18
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9998
RUNS TEST: 48 RUNS, 110 POSITIVE, 170 NEGATIVE, NORMAL STATISTIC =-10.8666
|_STOP

Analysis:Florida Refund

The following statistical analysis shows the 1992 impact of the refunds associated with Florida's Inside Wire and the publicity that surrounded it. Assumed to occur in August 1992 , the impact of the refund led to approximately 9,000 SEQ1X plans being dropped. This includes both the residential and business sectors. In other words, if the refunds and publicity surrounding the plans had not occurred, the model predicted that the number of plans In-service in August of 1992 would have been 2,002,448 instead of 1,993,400 - a loss of less than one half of one percent of the existing base. The result is statistically significant and was measured by the inclusion of what are called intercept binaries into the forecast equation. The statistical output associated with the regression follows.

|_* FLORIDA:

|_AUTO SEQ ANDREW8 ANDREW9 TLINES SEQR AWMR WMQ &
| /LIST RS BEG=10 END=74 DROP

REQUIRED MEMORY IS PAR= 203 CURRENT PAR= 5555

DEPENDENT VARIABLE = SEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION   64 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	-745.558	0.49226E+11
2	0.89275	-673.486	0.51767E+10
3	0.98534	-661.603	0.35710E+10
4	0.98192	-660.357	0.34346E+10
5	0.97918	-658.615	0.32526E+10
6	0.97680	-656.414	0.30364E+10
7	0.97469	-653.870	0.28044E+10
8	0.97282	-651.166	0.25771E+10
9	0.97117	-648.511	0.23720E+10
10	0.96973	-646.091	0.21992E+10
11	0.96847	-644.028	0.20619E+10
12	0.96739	-642.368	0.19576E+10
13	0.96646	-641.096	0.18814E+10

LOG L.F. =   -641.096   AT RHO =   0.96646

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.96646	0.00103	0.03210	30.10789

R-SQUARE =   0.9999   R-SQUARE ADJUSTED =   0.9999
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.33006E+08
STANDARD ERROR OF THE ESTIMATE-SIGMA =   5745.1
SUM OF SQUARED ERRORS-SSE= 0.18814E+10
MEAN OF DEPENDENT VARIABLE = 0.14098E+07
LOG OF THE LIKELIHOOD FUNCTION = -641.096

		A	B	C	D	E	F
	VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 57 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
35	ANDREW8			-1.8826	-0.2420		
	ANDREW9			-1.8565	-0.2388		
	TLINES		1	2.7283	0.3399		
	SEQR			0.16058	0.0213		
	AWMR			-0.91310	-0.1201		
	WMQ			-0.66262	-0.0874		
41	CONSTANT			5.2243	0.5690		

	OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL	
44	11			3234.4	I *
	12			6694.8	I *
	13			-1939.7	* I
	14			-2953.0	* I
	15			-526.29	*
49	16			-6377.3	* I

	A	B	C
17			-4874.7
18			7078.3
19			-1125.7
20			6264.3
21			-517.69
22			-1979.3
23			-3156.4
24			-5511.4
25			871.94
26			5384.8
27			7136.1
28			2374.9
29			294.01
30			5237.3
31			541.63
32			9667.2
33			2048.2
34			5146.0
35			8069.4
36			4981.5
37			9075.1
38			4923.8
39			6279.8
40			-2720.1
41			1067.5
42			3618.6
43			-4007.6
44			7635.5
45			2312.2
46			5290.4
47			-14088.
48			-1234.9
49			3349.2
50			1199.1
51			1026.6
52			-8528.7
53			-3141.6
54			-2452.8
55			-3953.2
56			1329.0
57			-5366.7
58			-273.06
59			953.75
60			-776.77
61			8574.6
62			7136.9
63			948.68
64			-1284.0
65			-3270.7
66			-4622.1
67			-13641.
68			-9143.9
69			-9461.1
70			-9789.4
71			-2960.9
72			-3941.7
73			-4269.8
74			-1855.6

DURBIN-WATSON = 1.1755   VON NEUMANN RATIO = 1.1942   RHO = 0.40930

RESIDUAL SUM = -0.34051E-08 RESIDUAL VARIANCE = 0.33006E+08
SUM OF ABSOLUTE ERRORS= 0.27949E+06
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9999
RUNS TEST: 20 RUNS, 32 POSITIVE, 32 NEGATIVE, NORMAL STATISTIC = -3.2761

|_FC /BEG=74 END=144 BLUP PREDICT=PREDF MODEL=AUTO ESTEND=74

REQUIRED MEMORY IS PAR= 203 CURRENT PAR= 5555
..ASSUMING ESTIMATION ENDED AT OBSERVATION 74
DEPENDENT VARIABLE = SEQ 71 OBSERVATIONS
REGRESSION COEFFICIENTS

10

AUTOCORRELATION RHO
0.9664644911435
USER SPECIFIED RHO= 0.96646
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS. 75

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS= 0.16584E+09
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0030
MEAN ERROR = -0.23358E+07
SUM-SQUARED ERRORS = 0.39330E+15
MEAN SQUARE ERROR = 0.55394E+13
MEAN ABSOLUTE ERROR= 0.23358E+07
ROOT MEAN SQUARE ERROR = 0.23536E+07
THEIL INEQUALITY COEFFICIENT U = 9.638
DECOMPOSITION
PROPORTION DUE TO BIAS = 0.98492
PROPORTION DUE TO VARIANCE = 0.17311E-02
PROPORTION DUE TO COVARIANCE = 0.13348E-01
DECOMPOSITION
PROPORTION DUE TO BIAS = 0.98492
PROPORTION DUE TO REGRESSION = 0.44983E-02
PROPORTION DUE TO DISTURBANCE = 0.10581E-01
|_PRINT STATE MO YR PREDF /BEG=74 END=144

	A STATE	B MO	C YR	D PREDF
36	2.000000	2.000000	93.00000	
	2.000000	3.000000	93.00000	
	2.000000	4.000000	93.00000	
	2.000000	5.000000	93.00000	
	2.000000	6.000000	93.00000	
	2.000000	7.000000	93.00000	
	2.000000	8.000000	93.00000	
	2.000000	9.000000	93.00000	
	2.000000	10.00000	93.00000	
	2.000000	11.00000	93.00000	
	2.000000	12.00000	93.00000	
	2.000000	1.000000	94.00000	
	2.000000	2.000000	94.00000	
	2.000000	3.000000	94.00000	
	2.000000	4.000000	94.00000	
	2.000000	5.000000	94.00000	
	2.000000	6.000000	94.00000	
	2.000000	7.000000	94.00000	
	2.000000	8.000000	94.00000	
	2.000000	9.000000	94.00000	
	2.000000	10.00000	94.00000	
57	2.000000	11.00000	94.00000	

A	B	C	D
2.000000	12.00000	94.00000	
2.000000	1.000000	95.00000	
2.000000	2.000000	95.00000	
2.000000	3.000000	95.00000	
2.000000	4.000000	95.00000	
2.000000	5.000000	95.00000	
2.000000	6.000000	95.00000	
2.000000	7.000000	95.00000	
2.000000	8.000000	95.00000	
2.000000	9.000000	95.00000	
2.000000	10.00000	95.00000	
2.000000	11.00000	95.00000	
2.000000	12.00000	95.00000	
2.000000	1.000000	96.00000	
2.000000	2.000000	96.00000	
2.000000	3.000000	96.00000	
2.000000	4.000000	96.00000	
2.000000	5.000000	96.00000	
2.000000	6.000000	96.00000	
2.000000	7.000000	96.00000	
2.000000	8.000000	96.00000	
2.000000	9.000000	96.00000	
2.000000	10.00000	96.00000	
2.000000	11.00000	96.00000	
2.000000	12.00000	97.00000	
2.000000	1.000000	97.00000	
2.000000	2.000000	97.00000	
2.000000	3.000000	97.00000	
2.000000	4.000000	97.00000	
2.000000	5.000000	97.00000	
2.000000	6.000000	97.00000	
2.000000	7.000000	97.00000	
2.000000	8.000000	97.00000	
2.000000	9.000000	97.00000	
2.000000	10.00000	97.00000	
2.000000	11.00000	97.00000	
2.000000	12.00000	97.00000	
2.000000	1.000000	98.00000	
2.000000	2.000000	98.00000	
2.000000	3.000000	98.00000	
2.000000	4.000000	98.00000	
2.000000	5.000000	98.00000	
2.000000	6.000000	98.00000	
2.000000	7.000000	98.00000	
2.000000	8.000000	98.00000	
2.000000	9.000000	98.00000	
2.000000	10.00000	98.00000	
2.000000	11.00000	98.00000	
2.000000	12.00000	98.00000	

INSIDE WIRE - NON RECURRING DATA FILES

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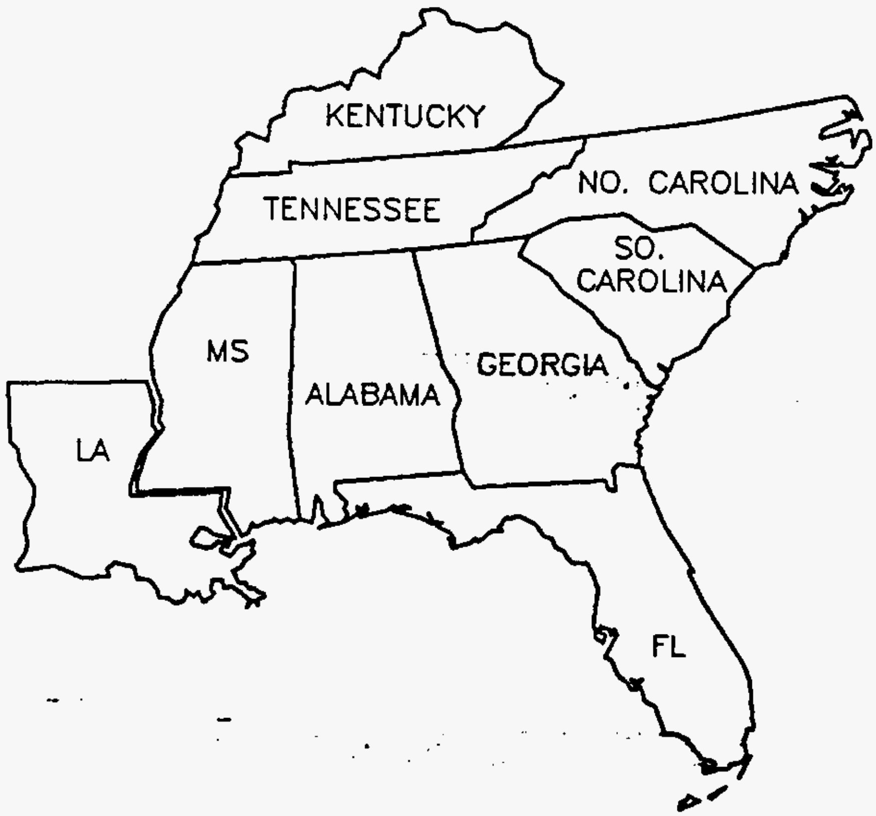
SCB	BAT	3560	07-15-91	2:37p
SHZSB	PRN	13680	07-19-91	9:19a
SHZSCB	PRN	19635	07-19-91	8:04a
DATADEF	TXT	1309	08-31-93	12:19p

BellSouth Services

PRICING & ECONOMICS

DEMAND ANALYSIS:

NON-RECURRING INSIDE WIRE



11/5/91 jsm
Demand Analysis

F01B25Z 0000193

NON-RECURRING

INSIDE WIRE

INSTALLATION & MAINTENANCE

SUMMARY & INTRODUCTION

11/5/91
Jeffrey Morrison

INSIDE WIRE: INSTALLATION AND MAINTENANCE CHARGES

Introduction:

The purpose of this study was in response to a March 7, 1991 letter from Ron Pardue of Pricing and Economics requesting a base and test rate forecast for Inside Wire non-recurring charges. In order to develop forecasts of this nature, it was necessary to construct an econometric model to determine how subscribers have responded to changes in the non-recurring rate. Forecasts under various test rates will be developed as soon as the proposed prices are received.

In Southern Bell, installation charges for inside wire are flat rated. The charges examined in this study consist of the following USOC's- PWT, SCO, and VCA. In addition, maintenance charges were also examined on a time and material basis. Historical data (January 1989 - December 1990) was collected from the Southern Bell "Non-recurring Charge Summary Report" by the following line items...

Prewire (PWT) - first installation	line 54
Prewire (PWT) - add'l installation	line 55
Jack (SCO) - first installation	line 56
Jack (SCO) - add'l installation	line 57
Exposed (VCA) - first installation	line 58
Exposed (VCA) - add'l installation	line 59
Premise Work - maint & installation (15 minutes)	line 61
Premise Work - add'l I&M (15 minutes)	line 62

South Central Bell also has flat rated installation charges. The data for the South Central states was collected from a different source than the Southern Bell data. Extracts were available for the period January 1987 - February 1991 from the Stat Master File for the following RIC codes...

Prewire (PWT) - first installation	RIC = 700
Prewire (PWT) - add'l installation	RIC = 703

1 Summary of Results and Methodology:

2 The price elasticity of the aggregate market was found to be
3 This is much higher than the elasticity found for the recurring component of inside wire - the monthly maintenance plans. However, this measure is still in the inelastic range.

Two econometric models were constructed in this study - both using "derived demand" as the dependent variable. Derived demand simply refers to taking the revenue associated with non-recurring charges and dividing them by the tariffed rate. The first model was developed with South Central Bell data and was used to estimate an elasticity measure. The South Central analysis covered the August 1987 to February 1991 time frame. The second model used Southern Bell data from January 1988 to February 1991, but did not attempt to describe price relationships. Both models were estimated using a double log transformation.

The Southern Bell model pooled state specific data over the historical period and specified demand as a function of the log of price, the log of real income, two outlier binaries for observation #31 and #66, monthly seasonal intercepts, state specific intercepts. Also included was a binary for the state of Alabama if the observation came after December 1989. Estimated by the econometric package SHAZAM, the autocorrelation and heteroscedasticity options were used. Rho was allowed to vary between states equating to a composite autocorrelation correction of .60. The t-statistic for the price variable was extremely significant (-14.5), indicating a great deal of precision in the estimate. The other driving variable, income, was also found significant with a t-statistic of 14. The Durbin-Watson statistic was adequate at 2.2. This equation was used to forecast base level demand at current rates.

Jack (SCO) - first installation	RIC = 701
Jack (SCO) - add'l installation	RIC = 704
Exposed (VCA) - first installation	RIC = 702
Exposed (VCA) - add'l installation	RIC = 705
Premise Work - first installation (15 minutes)	RIC = 800
Premise Work - add'l install. (15 minutes)	RIC = 801
Premise Work - first maintenance (15 minutes)	RIC = 846
Premise Work - add'l maintenance (15 minutes)	RIC = 847

Both Southern and South Central Bell had experienced rate changes to these inside wire charges since 1987. For South Central Bell, these changes occurred in January 1988 and August of 1989. Southern Bell had price changes in 1987 and 1988. Unfortunately, the only records for Southern Bell before January 1989 were destroyed by a flood in the records room at Southern Bell Center last year. Therefore, this study does not use Southern Bell data to determine a price elasticity for Inside Wire non-recurring charges. The price responsiveness measure represents the aggregate impact of rate changes in the residential and business markets.

The Southern Bell model specified demand as a function of seasonal intercepts, state specific intercepts an time trends specific to each cross section. Although real income was initially used to explain the trend component in the series, the short time frame precluded its significance in the equation. In fact, even some of the time trends proved insignificant - implying that the level of non-recurring charges in Southern Bell are remaining relatively constant. Like the South Central Bell model, the Southern Bell model used a pooling technique allowing state specific autocorrelation corrections as well as a heteroscedasticity adjustment. The Durbin-Watson was a little low at 1.7, but still adequate. Again, no price variable was included in the equation since there was no price change over the historical period. The equation was used only to forecast base case demand. The following pages show the results of the statistical estimation along with a series of graphs depicting historical demand, forecasts, prices over time.

Date: March 7, 1991

To: Jeff Morrison

From: Ron Pardue

Subject: IW Nonrecurring Rates

As we discussed recently, the Basic Inside Wire nonrecurring rates will be reviewed this year to determine if the rates are at the optimum level.

In the past, fully distributed costs were used as the pricing floor for nonrecurring rates. In the next few months a new cost study will be completed which will be based on incremental costs. Since these costs will be lower, there will be more pricing flexibility. Your demand analyses will be the primary tool in determining the new rates.

The current nonrecurring rate structure has flat rates for the more common type work functions and time sensitive charges (premises work charges) for unusual situations requiring extraordinary time.

In the real world, these charges are not always applied in the intended manner. Because of inconsistencies in charging, one state has proposed to eliminate Flat Rate while another state has proposed to eliminate Premises Work Charges. The Product Team will resolve this issue.

Whether the rate structure is changed or not, historical data will be required on the existing rate structure. If you could begin collecting this historical data it could possibly help us in determining the correct rate structure.

Attached are the current nonrecurring rates. Also attached is a historical list of rates since 1/1/87.

After reviewing this, please let me know when you can provide this historical data.

Ron

cc: Bill Freeman
Jeff Salyer

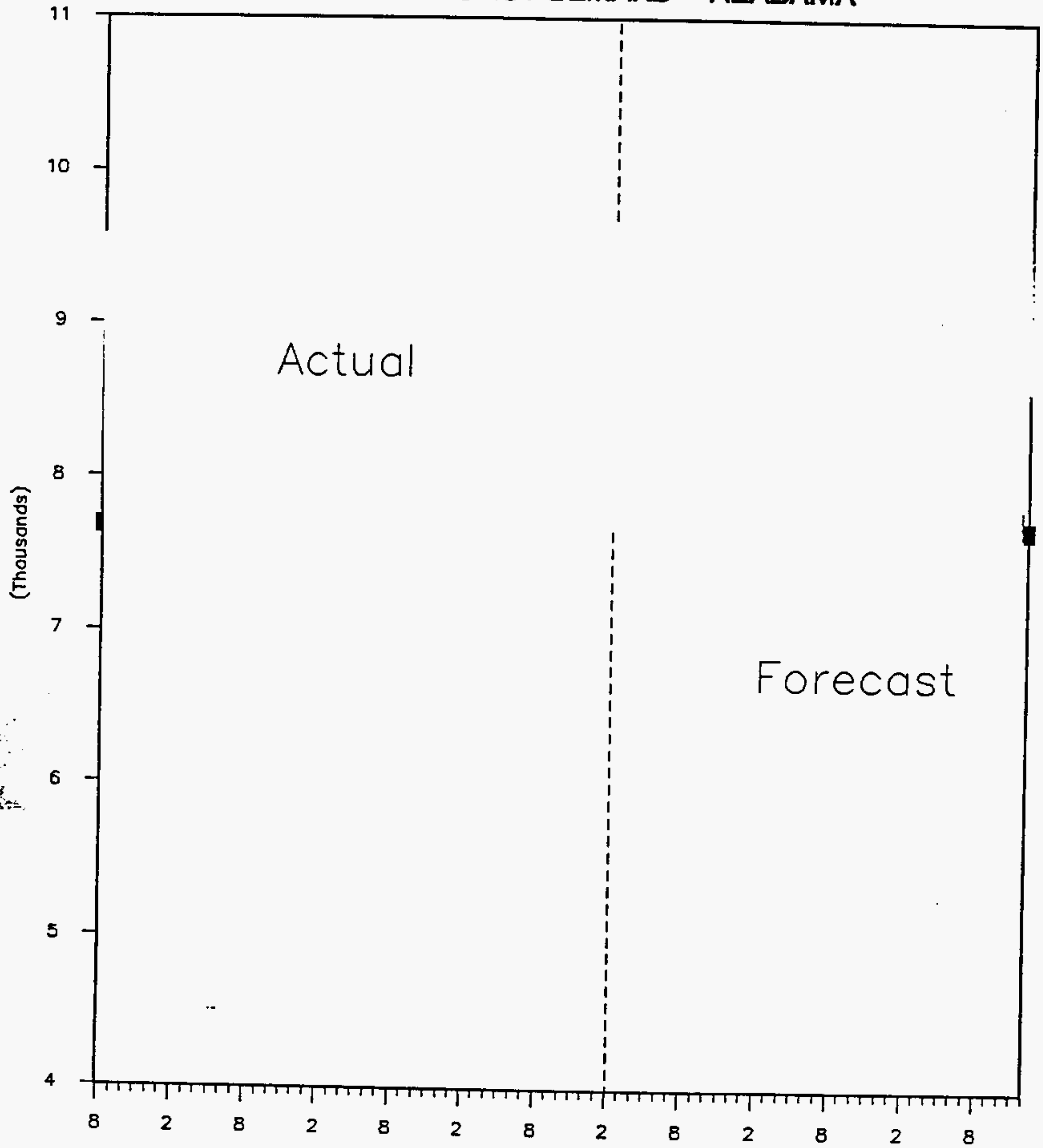
NON-RECURRING

INSIDE WIRE

FORECASTS

INSIDE WIRE INSTALLATION & MAINTENANCE

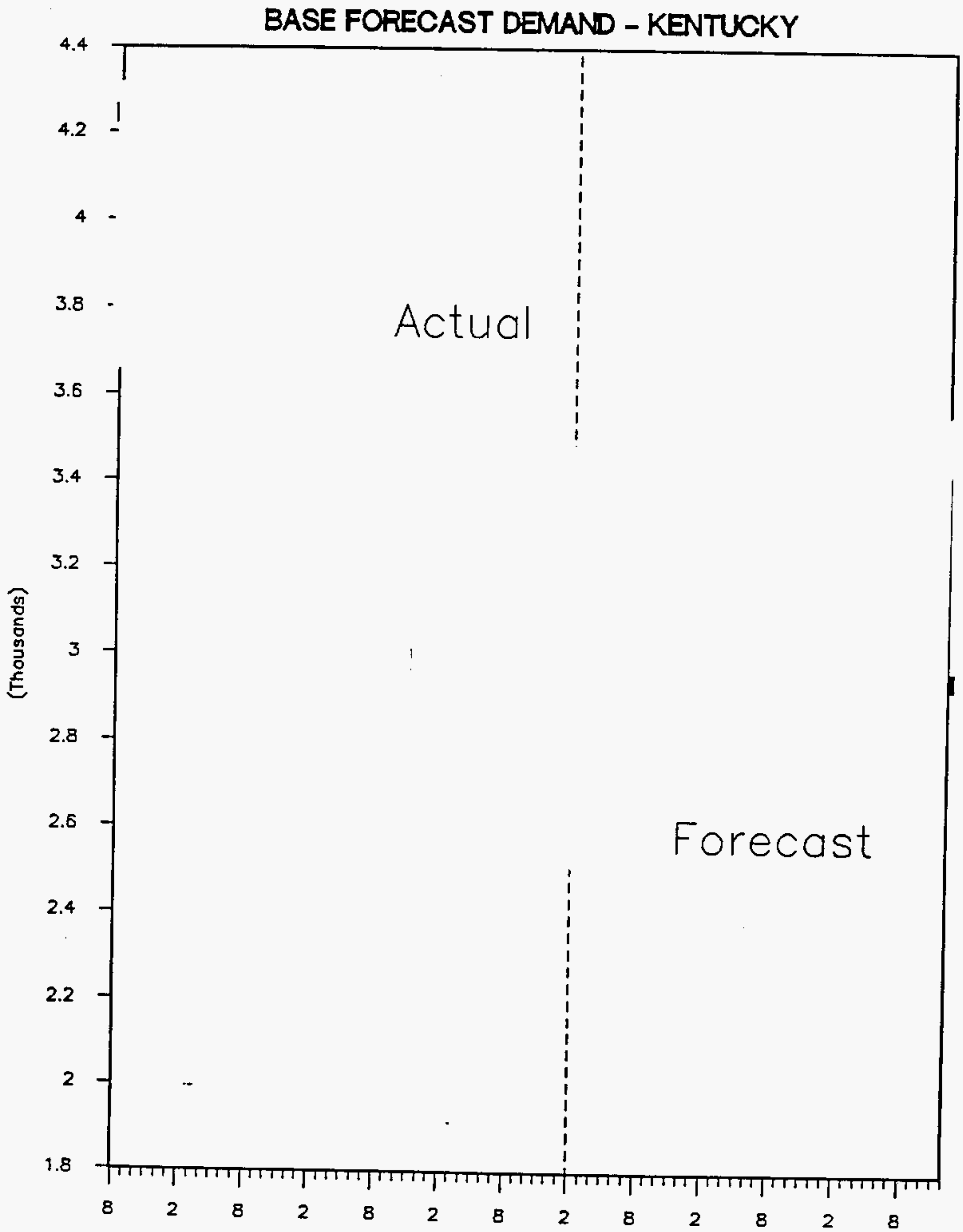
BASE FORECAST DEMAND – ALABAMA



AUGUST 1987–DECEMBER 1993 (8/87–12/93)

F01B252 0000201

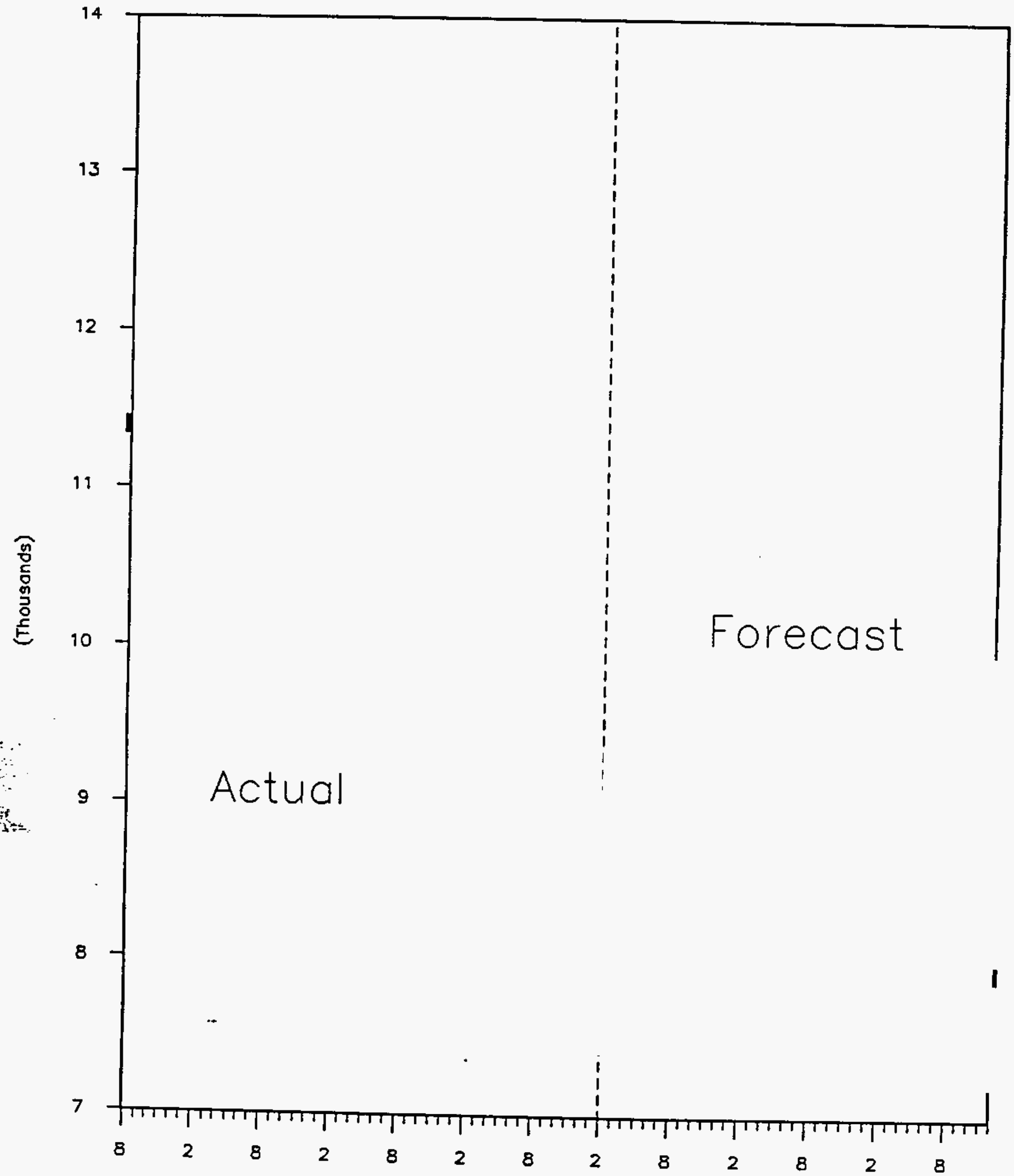
INSIDE WIRE INSTALLATION & MAINTENANCE



AUGUST 1987–DECEMBER 1993 (8/87–12/93)

INSIDE WIRE INSTALLATION & MAINTENANCE

BASE FORECAST DEMAND - LOUISIANA

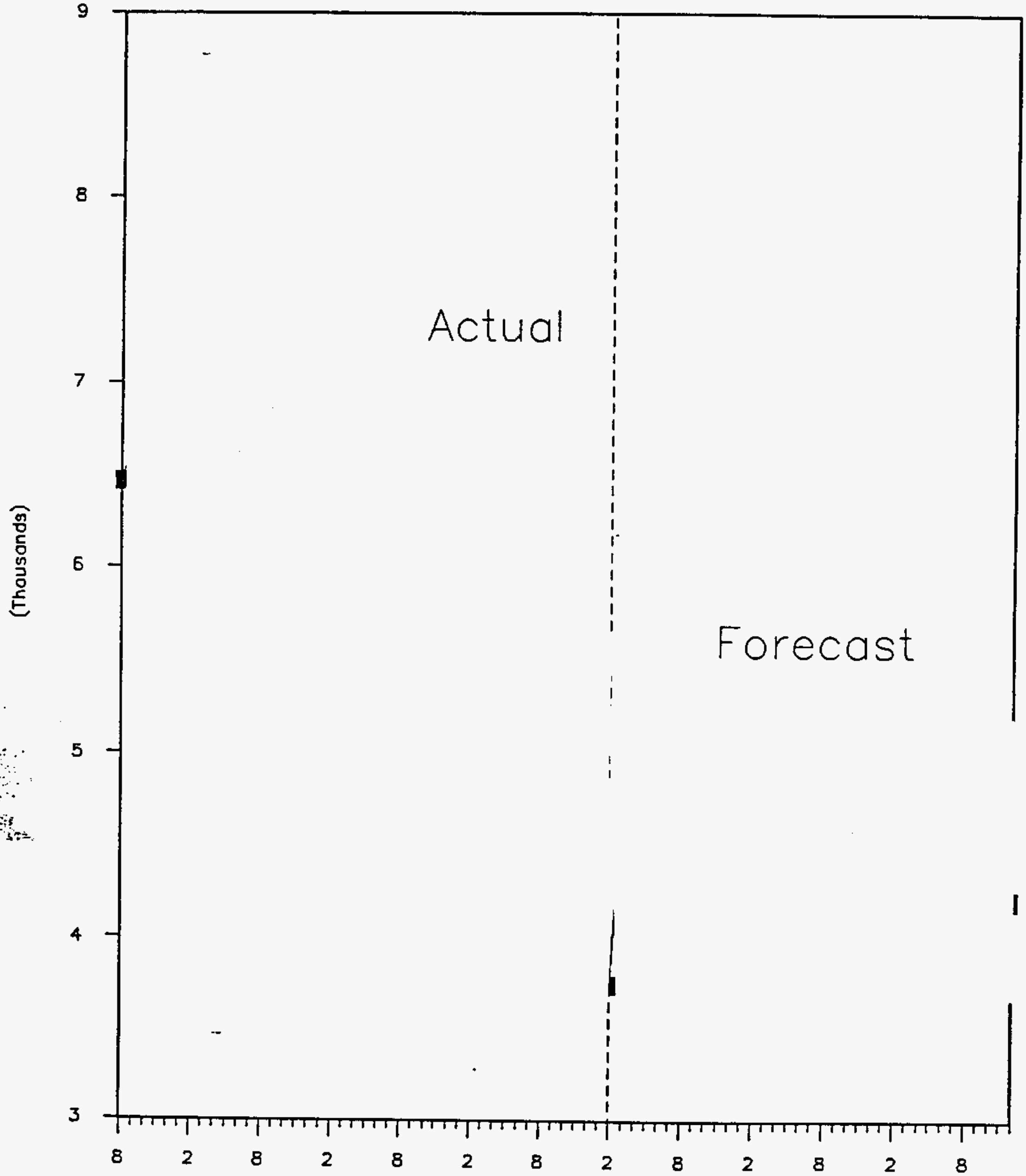


AUGUST 1987–DECEMBER 1993 (8/87–12/93)

F01B252 0000203

INSIDE WIRE INSTALLATION & MAINTENANCE

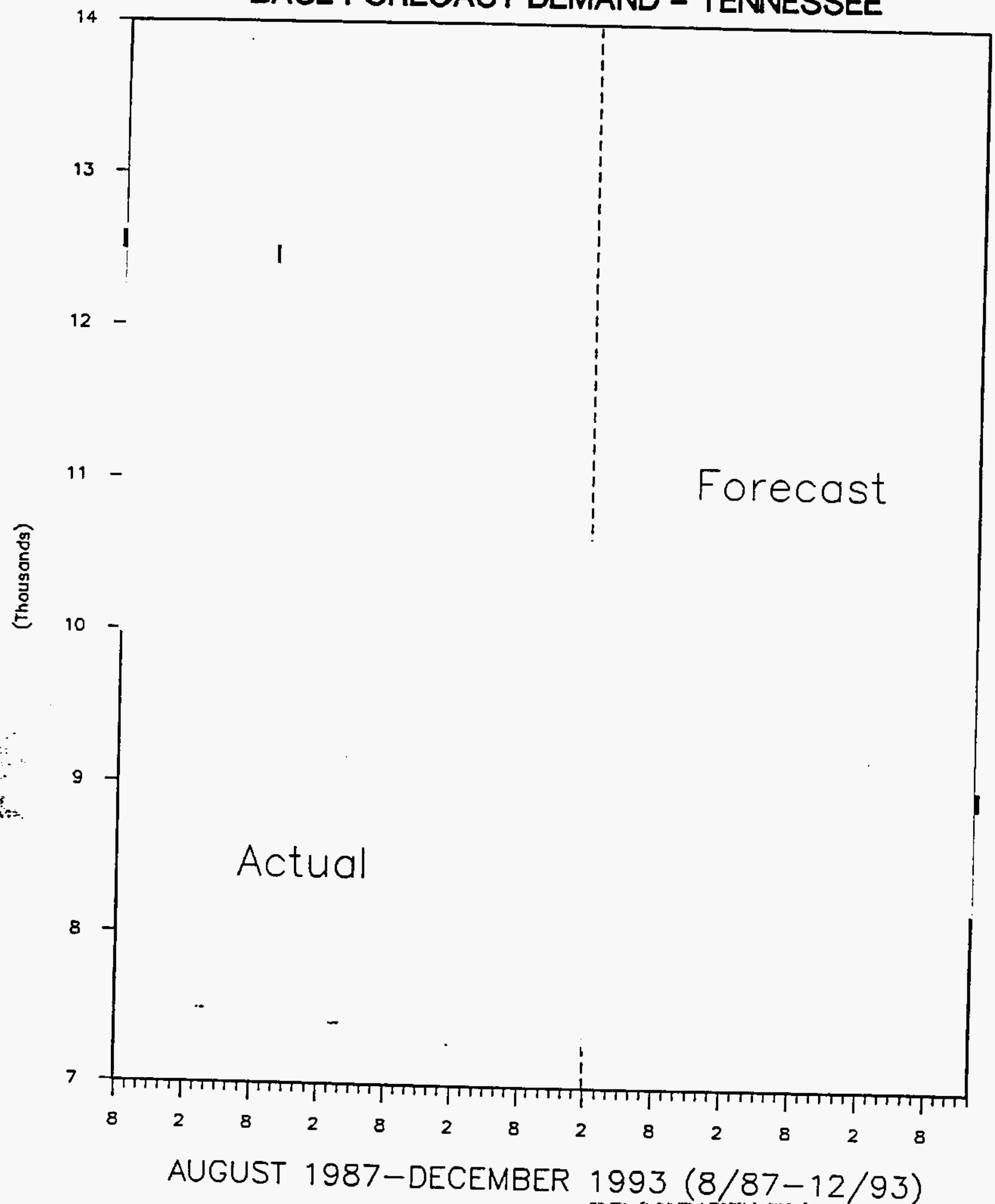
BASE FORECAST DEMAND - MISSISSIPPI



AUGUST 1987–DECEMBER 1993 (8/87–12/93)

INSIDE WIRE INSTALLATION & MAINTENANCE

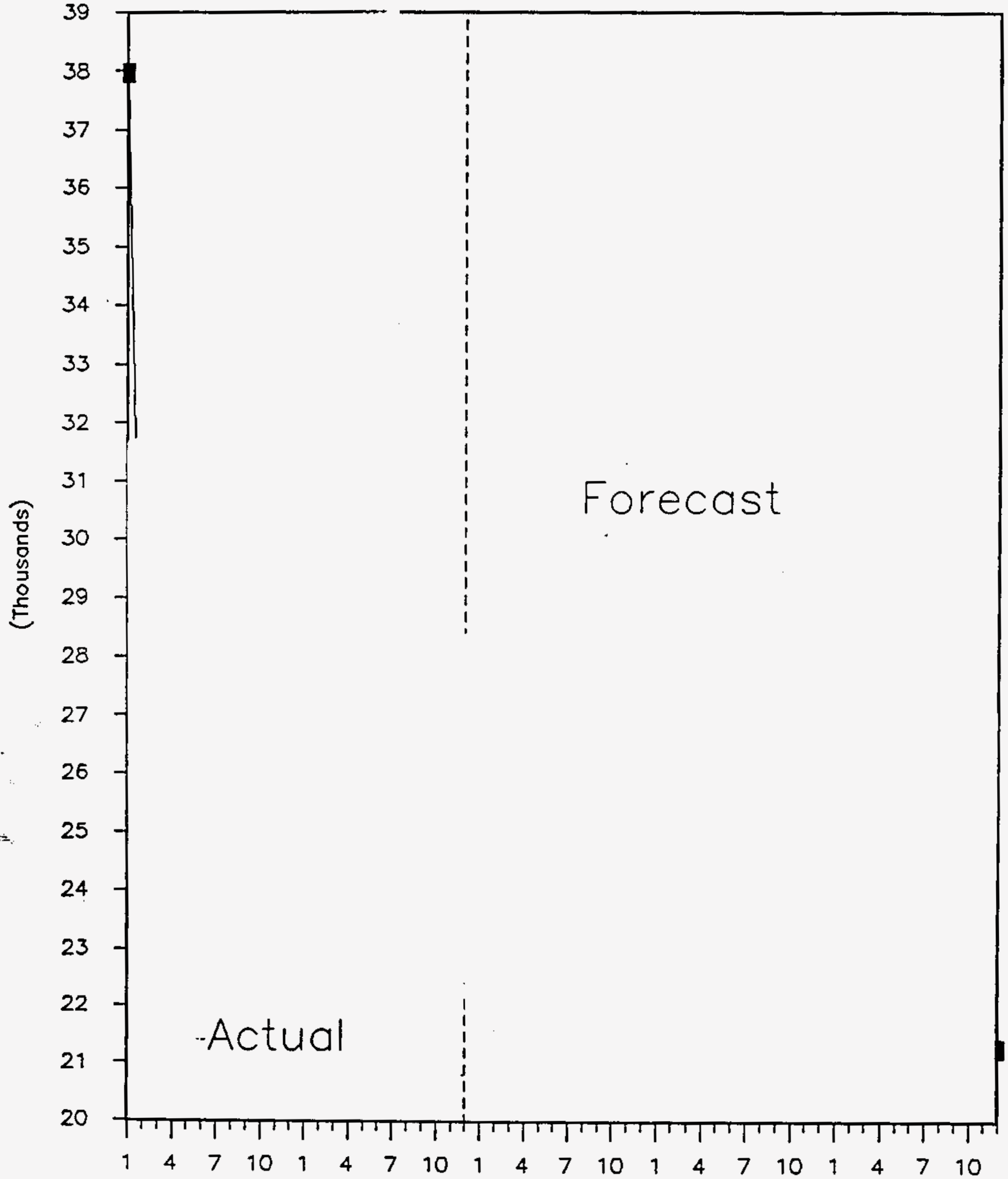
BASE FORECAST DEMAND – TENNESSEE



F01B25Z 0000205

INSIDE WIRE INSTALLATION & MAINTENANCE

BASE FORECAST DEMAND – FLORIDA

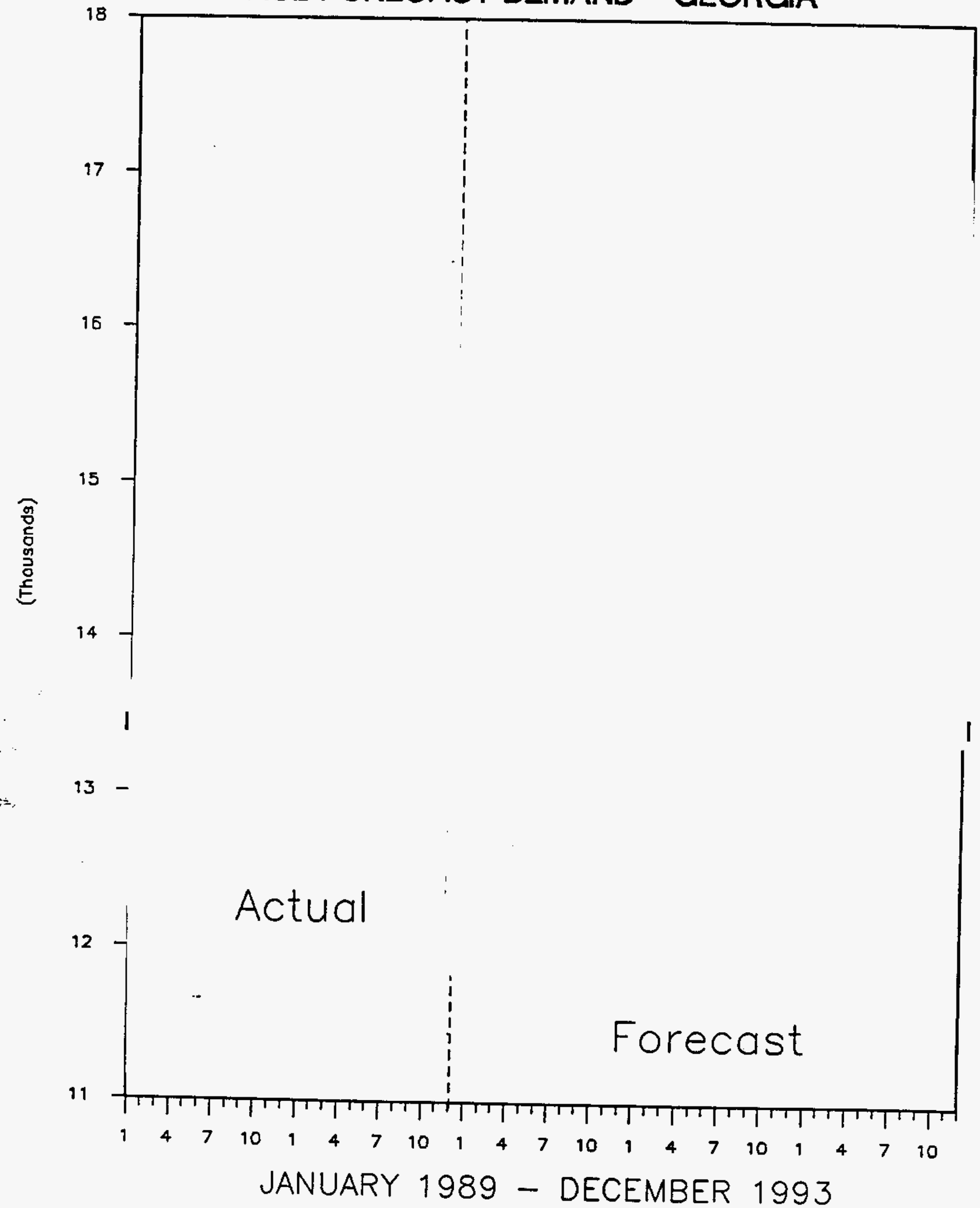


JANUARY 1989 – DECEMBER 1993

F01B252 0000206

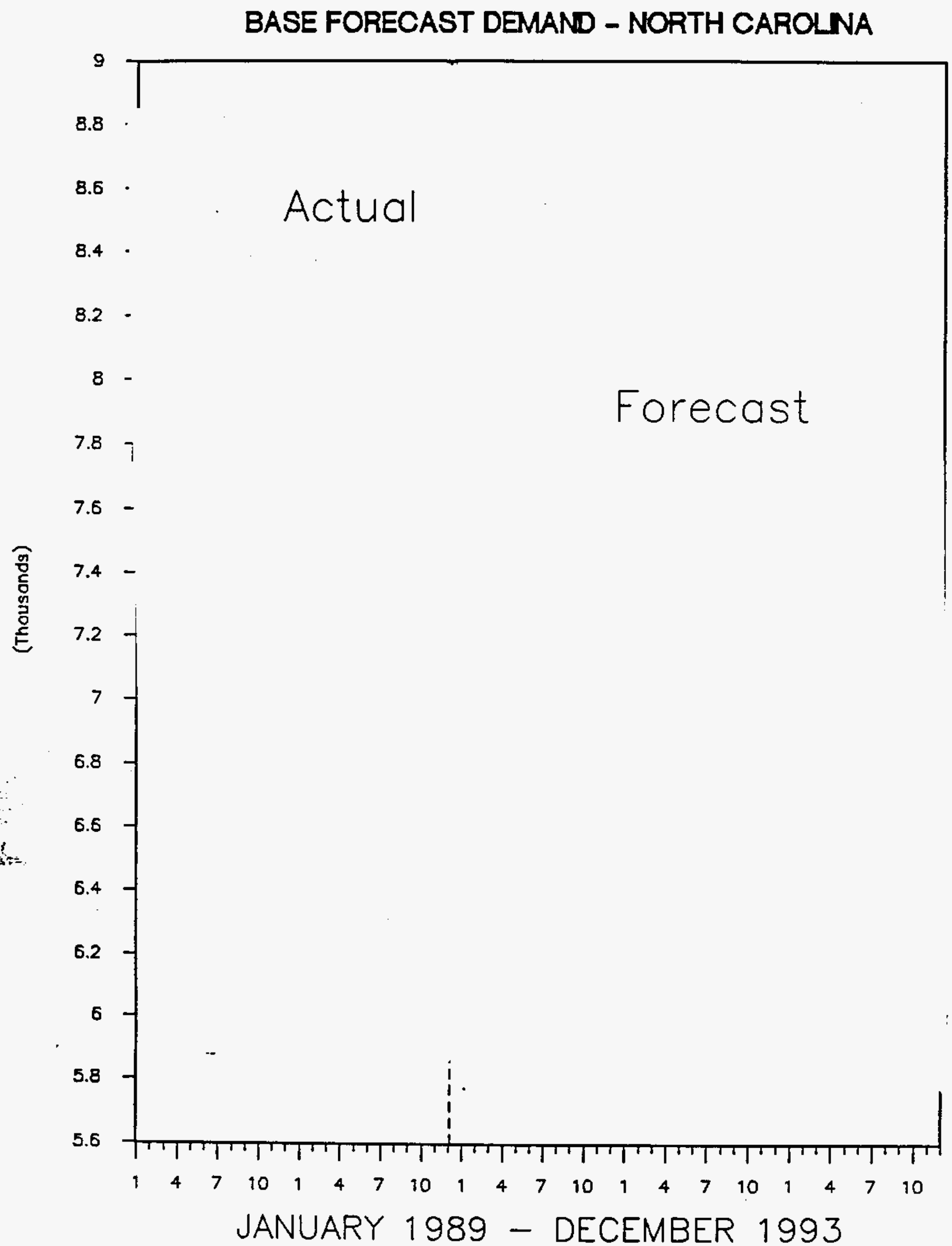
INSIDE WIRE INSTALLATION & MAINTENANCE

BASE FORECAST DEMAND - GEORGIA



F018257 000027

INSIDE WIRE INSTALLATION & MAINTENANCE



PROPRIETARY

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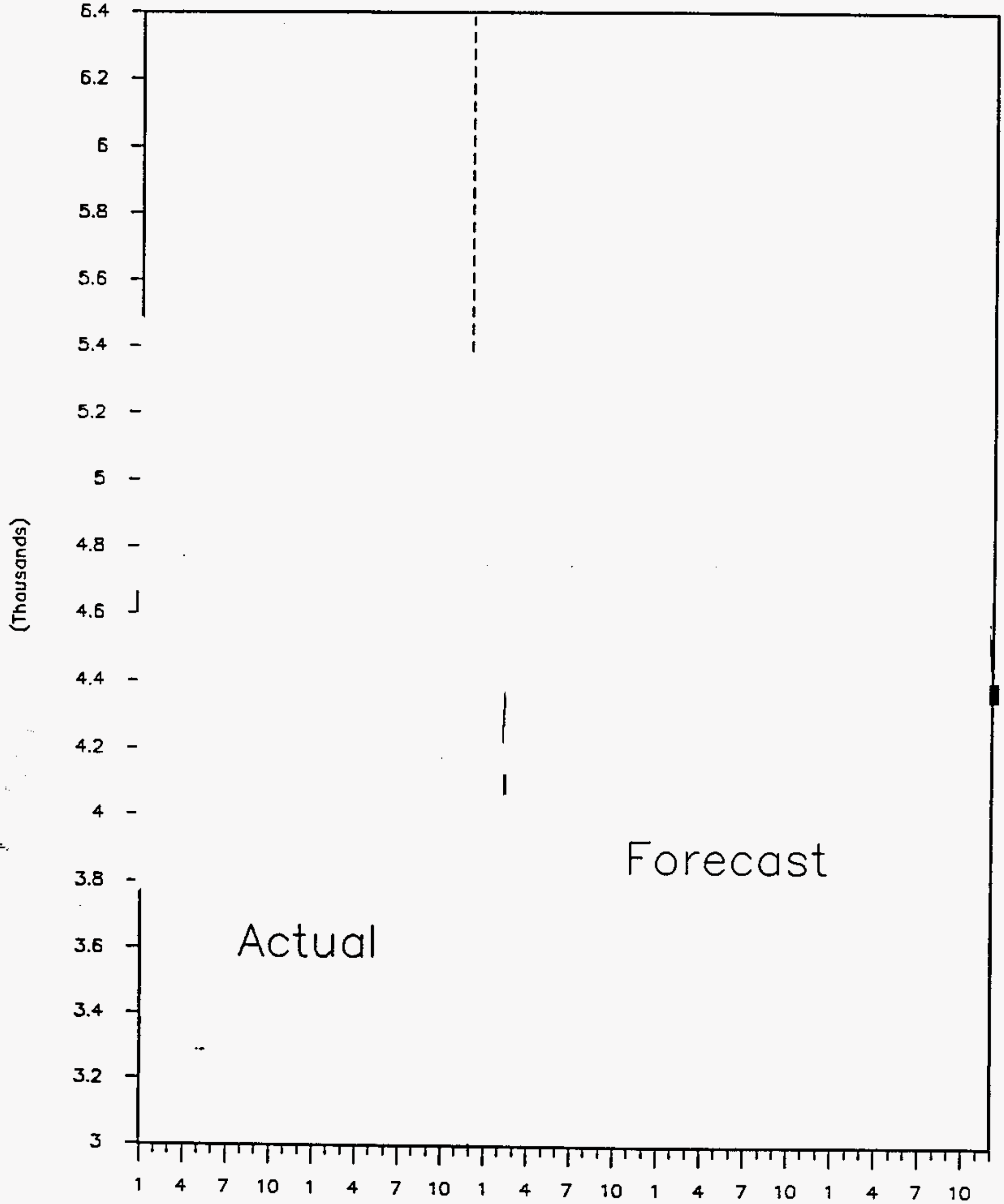
F01B25Z 0000208

