

**THE ECONOMIC IMPACT OF WAL-MART STORES
ON HOST RURAL COUNTIES:
A SURVEY OF RURAL WAL-MART AND
NON WAL-MART COUNTIES IN
WAL-MART HOST STATES**

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THE ECONOMIC IMPACT OF WAL-MART STORES ON HOST RURAL COUNTIES: A SURVEY OF RURAL WAL-MART AND NON WAL-MART COUNTIES IN WAL-MART HOST STATES

EXECUTIVE SUMMARY

This study presents an analysis of economic data and statistics for all rural counties in the 26 states in which the Wal-Mart Corporation operated a retail outlet during the period 1969 to 1987. The counties are subdivided into urban (SMSA) counties and rural counties (non SMSAs). The economic development of the 678 rural counties hosting a Wal-Mart store was compared to the 1,207 non Wal-Mart rural counties. Comparisons with both rural and statewide economic trends were also made.

The data for the study consisted of income and employment information covering 18 broad measures of economic activity. The data was extracted from publicly available databases maintained by the U.S. Department of the Commerce, Bureau of Economic Analysis and the U.S. Department of Labor, Bureau of Labor Statistics.

Three levels of analysis were conducted. The first consisted of a comparison of the level and rates of change in the 18 economic indicators before and after the opening of a Wal-Mart store in rural counties.

The second level of analysis was similar to the first, except that the indicators were indexed to reflect relative changes compared to statewide indices, SMSA indices and the indices for non Wal-Mart counties. The advantage of this approach is that it accounted for the prevailing economic climate within each region.

The final section of the study presents a regression analysis which compared counties with a Wal-Mart store and those without one.

The major findings of the study are as follows:

- I. Rural areas were outpaced in economic growth by their urban neighbors. Urban SMSA counties demonstrated stronger growth patterns than rural counties on almost all economic variables considered in the study.
 - 3 Population increased an average of 1.4% per year for the states as a whole, but only 1.0% in rural areas.
 - 3 Total income increased an average of 3.8% per year for the states as a whole, but only 3.4% in rural areas.
 - 3 Retail employment increased an average of 3.6% per year for the states as a whole, but only 2.3% in rural areas.

- II. Average rates of change in real earnings in retail trade were stronger in every retail category for urban counties.
 - 3 Real earnings in retail trade grew faster in urban than rural areas. The average annual average rate of change was 1.9% when all counties in the states were considered, as compared with a 0.5% change when only rural counties were considered.
 - 3 Rural areas as a whole experienced declining average annual earnings in retail trade in the sectors of building materials, automotive, and apparel. These declines were not evident when the states, including urban areas, were considered as a whole.

- III. Rural economies in some regions of the country have experienced greater economic hardship than rural economies in other regions of the country.
 - 3 In the Plains states (Nebraska, Kansas, Minnesota, Iowa, and Missouri) and Great Lakes states (Illinois, Indiana, Ohio and Wisconsin), real earnings in retail trade at the state level increased an average of 0.3 and 0.1 percent per year respectively, as compared to 1.9 percent average for all states considered.
 - 3 With the exception of the categories of food and eating/drinking, all categories of retail trade earnings declined in rural areas in the Plains and Great Lakes states over the period of the study.

- IV. Rural counties with Wal-Mart stores have a significantly higher growth rate on all 18 economic indicators in the study than non Wal-Mart rural counties.
 - 3 Average retail trade earnings in building materials, general merchandise, automotive and apparel were declining at a faster rate in non Wal-Mart counties.
 - 3 Although population increased in only 67% of the Wal-Mart rural counties after the opening of a Wal-Mart store, real personal income increased in 84% of the Wal-Mart counties after opening, employment in retail trade increased in 76% of the counties, and non-farm self employment increased in 99% of the Wal-Mart counties.
 - 3 Changes in retail trade earnings in food, automotive, apparel, and miscellaneous retail were significantly related to changes in real personal income and county population, but not the presence or absence of a Wal-Mart store in the county.

- V. The longer a Wal-Mart existed in a county, the more positive the impact on economic indicators. Counties with Wal-Mart stores which have been open for longer periods tend to compare very favorably on growth rates when state and non Wal-Mart rural areas are examined.

INTRODUCTION

Rural areas across America have faced serious economic problems during the last two decades. Small towns and rural communities have been severely hit by declining farm incomes, population shifts and losses in employment opportunity. Many communities have observed a decreasing availability of goods and services in their market area. Some rural citizens have developed a preference for visiting urban areas for at least part of their consumer needs. At the same time, the Wal-Mart corporation has chosen to invest heavily in rural areas, opening large discount department stores in small and sometimes shrinking communities across the nation.

The entry of the large mass merchandiser into rural market areas engenders a variety of reactions in the affected community. Some observers fear that the store's volume of business and discount policies will further injure the local economy, while others hope that the new business will shore up the community's economy. Unfortunately, while many strong beliefs are held about the impact of the large mass retailer on rural economies, little systematic research has been done to ascertain the actual effect of a mass merchandiser such as Wal-Mart stores on rural areas.

This report describes a study which assesses the impact of the opening of a Wal-Mart retail outlet on the economic environment of the associated host county. The study examines all the rural counties in the twenty-six states where Wal-Mart has opened stores, contrasting them with rural counties in the same states which do not host a Wal-Mart retail outlet. The analysis includes a before/after analysis of impact on the host county and also examines both short-term and long-run impacts.

The research study has been designed to answer these specific questions:

Does the introduction of a Wal-Mart store into a rural county have a positive or a negative impact on the county's economy?

How do rural Wal-Mart counties' economies compare with those of rural non Wal-Mart counties, rural counties in general, and the statewide economy?

What is the impact of Wal-Mart on specific sectors of retail trade, such as building materials, and apparel?

RESEARCH DESIGN

The study was designed to discern the short-term and longer-run economic effects associated with the opening of discount, mass volume retail outlets in rural areas. The retailer studied was the Wal-Mart Corporation. The geographic areas included in the analysis were all the non-SMSA counties in the 26 states in which Wal-Mart opened retail operations during the period 1969 to 1987.

The scope of the study was limited to the economic impact on the host county. It excludes, therefore, the effect on other communities in bordering or nearby counties and the effect on individual small towns or communities. Counties were chosen as the unit of analysis because of the unavailability of rural economic data at the community or city level.

The study is divided into three parts. The first examined the annual average rates of change on 18 broad measures of economic activity before and after the Wal-Mart opening. These constituted the simplest level of analysis, in that they did not consider the overall economic climate of the county at the time of opening.

The economic measures included were:

1. Population, as of July 1
2. Real Personal Income
3. Real Per Capita Personal Income
4. Real Wages and Salaries
5. Real Non-farm Proprietors' Income
6. Real Earnings in Retail Trade
7. Real Earnings in SIC 52 - Building Materials
8. Real Earnings in SIC 53 - General Mdse
9. Real Earnings in SIC 54 - Food
10. Real Earnings in SIC 55 - Automotive Dealers
11. Real Earnings in SIC 56 - Apparel Stores
12. Real Earnings in SIC 57 - Furniture Stores
13. Real Earnings in SIC 58 - Eating Places
14. Real Earnings in SIC 59 - Misc Retail Trade
15. Total Employment
16. Total Wage and Salary Employment
17. Non-Farm Self Employment
18. Employment in Retail Trade

The second part of the analysis consisted of the construction of 5 sets of indices for each economic measure. The indices were constructed using 1969 as the base period. The indices were:

1. The aggregate statewide index
2. The aggregate rural areas index
3. The aggregate Wal-Mart counties index
4. The aggregate non Wal-Mart counties index
5. The individual county index

The short-term or marginal impacts were measured by the change in the relative ratios of each index during the three period centered on the opening date of the Wal-Mart store. The measure of the longer-run impacts used the period one year prior to opening to the end of the data base (1987).

The third and final part of the study presents a regression analysis of the individual county growth rates for all 18 measures of activity. The inclusion of a dichotomous qualitative variable indicating the presence of a Wal-Mart retail outlet was utilized to compare counties with a Wal-Mart retail outlet and those without one.

DATA SOURCES

The time span for all data series was the period 1969 to 1987. The first Wal-Mart stores were introduced in 1968. The data for 1988 and 1989 were unavailable at the time of analysis. The raw data were extracted from three sources:

1. Annual estimates of personal income, population and employment were taken from the files compiled by the U.S. Department of the Commerce, Bureau of Economic Analysis (BEA).
2. All income items were deflated to reflect real measures of activity. The deflator utilized for these series was the All Items U.S. Consumer Price Index for Wage and Salary Earners published by the U.S. Department of Labor, Bureau of Labor Statistics (BLS).
3. Data for individual store locations, opening dates and other related data items were provided by the Wal-Mart Corporation.

The initial data extracted from the BEA files consisted of 17 broad measures of income and employment for the 26 states in which the Wal-Mart Corporation had retail activity during the 1969-1987 time period. The data were extracted for each of the 1,885 rural counties in these states, in addition to the statewide aggregates.

