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Office of Planning and Policy Analysis

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A PROGRAM TO MONITOR THE WEEKLY
RETAIL PRICE OF HOME-HEATING
FUEL OIL NO. 2 IN THE
STATE OF NEW JERSEY

Year One
FINAL REPORT
June 1979

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INTRODUCTION

In order to enable the Energy Information Administration (EIA) of the United States Department of Energy (US DOE) to execute its role in monitoring the cost and price movements within the United States' petroleum industry and to perform analyses and projections related to energy supplies, demand, and prices, the US DOE and the New Jersey Department of Energy (NJ DOE) entered into a cooperative agreement effective between February 26, 1979 and May 30, 1979. The NJ DOE agreed to undertake a weekly program to monitor and evaluate price fluctuations of residential heating oil (No. 2) sold in the State of New Jersey and the US DOE agreed to reimburse the State of New Jersey for 90% of the expenses incurred by the NJ DOE in the implementation of this survey and to provide technical assistance and guidance as needed by the NJ DOE in the development of this program.

PROCEDURE

Sample

The sample was randomly selected from a list of home heating oil dealers for each county. Thus, the state sample is stratified over the counties. The universe of dealers is the 1977 Membership Roster of the Fuel Merchants Association of New Jersey [1], which is estimated to include approximately seventy percent of the total number of dealers in the state, with good representation in each county. There are 77 dealers in the sample, approximately 13% of the universe.

The sample is judged likely to be representative of the state's home heating oil dealers on the basis to two estimates: in spite of certain unavoidable sources of possible error, the procedural approach is in accord with recognized survey research procedures [2], and informal comparisons of the average prices obtained have confirmed to a high degree with the results of a US DOE survey established previously. There are three possible sources of error in the procedures used which may have affected the representativeness of the sample:

(1) the membership roster of the Fuel Merchants Association may be biased with respect to the actual total of dealers in the state in some way which could influence the price charged,

(2) the number of dealers in the sample is so small for some counties that there is a danger in assuming these observations to be representative of the county, and

(3) taking of weekly price information from dealers in the sample has, over time, resulted in the dropping of some uncooperative dealers and their replacement with newly drawn members of the sample. Such a selective factor may have tended to bias the sample to some degree. Also as some dealers have been eliminated, the sample has been allowed to decrease somewhat. In spite of these sources of possible error, however, the overall effect of systematic bias on the sample is thought to be small, for the reasons discussed above.

Method

Each of the heating oil dealers was advised by letter of the overall purpose of the survey and of the specific information which would be requested. The survey was conducted by telephone on each Monday for the period February 26, 1979 through May 30, 1979. The dealers were asked for the discounted price of home heating oil (No. 2) as of the close of business of the preceding Saturday. The discounted price was defined as the gross price less any discount for early cash payment (i.e. 2% discount for payment within 10 days).

Evaluation

Overall state maximum, minimum, and mean prices were calculated as well as the mean for each county in New Jersey. These data were reported to the Region II EIA Data Coordinator by letter within one or two days of their compilation. The statewide maximum, minimum, and mean prices were also reported by telephone to the Washington office of the EIA.

Results

Over the period surveyed, February 24, 1979 through June 2, 1979, the state mean price increased each week an average of .6¢/gallon from 58.0¢/gal. at the survey's inception to 66.8¢/gallon at its conclusion. More significant is that the weekly price increase for the first half of the survey period, February 24, 1979 through April 7, 1979, was .5¢/gallon and for the last half of the

of the survey period, April 14, 1979 through June 2, 1979, the average weekly increase was .7¢/gallon, indicating that, even though demand was decreasing seasonally due to normal warmer weather conditions, price was continuing to increase at an increasing rate. At its own initiative the NJ DOE continued the survey beyond the period of this contract, from June 9, 1979 through July 28, 1979. During this extension period, the state mean price increased from 68.0¢/gallon with an average weekly increase of 1.0¢/gallon, which reflected a continuing increase in price even though demand was decreasing.

The average weekly difference in price within each county was $\pm .6$ ¢/gallon and the average weekly difference in price between counties and the state mean was $\pm .4$ ¢/gallon.

A comparison of the observed heating oil price increases with consumer price index (CPI) increases during the period of this study may be of interest. Specifically, monthly oil price increases display correlation coefficients of .99 with both the New York - Northern New Jersey CPI and the national CPI for fuel costs adjusted for seasonal variation. Although this correlation is high, it must be interpreted with caution as the direction of causality is not unambiguous. Some portion of the observed oil price increases is clearly attributable to a general increase in costs throughout the regional and national economy; however, the consumer price index is based in part on oil price increases. The rate of increase is steeper for home heating oil than for either of the consumer price indices: the oil prices increased to 122% of the February figure by the end of June; the CPI for New York - Northern New Jersey increased in the same period 104%; the US CPI for fuels, reasonably adjusted, 111%. Clearly, home heating oil has been increasing more rapidly than prices as a whole.

Because, contrary to the normal relationship of demand and supply to market prices, prices have continued to rise at an increasing rate even though demand has gradually decreased due to normal warmer weather conditions, monitoring of home heating oil prices should continue in order to determine if the results obtained are indicative of the true price pattern or are the result of a

temporary aberration due to the current world oil situation, to provide the EIA and the NJ DOE with current reliable figures on home heating oil prices and to form the data base for future analyses of the home heating oil price situation.

NOTES

1. Fuel Merchants Association of New Jersey,
1977 Membership Roster (Springfield, NJ), pgs. 85-98.
2. Standard references include Herbert H. Hyman, Survey Design and Analysis (Glencoe: Free Press, 1955); Paul F. Hazarsfeld and Morris Rosenberg, The Language of Social Research (Glencoe: Free Press, 1955) and Gardner Lindzey, ed., Handbook of Social Psychology (Reading, Mass.: Addison-Wesley, 1954).