INSIDE WIRE INSTALLATION & MAINTENANCE

BASE FORECAST DEMAND – SOUTH CAROLINA



JANUARY 1989 – DECEMBER 1993

INSIDE WIRE INSTALLATION AND MAINTENANCE MODEL - SCB

A	B	C	D	E

|_PRINT OBS MONTH YEAR ALD ALREV

OBS	MONTH	YEAR	ALD	ALREV
216.0000	3.000000	91.00000		
217.0000	4.000000	91.00000		
218.0000	5.000000	91.00000		
219.0000	6.000000	91.00000		
220.0000	7.000000	91.00000		
221.0000	8.000000	91.00000		
222.0000	9.000000	91.00000		
223.0000	10.00000	91.00000		
224.0000	11.00000	91.00000		
225.0000	12.00000	91.00000		
226.0000	1.000000	92.00000		
227.0000	2.000000	92.00000		
228.0000	3.000000	92.00000		
229.0000	4.000000	92.00000		
230.0000	5.000000	92.00000		
231.0000	6.000000	92.00000		
232.0000	7.000000	92.00000		
233.0000	8.000000	92.00000		
234.0000	9.000000	92.00000		
235.0000	10.00000	92.00000		
236.0000	11.00000	92.00000		
237.0000	12.00000	92.00000		
238.0000	1.000000	93.00000		
239.0000	2.000000	93.00000		
240.0000	3.000000	93.00000		
241.0000	4.000000	93.00000		
242.0000	5.000000	93.00000		
243.0000	6.000000	93.00000		
244.0000	7.000000	93.00000		
245.0000	8.000000	93.00000		
246.0000	9.000000	93.00000		
247.0000	10.00000	93.00000		
248.0000	11.00000	93.00000		
249.0000	12.00000	93.00000		

|_SMPL 250 283

A B C D E

|_PRINT OBS MONTH YEAR KYD KYREV

OBS	MONTH	YEAR	KYD	KYREV
250.0000	3.000000	91.00000		
251.0000	4.000000	91.00000		
252.0000	5.000000	91.00000		
253.0000	6.000000	91.00000		
254.0000	7.000000	91.00000		
255.0000	8.000000	91.00000		
256.0000	9.000000	91.00000		
257.0000	10.00000	91.00000		
258.0000	11.00000	91.00000		
259.0000	12.00000	91.00000		
260.0000	1.000000	92.00000		
261.0000	2.000000	92.00000		
262.0000	3.000000	92.00000		
263.0000	4.000000	92.00000		
264.0000	5.000000	92.00000		
265.0000	6.000000	92.00000		
266.0000	7.000000	92.00000		
267.0000	8.000000	92.00000		
268.0000	9.000000	92.00000		
269.0000	10.00000	92.00000		
270.0000	11.00000	92.00000		
271.0000	12.00000	92.00000		
272.0000	1.000000	93.00000		
273.0000	2.000000	93.00000		
274.0000	3.000000	93.00000		
275.0000	4.000000	93.00000		
276.0000	5.000000	93.00000		
277.0000	6.000000	93.00000		
278.0000	7.000000	93.00000		
279.0000	8.000000	93.00000		
280.0000	9.000000	93.00000		
281.0000	10.00000	93.00000		
282.0000	11.00000	93.00000		
283.0000	12.00000	93.00000		

|_SMPL 284 317

INSIDE WIRE INSTALLATION AND MAINTENANCE MODEL - SCB

|_PRINT OBS MONTH YEAR LAD LAREV

A OBS	B MONTH	C YEAR	D LAD	E LAREV
284.0000	3.000000	91.00000		
285.0000	4.000000	91.00000		
286.0000	5.000000	91.00000		
287.0000	6.000000	91.00000		
288.0000	7.000000	91.00000		
289.0000	8.000000	91.00000		
290.0000	9.000000	91.00000		
291.0000	10.00000	91.00000		
292.0000	11.00000	91.00000		
293.0000	12.00000	91.00000		
294.0000	1.000000	92.00000		
295.0000	2.000000	92.00000		
296.0000	3.000000	92.00000		
297.0000	4.000000	92.00000		
298.0000	5.000000	92.00000		
299.0000	6.000000	92.00000		
300.0000	7.000000	92.00000		
301.0000	8.000000	92.00000		
302.0000	9.000000	92.00000		
303.0000	10.00000	92.00000		
304.0000	11.00000	92.00000		
305.0000	12.00000	92.00000		
306.0000	1.000000	93.00000		
307.0000	2.000000	93.00000		
308.0000	3.000000	93.00000		
309.0000	4.000000	93.00000		
310.0000	5.000000	93.00000		
311.0000	6.000000	93.00000		
312.0000	7.000000	93.00000		
313.0000	8.000000	93.00000		
314.0000	9.000000	93.00000		
315.0000	10.00000	93.00000		
316.0000	11.00000	93.00000		
317.0000	12.00000	93.00000		

|_SMPL 318 351

INSIDE WIRE INSTALLATION AND MAINTENANCE MODEL - SCB

|_PRINT OBS MONTH YEAR MSD MSREV

A OBS	B MONTH	C YEAR	D MSD	E MSREV
318.0000	3.000000	91.00000		
319.0000	4.000000	91.00000		
320.0000	5.000000	91.00000		
321.0000	6.000000	91.00000		
322.0000	7.000000	91.00000		
323.0000	8.000000	91.00000		
324.0000	9.000000	91.00000		
325.0000	10.00000	91.00000		
326.0000	11.00000	91.00000		
327.0000	12.00000	91.00000		
328.0000	1.000000	92.00000		
329.0000	2.000000	92.00000		
330.0000	3.000000	92.00000		
331.0000	4.000000	92.00000		
332.0000	5.000000	92.00000		
333.0000	6.000000	92.00000		
334.0000	7.000000	92.00000		
335.0000	8.000000	92.00000		
336.0000	9.000000	92.00000		
337.0000	10.00000	92.00000		
338.0000	11.00000	92.00000		
339.0000	12.00000	92.00000		
340.0000	1.000000	93.00000		
341.0000	2.000000	93.00000		
342.0000	3.000000	93.00000		
343.0000	4.000000	93.00000		
344.0000	5.000000	93.00000		
345.0000	6.000000	93.00000		
346.0000	7.000000	93.00000		
347.0000	8.000000	93.00000		
348.0000	9.000000	93.00000		
349.0000	10.00000	93.00000		
350.0000	11.00000	93.00000		
351.0000	12.00000	93.00000		

|_SMPL 352 385

A B C D E

|_PRINT OBS MONTH YEAR TND TNREV

OBS	MONTH	YEAR	TND	TNREV
352.0000	3.000000	91.00000		
353.0000	4.000000	91.00000		
354.0000	5.000000	91.00000		
355.0000	6.000000	91.00000		
356.0000	7.000000	91.00000		
357.0000	8.000000	91.00000		
358.0000	9.000000	91.00000		
359.0000	10.00000	91.00000		
360.0000	11.00000	91.00000		
361.0000	12.00000	91.00000		
362.0000	1.000000	92.00000		
363.0000	2.000000	92.00000		
364.0000	3.000000	92.00000		
365.0000	4.000000	92.00000		
366.0000	5.000000	92.00000		
367.0000	6.000000	92.00000		
368.0000	7.000000	92.00000		
369.0000	8.000000	92.00000		
370.0000	9.000000	92.00000		
371.0000	10.00000	92.00000		
372.0000	11.00000	92.00000		
373.0000	12.00000	92.00000		
374.0000	1.000000	93.00000		
375.0000	2.000000	93.00000		
376.0000	3.000000	93.00000		
377.0000	4.000000	93.00000		
378.0000	5.000000	93.00000		
379.0000	6.000000	93.00000		
380.0000	7.000000	93.00000		
381.0000	8.000000	93.00000		
382.0000	9.000000	93.00000		
383.0000	10.00000	93.00000		
384.0000	11.00000	93.00000		
385.0000	12.00000	93.00000		

A B C D E

```
|_SMPL 97 132
|_PRINT OBS MONTH YEAR FLD FLREV
```

OBS	MONTH	YEAR	FLD	FLREV
97.00000	1.000000	1991.000		
98.00000	2.000000	1991.000		
99.00000	3.000000	1991.000		
100.0000	4.000000	1991.000		
101.0000	5.000000	1991.000		
102.0000	6.000000	1991.000		
103.0000	7.000000	1991.000		
104.0000	8.000000	1991.000		
105.0000	9.000000	1991.000		
106.0000	10.00000	1991.000		
107.0000	11.00000	1991.000		
108.0000	12.00000	1991.000		
109.0000	1.000000	1992.000		
110.0000	2.000000	1992.000		
111.0000	3.000000	1992.000		
112.0000	4.000000	1992.000		
113.0000	5.000000	1992.000		
114.0000	6.000000	1992.000		
115.0000	7.000000	1992.000		
116.0000	8.000000	1992.000		
117.0000	9.000000	1992.000		
118.0000	10.00000	1992.000		
119.0000	11.00000	1992.000		
120.0000	12.00000	1992.000		
121.0000	1.000000	1993.000		
122.0000	2.000000	1993.000		
123.0000	3.000000	1993.000		
124.0000	4.000000	1993.000		
125.0000	5.000000	1993.000		
126.0000	6.000000	1993.000		
127.0000	7.000000	1993.000		
128.0000	8.000000	1993.000		
129.0000	9.000000	1993.000		
130.0000	10.00000	1993.000		
131.0000	11.00000	1993.000		
132.0000	12.00000	1993.000		

A B C D E

```
|_SMPL 133 168
|_PRINT OBS MONTH YEAR GAD GAREV
```

OBS	MONTH	YEAR	GAD	GAREV
133.0000	1.000000	1991.000		
134.0000	2.000000	1991.000		
135.0000	3.000000	1991.000		
136.0000	4.000000	1991.000		
137.0000	5.000000	1991.000		
138.0000	6.000000	1991.000		
139.0000	7.000000	1991.000		
140.0000	8.000000	1991.000		
141.0000	9.000000	1991.000		
142.0000	10.00000	1991.000		
143.0000	11.00000	1991.000		
144.0000	12.00000	1991.000		
145.0000	1.000000	1992.000		
146.0000	2.000000	1992.000		
147.0000	3.000000	1992.000		
148.0000	4.000000	1992.000		
149.0000	5.000000	1992.000		
150.0000	6.000000	1992.000		
151.0000	7.000000	1992.000		
152.0000	8.000000	1992.000		
153.0000	9.000000	1992.000		
154.0000	10.00000	1992.000		
155.0000	11.00000	1992.000		
156.0000	12.00000	1992.000		
157.0000	1.000000	1993.000		
158.0000	2.000000	1993.000		
159.0000	3.000000	1993.000		
160.0000	4.000000	1993.000		
161.0000	5.000000	1993.000		
162.0000	6.000000	1993.000		
163.0000	7.000000	1993.000		
164.0000	8.000000	1993.000		
165.0000	9.000000	1993.000		
166.0000	10.00000	1993.000		
167.0000	11.00000	1993.000		
168.0000	12.00000	1993.000		

A B C D E

```
|_SMPL 169 204
|_PRINT OBS MONTH YEAR NCD NCREV
```

OBS	MONTH	YEAR	NCD	NCREV
169.0000	1.000000	1991.000		
170.0000	2.000000	1991.000		
171.0000	3.000000	1991.000		
172.0000	4.000000	1991.000		
173.0000	5.000000	1991.000		
174.0000	6.000000	1991.000		
175.0000	7.000000	1991.000		
176.0000	8.000000	1991.000		
177.0000	9.000000	1991.000		
178.0000	10.00000	1991.000		
179.0000	11.00000	1991.000		
180.0000	12.00000	1991.000		
181.0000	1.000000	1992.000		
182.0000	2.000000	1992.000		
183.0000	3.000000	1992.000		
184.0000	4.000000	1992.000		
185.0000	5.000000	1992.000		
186.0000	6.000000	1992.000		
187.0000	7.000000	1992.000		
188.0000	8.000000	1992.000		
189.0000	9.000000	1992.000		
190.0000	10.00000	1992.000		
191.0000	11.00000	1992.000		
192.0000	12.00000	1992.000		
193.0000	1.000000	1993.000		
194.0000	2.000000	1993.000		
195.0000	3.000000	1993.000		
196.0000	4.000000	1993.000		
197.0000	5.000000	1993.000		
198.0000	6.000000	1993.000		
199.0000	7.000000	1993.000		
200.0000	8.000000	1993.000		
201.0000	9.000000	1993.000		
202.0000	10.00000	1993.000		
203.0000	11.00000	1993.000		
204.0000	12.00000	1993.000		

A B C D E

```
|_SMPL 205 240
|_PRINT OBS MONTH YEAR SCD SCREV
```

OBS	MONTH	YEAR	SCD	SCREV
205.0000	1.000000	1991.000		
206.0000	2.000000	1991.000		
207.0000	3.000000	1991.000		
208.0000	4.000000	1991.000		
209.0000	5.000000	1991.000		
210.0000	6.000000	1991.000		
211.0000	7.000000	1991.000		
212.0000	8.000000	1991.000		
213.0000	9.000000	1991.000		
214.0000	10.00000	1991.000		
215.0000	11.00000	1991.000		
216.0000	12.00000	1991.000		
217.0000	1.000000	1992.000		
218.0000	2.000000	1992.000		
219.0000	3.000000	1992.000		
220.0000	4.000000	1992.000		
221.0000	5.000000	1992.000		
222.0000	6.000000	1992.000		
223.0000	7.000000	1992.000		
224.0000	8.000000	1992.000		
225.0000	9.000000	1992.000		
226.0000	10.00000	1992.000		
227.0000	11.00000	1992.000		
228.0000	12.00000	1992.000		
229.0000	1.000000	1993.000		
230.0000	2.000000	1993.000		
231.0000	3.000000	1993.000		
232.0000	4.000000	1993.000		
233.0000	5.000000	1993.000		
234.0000	6.000000	1993.000		
235.0000	7.000000	1993.000		
236.0000	8.000000	1993.000		
237.0000	9.000000	1993.000		
238.0000	10.00000	1993.000		
239.0000	11.00000	1993.000		
240.0000	12.00000	1993.000		

SOUTH CENTRAL BELL

MODEL

```
********************************************************************
*    SHAZAM - MS DOS VERSION    SITE NO.  566A1Y                   *
*                                                                  *
* ** Copyright (C)  1990  by K.J. White - All Rights Reserved **   *
*                                                                  *
* FOR USE ONLY BY: BellSouth Services Incorporated                 *
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* agree to send payment within 7 days for a software license       *
*                                                                  *
*                                                                  *
*                                                                  *
* SITE LICENSE - FOR USE ON ALL COMPUTERS AT ABOVE LOCATION        *
********************************************************************
Hello/Bonjour/Aloha/Howdy/G Day/Kia Ora/Konnichiwa
Welcome to SHAZAM - Version 6.2  -  JUN 1990 SYSTEM=MS-DOS   PAR=  170
|_* This is a forecasting model to project aggregate I&M revenues by
|_*   looking at derived demand as a function of real income, seasonality,
|_*   differential intercepts, and an aggregate rate. Because of the liklihood
|_*   of recording errors between accounts, this aggregate approach was
|_*   developed to forecast aggregate I&M revenue for a number of test rates.
|_*   These test rates for individual accounts (RIC codes) would be translated
|_*   into changes in the aggregate rate to forecast total demand units. By
|_*   simply multiplying the total units by the aggregate price, revenue
|_*   forecasts can be developed. Base case forecasts are developed by using
|_*   forecasted levels of real income and assuming the aggregate price for
|_*   each state would remain constant at 2/91 levels.
|_* ---------------------------------------------------------------------
|_FILE 4 INSTALL.PRN
UNIT  4 IS NOW ASSIGNED TO: INSTALL.PRN
|_FILE 11 OUT.TXT
UNIT 11 IS NOW ASSIGNED TO: OUT.TXT
|_READ(4) OBS STATE YEAR MONTH DEMAND PRICE RINCOME D1 D2 D3 D4 D5

...SAMPLE RANGE IS NOW SET TO:         1       385
|_DIM ALD 400 KYD 400 LAD 400 MSD 400 TND 400
|_* ---------------------------------------------------------------------
|_GENR LOGD=LOG(DEMAND)
|_GENR LOGP=LOG(PRICE)
|_GENR LOGRINC=LOG(RINCOME)
|_* --------------------
|_GENR PDAL=D1*LOGP
|_GENR PDKY=D2*LOGP
|_GENR PDLA=D3*LOGP
|_GENR PDMS=D4*LOGP
|_GENR ALDUM=0
|_IF((STATE.EQ.1).AND.(OBS.GT.29))ALDUM=1
|_* --------------------
|_GENR ALF=0
|_GENR KYF=0
|_GENR LAF=0
|_GENR MSF=0
|_GENR TNF=0
|_GENR AUG=0
|_GENR SEP=0
|_GENR OCT=0
```

```
|_GENR NOV=0
|_GENR DEC=0
|_GENR JAN=0
|_GENR FEB=0
|_GENR MAR=0
|_GENR APR=0
|_GENR MAY=0
|_GENR JUN=0
|_IF(MONTH.EQ.8)AUG=1
|_IF(MONTH.EQ.9)SEP=1
|_IF(MONTH.EQ.10)OCT=1
|_IF(MONTH.EQ.11)NOV=1
|_IF(MONTH.EQ.12)DEC=1
|_IF(MONTH.EQ.1)JAN=1
|_IF(MONTH.EQ.2)FEB=1
|_IF(MONTH.EQ.3)MAR=1
|_IF(MONTH.EQ.4)APR=1
|_IF(MONTH.EQ.5)MAY=1
|_IF(MONTH.EQ.6)JUN=1
|_* ---------------------
|_GENR DUM31=0
|_IF(OBS.EQ.31)DUM31=1
|_GENR DUM66=0
|_IF(OBS.EQ.66)DUM66=1
|_* --- adding real income, price, & diff interc. --  independent variables
|_* --- adding real state intercepts --  intercept binaries
|_* --- taking out observations # 31, 66  as outliers --- intercept binaries
|_* --- Alabama's demand shifts up after price increase - intercept binary
|_GENR DUM31=0
|_IF(OBS.EQ.31)DUM31=1
|_GENR DUM66=0
|_IF(OBS.EQ.66)DUM66=1
|_GENR ALDUM=0
|_IF((STATE.EQ.1).AND.(OBS.GT.29))ALDUM=1
|_* ---------------------
```

```
|_POOL LOGD LOGP LOGRINC DUM31 DUM66 AUG SEP OCT NOV DEC JAN FEB MAR      &
|      APR MAY JUN D2 D3 ALDUM/ NCROSS=5 RS LIST BEG=1 END=215
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     5 CROSS-SECTIONS AND     43 TIME-PERIODS
   215 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LOGD

OLS COEFFICIENTS
```

9
10
11
12

```
RHO VECTOR
  0.61367      0.22965      0.63603      0.67848      0.65027
CONSTANT RHO =  0.59839
VARIANCES
```

17

```
PHI MATRIX
  0.23115E-01
 -0.51185E-03  0.88580E-02
  0.31324E-02 -0.49342E-03  0.99340E-02
  0.38997E-02  0.23251E-02  0.40666E-02  0.85307E-02
  0.38468E-02  0.31241E-02  0.48126E-02  0.55511E-02  0.10288E-01
FINAL COEFFICIENTS
 -0.79315      0.74499      0.27150     -0.54640      0.13815
  0.58944E-01  0.68275E-01 -0.27630E-01 -0.38005E-01  0.50322E-02
 -0.79010E-01  0.11265      0.15726E-01  0.23573E-01  0.12118E-01
 -0.80081      0.11543      0.31627       5.6245
FINAL SSE =   118.26
BUSE R-SQUARE = 0.9234       BUSE RAW-MOMENT R-SQUARE = 0.9997
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.60335
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.77675
SUM OF SQUARED ERRORS-SSE=   118.26
MEAN OF DEPENDENT VARIABLE =   8.8121
LOG OF THE LIKELIHOOD FUNCTION =  240.680


VARIABLE    ESTIMATED   STANDARD   T-RATIO    PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR     196 DF      CORR.  COEFFICIENT  AT MEANS
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38

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LOGP
LOGRIN
DUM31
DUM66
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
AI
MA
JUN
D2
D3
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54

000222

F01B257Z

RY

1 INSIDE WIRE INSTALLATION AND MAINTENANCE MODEL - SCB

	A	B	C	D	E	F	G
2	ALDUM			4.2601	0.2911		
3	CONSTANT			12.097	0.6538		

A	B	C	D
OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL
1			-1.8840
2			0.76518E-01
3			-1.1119
4			-1.4670
5			0.45637
6			-0.45837
7			0.85407
8			0.24719
9			-0.22362
10			-0.36761
11			0.30052
12			-0.77070
13			-0.16821
14			-0.23003
15			-0.98589
16			-0.22091
17			0.45788E-01
18			-0.76138
19			-0.82288
20			-0.26760
21			-0.69958
22			-0.14611E-01
23			-1.3305
24			1.0380
25			0.74207E-03
26			-0.12202
27			-0.38233
28			-0.83260
29			-0.63454
30			-2.3838
31			0.78344
32			1.2766
33			0.64014
34			0.34891
35			0.56261
36			0.31517
37			0.62460
38			-0.35410
39			0.45420
40			0.38379
41			0.15710
42			0.69920
43			0.27882
44			0.21552E-01
45			0.71857
46			-0.71946
47			1.3883
48			0.85778
49			-0.11025
50			1.7129
51			0.43356
52			0.40086
53			-0.19826
54			0.68577
55			0.71603
56			0.24936
57			0.38917

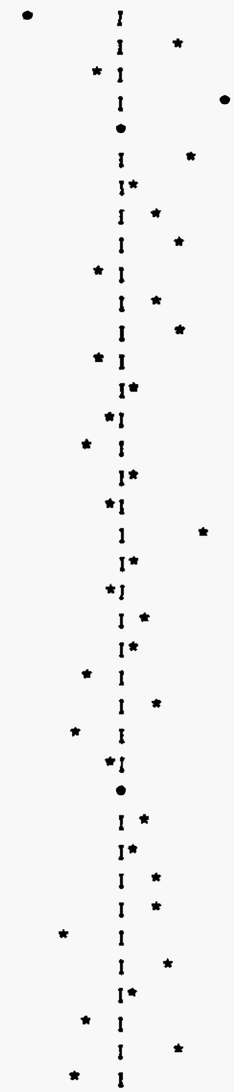
A	B	C	
58		-0.30054	* I
59		-0.71646	* I
60		1.2337	I *
61		-0.64164	* I
62		-0.32312	* I
63		-0.70745	* I
64		-0.78532	* I
65		-0.63302	* I
66		-0.40111	* I
67		-1.7467	* I
68		0.21406	I*
69		0.28917	I*
70		0.26757	I*
71		0.95208	I *
72		-1.3820	* I
73		0.34365	I *
74		-0.15417	*I
75		-0.43415	* I
76		-0.16888	*I
77		0.26491	I*
78		0.63252E-01	*
79		-0.23690	*I
80		0.30163E-01	*
81		-0.78884	* I
82		0.82917E-01	*
83		0.73827	I *
84		-1.2312	* I
85		0.25367	I*
86		-0.63349	* I
87		-1.4323	* I
88		0.68122	I *
89		-1.3477	* I
90		-0.74150	* I
91		0.80654	I *
92		-1.4327	* I
93		-0.83780E-01	*
94		-0.58586	* I
95		-0.57194	* I
96		-0.64277	* I
97		-0.10861	*I
98		-1.1596	* I
99		0.32188E-01	*
100		-0.56937	* I
101		0.86060	I *
102		0.55174	I *
103		0.41243	I *
104		0.10907	I*
105		-0.18353	*I
106		0.16122	I*
107		-0.92386E-01	*
108		0.82546	I *
109		-0.52278	* I
110		1.3408	I *
111		-0.78883	* I
112		0.47952	I *
113		0.13170E-01	*
114		0.32962E-01	*
115		-0.15335	*I
116		2.1866	I *
117		-0.18411	

A B C

118	0.50254	I *
119	0.35249	I *
120	0.93103	I *
121	0.11503	I*
122	0.23291	I*
123	0.97638	I *
124	-0.72733	* I
125	0.97469	I *
126	-0.13040	*I
127	-0.86210E-01	*
128	0.67147	I *
129	-0.10056	*I
130	-0.90979	* I
131	0.78263	I *
132	0.57051E-03	*
133	-0.58443	* I
134	1.0490	I *
135	0.37342	I *
136	1.3725	I *
137	0.99847	I *
138	0.33050	I *
139	-0.13393	*I
140	1.1411	I *
141	-0.65752	* I
142	0.82373	I *
143	0.34994	I *
144	-0.13134	*I
145	0.62068	I *
146	0.37434	I *
147	-0.47396	* I
148	-0.63415	* I
149	0.90206	I *
150	0.42509	I *
151	0.25747	I*
152	-0.86194	* I
153	1.4394	I *
154	-0.96723	* I
155	-0.25351	*I
156	0.26229	I*
157	-0.29225	*I
158	-0.80241	* I
159	0.56331	I *
160	-0.23157	*I
161	-0.50429	* I
162	0.56700E-01	*
163	-0.16916	*I
164	0.66010	I *
165	-0.61812	* I
166	0.68628	I *
167	-1.6798	* I
168	0.51988	I *
169	-0.24694	*I
170	-0.98942	* I
171	0.58992	I *
172	-0.18483	*I
173	-0.83355	* I
174	0.94123	I *
175	-0.62579	* I
176	-0.85329	* I
177	0.33435	

INSIDE WIRE INSTALLATION AND MAINTENANCE MODEL - SCB

A	B	C	D
178	31.135		
179	32.812		
180	33.783		
181	31.109		
182	31.676		
183	32.956		
184	31.779		
185	33.497		
186	32.333		
187	31.171		
188	31.495		
189	32.300		
190	31.399		
191	30.938		
192	33.081		
193	30.423		
194	31.877		
195	31.400		
196	33.176		
197	32.561		
198	30.741		
199	32.369		
200	30.711		
201	30.412		
202	32.432		
203	29.800		
204	32.731		
205	30.671		
206	31.909		
207	31.385		
208	31.883		
209	33.418		
210	29.978		
211	32.601		
212	30.765		
213	30.624		
214	32.669		
215	29.769		



DURBIN-WATSON = 2.2198   VON NEUMANN RATIO = 2.2301   RHO = -0.14511
RESIDUAL SUM = 3.3458   RESIDUAL VARIANCE = 0.60335
SUM OF ABSOLUTE ERRORS= 127.53
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9978
RUNS TEST: 115 RUNS, 114 POSITIVE, 101 NEGATIVE, NORMAL STATISTIC = 0.9459

|_FC /BEG=216 END=249 MODEL=POOL LIST NC=5 CSNUM=1 PRED=ALD

REQUIRED MEMORY IS PAR= 139 CURRENT PAR= 170
DEPENDENT VARIABLE = LOGD 34 OBSERVATIONS
REGRESSION COEFFICIENTS

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POOL STANDARD ERROR= 0.152034952229 POOL VARIANCE= 0.231146266992E-01
..WARNING FORECAST STD. ERRORS ONLY VALID FOR OLS

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A OBS. NO.	B OBSERVED VALUE	C PREDICTED VALUE	D CALCULATED RESIDUAL	STD. ERROR		
216	0.00000E+00	9		0.13838	*	I
217	0.00000E+00	8		0.74751E-01	*	I
218	0.00000E+00	8		0.72899E-01	*	I
219	0.00000E+00	8		0.73236E-01	*	I
220	0.00000E+00	8		0.73153E-01	*	I
221	0.00000E+00	9		0.72316E-01	*	I
222	0.00000E+00	9		0.72327E-01	*	I
223	0.00000E+00	9		0.72329E-01	*	I
224	0.00000E+00	8		0.72316E-01	*	I
225	0.00000E+00	8		0.72367E-01	*	I
226	0.00000E+00	8		0.70884E-01	*	I
227	0.00000E+00	8		0.71160E-01	*	I
228	0.00000E+00	9		0.72146E-01	*	I
229	0.00000E+00	8		0.72581E-01	*	I
230	0.00000E+00	8		0.72867E-01	*	I
231	0.00000E+00	8		0.73254E-01	*	I
232	0.00000E+00	8		0.73171E-01	*	I
233	0.00000E+00	9		0.72343E-01	*	I
234	0.00000E+00	9		0.72358E-01	*	I
235	0.00000E+00	9		0.72359E-01	*	I
236	0.00000E+00	8		0.72346E-01	*	I
237	0.00000E+00	8		0.72397E-01	*	I
238	0.00000E+00	8		0.70913E-01	*	I
239	0.00000E+00	8		0.71191E-01	*	I
240	0.00000E+00	9		0.72182E-01	*	I
241	0.00000E+00	8		0.72615E-01	*	I
242	0.00000E+00	9		0.72902E-01	*	I
243	0.00000E+00	8		0.73295E-01	*	I
244	0.00000E+00	8		0.73207E-01	*	I
245	0.00000E+00	9		0.72388E-01	*	I
246	0.00000E+00	9		0.72410E-01	*	I
247	0.00000E+00	9		0.72402E-01	*	I
248	0.00000E+00			0.72395E-01	*	I
249	0.00000E+00			0.72457E-01	*	I

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SUM OF ABSOLUTE ERRORS= 305.
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0000
MEAN ERROR = -8.9963
SUM-SQUARED ERRORS = 2751.9
MEAN SQUARE ERROR = 80.938
MEAN ABSOLUTE ERROR= 8.9963
ROOT MEAN SQUARE ERROR = 8.9965

THEIL INEQUALITY COEFFICIENT U = 0.000

DECOMPOSITION

PROPORTION DUE TO BIAS = 0.99996

PROPORTION DUE TO VARIANCE = 0.42180E-04

PROPORTION DUE TO COVARIANCE = 0.38977E-16

DECOMPOSITION

PROPORTION DUE TO BIAS = 0.99996

PROPORTION DUE TO REGRESSION = 0.42180E-04

PROPORTION DUE TO DISTURBANCE = 0.38977E-16

INSIDE WIRE INSTALLATION AND MAINTENANCE MODEL - SCB

|_FC /BEG=250 END=283 MODEL=POOL LIST NC=5 CSNUM=2 PRED=KYD

REQUIRED MEMORY IS PAR= 139 CURRENT PAR= 170
DEPENDENT VARIABLE = LOGD 34 OBSERVATIONS
REGRESSION COEFFICIENTS

[illegible]
POOL STANDARD ERROR= 0.941168646050E-01 POOL VARIANCE= 0.885798420308E-02
..WARNING FORECAST STD. ERRORS ONLY VALID FOR OLS

A OBS. NO.	B OBSERVED VALUE	C PREDICTED VALUE	D CALCULATED RESIDUAL	STD. ERROR		
250	0.00000E+00			0.77551E-01	*	I
251	0.00000E+00			0.27184E-01	*	I
252	0.00000E+00			0.26733E-01	*	I
253	0.00000E+00			0.27783E-01	*	I
254	0.00000E+00			0.27119E-01	*	I
255	0.00000E+00			0.24177E-01	*	I
256	0.00000E+00			0.23944E-01	*	I
257	0.00000E+00			0.23789E-01	*	I
258	0.00000E+00			0.23520E-01	*	I
259	0.00000E+00			0.23379E-01	*	I
260	0.00000E+00			0.23579E-01	*	I
261	0.00000E+00			0.23932E-01	*	I
262	0.00000E+00			0.25939E-01	*	I
263	0.00000E+00			0.26369E-01	*	I
264	0.00000E+00			0.26795E-01	*	I
265	0.00000E+00			0.27849E-01	*	I
266	0.00000E+00			0.27190E-01	*	I
267	0.00000E+00			0.24285E-01	*	I
268	0.00000E+00			0.24054E-01	*	I
269	0.00000E+00			0.23889E-01	*	I
270	0.00000E+00			0.23623E-01	*	I
271	0.00000E+00			0.23483E-01	*	I
272	0.00000E+00			0.23656E-01	*	I
273	0.00000E+00			0.24018E-01	*	I
274	0.00000E+00			0.26038E-01	*	I
275	0.00000E+00			0.26445E-01	*	I
276	0.00000E+00			0.26880E-01	*	I
277	0.00000E+00			0.27950E-01	*	I
278	0.00000E+00			0.27268E-01	*	I
279	0.00000E+00			0.24406E-01	*	I
280	0.00000E+00			0.24204E-01	*	I
281	0.00000E+00			0.23993E-01	*	I
282	0.00000E+00			0.23742E-01	*	I
283	0.00000E+00			0.23630E-01	*	I

SUM OF ABSOLUTE ERRORS=
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0000
MEAN ERROR = -8.0368
SUM-SQUARED ERRORS = 2196.2
MEAN SQUARE ERROR = 64.594
MEAN ABSOLUTE ERROR= 8.0368
ROOT MEAN SQUARE ERROR = 8.0371
THEIL INEQUALITY COEFFICIENT U = 0.000

DECOMPOSITION
PROPORTION DUE TO BIAS = 0.99995
PROPORTION DUE TO VARIANCE = 0.52401E-04
PROPORTION DUE TO COVARIANCE = -0.22335E-16
DECOMPOSITION
PROPORTION DUE TO BIAS = 0.99995
PROPORTION DUE TO REGRESSION = 0.52401E-04
PROPORTION DUE TO DISTURBANCE = -0.22335E-16

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|_FC /BEG=284 END=317 MODEL=POOL LIST NC=5 CSNUM=3 PRED=LAD

REQUIRED MEMORY IS PAR=  139 CURRENT PAR=  170
DEPENDENT VARIABLE = LOGD            34 OBSERVATIONS
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[illegible]
0.6360292888637
POOL STANDARD ERROR= 0.996693600928E-01 POOL VARIANCE= 0.993398134131E-02
..WARNING FORECAST STD. ERRORS ONLY VALID FOR OLS

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A OBS. NO.	B OBSERVED VALUE	C PREDICTED VALUE	D CALCULATED RESIDUAL	STD. ERROR		
284	0.00000E+00	[illegible]	[illegible]	0.87269E-01	*	I
285	0.00000E+00			0.41265E-01	*	I
286	0.00000E+00			0.40991E-01	*	I
287	0.00000E+00			0.41733E-01	*	I
288	0.00000E+00			0.41678E-01	*	I
289	0.00000E+00			0.39022E-01	*	I
290	0.00000E+00			0.39067E-01	*	I
291	0.00000E+00			0.39030E-01	*	I
292	0.00000E+00			0.38716E-01	*	I
293	0.00000E+00			0.38481E-01	*	I
294	0.00000E+00			0.38582E-01	*	I
295	0.00000E+00			0.38658E-01	*	I
296	0.00000E+00			0.40274E-01	*	I
297	0.00000E+00			0.40537E-01	*	I
298	0.00000E+00			0.40984E-01	*	I
299	0.00000E+00			0.41732E-01	*	I
300	0.00000E+00			0.41678E-01	*	I
301	0.00000E+00			0.39033E-01	*	I
302	0.00000E+00			0.39078E-01	*	I
303	0.00000E+00			0.39036E-01	*	I
304	0.00000E+00			0.38723E-01	*	I
305	0.00000E+00			0.38488E-01	*	I
306	0.00000E+00			0.38587E-01	*	I
307	0.00000E+00			0.38663E-01	*	I
308	0.00000E+00			0.40282E-01	*	I
309	0.00000E+00			0.40544E-01	*	I
310	0.00000E+00			0.40992E-01	*	I
311	0.00000E+00			0.41743E-01	*	I
312	0.00000E+00			0.41685E-01	*	I
313	0.00000E+00			0.39051E-01	*	I
314	0.00000E+00			0.39101E-01	*	I
315	0.00000E+00			0.39048E-01	*	I
316	0.00000E+00			0.38737E-01	*	I
317	0.00000E+00			0.38507E-01	*	I

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SUM OF ABSOLUTE ERRORS=
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0000
MEAN ERROR = -9.0338
SUM-SQUARED ERRORS =   2774.9
MEAN SQUARE ERROR =   81.614
MEAN ABSOLUTE ERROR=   9.0338
ROOT MEAN SQUARE ERROR =   9.0340
THEIL INEQUALITY COEFFICIENT U = 0.000

DECOMPOSITION
PROPORTION DUE TO BIAS = 0.99996
PROPORTION DUE TO VARIANCE = 0.41240E-04
PROPORTION DUE TO COVARIANCE = -0.10593E-15
DECOMPOSITION
PROPORTION DUE TO BIAS = 0.99996
PROPORTION DUE TO REGRESSION = 0.41240E-04
PROPORTION DUE TO DISTURBANCE = -0.10593E-15

|_FC /BEG=318 END=351 MODEL=POOL LIST NC=5 CSNUM=4 PRED=MSD

REQUIRED MEMORY IS PAR= 139 CURRENT PAR= 170
DEPENDENT VARIABLE = LOGD 34 OBSERVATIONS
REGRESSION COEFFICIENTS

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AUTOCORRELATION RHO
0.6784778287193
POOL STANDARD ERROR= 0.923616862666E-01 POOL VARIANCE= 0.853068109001E-02
..WARNING FORECAST STD. ERRORS ONLY VALID FOR OLS

17

A OBS. NO.	B OBSERVED VALUE	C PREDICTED	d CALCULATED	STD. ERROR		
318	0.00000E+00			0.82560E-01	*	I
319	0.00000E+00			0.41420E-01	*	I
320	0.00000E+00			0.41316E-01	*	I
321	0.00000E+00			0.42061E-01	*	I
322	0.00000E+00			0.41875E-01	*	I
323	0.00000E+00			0.38832E-01	*	I
324	0.00000E+00			0.38917E-01	*	I
325	0.00000E+00			0.38951E-01	*	I
326	0.00000E+00			0.38639E-01	*	I
327	0.00000E+00			0.38410E-01	*	I
328	0.00000E+00			0.38585E-01	*	I
329	0.00000E+00			0.38637E-01	*	I
330	0.00000E+00			0.40210E-01	*	I
331	0.00000E+00			0.40266E-01	*	I
332	0.00000E+00			0.40690E-01	*	I
333	0.00000E+00			0.41442E-01	*	I
334	0.00000E+00			0.41279E-01	*	I
335	0.00000E+00			0.38199E-01	*	I
336	0.00000E+00			0.38277E-01	*	I
337	0.00000E+00			0.38346E-01	*	I
338	0.00000E+00			0.38022E-01	*	I
339	0.00000E+00			0.37780E-01	*	I
340	0.00000E+00			0.38134E-01	*	I
341	0.00000E+00			0.38138E-01	*	I
342	0.00000E+00			0.39637E-01	*	I
343	0.00000E+00			0.39855E-01	*	I
344	0.00000E+00			0.40240E-01	*	I
345	0.00000E+00			0.40909E-01	*	I
346	0.00000E+00			0.40888E-01	*	I
347	0.00000E+00			0.37744E-01	*	I
348	0.00000E+00			0.37728E-01	*	I
349	0.00000E+00			0.37943E-01	*	I
350	0.00000E+00			0.37569E-01	*	I
351	0.00000E+00			0.37228E-01	*	I

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SUM OF ABSOLUTE ERRORS=
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0000
MEAN ERROR = -8.3922
SUM-SQUARED ERRORS = 2394.7
MEAN SQUARE ERROR = 70.432
MEAN ABSOLUTE ERROR= 8.3922
ROOT MEAN SQUARE ERROR = 8.3924
THEIL INEQUALITY COEFFICIENT U = 0.000

DECOMPOSITION

PROPORTION DUE TO BIAS = 0.99995
PROPORTION DUE TO VARIANCE = 0.48019E-04
PROPORTION DUE TO COVARIANCE = -0.31225E-16

DECOMPOSITION

PROPORTION DUE TO BIAS = 0.99995
PROPORTION DUE TO REGRESSION = 0.48019E-04
PROPORTION DUE TO DISTURBANCE = -0.31225E-16

INSIDE WIRE INSTALLATION AND MAINTENANCE MODEL - SCB

|_FC /BEG=352 END=385 MODEL=POOL LIST NC=5 CSNUM=5 PRED=TND

REQUIRED MEMORY IS PAR= 139 CURRENT PAR= 170
DEPENDENT VARIABLE = LOGD 34 OBSERVATIONS
REGRESSION COEFFICIENTS
-C

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AUTOCORRELATION RHO
0.6502723265962
POOL STANDARD ERROR= 0.101432046070 POOL VARIANCE= 0.102884599700E-01
..WARNING FORECAST STD. ERRORS ONLY VALID FOR OLS

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A OBS. NO.	B OBSERVED VALUE	C PREDICTED VALUE	D CALCULATED RESIDUAL	STD. ERROR		
352	0.00000E+00			0.87541E-01	*	I
353	0.00000E+00			0.39541E-01	*	I
354	0.00000E+00			0.39011E-01	*	I
355	0.00000E+00			0.39520E-01	*	I
356	0.00000E+00			0.39312E-01	*	I
357	0.00000E+00			0.37446E-01	*	I
358	0.00000E+00			0.37484E-01	*	I
359	0.00000E+00			0.37449E-01	*	I
360	0.00000E+00			0.37274E-01	*	I
361	0.00000E+00			0.37108E-01	*	I
362	0.00000E+00			0.37536E-01	*	I
363	0.00000E+00			0.37564E-01	*	I
364	0.00000E+00			0.39000E-01	*	I
365	0.00000E+00			0.39555E-01	*	I
366	0.00000E+00			0.39834E-01	*	I
367	0.00000E+00			0.40347E-01	*	I
368	0.00000E+00			0.40151E-01	*	I
369	0.00000E+00			0.38358E-01	*	I
370	0.00000E+00			0.38403E-01	*	I
371	0.00000E+00			0.38341E-01	*	I
372	0.00000E+00			0.38179E-01	*	I
373	0.00000E+00			0.38025E-01	*	I
374	0.00000E+00			0.38230E-01	*	I
375	0.00000E+00			0.38331E-01	*	I
376	0.00000E+00			0.39863E-01	*	I
377	0.00000E+00			0.40199E-01	*	I
378	0.00000E+00			0.40543E-01	*	I
379	0.00000E+00			0.41168E-01	*	I
380	0.00000E+00			0.40772E-01	*	I
381	0.00000E+00			0.39098E-01	*	I
382	0.00000E+00			0.39274E-01	*	I
383	0.00000E+00			0.38993E-01	*	I
384	0.00000E+00			0.38909E-01	*	I
385	0.00000E+00			0.38891E-01	*	I

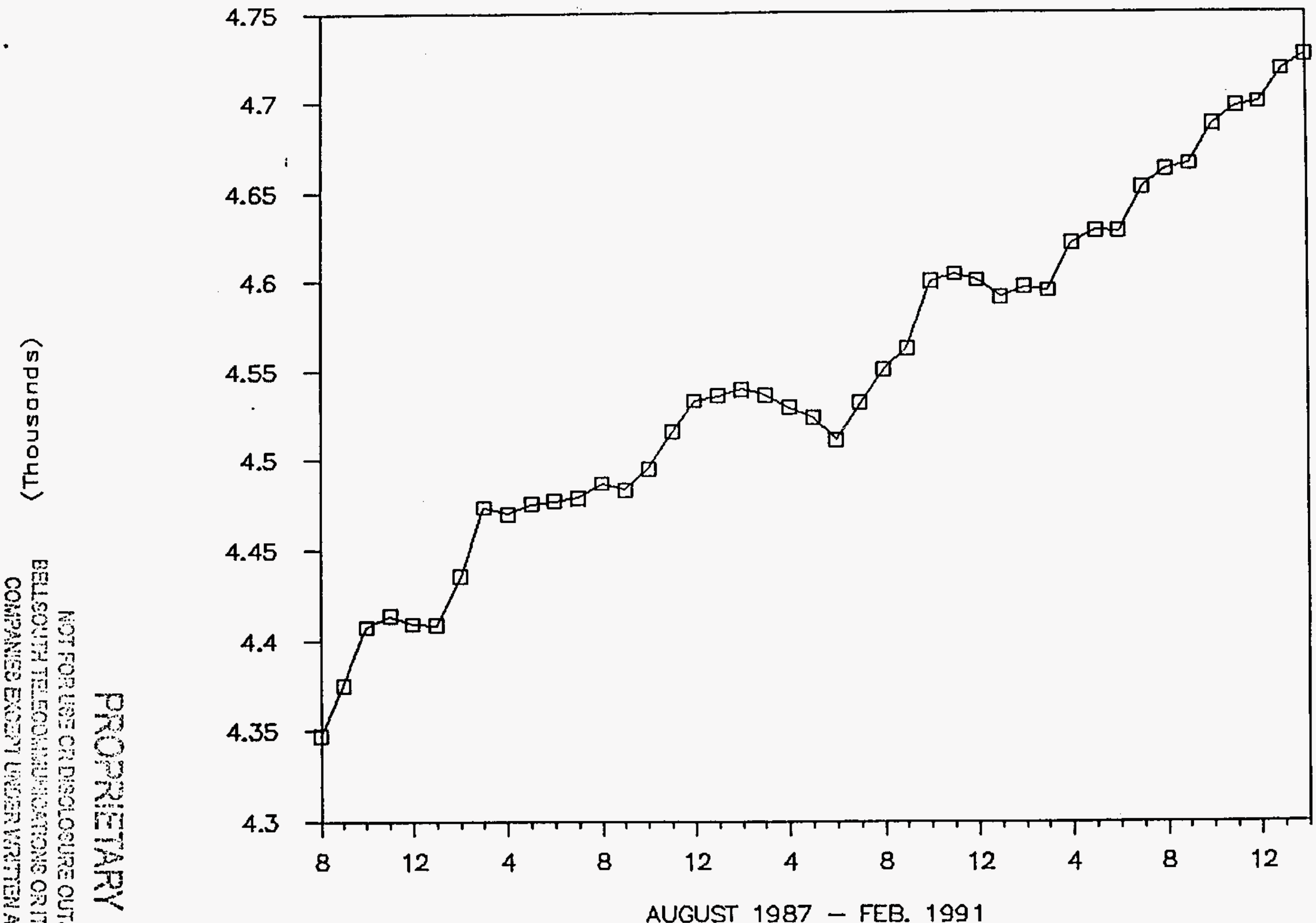
50

SUM OF ABSOLUTE ERRORS= 311
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0000
MEAN ERROR = -9.1410
SUM-SQUARED ERRORS = 2841.1
MEAN SQUARE ERROR = 83.561
MEAN ABSOLUTE ERROR= 9.1410
ROOT MEAN SQUARE ERROR = 9.1412
THEIL INEQUALITY COEFFICIENT U = 0.000