The states included in the study were: Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, North Carolina, Nebraska, Nevada, New Mexico, Ohio, Oklahoma, South Carolina, Tennessee, Texas, Virginia and Wisconsin.

The regional classification of the states is as follows:

Great Lakes States: Illinois, Indiana, Ohio, Wisconsin
Plains States: Iowa, Kansas, Minnesota, Missouri, Nebraska
South Atlantic States: Georgia, Florida, South Carolina, North Carolina
East-South Central States: Mississippi, Alabama, Tennessee, Kentucky
West-South Central States: Arkansas, Texas, Oklahoma, Louisiana
Mountain States: Arizona, Wyoming, New Mexico, Colorado

The number of Wal-Mart stores opened by year and by state during the period is presented in Table 1.

The original 17 data items included were:

1. Population
2. Total personal income
3. Wage and salary disbursements (payrolls)
4. Non-farm proprietors' income
5. Earnings in retail trade
6. Earnings in SIC 52 - Building material dealers
7. Earnings in SIC 53 - General merchandise stores
8. Earnings in SIC 54 - Food stores
9. Earnings in SIC 55 - Automotive dealers
10. Earnings in SIC 56 - Apparel stores
11. Earnings in SIC 57 - Furniture stores
12. Earnings in SIC 58 - Eating & drinking places
13. Earnings in SIC 59 - Miscellaneous retail stores
14. Total Employment
15. Total Wage and Salary Employment
16. Non-farm self Employment
17. Employment in retail trade

Two additional variables were added to this file. The first was a dummy variable denoting the presence of a Wal-Mart store in the county (WMCD). The second was the first store opening date for those counties with a Wal-Mart retail outlet.

TABLE 1
WAL-MART STUDY
STORE OPENING YEAR BY STATE

STATE	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	All
Alabama	0	0	0	0	0	0	0	0	0	0	0	2	14	2	0	1	1	0	3	23
Arkansas	1	0	2	5	6	4	0	3	4	3	2	6	2	1	1	0	1	0	1	42
Colorado	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	9
Florida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	2	1	11
Georgia	0	0	0	0	0	0	0	0	0	0	0	0	5	0	3	6	7	5	9	35
Illinois	0	0	0	0	0	0	0	0	5	5	3	2	2	4	2	1	7	3	0	34
Indiana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	2	5	10
Iowa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	7	3	0	15
Kansas	0	0	1	2	1	1	1	0	0	1	0	5	3	1	2	2	3	1	1	25
Kentucky	0	0	0	0	0	1	0	1	0	1	1	3	14	1	3	4	3	2	2	36
Louisiana	0	1	0	0	0	1	1	0	2	0	1	5	4	1	6	0	1	2	4	29
Minnesota	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4
Mississippi	0	0	0	0	0	1	2	3	4	1	6	2	3	2	1	0	5	4	4	38
Missouri	2	3	8	4	3	4	3	3	5	2	2	2	3	0	0	1	6	2	3	56
Nebraska	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	4	2	0	10
New Mexico	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4	0	8
North Carolina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	5	7
Oklahoma	0	1	3	2	2	1	5	5	3	5	0	0	3	3	1	1	0	2	0	37
South Carolina	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	1	2	0	3	15
Tennessee	0	0	0	0	1	3	0	0	2	0	4	0	22	1	1	4	1	0	1	40
Texas	0	0	0	0	0	0	1	4	3	5	9	6	5	11	10	10	8	7	9	88
Virginia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Wisconsin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	2	9
ALL	3	5	14	13	13	16	13	19	28	23	28	33	89	28	35	43	66	53	61	583

IMPACT ANALYSIS - PART I

A. GLOBAL MEASURES OF ECONOMIC ACTIVITY

Although the original data set includes 678 counties of Wal-Mart operation in 26 states, the data for this part of the study covers only 513 counties in 23 states. It is necessary to evaluate a smaller set of data for the before/after analysis in order to have sufficient observations to compute changes in the economic indicators. Thus, while the original dataset included years from 1969-1988, computations for this analysis are valid only for counties with stores opening during the period of 1971 to 1986. For this reason, states and counties without openings during that period are not part of the analysis.

Population

Population growth was strongest in the Mountain and Southern States, where average annual growth rates ranges between 1.0 and 3.7% per year. Rural counties in the Plains states exhibited the smallest average annual rate of change in population, with a 0.2% annual rate of change over the period of the study. Population increased in 451 of the 513 (88%) Wal-Mart counties during the study period.

Real Personal Income and Payrolls

The most commonly used global measure of real economic activity at the substate level is personal income, which is calculated by dividing the annual personal income by the Consumer Price Index (CPI) to allow evaluation across years in constant dollars. In the examination of this dataset, real personal income increased in all 513 Wal-Mart counties (100%) over the study period.

Real per capita personal income showed similar strength in the Wal-Mart counties. Over the period from 1969 to 1987, 511 of the 513 counties (99.6%) showed positive growth in this measure. Total real wage and salary disbursements (real payrolls) exhibited a similar pattern. Real payrolls increased in 468 counties (91%) over the entire study period. In all states the Wal-Mart rural counties fared better than the non Wal-mart counties on income and salary data. The Great Lakes and Plains regions of the country showed the weakest growth on income variables.

Non-Farm Proprietors' Income

Non-farm proprietor's income is a measure of the income of self-employed persons. It is heavily concentrated in the retail trade and service industries and is the best available measure of the economic performance of the non-corporate sector, which includes most small retailers and small businesses. For the study period, real non-farm proprietors' income increased in 428 of the counties (83%), while the 395 counties (77%) showed growth after the entry of Wal-Mart. In addition, the rate of change in real non-farm proprietors' income was higher after the opening of a Wal-Mart store in 320 of the 513 counties, 62% of the total. Wal-Mart counties showed a positive average annual increase in non-farm proprietors' income in all regions of the country, while non Wal-Mart counties showed decreases in the Great Lakes and Plains states.

Total Employment

Total employment increased in 469 of the 513 counties (91%) over the entire study period. Prior to the opening of the Wal-Mart store, employment increased in 462 of the counties. After opening, employment was higher in 379 of the counties (74%). Of the 134 counties with employment declines in the post Wal-Mart period, 58 (43%) occurred in the 4 oil producing states. The rate of growth in total employment was higher in 182 of the counties (35%) after the Wal-Mart opening. Employment variables were weakest in the Plains, Great Lakes, and West-South Central regions of the country, with those weaknesses magnified in the rural areas.

Retail Trade Employment

Total retail trade employment increased in 460 (90%) of the counties over the entire period. Prior to the Wal-Mart opening, employment increased in 449 of the counties (87%). In the post Wal-Mart era, 389 counties had gains in retail trade employment and 124 had losses. Again, the Plains, Great Lakes and West-South Central regions experiences the weakest retail trade employment figures.

Real Earnings in Retail Trade

Real earnings in retail trade increased in 302 of the Wal-Mart counties over the period considered, 59% of the total. Retail trade demonstrated a definite downturn in all rural areas in both the Plains and Great Lakes states during the years of the study. The shrinking rural retail trade was not only reflected in the total earnings for these regions, but also for the specific areas of building materials, general merchandise, automotive, apparel, furniture, and miscellaneous. The loss of retail trade earnings was occurring at a faster rate in the non Wal-Mart counties.

Summary

During the period of the study and most notably in the 1980's, the Great Lakes, Plains, and West-South Central regions of the country experienced economic declines. These were the result of, respectively, the restructuring of the manufacturing sector, the "farm crisis", and the downturn in the oil and gas industry.

The data in Table 2 summarize the performance of the 17 economic indicators before and after Wal-Mart entered the market. Some highlights from that table are presented in the following discussion.

TABLE 2
Percentage of Counties with Increase in
Economic Indicator
After Wal-Mart Entry into Market

Indicator	% Counties with Increase
Population	66.7
Real personal income	84.0
Real Wage and salary disbursements (payrolls)	65.7
Real Non-farm proprietors' income	77.0
Real Earnings in retail trade	48.2
Real Earnings in SIC 52 - Building material dealers	33.5
Real Earnings in SIC 53 - General merchandise stores	70.0
Real Earnings in SIC 54 - Food stores	39.2
Real Earnings in SIC 55 - Automotive dealers	33.1
Real Earnings in SIC 56 - Apparel stores	20.1
Real Earnings in SIC 57 - Furniture stores	45.1
Real Earnings in SIC 58 - Eating & drinking places	71.0
Real Earnings in SIC 59 - Miscellaneous retail stores	57.7
Total Employment	73.9
Total Wage and Salary Employment	66.5
Non-farm self Employment	99.0
Employment in retail trade	75.8

n = 513 (adjusted by BEA in some categories for nondisclosure of proprietary data)

B. COMPARISON OF RURAL WAL-MART COUNTIES TO NON WAL-MART COUNTIES

Table 3 provides a summary of the percent increase over the period of the study of seventeen relevant economic variables for Wal-Mart and Non-Walmart counties. Tables 4-A, 4-B, and 4-C describes the annual average rate of change on the same economic variables. The rates of change have been calculated for the total state (including SMSA areas), for all rural areas, and for rural areas subdivided as Wal-Mart and non Wal-Mart counties. The states of Arizona, Ohio, and West Virginia have been included, although they experienced no Wal-Mart store openings until 1988 or later. Thus, for those states, the Wal-Mart county summary depicts events which happened in those counties prior to the opening of the Wal-Mart store and does not include any effects of the mass merchandiser on the county economy.