APPENDIX E

COUNTY AND STATE AVERAGE PRICES
BY WEEK (2/26 - 7/28/79)

COUNTY	2/26	3/5	3/12	3/19	3/26	4/2	4/9	4/16	4/23	4/30	5/7	5/14	5/21	5/28	6/4	6/11	6/18	6/24	6/30	7/7	7/21	7/28
Atlantic	58.5	59.0	59.5	60.7	60.7	60.6	61.2	62.2	62.4	62.7	63.7	64.2	65.2	65.9	67.2	68.4	69.7	70.5	71.5	71.8	74.8	76.3
Bergen	57.0	58.0	58.9	59.2	59.1	59.0	59.4	60.5	60.5	61.1	62.0	62.5	63.6	64.5	66.3	67.1	68.3	70.0	69.6	70.1	72.3	72.5
Burlington	58.1	59.0	59.4	59.7	59.8	60.0	60.0	61.1	61.1	61.8	62.1	62.5	63.3	63.3	65.8	66.6	67.8	69.4	69.4	70.7	73.3	74.1
Camden	58.6	59.3	59.7	60.0	60.3	60.3	60.9	61.6	61.8	62.6	63.3	63.8	65.1	66.2	67.4	68.6	69.7	71.3	71.3	72.5	73.7	74.9
Cape May	59.9	60.9	61.9	61.9	61.9	62.9	62.9	64.9	64.9	64.9	65.9	65.9	67.9	69.9	69.9	71.9	71.9	73.9	75.9	75.9	77.9	77.9
Cumberland	58.6	58.7	59.2	59.7	59.9	59.9	59.9	60.8	61.9	62.2	63.0	63.0	64.8	65.3	66.3	68.3	70.3	71.4	72.6	72.6	73.8	75.4
Essex	57.2	58.5	59.2	59.4	60.0	59.8	60.1	61.2	61.9	62.4	62.5	63.5	64.5	66.0	66.9	68.7	70.0	71.3	71.4	72.1	74.0	76.2
Gloucester	59.5	60.2	60.0	60.8	61.4	61.3	61.5	62.0	62.7	63.5	64.0	64.4	65.7	66.8	67.7	68.9	72.2	72.4	73.7	74.4	76.2	76.4
Hudson	56.3	58.9	59.9	59.9	60.2	59.9	60.2	61.1	61.7	61.9	62.3	63.9	64.4	65.1	66.0	66.7	68.5	69.2	70.8	71.4	74.3	74.3
Hunterdon	56.3	56.7	57.2	57.7	58.6	58.8	59.1	60.1	60.8	61.4	62.3	62.8	63.8	64.8	65.4	66.8	69.3	69.4	69.3	71.6	71.6	73.3
Mercer	57.9	58.9	59.8	60.2	60.4	60.5	60.7	61.3	62.1	62.3	63.3	64.1	65.1	65.7	67.1	68.5	69.7	71.1	71.7	73.2	74.1	75.9
Middlesex	58.0	59.5	60.4	60.8	61.3	61.1	61.1	62.1	62.4	63.2	63.8	64.4	65.5	66.6	67.4	68.2	70.3	70.6	70.9	71.6	73.7	74.8
Monmouth	57.9	59.4	59.8	60.0	60.5	60.3	60.3	61.2	62.0	62.8	63.0	64.0	65.1	66.0	67.5	68.7	70.0	70.6	70.9	71.6	74.3	75.1
Morris	58.3	59.6	60.0	60.1	60.0	60.2	60.2	61.2	61.4	62.3	63.1	63.7	64.6	65.9	65.8	67.9	68.9	69.4	70.5	71.9	74.0	74.3
Ocean	57.9	59.7	59.2	59.2	59.9	60.4	60.4	61.4	62.4	62.4	62.9	63.9	64.4	65.4	65.9	67.4	67.9	69.4	70.4	70.4	72.4	74.4
Passaic	57.7	58.9	59.2	59.6	59.6	59.6	60.2	60.6	62.1	62.5	62.9	63.7	64.7	65.6	66.1	67.0	68.6	69.5	70.4	70.7	72.8	73.7
Salem	58.4	58.4	58.9	59.9	60.2	59.9	60.4	61.7	62.9	63.4	63.4	64.9	65.7	66.7	68.2	69.7	71.2	73.4	73.4	72.7	74.7	76.7
Somerset	58.3	60.2	60.4	60.4	60.2	60.2	60.2	61.4	62.6	62.6	63.3	65.6	66.4	66.8	67.8	68.4	69.9	70.6	71.9	71.9	73.9	73.9
Sussex	58.3	59.0	59.8	59.8	59.8	59.9	60.7	61.4	61.4	62.0	62.9	64.1	64.9	66.4	66.9	66.9	68.9	68.9	69.9	70.4	72.4	73.9
Union	57.7	58.7	59.4	59.6	59.7	59.8	60.0	60.7	61.9	62.2	62.5	63.6	64.5	66.1	66.5	67.6	68.9	69.1	70.2	72.0	73.5	74.8
Warren	56.5	57.9	58.5	59.5	59.5	60.5	61.2	61.2	62.2	62.5	62.9	64.2	64.9	65.9	67.2	69.5	70.5	70.9	72.5	73.4	75.6	76.2
State Mean Prices	58.0	59.0	59.5	60.4	60.6	60.6	60.9	61.8	62.4	63.0	63.5	64.4	64.8	65.8	66.8	68.0	69.5	70.3	71.0	71.8	73.8	74.9