```
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99996
     PROPORTION DUE TO VARIANCE =  0.41088E-04
     PROPORTION DUE TO COVARIANCE =  0.86845E-16
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99996
     PROPORTION DUE TO REGRESSION =  0.41088E-04
     PROPORTION DUE TO DISTURBANCE =  0.86845E-16
|_GENR ALD=EXP(ALD)
|_GENR KYD=EXP(KYD)
|_GENR LAD=EXP(LAD)
|_GENR MSD=EXP(MSD)
|_GENR TND=EXP(TND)
|_WRITE(11) ALF KYF LAF MSF TNF
|_SMPL 216 385
|_GENR ALREV=PRICE*ALD
|_GENR KYREV=PRICE*KYD
|_GENR LAREV=PRICE*LAD
|_GENR MSREV=PRICE*MSD
|_GENR TNREV=PRICE*TND
|_*  -- We are now going to print the FORECAST for each state --
|_SMPL 216 249
```

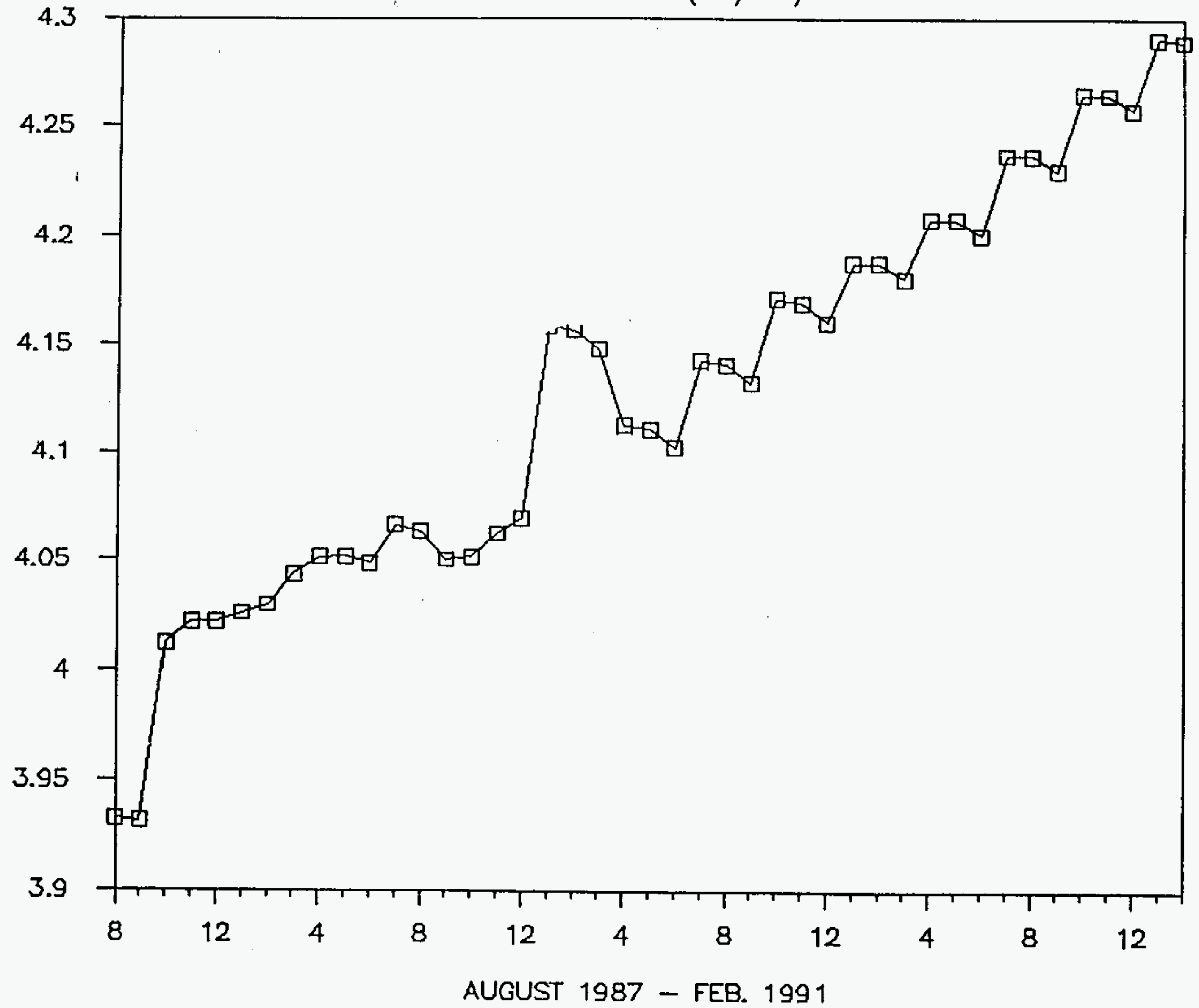
ALABAMA

REAL INCOME (TPI/CPI)



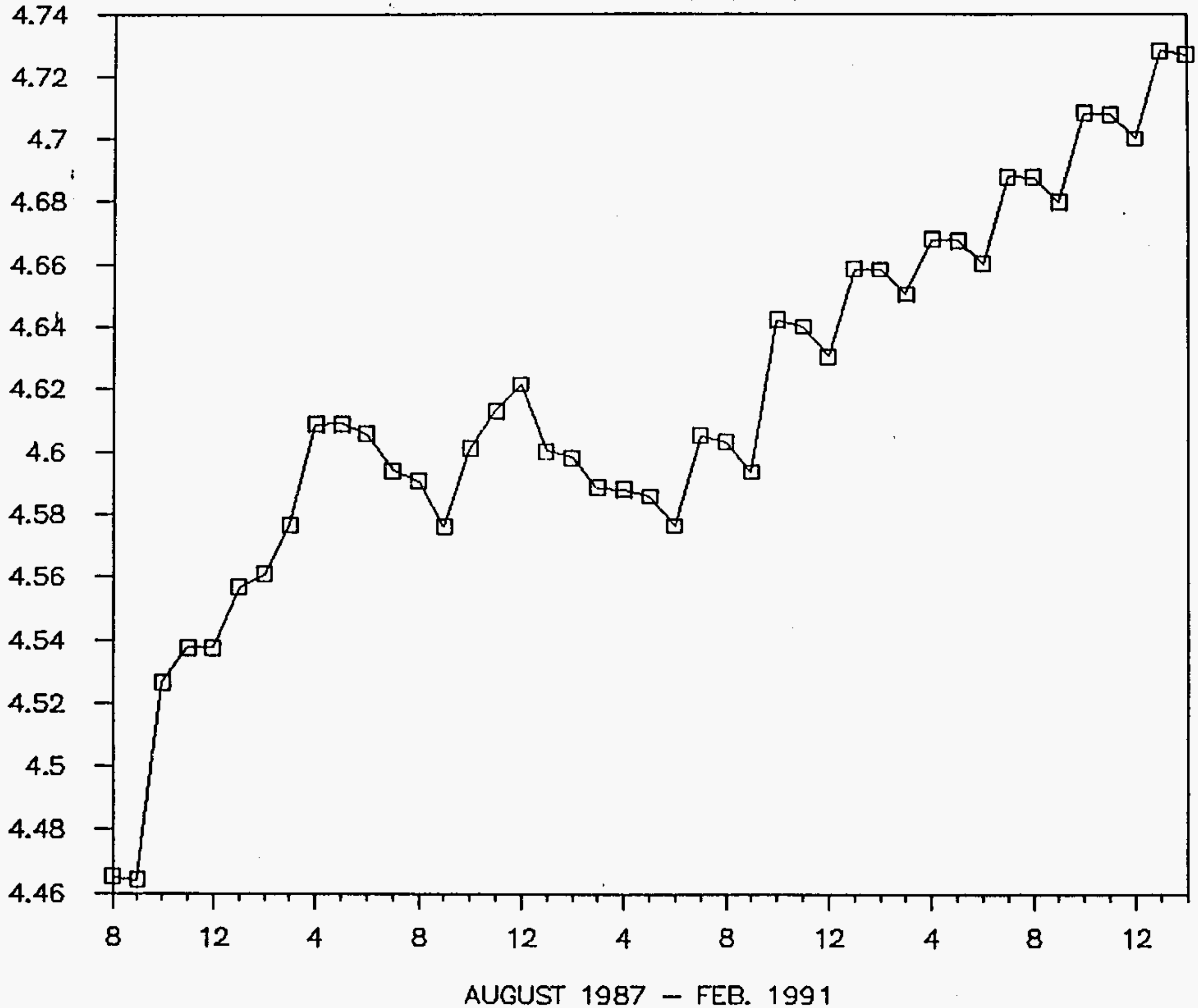
KENTUCKY

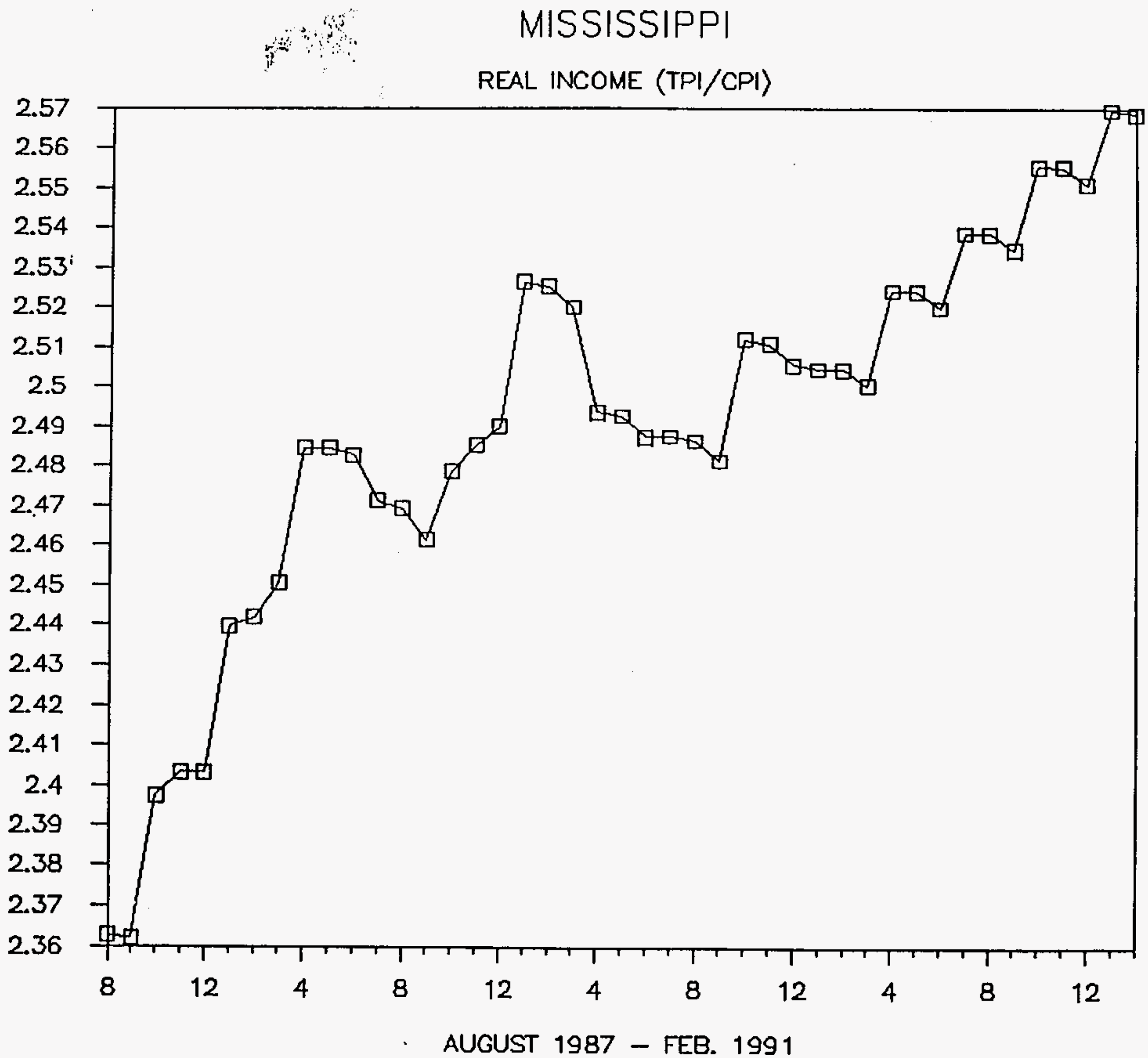
REAL INCOME (TPI/CPI)



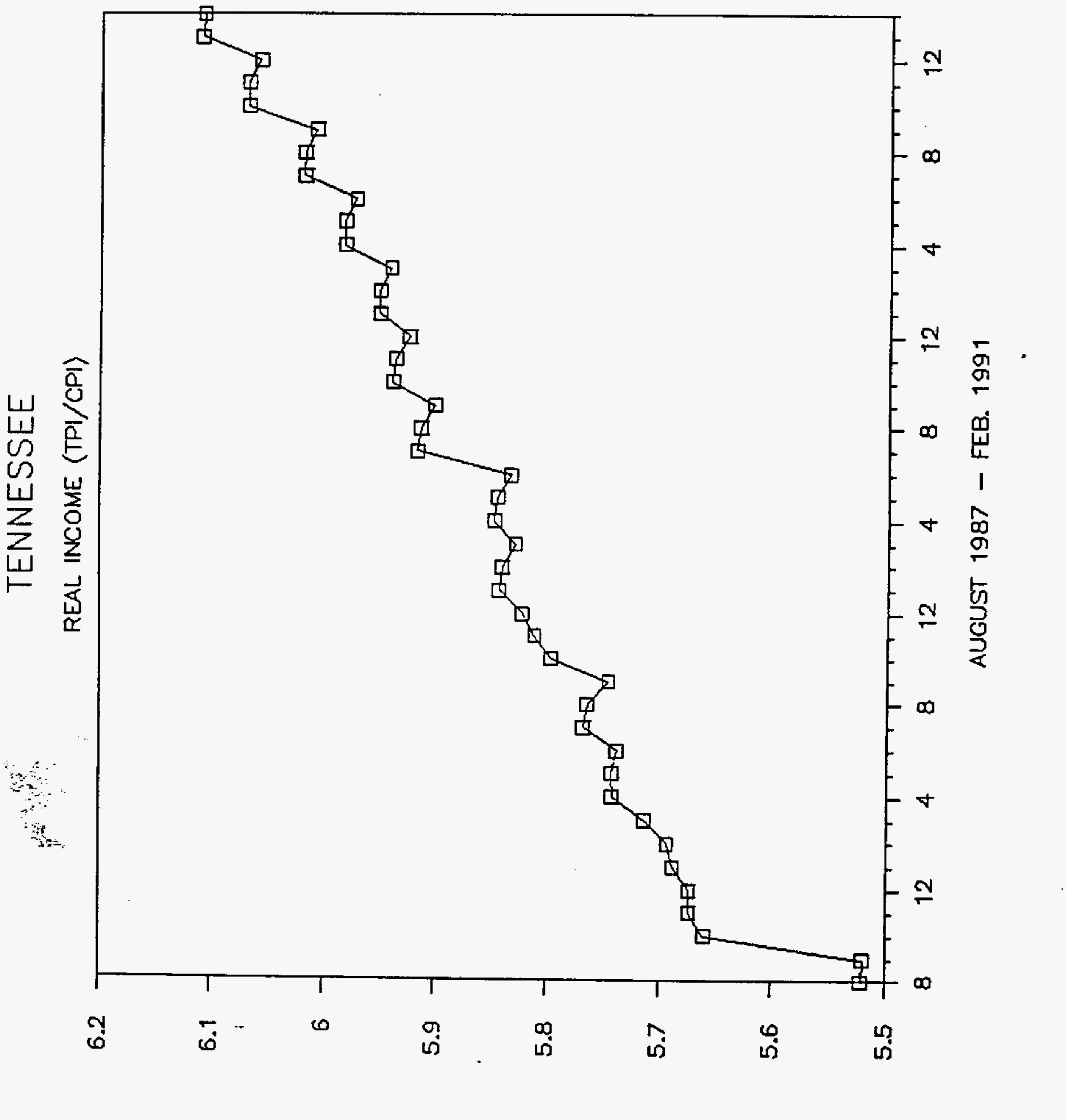
LOUISIANA

REAL INCOME (TPI/CPI)





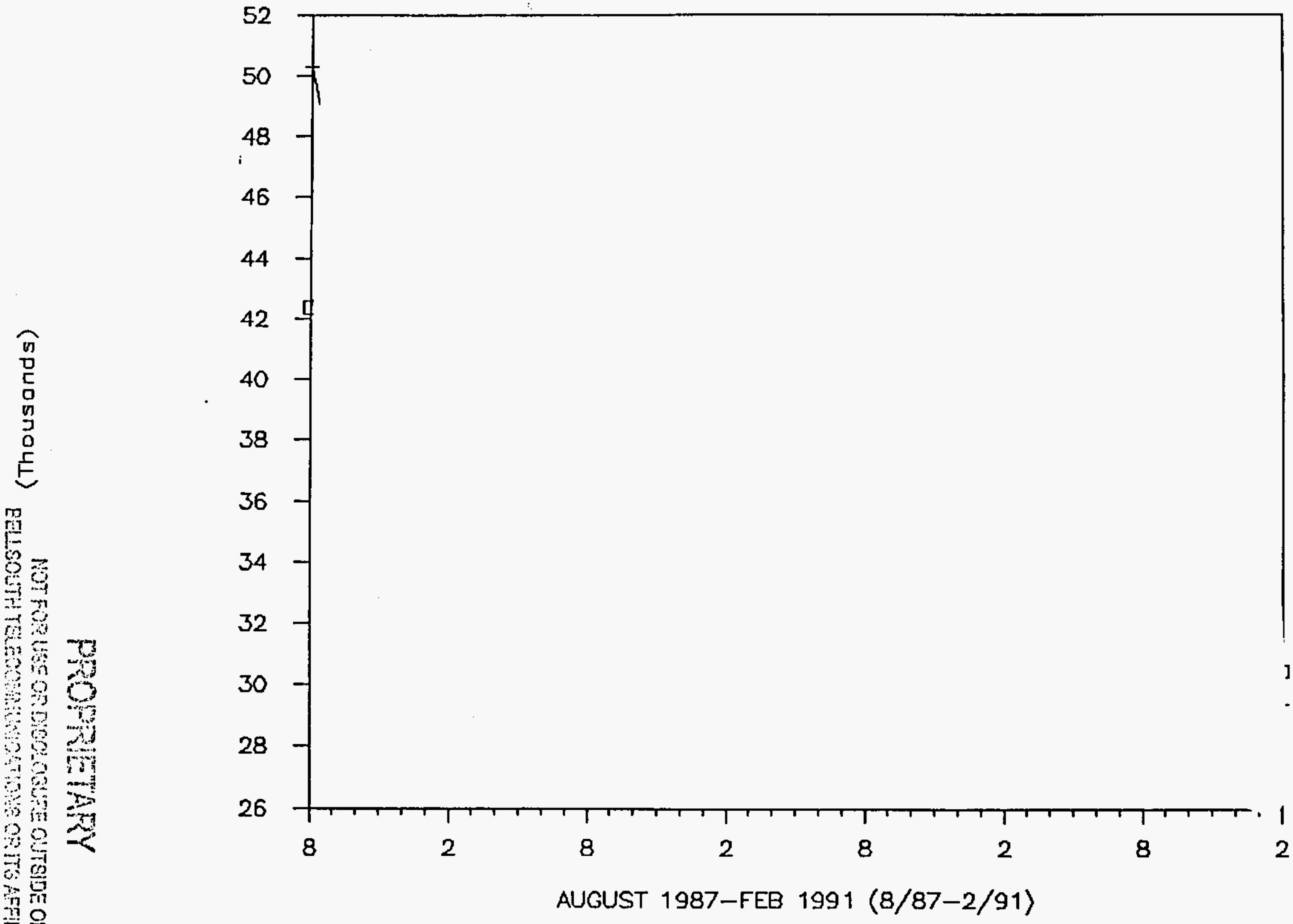
MISSISSIPPI
REAL INCOME (TPI/CPI)
(Thousands)
2.57
2.56
2.55
2.54
2.53
2.52
2.51
2.5
2.49
2.48
2.47
2.46
2.45
2.44
2.43
2.42
2.41
2.4
2.39
2.38
2.37
2.36
8
12
4
8
12
4
8
12
4
8
12
AUGUST 1987 – FEB. 1991



F01825Z 0000242

INSIDE WIRE INSTALLATION & MAINTENANCE

ACTUAL vs. PREDICTED – SCB

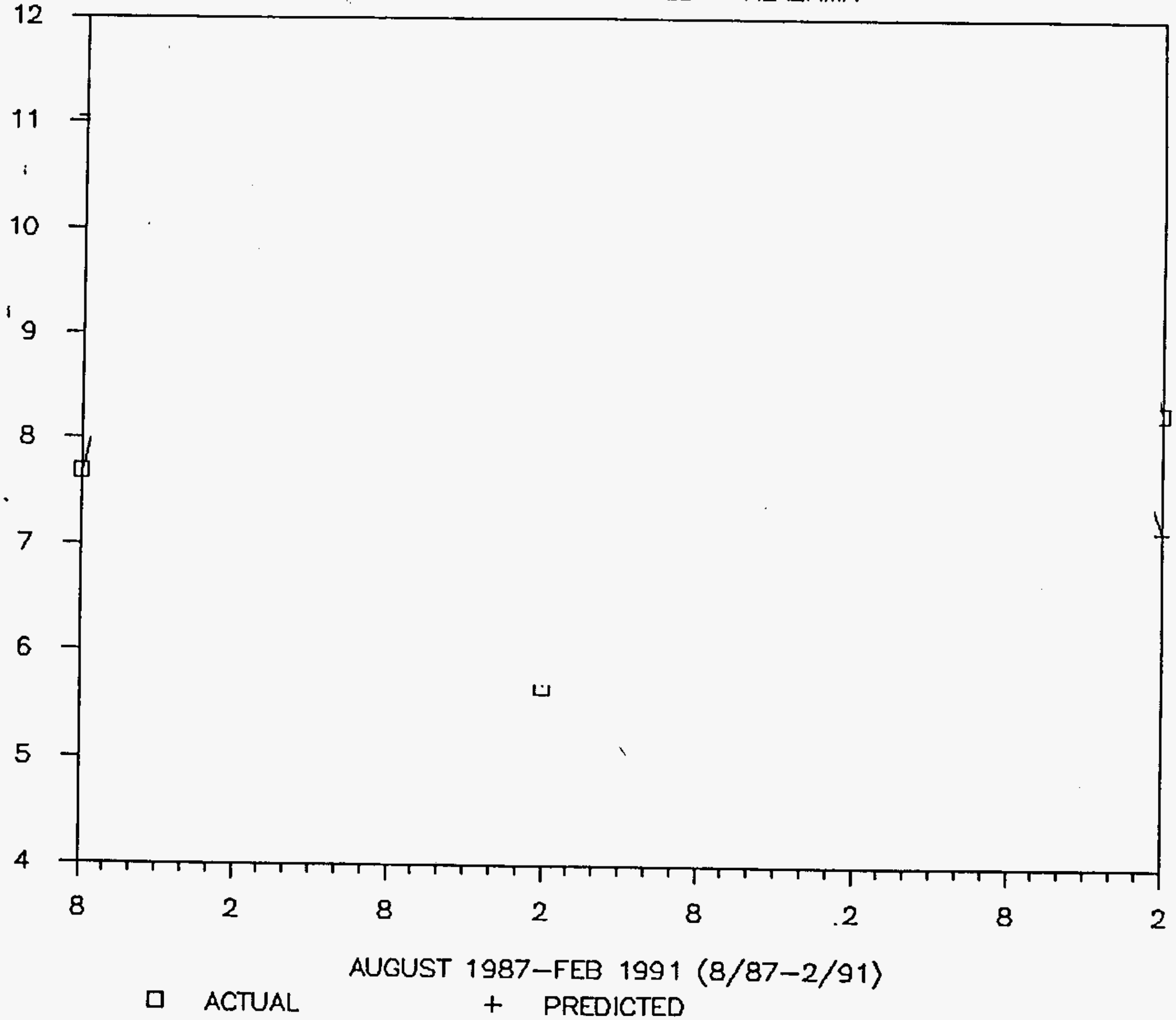


SOUTH CENTRAL BELL
DEMAND RATIO AS PERCENT OF TOTAL
AVERAGE 1990

	AL	KY	LA	MS	TN
5 701					
702					
704					
705					
800					
801					
846					
12. 847					
	100.000000%	100.000000%	100.000000%	100.000000%	100.000000%

INSIDE WIRE INSTALLATION & MAINTENANCE

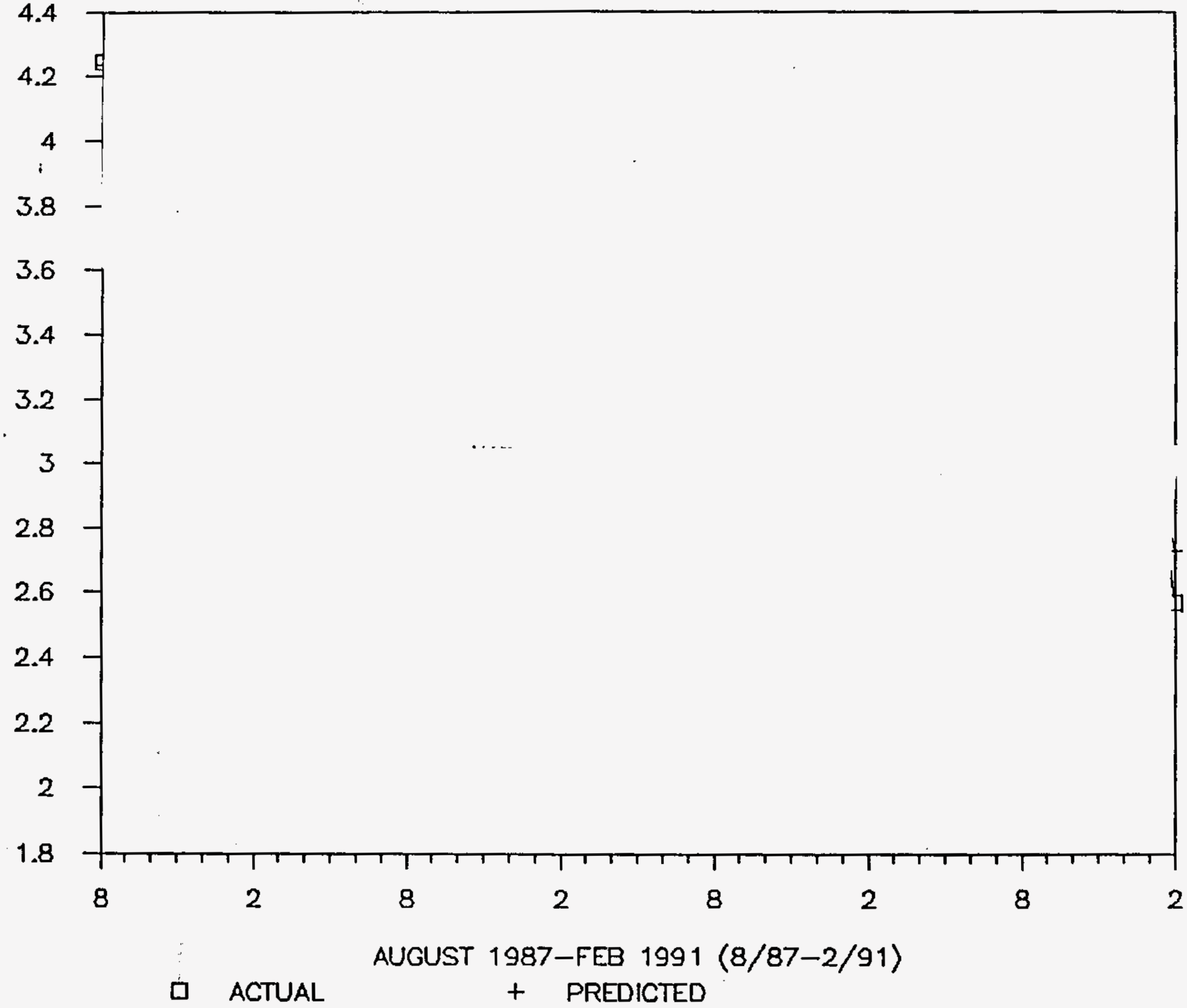
ACTUAL vs. PREDICTED – ALABAMA



(Thousands)

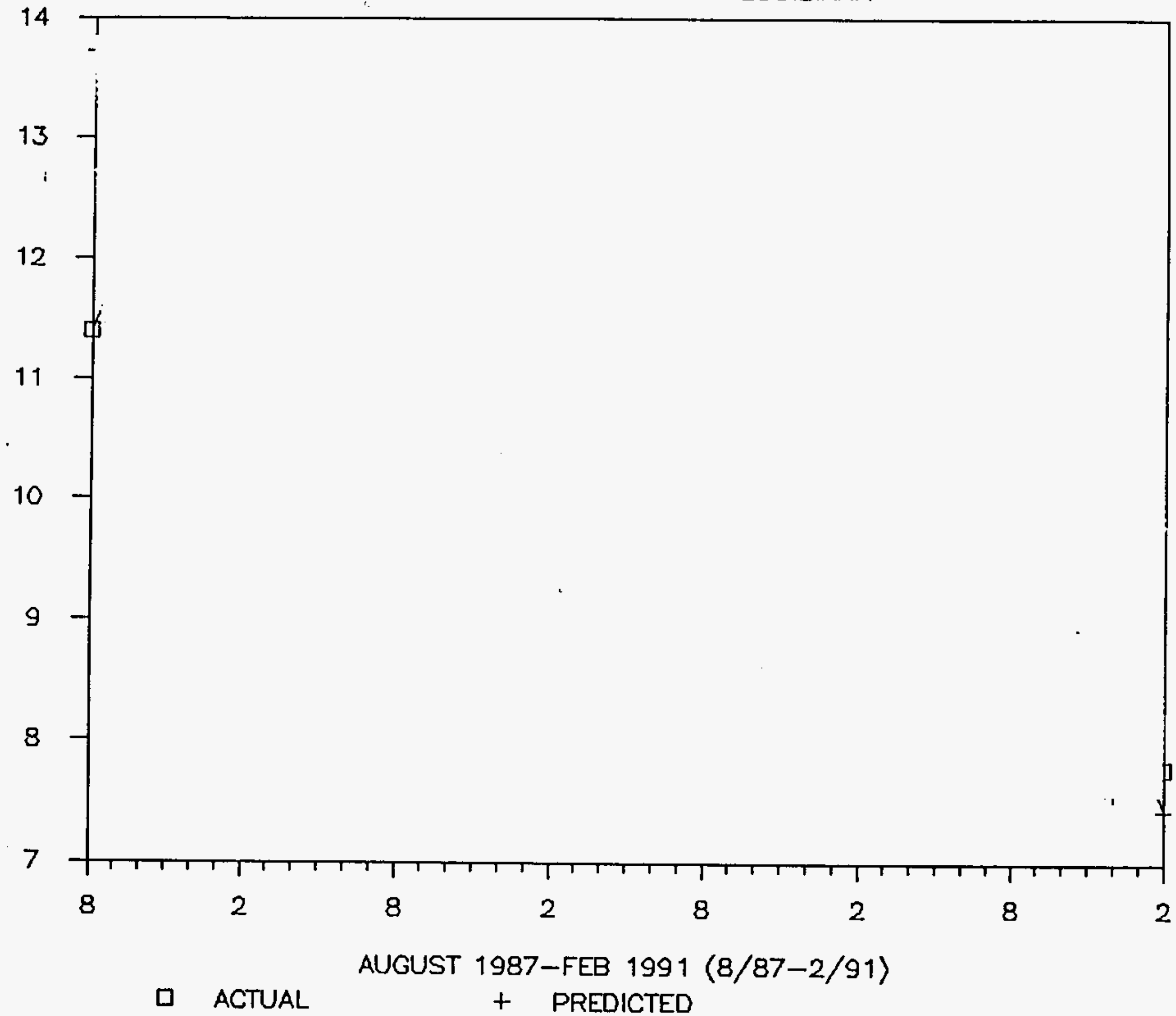
INSIDE WIRE INSTALLATION & MAINTENANCE

ACTUAL vs. PREDICTED – KENTUCKY



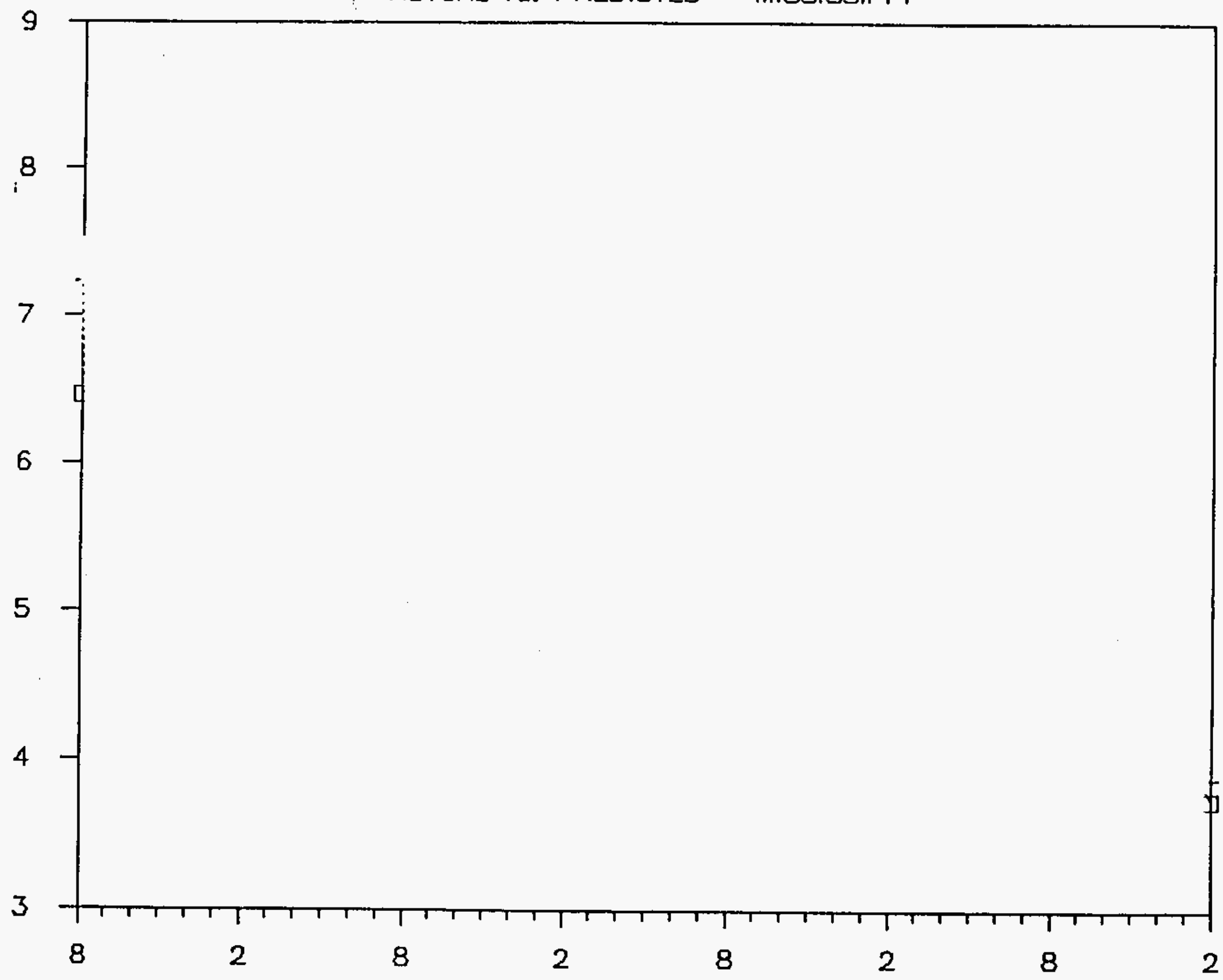
INSIDE WIRE INSTALLATION & MAINTENANCE

ACTUAL vs. PREDICTED – LOUISIANA



INSIDE WIRE INSTALLATION & MAINTENANCE

ACTUAL vs. PREDICTED – MISSISSIPPI

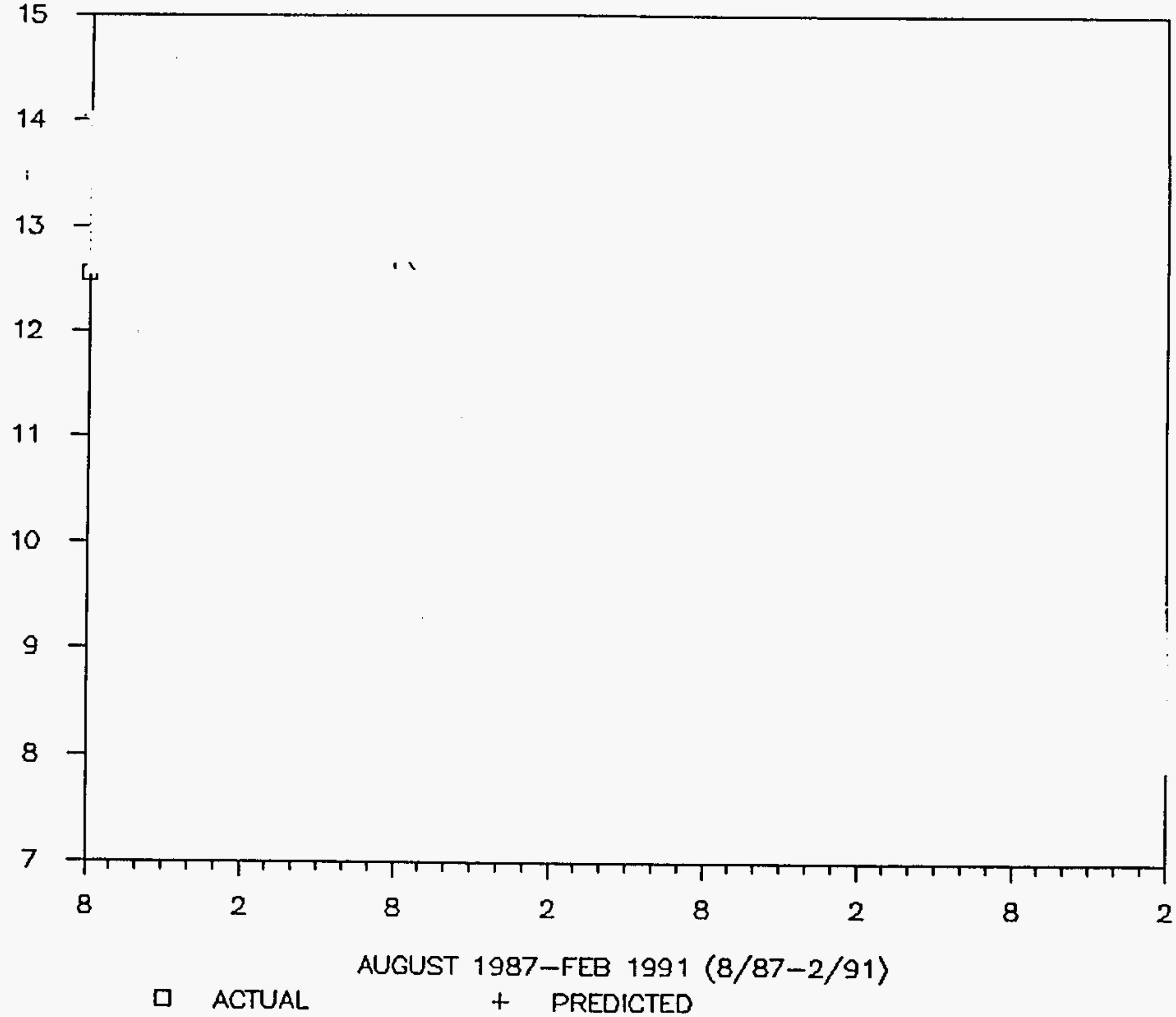


AUGUST 1987–FEB 1991 (8/87–2/91)

□ ACTUAL + PREDICTED

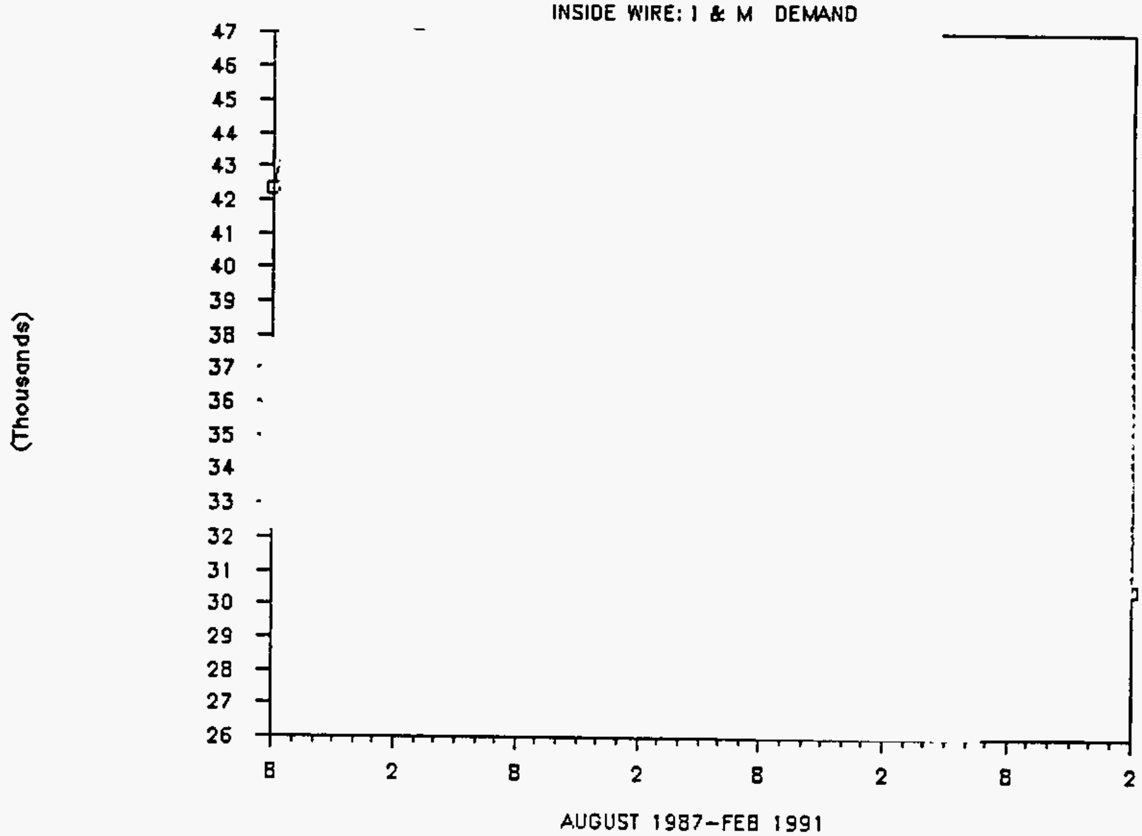
INSIDE WIRE INSTALLATION & MAINTENANCE

ACTUAL vs. PREDICTED – TENNESSEE



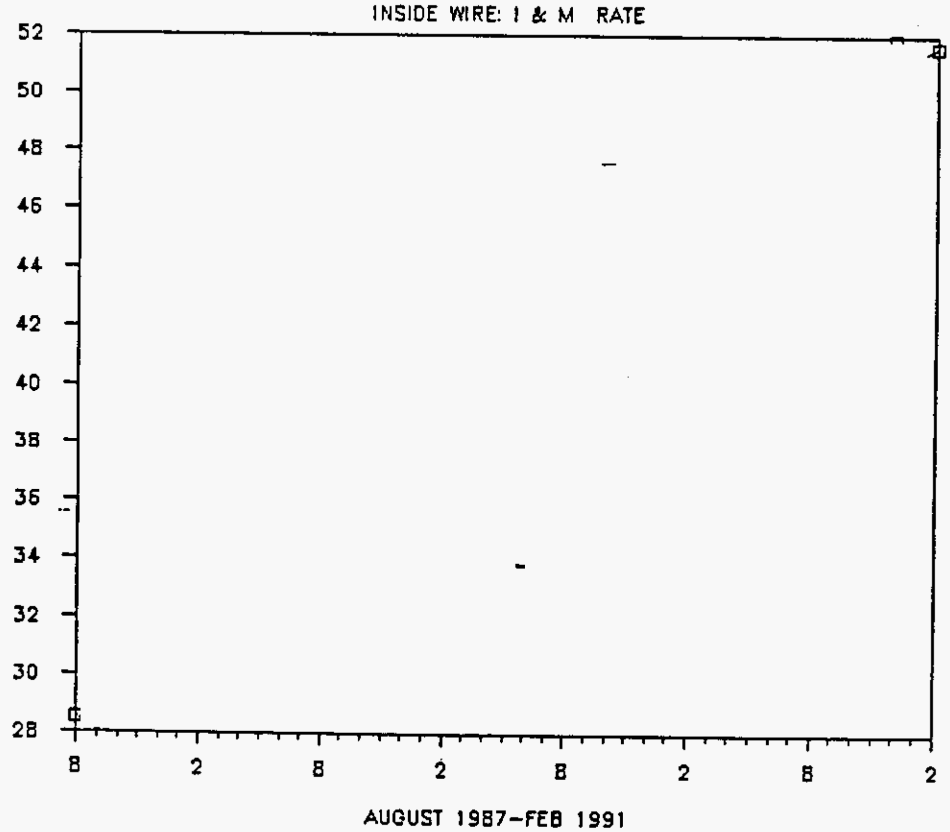
SOUTH CENTRAL BELL

INSIDE WIRE: I & M DEMAND



SOUTH CENTRAL BELL

INSIDE WIRE: I & M RATE



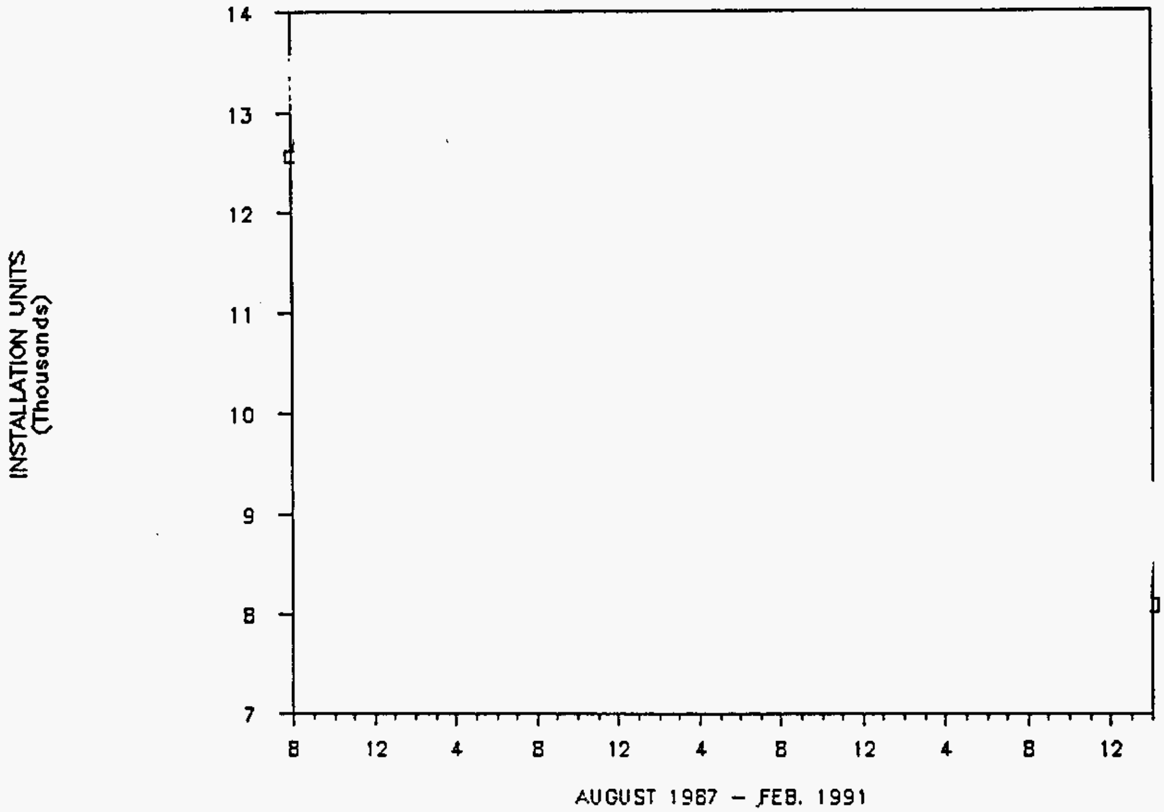
PROPRIETARY

NOT FOR USE OR DISCLOSURE OUTSIDE OF BELLSOUTH TELECOMMUNICATIONS OR ITS AFFILIATED COMPANIES EXCEPT UNDER WRITTEN AGREEMENT

5010257 0000250

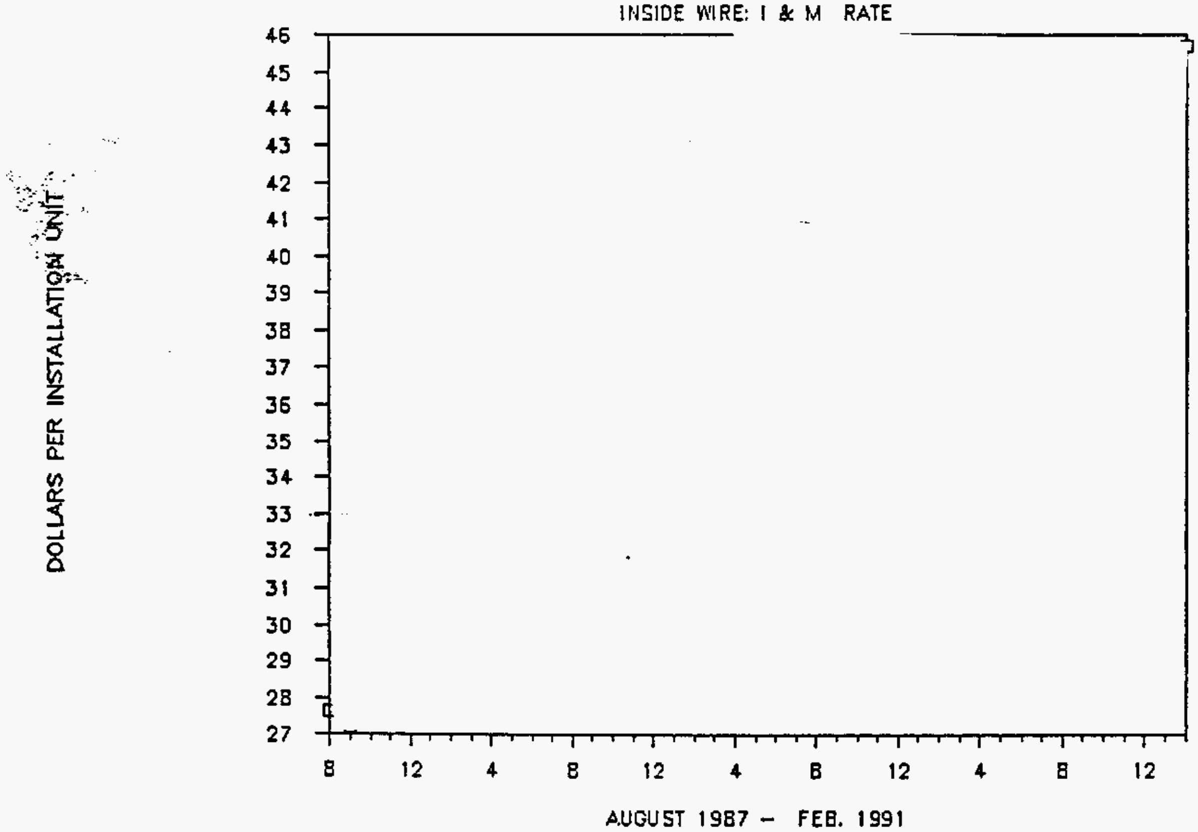
TENNESSEE

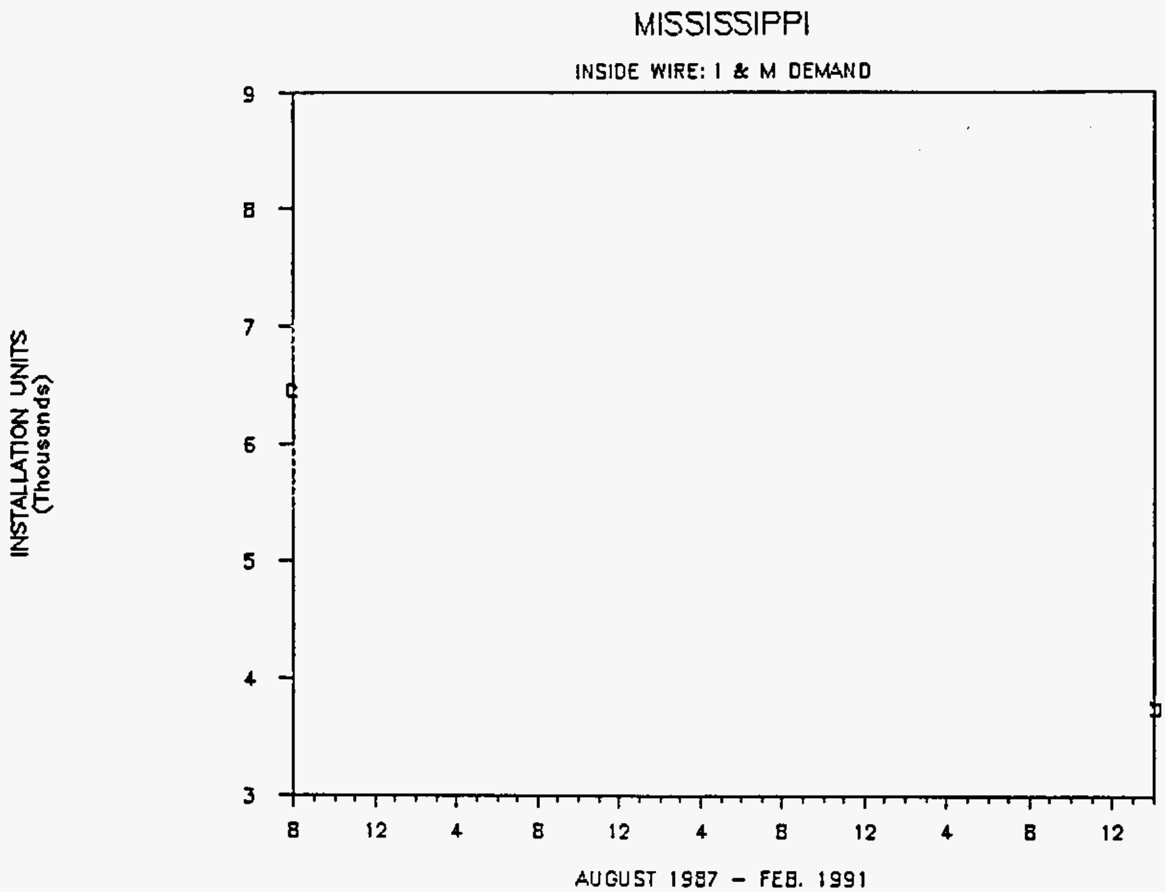
INSIDE WIRE: I & M DEMAND

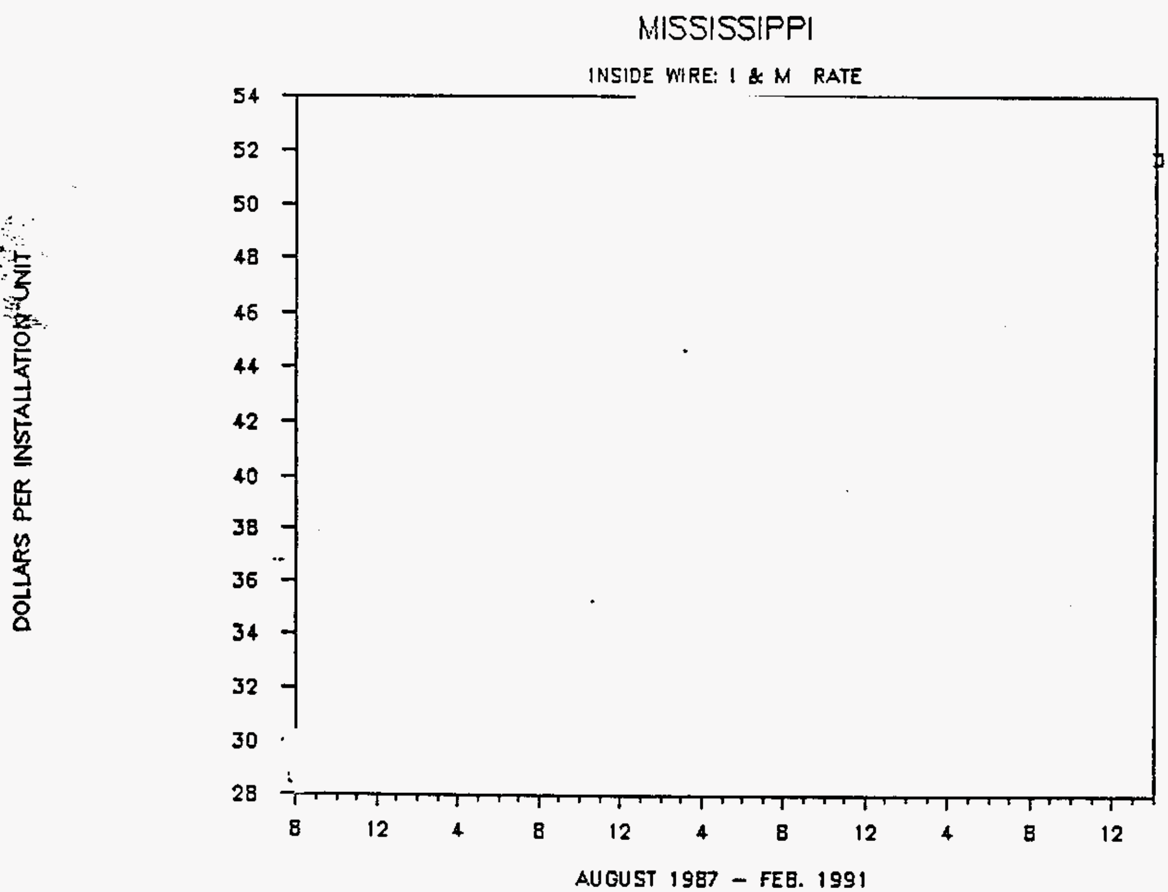


TENNESSEE

INSIDE WIRE: I & M RATE



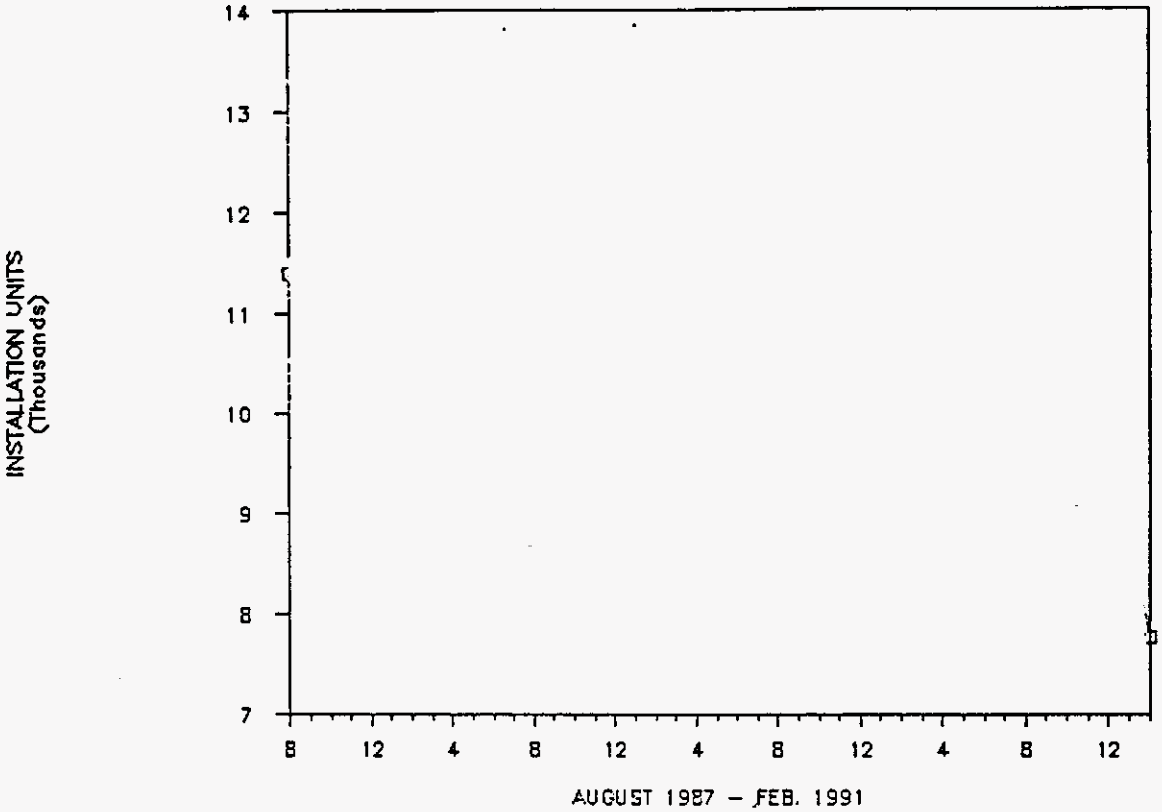




PROPRIETARY
NOT FOR USE OR DISCLOSURE OUTSIDE OF
BELLSOUTH TELECOMMUNICATIONS OR ITS AFFILIATED
COMPANIES EXCEPT UNDER WRITTEN AGREEMENT

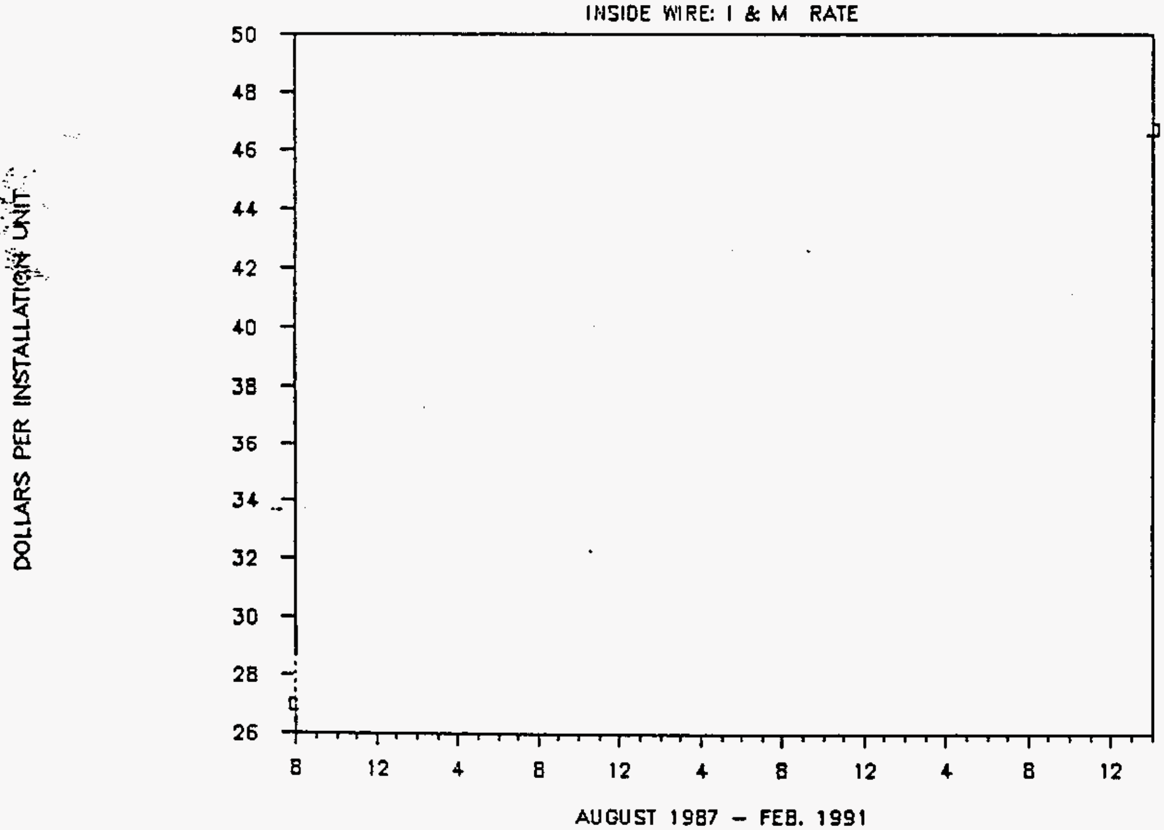
LOUISIANA

INSIDE WIRE: I & M DEMAND

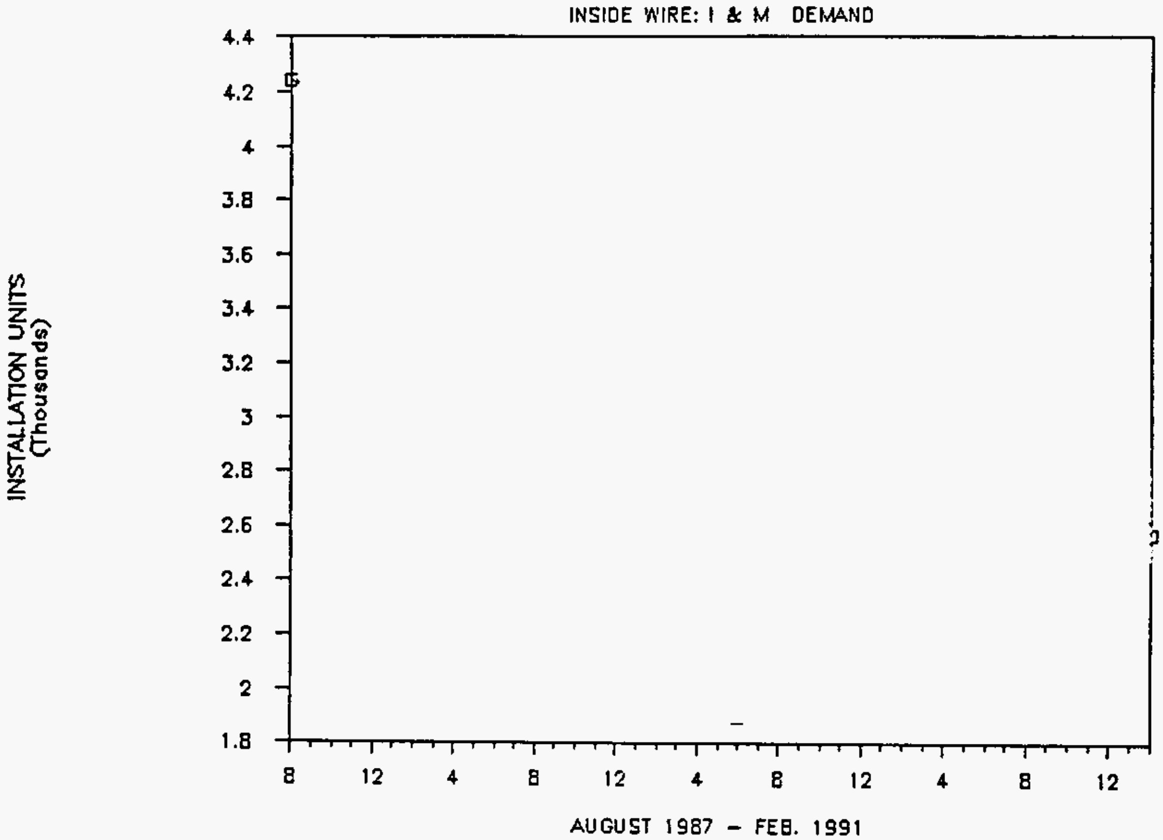


LOUISIANA

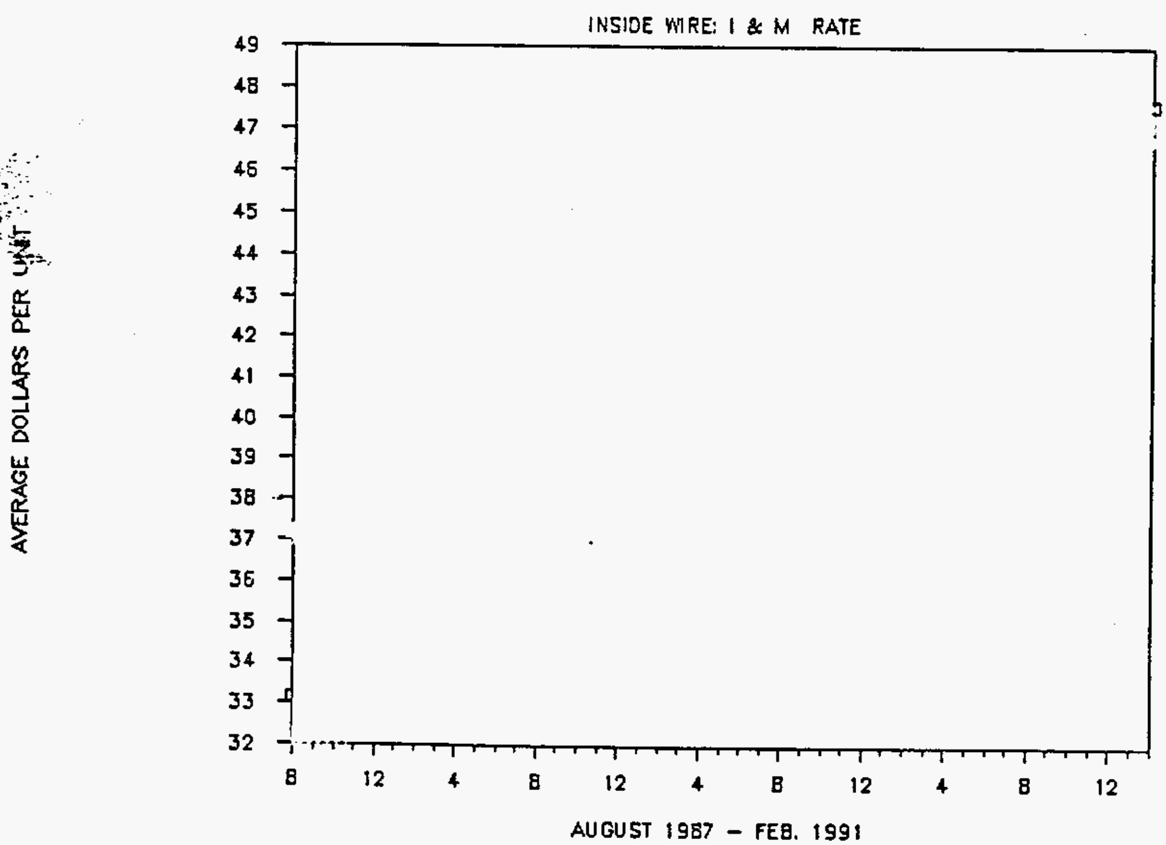
INSIDE WIRE: I & M RATE



KENTUCKY



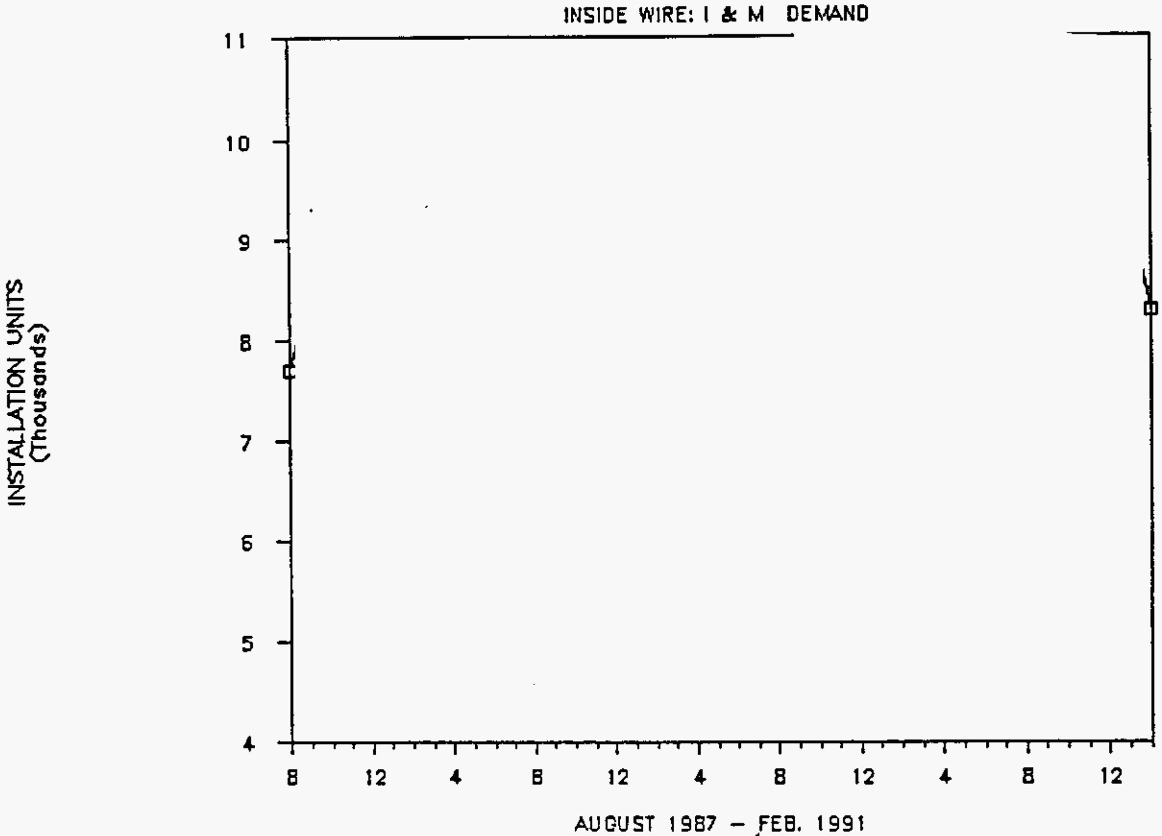
KENTUCKY



PROPRIETARY
NOT FOR USE OR DISCLOSURE OUTSIDE OF BELLSOUTH TELECOMMUNICATIONS OR ITS AFFILIATED COMPANIES EXCEPT UNDER WRITTEN AGREEMENT

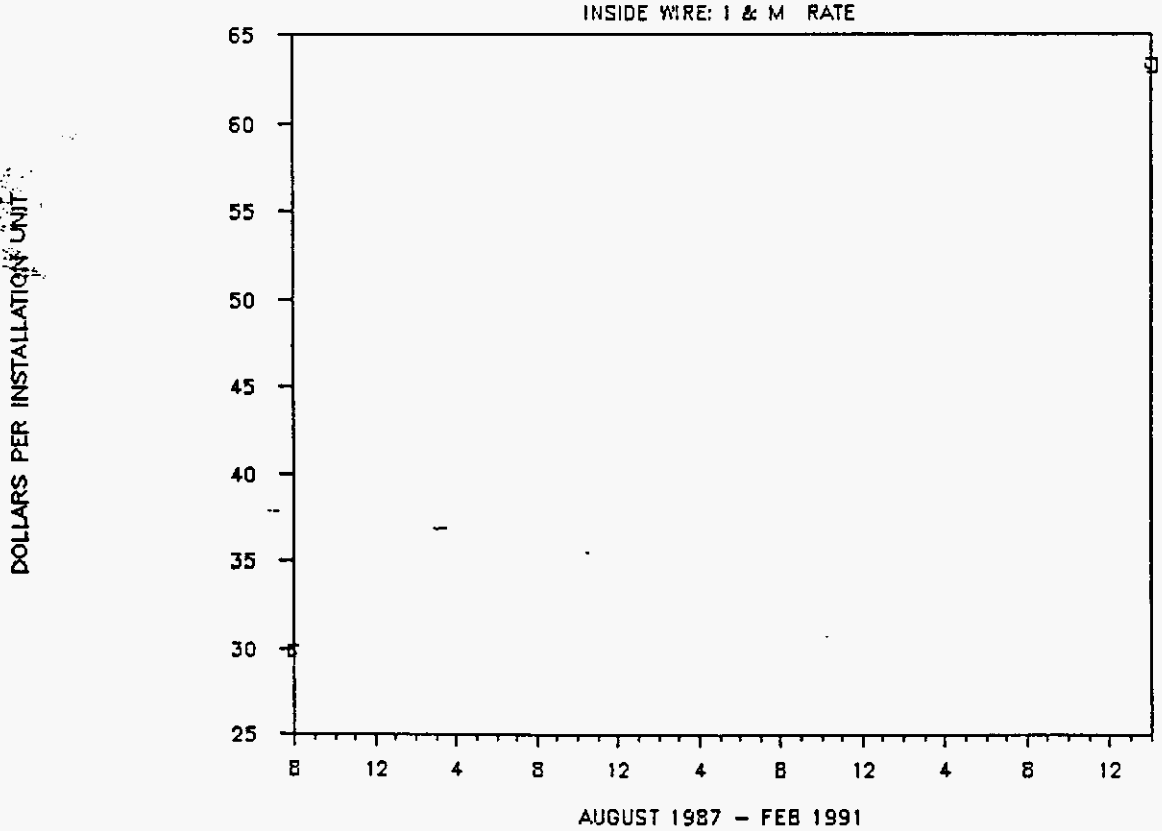
ALABAMA

INSIDE WIRE: I & M DEMAND



ALABAMA

INSIDE WIRE: I & M RATE



SOUTHERN BELL

MODEL