The following tables provide a comparison of the state-wide growth rate of real earnings in retail trade with the rural growth rates. The fact that rural areas are experiencing a challenging environment in many retail markets is confirmed by the "All States" summary of average rates of change. Table 4-A summarizes the average annual rates of change for income and employment for the 26 state area. While the cumulative state averages (Table 4-B) demonstrate growth for the total real earnings in retail trade and for every segment except general merchandise, the cumulative rural average for the 26 states shows that rural counties have declining real earnings in the areas of building materials (SIC 52), general

merchandise (SIC 53), automotive (SIC 54), and apparel (SIC 56). From this, it is obvious that the urban SMSA areas are responsible for the increasing growth in the retail trade that contributes to the all states figure's positive growth rates.

The fact that rural counties are losing retail markets is further substantiated by analysis of the non Wal-Mart counties for all states (see Table 4-B). These data show a declining average growth rate in total real earnings in retail trade as well as in the areas of building materials (SIC 52), general merchandise (SIC 53), automotive (SIC 54), and apparel (SIC 56). Rural counties with Wal-Mart stores exhibit some of the same declines in growth rate as the other counties, with the exception that the declines are of a much smaller magnitude by comparison.

TABLE 3
Percent Increase in Economic Indicator
Wal-Mart and Non Wal-Mart Rural Counties
1969 - 1987

INDICATOR	PERCENT INCREASE		
	RURAL WAL- MART	RURAL NON WAL-MART	TOTAL STATE
Population	22.9	12.6	25.2
Real Personal Income	69.2	52.4	68.8
Real Wage & salary disbursements (payrolls)	37.7	35.4	34.8
Real Non-farm proprietors' Income	42.6	30.7	48.6
Real Earnings in retail trade	19.9	-2.4	34.0
Real Earnings Building material dealers	-33.1	-42.2	0.8
Real Earnings General merchandise stores	-14.9	-31.4	-9.3
Real Earnings Food stores	46.2	14.8	41.4
Real Earnings Automotive dealers	-4.7	-17.3	13.9
Real Earnings Apparel stores	4.4	-12.4	17.4
Real Earnings Furniture stores	11.6	0.4	38.7
Real Earnings Eating & drinking places	93.5	43.9	102.7
Real Earnings Miscellaneous retail stores	24.5	2.7	66.4
Total Employment	35.2	24.4	47.8
Total Wage & Salary Employment	34.1	26.3	43.5
Non-farm self Employment	91.1	68.1	123.9
Employment in retail trade	53.0	30.2	65.6

**TABLE 4-A
Population and Income
Average Annual Rates of Change**

	Pop	Population and Real Income				Employment		
		Total Income	Per Capita Income	Total W&S	Nonfarm Income	Total W&S	Nonfarm Self	Retail Trade
All States	1.4	3.8	1.9	2.7	2.1	2.4	6.9	3.6
All Rural	1.0	3.4	2.0	2.1	0.8	1.7	4.4	2.3
Wal-Mart	1.3	3.8	2.1	2.4	1.4	1.9	5.1	2.9
Non Wal-Mart	0.6	2.9	2.0	1.7	0.4	1.4	3.7	1.6

**TABLE 4-B
Real Earnings in Retail Trade
Average Annual Rates of Change**

	Total	Build	Gen-Merch	Food	Auto	Apparel	Furn	Eat	Misc
All States	1.9	0.0	-0.5	2.3	0.8	1.0	2.2	5.6	3.7
All Rural	0.5	-2.1	-1.2	1.7	-0.6	-0.1	0.4	3.8	0.8
Wal-Mart	1.1	-1.8	-0.8	2.6	-0.3	0.2	0.6	5.2	1.4
Non Wal-Mart	-0.2	-2.3	-1.9	0.8	-1.0	-0.7	0.1	2.5	0.1

State by state analysis of the annual average rates (Table 4-C) of change data for the real earnings in retail trade categories shows that almost all declines in retail trade are associated with rural areas.

**TABLE 4-C
Real Earnings in Retail Trade
Number of States Showing Declining
Average Annual Rates of Change
(26 States Considered)**

	Total	Build	Gen-Merch	Food	Auto	Apparel	Furn	Eat	Misc
All States	2	14	13	1	12	9	3	0	1
All Rural	10	20	21	4	19	14	7	1	7
Wal-Mart	8	18	18	2	16	10	10	0	6
Non Wal-Mart	14	22	25	9	22	14	12	4	9

C. STATE BY STATE COMPARISONS OF BEFORE/AFTER WAL-MART

Examination of the eight midwestern farm belt states, Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, and Oklahoma, shows major declines in real earnings in many categories of retail trade (Table 5). In all eight states, the total retail trade earnings for the entire state (including SMSA areas) outperforms the rural areas. This demonstrates again that the urban area's gains in retail trade earnings come at the expense of the rural areas. All eight states show only declines in retail trade categories of building materials (SIC 52) and general merchandise (SIC 53). In building

materials, the declining performance of the rural Wal-Mart counties is very similar to the rural areas in general. In general merchandise, rural Wal-Mart areas appear to be declining, but at a slower rate. A strong pattern of retail trade earnings decline in the rural areas is also found in the sectors of automotive (SIC 55) and apparel (SIC 56) as well as weakness in the furniture (SIC 57) and miscellaneous sector (SIC 59).

The average annual rates of change in economic indicators by region of the country are presented in Table 6-A. The decline of rural areas in the midwest farm belt can be seen by examining the total real earnings in retail trade figures summarized in Table 6-B.

TABLE 6-B
Real Earnings in Retail Trade
Average Annual Rates of Change
By Region of the Country

	All States	Great Lakes	Plains	South Atlantic	East South	West South	Mountain
State-wide	1.9	0.1	0.3	4.3	2.2	2.7	4.5
All Rural	0.5	-0.6	-1.0	2.6	1.2	0.4	2.4
Wal-Mart	1.1	-0.5	-0.4	3.5	1.6	0.8	2.7
Non Wal-Mart	-0.2	-0.7	-1.4	1.8	0.0	-1.0	1.8

While previous studies in Iowa and Missouri have found the entry of a Wal-Mart store in a county to be coincident with declines in automotive, apparel, and furniture retail trade, this data suggests that at least part of the declines experienced in Wal-Mart counties may be a function of the decreasing rural retail market.

Examination of the data for the states of Ohio, Arizona and West Virginia, where Wal-Mart stores had not yet opened during the span of the data collection, shows that rural retail trade in those states was decreasing in several areas prior to the advent of Wal-Mart. Two of the three states showed decreases in growth in general merchandise, automotive and apparel in rural counties.

TABLE 5
Wal-Mart Local Area Impact Study - U.S.
Comparison of Wal-Mart Areas to State Averages and Non Wal-Mart Areas
Annual Average Rates of Change