```
*********************************************************************
*    SHAZAM - MS DOS VERSION    SITE NO.  566A1Y                    *
*                                                                   *
* ** Copyright (C)  1990  by K.J. White - All Rights Reserved **    *
*                                                                   *
* FOR USE ONLY BY: BellSouth Services Incorporated                  *
* AT: Birmingham, Alabama                                           *
*                                                                   *
*                                                                   *
* If this does not describe you then you have stolen this copy      *
* and if you type anything except STOP or HELP SHAZAM you           *
* agree to send payment within 7 days for a software license        *
*                                                                   *
*                                                                   *
*                                                                   *
* SITE LICENSE - FOR USE ON ALL COMPUTERS AT ABOVE LOCATION         *
*********************************************************************
Hello/Bonjour/Aloha/Howdy/G Day/Kia Ora/Konnichiwa
Welcome to SHAZAM - Version 6.2  -  JUN 1990 SYSTEM=MS-DOS   PAR=  170
|_*                        S O U T H E R N   B E L L
|_*
|_* This is a forecasting model to project aggregate I&M revenues by
|_*   looking at derived demand as a function of real income, seasonality,
|_*   differential intercepts, and an aggregate rate. Because of the liklihood
|_*   of recording errors between accounts, this aggregate approach was
|_*   developed to forecast aggregate I&M revenue for a number of test rates.
|_*   This data was taken from the NON-RECURRING CHARGE SUMMARY REPORT  for line
|_*   numbers 54, 55, 56, 57 58, 59, 61, 62-representing both installation
|_*   and maintenance charges. The historical data covers the time 1/89  -
|_*   12/90. Since there were no price changes over that time, the price
|_*   variable was not used in the equation.
|_* ---------------------------------------------------------------------
|_FILE 4 SHZSB2.PRN
UNIT  4 IS NOW ASSIGNED TO: SHZSB2.PRN
|_FILE 11 OUT.TXT
UNIT 11 IS NOW ASSIGNED TO: OUT.TXT
|_FILE 12 HPRED.TXT
UNIT 12 IS NOW ASSIGNED TO: HPRED.TXT
|_READ(4) OBS STATE YEAR MONTH DEMAND PRICE RINCOME D1 D2 D3 D4 TIME

...SAMPLE RANGE IS NOW SET TO:          1       240
|_DIM FLD 400 GAD 400 NCD 400 SCD 400 HPRED 400
|_* ---------------------------------------------------------------------
|_GENR LOGD=LOG(DEMAND)
|_GENR LOGP=LOG(PRICE)
|_GENR LOGRINC=LOG(RINCOME)
|_GENR LOGTIME=LOG(TIME)
|_GENR FLT=LOGTIME*D1
|_GENR GAT=LOGTIME*D2
|_GENR NCT=LOGTIME*D3
|_GENR SCT=LOGTIME*D4
|_* --------------------
|_GENR FLF=0
|_GENR GAF=0
|_GENR NCF=0
|_GENR SCF=0
|_GENR JAN=0
|_GENR FEB=0
|_GENR MAR=0
```

```
|_GENR APR=0
|_GENR MAY=0
|_GENR JUN=0
|_GENR JUL=0
|_GENR AUG=0
|_GENR SEP=0
|_GENR OCT=0
|_GENR NOV=0
|_IF(MONTH.EQ.1)JAN=1
|_IF(MONTH.EQ.2)FEB=1
|_IF(MONTH.EQ.3)MAR=1
|_IF(MONTH.EQ.4)APR=1
|_IF(MONTH.EQ.5)MAY=1
|_IF(MONTH.EQ.6)JUN=1
|_IF(MONTH.EQ.7)JUL=1
|_IF(MONTH.EQ.8)AUG=1
|_IF(MONTH.EQ.9)SEP=1
|_IF(MONTH.EQ.10)OCT=1
|_IF(MONTH.EQ.11)NOV=1
|_* ----------------------------------------------------------------------
```

```
|_POOL LOGD    JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV &
|  D1 D2 D3 FLT GAT NCT SCT /NCROSS=4 FULL RS LIST BEG=1 END=96  PRED=HPRED
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     4 CROSS-SECTIONS AND     24 TIME-PERIODS
     96 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LOGD

OLS COEFFICIENTS
  0.15422      -0.69245E-01  0.81843E-01  0.26837E-01  0.99531E-01
  0.55403E-01  0.47234E-01  0.18494      0.19662E-01  0.14291
  0.11228       1.9089        1.0940      0.53217     -0.64855E-01
  0.70799E-02 -0.44245E-01  0.26571E-02  8.3903

RHO VECTOR
  0.59943      0.45754     -0.56131E-01  0.36057
CONSTANT RHO =  0.36707
VARIANCES
  0.21915E-01  0.16448E-01  0.44072E-01  0.39207E-01

PHI MATRIX
  0.21915E-01
 -0.47842E-02  0.16448E-01
  0.74652E-02  0.29946E-02  0.44072E-01
 -0.32789E-02  0.42548E-02 -0.16565E-01  0.39207E-01
FINAL COEFFICIENTS
```

23

26

```
F
BUSE R-SQUARE = 0.9799      BUSE RAW-MOMENT R-SQUARE = 0.9999
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.25364
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.50363
SUM OF SQUARED ERRORS-SSE=   19.530
MEAN OF DEPENDENT VARIABLE =   9.2886
LOG OF THE LIKELIHOOD FUNCTION =  111.272
```

A VARIABLE NAME	B ESTIMATED COEFFICIENT	C STANDARD ERROR	D T-RATIO 77 DF	E PARTIAL CORR.	F STANDARDIZED COEFFICIENT	G ELASTICITY AT MEANS
3 JAN			4.8078	0.4805		
FEB			-1.3251	-0.1493		
MAR			2.6057	0.2847		
APR			1.6431	0.1840		
MAY			3.0450	0.3278		
JUN			2.4552	0.2694		
JUL			2.0829	0.2310		
AUG			5.5103	0.5318		
SEP			1.5834	0.1776		
OCT			4.8598	0.4845		
NOV			4.2336	0.4345		
D1			16.218	0.8795		
D2			11.565	0.7966		
D3			4.9281	0.4897		
FLT			-2.5099	-0.2750		
GAT			0.85615	0.0971		
NCT			-2.0341	-0.2258		
SCT			0.41717	0.0475		
21 CONSTANT			91.039	0.9954		

A	B	C		
OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL	
1			0.14824	I*
2			-0.63971	* I
3			-0.40372	* I
4			-0.42942	* I
5			0.15679	I*
6			-0.50261E-01	*
7			0.12079	I*
8			-0.41395E-01	*
9			0.42633	I *
10			-0.22319	*I
11			-0.13153	*I
12			0.81582	I *
13			1.2244	I *
14			0.10287	I*
15			-0.38280	* I
16			0.18540	I*
17			-0.40400	* I
18			-0.40085	* I
19			0.22143	I*
20			-0.49697	* I
21			-0.15444E-01	*
22			0.31442	I *
23			0.36684E-01	*
24			-0.28185	*I
25			-0.46498	* I
26			0.39834E-01	*
27			0.88675	I *
28			-0.11745	*I
29			0.40787	I *
30			0.52934	I *
31			-0.27108	*I
32			0.52011	I *
33			0.25439E-01	*
34			-0.14261	*I
35			-0.87032	* I
36			0.29506	I*
37			-0.31167	* I
38			0.39545	I *
39			0.41523	I *
40			0.60744	I *
41			-0.52483	* I
42			0.53478	I *
43			-0.32647	* I
44			-0.16864	*I
45			-0.32150	* I
46			-0.49859	* I
47			-0.22764	*I
48			-0.98013E-01	*
49			-0.89109	* I
50			0.26543E-01	*
51			0.16140	I*
52			-0.37022E-01	*
53			0.49374	I *
54			0.29275	I*
55			0.92946E-01	*
56			0.49835	I *
57			0.17777	I*

A B C

58	0.78793E-01	*
59	1.0523	I *
60	0.24858	I*
61	-0.35531E-01	*
62	-0.10908	*I
63	-0.27035	*I
64	-0.55245	* I
65	-0.21273	*I
66	-0.65442	* I
67	0.91824E-01	*
68	-0.30503	* I
69	-0.47736	* I
70	-0.82362E-01	*
71	-0.74433	* I
72	1.1307	I *
73	-0.32641	* I
74	0.14330	I*
75	0.16480	I*
76	0.22024	I*
77	0.26611	I*
78	-0.93992E-01	*
79	-0.49206	* I
80	0.40340	I *
81	-0.97006E-02	*
82	0.32413	I *
83	1.2069	I *
84	-0.32809	* I
85	0.19653	I*
86	0.34186	I *
87	-0.78443E-01	*
88	0.24384	I*
89	-0.22276E-01	*
90	0.68341E-02	*
91	0.14827	I*
92	-0.56519E-01	*
93	-0.10858	*I
94	-0.12469	*I
95	-0.10546	*I
96	-1.5600	* I

DURBIN-WATSON = 1.6585 VON NEUMANN RATIO = 1.6760 RHO = 0.05057
RESIDUAL SUM = 0.49946 RESIDUAL VARIANCE = 0.25364
SUM OF ABSOLUTE ERRORS= 32.345
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9991
RUNS TEST: 47 RUNS, 46 POSITIVE, 50 NEGATIVE, NORMAL STATISTIC = -0.3940
|_* ---

|_FC /BEG=97 END=132 MODEL=POOL LIST NC=4 CSNUM=1 PRED=FLD

REQUIRED MEMORY IS PAR= 91 CURRENT PAR= 170
DEPENDENT VARIABLE = LOGD 36 OBSERVATIONS
REGRESSION COEFFICIENTS

5

9

AUTOCORRELATION RHO
0.5994348092524
POOL STANDARD ERROR= 0.148036595582 POOL VARIANCE= 0.219148336314E-01
..WARNING FORECAST STD. ERRORS ONLY VALID FOR OLS

A OBS. NO.	B OBSERVED VALUE	C PREDICTED VALUE	D CALCULATED RESIDUAL	STD. ERROR		
16 97	0.00000E+00			0.97185E-01	•	I
98	0.00000E+00			0.61553E-01	*	I
99	0.00000E+00			0.60240E-01	*	I
100	0.00000E+00			0.60332E-01	*	I
101	0.00000E+00			0.60649E-01	*	I
102	0.00000E+00			0.61077E-01	•	I
103	0.00000E+00			0.61572E-01	*	I
104	0.00000E+00			0.62107E-01	*	I
105	0.00000E+00			0.62668E-01	•	I
106	0.00000E+00			0.63243E-01	•	I
107	0.00000E+00			0.63828E-01	•	I
108	0.00000E+00			0.64511E-01	•	I
109	0.00000E+00			0.72893E-01	*	I
110	0.00000E+00			0.70551E-01	•	I
111	0.00000E+00			0.69873E-01	•	I
112	0.00000E+00			0.69716E-01	*	I
113	0.00000E+00			0.69790E-01	*	I
114	0.00000E+00			0.69991E-01	*	I
115	0.00000E+00			0.70270E-01	•	I
116	0.00000E+00			0.70603E-01	*	I
117	0.00000E+00			0.70977E-01	*	I
118	0.00000E+00			0.71387E-01	•	I
119	0.00000E+00			0.71846E-01	•	I
120	0.00000E+00			0.72477E-01	•	I
121	0.00000E+00			0.81119E-01	*	I
122	0.00000E+00			0.78467E-01	*	I
123	0.00000E+00			0.77584E-01	*	I
124	0.00000E+00			0.77253E-01	•	I
125	0.00000E+00			0.77168E-01	*	I
126	0.00000E+00			0.77216E-01	*	I
127	0.00000E+00			0.77350E-01	*	I
128	0.00000E+00			0.77545E-01	*	I
129	0.00000E+00			0.77790E-01	*	I
130	0.00000E+00			0.78083E-01	*	I
51 131	0.00000E+00			0.78451E-01	•	I
132	0.00000E+00			0.79037E-01	*	I

SUM OF ABSOLUTE ERRORS= 363.55
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0000
MEAN ERROR = -10.099
SUM-SQUARED ERRORS = 3671.7
MEAN SQUARE ERROR = 101.99
MEAN ABSOLUTE ERROR= 10.099

```
ROOT MEAN SQUARE ERROR =    10.099
THEIL INEQUALITY COEFFICIENT U = 0.000
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99994
     PROPORTION DUE TO VARIANCE =  0.57997E-04
     PROPORTION DUE TO COVARIANCE = -0.91398E-16
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99994
     PROPORTION DUE TO REGRESSION =  0.57997E-04
     PROPORTION DUE TO DISTURBANCE = -0.91398E-16
```

|_FC /BEG=133 END=168 MODEL=POOL LIST NC=4 CSNUM=2 PRED=GAD

REQUIRED MEMORY IS PAR= 91 CURRENT PAR= 170
DEPENDENT VARIABLE = LOGD 36 OBSERVATIONS
REGRESSION COEFFICIENTS

5)1

9)1

AUTOCORRELATION RHO
0.4575406302093
POOL STANDARD ERROR= 0.128250364742 POOL VARIANCE= 0.164481560564E-01
..WARNING FORECAST STD. ERRORS ONLY VALID FOR OLS

16

A OBS. NO.	B OBSERVED VALUE	C PREDICTED VALUE	D CALCULATED RESIDUAL	STD. ERROR		
133	0.00000E+00			0.81243E-01	*	I
134	0.00000E+00			0.48310E-01	*	I
135	0.00000E+00			0.46775E-01	*	I
136	0.00000E+00			0.46276E-01	*	I
137	0.00000E+00			0.46016E-01	*	I
138	0.00000E+00			0.45913E-01	*	I
139	0.00000E+00			0.45924E-01	*	I
140	0.00000E+00			0.46019E-01	*	I
141	0.00000E+00			0.46184E-01	*	I
142	0.00000E+00			0.46423E-01	*	I
143	0.00000E+00			0.46789E-01	*	I
144	0.00000E+00			0.47541E-01	*	I
145	0.00000E+00			0.56922E-01	*	I
146	0.00000E+00			0.54893E-01	*	I
147	0.00000E+00			0.53766E-01	*	I
148	0.00000E+00			0.53018E-01	*	I
149	0.00000E+00			0.52520E-01	*	I
150	0.00000E+00			0.52202E-01	*	I
151	0.00000E+00			0.52014E-01	*	I
152	0.00000E+00			0.51929E-01	*	I
153	0.00000E+00			0.51934E-01	*	I
154	0.00000E+00			0.52040E-01	*	I
155	0.00000E+00			0.52320E-01	*	I
156	0.00000E+00			0.53074E-01	*	I
157	0.00000E+00			0.62887E-01	*	I
158	0.00000E+00			0.60668E-01	*	I
159	0.00000E+00			0.59368E-01	*	I
160	0.00000E+00			0.58461E-01	*	I
161	0.00000E+00			0.57815E-01	*	I
162	0.00000E+00			0.57357E-01	*	I
163	0.00000E+00			0.57040E-01	*	I
164	0.00000E+00			0.56834E-01	*	I
165	0.00000E+00			0.56729E-01	*	I
166	0.00000E+00			0.56741E-01	*	I
167	0.00000E+00			0.56955E-01	*	I
168	0.00000E+00			0.57697E-01	*	I

51

SUM OF ABSOLUTE ERRORS=
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0000
MEAN ERROR = -9.5995
SUM-SQUARED ERRORS = 3317.6
MEAN SQUARE ERROR = 92.156

```
MEAN ABSOLUTE ERROR=   9.5995
ROOT MEAN SQUARE ERROR =   9.5998
THEIL INEQUALITY COEFFICIENT U = 0.000
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99994
     PROPORTION DUE TO VARIANCE =  0.59765E-04
     PROPORTION DUE TO COVARIANCE =  0.35833E-16
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99994
     PROPORTION DUE TO REGRESSION =  0.59765E-04
     PROPORTION DUE TO DISTURBANCE =  0.35833E-16
```

|_FC /BEG=169 END=204 MODEL=POOL LIST NC=4 CSNUM=3 PRED=NCD

REQUIRED MEMORY IS PAR= 91 CURRENT PAR= 170
DEPENDENT VARIABLE = LOGD 36 OBSERVATIONS
REGRESSION COEFFICIENTS

5

9

AUTOCORRELATION RHO
-0.5613078788124E-01
POOL STANDARD ERROR= 0.209933736265 POOL VARIANCE= 0.440721736222E-01
..WARNING FORECAST STD. ERRORS ONLY VALID FOR OLS

16

A OBS. NO.	B OBSERVED VALUE	C PREDICTED VALUE	D CALCULATED RESIDUAL	STD. ERROR		
169	0.00000E+00	I		0.11564	*	I
170	0.00000E+00	I		0.50663E-01	*	I
171	0.00000E+00	I		0.44911E-01	*	I
172	0.00000E+00	I		0.44037E-01	*	I
173	0.00000E+00	I		0.43590E-01	*	I
174	0.00000E+00	I		0.43317E-01	*	I
175	0.00000E+00	I		0.43177E-01	*	I
176	0.00000E+00	I		0.43149E-01	*	I
177	0.00000E+00	I		0.43245E-01	*	I
178	0.00000E+00	I		0.43534E-01	*	I
179	0.00000E+00	I		0.44233E-01	*	I
180	0.00000E+00	I		0.46011E-01	*	I
181	0.00000E+00	I		0.54240E-01	*	I
182	0.00000E+00	I		0.52818E-01	*	I
183	0.00000E+00			0.51694E-01	*	I
184	0.00000E+00			0.50785E-01	*	I
185	0.00000E+00			0.50092E-01	*	I
186	0.00000E+00			0.49584E-01	*	I
187	0.00000E+00			0.49229E-01	*	I
188	0.00000E+00			0.49008E-01	*	I
189	0.00000E+00			0.48932E-01	*	I
190	0.00000E+00			0.49082E-01	*	I
191	0.00000E+00			0.49697E-01	*	I
192	0.00000E+00			0.51488E-01	*	I
193	0.00000E+00			0.60053E-01	*	I
194	0.00000E+00			0.58565E-01	*	I
195	0.00000E+00			0.57296E-01	*	I
196	0.00000E+00			0.56226E-01	*	I
197	0.00000E+00			0.55377E-01	*	I
198	0.00000E+00			0.54721E-01	*	I
199	0.00000E+00			0.54228E-01	*	I
200	0.00000E+00			0.53878E-01	*	I
201	0.00000E+00			0.53686E-01	*	I
202	0.00000E+00			0.53737E-01	*	I
203	0.00000E+00			0.54284E-01	*	I
204	0.00000E+00			0.56064E-01	*	I

51

SUM OF ABSOLUTE ERRORS=
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0000
MEAN ERROR = -8.8170
SUM-SQUARED ERRORS = 2798.8
MEAN SQUARE ERROR = 77.746

```
MEAN ABSOLUTE ERROR=   8.8170
ROOT MEAN SQUARE ERROR =   8.8174
THEIL INEQUALITY COEFFICIENT U = 0.000
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99993
     PROPORTION DUE TO VARIANCE =  0.71997E-04
     PROPORTION DUE TO COVARIANCE = -0.90965E-16
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99993
     PROPORTION DUE TO REGRESSION =  0.71997E-04
     PROPORTION DUE TO DISTURBANCE = -0.90965E-16
```

|_FC /BEG=205 END=240 MODEL=POOL LIST NC=4 CSNUM=4 PRED=SCD

REQUIRED MEMORY IS PAR= 91 CURRENT PAR= 170
DEPENDENT VARIABLE = LOGD 36 OBSERVATIONS
REGRESSION COEFFICIENTS

AUTOCORRELATION RHO
0.3605705425117
POOL STANDARD ERROR= 0.198008344515 POOL VARIANCE= 0.392073044976E-01
..WARNING FORECAST STD. ERRORS ONLY VALID FOR OLS

16

A OBS. NO.	B OBSERVED VALUE	C PREDICTED VALUE	D CALCULATED RESIDUAL	STD. ERROR		
205	0.00000E+00		[illegible]	0.11543	*	I
206	0.00000E+00			0.60179E-01	*	I
207	0.00000E+00			0.56620E-01	*	I
208	0.00000E+00			0.56473E-01	*	I
209	0.00000E+00			0.56648E-01	*	I
210	0.00000E+00			0.56954E-01	*	I
211	0.00000E+00			0.57346E-01	*	I
212	0.00000E+00			0.57802E-01	*	I
213	0.00000E+00			0.58313E-01	*	I
214	0.00000E+00			0.58897E-01	*	I
215	0.00000E+00			0.59626E-01	*	I
216	0.00000E+00			0.60786E-01	*	I
217	0.00000E+00			0.68635E-01	*	I
218	0.00000E+00			0.66954E-01	*	I
219	0.00000E+00			0.66281E-01	*	I
220	0.00000E+00			0.65988E-01	*	I
221	0.00000E+00			0.65914E-01	*	I
222	0.00000E+00			0.65981E-01	*	I
223	0.00000E+00			0.66147E-01	*	I
224	0.00000E+00			0.66390E-01	*	I
225	0.00000E+00			0.66704E-01	*	I
226	0.00000E+00			0.67113E-01	*	I
227	0.00000E+00			0.67703E-01	*	I
228	0.00000E+00			0.68789E-01	*	I
229	0.00000E+00			0.76840E-01	*	I
230	0.00000E+00			0.74935E-01	*	I
231	0.00000E+00			0.74072E-01	*	I
232	0.00000E+00			0.73606E-01	*	I
233	0.00000E+00			0.73367E-01	*	I
234	0.00000E+00			0.73276E-01	*	I
235	0.00000E+00			0.73292E-01	*	I
236	0.00000E+00			0.73391E-01	*	I
237	0.00000E+00			0.73571E-01	*	I
238	0.00000E+00			0.73857E-01	*	I
239	0.00000E+00			0.74347E-01	*	I
240	0.00000E+00			0.75370E-01	*	I

51

SUM OF ABSOLUTE ERRORS=
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0000
MEAN ERROR = -8.4771
SUM-SQUARED ERRORS = 2587.2
MEAN SQUARE ERROR = 71.866

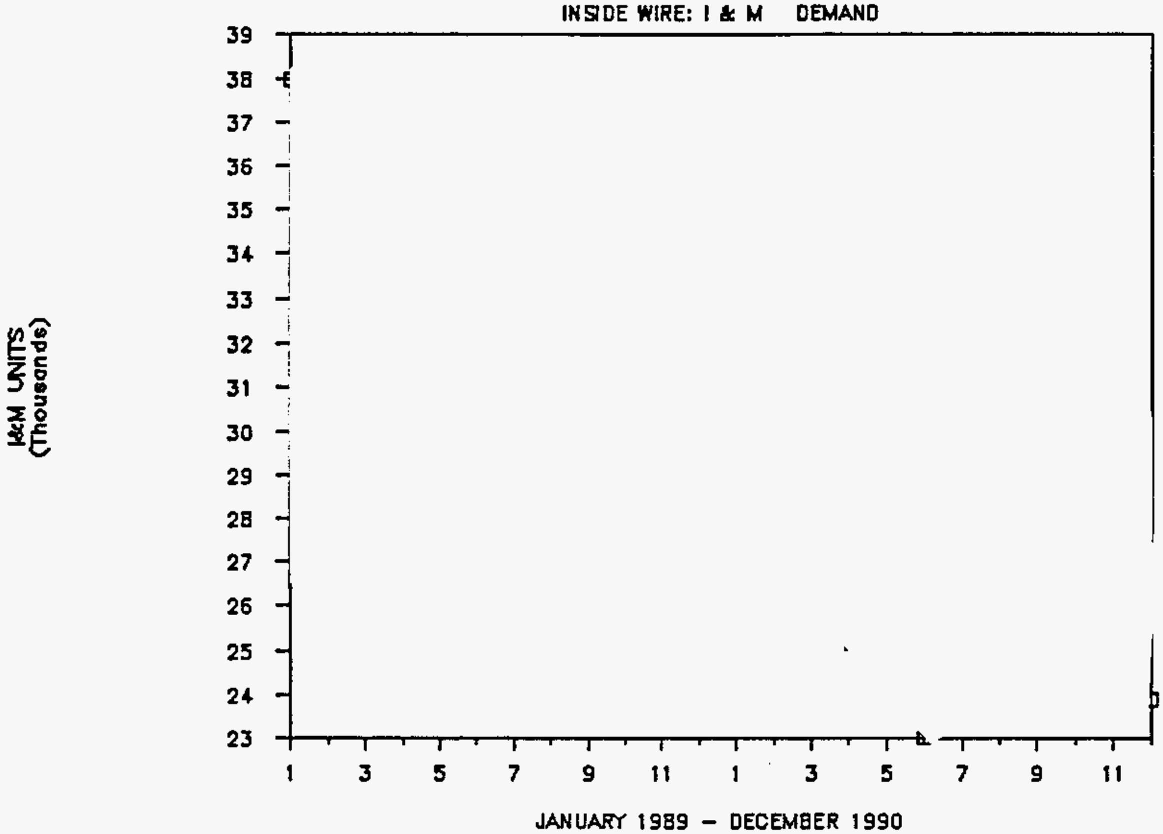
```
MEAN ABSOLUTE ERROR=   8.4771
ROOT MEAN SQUARE ERROR =   8.4774
THEIL INEQUALITY COEFFICIENT U = 0.000
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99992
     PROPORTION DUE TO VARIANCE =  0.76281E-04
     PROPORTION DUE TO COVARIANCE = -0.98120E-16
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99992
     PROPORTION DUE TO REGRESSION =  0.76281E-04
     PROPORTION DUE TO DISTURBANCE = -0.98120E-16
|_GENR FLD=EXP(FLD)
|_GENR GAD=EXP(GAD)
|_GENR NCD=EXP(NCD)
|_GENR SCD=EXP(SCD)
|_SMPL 1 96
|_GENR HPRED=EXP(HPRED)
|_WRITE(12) OBS MONTH YEAR DEMAND HPRED
|_SMPL 97 240
|_WRITE(11) FLD GAD NCD SCD
|_GENR FLREV=PRICE*FLD
|_GENR GAREV=PRICE*GAD
|_GENR NCREV=PRICE*NCD
|_GENR SCREV=PRICE*SCD
|_*  -- We are now going to print the BASE FORECAST for each state --
```

SOUTHERN BELL
LINE ITEM DEMAND AS PERCENT OF TOTAL
AVERAGE 1990

		FL	GA	NC	SC
5	54				
	55				
	56				
	57				
	58				
	59				
	61				
12	62				
		1.00	1.00	1.00	1.00

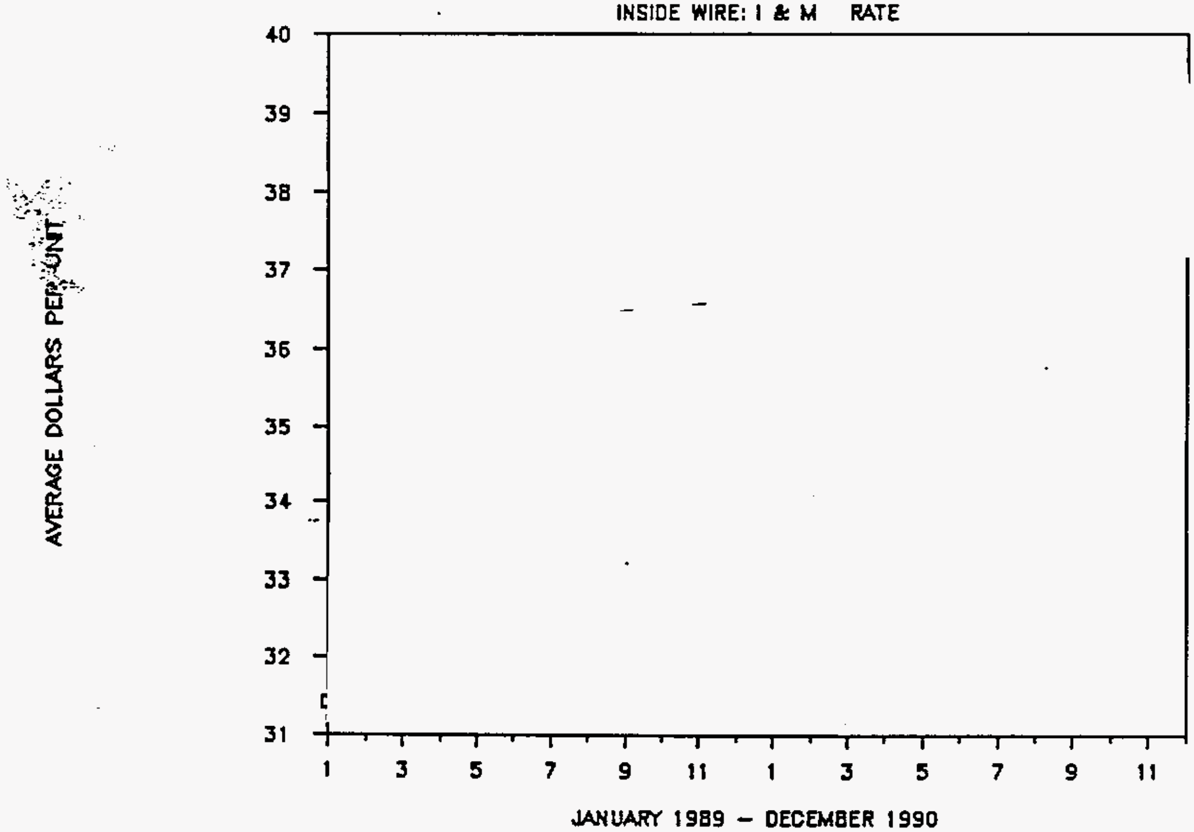
FLORIDA

INSIDE WIRE: I & M DEMAND



FLORIDA

INSIDE WIRE: I & M RATE



PROPRIETARY

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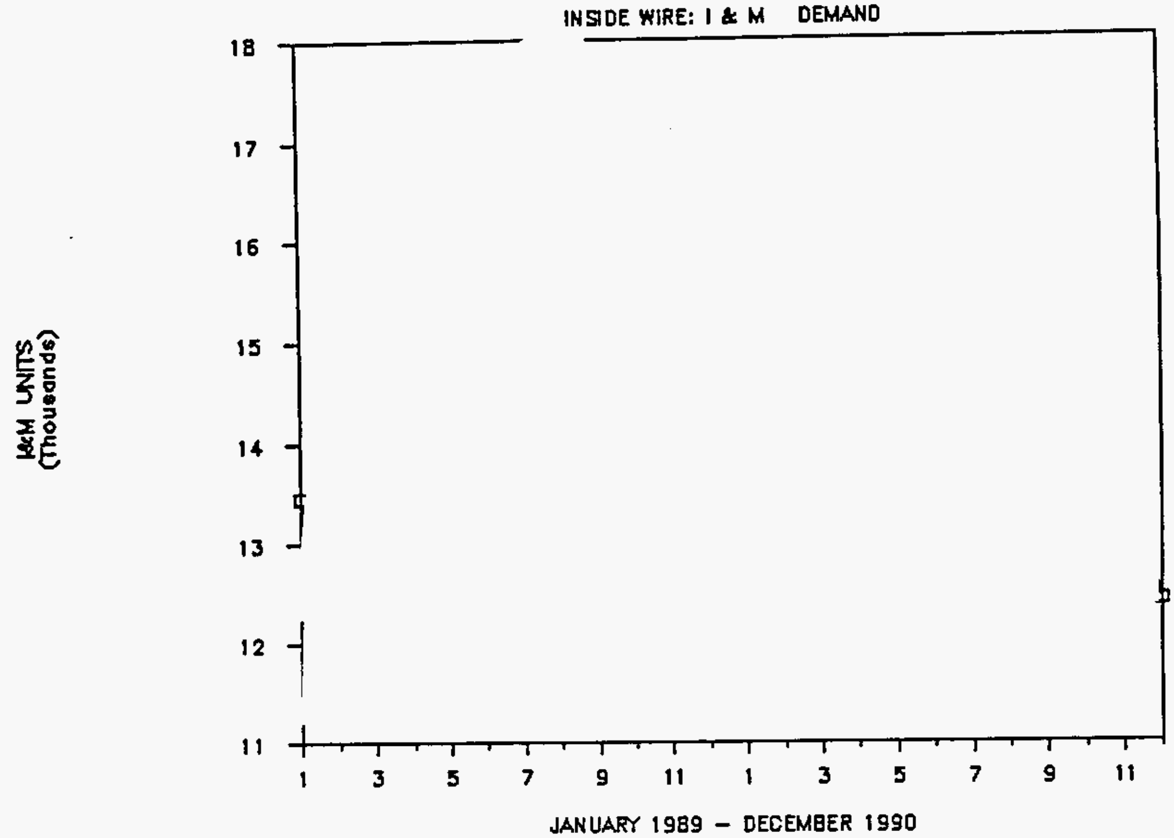
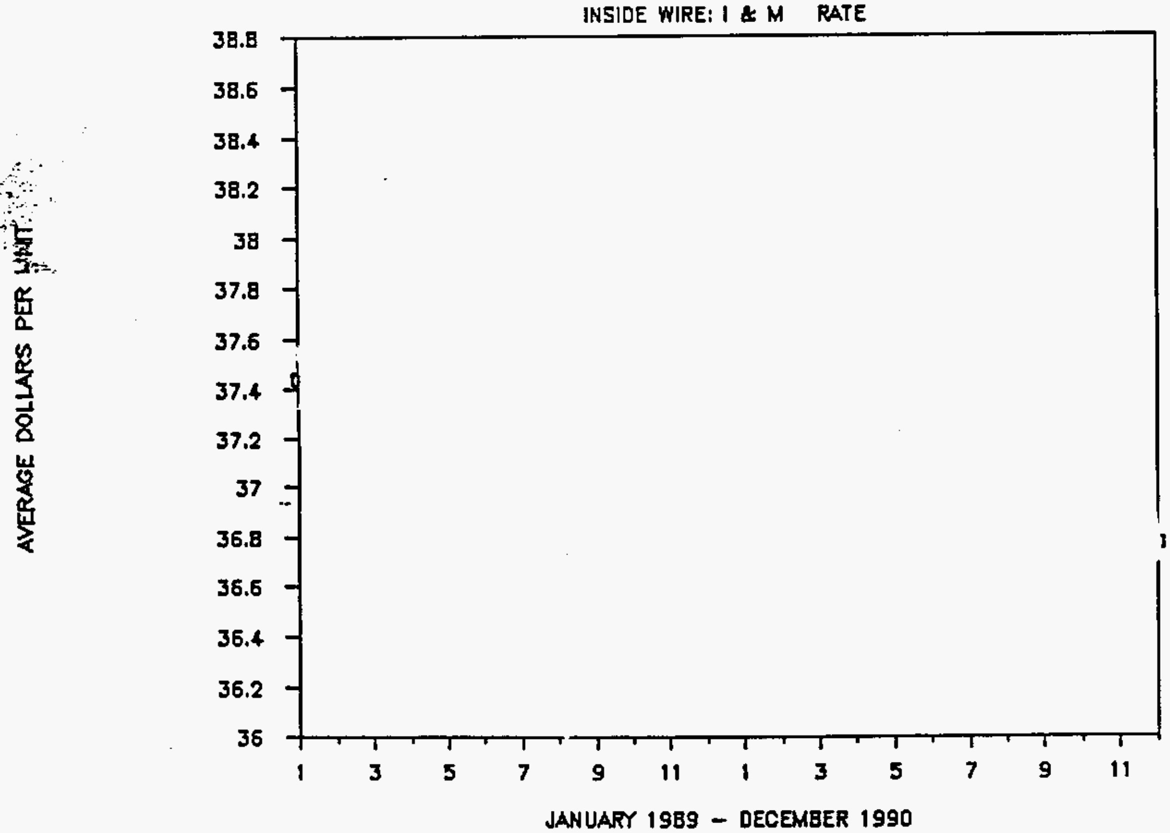
GEORGIA

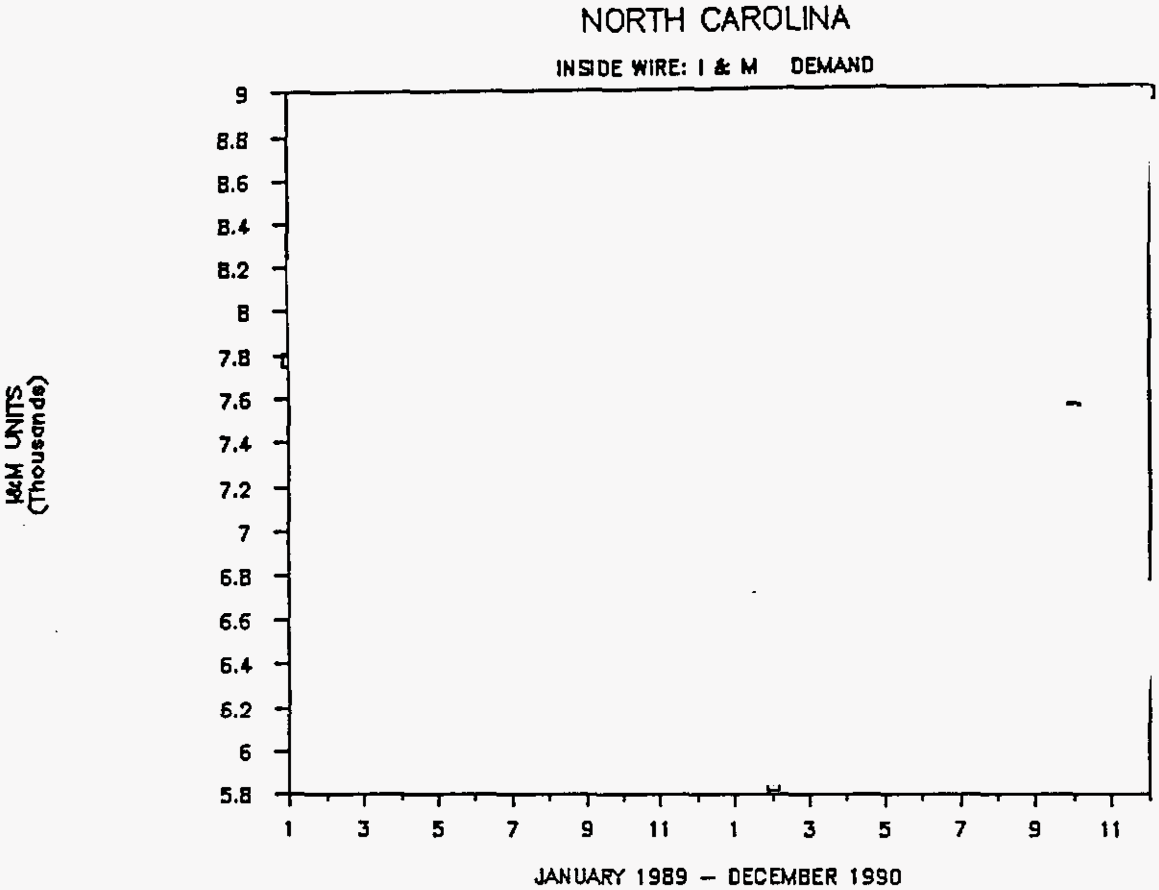
INSIDE WIRE: I & M DEMAND

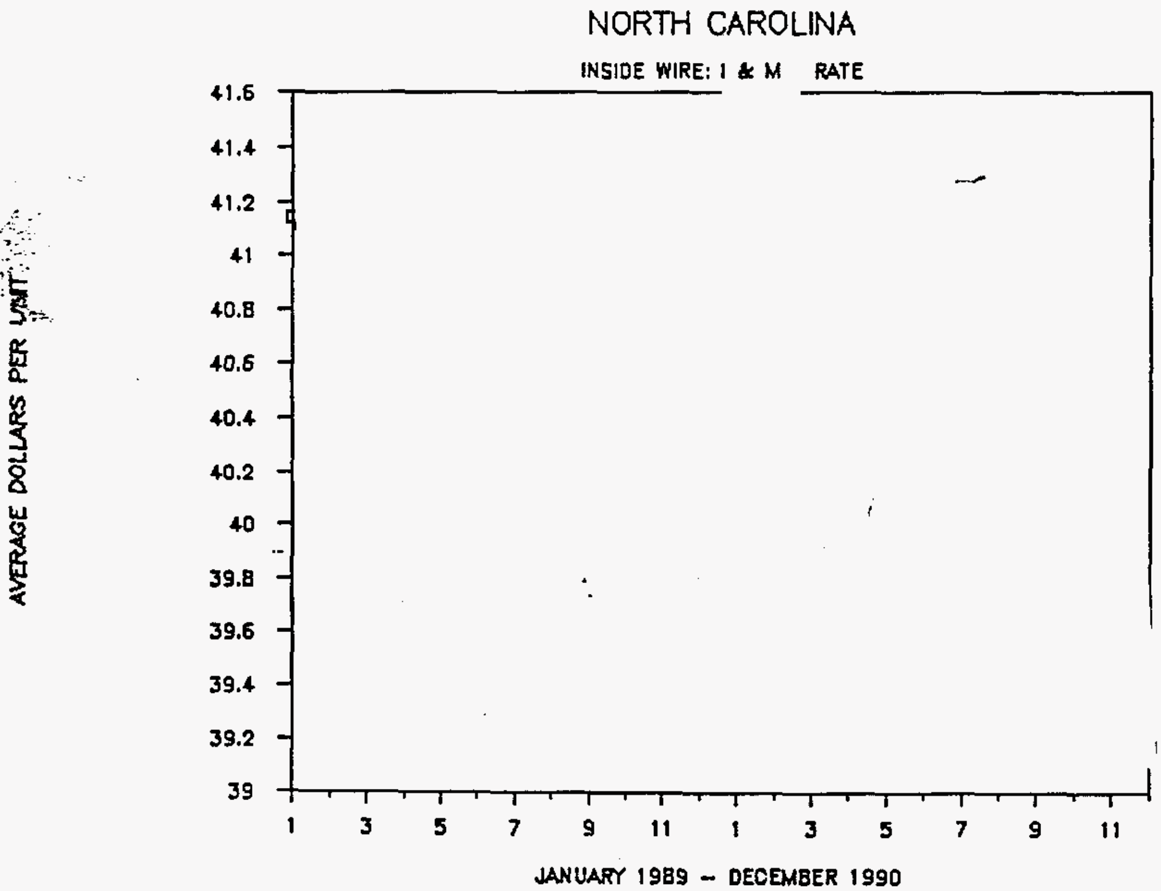


GEORGIA

INSIDE WIRE: I & M RATE

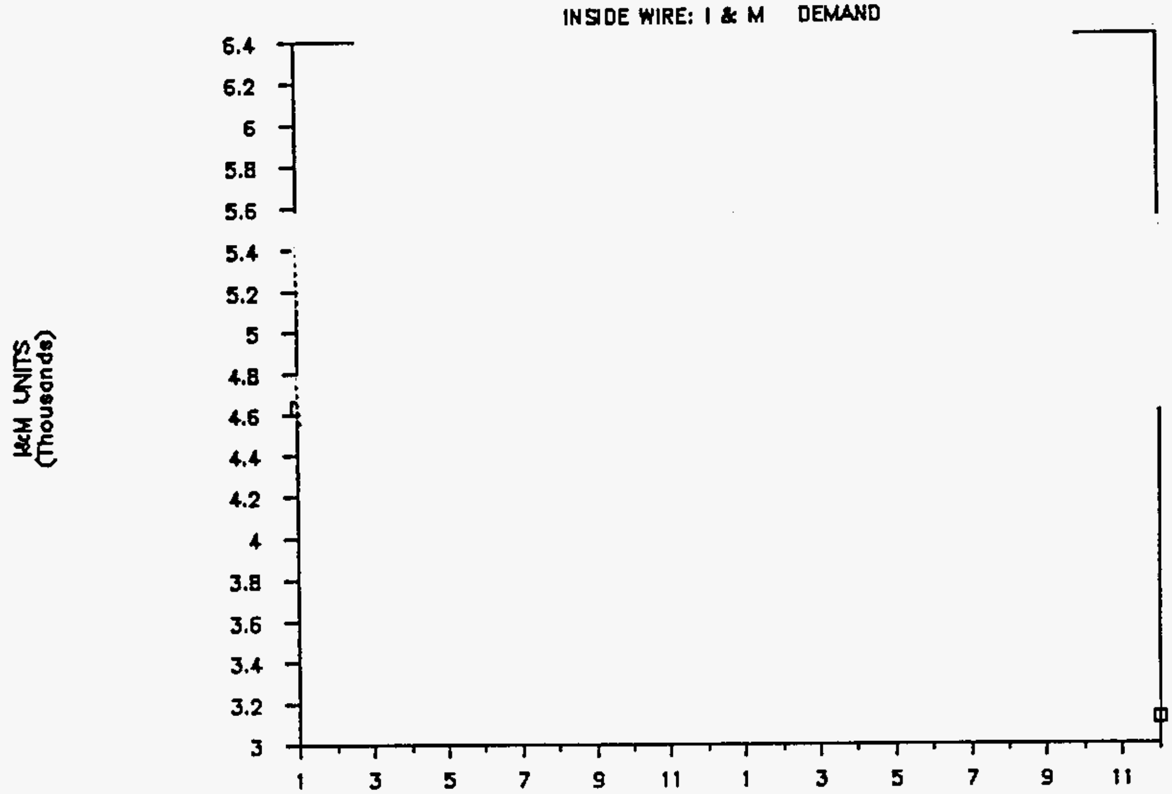



NORTH CAROLINA
INSIDE WIRE: I & M DEMAND
I&M UNITS (Thousands)
9
8.8
8.6
8.4
8.2
8
7.8
7.6
7.4
7.2
7
6.8
6.6
6.4
6.2
6
5.8
1 3 5 7 9 11 1 3 5 7 9 11
JANUARY 1989 – DECEMBER 1990


NORTH CAROLINA
INSIDE WIRE: I & M RATE
AVERAGE DOLLARS PER UNIT
41.6
41.4
41.2
41
40.8
40.6
40.4
40.2
40
39.8
39.6
39.4
39.2
39
1 3 5 7 9 11 1 3 5 7 9 11
JANUARY 1989 – DECEMBER 1990

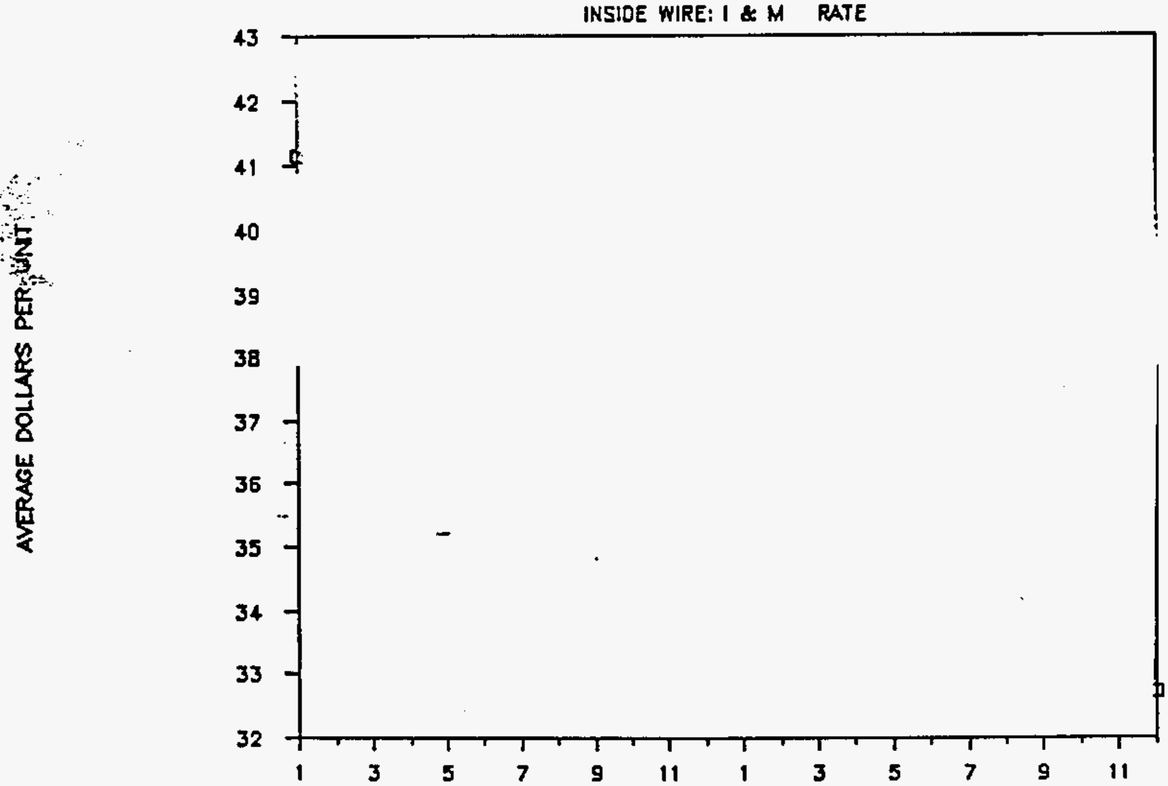
SOUTH CAROLINA

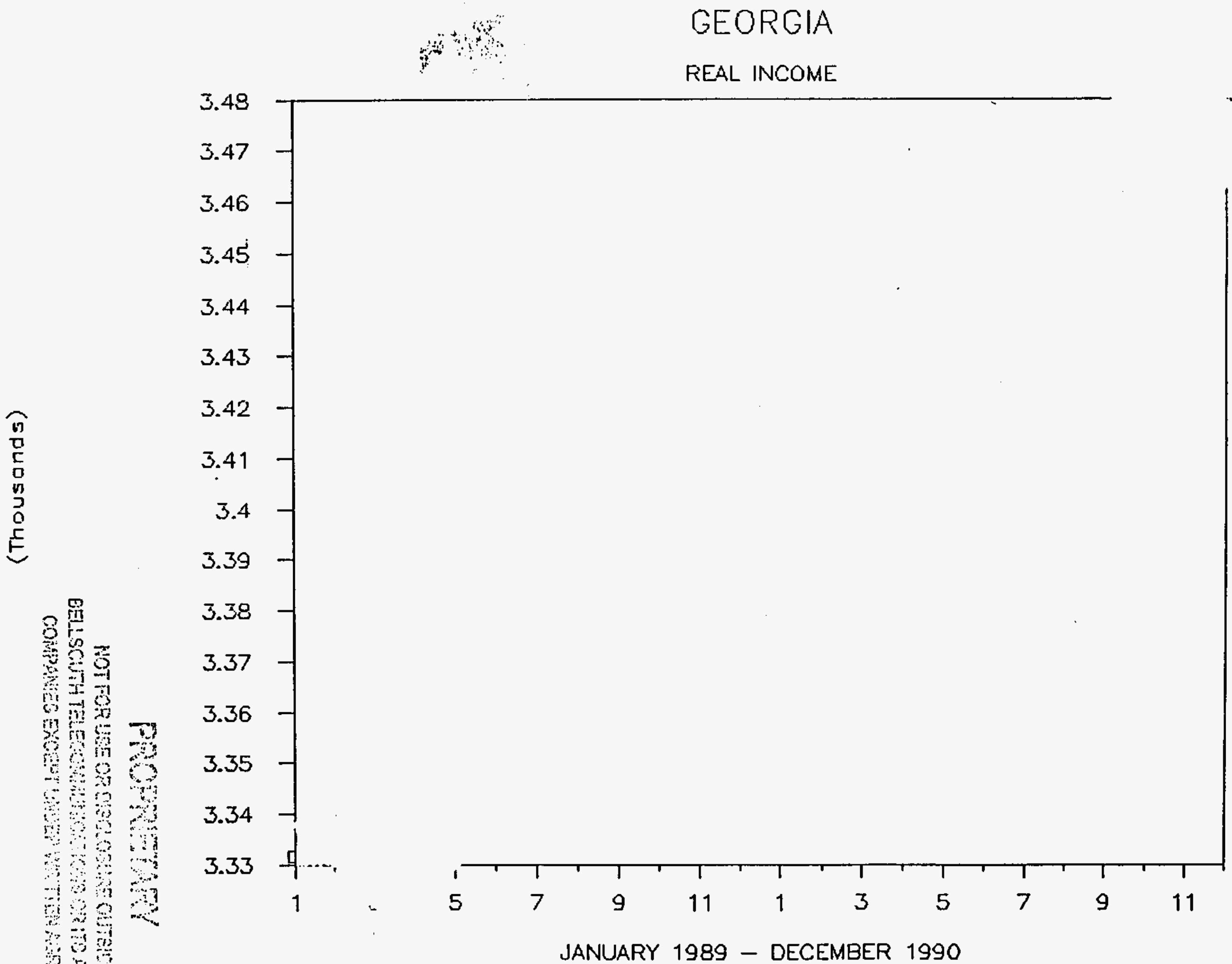
INSIDE WIRE: I & M DEMAND

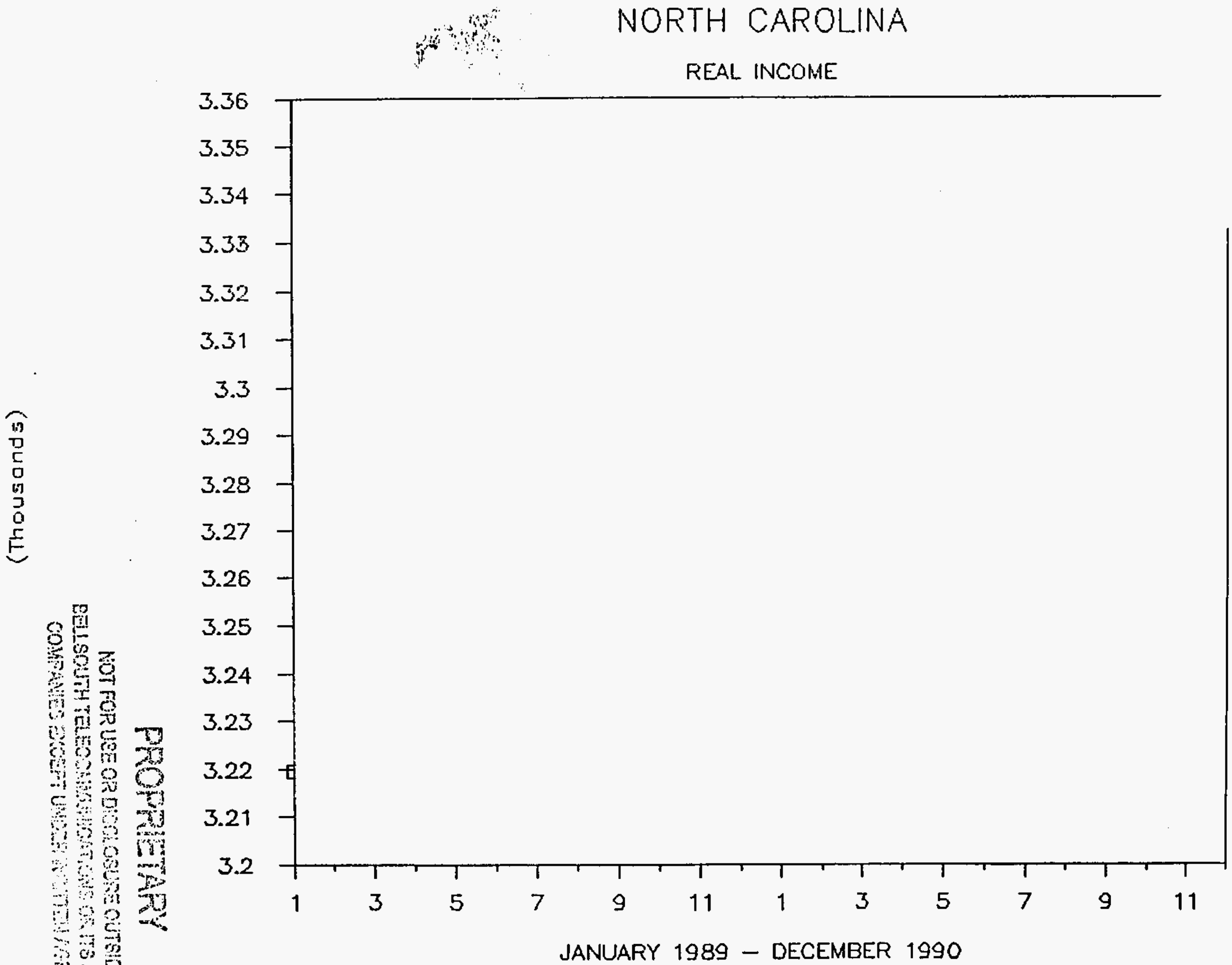


SOUTH CAROLINA

INSIDE WIRE: I & M RATE




GEORGIA
REAL INCOME
(Thousands)
3.48
3.47
3.46
3.45
3.44
3.43
3.42
3.41
3.4
3.39
3.38
3.37
3.36
3.35
3.34
3.33
1
5
7
9
11
1
3
5
7
9
11
JANUARY 1989 — DECEMBER 1990



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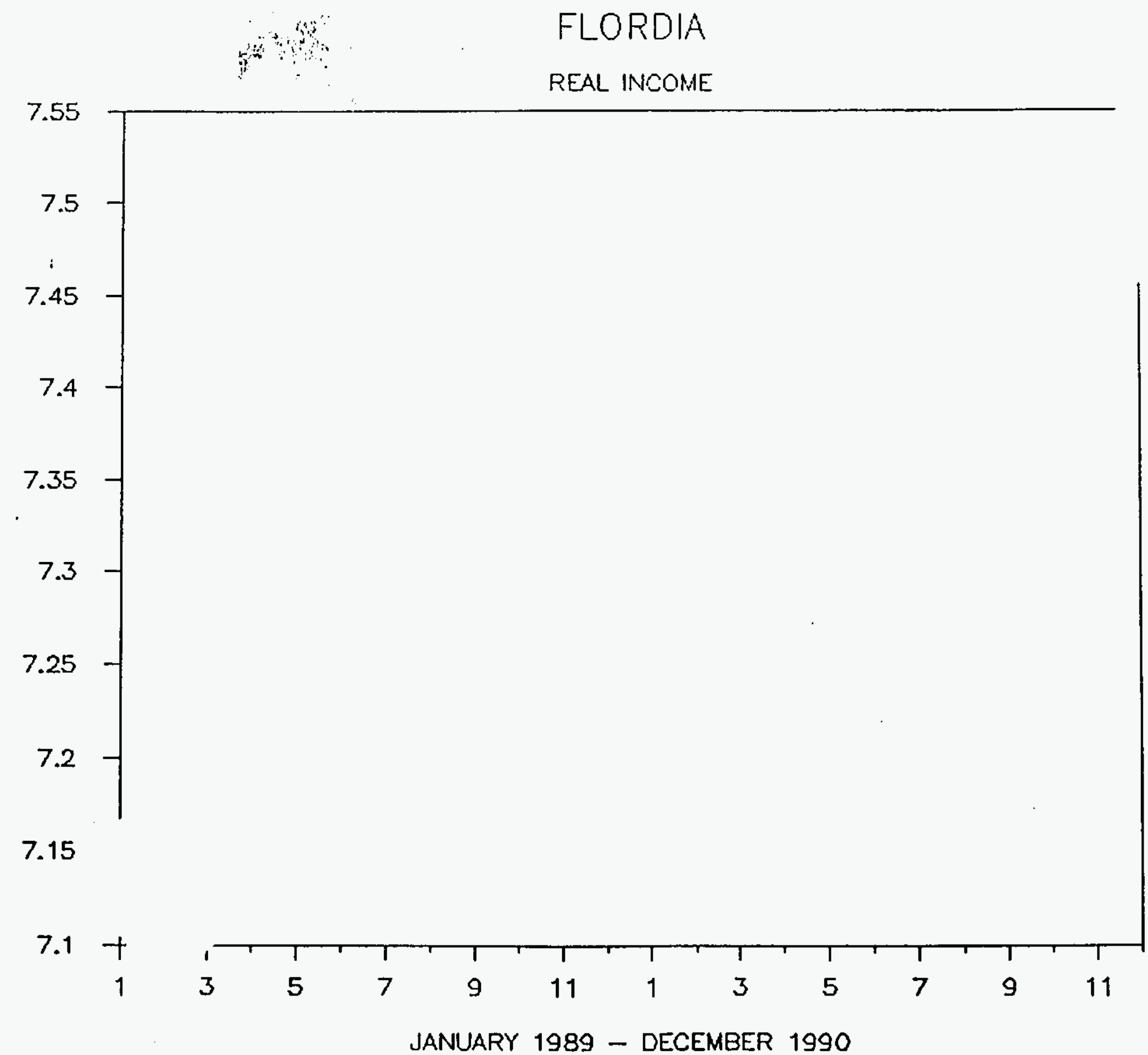
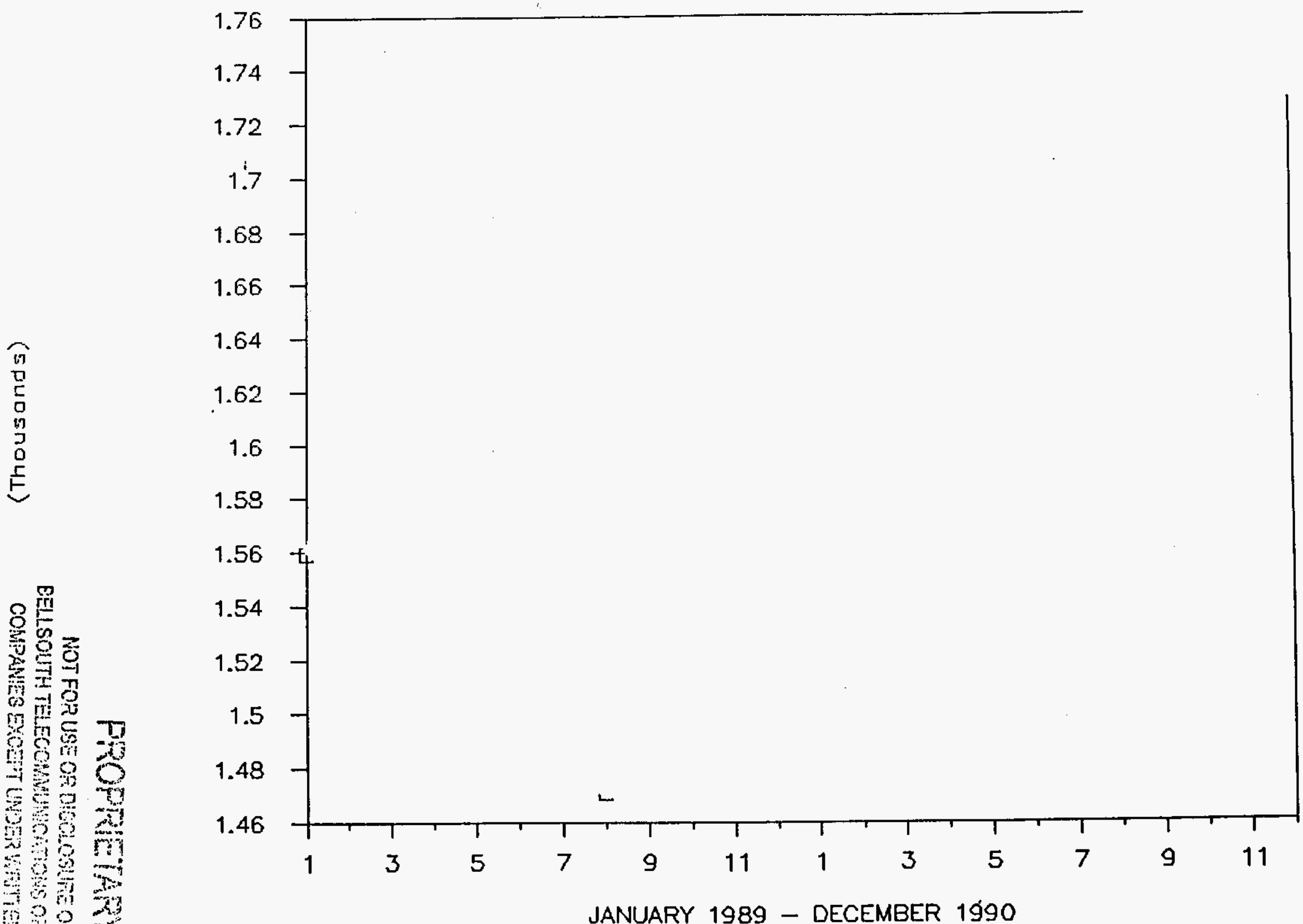
00002777

F01B257


FLORDIA
REAL INCOME
(Thousands)
7.55
7.5
7.45
7.4
7.35
7.3
7.25
7.2
7.15
7.1
1 3 5 7 9 11 1 3 5 7 9 11
JANUARY 1989 – DECEMBER 1990

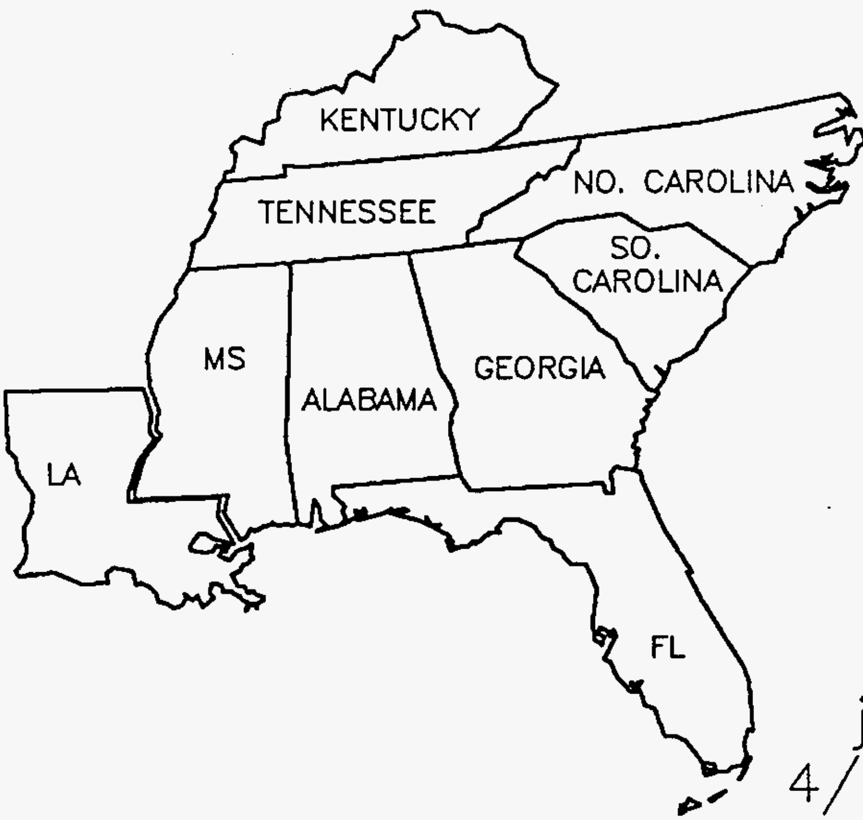
SOUTH CAROLINA

REAL INCOME



BellSouth Telecommunications
ECONOMIC ANALYSIS

DEMAND ANALYSIS:
INSIDE WIRE MONTHLY PLANS
Book 2 of 2



jsm
4/29/93

FC1B25Z

0000280

STATISTICAL DOCUMENTATION

The following information contains the statistical documentation associated with the univariate projections and the econometric models developed to project the demand for monthly Inside Wire plans under "business as usual conditions". Univariate techniques were used to forecast WMR and WMQ plans in Southern Bell. All other forecasts were developed through regression techniques. Also enclosed are copies of the quarterly reports used in determining mutual subscription is Southern Bell.

SOUTHERN BELL MODELS

WMR

WMQ

SEQ1X

```
Date:04/22/93 Time:13:52:16.33
*********************************************************************
* SHAZAM - FOR 386/486 EXTENDED MEMORY SITE NO.  566A4Y              *
*                                                                   *
* ** Copyright (C)  1991  by K.J. White - All Rights Reserved **     *
*                                                                   *
* FOR USE ONLY BY: BellSouth Services Incorporated                  *
* AT: Birmingham, Alabama                                           *
*                                                                   *
*                                                                   *
* If this does not describe you then you have stolen this copy      *
* and if you type anything except STOP or HELP SHAZAM you           *
* agree to send payment within 7 days for a software license        *
*                                                                   *
*                                                                   *
*                                                                   *
* SITE LICENSE - FOR USE ON ALL COMPUTERS AT ABOVE LOCATION         *
*********************************************************************
Hello/Bonjour/Aloha/Howdy/G Day/Kia Ora/Konnichiwa/Buenos Dias/Nee Hau
Welcome to SHAZAM - Version 6.2  -  AUG 1991 SYSTEM=OS386     PAR= 5555
|_* ----------------------------------------------------------------
|_*          SOUTHERN BELL INSIDE WIRE MONTHLY PLANS (SEQ1X)
|_* ----------------------------------------------------------------
|_*     Data:   1/87 - 12/98; SEQ1X VARIES BETWEEN STATES ON START DATES
|_*     Total Observations = 144 Per State (INCLUDES FCST PERIOD)
|_* ----------------------------------------------------------------
|_DIM PREDF 1200 PREDG 1200 PREDN 1200 PREDS 1200
|_FILE 4 SB.PRN
UNIT  4 IS NOW ASSIGNED TO: SB.PRN
|_* ------------
|_FILE 11 FL.OUT
UNIT 11 IS NOW ASSIGNED TO: FL.OUT
|_FILE 12 GA.OUT
UNIT 12 IS NOW ASSIGNED TO: GA.OUT
|_FILE 13 NC.OUT
UNIT 13 IS NOW ASSIGNED TO: NC.OUT
|_FILE 14 SC.OUT
UNIT 14 IS NOW ASSIGNED TO: SC.OUT
|_* ---------------------------------------------
|_READ(4) X1 X2 TIME  STATE YR MO WMR AWMR WMQ SEQ SEQR &
|         RLINES IRLINES BLINES IBLINES TLINES ITLINES

...SAMPLE RANGE IS NOW SET TO:        1       576
|_* ----------------------------------------------------------------
|_SET NOWARNSKIP
|_GENR TOTOBS=TIME(0)
|_* PRINT TOTOBS STATE MO YR SEQ
|_* ----------------------------------------------------------------
|_* CREATING SEASONAL DUMMIES
|_* ----------------------------------------------------------------
|_GENR JAN=0
|_GENR FEB=0
|_GENR MAR=0
|_GENR APR=0
|_GENR MAY=0
|_GENR JUN=0
|_GENR JUL=0
|_GENR AUG=0
|_GENR SEP=0
|_GENR OCT=0
```

```
|_GENR NOV=0
|_GENR DEC=0
|_IF(MO.EQ.1)JAN=1
|_IF(MO.EQ.2)FEB=1
|_IF(MO.EQ.3)MAR=1
|_IF(MO.EQ.4)APR=1
|_IF(MO.EQ.5)MAY=1
|_IF(MO.EQ.6)JUN=1
|_IF(MO.EQ.7)JUL=1
|_IF(MO.EQ.8)AUG=1
|_IF(MO.EQ.9)SEP=1
|_IF(MO.EQ.10)OCT=1
|_IF(MO.EQ.11)NOV=1
|_IF(MO.EQ.12)DEC=1
|_* ------------------------------------------------
|_*  CREATING  STATE DUMMIES
|_* ------------------------------------------------
|_GENR FL=0
|_GENR GA=0
|_GENR NC=0
|_GENR SC=0
|_IF(STATE.EQ.2)FL=1
|_IF(STATE.EQ.3)GA=1
|_IF(STATE.EQ.7)NC=1
|_IF(STATE.EQ.8)SC=1
|_* -----------------------------------------------------------------
|_STAT /ALL
```

NAME	N	MEAN	ST. DEV	VARIANCE	MINIMUM	MAXIMUM
PREDF	576	0.00000	0.00000	0.00000	0.00000	0.00000
PREDG	576	0.00000	0.00000	0.00000	0.00000	0.00000
PREDN	576	0.00000	0.00000	0.00000	0.00000	0.00000
PREDS	576	0.00000	0.00000	0.00000	0.00000	0.00000
X1	576	72.500	41.604	1730.9	1.0000	144.00
X2	576	5.0000	2.5517	6.5113	2.0000	8.0000
TIME	576	72.500	41.604	1730.9	1.0000	144.00
STATE	576	5.0000	2.5517	6.5113	2.0000	8.0000
YR	576	92.507	3.4631	11.993	87.000	98.000
MO	576	6.5000	3.4551	11.937	1.0000	12.000
WMR	576	0.69102E+06	0.52956E+06	0.28044E+12	49487.	0.28316E+07
AWMR	576	0.67303E+06	0.52126E+06	0.27171E+12	49487.	0.28316E+07
WMQ	576	0.26277E+06	0.21073E+06	0.44406E+11	1511.0	0.10894E+07
SEQ	576	0.28555E+06	0.51007E+06	0.26017E+12	0.00000	0.20576E+07
SEQR	576	1.9141	0.78684	0.61912	0.00000	2.5000
RLINES	576	0.19534E+07	0.10772E+07	0.11604E+13	0.71203E+06	0.44531E+07
IRLINES	576	124.20	15.870	251.87	99.960	160.79
BLINES	576	0.51536E+06	0.31912E+06	0.10184E+12	0.14128E+06	0.13343E+07
IBLINES	576	140.34	24.782	614.17	100.00	203.68
TLINES	576	0.24688E+07	0.13952E+07	0.19466E+13	0.85331E+06	0.57874E+07
ITLINES	576	127.13	17.182	295.21	100.00	168.53
TOTOBS	576	288.50	166.42	27696.	1.0000	576.00
JAN	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000
FEB	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000
MAR	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000
APR	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000
MAY	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000
JUN	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000
JUL	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000
AUG	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000
SEP	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000
OCT	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000

NOV	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000
DEC	576	0.83333E-01	0.27663	0.76522E-01	0.00000	1.0000
FL	576	0.25000	0.43339	0.18783	0.00000	1.0000
GA	576	0.25000	0.43339	0.18783	0.00000	1.0000
NC	576	0.25000	0.43339	0.18783	0.00000	1.0000
SC	576	0.25000	0.43339	0.18783	0.00000	1.0000

|_* --

|_* FLORIDA

|_AUTO SEQ TLINES SEQR AWMR WMQ &

| /LIST RS BEG=10 END=74 DROP

REQUIRED MEMORY IS PAR= 198 CURRENT PAR= 5555

DEPENDENT VARIABLE = SEQ

..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION 64 OBSERVATIONS

BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	-746.974	0.51453E+11
2	0.90552	-671.186	0.48178E+10
3	0.96501	-641.973	0.19336E+10
4	0.96436	-641.407	0.18997E+10

LOG L.F. = -641.407 AT RHO = 0.96436

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.96436	0.00109	0.03308	29.15610

R-SQUARE = 0.9999 R-SQUARE ADJUSTED = 0.9999

VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.32198E+08

STANDARD ERROR OF THE ESTIMATE-SIGMA = 5674.4

SUM OF SQUARED ERRORS-SSE= 0.18997E+10

MEAN OF DEPENDENT VARIABLE = 0.14098E+07

LOG OF THE LIKELIHOOD FUNCTION = -641.407

A	B	C	D	E	F	G
VARIABLE NAME	ESTIMATED	STANDARD	T-RATIO	PARTIAL	STANDARDIZED	ELASTICITY

33

TLINES

SEQR

AWMR

37 WMQ

CONSTANT

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL	
11			2160.5	I *
12			5842.1	I *
13			-4757.8	* I
14			-3298.7	* I
15			-1167.7	*I
16			-6523.6	* I
17			-4708.4	* I
18			6591.9	I *
19			-1430.9	*I
20			6041.1	I *

40

49

0000235

F01B257Z

A B C

```
21      -1375.2                 *I
22      -2753.5                * I
23      -4045.6              *   I
24      -6402.4            *     I
25      -401.82                  *
26       4482.7                  I   *
27       6800.3                  I     *
28       2324.6                  I *
29       644.93                  I*
30       5274.0                  I    *
31       121.84                  *
32       9270.3                  I       *
33       1999.8                  I *
34       5118.9                  I    *
35       7656.8                  I      *
36       4669.8                  I   *
37       8400.6                  I      *
38       4781.9                  I   *
39       6362.2                  I     *
40      -1766.7                * I
41       1641.2                  I*
42       4134.1                  I   *
43      -3213.7               *  I
44       7833.2                  I      *
45       2738.1                  I *
46       5917.5                  I    *
47      -14269.     *            I
48      -775.36                 *I
49       3034.0                  I  *
50       1516.7                  I*
51       1556.6                  I*
52      -7027.5            *     I
53      -2236.2                * I
54      -1614.8                 *I
55      -2931.9               *  I
56       1527.9                  I*
57      -4529.1              *   I
58       26.826                  *
59       1181.0                  I*
60      -408.20                  *
61       8108.3                  I      *
62       6972.5                  I     *
63       1736.2                  I *
64      -431.38                  *
65      -2336.2                * I
66      -3382.3               *  I
67      -12964.       *          I
68      -17141.   *              I
69      -8820.4          *       I
70 -    -1206.8                 *I
71      -2673.5                * I
72      -3116.9               *  I
73      -6082.8             *    I
74      -2675.8                * I
```

DURBIN-WATSON = 1.1876 VON NEUMANN RATIO = 1.2064 RHO = 0.40464
RESIDUAL SUM = -0.71304E-09 RESIDUAL VARIANCE = 0.32198E+08
SUM OF ABSOLUTE ERRORS= 0.27294E+06
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9999
RUNS TEST: 20 RUNS, 32 POSITIVE, 32 NEGATIVE, NORMAL STATISTIC = -3.2761

```
|_FC /BEG=74 END=144 BLUP PREDICT=PREDF MODEL=AUTO ESTEND=74

REQUIRED MEMORY IS PAR=  197 CURRENT PAR= 5555
..ASSUMING ESTIMATION ENDED AT OBSERVATION    74
DEPENDENT VARIABLE = SEQ              71 OBSERVATIONS
REGRESSION COEFFICIENTS

AUTOCORRELATION RHO
  0.9643568449946
USER SPECIFIED RHO= 0.96436
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS.   75

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS=  0.16652E+09
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0076
MEAN ERROR = -0.23453E+07
SUM-SQUARED ERRORS =  0.39684E+15
MEAN SQUARE ERROR =  0.55893E+13
MEAN ABSOLUTE ERROR=  0.23453E+07
ROOT MEAN SQUARE ERROR =  0.23642E+07
THEIL INEQUALITY COEFFICIENT U = 9.681
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98413
     PROPORTION DUE TO VARIANCE =  0.14323E-02
     PROPORTION DUE TO COVARIANCE =  0.14434E-01
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98413
     PROPORTION DUE TO REGRESSION =  0.54286E-02
     PROPORTION DUE TO DISTURBANCE =  0.10438E-01
|_PRINT STATE MO YR PREDF /BEG=74  END=144
```

6

D

STATE	MO	YR
2.000000	2.000000	93.00000
2.000000	3.000000	93.00000
2.000000	4.000000	93.00000
2.000000	5.000000	93.00000
2.000000	6.000000	93.00000
2.000000	7.000000	93.00000
2.000000	8.000000	93.00000
2.000000	9.000000	93.00000
2.000000	10.00000	93.00000
2.000000	11.00000	93.00000
2.000000	12.00000	93.00000
2.000000	1.000000	94.00000
2.000000	2.000000	94.00000
2.000000	3.000000	94.00000
2.000000	4.000000	94.00000
2.000000	5.000000	94.00000
2.000000	6.000000	94.00000
2.000000	7.000000	94.00000
2.000000	8.000000	94.00000
2.000000	9.000000	94.00000
2.000000	10.00000	94.00000
2.000000	11.00000	94.00000
2.000000	12.00000	94.00000
2.000000	1.000000	95.00000
2.000000	2.000000	95.00000
2.000000	3.000000	95.00000

57

0000287

A	B	C	D
2.000000	4.000000	95.00000	
2.000000	5.000000	95.00000	
2.000000	6.000000	95.00000	
2.000000	7.000000	95.00000	
2.000000	8.000000	95.00000	
2.000000	9.000000	95.00000	
2.000000	10.00000	95.00000	
2.000000	11.00000	95.00000	
2.000000	12.00000	95.00000	
2.000000	1.000000	96.00000	
2.000000	2.000000	96.00000	
2.000000	3.000000	96.00000	
2.000000	4.000000	96.00000	
2.000000	5.000000	96.00000	
2.000000	6.000000	96.00000	
2.000000	7.000000	96.00000	
2.000000	8.000000	96.00000	
2.000000	9.000000	96.00000	
2.000000	10.00000	96.00000	
2.000000	11.00000	96.00000	
2.000000	12.00000	97.00000	
2.000000	1.000000	97.00000	
2.000000	2.000000	97.00000	
2.000000	3.000000	97.00000	
2.000000	4.000000	97.00000	
2.000000	5.000000	97.00000	
2.000000	6.000000	97.00000	
2.000000	7.000000	97.00000	
2.000000	8.000000	97.00000	
2.000000	9.000000	97.00000	
2.000000	10.00000	97.00000	
2.000000	11.00000	97.00000	
2.000000	12.00000	97.00000	
2.000000	1.000000	98.00000	
2.000000	2.000000	98.00000	
2.000000	3.000000	98.00000	
2.000000	4.000000	98.00000	
2.000000	5.000000	98.00000	
2.000000	6.000000	98.00000	
2.000000	7.000000	98.00000	
2.000000	8.000000	98.00000	
2.000000	9.000000	98.00000	
2.000000	10.00000	98.00000	
2.000000	11.00000	98.00000	
2.000000	12.00000	98.00000	

```
|_WRITE(11) STATE MO YR PREDF /BEG=74  END
|_* ------------------------------------            ----------------
|_* GEORGIA

|_AUTO .SEQ                                              TLINES      AWMR WMQ &
|      /LIST RS BEG=171  END=218

REQUIRED MEMORY IS PAR=  196 CURRENT PAR= 5555

DEPENDENT VARIABLE =  SEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION           48 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100
```

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	-505.704	0.39791E+10
2	0.82951	-472.767	0.98454E+09
3	0.93749	-468.489	0.80770E+09
4	0.98049	-467.432	0.75475E+09
5	0.99132	-467.587	0.74699E+09
6	0.99170	-467.603	0.74679E+09

LOG L.F. = -467.603 AT RHO = 0.99170

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.99170	0.00034	0.01856	53.44570

R-SQUARE = 0.9998 R-SQUARE ADJUSTED = 0.9998
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.16972E+08
STANDARD ERROR OF THE ESTIMATE-SIGMA = 4119.8
SUM OF SQUARED ERRORS-SSE= 0.74679E+09
MEAN OF DEPENDENT VARIABLE = 0.69182E+06
LOG OF THE LIKELIHOOD FUNCTION = -467.603

A VARIABLE NAME	B ESTIMATED COEFFICIENT	C STANDARD ERROR	D T-RATIO 44 DF	E PARTIAL CORR.	F STANDARDIZED COEFFICIENT	G ELASTICITY AT MEANS
TLINES			7.8283	0.7629		
AWMR			-4.4216	-0.5547		
WMQ			-2.8007	-0.3890		
CONSTANT			0.12575E-03	0.0000		

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL
171			-16457.
172			-974.51
173			-2178.0
174			-3440.8
175			-1731.2
176			-895.73
177			-2775.0
178			-1681.9
179			-4764.0
180			-5018.8
181			-1791.2
182			-603.16
183			-1167.1
184			1655.2
185			-9621.3
186			92.782
187			3922.4
188			6697.5
189			3043.0
190			2985.3
191			-5896.9
192			1264.1
193			1457.0
194			4273.3
195			3787.8
196			4707.2
197			4362.6
198			4130.6
199			4176.6

A B C

```
200                4890.9              I     *
201                4776.4              I     *
202                3735.2              I    *
203                3358.4              I   *
204                1335.6              I *
205                10506.              I                 *
206               -5521.0         *    I
207                2515.0              I  *
208                1942.5              I *
209               -3495.0            * I
210                4290.6              I    *
211                1342.8              I *
212                1402.8              I *
213                1342.2              I *
214                1176.9              I*
215                22.467              *
216                927.38              I*
217                2455.7              I  *
218               -8242.0       *      I