	POPULATION AND REAL INCOME				EMPLOYMENT			REAL EARNINGS IN RETAIL TRADE									
	POP	TOTAL INCOME	PER CAPITA INCOME	TOTAL W & S	NON FARM INCOME	TOTAL W & S	NON FARM SELF	RETAIL TRADE	TOTAL	SIC 52	SIC 53	SIC 54	SIC 55	SIC 56	SIC 57	SIC 58	SIC 59
ALL AREAS	1.4	3.8	1.9	2.7	2.1	2.4	6.9	3.6	1.9	0.0	-0.5	2.3	0.8	1.0	2.2	5.6	3.7
ALL RURAL	1.0	3.4	2.0	2.1	0.8	1.7	4.4	2.3	0.5	-2.1	-1.2	1.7	-0.6	-0.1	0.4	3.8	0.8
WAL-MART	1.3	3.8	2.1	2.4	1.4	1.9	5.1	2.9	1.1	-1.8	-0.8	2.6	-0.3	0.2	0.6	5.2	1.4
NON WAL-MART	0.6	2.9	2.0	1.7	0.4	1.4	3.7	1.6	-0.2	-2.3	-1.9	0.8	-1.0	-0.7	0.1	2.5	0.1
ALABAMA	1.0	3.9	2.4	2.8	2.1	1.9	5.6	3.6	2.2	0.1	0.1	1.8	1.0	1.5	1.1	8.2	4.0
ALL RURAL	0.6	3.8	2.8	2.8	0.8	1.4	3.7	2.6	1.4	-2.1	-1.9	1.3	-0.1	1.2	0.3	8.9	2.4
WAL-MART	0.9	4.0	2.6	2.9	1.1	1.7	4.3	3.0	1.8	-2.3	-1.6	1.6	0.1	0.8	0.5	9.5	2.9
NON WAL-MART	-0.0	3.2	3.2	2.5	0.0	0.8	2.3	1.6	0.4	-1.3	-2.7	0.5	-0.8	3.7	-0.3	7.1	1.2
ARIZONA	5.3	9.2	2.0	8.1	4.4	7.8	15.3	8.7	6.3	4.8	2.7	9.8	3.7	4.2	6.6	9.5	8.5
ALL RURAL	4.5	6.4	1.1	4.1	2.5	4.5	12.4	6.1	3.2	3.2	2.9	9.7	1.1	0.4	5.9	4.9	3.3
WAL-MART	4.0	6.3	1.3	4.1	2.5	4.6	12.1	5.6	3.0	3.8	3.4	11.2	0.5	-0.1	5.3	4.5	3.9
NON WAL-MART	5.6	6.6	0.5	4.2	2.5	4.5	13.0	7.4	3.7	2.3	1.7	7.1	2.7	3.3	7.4	5.9	2.1
ARKANSAS	1.4	4.5	2.5	3.4	2.3	2.3	6.2	3.4	1.9	-1.2	4.3	2.4	0.2	1.0	1.4	6.0	1.4
ALL RURAL	1.2	4.4	2.6	2.8	1.7	1.9	5.5	2.8	1.3	-2.8	-2.1	1.0	-0.2	0.1	1.0	5.0	0.9
WAL-MART	1.3	4.5	2.6	3.0	1.8	2.2	5.8	3.2	1.6	-3.0	-2.0	1.2	-0.1	0.2	0.9	5.5	1.0
NON WAL-MART	0.4	3.2	2.6	1.2	0.6	0.1	3.5	-0.5	-1.4	-1.1	-3.5	-0.1	-1.4	-0.3	3.0	-0.4	0.3
COLORADO	2.9	6.2	2.2	5.4	4.6	4.6	13.9	5.4	3.6	0.7	0.2	6.5	1.5	2.1	5.1	7.2	4.7
ALL RURAL	2.2	5.6	2.4	4.6	2.3	4.2	9.8	4.6	2.4	-0.3	0.1	6.6	-0.6	6.1	3.1	6.1	2.4
WAL-MART	2.8	6.4	2.4	5.8	3.5	5.3	12.2	6.3	3.9	1.5	3.3	8.8	-0.1	4.0	3.7	8.9	3.6
NON WAL-MART	1.7	5.0	2.5	3.6	1.5	3.4	8.2	3.3	1.2	-1.5	-2.4	4.6	-1.2	8.8	2.4	4.1	1.5
FLORIDA	4.5	8.7	2.3	6.8	4.2	6.3	13.2	7.9	5.9	3.8	2.8	6.4	4.4	4.1	6.8	9.9	7.5
ALL RURAL	5.2	10.1	2.5	6.0	2.5	5.4	12.3	8.5	5.9	3.4	5.6	8.4	3.8	5.5	8.9	10.4	3.1
WAL-MART	6.7	12.1	2.5	7.5	2.9	6.8	13.7	10.2	7.0	3.4	9.7	10.3	4.5	7.8	11.6	12.5	3.3
NON WAL-MART	2.7	6.2	2.4	3.7	1.8	3.1	9.6	5.4	3.5	3.3	-0.3	4.9	2.0	1.8	2.8	7.4	2.8
GEORGIA	2.0	5.8	2.7	4.8	3.5	3.5	8.0	5.6	4.0	4.0	0.4	4.3	2.4	2.3	4.4	11.5	5.6
ALL RURAL	1.3	4.9	2.9	3.9	1.9	2.8	4.4	3.9	2.1	-0.6	0.1	3.5	0.4	1.5	1.2	8.8	1.9
WAL-MART	1.5	4.9	2.7	3.6	2.2	2.9	4.9	4.7	2.7	-0.3	0.4	3.8	0.9	1.2	1.2	9.4	2.8
NON WAL-MART	1.1	4.8	3.0	4.6	1.2	2.7	3.7	2.3	1.0	-1.1	-1.7	2.8	-0.6	4.1	1.2	7.2	0.5

TABLE 5 (continued)
 Wal-Mart Local Area Impact Study - U.S.
 Comparison of Wal-Mart Areas to State Averages and Non Wal-Mart Areas
 Annual Average Rates of Change

	POPULATION AND REAL INCOME				EMPLOYMENT			REAL EARNINGS IN RETAIL TRADE									
	POP	TOTAL INCOME	PER CAPITA INCOME	TOTAL W & S	NON FARM INCOME	TOTAL W & S	NON FARM SELF	RETAIL TRADE	TOTAL	SIC 52	SIC 53	SIC 54	SIC 55	SIC 56	SIC 57	SIC 58	SIC 59
ILLINOIS	0.3	1.7	1.3	0.8	1.4	0.8	4.7	1.5	0.1	-1.1	-2.3	-0.0	-0.4	-0.6	0.5	2.3	3.3
ALL RURAL	0.1	1.6	1.4	0.5	-0.2	0.6	3.1	0.6	-1.0	-2.9	-2.1	-0.3	-1.6	-1.7	-0.5	0.6	-0.9
WAL-MART	0.2	1.8	1.5	0.7	-0.0	0.8	3.5	1.0	-0.9	-3.1	-1.6	0.0	-1.5	-1.9	-0.6	0.9	-0.5
NON WAL-MART	-0.1	1.1	1.3	0.2	-0.5	0.3	2.5	0.0	-1.3	-2.6	-2.8	-0.8	-1.6	-1.3	-0.3	0.2	-1.4
INDIANA	0.4	1.9	1.3	0.8	0.8	1.1	5.3	2.3	0.3	-1.2	-2.0	0.3	-0.4	-0.4	0.8	2.9	3.1
ALL RURAL	0.4	1.8	1.2	0.8	0.2	1.0	3.8	1.5	-0.3	-2.5	-2.2	0.8	-0.8	-1.9	0.1	1.3	1.0
WAL-MART	0.5	1.9	1.3	1.1	0.5	1.1	4.1	1.8	-0.2	-2.8	-2.1	0.6	-0.6	-2.0	-0.2	1.9	1.0
NON WAL-MART	0.4	1.7	1.2	0.6	0.1	0.9	3.6	1.2	-0.4	-2.4	-2.3	0.8	-1.0	-1.8	0.3	0.9	1.0
IOWA	0.1	1.7	1.7	1.0	0.2	1.2	3.8	1.1	-0.7	-3.1	-1.1	0.4	-1.1	-1.5	-1.1	1.5	-0.7
ALL RURAL	-0.2	1.4	1.6	0.6	-0.4	0.8	2.7	0.2	-1.6	-3.7	-2.4	-0.7	-1.8	-1.9	-1.8	0.3	-1.9
WAL-MART	0.1	1.6	1.5	0.8	-0.1	1.0	3.8	1.3	-0.9	-3.1	-1.6	-0.5	-1.3	-1.4	-1.7	1.4	-1.3
NON WAL-MART	-0.3	1.2	1.7	0.4	-0.5	0.6	2.2	-0.4	-2.0	-3.9	-3.0	-0.8	-2.0	-2.2	-1.8	-0.4	-2.2
KANSAS	0.6	3.1	2.3	2.6	0.8	2.1	5.1	1.8	0.4	-1.6	-0.1	0.9	-0.8	-0.7	1.0	4.7	0.4
ALL RURAL	0.2	2.5	2.3	1.4	0.1	1.3	3.2	0.4	-1.1	-2.7	-1.5	6.9	-1.6	-1.6	-0.8	8.7	-1.8
WAL-MART	0.4	2.6	2.0	1.5	0.7	1.4	4.3	1.1	-0.5	-2.4	-1.2	21.1	-1.3	-1.5	-0.5	16.0	-1.2
NON WAL-MART	-0.2	2.3	2.7	1.1	-0.5	1.0	2.0	-0.8	-2.1	-3.1	-2.8	-0.7	-2.0	-1.8	-1.6	1.2	-2.7
KENTUCKY	0.9	3.2	1.9	2.2	1.7	1.9	4.6	3.2	1.3	-0.8	-0.5	1.7	-0.1	1.2	1.3	5.7	1.7
ALL RURAL	1.2	3.7	2.1	2.6	1.5	2.0	3.6	3.0	1.1	-1.8	-0.3	1.7	-0.4	1.6	1.4	5.7	1.5
WAL-MART	1.3	3.9	2.0	2.5	1.7	1.9	4.1	3.6	1.6	-1.4	0.3	2.0	-0.3	1.3	1.4	6.3	2.1
NON WAL-MART	0.9	3.4	2.1	3.1	1.1	2.3	2.7	1.4	-0.0	-2.4	-1.4	1.0	-0.9	3.3	1.2	3.5	0.3
LOUISIANA	1.3	3.4	1.7	1.9	2.4	1.5	6.2	3.0	1.2	-1.0	-0.0	1.8	-0.1	0.1	0.8	5.1	2.3
ALL RURAL	0.8	2.9	1.8	1.2	1.0	0.5	3.9	1.3	-0.2	-2.6	-1.7	2.3	-1.6	-0.1	-0.7	2.2	0.2
WAL-MART	0.9	2.9	1.7	1.0	1.1	0.4	4.0	1.3	-0.2	-2.6	-1.6	2.6	-1.6	0.2	-0.8	2.2	0.3
NON WAL-MART	0.6	3.2	2.4	2.5	0.4	1.1	3.2	1.0	-0.4	-2.6	-2.9	0.8	-1.4	-2.3	0.8	1.9	-0.9
MINNESOTA	0.7	3.2	2.2	2.6	1.2	2.6	6.8	3.4	1.0	-1.6	-0.2	1.0	-0.2	0.7	2.4	3.9	3.9
ALL RURAL	0.3	2.7	2.3	1.7	0.4	2.0	4.5	2.5	-0.3	-3.6	-2.9	-1.1	-1.0	-0.3	0.2	2.3	0.3
WAL-MART	-0.1	2.1	2.3	1.3	0.4	1.5	3.4	1.7	-0.6	-3.5	-5.3	-4.9	-0.4	-0.6	-0.0	1.0	0.5
NON WAL-MART	0.3	2.8	2.4	1.8	0.4	2.1	4.6	2.6	-0.3	-3.6	-2.6	-0.6	-1.0	-0.2	0.3	2.4	0.3

TABLE 5 (continued)
 Wal-Mart Local Area Impact Study - U.S.
 Comparison of Wal-Mart Areas to State Averages and Non Wal-Mart Areas
 Annual Average Rates of Change

	POPULATION AND REAL INCOME				EMPLOYMENT			REAL EARNINGS IN RETAIL TRADE									
	POP	TOTAL INCOME	PER CAPITA INCOME	TOTAL W & S	NON FARM INCOME	TOTAL W & S	NON FARM SELF	RETAIL TRADE	TOTAL	SIC 52	SIC 53	SIC 54	SIC 55	SIC 56	SIC 57	SIC 58	SIC 59
MISSISSIPPI	1.0	3.8	2.4	2.3	2.2	1.5	5.2	3.2	1.7	-0.9	0.8	2.5	0.1	0.7	0.8	7.4	3.3
ALL RURAL	0.6	3.4	2.6	1.9	1.6	1.0	4.2	2.4	1.0	-2.0	-0.4	1.8	-0.5	0.7	0.2	6.9	2.9
WAL-MART	0.7	3.5	2.4	2.0	1.9	1.2	4.7	2.8	1.4	-1.5	-0.0	2.2	-0.3	0.6	0.4	7.1	3.3
NON WAL-MART	0.1	3.1	3.0	1.6	0.9	0.3	2.7	0.7	-0.4	-3.3	-2.7	0.7	-1.3	1.4	-0.8	6.0	1.5
MISSOURI	0.6	2.8	2.0	1.5	1.9	1.5	6.1	2.3	0.5	-0.3	-1.1	0.4	-0.2	-0.3	0.5	3.9	1.1
ALL RURAL	0.8	3.3	2.2	1.8	1.1	1.7	5.1	1.8	-0.1	-3.0	-1.8	1.2	-0.8	-1.3	0.2	3.5	-0.6
WAL-MART	0.9	3.5	2.2	1.9	1.4	1.8	5.7	2.3	0.3	-3.0	-1.3	1.8	-0.7	-1.5	0.4	4.2	-0.1
NON WAL-MART	0.3	2.8	2.3	1.2	0.1	1.2	3.6	0.0	-1.6	-3.0	-4.0	-0.7	-1.1	0.7	-1.0	0.2	-2.0
NEBRASKA	0.5	2.4	1.8	1.8	0.3	1.9	3.8	1.3	-0.4	-2.4	-1.2	0.2	-1.0	-1.0	0.4	1.6	0.0
ALL RURAL	0.0	2.1	2.0	1.2	-0.2	1.3	2.3	0.2	-1.5	-3.4	-2.3	-0.0	-1.7	-0.8	-1.6	-0.4	-1.5
WAL-MART	0.5	2.1	1.4	1.4	0.3	1.6	3.6	1.2	-0.9	-3.1	-1.8	1.6	-1.4	0.5	-1.5	0.6	-1.3
NON WAL-MART	-0.2	2.1	2.3	1.1	-0.5	1.0	1.8	-0.4	-1.9	-3.5	-3.1	-1.0	-1.9	-2.0	-1.6	-1.1	-1.7
NEW MEXICO	2.7	5.6	1.9	4.0	2.6	4.0	8.8	5.2	3.2	2.1	0.6	5.8	1.1	3.2	3.1	7.3	2.9
ALL RURAL	2.1	4.3	1.6	2.0	1.8	2.1	6.2	3.4	1.6	0.3	-0.6	5.4	-0.1	0.7	1.6	3.3	1.3
WAL-MART	1.9	3.6	1.2	1.8	1.6	2.0	6.4	3.6	1.7	0.2	-0.3	5.2	0.4	0.5	1.7	3.2	1.7
NON WAL-MART	2.5	6.0	2.4	2.4	2.1	2.5	5.9	3.0	1.4	0.7	-1.5	5.9	-1.1	1.6	0.9	3.3	0.5
NORTH CAROLINA	1.5	4.7	2.5	3.7	3.4	2.7	6.6	5.4	3.5	3.7	0.1	2.8	1.8	1.9	4.5	9.6	6.6
ALL RURAL	1.3	4.5	2.6	3.2	2.9	2.2	5.3	4.7	3.0	1.7	-0.4	2.3	1.3	1.6	2.4	11.2	5.1
WAL-MART	1.4	4.5	2.5	3.0	3.2	2.1	5.3	4.6	2.8	1.8	-0.3	2.3	1.2	1.5	2.2	10.6	5.3
NON WAL-MART	1.2	4.5	2.7	3.5	2.6	2.3	5.2	4.7	3.2	1.7	-0.5	2.2	1.5	1.7	2.7	11.8	5.0
OHIO	0.1	1.4	1.3	0.5	-0.2	0.8	4.1	1.9	-0.0	-0.9	-1.8	-0.0	-1.0	-1.0	-0.7	2.0	3.0
ALL RURAL	0.5	1.9	1.2	0.7	-0.6	0.9	3.2	1.4	-0.5	-1.8	-0.9	-0.4	-1.4	-2.2	-1.3	1.0	0.3
WAL-MART	0.9	2.0	1.0	1.5	-0.7	1.4	2.4	1.3	-0.6	-2.6	-2.3	0.4	-1.6	3.7	-2.2	0.9	-0.8
NON WAL-MART	0.5	1.9	1.2	0.7	-0.6	0.8	3.3	1.4	-0.5	-1.8	-0.8	-0.4	-1.3	-2.6	-1.2	1.0	0.4
OKLAHOMA	1.6	3.8	1.7	2.6	2.1	2.1	7.3	2.9	1.5	0.3	-0.5	2.6	-0.0	1.1	1.3	5.5	2.1
ALL RURAL	1.1	3.4	2.0	1.9	1.2	1.4	4.5	1.4	0.3	-2.0	-1.3	2.1	-1.2	-0.2	-0.0	4.1	-0.2
WAL-MART	1.2	3.6	1.9	2.1	1.4	1.6	5.1	1.8	0.6	-1.8	-1.0	2.4	-1.1	-0.2	0.1	5.0	0.1
NON WAL-MART	0.3	2.6	2.2	0.8	-0.0	0.2	2.2	-0.8	-1.5	-2.7	-4.4	0.3	-2.2	-0.3	-1.3	-0.9	-1.6

TABLE 5 (continued)
 Wal-Mart Local Area Impact Study - U.S.
 Comparison of Wal-Mart Areas to State Averages and Non Wal-Mart Areas
 Annual Average Rates of Change