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

DURBIN-WATSON = 1.2900    VON NEUMANN RATIO = 1.3174    RHO =  0.20131
RESIDUAL SUM =   16321.      RESIDUAL VARIANCE =  0.23026E+08
SUM OF ABSOLUTE ERRORS=  0.16883E+06
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9998
RUNS TEST:   11 RUNS,   30 POSITIVE,   18 NEGATIVE, NORMAL STATISTIC = -3.8963

|_FC /BEG=218 END=288 BLUP PREDICT=PREDG MODEL=AUTO ESTEND=218

REQUIRED MEMORY IS PAR=  196 CURRENT PAR= 5555
..ASSUMING ESTIMATION ENDED AT OBSERVATION   218
DEPENDENT VARIABLE = SEQ              71 OBSERVATIONS
REGRESSION COEFFICIENTS

AUTOCORRELATION RHO
  0.9917023712823
USER SPECIFIED RHO= 0.99170
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS.  219

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS=  0.10469E+09
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0500
RUNS TEST:    2 RUNS,    1 POSITIVE,   70 NEGATIVE, NORMAL STATISTIC = -5.8737
MEAN ERROR = -0.14740E+07
SUM-SQUARED ERRORS =  0.15973E+15
MEAN SQUARE ERROR =  0.22497E+13
MEAN ABSOLUTE ERROR=  0.14745E+07
ROOT MEAN SQUARE ERROR =  0.14999E+07
THEIL INEQUALITY COEFFICIENT U =11.470
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.96572
     PROPORTION DUE TO VARIANCE =  0.34671E-02
     PROPORTION DUE TO COVARIANCE =  0.30814E-01
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.96572
     PROPORTION DUE TO REGRESSION =  0.27162E-01
     PROPORTION DUE TO DISTURBANCE =  0.71190E-02
```

0000293

F01B257

A B C D

|_PRINT STATE MO YR PREDG /BEG=218 END=288

STATE	MO	YR	PREDG
3.000000	2.000000	93.00000	
3.000000	3.000000	93.00000	
3.000000	4.000000	93.00000	
3.000000	5.000000	93.00000	
3.000000	6.000000	93.00000	
3.000000	7.000000	93.00000	
3.000000	8.000000	93.00000	
3.000000	9.000000	93.00000	
3.000000	10.00000	93.00000	
3.000000	11.00000	93.00000	
3.000000	12.00000	93.00000	
3.000000	1.000000	94.00000	
3.000000	2.000000	94.00000	
3.000000	3.000000	94.00000	
3.000000	4.000000	94.00000	
3.000000	5.000000	94.00000	
3.000000	6.000000	94.00000	
3.000000	7.000000	94.00000	
3.000000	8.000000	94.00000	
3.000000	9.000000	94.00000	
3.000000	10.00000	94.00000	
3.000000	11.00000	94.00000	
3.000000	12.00000	94.00000	
3.000000	1.000000	95.00000	
3.000000	2.000000	95.00000	
3.000000	3.000000	95.00000	
3.000000	4.000000	95.00000	
3.000000	5.000000	95.00000	
3.000000	6.000000	95.00000	
3.000000	7.000000	95.00000	
3.000000	8.000000	95.00000	
3.000000	9.000000	95.00000	
3.000000	10.00000	95.00000	
3.000000	11.00000	95.00000	
3.000000	12.00000	95.00000	
3.000000	1.000000	96.00000	
3.000000	2.000000	96.00000	
3.000000	3.000000	96.00000	
3.000000	4.000000	96.00000	
3.000000	5.000000	96.00000	
3.000000	6.000000	96.00000	
3.000000	7.000000	96.00000	
3.000000	8.000000	96.00000	
3.000000	9.000000	96.00000	
3.000000	10.00000	96.00000	
3.000000	11.00000	96.00000	
3.000000	12.00000	97.00000	
3.000000	1.000000	97.00000	
3.000000	2.000000	97.00000	
3.000000	3.000000	97.00000	
3.000000	4.000000	97.00000	
3.000000	5.000000	97.00000	
3.000000	6.000000	97.00000	
3.000000	7.000000	97.00000	
3.000000	8.000000	97.00000	
3.000000	9.000000	97.00000	
3.000000	10.00000	97.00000	
3.000000	11.00000	97.00000	

A	B	C	D
3.000000	12.00000	97.00000	
3.000000	1.000000	98.00000	
3.000000	2.000000	98.00000	
3.000000	3.000000	98.00000	
3.000000	4.000000	98.00000	
3.000000	5.000000	98.00000	
3.000000	6.000000	98.00000	
3.000000	7.000000	98.00000	
3.000000	8.000000	98.00000	
3.000000	9.000000	98.00000	
3.000000	10.00000	98.00000	
3.000000	11.00000	98.00000	
3.000000	12.00000	98.00000	

```
|_WRITE(12) STATE MO YR PREDG /BEG=218 END=288
|_* ------------------------------------------------------
|_* NORTH CAROLINA

|_AUTO SEQ                                        TLINES SEQR AWMR WMQ &
|      /LIST RS BEG=307  END=362 DROP

REQUIRED MEMORY IS PAR=  197 CURRENT PAR= 5555

DEPENDENT VARIABLE =  SEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION            55 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100
```

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	-562.131	0.24286E+10
2	0.54918	-537.335	0.98576E+09
3	0.65973	-535.092	0.90852E+09
4	0.73172	-533.752	0.86532E+09
5	0.77801	-533.053	0.84361E+09
6	0.80423	-532.790	0.83558E+09
7	0.81756	-532.715	0.83331E+09
8	0.82393	-532.697	0.83277E+09
9	0.82690	-532.693	0.83265E+09
10	0.82826	-532.692	0.83262E+09
11	0.82888	-532.692	0.83261E+09

```
LOG L.F. =   -532.692       AT RHO =     0.82888
```

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.82888	0.00569	0.07543	10.98844

```
R-SQUARE =   0.9997     R-SQUARE ADJUSTED =   0.9996
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.16652E+08
STANDARD ERROR OF THE ESTIMATE-SIGMA =   4080.7
SUM OF SQUARED ERRORS-SSE=  0.83261E+09
MEAN OF DEPENDENT VARIABLE =  0.46797E+06
LOG OF THE LIKELIHOOD FUNCTION = -532.692
```

A	B	C	D	E	F	G
VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 50 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
TLINES			7.8925	0.7448		
SEQR			0.59944	0.0845		

A B C D E F G

1 3 6

AWMR			-8.9200	-0.7836
WMQ			-47.325	-0.9890
CONSTANT			-1.3289	-0.1847

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL	
308	44741.	48380.	-3639.2	* I
309	68897.	70275.	-1378.2	* I
310	87280.	87010.	270.13	*
311	0.10397E+06	0.10197E+06	2003.4	I *
312	0.10915E+06	0.11683E+06	-7687.6	* I
313	0.13278E+06	0.12571E+06	7076.3	I *
314	0.14609E+06	0.14574E+06	343.33	*
315	0.16172E+06	0.16171E+06	11.530	*
316	0.17612E+06	0.17489E+06	1234.8	I *
317	0.18959E+06	0.18425E+06	5334.7	I *
318	0.20718E+06	0.20581E+06	1372.2	I *
319	0.22052E+06	0.21953E+06	990.38	I*
320	0.24162E+06	0.24495E+06	-3327.9	* I
321	0.25445E+06	0.25525E+06	-803.97	*I
322	0.46919E+06	0.46899E+06	199.42	*
323	0.47698E+06	0.47585E+06	1133.5	I*
324	0.47955E+06	0.48151E+06	-1964.6	* I
325	0.48297E+06	0.49091E+06	-7935.7	* I
326	0.48938E+06	0.49376E+06	-4375.8	* I
327	0.49716E+06	0.49865E+06	-1490.5	* I
328	0.50465E+06	0.50445E+06	193.20	*
329	0.51043E+06	0.50370E+06	6727.6	I *
330	0.51879E+06	0.51582E+06	2977.7	I *
331	0.52638E+06	0.52326E+06	3122.1	I *
332	0.54275E+06	0.54344E+06	-689.65	*I
333	0.55313E+06	0.55063E+06	2498.9	I *
334	0.55765E+06	0.55279E+06	4865.0	I *
335	0.55234E+06	0.56761E+06	-15272.	X I
336	0.55559E+06	0.55499E+06	593.66	I*
337	0.55632E+06	0.56642E+06	-10103.	* I
338	0.56105E+06	0.56471E+06	-3658.3	* I
339	0.56683E+06	0.57070E+06	-3874.6	* I
340	0.57080E+06	0.57261E+06	-1806.3	* I
341	0.57176E+06	0.56849E+06	3273.5	I *
342	0.57780E+06	0.57789E+06	-84.326	*
343	0.58213E+06	0.58174E+06	389.63	*
344	0.59459E+06	0.59874E+06	-4147.5	* I
345	0.59950E+06	0.60050E+06	-996.74	*I
346	0.60463E+06	0.60495E+06	-318.33	*
347	0.61205E+06	0.61138E+06	663.63	I*
348	0.61587E+06	0.61562E+06	250.01	*
349	0.62289E+06	0.62279E+06	99.792	*
350	0.63177E+06	0.63049E+06	1281.0	I *
351	0.63926E+06	0.63777E+06	1495.8	I *
352	0.64596E+06	0.64438E+06	1583.8	I *
353	0.64759E+06	0.64230E+06	5293.1	I *
354	0.65295E+06	0.65026E+06	2687.5	I *
355	0.66031E+06	0.65759E+06	2727.2	I *
356	0.67201E+06	0.67128E+06	733.91	I*
357	0.67770E+06	0.67642E+06	1284.6	I *
358	0.68389E+06	0.68284E+06	1049.5	I*
359	0.68712E+06	0.68373E+06	3388.4	I *
360	0.69113E+06	0.68898E+06	2156.1	I *
361	0.69790E+06	0.69654E+06	1359.8	I *
362	0.70554E+06	0.70265E+06	2889.9	I *

60

0000293

```
BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

DURBIN-WATSON = 1.8119    VON NEUMANN RATIO = 1.8455    RHO =  0.08190
RESIDUAL SUM = -0.21828E-08  RESIDUAL VARIANCE =  0.16652E+08
SUM OF ABSOLUTE ERRORS=  0.14711E+06
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9996
RUNS TEST:    18 RUNS,    36 POSITIVE,    19 NEGATIVE, NORMAL STATISTIC = -2.3742

|_FC /BEG=362 END=432 BLUP PREDICT=PREDN MODEL=AUTO ESTEND=362

REQUIRED MEMORY IS PAR=  197 CURRENT PAR= 5555
..ASSUMING ESTIMATION ENDED AT OBSERVATION   362
DEPENDENT VARIABLE = SEQ              71 OBSERVATIONS
REGRESSION COEFFICIENTS

AUTOCORRELATION RHO
  0.8288836066536
USER SPECIFIED RHO= 0.82888
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS.  363

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS=  0.62577E+08
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0438
RUNS TEST:     2 RUNS,     1 POSITIVE,    70 NEGATIVE, NORMAL STATISTIC = -5.8737
MEAN ERROR = -0.88105E+06
SUM-SQUARED ERRORS =  0.56778E+14
MEAN SQUARE ERROR =  0.79969E+12
MEAN ABSOLUTE ERROR=  0.88137E+06
ROOT MEAN SQUARE ERROR =  0.89425E+06
THEIL INEQUALITY COEFFICIENT U =10.680
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.97069
     PROPORTION DUE TO VARIANCE =  0.10652E-02
     PROPORTION DUE TO COVARIANCE =  0.28244E-01
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.97069
     PROPORTION DUE TO REGRESSION =  0.21044E-01
     PROPORTION DUE TO DISTURBANCE =  0.82653E-02
|_PRINT STATE MO YR PREDN /BEG=362 END=432
```

12

39

STATE	MO	YR	PREDN
7.000000	2.000000	93.00000	
7.000000	3.000000	93.00000	
7.000000	4.000000	93.00000	
7.000000	5.000000	93.00000	
7.000000	6.000000	93.00000	
7.000000	7.000000	93.00000	
7.000000	8.000000	93.00000	
7.000000	9.000000	93.00000	
7.000000	10.00000	93.00000	
7.000000	11.00000	93.00000	
7.000000	12.00000	93.00000	
7.000000	1.000000	94.00000	
7.000000	2.000000	94.00000	
7.000000	3.000000	94.00000	
7.000000	4.000000	94.00000	
7.000000	5.000000	94.00000	
7.000000	6.000000	94.00000	

55

A	B	C	D
7.000000	7.000000	94.00000	
7.000000	8.000000	94.00000	
7.000000	9.000000	94.00000	
7.000000	10.00000	94.00000	
7.000000	11.00000	94.00000	
7.000000	12.00000	94.00000	
7.000000	1.000000	95.00000	
7.000000	2.000000	95.00000	
7.000000	3.000000	95.00000	
7.000000	4.000000	95.00000	
7.000000	5.000000	95.00000	
7.000000	6.000000	95.00000	
7.000000	7.000000	95.00000	
7.000000	8.000000	95.00000	
7.000000	9.000000	95.00000	
7.000000	10.00000	95.00000	
7.000000	11.00000	95.00000	
7.000000	12.00000	95.00000	
7.000000	1.000000	96.00000	
7.000000	2.000000	96.00000	
7.000000	3.000000	96.00000	
7.000000	4.000000	96.00000	
7.000000	5.000000	96.00000	
7.000000	6.000000	96.00000	
7.000000	7.000000	96.00000	
7.000000	8.000000	96.00000	
7.000000	9.000000	96.00000	
7.000000	10.00000	96.00000	
7.000000	11.00000	96.00000	
7.000000	12.00000	97.00000	
7.000000	1.000000	97.00000	
7.000000	2.000000	97.00000	
7.000000	3.000000	97.00000	
7.000000	4.000000	97.00000	
7.000000	5.000000	97.00000	
7.000000	6.000000	97.00000	
7.000000	7.000000	97.00000	
7.000000	8.000000	97.00000	
7.000000	9.000000	97.00000	
7.000000	10.00000	97.00000	
7.000000	11.00000	97.00000	
7.000000	12.00000	97.00000	
7.000000	1.000000	98.00000	
7.000000	2.000000	98.00000	
7.000000	3.000000	98.00000	
7.000000	4.000000	98.00000	
7.000000	5.000000	98.00000	
7.000000	6.000000	98.00000	
7.000000	7.000000	98.00000	
7.000000	8.000000	98.00000	
7.000000	9.000000	98.00000	
7.000000	10.00000	98.00000	
7.000000	11.00000	98.00000	
7.000000	12.00000	98.00000	

```
|_WRITE(13) STATE MO YR PREDN /BEG=362 END=432
|_* ----------------------------------------------------
|_* SOUTH CAROLINA

|_AUTO  SEQ
|      /LIST RS BEG=456  END=506
```

TLINES AWMR WMQ &

REQUIRED MEMORY IS PAR= 196 CURRENT PAR= 5555

DEPENDENT VARIABLE = SEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION 51 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	-494.961	0.80325E+09
2	0.91310	-437.060	0.80068E+08
3	0.98062	-433.169	0.66788E+08
4	0.99284	-433.208	0.65606E+08
5	0.99312	-433.220	0.65585E+08

LOG L.F. = -433.220 AT RHO = 0.99312

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.99312	0.00027	0.01640	60.55765

R-SQUARE = 0.9999 R-SQUARE ADJUSTED = 0.9999
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.13954E+07
STANDARD ERROR OF THE ESTIMATE-SIGMA = 1181.3
SUM OF SQUARED ERRORS-SSE= 0.65585E+08
MEAN OF DEPENDENT VARIABLE = 0.26328E+06
LOG OF THE LIKELIHOOD FUNCTION = -433.220

A	B	C	D	E	F	G
VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 47 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
TLINES		1	12.872	0.8826		
AWMR			-4.4890	-0.5478		
WMQ			-2.9661	-0.3971		
CONSTANT			-4.9023	-0.5817		

24

27

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL	
456			-6040.4	X I
457			377.95	I *
458			179.43	I*
459			-359.59	* I
460			-866.38	* I
461			-3621.5	* I
462			-3135.7	* I
463			-170.77	*I
464			-751.70	* I
465			-578.49	* I
466			1082.8	I *
467			-118.52	*I
468			355.57	I *
469			-438.31	* I
470			-293.73	*I
471			477.69	I *
472			267.17	I*
473			531.67	I *
474			1678.1	I *
475			49.241	*
476			1068.5	I *

0000295

F01R257

A B C

```
1    477      146.07      I*
     478      1722.1      I      *
     479      947.16      I   *
     480      792.03      I  *
     481      874.91      I   *
     482      1204.6      I    *
     483      2342.1      I         *
     484      1470.1      I     *
     485      1185.9      I    *
     486      1692.1      I      *
     487      1637.9      I      *
     488      222.86      I*
     489      1073.0      I    *
     490      2577.8      I          *
     491      600.69      I  *
     492      1015.3      I   *
     493     -60.048      *
     494     -468.45    * I
     495     -515.84    * I
     496     -445.36    * I
     497     -126.80     *I
     498      348.84      I*
     499     -320.54     *I
     500     -919.04   *  I
     501     -572.05    * I
     502     -523.78    * I
     503      20.241      *
     504      619.60      I  *
     505     -695.82   *  I
30   506      459.95      I *
```

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

DURBIN-WATSON = 0.9000 VON NEUMANN RATIO = 0.9180 RHO = 0.37014
RESIDUAL SUM = 5998.8 RESIDUAL VARIANCE = 0.21611E+07
SUM OF ABSOLUTE ERRORS= 48044.
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9999
RUNS TEST: 14 RUNS, 30 POSITIVE, 21 NEGATIVE, NORMAL STATISTIC = -3.4203

|_FC /BEG=506 END=576 BLUP PREDICT=PREDS MODEL=AUTO ESTEND=506

REQUIRED MEMORY IS PAR= 196 CURRENT PAR= 5555
..ASSUMING ESTIMATION ENDED AT OBSERVATION 506
DEPENDENT VARIABLE = SEQ 71 OBSERVATIONS
42 REGRESSION COEFFICIENTS

AUTOCORRELATION RHO
0.9931182159064
USER SPECIFIED RHO= 0.99312
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS. 507

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS= 0.42667E+08
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0488
RUNS TEST: 2 RUNS, 1 POSITIVE, 70 NEGATIVE, NORMAL STATISTIC = -5.8737
MEAN ERROR = -0.60076E+06
SUM-SQUARED ERRORS = 0.26688E+14
MEAN SQUARE ERROR = 0.37588E+12

```
MEAN ABSOLUTE ERROR=  0.60095E+06
ROOT MEAN SQUARE ERROR =  0.61309E+06
THEIL INEQUALITY COEFFICIENT U =12.104
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.96016
     PROPORTION DUE TO VARIANCE =  0.68410E-02
     PROPORTION DUE TO COVARIANCE =  0.32999E-01
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.96016
     PROPORTION DUE TO REGRESSION =  0.33439E-01
     PROPORTION DUE TO DISTURBANCE =  0.64012E-02      D
|_PRINT STATE MO YR PREDS /BEG=506 END=576
```

14

STATE	MO	YR	PREDS
8.000000	2.000000	93.00000	
8.000000	3.000000	93.00000	
8.000000	4.000000	93.00000	
8.000000	5.000000	93.00000	
8.000000	6.000000	93.00000	
8.000000	7.000000	93.00000	
8.000000	8.000000	93.00000	
8.000000	9.000000	93.00000	
8.000000	10.00000	93.00000	
8.000000	11.00000	93.00000	
8.000000	12.00000	93.00000	
8.000000	1.000000	94.00000	
8.000000	2.000000	94.00000	
8.000000	3.000000	94.00000	
8.000000	4.000000	94.00000	
8.000000	5.000000	94.00000	
8.000000	6.000000	94.00000	
8.000000	7.000000	94.00000	
8.000000	8.000000	94.00000	
8.000000	9.000000	94.00000	
8.000000	10.00000	94.00000	
8.000000	11.00000	94.00000	
8.000000	12.00000	94.00000	
8.000000	1.000000	95.00000	
8.000000	2.000000	95.00000	
8.000000	3.000000	95.00000	
8.000000	4.000000	95.00000	
8.000000	5.000000	95.00000	
8.000000	6.000000	95.00000	
8.000000	7.000000	95.00000	
8.000000	8.000000	95.00000	
8.000000	9.000000	95.00000	
8.000000	10.00000	95.00000	
8.000000	11.00000	95.00000	
8.000000	12.00000	95.00000	
8.000000	1.000000	96.00000	
8.000000	2.000000	96.00000	
8.000000	3.000000	96.00000	
8.000000	4.000000	96.00000	
8.000000	5.000000	96.00000	
8.000000	6.000000	96.00000	
8.000000	7.000000	96.00000	
8.000000	8.000000	96.00000	
8.000000	9.000000	96.00000	
8.000000	10.00000	96.00000	
8.000000	11.00000	96.00000	
8.000000	12.00000	97.00000	

60

A	B	C	D
8.000000	1.000000	97.00000	
8.000000	2.000000	97.00000	
8.000000	3.000000	97.00000	
8.000000	4.000000	97.00000	
8.000000	5.000000	97.00000	
8.000000	6.000000	97.00000	
8.000000	7.000000	97.00000	
8.000000	8.000000	97.00000	
8.000000	9.000000	97.00000	
8.000000	10.00000	97.00000	
8.000000	11.00000	97.00000	
8.000000	12.00000	97.00000	
8.000000	1.000000	98.00000	
8.000000	2.000000	98.00000	
8.000000	3.000000	98.00000	
8.000000	4.000000	98.00000	
8.000000	5.000000	98.00000	
8.000000	6.000000	98.00000	
8.000000	7.000000	98.00000	
8.000000	8.000000	98.00000	
8.000000	9.000000	98.00000	
8.000000	10.00000	98.00000	
8.000000	11.00000	98.00000	
8.000000	12.00000	98.00000	

```
|_WRITE(14) STATE MO YR PREDS /BEG=506 END=576
|_* -------------------------------------------------------
|_STOP
```

SOUTH CENTRAL BELL MODELS

SEQ1X: RESIDENCE

```
Date:04/22/93 Time:12:41:28.12
**********************************************************************
*       --------------------------------------------------
*       RESIDENTIAL SCB SEQ1X MODELS: BASE CASE SCENARIOS
*       --------------------------------------------------
* SITE LICENSE - FOR USE ON ALL COMPUTERS AT ABOVE LOCATION        *
**********************************************************************
Hello/Bonjour/Aloha/Howdy/G Day/Kia Ora/Konnichiwa/Buenos Dias/Nee Hau
Welcome to SHAZAM - Version 6.2  -  AUG 1991 SYSTEM=OS386    PAR= 6666
|_* ------------------------------------------------------------------------
|_*                     INSIDE WIRE MONTHLY PLANS (SEQ1X)
|_* ------------------------------------------------------------------------
|_*     Data:   1/87 - 12/98; SEQ1X DATA BEGINS ON 2/88 & ENDS ON 2/93
|_*     Total Observations = 144 Per State
|_* ------------------------------------------------------------------------
|_DIM PREDA 1200 PREDK 1200 PREDL 1200 PREDM 1200 PREDT 1200
|_SET NODELETE
|_FILE 4 SCB.PRN
UNIT  4 IS NOW ASSIGNED TO: SCB.PRN
|_* ------------
|_FILE 11 ALR.OUT
UNIT 11 IS NOW ASSIGNED TO: ALR.OUT
|_FILE 12 KYR.OUT
UNIT 12 IS NOW ASSIGNED TO: KYR.OUT
|_FILE 13 LAR.OUT
UNIT 13 IS NOW ASSIGNED TO: LAR.OUT
|_FILE 14 MSR.OUT
UNIT 14 IS NOW ASSIGNED TO: MSR.OUT
|_FILE 15 TNR.OUT
UNIT 15 IS NOW ASSIGNED TO: TNR.OUT
|_* ------------
|_FILE 16 ALB.OUT
UNIT 16 IS NOW ASSIGNED TO: ALB.OUT
|_FILE 17 KYB.OUT
UNIT 17 IS NOW ASSIGNED TO: KYB.OUT
|_FILE 18 LAB.OUT
UNIT 18 IS NOW ASSIGNED TO: LAB.OUT
|_FILE 19 MSB.OUT
UNIT 19 IS NOW ASSIGNED TO: MSB.OUT
|_FILE 20 TNB.OUT
UNIT 20 IS NOW ASSIGNED TO: TNB.OUT
|_* -------------------------------------------------
|_READ(4) TIME  STATE YR MO RSEQ RSEQR BSEQ BSEQR  &
|        RLINES IRLINES BLINES IBLINES TLINES ITLINES

...SAMPLE RANGE IS NOW SET TO:        1       720
|_* ------------------------------------------------------------------------
|_*  SINCE DATA STARTS AT 2/88 (TIME=14), SKIP DATA BEFORE THAT TIME...
|_* ------------------------------------------------------------------------
|_SET NOWARNSKIP
|_SKIPIF(TIME.LT.14)
|_GENR TOTOBS=TIME(0)
|_* ------------------------------------------------------------------------
|_* CREATING SEASONAL DUMMIES
|_* ------------------------------------------------------------------------
|_GENR JAN=0
|_GENR FEB=0
|_GENR MAR=0
|_GENR APR=0
|_GENR MAY=0
```

```
|_GENR JUN=0
|_GENR JUL=0
|_GENR AUG=0
|_GENR SEP=0
|_GENR OCT=0
|_GENR NOV=0
|_GENR DEC=0
|_IF(MO.EQ.1)JAN=1
|_IF(MO.EQ.2)FEB=1
|_IF(MO.EQ.3)MAR=1
|_IF(MO.EQ.4)APR=1
|_IF(MO.EQ.5)MAY=1
|_IF(MO.EQ.6)JUN=1
|_IF(MO.EQ.7)JUL=1
|_IF(MO.EQ.8)AUG=1
|_IF(MO.EQ.9)SEP=1
|_IF(MO.EQ.10)OCT=1
|_IF(MO.EQ.11)NOV=1
|_IF(MO.EQ.12)DEC=1
|_* ---------------------------------------------------
|_*  CREATING  STATE DUMMIES
|_* ---------------------------------------------------
|_GENR AL=0
|_GENR KY=0
|_GENR LA=0
|_GENR MS=0
|_GENR TN=0
|_IF(STATE.EQ.1)AL=1
|_IF(STATE.EQ.4)KY=1
|_IF(STATE.EQ.5)LA=1
|_IF(STATE.EQ.6)MS=1
|_IF(STATE.EQ.9)TN=1
|_* ------------------------------------------------------------------
|_* Creating Slope dummies for POOLED ANALYSIS Residential Access Lines
|_* ------------------------------------------------------------------
|_GENR RSAL=0
|_GENR RSKY=0
|_GENR RSLA=0
|_GENR RSMS=0
|_GENR RSTN=0
|_IF(STATE.EQ.1)RSAL=RLINES
|_IF(STATE.EQ.4)RSKY=RLINES
|_IF(STATE.EQ.5)RSLA=RLINES
|_IF(STATE.EQ.6)RSMS=RLINES
|_IF(STATE.EQ.9)RSTN=RLINES
|_* ------------------------------------------------------------------
|_* Creating Slope dummies for POOLED ANALYSISBusiness Main Access Lines
|_* ------------------------------------------------------------------
|_GENR BSAL=0
|_GENR BSKY=0
|_GENR BSLA=0
|_GENR BSMS=0
|_GENR BSTN=0
|_IF(STATE.EQ.1)BSAL=BLINES
|_IF(STATE.EQ.4)BSKY=BLINES
|_IF(STATE.EQ.5)BSLA=BLINES
|_IF(STATE.EQ.6)BSMS=BLINES
|_IF(STATE.EQ.9)BSTN=BLINES
|_* -------------------------------------------------------------------
|_STAT /ALL
```

NAME	N	MEAN	ST. DEV	VARIANCE	MINIMUM	MAXIMUM
PREDA	655	0.00000	0.00000	0.00000	0.00000	0.00000
PREDK	655	0.00000	0.00000	0.00000	0.00000	0.00000
PREDL	655	0.00000	0.00000	0.00000	0.00000	0.00000
PREDM	655	0.00000	0.00000	0.00000	0.00000	0.00000
PREDT	655	0.00000	0.00000	0.00000	0.00000	0.00000
TIME	655	79.000	37.844	1432.2	14.000	144.00
STATE	655	5.0000	2.6097	6.8104	1.0000	9.0000
YR	655	93.046	3.1547	9.9520	88.000	98.000
MO	655	6.5420	3.4341	11.793	1.0000	12.000
RSEQ	655	0.39367E+06	0.46377E+06	0.21508E+12	0.00000	0.12386E+07
RSEQR	655	1.5670	0.44622	0.19911	0.60000	2.0000
BSEQ	655	25602.	29986.	0.89914E+09	0.00000	81654.
BSEQR	655	1.6212	0.39959	0.15967	0.60000	2.0000
RLINES	655	0.11661E+07	0.35368E+06	0.12509E+12	0.68774E+06	0.19395E+07
IRLINES	655	116.56	10.017	100.35	101.05	146.59
BLINES	655	0.25327E+06	90503.	0.81907E+10	0.12406E+06	0.48437E+06
IBLINES	655	131.97	19.073	363.77	101.32	184.23
TLINES	655	0.14193E+07	0.44308E+06	0.19632E+12	0.81180E+06	0.24239E+07
ITLINES	655	119.01	11.363	129.11	101.09	152.83
SKIP$	655	0.00000	0.00000	0.00000	0.00000	0.00000
TOTOBS	655	367.00	207.29	42968.	14.000	720.00
JAN	655	0.76336E-01	0.26574	0.70617E-01	0.00000	1.0000
FEB	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
MAR	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
APR	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
MAY	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
JUN	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
JUL	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
AUG	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
SEP	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
OCT	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
NOV	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
DEC	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
AL	655	0.20000	0.40031	0.16024	0.00000	1.0000
KY	655	0.20000	0.40031	0.16024	0.00000	1.0000
LA	655	0.20000	0.40031	0.16024	0.00000	1.0000
MS	655	0.20000	0.40031	0.16024	0.00000	1.0000
TN	655	0.20000	0.40031	0.16024	0.00000	1.0000
RSAL	655	0.24116E+06	0.48425E+06	0.23450E+12	0.00000	0.13576E+07
RSKY	655	0.15574E+06	0.31295E+06	0.97941E+11	0.00000	0.89185E+06
RSLA	655	0.28468E+06	0.57050E+06	0.32547E+12	0.00000	0.15228E+07
RSMS	655	0.15779E+06	0.31656E+06	0.10021E+12	0.00000	0.86980E+06
RSTN	655	0.32671E+06	0.65821E+06	0.43324E+12	0.00000	0.19395E+07
BSAL	655	48348.	97338.	0.94747E+10	0.00000	0.28321E+06
BSKY	655	32801.	66549.	0.44287E+10	0.00000	0.20827E+06
BSLA	655	62483.	0.12568E+06	0.15794E+11	0.00000	0.35973E+06
BSMS	655	33404.	67350.	0.45360E+10	0.00000	0.19948E+06
BSTN	655	76232.	0.15470E+06	0.23932E+11	0.00000	0.48437E+06

```
|_* ----------------------------------------------------------------------
|_*    Plotting Residence Seq1x History...
|_* ----------------------------------------------------------------------
|_* PLOT RSEQ         /TIME SAME GRAPHICS LINEONLY BEG=1   END=74  PAUSE
|_* PLOT RSEQ         /TIME SAME GRAPHICS LINEONLY BEG=88  END=148 PAUSE
|_* PLOT RSEQ         /TIME SAME GRAPHICS LINEONLY BEG=162 END=222 PAUSE
|_* PLOT RSEQ         /TIME SAME GRAPHICS LINEONLY BEG=236 END=296 PAUSE
|_* PLOT RSEQ         /TIME SAME GRAPHICS LINEONLY BEG=310 END=370 PAUSE
|_* ----------------------------------------------------------------------
|_*    Plotting Business Seq1x History...
|_* ----------------------------------------------------------------------
```

```
|_* PLOT BSEQ          /TIME SAME GRAPHICS LINEONLY BEG=1   END=74  PAUSE
|_* PLOT BSEQ          /TIME SAME GRAPHICS LINEONLY BEG=88  END=148 PAUSE
|_* PLOT BSEQ          /TIME SAME GRAPHICS LINEONLY BEG=162 END=222 PAUSE
|_* PLOT BSEQ          /TIME SAME GRAPHICS LINEONLY BEG=236 END=296 PAUSE
|_* PLOT BSEQ          /TIME SAME GRAPHICS LINEONLY BEG=310 END=370 PAUSE
|_* ---------------------------------------------------------------------
|_* ALABAMA

|_AUTO RSEQ JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV RLINES RSEQR        &
|      /LIST RS BEG=14 END=74
```

REQUIRED MEMORY IS PAR= 302 CURRENT PAR= 6666

DEPENDENT VARIABLE = RSEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION 61 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	-571.622	0.49235E+09
2	0.90511	-512.605	0.69143E+08
3	0.96450	-510.857	0.64280E+08
4	0.98824	-510.083	0.61556E+08
5	0.99231	-509.995	0.60954E+08
6	0.99230	-509.995	0.60956E+08

LOG L.F. = -509.995 AT RHO = 0.99230

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.99230	0.00025	0.01586	62.55788

R-SQUARE = 0.9952 R-SQUARE ADJUSTED = 0.9938
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.12969E+07
STANDARD ERROR OF THE ESTIMATE-SIGMA = 1138.8
SUM OF SQUARED ERRORS-SSE= 0.60956E+08
MEAN OF DEPENDENT VARIABLE = 0.93431E+06
LOG OF THE LIKELIHOOD FUNCTION = -509.995

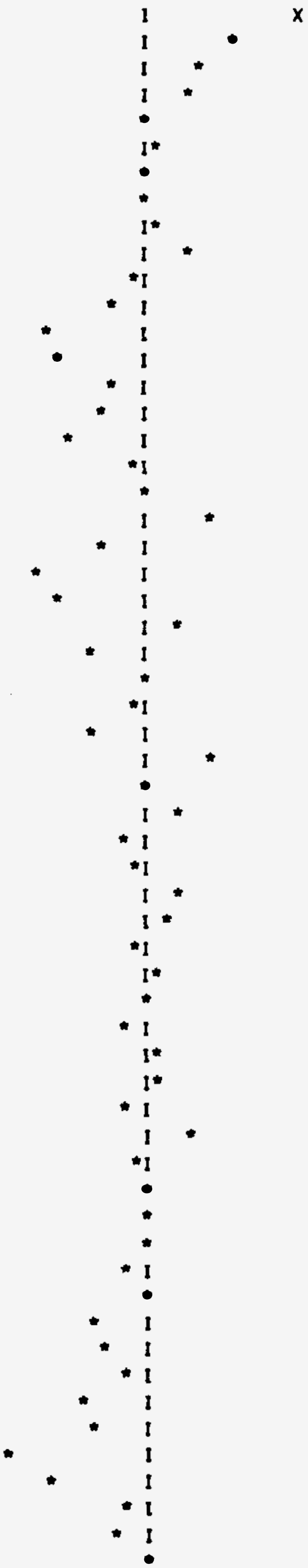
34

A VARIABLE NAME	B ESTIMATED COEFFICIENT	C STANDARD ERROR	D T-RATIO 47 DF	E PARTIAL CORR.	F STANDARDIZED COEFFICIENT	G ELASTICITY AT MEANS
JAN			0.24599	0.0359		
FEB			1.0989	0.1583		
MAR			2.2027	0.3059		
APR			2.6613	0.3619		
MAY			2.1301	0.2967		
JUN			2.2801	0.3156		
JUL			1.9896	0.2787		
AUG			1.9832	0.2779		
SEP			2.9618	0.3966		
OCT			2.8129	0.3796		
NOV			2.6684	0.3627		
RLINES			11.337	0.8557		
RSEQR			-2.7172	-0.3685		
CONSTANT			4.8509	0.5776		

48

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL

A	B	C
14		8803.4
15		1782.3
16		1050.9
17		955.64
18		-54.931
19		280.08
20		9.7664
21		-9.1619
22		191.09
23		1020.4
24		-131.09
25		-731.96
26		-2027.8
27		-1898.6
28		-771.99
29		-899.63
30		-1680.9
31		-234.02
32		-61.624
33		1329.5
34		-885.65
35		-2306.9
36		-1832.6
37		660.15
38		-1217.3
39		37.376
40		-233.38
41		-1190.7
42		1324.8
43		-15.015
44		658.01
45		-423.26
46		-289.35
47		569.70
48		393.91
49		-304.25
50		233.17
51		-111.57
52		-432.55
53		257.03
54		249.85
55		-358.36
56		804.93
57		-322.13
58		-92.222
59		5.2892
60		95.223
61		-481.59
62		-72.579
63		-1209.7
64		-1024.1
65		-544.36
66		-1271.9
67		-1116.9
68		-2866.5
69		-2041.7
70		-401.97
71		-778.06
72		-26.586
73		-655.15



1

74 1560.0 I •

```
DURBIN-WATSON = 0.8064    VON NEUMANN RATIO = 0.8198    RHO =  0.31118
RESIDUAL SUM =  -8735.5      RESIDUAL VARIANCE =  0.29205E+07
SUM OF ABSOLUTE ERRORS=   53281.
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9908
RUNS TEST:   27 RUNS,   22 POSITIVE,   39 NEGATIVE, NORMAL STATISTIC = -0.5975

|_FC /BEG=74 END=144 BLUP PREDICT=PREDA MODEL=AUTO ESTEND=74

REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666
..ASSUMING ESTIMATION ENDED AT OBSERVATION    74
DEPENDENT VARIABLE = RSEQ            71 OBSERVATIONS
REGRESSION COEFFICIENTS
```

12

```
AUTOCORRELATION RHO
  0.9922963844430
USER SPECIFIED RHO= 0.99230
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS.   75

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS=  0.70783E+08
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0312
MEAN ERROR = -0.99695E+06
SUM-SQUARED ERRORS =  0.71618E+14
MEAN SQUARE ERROR =  0.10087E+13
MEAN ABSOLUTE ERROR=  0.99695E+06
ROOT MEAN SQUARE ERROR =  0.10043E+07
THEIL INEQUALITY COEFFICIENT U = 8.850
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98533
     PROPORTION DUE TO VARIANCE =  0.67655E-02
     PROPORTION DUE TO COVARIANCE =  0.79058E-02
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98533
     PROPORTION DUE TO REGRESSION =  0.24766E-02
     PROPORTION DUE TO DISTURBANCE =  0.12195E-01   D
|_PRINT STATE MO YR PREDA /BEG=74  END=144
```

38

STATE	MO	YR	PREDA
1.000000	2.000000	93.00000	
1.000000	3.000000	93.00000	
1.000000	4.000000	93.00000	
1.000000	5.000000	93.00000	
1.000000	6.000000	93.00000	
1.000000	7.000000	93.00000	
1.000000	8.000000	93.00000	
1.000000	9.000000	93.00000	
1.000000	10.00000	93.00000	
1.000000	11.00000	93.00000	
1.000000	12.00000	93.00000	
1.000000	1.000000	94.00000	
1.000000	2.000000	94.00000	
1.000000	3.000000	94.00000	
1.000000	4.000000	94.00000	
1.000000	5.000000	94.00000	
1.000000	6.000000	94.00000	
1.000000	7.000000	94.00000	
1.000000	8.000000	94.00000	

56

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A	B	C	D
1.000000	9.000000	94.00000	
1.000000	10.00000	94.00000	
1.000000	11.00000	94.00000	
1.000000	12.00000	94.00000	
1.000000	1.000000	95.00000	
1.000000	2.000000	95.00000	
1.000000	3.000000	95.00000	
1.000000	4.000000	95.00000	
1.000000	5.000000	95.00000	
1.000000	6.000000	95.00000	
1.000000	7.000000	95.00000	
1.000000	8.000000	95.00000	
1.000000	9.000000	95.00000	
1.000000	10.00000	95.00000	
1.000000	11.00000	95.00000	
1.000000	12.00000	95.00000	
1.000000	1.000000	96.00000	
1.000000	2.000000	96.00000	
1.000000	3.000000	96.00000	
1.000000	4.000000	96.00000	
1.000000	5.000000	96.00000	
1.000000	6.000000	96.00000	
1.000000	7.000000	96.00000	
1.000000	8.000000	96.00000	
1.000000	9.000000	96.00000	
1.000000	10.00000	96.00000	
1.000000	11.00000	96.00000	
1.000000	12.00000	97.00000	
1.000000	1.000000	97.00000	
1.000000	2.000000	97.00000	
1.000000	3.000000	97.00000	
1.000000	4.000000	97.00000	
1.000000	5.000000	97.00000	
1.000000	6.000000	97.00000	
1.000000	7.000000	97.00000	
1.000000	8.000000	97.00000	
1.000000	9.000000	97.00000	
1.000000	10.00000	97.00000	
1.000000	11.00000	97.00000	
1.000000	12.00000	97.00000	
1.000000	1.000000	98.00000	
1.000000	2.000000	98.00000	
1.000000	3.000000	98.00000	
1.000000	4.000000	98.00000	
1.000000	5.000000	98.00000	
1.000000	6.000000	98.00000	
1.000000	7.000000	98.00000	
1.000000	8.000000	98.00000	
1.000000	9.000000	98.00000	
1.000000	10.00000	98.00000	
1.000000	11.00000	98.00000	
1.000000	12.00000	98.00000	

```
|_WRITE(11) STATE MO YR PREDA /BEG=74  END=144
|_* ------------------------------------------------------------
|_* KENTUCKY

|_AUTO RSEQ JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV RLINES RSEQR          &
|       /LIST RS BEG=145  END=218

REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666
```

DEPENDENT VARIABLE = RSEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION 61 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	-540.281	0.17620E+09
2	0.88964	-468.588	0.16368E+08
3	0.97683	-463.026	0.13305E+08
4	0.98305	-463.126	0.13281E+08
5	0.98373	-463.144	0.13280E+08

LOG L.F. = -463.144 AT RHO = 0.98373

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.98373	0.00053	0.02300	42.76324

R-SQUARE = 0.9988 R-SQUARE ADJUSTED = 0.9985
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.28255E+06
STANDARD ERROR OF THE ESTIMATE-SIGMA = 531.56
SUM OF SQUARED ERRORS-SSE= 0.13280E+08
MEAN OF DEPENDENT VARIABLE = 0.42764E+06
LOG OF THE LIKELIHOOD FUNCTION = -463.144

A	B	C	D	E	F	G
VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 47 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
JAN			-2.3198	-0.3205		
FEB			-1.5021	-0.2140		
MAR			-0.23412	-0.0341		
APR			0.24794	0.0361		
MAY			1.0131	0.1462		
JUN			0.27232	0.0397		
JUL			0.81486	0.1180		
AUG			0.94522E-01	0.0138		
SEP			-0.20265	-0.0295		
OCT			0.40052	0.0583		
NOV			1.2875	0.1846		
RLINES			15.946	0.9187		
RSEQR			-2.0344	-0.2845		
CONSTANT		...	-1.9915	-0.2790		

93

36

51

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL
158			638.09
159			1232.3
160			779.56
161			1154.6
162			-303.75
163			-322.47
164			-945.06
165			-374.82
166			-508.33
167			-455.01
168			-189.92
169			-347.49
170			-372.99

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A B C

171	-727.91	* I
172	-660.08	* I
173	-948.46	* I
174	-1049.3	* I
175	64.215	I*
176	-266.63	* I
177	-842.50	* I
178	123.99	I*
179	277.55	I *
180	-399.50	* I
181	-332.04	* I
182	-223.18	* I
183	-359.05	* I
184	-155.75	*I
185	-110.29	*I
186	317.60	I *
187	-78.453	*I
188	355.68	I *
189	580.71	I *
190	214.36	I *
191	334.02	I *
192	492.44	I *
193	474.08	I *
194	425.55	I *
195	30.321	*
196	225.07	I *
197	105.15	I*
198	247.08	I *
199	182.33	I *
200	381.15	I *
201	517.07	I *
202	114.79	I*
203	-137.47	*I
204	195.86	I *
205	542.83	I *
206	184.66	I *
207	-271.92	* I
208	-286.61	* I
209	-300.40	* I
210	687.30	I *
211	51.624	*
212	370.41	I *
213	13.348	*
214	-52.747	*
215	-128.81	*I
216	-210.43	* I
217	-450.76	* I
218	-129.30	*I

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

DURBIN-WATSON = 0.7811 VON NEUMANN RATIO = 0.7942 RHO = 0.59466
RESIDUAL SUM = -627.70 RESIDUAL VARIANCE = 0.29094E+06
SUM OF ABSOLUTE ERRORS= 23255.
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9988
RUNS TEST: 14 RUNS, 30 POSITIVE, 31 NEGATIVE, NORMAL STATISTIC = -4.5182

|_FC /BEG=218 END=288 BLUP PREDICT=PREDK MODEL=AUTO ESTEND=218

REQUIRED MEMORY IS PAR= 302 CURRENT PAR= 6666

..ASSUMING ESTIMATION ENDED AT OBSERVATION 218
DEPENDENT VARIABLE = RSEQ 71 OBSERVATIONS
REGRESSION COEFFICIENTS

4

AUTOCORRELATION RHO
0.9837274269344
USER SPECIFIED RHO= 0.98373
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS. 219

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS= 0.35166E+08
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0455
RUNS TEST: 2 RUNS, 1 POSITIVE, 70 NEGATIVE, NORMAL STATISTIC = -5.8737
MEAN ERROR = -0.49528E+06
SUM-SQUARED ERRORS = 0.17713E+14
MEAN SQUARE ERROR = 0.24948E+12
MEAN ABSOLUTE ERROR= 0.49529E+06
ROOT MEAN SQUARE ERROR = 0.49948E+06
THEIL INEQUALITY COEFFICIENT U = 9.255
DECOMPOSITION
PROPORTION DUE TO BIAS = 0.98325
PROPORTION DUE TO VARIANCE = 0.29455E-02
PROPORTION DUE TO COVARIANCE = 0.13800E-01
DECOMPOSITION
PROPORTION DUE TO BIAS = 0.98325
PROPORTION DUE TO REGRESSION = 0.57610E-02
PROPORTION DUE TO DISTURBANCE = 0.10985E-01 D
|_PRINT STATE MO YR PREDK /BEG=218 END=288

31

STATE	MO	YR	PREDK
4.000000	2.000000	93.00000	
4.000000	3.000000	93.00000	
4.000000	4.000000	93.00000	
4.000000	5.000000	93.00000	
4.000000	6.000000	93.00000	
4.000000	7.000000	93.00000	
4.000000	8.000000	93.00000	
4.000000	9.000000	93.00000	
4.000000	10.00000	93.00000	
4.000000	11.00000	93.00000	
4.000000	12.00000	93.00000	
4.000000	1.000000	94.00000	
4.000000	2.000000	94.00000	
4.000000	3.000000	94.00000	
4.000000	4.000000	94.00000	
4.000000	5.000000	94.00000	
4.000000	6.000000	94.00000	
4.000000	7.000000	94.00000	
4.000000	8.000000	94.00000	
4.000000	9.000000	94.00000	
4.000000	10.00000	94.00000	
4.000000	11.00000	94.00000	
4.000000	12.00000	94.00000	
4.000000	1.000000	95.00000	
4.000000	2.000000	95.00000	
4.000000	3.000000	95.00000	
4.000000	4.000000	95.00000	
4.000000	5.000000	95.00000	
4.000000	6.000000	95.00000	

59

F01B257

J000310

A	B	C	D
4.000000	7.000000	95.00000	
4.000000	8.000000	95.00000	
4.000000	9.000000	95.00000	
4.000000	10.00000	95.00000	
4.000000	11.00000	95.00000	
4.000000	12.00000	95.00000	
4.000000	1.000000	96.00000	
4.000000	2.000000	96.00000	
4.000000	3.000000	96.00000	
4.000000	4.000000	96.00000	
4.000000	5.000000	96.00000	
4.000000	6.000000	96.00000	
4.000000	7.000000	96.00000	
4.000000	8.000000	96.00000	
4.000000	9.000000	96.00000	
4.000000	10.00000	96.00000	
4.000000	11.00000	96.00000	
4.000000	12.00000	97.00000	
4.000000	1.000000	97.00000	
4.000000	2.000000	97.00000	
4.000000	3.000000	97.00000	
4.000000	4.000000	97.00000	
4.000000	5.000000	97.00000	
4.000000	6.000000	97.00000	
4.000000	7.000000	97.00000	
4.000000	8.000000	97.00000	
4.000000	9.000000	97.00000	
4.000000	10.00000	97.00000	
4.000000	11.00000	97.00000	
4.000000	12.00000	97.00000	
4.000000	1.000000	98.00000	
4.000000	2.000000	98.00000	
4.000000	3.000000	98.00000	
4.000000	4.000000	98.00000	
4.000000	5.000000	98.00000	
4.000000	6.000000	98.00000	
4.000000	7.000000	98.00000	
4.000000	8.000000	98.00000	
4.000000	9.000000	98.00000	
4.000000	10.00000	98.00000	
4.000000	11.00000	98.00000	
4.000000	12.00000	98.00000	

```
|_WRITE(12) STATE MO YR PREDK /BEG=218 END=28_
|_* ------------------------------------------------------
|_* LOUISIANA

|_AUTO RSEQ JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV RLINES RSEQR          &
|      /LIST RS BEG=302  END=362 DROP

REQUIRED_MEMORY IS PAR=  302 CURRENT PAR= 6666

DEPENDENT VARIABLE =  RSEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION            60 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

    ITERATION         RHO          LOG L.F.          SSE
        1           0.00000       -592.340        0.13203E+10
        2           0.97138       -505.001        0.71832E+08
```

PROPRIETARY

000311

F01R257

3	1.00090	-500.249	0.61310E+08
4	1.00092	-500.245	0.61301E+08

LOG L.F. = -500.245 AT RHO = 1.00092

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	1.00092	-0.00003	0.00554	180.54451

R-SQUARE = 0.9956 R-SQUARE ADJUSTED = 0.9944
VARIANCE OF THE ESTIMATE-SIGMA**2 = 0.13326E+07
STANDARD ERROR OF THE ESTIMATE-SIGMA = 1154.4
SUM OF SQUARED ERRORS-SSE= 0.61301E+08
MEAN OF DEPENDENT VARIABLE = 0.10720E+07
LOG OF THE LIKELIHOOD FUNCTION = -500.245

A	B	C	D	E	F	G
VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 46 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
JAN			-1.8324	-0.2608		
FEB			-0.24879	-0.0367		
MAR			1.5232	0.2191		
APR			2.3650	0.3293		
MAY			3.3810	0.4461		
JUN			3.3303	0.4408		
JUL			3.6848	0.4774		
AUG			2.3909	0.3325		
SEP			1.2936	0.1873		
OCT			0.31525	0.0464		
NOV			0.58547	0.0860		
RLINES			10.618	0.8428		
RSEQR			-3.0803	-0.4135		
CONSTANT			3.0146	0.4062		

15

28

31

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL
303			2500.9
304			1170.1
305			725.28
306			1412.3
307			663.95
308			1925.8
309			1828.1
310			1320.0
311			361.10
312			626.70
313			1501.8
314			-368.25
315			-849.69
316			-233.05
317			-196.46
318			-411.89
319			633.88
320			-374.27
321			-2186.7
322			-1416.3
323			1448.1
324			-106.08
325			-369.66
326			-144.28

54

0000312

F01B257

A B C D