	POPULATION AND REAL INCOME				EMPLOYMENT			REAL EARNINGS IN RETAIL TRADE									
	POP	TOTAL INCOME	PER CAPITA INCOME	TOTAL W & S	NON FARM INCOME	TOTAL W & S	NON FARM SELF	RETAIL TRADE	TOTAL	SIC 52	SIC 53	SIC 54	SIC 55	SIC 56	SIC 57	SIC 58	SIC 59
SOUTH CAROLINA	1.8	5.0	2.3	3.6	2.8	2.7	7.5	7.1	3.9	2.7	0.1	3.3	2.2	3.8	3.7	13.5	5.1
ALL RURAL	1.4	4.5	2.5	2.9	2.1	1.7	5.7	6.5	3.4	1.0	1.1	2.3	0.9	4.8	2.6	15.6	4.1
WAL-MART	1.6	4.8	2.5	3.1	2.4	2.1	6.7	7.9	4.3	1.9	1.6	3.2	1.5	5.6	3.5	16.7	5.0
NON WAL-MART	0.6	3.2	2.3	1.9	0.8	0.5	2.8	2.0	-0.0	-2.2	-1.6	-0.3	-1.2	1.2	-0.8	8.1	0.9
TENNESSEE	1.4	4.4	2.4	3.2	3.1	2.4	6.2	4.7	3.3	1.7	0.1	3.2	2.3	2.9	2.9	9.2	5.3
ALL RURAL	1.3	4.4	2.5	2.7	2.0	1.8	4.3	3.2	1.6	-1.1	-0.7	1.7	0.5	0.8	1.2	5.5	2.4
WAL-MART	1.4	4.4	2.4	2.9	2.1	2.0	4.3	3.6	1.9	-1.1	-0.3	2.1	0.8	0.6	1.0	5.5	2.6
NON WAL-MART	1.2	4.6	2.8	1.8	1.6	1.2	4.3	1.4	0.3	-0.7	-3.0	0.4	-0.8	3.5	2.6	5.2	1.4
TEXAS	2.9	5.9	2.0	4.8	3.5	3.7	8.6	4.6	3.5	0.8	0.3	5.2	1.8	3.0	3.4	8.7	4.8
ALL RURAL	1.6	4.6	2.3	3.0	1.0	2.0	4.2	1.6	0.3	-2.9	-2.8	2.2	-1.0	0.5	0.0	3.3	0.3
WAL-MART	1.9	5.2	2.4	3.1	1.3	2.2	4.9	2.1	0.8	-2.9	-2.8	2.9	-0.7	0.8	-0.2	4.1	0.9
NON WAL-MART	0.9	3.4	2.1	2.7	0.2	1.5	2.9	0.2	-0.9	-2.9	-2.6	0.4	-1.7	-0.9	1.0	1.2	-0.9
VIRGINIA	1.6	5.4	3.0	4.3	3.6	3.3	8.9	5.1	3.7	2.1	0.7	3.7	2.5	2.0	4.4	9.1	5.4
ALL RURAL	1.2	4.9	3.1	2.6	1.9	2.0	5.3	3.3	1.8	-0.5	-1.5	2.9	0.5	-0.1	2.1	6.9	3.0
WAL-MART	0.7	4.4	3.3	3.2	4.5	1.7	5.2	2.7	2.5	0.9	0.6	4.3	1.1	0.2	-0.9	10.5	3.7
NON WAL-MART	1.2	4.9	3.1	2.5	1.7	2.0	5.3	3.4	1.8	-0.6	-1.6	2.9	0.4	-0.1	2.2	6.8	3.0
WEST VIRGINIA	0.5	2.3	1.7	0.6	0.8	0.5	4.3	2.4	0.6	-0.5	-0.7	1.5	-0.4	-1.0	-0.2	4.1	2.0
ALL RURAL	0.8	3.0	2.0	1.2	1.0	0.9	4.6	2.6	0.9	0.1	-0.6	1.7	-0.5	-0.5	0.4	4.6	1.9
WAL-MART	1.0	3.9	2.4	3.0	1.4	2.1	5.3	3.9	2.5	0.9	1.8	2.2	1.6	-1.4	0.9	9.4	5.0
NON WAL-MART	0.7	2.9	1.9	1.1	0.9	0.8	4.5	2.5	0.7	-0.0	-0.9	1.7	-0.7	-0.4	0.4	4.3	1.7
WISCONSIN	0.5	2.5	1.8	1.6	0.7	1.9	5.0	2.2	0.1	-1.6	-1.6	-0.4	-0.4	-0.9	0.6	2.1	2.3
ALL RURAL	0.8	3.1	2.0	2.2	0.5	2.2	4.0	2.0	-0.3	-2.9	-2.0	1.3	-1.2	-1.2	-0.3	1.6	-0.1
WAL-MART	0.8	3.0	1.9	2.5	0.3	2.4	4.0	2.7	0.3	-2.9	-1.6	0.3	-0.6	-0.9	-0.4	1.6	0.5
NON WAL-MART	0.9	3.2	2.0	2.0	0.6	2.1	4.0	1.7	-0.6	-2.9	-2.2	1.8	-1.4	-1.3	-0.2	1.6	-0.4

TABLE 6-A
 Wal-Mart Local Area Impact Study - U.S.
 Comparison of Wal-Mart Areas to Division Averages and Non Wal-Mart Areas
 Annual Average Rates of Change

	POPULATION AND REAL INCOME				EMPLOYMENT			REAL EARNINGS IN RETAIL TRADE									
	POP	TOTAL INCOME	PER CAPITA INCOME	TOTAL W & S	NON FARM INCOME	TOTAL W & S	NON FARM SELF	RETAIL TRADE	TOTAL	SIC 52	SIC 53	SIC 54	SIC 55	SIC 56	SIC 57	SIC 58	SIC 59
ALL STATES	1.4	3.8	1.9	2.7	2.1	2.4	6.9	3.6	1.9	0.0	-0.5	2.3	0.8	1.0	2.2	5.6	3.7
ALL RURAL	1.0	3.4	2.1	2.1	0.9	1.7	4.4	2.3	0.5	-2.1	-1.2	1.7	-0.6	-0.1	0.4	3.9	0.8
WAL-MART	1.3	3.8	2.1	2.4	1.4	1.9	5.1	2.9	1.1	-1.8	-0.8	2.6	-0.3	0.2	0.6	5.2	1.4
NON WAL-MART	0.6	2.9	2.0	1.7	0.4	1.4	3.7	1.6	-0.2	-2.3	-1.9	0.8	-1.0	-0.7	0.1	2.5	0.1
GREAT LAKES	0.3	1.7	1.4	0.8	0.7	1.0	4.6	1.9	0.1	-1.1	-2.0	-0.0	-0.6	-0.7	0.1	2.3	3.0
ALL RURAL	0.5	2.0	1.4	0.9	-0.1	1.1	3.5	1.3	-0.6	-2.6	-1.8	0.2	-1.3	-1.8	-0.6	1.1	-0.1
WAL-MART	0.5	2.1	1.5	1.2	0.1	1.2	3.6	1.6	-0.5	-2.9	-1.8	0.3	-1.1	-1.6	-0.6	1.3	0.0
NON WAL-MART	0.5	1.9	1.4	0.8	-0.2	1.0	3.4	1.2	-0.7	-2.4	-1.8	0.2	-1.3	-1.9	-0.6	1.0	-0.1
PLAINS	0.5	2.7	2.0	1.9	1.0	1.9	5.3	2.2	0.3	-1.7	-0.7	0.6	-0.5	-0.4	0.8	3.3	1.1
ALL RURAL	0.2	2.3	2.0	1.3	0.2	1.4	3.6	1.0	-1.0	-3.4	-2.2	0.5	-1.4	-1.3	-0.8	2.1	-1.2
WAL-MART	0.6	2.6	1.9	1.4	0.7	1.5	4.7	1.6	-0.4	-3.0	-1.5	2.4	-1.1	-1.2	-0.6	4.1	-0.8
NON WAL-MART	-0.0	2.1	2.1	1.2	-0.2	1.3	2.9	0.4	-1.4	-3.6	-3.0	-0.8	-1.6	-1.3	-1.1	0.6	-1.5
SOUTH ATLANTIC	2.4	6.1	2.5	4.6	3.5	3.7	9.2	6.1	4.3	3.2	1.0	4.3	2.7	2.7	4.8	9.9	6.2
ALL RURAL	1.5	4.9	2.7	3.1	2.1	2.3	5.7	4.5	2.6	0.7	-0.2	3.0	0.9	1.6	2.3	9.6	3.3
WAL-MART	2.0	5.5	2.6	3.6	2.7	2.7	6.5	5.9	3.5	1.3	0.9	3.9	1.6	2.4	2.8	11.7	4.0
NON WAL-MART	1.1	4.4	2.7	2.7	1.7	1.9	5.0	3.4	1.8	0.1	-1.1	2.4	0.3	0.8	1.7	7.8	2.6
E-SOUTH CENTRAL	1.1	3.9	2.3	2.7	2.3	2.0	5.5	3.8	2.2	0.2	0.1	2.3	1.0	1.8	1.7	7.6	3.6
ALL RURAL	0.9	3.8	2.5	2.5	1.5	1.6	3.9	2.8	1.2	-1.7	-0.7	1.6	-0.2	1.1	0.8	6.4	2.3
WAL-MART	1.1	3.9	2.4	2.5	1.8	1.7	4.3	3.3	1.6	-1.5	-0.3	2.0	0.1	0.8	0.8	6.7	2.7
NON WAL-MART	0.5	3.5	2.7	2.4	0.9	1.2	2.9	1.3	0.0	-2.3	-2.1	0.7	-0.9	3.0	0.6	4.9	1.0
W-SOUTH CENTRAL	2.3	5.1	2.0	3.9	3.0	3.0	7.8	4.0	2.7	0.1	0.4	4.0	1.1	2.2	2.5	7.5	3.7
ALL RURAL	1.3	4.0	2.2	2.4	1.1	1.6	4.5	1.7	0.4	-2.7	-2.2	2.0	-1.0	0.2	0.1	3.6	0.3
WAL-MART	1.4	4.3	2.3	2.4	1.4	1.7	5.0	2.1	0.8	-2.7	-2.1	2.4	-0.8	0.4	0.0	4.2	0.7
NON WAL-MART	0.7	3.2	2.2	2.3	0.2	1.1	2.9	0.1	-1.0	-2.6	-3.1	0.4	-1.7	-1.0	0.7	0.8	-0.9
MOUNTAIN	3.7	7.2	2.1	6.1	4.2	5.6	13.4	6.5	4.5	2.3	1.1	7.6	2.2	3.0	5.3	8.0	5.7
ALL RURAL	2.9	5.4	1.6	3.4	2.2	3.5	9.2	4.6	2.4	0.8	0.8	7.1	0.1	2.2	3.2	4.8	2.3
WAL-MART	2.9	5.2	1.5	3.4	2.5	3.6	10.0	4.9	2.7	1.6	1.7	8.0	0.3	1.1	3.3	5.1	2.9
NON WAL-MART	2.9	5.6	1.8	3.5	1.8	3.5	8.3	4.1	1.8	-0.2	-1.0	5.7	-0.2	5.8	3.2	4.3	1.3

IMPACT ANALYSIS - PART II

The difficulty of assessing whether changes in county economic indicators are associated with changing merchandising patterns, i.e. the addition of a mass merchandiser such as Wal-Mart to the retail mix, or economic changes associated with environmental factors such as droughts, recessions, or changing employment patterns is addressed in the second part of the study. To evaluate the general impact of the economy on the county and rural business patterns, indices were used to control for economic impacts which existed during the period from 1969 to 1987.

Five sets of indices were constructed for each economic measure, using 1969 as the base period. The indices constructed for each state were:

1. The aggregate statewide index
2. The aggregate rural areas index
3. The aggregate Wal-Mart counties index
4. The aggregate non Wal-Mart counties index
5. The individual county index

The raw indices themselves (which are generated by dividing each data item by its 1969 value) represent only an alternate formulation of the original data. Tables 7-10 present a summary of the aggregate indices for relevant economic variables for all 26 states included in the study. Table 7 provides the indices for the aggregate rural areas in all states. Table 8 and 9 provides indices for aggregate rural Wal-Mart counties and Non Wal-Mart counties respectively. Table 10 is the aggregate for all 26 states, including both rural and urban areas.

Each index can be interpreted in term of percent gain or loss over the base year. For example, an index of 127.2 on an economic variable indicates that there has been a 27.2% increase on that variable since the base year. Likewise, an index of 88% shows a 12% decrease from the base year. Thus the trends occurring over the period of the study can be examined by plotting the indices, and a summary of the total change over the period is found in examining the indices for the last year, 1987. The statewide indices for all 26 states are available in a separate appendix.

The computation and use of indices is illustrated via the computation of Alabama indices, found in Table 11. For each economic indicator a state, state rural, state-rural Wal-Mart, and state-rural non Wal-Mart index is created for each year. County area indices are created showing the county activity on the given economic variable relative the 1969 base year. Then, for each county a set of relative ratios can be constructed by dividing the county area index by the relevant state indexes. These ratios describe how well the county is performing in comparison to the reference group.

TABLE 7
Wal-Mart Study - U.S.
Indices for all Rural Areas - All States
Real Income and Employment

YEAR	POPULATION	REAL PERSONAL INCOME	REAL PER CAPITA INCOME	REAL WAGES & SALARIES	REAL NONFARM PROPRIETORS' INCOME	REAL EARNINGS RETAIL TRADE	TOTAL EMPLOYMENT	WAGE & SALARY EMPLOYMENT	NONFARM SELF EMPLOYMENT	RETAIL TRADE EMPLOYMENT
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1970	100.4	102.3	101.9	101.1	96.7	100.3	100.3	100.5	100.6	101.3
1971	102.2	106.8	104.5	104.4	101.8	104.8	101.6	101.7	104.5	104.6
1972	103.8	115.2	111.0	111.1	110.8	109.7	104.7	104.8	112.4	106.7
1973	105.0	127.9	121.8	117.4	113.4	117.0	108.5	109.7	114.2	111.2
1974	106.0	124.9	117.8	116.9	110.4	114.4	110.3	111.9	115.3	113.3
1975	107.7	125.4	116.4	114.0	109.2	107.5	108.7	110.1	115.3	109.2
1976	109.0	131.1	120.3	122.7	118.1	115.1	112.8	115.0	120.1	114.8
1977	110.4	137.3	124.4	128.4	124.0	117.7	116.1	118.8	125.1	119.2
1978	111.5	144.5	129.6	134.7	127.2	121.2	120.0	123.4	130.3	124.1
1979	112.7	146.0	129.5	135.3	120.4	118.8	122.6	126.0	133.7	126.8
1980	114.0	139.4	122.3	128.7	106.3	106.6	121.7	124.9	136.4	126.1
1981	114.9	142.0	123.6	127.9	92.9	101.7	121.9	124.6	140.0	127.0
1982	115.7	139.8	120.8	124.5	84.5	98.3	120.3	121.8	147.0	127.4
1983	116.5	141.5	121.5	125.1	94.7	103.6	121.3	121.5	152.8	128.5
1984	117.0	150.3	128.5	131.0	102.7	105.1	125.1	125.9	160.2	133.1
1985	117.3	152.3	129.9	132.1	103.8	105.5	126.2	126.9	165.2	136.3
1986	117.4	157.2	133.8	134.4	112.2	107.3	127.0	127.5	171.8	138.3
1987	117.7	160.7	136.5	137.0	115.2	109.0	130.0	130.4	179.5	141.9

TABLE 7 (continued)
 Wal-Mart Study - U.S.
 Indices for all Rural Areas - All States
 Real Earnings in Retail Trade

YEAR	BUILDING MATERIAL DEALERS	GENERAL MDSE STORES	FOOD STORES	AUTOMOTIVE DEALERS	APPARE STORES	FURNITURE STORES	EATING PLACES	MISC
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1970	96.6	102.1	102.3	99.9	98.9	97.2	102.3	100.3
1971	102.3	105.5	107.0	105.1	105.6	102.7	106.3	103.3
1972	108.8	113.5	111.7	111.5	113.9	109.9	109.1	103.2
1973	117.9	118.1	117.3	120.2	120.4	121.4	121.8	105.7
1974	118.1	122.0	119.6	114.9	109.6	108.8	115.5	104.5
1975	82.5	87.3	127.3	107.0	120.0	111.7	122.6	104.7
1976	85.8	89.3	136.3	113.6	121.2	129.4	134.3	114.1
1977	92.2	88.6	137.4	115.4	134.6	126.7	143.1	113.2
1978	94.3	90.1	146.1	116.4	140.8	128.6	150.3	114.2
1979	92.9	91.7	140.9	116.1	125.3	113.8	148.6	114.8
1980	80.7	85.5	135.2	95.7	110.8	100.8	140.1	101.7
1981	74.4	84.1	132.4	85.3	103.9	92.2	134.8	103.2
1982	67.4	75.0	132.4	81.2	100.8	92.9	136.8	93.6
1983	61.2	74.2	133.5	86.0	116.7	113.3	146.7	104.3
1984	70.2	75.7	136.3	88.7	117.5	96.9	144.6	105.5
1985	68.5	77.2	130.5	92.5	108.6	101.2	156.1	98.8
1986	63.8	80.1	130.4	88.3	97.1	105.9	161.7	112.1
1987	62.3	78.1	130.4	89.2	97.6	106.7	167.7	113.6

TABLE 8
Wal-Mart Study - U.S.
Index for Wal-Mart Areas - All States
Real Income and Employment

YEAR	POPULATION	REAL PERSONAL INCOME	REAL PER CAPITA INCOME	REAL WAGES & SALARIES	REAL NONFARM PROPRIETORS' INCOME	REAL EARNINGS RETAIL TRADE	TOTAL EMPLOYMENT	WAGE & SALARY EMPLOYMENT	NONFARM SELF EMPLOYMENT	RETAIL TRADE EMPLOYMENT
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1970	100.6	102.8	102.1	101.3	96.9	100.5	100.4	100.5	101.2	101.5
1971	102.7	107.6	104.8	104.5	103.6	105.7	101.9	101.7	106.5	105.3
1972	104.5	116.1	111.1	111.6	113.6	111.6	105.2	105.0	114.9	108.0
1973	105.9	127.3	120.3	117.9	116.5	119.1	109.2	109.8	117.0	112.8
1974	107.2	126.2	117.7	117.8	114.1	117.3	111.2	112.1	118.3	115.6
1975	109.0	127.1	116.6	114.8	113.2	111.6	109.5	110.1	118.5	112.4
1976	110.5	134.2	121.4	123.4	123.4	120.3	113.8	115.0	124.0	118.6
1977	112.2	140.6	125.4	129.6	130.7	123.6	117.7	119.3	130.1	123.5
1978	113.6	148.4	130.6	136.5	135.3	128.3	122.3	124.3	136.4	129.4
1979	115.1	150.3	130.6	137.4	128.7	126.1	125.1	127.1	140.0	132.4
1980	116.7	145.1	124.4	131.9	113.6	114.0	124.7	126.7	142.7	132.2
1981	118.0	148.8	126.1	132.6	99.9	109.9	125.7	127.3	146.8	134.1
1982	119.4	147.7	123.7	129.9	91.1	107.1	124.6	124.9	154.9	135.1
1983	120.6	150.3	124.6	131.1	102.4	113.6	125.7	124.8	161.9	136.9
1984	121.4	158.6	130.6	137.0	110.9	115.6	130.0	129.5	169.8	142.7
1985	122.0	161.1	132.0	138.2	112.7	116.6	131.3	130.7	175.9	146.8
1986	122.5	165.7	135.3	140.0	121.9	118.2	132.1	131.1	182.9	149.0
1987	122.9	169.2	137.7	142.6	125.0	119.9	135.2	134.1	191.1	153.0