```
1      327          167.74          I*
       328          340.21          I*
       329          249.29          I*
       330          641.25          I  *
       331          481.59          I *
       332          1218.8          I     *
       333          1223.8          I     *
       334          934.46          I    *
       335          115.80          I*
       336          850.28          I    *
       337          556.53          I *
       338          646.50          I  *
       339         -252.61         *I
       340          41.984          *
       341          450.85          I *
       342         -995.55      *   I
       343          202.74          I*
       344         -671.28       *  I
       345         -31.629          *
       346         -13.602          *
       347         -1040.7     *    I
       348         -492.85        * I
       349         -916.98      *   I
       350         -485.63        * I
       351         -1566.3   *      I
       352         -1319.2    *     I
       353         -1229.0     *    I
       354         -646.16       *  I
       355         -1982.2  *       I
       356         -2099.1  *       I
       357         -833.59      *   I
       358         -824.58      *   I
       359         -884.36      *   I
       360         -878.04      *   I
       361         -771.71       *  I
36     362          351.67          I *
```

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

DURBIN-WATSON = 0.7094   VON NEUMANN RATIO = 0.7214   RHO = 0.59447
RESIDUAL SUM = -0.26375E-10 RESIDUAL VARIANCE = 0.13326E+07
SUM OF ABSOLUTE ERRORS= 49183.
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9965
RUNS TEST: 13 RUNS, 29 POSITIVE, 31 NEGATIVE, NORMAL STATISTIC = -4.6841

|_FC /BEG=362 END=432 BLUP PREDICT=PREDL MODEL=AUTO ESTEND=362

REQUIRED MEMORY IS PAR= 302 CURRENT PAR= 6666
..ASSUMING ESTIMATION ENDED AT OBSERVATION 362
DEPENDENT VARIABLE = RSEQ 71 OBSERVATIONS
REGRESSION COEFFICIENTS

48

AUTOCORRELATION RHO
1.000921621841
USER SPECIFIED RHO= 1.00092
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS. 363

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

```
SUM OF ABSOLUTE ERRORS=  0.78412E+08
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9414
MEAN ERROR = -0.11044E+07
SUM-SQUARED ERRORS =  0.87019E+14
MEAN SQUARE ERROR =  0.12256E+13
MEAN ABSOLUTE ERROR=  0.11044E+07
ROOT MEAN SQUARE ERROR =  0.11071E+07
THEIL INEQUALITY COEFFICIENT U = 8.592
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99515
     PROPORTION DUE TO VARIANCE =  0.45209E-02
     PROPORTION DUE TO COVARIANCE =  0.33060E-03
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.99515
     PROPORTION DUE TO REGRESSION =  0.40713E-02
     PROPORTION DUE TO DISTURBANCE =  0.78023E-03
|_PRINT STATE MO YR PREDL /BEG=362 END=432
```

D

19

STATE	MO	YR	PREDL
5.000000	2.000000	93.00000	
5.000000	3.000000	93.00000	
5.000000	4.000000	93.00000	
5.000000	5.000000	93.00000	
5.000000	6.000000	93.00000	
5.000000	7.000000	93.00000	
5.000000	8.000000	93.00000	
5.000000	9.000000	93.00000	
5.000000	10.00000	93.00000	
5.000000	11.00000	93.00000	
5.000000	12.00000	93.00000	
5.000000	1.000000	94.00000	
5.000000	2.000000	94.00000	
5.000000	3.000000	94.00000	
5.000000	4.000000	94.00000	
5.000000	5.000000	94.00000	
5.000000	6.000000	94.00000	
5.000000	7.000000	94.00000	
5.000000	8.000000	94.00000	
5.000000	9.000000	94.00000	
5.000000	10.00000	94.00000	
5.000000	11.00000	94.00000	
5.000000	12.00000	94.00000	
5.000000	1.000000	95.00000	
5.000000	2.000000	95.00000	
5.000000	3.000000	95.00000	
5.000000	4.000000	95.00000	
5.000000	5.000000	95.00000	
5.000000	6.000000	95.00000	
5.000000	7.000000	95.00000	
5.000000	8.000000	95.00000	
5.000000	9.000000	95.00000	
5.000000	10.00000	95.00000	
5.000000	11.00000	95.00000	
5.000000	12.00000	95.00000	
5.000000	1.000000	96.00000	
5.000000	2.000000	96.00000	
5.000000	3.000000	96.00000	
5.000000	4.000000	96.00000	
5.000000	5.000000	96.00000	
5.000000	6.000000	96.00000	
5.000000	7.000000	96.00000	

60

F01R257 00003l4

A B C D

5.000000	8.000000	96.00000
5.000000	9.000000	96.00000
5.000000	10.00000	96.00000
5.000000	11.00000	96.00000
5.000000	12.00000	97.00000
5.000000	1.000000	97.00000
5.000000	2.000000	97.00000
5.000000	3.000000	97.00000
5.000000	4.000000	97.00000
5.000000	5.000000	97.00000
5.000000	6.000000	97.00000
5.000000	7.000000	97.00000
5.000000	8.000000	97.00000
5.000000	9.000000	97.00000
5.000000	10.00000	97.00000
5.000000	11.00000	97.00000
5.000000	12.00000	97.00000
5.000000	1.000000	98.00000
5.000000	2.000000	98.00000
5.000000	3.000000	98.00000
5.000000	4.000000	98.00000
5.000000	5.000000	98.00000
5.000000	6.000000	98.00000
5.000000	7.000000	98.00000
5.000000	8.000000	98.00000
5.000000	9.000000	98.00000
5.000000	10.00000	98.00000
5.000000	11.00000	98.00000
5.000000	12.00000	98.00000

29

```
|_WRITE(13) STATE MO YR PREDL /BEG=362 END=432
|_* -------------------------------------------------------
|_* MISSISSIPPI

|_AUTO RSEQ JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV       RSEQR TIME     &
|       /LIST RS BEG=464  END=506

REQUIRED MEMORY IS PAR=  299 CURRENT PAR= 6666

DEPENDENT VARIABLE =  RSEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION              43 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

    ITERATION        RHO           LOG L.F.          SSE
        1          0.00000        -390.436        0.19395E+09
        2          0.71885        -374.450        0.90665E+08
        3          0.74848        -374.448        0.90458E+08
        4          0.75072        -374.451        0.90456E+08
        5          0.75089        -374.452        0.90456E+08

 LOG L.F. =   -374.452       AT RHO =      0.75089

                      ASYMPTOTIC  ASYMPTOTIC  ASYMPTOTIC
            ESTIMATE   VARIANCE    ST.ERROR    T-RATIO
RHO          0.75089    0.01014     0.10071    7.45561

 R-SQUARE =    0.8069     R-SQUARE ADJUSTED =    0.7204
VARIANCE OF THE ESTIMATE-SIGMA**2 =   0.31192E+07
STANDARD ERROR OF THE ESTIMATE-SIGMA =     1766.1
```

SUM OF SQUARED ERRORS-SSE= 0.90456E+08
MEAN OF DEPENDENT VARIABLE = 0.61660E+06
LOG OF THE LIKELIHOOD FUNCTION = -374.452

A VARIABLE NAME	B ESTIMATED COEFFICIENT	C STANDARD ERROR	D T-RATIO 29 DF	E PARTIAL CORR.	F STANDARDIZED COEFFICIENT	G ELASTICITY AT MEANS
JAN			0.27003	0.0501		
FEB			1.2561	0.2272		
MAR			2.7178	0.4505		
APR			3.1470	0.5045		
MAY			3.5073	0.5457		
JUN			2.7399	0.4535		
JUL			1.6176	0.2877		
AUG			2.3460	0.3994		
SEP			2.0384	0.3540		
OCT			1.5063	0.2694		
NOV			1.5601	0.2783		
RSEQR			-1.2042	-0.2182		
TIME			-0.21385	-0.0397		
CONSTANT			143.35	0.9993		

6

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL	
464			-519.01	*I
465			-502.16	*I
466			-334.94	*I
467			167.45	*
468			1914.5	I *
469			-782.56	* I
470			-2266.4	* I
471			567.50	I *
472			503.37	I*
473			-1065.2	* I
474			2465.3	I *
475			-100.09	*
476			2324.1	I *
477			1160.6	I *
478			-906.87	* I
479			675.25	I *
480			-1597.6	* I
481			435.81	I*
482			-2471.7	* I
483			-1230.4	* I
484			-1303.7	* I
485			2391.0	I *
486			-3463.1	* I
487			-33.779	*
488			811.97	I *
489			740.69	I *
490			904.39	I *
491			722.83	I *
492			834.27	I *
493			918.84	I *
494			3032.6	I *
495			718.69	I *
496			874.67	I *
497			-1226.8	* I
498			1129.7	I *
499			309.49	

A B C

```
1   500                      -2902.2          *       I
    501                      -1389.1              *   I
    502                       350.75                  I*
    503                      -1547.8              *   I
    504                      -1127.6               *  I
5   505                      -540.61                * I
    506                       1747.4                  I    *

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

DURBIN-WATSON = 2.0044    VON NEUMANN RATIO = 2.0522    RHO = -0.02127
RESIDUAL SUM =   389.71      RESIDUAL VARIANCE =  0.31244E+07
SUM OF ABSOLUTE ERRORS=   51012.
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.8067
RUNS TEST:   22 RUNS,   23 POSITIVE,   20 NEGATIVE, NORMAL STATISTIC = -0.1227

|_FC /BEG=506 END=576 BLUP PREDICT=PREDM MODEL=AUTO ESTEND=506

REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666
..ASSUMING ESTIMATION ENDED AT OBSERVATION   506
DEPENDENT VARIABLE = RSEQ            71 OBSERVATIONS
REGRESSION COEFFICIENTS

AUTOCORRELATION RHO
  0.7508880603896
USER SPECIFIED RHO= 0.75089
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS.  507

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS=  0.43026E+08
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0013
MEAN ERROR = -0.60601E+06
SUM-SQUARED ERRORS =  0.26447E+14
MEAN SQUARE ERROR =  0.37249E+12
MEAN ABSOLUTE ERROR=  0.60601E+06
ROOT MEAN SQUARE ERROR =  0.61032E+06
THEIL INEQUALITY COEFFICIENT U = 8.380
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98592
     PROPORTION DUE TO VARIANCE =  0.13314E-01
     PROPORTION DUE TO COVARIANCE =  0.76243E-03
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98592
     PROPORTION DUE TO REGRESSION =  0.54211E-04
     PROPORTION DUE TO DISTURBANCE =  0.14022E-01     D
|_PRINT STATE MO YR PREDM /BEG=506 END=576
         STATE          MO            YR              PREDM
43     6.000000      2.000000      93.00000
       6.000000      3.000000      93.00000
       6.000000      4.000000      93.00000
       6.000000      5.000000      93.00000
       6.000000      6.000000      93.00000
       6.000000      7.000000      93.00000
       6.000000      8.000000      93.00000
       6.000000      9.000000      93.00000
       6.000000      10.00000      93.00000
       6.000000      11.00000      93.00000
53     6.000000      12.00000      93.00000
```

A	B	C	D
6.000000	1.000000	94.00000	
6.000000	2.000000	94.00000	
6.000000	3.000000	94.00000	
6.000000	4.000000	94.00000	
6.000000	5.000000	94.00000	
6.000000	6.000000	94.00000	
6.000000	7.000000	94.00000	
6.000000	8.000000	94.00000	
6.000000	9.000000	94.00000	
6.000000	10.00000	94.00000	
6.000000	11.00000	94.00000	
6.000000	12.00000	94.00000	
6.000000	1.000000	95.00000	
6.000000	2.000000	95.00000	
6.000000	3.000000	95.00000	
6.000000	4.000000	95.00000	
6.000000	5.000000	95.00000	
6.000000	6.000000	95.00000	
6.000000	7.000000	95.00000	
6.000000	8.000000	95.00000	
6.000000	9.000000	95.00000	
6.000000	10.00000	95.00000	
6.000000	11.00000	95.00000	
6.000000	12.00000	95.00000	
6.000000	1.000000	96.00000	
6.000000	2.000000	96.00000	
6.000000	3.000000	96.00000	
6.000000	4.000000	96.00000	
6.000000	5.000000	96.00000	
6.000000	6.000000	96.00000	
6.000000	7.000000	96.00000	
6.000000	8.000000	96.00000	
6.000000	9.000000	96.00000	
6.000000	10.00000	96.00000	
6.000000	11.00000	96.00000	
6.000000	12.00000	97.00000	
6.000000	1.000000	97.00000	
6.000000	2.000000	97.00000	
6.000000	3.000000	97.00000	
6.000000	4.000000	97.00000	
6.000000	5.000000	97.00000	
6.000000	6.000000	97.00000	
6.000000	7.000000	97.00000	
6.000000	8.000000	97.00000	
6.000000	9.000000	97.00000	
6.000000	10.00000	97.00000	
6.000000	11.00000	97.00000	
6.000000	12.00000	97.00000	
6.000000	1.000000	98.00000	
6.000000	2.000000	98.00000	
6.000000	3.000000	98.00000	
6.000000	4.000000	98.00000	
6.000000	5.000000	98.00000	
6.000000	6.000000	98.00000	
6.000000	7.000000	98.00000	
6.000000	8.000000	98.00000	
6.000000	9.000000	98.00000	
6.000000	10.00000	98.00000	
6.000000	11.00000	98.00000	
6.000000	12.00000	98.00000	

```
|_WRITE(14) STATE MO YR PREDM /BEG=506 END=576
|_* --------------------------------------------------------
|_* TENNESSEE

|_AUTO RSEQ JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV RLINES RSEQR        &
|       /LIST RS BEG=590  END=650

REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666

DEPENDENT VARIABLE =  RSEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION           61 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

    ITERATION          RHO              LOG L.F.          SSE
        1            0.00000          -548.646         0.23180E+09
        2            0.74321          -516.083         0.78654E+08
        3            0.79198          -515.060         0.75832E+08
        4            0.80246          -514.885         0.75342E+08
        5            0.80528          -514.841         0.75217E+08
        6            0.80609          -514.828         0.75181E+08

 LOG L.F. =    -514.828       AT RHO =     0.80609

                   ASYMPTOTIC  ASYMPTOTIC  ASYMPTOTIC
          ESTIMATE  VARIANCE    ST.ERROR    T-RATIO
RHO        0.80609   0.00574     0.07577    10.63839

 R-SQUARE =    0.9990     R-SQUARE ADJUSTED =    0.9987
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.15996E+07
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1264.8
SUM OF SQUARED ERRORS-SSE=  0.75181E+08
MEAN OF DEPENDENT VARIABLE =  0.11754E+07
LOG OF THE LIKELIHOOD FUNCTION = -514.828
```

VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 47 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
JAN			-1.3279	-0.1902		
FEB			-0.77512	-0.1123		
MAR			0.80832	0.1171		
APR			1.2677	0.1818		
MAY			0.87576	0.1267		
JUN			0.43311	0.0630		
JUL			-0.80968E-01	-0.0118		
AUG			-0.48245	-0.0702		
SEP			0.24814E-01	0.0036		
OCT			1.0669	0.1538		
NOV			0.96964	0.1400		
RLINES			41.649	0.9867		
RSEQR			-0.41417	-0.0603		
CONSTANT			13.304	0.8889		

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL		
590			-5184.5	X	I
591			1441.5		I *
592			1084.9		I *
593			985.43		

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000013

A B C

594	1047.3	I *
595	1265.3	I *
596	1447.8	I *
597	1203.0	I *
598	312.03	I*
599	542.69	I *
600	279.80	I*
601	622.85	I *
602	-669.72	* I
603	-1237.4	* I
604	-390.75	* I
605	-1569.6	* I
606	-851.98	* I
607	-387.55	* I
608	326.51	I*
609	-272.63	*I
610	4465.2	I X
611	1701.0	I *
612	943.34	I *
613	-198.03	*I
614	-815.86	* I
615	263.21	I*
616	-83.047	*
617	28.568	*
618	-126.35	*
619	-701.86	* I
620	820.91	I *
621	-647.49	* I
622	-1326.3	* I
623	-114.21	*
624	294.59	I*
625	58.460	*
626	459.72	I *
627	193.44	I*
628	-294.74	*I
629	685.55	I *
630	582.41	I *
631	186.70	I*
632	-1377.8	* I
633	1919.0	I *
634	-642.50	* I
635	-78.308	*
636	-99.592	*
637	993.85	I *
638	1412.5	I *
639	-477.48	* I
640	-88.978	*
641	152.23	I*
642	-301.40	*I
643	71.675	*
644	-678.75	* I
645	-1533.7	* I
646	-1979.4	* I
647	-1022.7	* I
648	-142.29	*I
649	105.63	*
650	1576.8	I *

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

I

```
DURBIN-WATSON = 1.3411    VON NEUMANN RATIO = 1.3634    RHO =  0.17570
RESIDUAL SUM =   4179.1      RESIDUAL VARIANCE =  0.19712E+07
SUM OF ABSOLUTE ERRORS=   50769.
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9987
RUNS TEST:   26 RUNS,   32 POSITIVE,   29 NEGATIVE, NORMAL STATISTIC = -1.4047

|_FC /BEG=650 END=720 BLUP PREDICT=PREDT MODEL=AUTO ESTEND=650

REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666
..ASSUMING ESTIMATION ENDED AT OBSERVATION   650
DEPENDENT VARIABLE = RSEQ            71 OBSERVATIONS
REGRESSION COEFFICIENTS

AUTOCORRELATION RHO
  0.8060881425618
USER SPECIFIED RHO= 0.80609
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS.  651

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS=  0.94692E+08
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0442
MEAN ERROR = -0.13337E+07
SUM-SQUARED ERRORS =  0.12837E+15
MEAN SQUARE ERROR =  0.18080E+13
MEAN ABSOLUTE ERROR=  0.13337E+07
ROOT MEAN SQUARE ERROR =  0.13446E+07
THEIL INEQUALITY COEFFICIENT U = 9.147
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98381
     PROPORTION DUE TO VARIANCE =  0.37388E-02
     PROPORTION DUE TO COVARIANCE =  0.12455E-01
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98381
     PROPORTION DUE TO REGRESSION =  0.49308E-02
     PROPORTION DUE TO DISTURBANCE =  0.11263E-01
|_PRINT STATE MO YR PREDT /BEG=650 END=720
```

D

STATE	MO	YR	PREDT
9.000000	2.000000	93.00000	
9.000000	3.000000	93.00000	
9.000000	4.000000	93.00000	
9.000000	5.000000	93.00000	
9.000000	6.000000	93.00000	
9.000000	7.000000	93.00000	
9.000000	8.000000	93.00000	
9.000000	9.000000	93.00000	
9.000000	10.00000	93.00000	
9.000000	11.00000	93.00000	
9.000000	12.00000	93.00000	
9.000000	1.000000	94.00000	
9.000000	2.000000	94.00000	
9.000000	3.000000	94.00000	
9.000000	4.000000	94.00000	
9.000000	5.000000	94.00000	
9.000000	6.000000	94.00000	
9.000000	7.000000	94.00000	
9.000000	8.000000	94.00000	
9.000000	9.000000	94.00000	
9.000000	10.00000	94.00000	

II

37

57

000321

F01B257

A	B	C	D
9.000000	11.00000	94.00000	
9.000000	12.00000	94.00000	
9.000000	1.000000	95.00000	
9.000000	2.000000	95.00000	
9.000000	3.000000	95.00000	
9.000000	4.000000	95.00000	
9.000000	5.000000	95.00000	
9.000000	6.000000	95.00000	
9.000000	7.000000	95.00000	
9.000000	8.000000	95.00000	
9.000000	9.000000	95.00000	
9.000000	10.00000	95.00000	
9.000000	11.00000	95.00000	
9.000000	12.00000	95.00000	
9.000000	1.000000	96.00000	
9.000000	2.000000	96.00000	
9.000000	3.000000	96.00000	
9.000000	4.000000	96.00000	
9.000000	5.000000	96.00000	
9.000000	6.000000	96.00000	
9.000000	7.000000	96.00000	
9.000000	8.000000	96.00000	
9.000000	9.000000	96.00000	
9.000000	10.00000	96.00000	
9.000000	11.00000	96.00000	
9.000000	12.00000	97.00000	
9.000000	1.000000	97.00000	
9.000000	2.000000	97.00000	
9.000000	3.000000	97.00000	
9.000000	4.000000	97.00000	
9.000000	5.000000	97.00000	
9.000000	6.000000	97.00000	
9.000000	7.000000	97.00000	
9.000000	8.000000	97.00000	
9.000000	9.000000	97.00000	
9.000000	10.00000	97.00000	
9.000000	11.00000	97.00000	
9.000000	12.00000	97.00000	
9.000000	1.000000	98.00000	
9.000000	2.000000	98.00000	
9.000000	3.000000	98.00000	
9.000000	4.000000	98.00000	
9.000000	5.000000	98.00000	
9.000000	6.000000	98.00000	
9.000000	7.000000	98.00000	
9.000000	8.000000	98.00000	
9.000000	9.000000	98.00000	
9.000000	10.00000	98.00000	
9.000000	11.00000	98.00000	
9.000000	12.00000	98.00000	

```
|_WRITE(15) STATE MO YR PREDT /BEG=650 END=720
|_STOP
```

SOUTH CENTRAL BELL MODELS

SEQ1X: BUSINESS

```
Date:04/22/93 Time:12:50:54.18
*****************************************************************
*                                                               *
*      BUSINESS SCB SEQ1X MODELS: BASE CASE SCENARIOS            
*                                                               *
* SITE LICENSE - FOR USE ON ALL COMPUTERS AT ABOVE LOCATION     *
*****************************************************************
Hello/Bonjour/Aloha/Howdy/G Day/Kia Ora/Konnichiwa/Buenos Dias/Nee Hau
Welcome to SHAZAM - Version 6.2  -  AUG 1991 SYSTEM=OS386    PAR= 6666
|_* ----------------------------------------------------------------------
|_*              BUSINESS INSIDE WIRE MONTHLY PLANS (SEQ1X)
|_* ----------------------------------------------------------------------
|_*     Data:   1/87 - 12/98; SEQ1X DATA BEGINS ON 2/88 & ENDS ON 2/93
|_*     Total Observations = 144 Per State
|_* ----------------------------------------------------------------------
|_DIM PREDA 1200 PREDK 1200 PREDL 1200 PREDM 1200 PREDT 1200
|_SET NODELETE
|_FILE 4 SCB.PRN
UNIT  4 IS NOW ASSIGNED TO: SCB.PRN
|_* ------------
|_FILE 11 ALR.OUT
UNIT 11 IS NOW ASSIGNED TO: ALR.OUT
|_FILE 12 KYR.OUT
UNIT 12 IS NOW ASSIGNED TO: KYR.OUT
|_FILE 13 LAR.OUT
UNIT 13 IS NOW ASSIGNED TO: LAR.OUT
|_FILE 14 MSR.OUT
UNIT 14 IS NOW ASSIGNED TO: MSR.OUT
|_FILE 15 TNR.OUT
UNIT 15 IS NOW ASSIGNED TO: TNR.OUT
|_* ------------
|_FILE 16 ALB.OUT
UNIT 16 IS NOW ASSIGNED TO: ALB.OUT
|_FILE 17 KYB.OUT
UNIT 17 IS NOW ASSIGNED TO: KYB.OUT
|_FILE 18 LAB.OUT
UNIT 18 IS NOW ASSIGNED TO: LAB.OUT
|_FILE 19 MSB.OUT
UNIT 19 IS NOW ASSIGNED TO: MSB.OUT
|_FILE 20 TNB.OUT
UNIT 20 IS NOW ASSIGNED TO: TNB.OUT
|_* ----------------------------------------------
|_READ(4) TIME  STATE YR MO RSEQ RSEQR BSEQ BSEQR  &
|        RLINES IRLINES BLINES IBLINES TLINES ITLINES

...SAMPLE RANGE IS NOW SET TO:         1        720
|_* ----------------------------------------------------------------------
|_*  SINCE DATA STARTS AT 2/88 (TIME=14), SKIP DATA BEFORE THAT TIME...
|_* ----------------------------------------------------------------------
|_SET NOWARNSKIP
|_SKIPIF(TIME.LT.14)
|_GENR TOTOBS=TIME(0)
|_* ----------------------------------------------------------------------
|_* CREATING SEASONAL DUMMIES
|_* ----------------------------------------------------------------------
|_GENR JAN=0
|_GENR FEB=0
|_GENR MAR=0
|_GENR APR=0
|_GENR MAY=0
```

```
|_GENR JUN=0
|_GENR JUL=0
|_GENR AUG=0
|_GENR SEP=0
|_GENR OCT=0
|_GENR NOV=0
|_GENR DEC=0
|_IF(MO.EQ.1)JAN=1
|_IF(MO.EQ.2)FEB=1
|_IF(MO.EQ.3)MAR=1
|_IF(MO.EQ.4)APR=1
|_IF(MO.EQ.5)MAY=1
|_IF(MO.EQ.6)JUN=1
|_IF(MO.EQ.7)JUL=1
|_IF(MO.EQ.8)AUG=1
|_IF(MO.EQ.9)SEP=1
|_IF(MO.EQ.10)OCT=1
|_IF(MO.EQ.11)NOV=1
|_IF(MO.EQ.12)DEC=1
|_* ----------------------------------------------------
|_*  CREATING  STATE DUMMIES
|_* ----------------------------------------------------
|_GENR AL=0
|_GENR KY=0
|_GENR LA=0
|_GENR MS=0
|_GENR TN=0
|_IF(STATE.EQ.1)AL=1
|_IF(STATE.EQ.4)KY=1
|_IF(STATE.EQ.5)LA=1
|_IF(STATE.EQ.6)MS=1
|_IF(STATE.EQ.9)TN=1
|_* -----------------------------------------------------------------
|_* Creating Slope dummies for POOLED ANALYSIS Residential Access Lines
|_* -----------------------------------------------------------------
|_GENR RSAL=0
|_GENR RSKY=0
|_GENR RSLA=0
|_GENR RSMS=0
|_GENR RSTN=0
|_IF(STATE.EQ.1)RSAL=RLINES
|_IF(STATE.EQ.4)RSKY=RLINES
|_IF(STATE.EQ.5)RSLA=RLINES
|_IF(STATE.EQ.6)RSMS=RLINES
|_IF(STATE.EQ.9)RSTN=RLINES
|_* -----------------------------------------------------------------
|_* Creating Slope dummies for POOLED ANALYSISBusiness Main Access Lines
|_* -----------------------------------------------------------------
|_GENR BSAL=0
|_GENR BSKY=0
|_GENR BSLA=0
|_GENR BSMS=0
|_GENR BSTN=0
|_IF(STATE.EQ.1)BSAL=BLINES
|_IF(STATE.EQ.4)BSKY=BLINES
|_IF(STATE.EQ.5)BSLA=BLINES
|_IF(STATE.EQ.6)BSMS=BLINES
|_IF(STATE.EQ.9)BSTN=BLINES
|_* --------------------------------------------------------------------
|_STAT /ALL
```

NAME	N	MEAN	ST. DEV	VARIANCE	MINIMUM	MAXIMUM
PREDA	655	0.00000	0.00000	0.00000	0.00000	0.00000
PREDK	655	0.00000	0.00000	0.00000	0.00000	0.00000
PREDL	655	0.00000	0.00000	0.00000	0.00000	0.00000
PREDM	655	0.00000	0.00000	0.00000	0.00000	0.00000
PREDT	655	0.00000	0.00000	0.00000	0.00000	0.00000
TIME	655	79.000	37.844	1432.2	14.000	144.00
STATE	655	5.0000	2.6097	6.8104	1.0000	9.0000
YR	655	93.046	3.1547	9.9520	88.000	98.000
MO	655	6.5420	3.4341	11.793	1.0000	12.000
RSEQ	655	0.39367E+06	0.46377E+06	0.21508E+12	0.00000	0.12386E+07
RSEQR	655	1.5670	0.44622	0.19911	0.60000	2.0000
BSEQ	655	25602.	29986.	0.89914E+09	0.00000	81654.
BSEQR	655	1.6212	0.39959	0.15967	0.60000	2.0000
RLINES	655	0.11661E+07	0.35368E+06	0.12509E+12	0.68774E+06	0.19395E+07
IRLINES	655	116.56	10.017	100.35	101.05	146.59
BLINES	655	0.25327E+06	90503.	0.81907E+10	0.12406E+06	0.48437E+06
IBLINES	655	131.97	19.073	363.77	101.32	184.23
TLINES	655	0.14193E+07	0.44308E+06	0.19632E+12	0.81180E+06	0.24239E+07
ITLINES	655	119.01	11.363	129.11	101.09	152.83
SKIP$	655	0.00000	0.00000	0.00000	0.00000	0.00000
TOTOBS	655	367.00	207.29	42968.	14.000	720.00
JAN	655	0.76336E-01	0.26574	0.70617E-01	0.00000	1.0000
FEB	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
MAR	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
APR	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
MAY	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
JUN	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
JUL	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
AUG	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
SEP	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
OCT	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
NOV	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
DEC	655	0.83969E-01	0.27755	0.77036E-01	0.00000	1.0000
AL	655	0.20000	0.40031	0.16024	0.00000	1.0000
KY	655	0.20000	0.40031	0.16024	0.00000	1.0000
LA	655	0.20000	0.40031	0.16024	0.00000	1.0000
MS	655	0.20000	0.40031	0.16024	0.00000	1.0000
TN	655	0.20000	0.40031	0.16024	0.00000	1.0000
RSAL	655	0.24116E+06	0.48425E+06	0.23450E+12	0.00000	0.13576E+07
RSKY	655	0.15574E+06	0.31295E+06	0.97941E+11	0.00000	0.89185E+06
RSLA	655	0.28468E+06	0.57050E+06	0.32547E+12	0.00000	0.15228E+07
RSMS	655	0.15779E+06	0.31656E+06	0.10021E+12	0.00000	0.86980E+06
RSTN	655	0.32671E+06	0.65821E+06	0.43324E+12	0.00000	0.19395E+07
BSAL	655	48348.	97338.	0.94747E+10	0.00000	0.28321E+06
BSKY	655	32801.	66549.	0.44287E+10	0.00000	0.20827E+06
BSLA	655	62483.	0.12568E+06	0.15794E+11	0.00000	0.35973E+06
BSMS	655	33404.	67350.	0.45360E+10	0.00000	0.19948E+06
BSTN	655	76232.	0.15470E+06	0.23932E+11	0.00000	0.48437E+06

```
|_* ---------------------------------------------------------------------
|_*    Plotting Residence Seq1x History...
|_* ---------------------------------------------------------------------
|_* PLOT RSEQ        /TIME SAME GRAPHICS LINEONLY BEG=1   END=74  PAUSE
|_* PLOT RSEQ        /TIME SAME GRAPHICS LINEONLY BEG=88  END=148 PAUSE
|_* PLOT RSEQ        /TIME SAME GRAPHICS LINEONLY BEG=162 END=222 PAUSE
|_* PLOT RSEQ        /TIME SAME GRAPHICS LINEONLY BEG=236 END=296 PAUSE
|_* PLOT RSEQ        /TIME SAME GRAPHICS LINEONLY BEG=310 END=370 PAUSE
|_* ---------------------------------------------------------------------
|_*    Plotting Business Seq1x History...
|_* ---------------------------------------------------------------------
```

```
|_* PLOT BSEQ          /TIME SAME GRAPHICS LINEONLY BEG=1   END=74  PAUSE
|_* PLOT BSEQ          /TIME SAME GRAPHICS LINEONLY BEG=88  END=148 PAUSE
|_* PLOT BSEQ          /TIME SAME GRAPHICS LINEONLY BEG=162 END=222 PAUSE
|_* PLOT BSEQ          /TIME SAME GRAPHICS LINEONLY BEG=236 END=296 PAUSE
|_* PLOT BSEQ          /TIME SAME GRAPHICS LINEONLY BEG=310 END=370 PAUSE
|_* ---------------------------------------------------------------------
|_* ALABAMA

|_AUTO BSEQ JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV BLINES BSEQR          &
|     /LIST RS BEG=14 END=74

REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666

DEPENDENT VARIABLE =  BSEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION            61 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100
```

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	-434.764	0.55402E+07
2	0.94169	-368.194	0.60274E+06
3	0.97269	-367.620	0.58434E+06
4	0.97914	-367.622	0.58182E+06
5	0.98110	-367.637	0.58117E+06
6	0.98176	-367.643	0.58096E+06

```
 LOG L.F. =   -367.643      AT RHO =     0.98176
```

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.98176	0.00059	0.02434	40.33298

```
 R-SQUARE =    0.9973     R-SQUARE ADJUSTED =    0.9966
VARIANCE OF THE ESTIMATE-SIGMA**2 =    12361.
STANDARD ERROR OF THE ESTIMATE-SIGMA =    111.18
SUM OF SQUARED ERRORS-SSE=  0.58096E+06
MEAN OF DEPENDENT VARIABLE =    51382.
LOG OF THE LIKELIHOOD FUNCTION = -367.643
```

A VARIABLE NAME	B ESTIMATED COEFFICIENT	C STANDARD ERROR	D T-RATIO 47 DF	E PARTIAL CORR.	F STANDARDIZED COEFFICIENT	G ELASTICITY AT MEANS
JAN			-0.81183	-0.1176		
FEB			0.18242	0.0266		
MAR			2.2606	0.3132		
APR			3.1244	0.4147		
MAY			3.6094	0.4659		
JUN			4.1428	0.5172		
JUL			4.1051	0.5137		
AUG			3.9650	0.5007		
SEP			5.2967	0.6114		
OCT			5.6697	0.6373		
NOV			4.6555	0.5618		
BLINES			-7.5852	-0.7419		
BSEQR			-1.0003	-0.1444		
CONSTANT			21.493	0.9527		

34

47

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL

0000327

F018257

A	B	C	
14			390.99
15			128.17
16			119.23
17			98.372
18			53.442
19			-102.53
20			10.564
21			-21.841
22			-70.565
23			16.841
24			56.140
25			-125.35
26			6.9478
27			-124.62
28			-167.39
29			-180.51
30			52.332
31			87.524
32			27.334
33			86.204
34			-109.56
35			-47.537
36			-9.5896
37			10.374
38			-61.103
39			-66.897
40			-25.469
41			-11.438
42			56.076
43			-18.341
44			-1.4165
45			-139.66
46			0.13423
47			-37.076
48			-56.756
49			-244.77
50			-150.36
51			-158.71
52			-41.238
53			97.630
54			-232.86
55			-94.556
56			-76.276
57			-65.576
58			-72.028
59			15.608
60			44.644
61			161.59
62			137.47
63			163.82
64			55.554
65			-64.472
66			9.4645
67			65.218
68			-24.054
69			75.835
70			185.77
71			-15.311
72			-103.17
73			128.15

A B C

1 74 -4.2512 *

```
DURBIN-WATSON = 1.0561    VON NEUMANN RATIO = 1.0737    RHO =  0.36700
RESIDUAL SUM =  -383.86      RESIDUAL VARIANCE =   15496.
SUM OF ABSOLUTE ERRORS=   5066.7
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9967
RUNS TEST:   26 RUNS,   28 POSITIVE,   33 NEGATIVE, NORMAL STATISTIC = -1.3768

|_FC /BEG=74 END=144 BLUP PREDICT=PREDA MODEL=AUTO ESTEND=74

REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666
..ASSUMING ESTIMATION ENDED AT OBSERVATION    74
DEPENDENT VARIABLE = BSEQ            71 OBSERVATIONS
REGRESSION COEFFICIENTS

AUTOCORRELATION RHO
  0.9817622912297
USER SPECIFIED RHO= 0.98176
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS.   75

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS=  0.32275E+07
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0431
MEAN ERROR =  -45458.
SUM-SQUARED ERRORS =  0.14902E+12
MEAN SQUARE ERROR =  0.20988E+10
MEAN ABSOLUTE ERROR=   45458.
ROOT MEAN SQUARE ERROR =   45813.
THEIL INEQUALITY COEFFICIENT U = 7.864
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98457
     PROPORTION DUE TO VARIANCE =  0.75699E-02
     PROPORTION DUE TO COVARIANCE =  0.78551E-02
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98457
     PROPORTION DUE TO REGRESSION =  0.16988E-03
     PROPORTION DUE TO DISTURBANCE =  0.15255E-01
|_PRINT STATE MO YR PREDA /BEG=74  END=144
```

12

STATE	MO	YR	PREDA
1.000000	2.000000	93.00000	
1.000000	3.000000	93.00000	
1.000000	4.000000	93.00000	
1.000000	5.000000	93.00000	
1.000000	6.000000	93.00000	
1.000000	7.000000	93.00000	
1.000000	8.000000	93.00000	
1.000000	9.000000	93.00000	
1.000000	10.00000	93.00000	
1.000000	11.00000	93.00000	
1.000000	12.00000	93.00000	
1.000000	1.000000	94.00000	
1.000000	2.000000	94.00000	
1.000000	3.000000	94.00000	
1.000000	4.000000	94.00000	
1.000000	5.000000	94.00000	
1.000000	6.000000	94.00000	
1.000000	7.000000	94.00000	
1.000000	8.000000	94.00000	

00003329

E01R257

A	B	C	D
1.000000	9.000000	94.00000	
1.000000	10.00000	94.00000	
1.000000	11.00000	94.00000	
1.000000	12.00000	94.00000	
1.000000	1.000000	95.00000	
1.000000	2.000000	95.00000	
1.000000	3.000000	95.00000	
1.000000	4.000000	95.00000	
1.000000	5.000000	95.00000	
1.000000	6.000000	95.00000	
1.000000	7.000000	95.00000	
1.000000	8.000000	95.00000	
1.000000	9.000000	95.00000	
1.000000	10.00000	95.00000	
1.000000	11.00000	95.00000	
1.000000	12.00000	95.00000	
1.000000	1.000000	96.00000	
1.000000	2.000000	96.00000	
1.000000	3.000000	96.00000	
1.000000	4.000000	96.00000	
1.000000	5.000000	96.00000	
1.000000	6.000000	96.00000	
1.000000	7.000000	96.00000	
1.000000	8.000000	96.00000	
1.000000	9.000000	96.00000	
1.000000	10.00000	96.00000	
1.000000	11.00000	96.00000	
1.000000	12.00000	97.00000	
1.000000	1.000000	97.00000	
1.000000	2.000000	97.00000	
1.000000	3.000000	97.00000	
1.000000	4.000000	97.00000	
1.000000	5.000000	97.00000	
1.000000	6.000000	97.00000	
1.000000	7.000000	97.00000	
1.000000	8.000000	97.00000	
1.000000	9.000000	97.00000	
1.000000	10.00000	97.00000	
1.000000	11.00000	97.00000	
1.000000	12.00000	97.00000	
1.000000	1.000000	98.00000	
1.000000	2.000000	98.00000	
1.000000	3.000000	98.00000	
1.000000	4.000000	98.00000	
1.000000	5.000000	98.00000	
1.000000	6.000000	98.00000	
1.000000	7.000000	98.00000	
1.000000	8.000000	98.00000	
1.000000	9.000000	98.00000	
1.000000	10.00000	98.00000	
1.000000	11.00000	98.00000	
1.000000	12.00000	98.00000	

```
|_WRITE(16) STATE MO YR PREDA /BEG=74  END=144
|_* ------------------------------------------------------------
|_* KENTUCKY

|_AUTO BSEQ JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV BLINES BSEQR          &
|      /LIST RS BEG=145  END=218

REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666
```

DEPENDENT VARIABLE = BSEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION 61 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	-399.577	0.17478E+07
2	0.92854	-324.028	0.14211E+06
3	0.96931	-323.277	0.13680E+06
4	0.97664	-323.369	0.13660E+06
5	0.97798	-323.397	0.13660E+06
6	0.97822	-323.402	0.13660E+06

LOG L.F. = -323.402 AT RHO = 0.97822

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.97822	0.00071	0.02658	36.80956

R-SQUARE = 0.9718 R-SQUARE ADJUSTED = 0.9641
VARIANCE OF THE ESTIMATE-SIGMA**2 = 2906.3
STANDARD ERROR OF THE ESTIMATE-SIGMA = 53.910
SUM OF SQUARED ERRORS-SSE= 0.13660E+06
MEAN OF DEPENDENT VARIABLE = 28531.
LOG OF THE LIKELIHOOD FUNCTION = -323.402

VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 47 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
JAN			-0.72819	-0.1056		
FEB			1.1486	0.1652		
MAR			1.7965	0.2535		
APR			1.8216	0.2568		
MAY			2.1146	0.2947		
JUN			2.3950	0.3298		
JUL			2.1777	0.3027		
AUG			2.1004	0.2929		
SEP			3.3035	0.4341		
OCT			3.1727	0.4200		
NOV			4.8072	0.5741		
BLINES	0.34207E-01	0.99050E-02	3.4535	0.4499		
BSEQR	119.86	63.369	1.8914	0.2660		
CONSTANT	23385.	1377.7	16.974	0.9272		

24

37

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL	
158	.	.	6.9242	I*
159.	.	.	35.345	I *
160	.	.	89.342	I *
161	.	.	2.0585	*
162	.	.	47.971	I *
163	.	.	48.195	I *
164	.	.	-46.312	* I
165	.	.	11.093	I*
166	.	.	33.370	I *
167	.	.	13.503	I*
168	.	.	70.657	I *
169	..	.	50.899	

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A B C

170	29.740	I *
171	101.44	I *
172	2.5922	*
173	-55.173	* I
174	-30.986	* I
175	-54.453	* I
176	19.529	I *
177	15.385	I*
178	60.026	I *
179	-27.939	* I
180	-23.007	* I
181	-54.692	* I
182	-53.261	* I
183	-50.503	* I
184	-39.232	* I
185	-8.5249	*I
186	-21.263	* I
187	-56.729	* I
188	8.7775	I*
189	4.5744	*
190	-88.990	* I
191	-44.648	* I
192	-22.995	* I
193	-47.254	* I
194	31.329	I *
195	-79.229	* I
196	-6.1804	*I
197	-12.433	*I
198	22.700	I *
199	-50.938	* I
200	-48.517	* I
201	-47.143	* I
202	-33.870	* I
203	7.1840	I*
204	17.613	I *
205	88.683	I *
206	44.842	I *
207	-8.0653	*I
208	-47.552	* I
209	73.019	I *
210	-19.499	* I
211	112.82	I *
212	65.396	I *
213	14.939	I*
214	28.288	I *
215	50.698	I *
216	-43.497	* I
217	-38.893	* I
218	-53.933	* I

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

DURBIN-WATSON = 1.3454 VON NEUMANN RATIO = 1.3678 RHO = 0.32338
RESIDUAL SUM = -6.7734 RESIDUAL VARIANCE = 2907.3
SUM OF ABSOLUTE ERRORS= 2424.7
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9734
RUNS TEST: 18 RUNS, 31 POSITIVE, 30 NEGATIVE, NORMAL STATISTIC = -3.4850

|_FC /BEG=218 END=288 BLUP PREDICT=PREDK MODEL=AUTO ESTEND=218

```
REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666
..ASSUMING ESTIMATION ENDED AT OBSERVATION   218
DEPENDENT VARIABLE = BSEQ            71 OBSERVATIONS
REGRESSION COEFFICIENTS

AUTOCORRELATION RHO
  0.9782224645550
USER SPECIFIED RHO= 0.97822
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS.  219

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS=  0.20968E+07
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0428
MEAN ERROR =  -29532.
SUM-SQUARED ERRORS =  0.62824E+11
MEAN SQUARE ERROR =  0.88485E+09
MEAN ABSOLUTE ERROR=   29532.
ROOT MEAN SQUARE ERROR =   29746.
THEIL INEQUALITY COEFFICIENT U = 8.645
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98566
     PROPORTION DUE TO VARIANCE =  0.94588E-02
     PROPORTION DUE TO COVARIANCE =  0.48791E-02
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98566
     PROPORTION DUE TO REGRESSION =  0.17113E-02
     PROPORTION DUE TO DISTURBANCE =  0.12627E-01
|_PRINT STATE MO YR PREDK /BEG=218 END=288
```

STATE	MO	YR	PREDK
4.000000	2.000000	93.00000	
4.000000	3.000000	93.00000	
4.000000	4.000000	93.00000	
4.000000	5.000000	93.00000	
4.000000	6.000000	93.00000	
4.000000	7.000000	93.00000	
4.000000	8.000000	93.00000	
4.000000	9.000000	93.00000	
4.000000	10.00000	93.00000	
4.000000	11.00000	93.00000	
4.000000	12.00000	93.00000	
4.000000	1.000000	94.00000	
4.000000	2.000000	94.00000	
4.000000	3.000000	94.00000	
4.000000	4.000000	94.00000	
4.000000	5.000000	94.00000	
4.000000	6.000000	94.00000	
4.000000	7.000000	94.00000	
4.000000	8.000000	94.00000	
4.000000	9.000000	94.00000	
4.000000	10.00000	94.00000	
4.000000	11.00000	94.00000	
4.000000	12.00000	94.00000	
4.000000	1.000000	95.00000	
4.000000	2.000000	95.00000	
4.000000	3.000000	95.00000	
4.000000	4.000000	95.00000	
4.000000	5.000000	95.00000	
4.000000	6.000000	95.00000	

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A	B	C	D
4.000000	7.000000	95.00000	
4.000000	8.000000	95.00000	
4.000000	9.000000	95.00000	
4.000000	10.00000	95.00000	
4.000000	11.00000	95.00000	
4.000000	12.00000	95.00000	
4.000000	1.000000	96.00000	
4.000000	2.000000	96.00000	
4.000000	3.000000	96.00000	
4.000000	4.000000	96.00000	
4.000000	5.000000	96.00000	
4.000000	6.000000	96.00000	
4.000000	7.000000	96.00000	
4.000000	8.000000	96.00000	
4.000000	9.000000	96.00000	
4.000000	10.00000	96.00000	
4.000000	11.00000	96.00000	
4.000000	12.00000	97.00000	
4.000000	1.000000	97.00000	
4.000000	2.000000	97.00000	
4.000000	3.000000	97.00000	
4.000000	4.000000	97.00000	
4.000000	5.000000	97.00000	
4.000000	6.000000	97.00000	
4.000000	7.000000	97.00000	
4.000000	8.000000	97.00000	
4.000000	9.000000	97.00000	
4.000000	10.00000	97.00000	
4.000000	11.00000	97.00000	
4.000000	12.00000	97.00000	
4.000000	1.000000	98.00000	
4.000000	2.000000	98.00000	
4.000000	3.000000	98.00000	
4.000000	4.000000	98.00000	
4.000000	5.000000	98.00000	
4.000000	6.000000	98.00000	
4.000000	7.000000	98.00000	
4.000000	8.000000	98.00000	
4.000000	9.000000	98.00000	
4.000000	10.00000	98.00000	
4.000000	11.00000	98.00000	
4.000000	12.00000	98.00000	

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|_WRITE(17) STATE MO YR PREDK /BEG=218 END=288
|_* ---------------------------------------------------
|_* LOUISIANA

|_AUTO BSEQ JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV BLINES BSEQR          &
|      /LIST RS BEG=302  END=362

REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666

DEPENDENT VARIABLE =  BSEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION            61 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

   ITERATION          RHO            LOG L.F.           SSE
       1            0.00000          -454.777         0.10678E+08
       2            0.88998          -393.354         0.13890E+07
```

3	0.94073	-391.775	0.13062E+07
4	0.94761	-391.659	0.12987E+07
5	0.94971	-391.628	0.12965E+07
6	0.95044	-391.618	0.12958E+07

LOG L.F. = -391.618 AT RHO = 0.95044

	ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO
RHO	0.95044	0.00158	0.03981	23.87631

R-SQUARE = 0.9963 R-SQUARE ADJUSTED = 0.9952
VARIANCE OF THE ESTIMATE-SIGMA**2 = 27570.
STANDARD ERROR OF THE ESTIMATE-SIGMA = 166.04
SUM OF SQUARED ERRORS-SSE= 0.12958E+07
MEAN OF DEPENDENT VARIABLE = 69013.
LOG OF THE LIKELIHOOD FUNCTION = -391.618

VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	T-RATIO 47 DF	PARTIAL CORR.	STANDARDIZED COEFFICIENT	ELASTICITY AT MEANS
JAN			-1.1113	-0.1600		
FEB			-0.66934	-0.0972		
MAR			0.29311	0.0427		
APR			1.5064	0.2146		
MAY			1.5870	0.2255		
JUN			1.5716	0.2235		
JUL			2.0380	0.2849		
AUG			3.1492	0.4174		
SEP			3.8118	0.4859		
OCT			3.7122	0.4762		
NOV			3.5726	0.4621		
BLINES			-9.1393	-0.8000		
BSEQR			-1.5284	-0.2176		
CONSTANT			23.735	0.9607		

```
OBS.   OBSERVED   PREDICTED   CALCULATED
 NO.    VALUE       VALUE      RESIDUAL
 302                  .         718.75                  I              X
 303                  .        -105.37               *  I
 304                  .         168.72                  I    *
 305                  .        -448.59      *           I
 306                  .        -54.515                * I
 307        .         .         49.459                  I*
 308        .         .        -131.42              *   I
 309        .         .        -84.454               *  I
 310        .         .        -78.767                * I
 311        .         .        -38.458                 *I
 312        .         .        -154.16             *    I
 313        .         .        -96.653               *  I
 314        .         .        -144.49              *   I
 315        .         .        -30.889                 *I
 316        .         .        -94.299               *  I
 317        .         .         119.18                  I   *
 318        .         .        -77.016                * I
 319        .         .        -264.85           *      I
 320        .         .        -22.368                 *I
 321        .         .         32.697                  I*
 322        .         .         105.31                  I  *
 323        .         .         117.82                  I   *
```

A B C

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 324   .    .    194.99        I     *
 325   .    .    11.354        *
 326   .    .    263.47        I        *
 327   .    .    179.05        I    *
 328   .    .    26.917        I*
 329   .    .    250.81        I        *
 330   .    .    61.662        I *
 331   .    .   -27.520       *I
 332   .    .   -31.390       *I
 333   .    .    2.7065        *
 334   .    .   -264.37   *     I
 335   .    .   -87.817      *  I
 336   .    .   -69.720       * I
 337   .    .   -255.38   *     I
 338   .    .   -134.21     *   I
 339   .    .   -109.32      *  I
 340   .    .   -62.538       * I
 341   .    .   -18.249       *I
 342   .    .   -96.987      *  I
 343   .    .    11.512        *
 344   .    .   -15.594        *
 345   .    .   -269.39   *     I
 346   .    .    37.648        I*
 347   .    .   -180.00     *   I
 348   .    .   -237.15   *     I
 349   .    .   -91.858      *  I
 350   .    .    9.3895        *
 351   .    .   -20.453       *I
 352   .    .   -130.32     *   I
 353   .    .    0.55957       *
 354   .    .    65.539        I *
 355   .    .    124.80        I  *
 356   .    .    88.612        I *
 357   .    .    200.43        I     *
 358   .    .    76.012        I *
 359   .    .    57.823        I *
 360   .    .    128.60        I  *
 361   .    .    287.92        I         *
 362   .    .   -146.31     *   I

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

DURBIN-WATSON = 1.4137    VON NEUMANN RATIO = 1.4373    RHO =  0.14223
RESIDUAL SUM =  -683.13      RESIDUAL VARIANCE =   37499.
SUM OF ABSOLUTE ERRORS=   7466.6
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9950
RUNS TEST:   20 RUNS,   27 POSITIVE,   34 NEGATIVE, NORMAL STATISTIC = -2.9049

|_FC /BEG=362 END=432 BLUP PREDICT=PREDL MODEL=AUTO ESTEND=362

REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666
..ASSUMING ESTIMATION ENDED AT OBSERVATION   362
DEPENDENT VARIABLE = BSEQ            71 OBSERVATIONS
REGRESSION COEFFICIENTS

AUTOCORRELATION RHO
  0.9504420296228
USER SPECIFIED RHO= 0.95044
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
```

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IGNORE FORECASTS AND STD. ERRORS BEFORE OBS. 363

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS= 0.42725E+07
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0384
RUNS TEST: 2 RUNS, 1 POSITIVE, 70 NEGATIVE, NORMAL STATISTIC = -5.8737
MEAN ERROR = -60174.
SUM-SQUARED ERRORS = 0.26119E+12
MEAN SQUARE ERROR = 0.36787E+10
MEAN ABSOLUTE ERROR= 60176.
ROOT MEAN SQUARE ERROR = 60652.
THEIL INEQUALITY COEFFICIENT U = 7.835
DECOMPOSITION
PROPORTION DUE TO BIAS = 0.98430
PROPORTION DUE TO VARIANCE = 0.73686E-02
PROPORTION DUE TO COVARIANCE = 0.83330E-02
DECOMPOSITION
PROPORTION DUE TO BIAS = 0.98430
PROPORTION DUE TO REGRESSION = 0.25801E-03
PROPORTION DUE TO DISTURBANCE = 0.15444E-01
|_PRINT STATE MO YR PREDL /BEG=362 END=432

22

STATE	MO	YR	PREDL
5.000000	2.000000	93.00000	
5.000000	3.000000	93.00000	
5.000000	4.000000	93.00000	
5.000000	5.000000	93.00000	
5.000000	6.000000	93.00000	
5.000000	7.000000	93.00000	
5.000000	8.000000	93.00000	
5.000000	9.000000	93.00000	
5.000000	10.00000	93.00000	
5.000000	11.00000	93.00000	
5.000000	12.00000	93.00000	
5.000000	1.000000	94.00000	
5.000000	2.000000	94.00000	
5.000000	3.000000	94.00000	
5.000000	4.000000	94.00000	
5.000000	5.000000	94.00000	
5.000000	6.000000	94.00000	
5.000000	7.000000	94.00000	
5.000000	8.000000	94.00000	
5.000000	9.000000	94.00000	
5.000000	10.00000	94.00000	
5.000000	11.00000	94.00000	
5.000000	12.00000	94.00000	
5.000000	1.000000	95.00000	
5.000000	2.000000	95.00000	
5.000000	3.000000	95.00000	
5.000000	4.000000	95.00000	
5.000000	5.000000	95.00000	
5.000000	6.000000	95.00000	
5.000000	7.000000	95.00000	
5.000000	8.000000	95.00000	
5.000000	9.000000	95.00000	
5.000000	10.00000	95.00000	
5.000000	11.00000	95.00000	
5.000000	12.00000	95.00000	
5.000000	1.000000	96.00000	
5.000000	2.000000	96.00000	
5.000000	3.000000	96.00000	

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A B C D

5.000000	4.000000	96.00000
5.000000	5.000000	96.00000
5.000000	6.000000	96.00000
5.000000	7.000000	96.00000
5.000000	8.000000	96.00000
5.000000	9.000000	96.00000
5.000000	10.00000	96.00000
5.000000	11.00000	96.00000
5.000000	12.00000	97.00000
5.000000	1.000000	97.00000
5.000000	2.000000	97.00000
5.000000	3.000000	97.00000
5.000000	4.000000	97.00000
5.000000	5.000000	97.00000
5.000000	6.000000	97.00000
5.000000	7.000000	97.00000
5.000000	8.000000	97.00000
5.000000	9.000000	97.00000
5.000000	10.00000	97.00000
5.000000	11.00000	97.00000
5.000000	12.00000	97.00000
5.000000	1.000000	98.00000
5.000000	2.000000	98.00000
5.000000	3.000000	98.00000
5.000000	4.000000	98.00000
5.000000	5.000000	98.00000
5.000000	6.000000	98.00000
5.000000	7.000000	98.00000
5.000000	8.000000	98.00000
5.000000	9.000000	98.00000
5.000000	10.00000	98.00000
5.000000	11.00000	98.00000
5.000000	12.00000	98.00000

33

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|_WRITE(18) STATE MO YR PREDL /BEG=362 END=432
|_* -----------------------------------------------------
|_* MISSISSIPPI

|_AUTO BSEQ JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV BLINES BSEQR          &
|     /LIST RS BEG=446  END=506

REQUIRED MEMORY IS PAR=  302 CURRENT PAR= 6666

DEPENDENT VARIABLE =  BSEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION              61 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100
```

ITERATION	RHO	LOG L.F.	SSE
1	0.00000	-468.608	0.16805E+08
2	0.85815	-400.954	0.17890E+07
3	0.96825	-389.007	0.11810E+07
4	0.99304	-388.066	0.11172E+07
5	0.99508	-388.155	0.11141E+07
6	0.99508	-388.155	0.11141E+07

LOG L.F. =   -388.155   AT RHO =   0.99508

ESTIMATE	ASYMPTOTIC VARIANCE	ASYMPTOTIC ST.ERROR	ASYMPTOTIC T-RATIO

RHO	0.99508	0.00016	0.01269	78.41700

R-SQUARE = 0.9970 R-SQUARE ADJUSTED = 0.9962
VARIANCE OF THE ESTIMATE-SIGMA**2 = 23705.
STANDARD ERROR OF THE ESTIMATE-SIGMA = 153.96
SUM OF SQUARED ERRORS-SSE= 0.11141E+07
MEAN OF DEPENDENT VARIABLE = 47093.
LOG OF THE LIKELIHOOD FUNCTION = -388.155

A VARIABLE NAME	B ESTIMATED COEFFICIENT	C STANDARD ERROR	D T-RATIO 47 DF	E PARTIAL CORR.	F STANDARDIZED COEFFICIENT	G ELASTICITY AT MEANS
10 JAN			0.79214E-01	0.0116		
FEB			0.12691	0.0185		
MAR			1.8403	0.2593		
APR			2.8841	0.3878		
MAY			3.3305	0.4370		
JUN			3.6318	0.4681		
JUL			3.6007	0.4650		
AUG			3.5811	0.4630		
SEP			3.8266	0.4874		
OCT			4.1135	0.5145		
NOV			3.4777	0.4524		
BLINES	-(		-4.3174	-0.5329		
BSEQR	.		-1.1054	-0.1592		
24 CONSTANT			11.919	0.8668		

OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL	
27 446	.	.	836.90	I X
447		.	369.45	I *
448		.	180.73	I *
449		.	113.11	I *
450	.	.	206.57	I *
451	.	.	34.194	I*
452	.	.	-25.194	*I
453	.	.	24.061	I*
454	.	.	50.665	I *
455	.	.	-40.659	*I
456	.	.	18.117	I*
457	.	.	-81.526	* I
458	.	.	99.277	I *
459	.	.	1.3557	*
460	.	.	164.93	I *
461	.	.	-91.174	* I
462	.	.	-30.675	*I
463	.	.	-36.456	*I
464	.	.	-46.638	* I
465	.	.	-67.938	* I
466	.	.	-101.74	* I
467	.	.	22.551	I*
468	.	.	116.69	I *
469	.	.	-205.52	* I
470	.	.	-87.273	* I
471	.	.	-96.190	* I
472	.	.	-223.21	* I
473	.	.	-195.61	* I
474	.	.	-130.73	* I
57 475	.	.	0.53232	*
476	.	.	-150.42	* I

PROPRIETARY

NOT FOR USE OR DISCLOSURE OUTSIDE OF
BELLSOUTH TELECOMMUNICATIONS OR IT'S AFFILIATED
COMPANIES EXCEPT UNDER WRITTEN AGREEMENT

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A B C

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477  .  .  .  -93.014     *  I
478  .  .  .  -53.956      * I
479  .  .  .  -131.15    *   I
480  .  .  .  -103.51     *  I
481  .  .  .  -126.37    *   I
482     .  .  -223.73  *     I
483     .  .  -274.94 *      I
484     .  .  -232.70  *     I
485     .  .  -87.364     *  I
486     .  .  -178.81   *    I
487     .  .  -282.00 *      I
488     .  .  -55.088      * I
489     .  .  46.719         I *
490     .  .  -44.960       *I
491     .  .  -83.957     *  I
492     .  .  99.065         I  *
493     .  .  32.461         I*
494     .  .  -13.513        *
495     .  .  -135.07    *   I
496     .  .  -25.812       *I
497     .  .  124.30         I   *
498     .  .  -3.7641        *
499     .  .  145.63         I    *
500     .  .  138.56         I   *
501     .  .  -49.293      * I
502     .  .  9.8401         *
503     .  .  92.368         I  *
504     .  .  -271.90 *      I
505     .  .  238.71         I        *
506     .  .  82.296         I  *
```

30

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

DURBIN-WATSON = 0.7735   VON NEUMANN RATIO = 0.7864   RHO = 0.41920
RESIDUAL SUM = -832.78   RESIDUAL VARIANCE = 38461.
SUM OF ABSOLUTE ERRORS= 7330.9
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9953
RUNS TEST: 23 RUNS, 25 POSITIVE, 36 NEGATIVE, NORMAL STATISTIC = -2.0052

|_FC /BEG=506 END=576 BLUP PREDICT=PREDM MODEL=AUTO ESTEND=506

REQUIRED MEMORY IS PAR= 302 CURRENT PAR= 6666
..ASSUMING ESTIMATION ENDED AT OBSERVATION 506
DEPENDENT VARIABLE = BSEQ   71 OBSERVATIONS
REGRESSION COEFFICIENTS

42

AUTOCORRELATION RHO
0.9950766261687
USER SPECIFIED RHO= 0.99508
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS. 507

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS= 0.28394E+07
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0633
MEAN ERROR = -39992.
SUM-SQUARED ERRORS = 0.11532E+12
MEAN SQUARE ERROR = 0.16242E+10
MEAN ABSOLUTE ERROR= 39992.

ROOT MEAN SQUARE ERROR = 40302.
THEIL INEQUALITY COEFFICIENT U = 7.805
DECOMPOSITION
PROPORTION DUE TO BIAS = 0.98467
PROPORTION DUE TO VARIANCE = 0.67637E-02
PROPORTION DUE TO COVARIANCE = 0.85641E-02
DECOMPOSITION
PROPORTION DUE TO BIAS = 0.98467
PROPORTION DUE TO REGRESSION = 0.16831E-03
PROPORTION DUE TO DISTURBANCE = 0.15159E-01

D

|_PRINT STATE MO YR PREDM /BEG=506 END=576

13

STATE	MO	YR	PREDM
6.000000	2.000000	93.00000	
6.000000	3.000000	93.00000	
6.000000	4.000000	93.00000	
6.000000	5.000000	93.00000	
6.000000	6.000000	93.00000	
6.000000	7.000000	93.00000	
6.000000	8.000000	93.00000	
6.000000	9.000000	93.00000	
6.000000	10.00000	93.00000	
6.000000	11.00000	93.00000	
6.000000	12.00000	93.00000	
6.000000	1.000000	94.00000	
6.000000	2.000000	94.00000	
6.000000	3.000000	94.00000	
6.000000	4.000000	94.00000	
6.000000	5.000000	94.00000	
6.000000	6.000000	94.00000	
6.000000	7.000000	94.00000	
6.000000	8.000000	94.00000	
6.000000	9.000000	94.00000	
6.000000	10.00000	94.00000	
6.000000	11.00000	94.00000	
6.000000	12.00000	94.00000	
6.000000	1.000000	95.00000	
6.000000	2.000000	95.00000	
6.000000	3.000000	95.00000	
6.000000	4.000000	95.00000	
6.000000	5.000000	95.00000	
6.000000	6.000000	95.00000	
6.000000	7.000000	95.00000	
6.000000	8.000000	95.00000	
6.000000	9.000000	95.00000	
6.000000	10.00000	95.00000	
6.000000	11.00000	95.00000	
6.000000	12.00000	95.00000	
6.000000	1.000000	96.00000	
6.000000	2.000000	96.00000	
6.000000	3.000000	96.00000	
6.000000	4.000000	96.00000	
6.000000	5.000000	96.00000	
6.000000	6.000000	96.00000	
6.000000	7.000000	96.00000	
6.000000	8.000000	96.00000	
6.000000	9.000000	96.00000	
6.000000	10.00000	96.00000	
6.000000	11.00000	96.00000	
6.000000	12.00000	97.00000	
6.000000	1.000000	97.00000	

0000341

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A	B	C	D
6.000000	2.000000	97.00000	
6.000000	3.000000	97.00000	
6.000000	4.000000	97.00000	
6.000000	5.000000	97.00000	
6.000000	6.000000	97.00000	
6.000000	7.000000	97.00000	
6.000000	8.000000	97.00000	
6.000000	9.000000	97.00000	
6.000000	10.00000	97.00000	
6.000000	11.00000	97.00000	
6.000000	12.00000	97.00000	
6.000000	1.000000	98.00000	
6.000000	2.000000	98.00000	
6.000000	3.000000	98.00000	
6.000000	4.000000	98.00000	
6.000000	5.000000	98.00000	
6.000000	6.000000	98.00000	
6.000000	7.000000	98.00000	
6.000000	8.000000	98.00000	
6.000000	9.000000	98.00000	
6.000000	10.00000	98.00000	
6.000000	11.00000	98.00000	
6.000000	12.00000	98.00000	

```
|_WRITE(19) STATE MO YR PREDM /BEG=506 END=576
|_* ----------------------------------------------------
|_* TENNESSEE

|_AUTO BSEQ JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV BLINES          &
|      /LIST RS BEG=614  END=650

REQUIRED MEMORY IS PAR=  298 CURRENT PAR= 6666

DEPENDENT VARIABLE =  BSEQ
..NOTE..R-SQUARE,ANOVA,RESIDUALS DONE ON ORIGINAL VARS

LEAST SQUARES ESTIMATION             37 OBSERVATIONS
BY COCHRANE-ORCUTT TYPE PROCEDURE WITH CONVERGENCE = 0.00100

    ITERATION          RHO            LOG L.F.          SSE
        1            0.00000         -297.975        0.21420E+08
        2            0.98294         -243.735        0.10417E+07
        3            0.98364         -243.738        0.10407E+07

 LOG L.F. =    -243.738       AT RHO =      0.98364

                  ASYMPTOTIC  ASYMPTOTIC  ASYMPTOTIC
          ESTIMATE   VARIANCE    ST.ERROR     T-RATIO
RHO        0.98364    0.00088     0.02962    33.21181

 R-SQUARE =   0.9905     R-SQUARE ADJUSTED =   0.9857
VARIANCE OF THE ESTIMATE-SIGMA**2 =   43363.
STANDARD ERROR OF THE ESTIMATE-SIGMA =   208.24
SUM OF SQUARED ERRORS-SSE=  0.10407E+07
MEAN OF DEPENDENT VARIABLE =   77522.
LOG OF THE LIKELIHOOD FUNCTION = -243.738


VARIABLE   ESTIMATED  STANDARD  T-RATIO    PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT   ERROR    24 DF      CORR.  COEFFICIENT  AT MEANS
```

	A	B	C	D	E	F	G
1	JAN			0.46544E-01	0.0095		
	FEB			0.39151	0.0797		
	MAR			0.96988	0.1942		
	APR			1.6338	0.3164		
	MAY			1.9672	0.3726		
	JUN			1.9138	0.3639		
	JUL			1.8278	0.3496		
	AUG			2.2460	0.4168		
	SEP			2.8354	0.5009		
	OCT			3.2675	0.5549		
	NOV			3.2284	0.5503		
	BLINES	-(		-3.7198	-0.6047 -		
13	CONSTANT	C.....		12.562	0.9317		

	OBS. NO.	OBSERVED VALUE	PREDICTED VALUE	CALCULATED RESIDUAL		
16	614	.	.	843.56	I	X
	615	.	.	-181.22	* I	
	616	.	.	-22.350	*I	
	617	.	.	64.441	I *	
	618	.	.	-46.507	*I	
	619	.	.	-9.9608	*	
	620	.	.	101.11	I *	
	621	.	.	-102.64	* I	
	622	.	.	-299.67	* I	
	623	.	.	-45.153	*I	
	624	.	.	-124.43	* I	
	625	.	.	-378.06	* I	
	626	.	.	-493.08	* I	
	627	.	.	-123.07	* I	
	628	.	.	-198.85	* I	
	629	.	.	-295.94	* I	
	630	.	.	-126.83	* I	
	631	.	.	-215.81	* I	
	632	.	.	-168.14	* I	
	633	.	.	-60.098	*I	
	634	.	.	-37.849	*I	
	635	.	.	-72.635	* I	
	636	.	.	-113.77	* I	
	637	.	.	42.606	I*	
	638	.	.	192.99	I *	
	639	.	.	177.14	I *	
	640	.	.	91.938	I *	
	641	.	.	100.09	I *	
	642	.	.	39.747	I*	
	643	.	.	89.958	I *	
	644	.	.	-71.040	* I	
	645	.	.	22.372	I*	
	646	.	.	194.81	I *	
	647	.	.	-27.293	*I	
	648.	.	.	90.702	I *	
	649	.	.	185.51	I *	
52	650	.	.	147.65	I *	

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS

DURBIN-WATSON = 1.0078   VON NEUMANN RATIO = 1.0358   RHO = 0.28767
RESIDUAL SUM = -829.76   RESIDUAL VARIANCE = 72051.
SUM OF ABSOLUTE ERRORS= 5599.0
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.9848
RUNS TEST: 11 RUNS, 15 POSITIVE, 22 NEGATIVE, NORMAL STATISTIC = -2.7135

6

```
|_FC /BEG=650 END=720 BLUP PREDICT=PREDT MODEL=AUTO ESTEND=650

REQUIRED MEMORY IS PAR=  301 CURRENT PAR= 6666
..ASSUMING ESTIMATION ENDED AT OBSERVATION   650
DEPENDENT VARIABLE = BSEQ           71 OBSERVATIONS
REGRESSION COEFFICIENTS

AUTOCORRELATION RHO
  0.9836384220121
USER SPECIFIED RHO= 0.98364
USER SPECIFIED SRHO= 0.00000
..FORECAST STD. ERRORS USE JUDGE(1985, EQ. 8.3.13)
IGNORE FORECASTS AND STD. ERRORS BEFORE OBS.  651

BLUP IS ACTIVE - PREDICTED VALUES ADJUSTED WITH LAGGED RESIDUALS
SUM OF ABSOLUTE ERRORS=  0.49085E+07
R-SQUARE BETWEEN OBSERVED AND PREDICTED = 0.0453
MEAN ERROR =  -69134.
SUM-SQUARED ERRORS =  0.34484E+12
MEAN SQUARE ERROR =  0.48568E+10
MEAN ABSOLUTE ERROR=   69134.
ROOT MEAN SQUARE ERROR =   69691.
THEIL INEQUALITY COEFFICIENT U = 7.777
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98408
     PROPORTION DUE TO VARIANCE =  0.66583E-02
     PROPORTION DUE TO COVARIANCE =  0.92632E-02
  DECOMPOSITION
     PROPORTION DUE TO BIAS =  0.98408
     PROPORTION DUE TO REGRESSION =  0.35770E-03
     PROPORTION DUE TO DISTURBANCE =  0.15564E-01
|_PRINT STATE MO YR PREDT /BEG=650 END=720
```

30

STATE	MO	YR	PREDT
9.000000	2.000000	93.00000	
9.000000	3.000000	93.00000	
9.000000	4.000000	93.00000	
9.000000	5.000000	93.00000	
9.000000	6.000000	93.00000	
9.000000	7.000000	93.00000	
9.000000	8.000000	93.00000	
9.000000	9.000000	93.00000	
9.000000	10.00000	93.00000	
9.000000	11.00000	93.00000	
9.000000	12.00000	93.00000	
9.000000	1.000000	94.00000	
9.000000	2.000000	94.00000	
9.000000	3.000000	94.00000	
9.000000	4.000000	94.00000	
9.000000	5.000000	94.00000	
9.000000	6.000000	94.00000	
9.000000	7.000000	94.00000	
9.000000	8.000000	94.00000	
9.000000	9.000000	94.00000	
9.000000	10.00000	94.00000	
9.000000	11.00000	94.00000	
9.000000	12.00000	94.00000	
9.000000	1.000000	95.00000	
9.000000	2.000000	95.00000	
9.000000	3.000000	95.00000	

31

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A	B	C	D
9.000000	4.000000	95.00000	
9.000000	5.000000	95.00000	
9.000000	6.000000	95.00000	
9.000000	7.000000	95.00000	
9.000000	8.000000	95.00000	
9.000000	9.000000	95.00000	
9.000000	10.00000	95.00000	
9.000000	11.00000	95.00000	
9.000000	12.00000	95.00000	
9.000000	1.000000	96.00000	
9.000000	2.000000	96.00000	
9.000000	3.000000	96.00000	
9.000000	4.000000	96.00000	
9.000000	5.000000	96.00000	
9.000000	6.000000	96.00000	
9.000000	7.000000	96.00000	
9.000000	8.000000	96.00000	
9.000000	9.000000	96.00000	
9.000000	10.00000	96.00000	
9.000000	11.00000	96.00000	
9.000000	12.00000	97.00000	
9.000000	1.000000	97.00000	
9.000000	2.000000	97.00000	
9.000000	3.000000	97.00000	
9.000000	4.000000	97.00000	
9.000000	5.000000	97.00000	
9.000000	6.000000	97.00000	
9.000000	7.000000	97.00000	
9.000000	8.000000	97.00000	
9.000000	9.000000	97.00000	
9.000000	10.00000	97.00000	
9.000000	11.00000	97.00000	
9.000000	12.00000	97.00000	
9.000000	1.000000	98.00000	
9.000000	2.000000	98.00000	
9.000000	3.000000	98.00000	
9.000000	4.000000	98.00000	
9.000000	5.000000	98.00000	
9.000000	6.000000	98.00000	
9.000000	7.000000	98.00000	
9.000000	8.000000	98.00000	
9.000000	9.000000	98.00000	
9.000000	10.00000	98.00000	
9.000000	11.00000	98.00000	
9.000000	12.00000	98.00000	

|_WRITE(20) STATE MO YR PREDT /BEG=650 END=720

Forecast Pro for Windows Version 1.00E
Mon Apr 19 13:46:26 1993

Expert data exploration of dependent variable FLWMR

Length 74 Minimum 918103 Maximum 2831570
Mean 1603858 Standard deviation 583253

Classical decomposition (multiplicative)
Trend-cycle: 99.63% Seasonal: 0.02% Irregular: 0.35%

Log transform recommended for Box-Jenkins.

There are no strongly significant regressors, so I will choose a univariate method.
Very low irregularity suggests Box-Jenkins.

Series is trended and nonseasonal.

Recommended model: Box-Jenkins

Forecast Model for FLWMR
Automatic model selection
ARIMA(1,1,2)

A Term	B Coefficient	C Std. Error	t-Statistic	Significance
18 a[1]			8.5962	1.0000
b[1]			3.0109	0.9964
20 b[2]			0.9313	0.6451

Try alternative model ARIMA(1,1,1)

Standard Diagnostics

Sample size 73	Number of parameters 3
Mean 1.587e+006	Standard deviation 5.735e+005
R-square 0.9985	Adjusted R-square 0.9985
Durbin-Watson 2.301	Ljung-Box(18)=12.59 P=0.1847
Forecast error 2.22e+004	BIC 2.374e+004 (Best so far)
MAPE 0.004873	RMSE 2.174e+004
MAD 1.056e+004	

Forecasts of FLWMR from base period 1993-02

A Period	B Lower 2.5	C Forecast	D Upper 97.5
23 1993-03			
1993-04			
1993-05			
1993-06			
1993-07			
33 1993-08			

	A	B	C	D
1	1993-09			
6	1993-10			
	1993-11			
	1993-12			
	1994-01			
	1994-02			
	1994-03			
	1994-04			
	1994-05			
	1994-06			
	1994-07			
	1994-08			
	1994-09			
	1994-10			
	1994-11			
	1994-12			
	1995-01			
	1995-02			
	1995-03			
	1995-04			
	1995-05			
	1995-06			
	1995-07			
	1995-08			
	1995-09			
	1995-10			
	1995-11			
	1995-12			
	1996-01			
	1996-02			
	1996-03			
	1996-04			
	1996-05			
	1996-06			
	1996-07			
	1996-08			
	1996-09			
	1996-10			
	1996-11			
	1996-12			
	1997-01			
	1997-02			
	1997-03			
	1997-04			
	1997-05			
	1997-06			
	1997-07			
	1997-08			
	1997-09			
	1997-10			

A B C D

1 1997-11
1997-12
1998-01
1998-02
1998-03
1998-04
1998-05

1998-06
1998-07
1998-08
1998-09
1998-10
1998-11
14 1998-12

Expert data exploration of dependent variable GAWMRA

Length 38 Minimum 647126 Maximum 1134134
Mean 830731 Standard deviation 141217

Classical decomposition (multiplicative)
Trend-cycle: 93.50% Seasonal: 1.20% Irregular: 5.30%

Log transform recommended for Box-Jenkins.

There are no strongly significant regressors, so I will choose a univariate method.

Box-Jenkins outperforms exponential smoothing by 3178 to 4131 out-of-sample (MAD). I tried 21 forecasts up to a maximum horizon 6. For Box-Jenkins, I used a log transform.

Series is trended and nonseasonal.

Recommended model: Box-Jenkins

Forecast Model for GAWMRA
Automatic model selection
ARIMA(0,2,1)

A Term	B Coefficient	C Std. Error	t-Statistic	Significance
33 b[1]			2.5844	0.9859

Standard Diagnostics

Sample size 36	Number of parameters 1
Mean 8.145e+005	Standard deviation 1.283e+005
R-square 0.999	Adjusted R-square 0.999
Durbin-Watson 1.97	Ljung-Box(18)=13.26 P=0.2239

Forecast error 4112
MAPE 0.00332
MAD 2893

BIC 4262 (Best so far)
RMSE 4055

Forecasts of GAWMRA from base period 1993-02

	A	B	C	D
	Period	Lower 2.5	Forecast	Upper 97.5
G	1993-03			
	1993-04			
	1993-05			
	1993-06			
	1993-07			
	1993-08			
	1993-09			
	1993-10			
	1993-11			
	1993-12			
	1994-01			
	1994-02			
	1994-03			
	1994-04			
	1994-05			
	1994-06			
	1994-07			
	1994-08			
	1994-09			
	1994-10			
	1994-11			
	1994-12			
	1995-01			
	1995-02			
	1995-03			
	1995-04			
	1995-05			
	1995-06			
	1995-07			
	1995-08			
	1995-09			
	1995-10			
	1995-11			
	1995-12			
	1996-01			
	1996-02			
	1996-03			
	1996-04			
	1996-05			
	1996-06			
	1996-07			
	1996-08			
	1996-09			

A B C D

1 1996-10
1996-11
1996-12
1997-01
1997-02
1997-03
1997-04
1997-05
1997-06
1997-07
1997-08
1997-09
1997-10
1997-11
1997-12
1998-01
1998-02
1998-03
1998-04

1998-05
1998-06
1998-07
1998-08
1998-09
1998-10 -
1998-11 -
27 1998-12 -

Forecast Model for GAWMRA
Automatic model selection
Holt exponential smoothing: Linear trend, No seasonality

Component	Smoothing Weight	Final Value
34 Level		
35 Trend		

Standard Diagnostics

Sample size 38	Number of parameters 2
Mean 8.307e+005	Standard deviation 1.431e+005
R-square 0.9982	Adjusted R-square 0.9982
Durbin-Watson 1.614	Ljung-Box(18)=16.54 P=0.4451
Forecast error 6102	BIC 6535
MAPE 0.004023	RMSE 5939
MAD 3725	

Expert data exploration of dependent variable NCWMRA

Length 50 Minimum 276414 Maximum 598581
Mean 396074 Standard deviation 93436

Classical decomposition (multiplicative)
Trend-cycle: 97.52% Seasonal: 0.14% Irregular: 2.34%

Log transform recommended for Box-Jenkins.

There are no strongly significant regressors, so I will choose a univariate method.

Box-Jenkins outperforms exponential smoothing by 846 to 1445 out-of-sample (MAD). I tried 78 forecasts up to a maximum horizon 12. For Box-Jenkins, I used a log transform.

Series is trended and nonseasonal.

Recommended model: Box-Jenkins

Forecast Model for NCWMRA
Automatic model selection
ARIMA(0,2,1)

	Term	Coefficient	Std. Error	t-Statistic	Significance
	A	B	C		
27	b[1]			7.5636	1.0000

Standard Diagnostics

Sample size 48	Number of parameters 1
Mean 3.879e+005	Standard deviation 8.697e+004
R-square 0.9987	Adjusted R-square 0.9987
Durbin-Watson 1.955	Ljung-Box(18)=9.62 P=0.05639
Forecast error 3151	BIC 3247 (Best so far)
MAPE 0.004567	RMSE 3118
MAD 1851	

Forecasts of NCWMRA from base period 1993-02

	A Period	B Lower 2.5	C Forecast	D Upper 97.5
28	1993-03			
	1993-04			
	1993-05			
	1993-06			
	1993-07			
	1993-08			
	1993-09			
	1993-10			
	1993-11			
37	1993-12			

A	B	C	D
1994-01			
1994-02			
1994-03			
1994-04			
1994-05			
1994-06			
1994-07			
1994-08			
1994-09			
1994-10			
1994-11			
1994-12			
1995-01			
1995-02			
1995-03			
1995-04			
1995-05			
1995-06			
1995-07			
1995-08			
1995-09			
1995-10			
1995-11			
1995-12			
1996-01			
1996-02			
1996-03			
1996-04			
1996-05			
1996-06			
1996-07			
1996-08			
1996-09			
1996-10			
1996-11			
1996-12			
1997-01			
1997-02			
1997-03			
1997-04			
1997-05			
1997-06			
1997-07			
1997-08			
1997-09			
1997-10			
1997-11			
1997-12			
1998-01			
1998-02			

A B C D

1 1998-03
1998-04
1998-05
1998-06
1998-07
1998-08
1998-09
1998-10
1998-11
10 1998-12

Expert data exploration of dependent variable SCWMRA

Length 45 Minimum 327511 Maximum 590631
Mean 428102 Standard deviation 75507

Classical decomposition (multiplicative)
Trend-cycle: 96.63% Seasonal: 0.73% Irregular: 2.64%

Log transform recommended for Box-Jenkins.

There are no strongly significant regressors, so I will choose a univariate method.

Box-Jenkins outperforms exponential smoothing by 1851 to 2803 out-of-sample (MAD). I tried 21 forecasts up to a maximum horizon 6. For Box-Jenkins, I used a log transform.

Series is trended and nonseasonal.

Recommended model: Box-Jenkins

Forecast Model for SCWMRA
Automatic model selection
ARIMA(0,2,0)

Term	Coefficient	Std. Error	t-Statistic	Significance

Standard Diagnostics

Sample size 43	Number of parameters 0
Mean 4.208e+005	Standard deviation 6.996e+004
R-square 0.9996	Adjusted R-square 0.9996
Durbin-Watson 2.381	Ljung-Box(18)=25.27 P=0.8823
Forecast error 1323	BIC 1323 (Best so far)
MAPE 0.002074	RMSE 1323
MAD 917.9	

Forecasts of SCWMRA from base period 1993-02

A Period	B Lower 2.5	C Forecast	D Upper 97.5
1993-03			
1993-04			
1993-05			
1993-06			
1993-07			
1993-08			
1993-09			
1993-10			
1993-11			
1993-12			
1994-01			
1994-02			
1994-03			
1994-04			
1994-05			
1994-06			
1994-07			
1994-08			
1994-09			
1994-10			
1994-11			
1994-12			
1995-01			
1995-02			
1995-03			
1995-04			
1995-05			
1995-06			
1995-07			
1995-08			
1995-09			
1995-10			
1995-11			
1995-12			
1996-01			
1996-02			
1996-03			
1996-04			
1996-05			
1996-06			
1996-07			
1996-08			
1996-09			
1996-10			
1996-11			
1996-12			
1997-01			
1997-02			

A B C D

1 1997-03
1997-04
1997-05
1997-06
1997-07
1997-08
1997-09
1997-10
1997-11
1997-12
1998-01
1998-02
1998-03
1998-04
1998-05
1998-06
1998-07
1998-08
1998-09
1998-10
1998-11
22 1998-12

Expert data exploration of dependent variable FLWMQ

Length 62 Minimum 340132 Maximum 963545
Mean 547193 Standard deviation 161309

Classical decomposition (multiplicative)
Trend-cycle: 97.66% Seasonal: 0.33% Irregular: 2.01%

Log transform recommended for Box-Jenkins.

There are no strongly significant regressors, so I will choose a univariate method.

Exponential smoothing outperforms Box-Jenkins by 6021 to 8363 out-of-sample (MAD). I tried 78 forecasts up to a maximum horizon 12. For Box-Jenkins, I used a log transform.

Series is trended and nonseasonal.

Recommended model: Exponential smoothing
Holt: linear trend, no seasonality

Forecast Model for FLWMQ
Automatic model selection
Holt exponential smoothing: Linear trend, No seasonality

Smoothing Final

Component	Weight	Value

Standard Diagnostics

Sample size 62	Number of parameters 2
Mean 5.472e+005	Standard deviation 1.626e+005
R-square 0.9986	Adjusted R-square 0.9986
Durbin-Watson 1.912	Ljung-Box(18)=11.75 P=0.1402
Forecast error 6063	BIC 6375 (Best so far)
MAPE 0.005994	RMSE 5964
MAD 3314	

Forecasts of FLWMQ from base period 1993-02

A B C D

15

Period	Lower 2.5	Forecast	Upper 97.5
1993-03			
1993-04			
1993-05			
1993-06			
1993-07			
1993-08			
1993-09			
1993-10			
1993-11			
1993-12			
1994-01			
1994-02			
1994-03			
1994-04			
1994-05			
1994-06			
1994-07			
1994-08			
1994-09			
1994-10			
1994-11			
1994-12			
1995-01			
1995-02			
1995-03			
1995-04			
1995-05			
1995-06			
1995-07			
1995-08			
1995-09			
1995-10			
1995-11			
1995-12			
1996-01			
1996-02			
1996-03			

A B C D

1996-04
1996-05
1996-06
1996-07
1996-08
1996-09
1996-10
1996-11
1996-12
1997-01
1997-02
1997-03
1997-04
1997-05
1997-06
1997-07
1997-08
1997-09
1997-10
1997-11
1997-12
1998-01
1998-02
1998-03
1998-04
1998-05
1998-06
1998-07
1998-08
1998-09
1998-10
1998-11
33 1998-12

Expert data exploration of dependent variable GAWMQ

Length 45 Minimum 238070 Maximum 594244
Mean 353607 Standard deviation 97140

Classical decomposition (multiplicative)
Trend-cycle: 95.48% Seasonal: 1.05% Irregular: 3.47%

Log transform recommended for Box-Jenkins.

There are no strongly significant regressors, so I will choose a univariate method.

Box-Jenkins outperforms exponential smoothing by 1482 to 2086 out-of-sample (MAD). I tried 21 forecasts up to a maximum horizon 6. For Box-Jenkins, I used a log transform.

Series is trended and seasonal.

Recommended model: Box-Jenkins

Forecast Model for GAWMQ

Automatic model selection
ARIMA(0,2,0)•(1,0,0)

Term	Coefficient	Std. Error	t-Statistic	Significance
A[12]			11.6909	1.0000

Standard Diagnostics

Sample size 43	Number of parameters 1
Mean 3.43e+005	Standard deviation 8.66e+004
R-square 0.9998	Adjusted R-square 0.9998
Durbin-Watson 2.779	** Ljung-Box(18)=66.13 P=1
Forecast error 1099	BIC 1135 (Best so far)
MAPE 0.002621	RMSE 1086
MAD 822.1	

Forecasts of GAWMQ from base period 1993-02

Period	Lower 2.5	Forecast	Upper 97.5
1993-03			
1993-04			
1993-05			
1993-06			
1993-07			
1993-08			
1993-09			
1993-10			
1993-11			
1993-12			
1994-01			
1994-02			
1994-03			
1994-04			
1994-05			
1994-06			
1994-07			
1994-08			
1994-09			
1994-10			
1994-11			
1994-12			
1995-01			
1995-02			
1995-03			
1995-04			
1995-05			
1995-06			
1995-07			

A	B	C	D
1995-08			
1995-09			
1995-10			
1995-11			
1995-12			
1996-01			
1996-02			

1996-03			
1996-04			
1996-05			
1996-06			
1996-07			
1996-08			
1996-09			
1996-10			
1996-11			
1996-12			
1997-01			
1997-02			
1997-03			
1997-04			
1997-05			
1997-06			
1997-07			
1997-08			
1997-09			
1997-10			
1997-11			
1997-12			
1998-01			
1998-02			
1998-03			
1998-04			
1998-05			
1998-06			
1998-07			
1998-08			
1998-09			
1998-10			
1998-11			
1998-12			

Expert data exploration of dependent variable SCWMQ

Length 45 Minimum 194217 Maximum 368229
Mean 256896 Standard deviation 48856

Classical decomposition (multiplicative)
Trend-cycle: 96.05% Seasonal: 0.93% Irregular: 3.02%

Log transform recommended for Box-Jenkins.

There are no strongly significant regressors, so I will choose a univariate method.

Box-Jenkins outperforms exponential smoothing by 1129 to 1682 out-of-sample (MAD). I tried 21 forecasts up to a maximum horizon 6. For Box-Jenkins, I used a log transform.

Series is trended and nonseasonal.

Recommended model: Box-Jenkins

Forecast Model for SCWMQ
Automatic model selection
ARIMA(0,2,1)*(1,0,0)

	A	B	C		
	Term	Coefficient	Std. Error	t-Statistic	Significance
13	b[1]			4.3094	0.9999
14	A[12]			9.6304	1.0000

Standard Diagnostics

Sample size 43	Number of parameters 2
Mean 2.519e+005	Standard deviation 4.463e+004
R-square 0.9996	Adjusted R-square 0.9996
Durbin-Watson 2.347	Ljung-Box(18)=21.8 P=0.759
Forecast error 888.6	BIC 947 (Best so far)
MAPE 0.002372	RMSE 867.7
MAD 608	

Forecasts of SCWMQ from base period 1993-02

	A	B	C	D
	Period	Lower 2.5	Forecast	Upper 97.5
26	1993-03			
	1993-04			
	1993-05			
	1993-06			
	1993-07			
	1993-08			
	1993-09			
	1993-10			
	1993-11			
	1993-12			
	1994-01			
	1994-02			
	1994-03			
	1994-04			
	1994-05			

A	B	C	D
1994-06			
1994-07			
1994-08			
1994-09			
1994-10			
1994-11			
1994-12			
1995-01			
1995-02			
1995-03			
1995-04			
1995-05			
1995-06			
1995-07			
1995-08			
1995-09			
1995-10			
1995-11			
1995-12			

1996-01			
1996-02			
1996-03			
1996-04			
1996-05			
1996-06			
1996-07			
1996-08			
1996-09			
1996-10			
1996-11			
1996-12			
1997-01			
1997-02			
1997-03			
1997-04			
1997-05			
1997-06			
1997-07			
1997-08			
1997-09			
1997-10			
1997-11			
1997-12			
1998-01			
1998-02			
1998-03			
1998-04			
1998-05			
1998-06			
1998-07			

MUTUAL SUBSCRIPTION

JOB/PGM RQ80B42/RQ80B422
SITE CHA-DPC-HOST
JES 7126 02/08/91
RUN DATE/TIME 04/05/93 07:04:58

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INSIDE WIRE MAINTENANCE STATISTICS

A	B	C	D	E	F	G	H	
		TOTALS						
PLAN *	SC	# ACCOUNTS	WMR QTY	WMQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT	6
IW (WMR)	J	1	1			1	1.50	
IW (WMR)	1							8
IW (WMR)	2							
TIP (WMQ)	1							
TIP (WMQ)	2							
IW & TIP (WMR & WMQ)	1							
IW & TIP (WMR & WMQ)	2		1	1		1		
MAINTENANCE PLAN (SEQ1X)	D				1	1		
MAINTENANCE PLAN (SEQ1X)	1							
MAINTENANCE PLAN (SEQ1X)	2							
MIXTURE OF ALL PLANS	1							
MIXTURE OF ALL PLANS	2							
GRAND TOTAL..............								19

N O T I C E : NOT FOR USE OR DISCLOSURE OUTSIDE BELLSOUTH EXCEPT UNDER WRITTEN AGREEMENT

JOB/PGM RQ80B42/RQ80B422
SITE COLUMBIA-DPC
JES 7127 02/08/91
RUN DATE/TIME 04/05/93 06:52:55

INSIDE WIRE MAINTENANCE STATISTICS

A	B	C	D	E	F	G	H
		TOTALS					
PLAN	SC	# ACCOUNTS	WMR QTY	WMQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT
IW (WMR)	J	1	1			1	0.00
IW (WMR)	1						
IW (WMR)	2						
IW (WMR)	3						
TIP (WMQ)	1						
TIP (WMQ)	2						
IW & TIP (WMR & WMQ)	M						
IW & TIP (WMR & WMQ)	1						
IW & TIP (WMR & WMQ)	2						
MAINTENANCE PLAN (SEQ1X)	1						
MAINTENANCE PLAN (SEQ1X)	2						
MIXTURE OF ALL PLANS	1						
MIXTURE OF ALL PLANS	2						
GRAND TOTAL.............							

3

20

N O T I C E : NOT FOR USE OR DISCLOSURE OUTSIDE BELLSOUTH EXCEPT UNDER WRITTEN AGREEMENT

JOB/PGM RQ80B42/RQ80B422
SITE MIA-DPC-HOST
JES 5844 02/08/91
RUN DATE/TIME 04/05/93 06:56:22

FORM MP-2338
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INSIDE WIRE MAINTENANCE STATISTICS

A B C

PLAN	SC	# ACCOUNTS	WMR QTY	WMQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT
		TOTALS					
IW (WMR)	1						
IW (WMR)	2						
IW (WMR)	3						
TIP (WMQ)	1						
TIP (WMQ)	2						
IW & TIP (WMR & WMQ)	1						
IW & TIP (WMR & WMQ)	2						
MAINTENANCE PLAN (SEQ1X)	1						
MAINTENANCE PLAN (SEQ1X)	2						
MIXTURE OF ALL PLANS	1						
MIXTURE OF ALL PLANS	2						
GRAND TOTAL.............							

18

JOB/PGM RQ80B42/RQ80B422
SITE FT.LAUDL-DPC
JES 5848 02/08/91
RUN DATE/TIME 04/05/93 07:05:06

FORM MP-2338
PAGE 1

INSIDE WIRE MAINTENANCE STATISTICS

A	B	C	D	E	F	G	H
		TOTALS					
PLAN	SC	# ACCOUNTS	WMR QTY	WMQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT
IW (WMR)	1						
IW (WMR)	2						
TIP (WMQ)	1						
TIP (WMQ)	2						
TIP (WMQ)	3						
IW & TIP (WMR & WMQ)	1						
IW & TIP (WMR & WMQ)	2						
MAINTENANCE PLAN (SEQ1X)	1						
MAINTENANCE PLAN (SEQ1X)	2						
MIXTURE OF ALL PLANS	1						
MIXTURE OF ALL PLANS	2						
GRAND TOTAL..............							

7

18

JOB/PGM RG. 542/RQ80B422
SITE JAX -DPC
JES 7412 02/08/91
RUN DATE/TIME 04/05/93 07:07:09

INSIDE WIRE MAINTENANCE STATISTICS

A	B	C	D	E	F	G	H
		TOTALS					
PLAN	SC	# ACCOUNTS	WHR QTY	WHQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT
IW (WHR)	1						
IW (WHR)	2						
TIP (WHQ)	1						
TIP (WHQ)	2						
IW & TIP (WHR & WHQ)	1						
IW & TIP (WHR & WHQ)	2						
MAINTENANCE PLAN (SEQ1X)	1						
MAINTENANCE PLAN (SEQ1X)	2						
MIXTURE OF ALL PLANS	1						
MIXTURE OF ALL PLANS	2						
GRAND TOTAL.............							

7

13

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JOB/PGM RQ80B42/RQ80B422
SITE CHA-DPC-HOST
JES 3198 02/08/91
RUN DATE/TIME 02/25/92 18:24:15

FORM MP-2338
PAGE 1

INSIDE WIRE MAINTENANCE STATISTICS

PLAN	SC	# ACCOUNTS	WMR QTY	WMQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT
		TOTALS					
IW (WMR)	1						
IW (WMR)	2						
TIP (WMQ)	1						
TIP (WMQ)	2						
IW & TIP (WMR & WMQ)	1						
IW & TIP (WMR & WMQ)	2						
MAINTENANCE PLAN (SEQ1X)	D						
MAINTENANCE PLAN (SEQ1X)	1						
MAINTENANCE PLAN (SEQ1X)	2						
MIXTURE OF ALL PLANS	1						
MIXTURE OF ALL PLANS	2						
GRAND TOTAL.............							

16

JOB/PGM RQ80B42/RQ80B422
SITE MACON -DPC
JES 9520 02/08/91
RUN DATE/TIME 02/20/92 15:32:14

FORM MP-2338
PAGE 1

INSIDE WIRE MAINTENANCE STATISTICS

A B C D E F G H

PLAN	SC D	# ACCOUNTS	WMR QTY	WMQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT
		TOTALS					
IW (WMR)	D						
IW (WMR)	J						
IW (WMR)	1						
IW (WMR)	2						
IW (WMR)	3						
TIP (WMQ)	1						
TIP (WMQ)	2						
TIP (WMQ)	3						
IW & TIP (WMR & WMQ)	1						
IW & TIP (WMR & WMQ)	2						
IW & TIP (WMR & WMQ)	3						
MAINTENANCE PLAN (SEQ1X)	1						
MAINTENANCE PLAN (SEQ1X)	2						
MIXTURE OF ALL PLANS	1						
MIXTURE OF ALL PLANS	2						
GRAND TOTAL..............							

7

0757
0758

22

JOB/PGM RQ80B42/RQ80B422
SITE ATL-DPC-HOST
JES 9519 02/08/91
RUN DATE/TIME 02/20/92 15:38:10

FORM MP-2338
PAGE 1

INSIDE WIRE MAINTENANCE STATISTICS

A	B	C	D	E	F	G	H
		TOTALS					
PLAN	SC	# ACCOUNTS	WMR QTY	WMQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT
IW (WMR)	D						
IW (WMR)	J						
IW (WMR)	1						
IW (WMR)	2						
IW (WMR)	3						
TIP (WMQ)	1						
TIP (WMQ)	2						
TIP (WMQ)	3						
IW & TIP (WMR & WMQ)	1						
IW & TIP (WMR & WMQ)	2						
IW & TIP (WMR & WMQ)	3						
MAINTENANCE PLAN (SEQ1X)	1						
MAINTENANCE PLAN (SEQ1X)	2						
MIXTURE OF ALL PLANS	1						
MIXTURE OF ALL PLANS	2						
GRAND TOTAL..............							

7

22

JOB/PGM RQ80B42/RQ80B422
SITE COLUMBIA-DPC
JES 9134 02/08/91
RUN DATE/TIME 02/20/92 15:32:31

FORM MP-2338
PAGE 1

INSIDE WIRE MAINTENANCE STATISTICS

A	B	C	D	E	F	G	H
		TOTALS					
PLAN	SC	# ACCOUNTS	WMR QTY	WMQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT
IW (WMR)	J						
IW (WMR)	1						
IW (WMR)	2						
IW (WMR)	3						
TIP (WMQ)	1						
TIP (WMQ)	2						
IW & TIP (WMR & WMQ)	1	1					
IW & TIP (WMR & WMQ)	2						
MAINTENANCE PLAN (SEQ1X)	N						
MAINTENANCE PLAN (SEQ1X)	1						
MAINTENANCE PLAN (SEQ1X)	2						
MIXTURE OF ALL PLANS	1						
MIXTURE OF ALL PLANS	2						
GRAND TOTAL.............							

7

20

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JOB/PGM RQ80B42/RQ80B422
SITE JAX -DPC
JES 366 02/08/91
RUN DATE/TIME 02/21/92 12:38:44

FORM MP-2338
PAGE 1

INSIDE WIRE MAINTENANCE STATISTICS

A	B	C	D	E	F	G	H
		TOTALS					
PLAN	SC	# ACCOUNTS	WMR QTY	WMQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT
IW (WMR)	1						
IW (WMR)	2						
TIP (WMQ)	1						
TIP (WMQ)	2						
IW & TIP (WMR & WMQ)	1						
IW & TIP (WMR & WMQ)	2						
MAINTENANCE PLAN (SEQ1X)	1						
MAINTENANCE PLAN (SEQ1X)	2						
MAINTENANCE PLAN (SEQ1X)	3						
MIXTURE OF ALL PLANS	1						
MIXTURE OF ALL PLANS	2						
GRAND TOTAL..............							

7

18

F01B25Z 0000372

JOB/PGM RQ80B42/RQ80B422
SITE MIA-DPC-HOST
JES 7234 02/08/91
RUN DATE/TIME 02/21/92 12:19:18

FORM MP-2338
PAGE 1

INSIDE WIRE MAINTENANCE STATISTICS

A	B	C	D	E	F	G	H	7
		TOTALS						
PLAN	SC	# ACCOUNTS	WHR QTY	WMQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT	
IW (WHR)	1							
IW (WHR)	2							
IW (WHR)	3							
TIP (WMQ)	1							
TIP (WMQ)	2							
TIP (WMQ)	3							
IW & TIP (WHR & WMQ)	1							
IW & TIP (WHR & WMQ)	2							
IW & TIP (WHR & WMQ)	3							
MAINTENANCE PLAN (SEQ1X)	1							
MAINTENANCE PLAN (SEQ1X)	2							
MIXTURE OF ALL PLANS	1							
MIXTURE OF ALL PLANS	2							
GRAND TOTAL.............								20

JOB/PGM RQ80B42/RQ80B422
SITE FT.LAUDL-DPC
JES 7235 02/08/91
RUN DATE/TIME 02/21/92 12:48:31

FORM MP-2338
PAGE 1

INSIDE WIRE MAINTENANCE STATISTICS

A	B	C	D	E	F	G	H
		TOTALS					
PLAN	SC	# ACCOUNTS	WHR QTY	WHQ QTY	SEQ1X QTY	LINE QTY	$ AMOUNT
IW (WHR)	1						
IW (WHR)	2						
TIP (WHQ)	J						
TIP (WHQ)	1						
TIP (WHQ)	2						
TIP (WHQ)	3						
IW & TIP (WHR & WHQ)	1						
IW & TIP (WHR & WHQ)	2						
MAINTENANCE PLAN (SEQ1X)	1						
MAINTENANCE PLAN (SEQ1X)	2						
MAINTENANCE PLAN (SEQ1X)	3						
MIXTURE OF ALL PLANS	1						
MIXTURE OF ALL PLANS	2						
GRAND TOTAL.............							

7

20

ALABAMA-	
1-1-89	INCREASED SEQ1X FROM .60 TO .95 (RESIDENCE)
1-1-90	INCREASED SEQ1X FROM .95 TO 1.50 (RESIDENCE)
	INCREASED SEQ1X FROM 1.20 TO 1.50 (BUSINESS)
	INCREASED WMR FROM 1.00 TO 1.50 (BOTH)
GEORGIA	
10-1-89	INCREASED WMR FROM .50 TO 1.00 (BOTH)
KENTUCKY	
1-20-88	INCREASED SEQ1X FROM .30 TO .60 (BOTH)
7-1-88	INCREASED SEQ1X FROM .60 TO 1.25 (BOTH)
11-1-89	INCREASED SEQ1X FROM 1.25 TO 2.00 (BOTH)
LOUSIANA	
8-14-89	INCREASED SEQ1X FROM .80 TO 1.25 (RESIDENCE)
	INCREASED SEQ1X FROM 1.60 TO 1.75 (BUSINESS)
7-1-91	INCREASED SEQ1X FROM 1.25 TO 2.00 (RESIDENCE)
	INCREASED SEQ1X FROM 1.75 TO 2.00 (BUSINESS)
MISSISSIPPI	
4-1-89	INCREASED SEQ1X FROM .60 TO 1.25 (BOTH)
1-1-91	INCREASED SEQ1X FROM 1.25 TO 2.00 (BOTH)
NORTH CAROLINA-	
11-1-89	INCREASED WMR FROM - TO 1.05 (BOTH)
2-1-91	INCREASED SEQ1X FROM 2.00 TO 2.50 (BOTH)
	INCREASED WMR FROM 1.05 TO 1.50 (BOTH)
SOUTH CAROLINA-	
4-1-89	INCREASED WMR FROM .50 TO 1.00 (BOTH)
TENNESSEE	
1-1-89	INCREASED SEQ1X FROM .60 TO 1.00 (BOTH)
1-1-90	INCREASED SEQ1X FROM 1.00 TO 1.25 (BOTH)

Florida

$1 → 1.50

From Ben Jordan

All WMG Rates are now at $1.00