TABLE 8 (continued)
 Wal-Mart Study - U.S.
 Index for Wal-Mart Areas - All States
 Real Earnings in Retail Trade

YEAR	BUILDING MATERIAL DEALERS	GENERAL MDSE STORES	FOOD STORES	AUTOMOTIVE DEALERS	APPARE STORES	FURNITURE STORES	EATING PLACES	MISC
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1970	96.8	102.1	102.2	100.1	99.7	96.9	103.3	100.4
1971	102.8	106.0	107.6	105.9	107.5	103.1	108.5	104.1
1972	109.6	114.8	113.1	113.8	115.4	110.6	111.6	105.1
1973	117.9	119.2	119.3	122.9	121.9	122.0	124.9	107.4
1974	118.5	123.8	123.5	117.7	111.4	109.8	120.4	106.8
1975	84.1	88.6	131.5	109.9	123.7	112.9	129.2	113.0
1976	88.7	91.3	141.2	117.5	125.1	131.5	143.5	123.5
1977	96.7	89.5	143.0	119.8	140.1	129.4	154.5	123.2
1978	100.4	91.5	153.6	122.0	147.8	132.2	163.2	125.5
1979	99.7	93.4	149.0	121.9	131.1	116.4	162.8	125.8
1980	87.2	88.7	143.4	101.4	116.9	103.4	155.6	111.8
1981	81.7	88.9	141.5	91.4	110.5	95.3	151.4	113.8
1982	74.1	79.2	142.4	87.5	108.8	96.6	156.4	104.2
1983	68.6	79.6	144.6	92.7	124.4	118.9	168.5	115.5
1984	78.2	83.0	150.6	95.8	126.0	103.4	168.4	117.3
1985	76.8	84.7	145.9	99.8	116.2	107.9	182.1	110.7
1986	70.9	88.0	146.2	94.7	104.4	111.6	186.8	124.0
1987	66.9	85.1	146.2	95.3	104.4	111.6	193.5	124.5

TABLE 9
Wal-Mart Study - U.S.
Index for Non Wal-Mart Areas --- All States
Real Income and Employment

YEAR	POPULATION	REAL PERSONAL INCOME	REAL PER CAPITA INCOME	REAL WAGES & SALARIES	REAL NONFARM PROPRIETORS' INCOME	REAL EARNINGS RETAIL TRADE	TOTAL EMPLOYMENT	WAGE & SALARY EMPLOYMENT	NONFARM SELF EMPLOYMENT	RETAIL TRADE EMPLOYMENT
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1970	100.3	101.9	101.6	101.0	96.5	100.0	100.2	100.5	100.1	101.1
1971	101.7	106.0	104.3	104.3	100.0	103.8	101.3	101.8	102.5	103.8
1972	103.1	114.3	110.9	110.5	108.0	107.6	104.1	104.7	109.9	105.3
1973	104.1	128.4	123.3	116.8	110.3	114.9	107.8	109.5	111.4	109.6
1974	104.8	123.5	117.9	116.0	106.8	111.5	109.3	111.6	112.4	110.9
1975	106.3	123.7	116.3	113.2	105.3	103.2	107.8	110.0	112.2	105.9
1976	107.4	128.2	119.3	121.9	112.9	109.6	111.6	114.9	116.3	110.7
1977	108.6	134.1	123.4	127.0	117.5	111.4	114.3	118.3	120.2	114.6
1978	109.5	140.7	128.6	132.8	119.2	113.6	117.5	122.4	124.3	118.4
1979	110.4	141.9	128.5	132.9	112.3	111.1	120.0	124.7	127.5	120.9
1980	111.2	133.9	120.4	125.2	99.0	98.7	118.5	123.0	130.3	119.8
1981	111.7	135.4	121.2	122.5	86.0	93.0	117.7	121.5	133.4	119.5
1982	112.0	132.1	118.0	118.3	77.9	89.0	115.7	118.1	139.2	119.4
1983	112.2	133.0	118.5	118.5	87.1	93.1	116.6	117.7	143.9	119.7
1984	112.5	142.2	126.4	124.3	94.5	94.0	119.9	121.7	150.8	123.0
1985	112.5	143.8	127.8	125.2	95.0	93.9	120.8	122.6	154.8	125.1
1986	112.4	148.9	132.5	128.0	102.5	95.9	121.6	123.4	160.9	127.1
1987	112.6	152.4	135.4	130.7	105.5	97.6	124.4	126.3	168.1	130.2

TABLE 9 (continued)
Wal-Mart Study - U.S.
Index for Non Wal-Mart Areas --- All States
Real Earnings in Retail Trade

YEAR	BUILDING MATERIAL DEALERS	GENERAL MDSE STORES	FOOD STORES	AUTOMOTIVE DEALERS	APPARE STORES	FURNITURE STORES	EATING PLACES	MISC
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1970	96.5	102.2	102.3	99.7	97.9	97.6	101.3	100.2
1971	101.8	104.9	106.5	104.2	102.7	102.2	104.3	102.5
1972	108.1	111.8	110.3	109.0	111.8	109.0	106.7	101.3
1973	117.9	116.6	115.4	117.3	118.4	120.6	119.0	104.0
1974	117.6	119.5	115.8	112.0	106.9	107.4	110.9	102.1
1975	81.0	85.6	123.1	103.9	114.4	110.1	116.6	96.4
1976	83.0	86.6	131.4	109.4	115.6	126.7	125.7	104.7
1977	87.9	87.5	131.9	110.5	126.6	123.2	132.6	103.2
1978	88.4	88.1	138.6	110.4	130.6	123.8	138.4	103.0
1979	86.4	89.3	132.9	109.9	116.7	110.5	135.5	103.7
1980	74.3	81.2	127.1	89.6	101.8	97.4	125.7	91.5
1981	67.4	77.7	123.5	78.7	94.3	88.0	119.4	92.4
1982	61.0	69.3	122.5	74.3	89.1	88.1	118.7	83.0
1983	54.1	66.9	122.5	78.8	105.3	106.0	126.5	93.0
1984	62.5	66.1	122.1	81.0	105.2	88.3	122.6	93.6
1985	60.6	67.3	115.3	84.6	97.4	92.4	132.2	86.9
1986	56.9	69.4	114.7	81.4	86.6	98.5	138.5	100.3
1987	57.8	68.6	114.8	82.7	87.6	100.4	143.9	102.7

TABLE 10
Wal-Mart Study - U.S.
Statewide Indices for All States
Real Income and Employment

YEAR	POPULATION	REAL PERSONAL INCOME	REAL PER CAPITA INCOME	REAL WAGES & SALARIES	REAL NONFARM PROPRIETORS' INCOME	REAL EARNINGS RETAIL TRADE	TOTAL EMPLOYMENT	WAGE & SALARY EMPLOYMENT	NONFARM SELF EMPLOYMENT	RETAIL TRADE EMPLOYMENT
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1970	101.2	102.3	101.0	101.1	96.3	101.1	100.5	100.4	102.2	102.1
1971	103.0	106.2	103.1	103.6	102.3	105.3	101.5	101.1	107.4	105.2
1972	104.6	113.8	108.7	110.4	111.2	111.5	105.1	104.5	116.4	108.8
1973	106.2	122.3	115.2	116.7	114.4	118.5	110.3	109.9	121.7	114.7
1974	107.6	121.7	113.1	115.9	111.4	115.9	112.6	112.4	124.3	117.3
1975	108.9	121.6	111.6	112.2	111.6	111.8	111.0	110.5	125.3	115.7
1976	110.2	127.8	115.9	118.3	123.0	119.4	114.7	114.2	130.9	121.6
1977	111.6	133.8	119.8	123.7	131.5	123.5	119.0	118.5	137.7	127.0
1978	113.0	140.7	124.5	130.2	137.1	128.5	124.4	124.1	144.7	133.6
1979	114.6	142.3	124.2	131.2	131.9	126.9	128.3	127.9	150.9	137.4
1980	116.3	139.3	119.8	127.0	116.3	117.2	129.0	128.3	156.0	138.0
1981	117.8	141.9	120.5	127.4	103.2	113.9	130.5	129.4	161.8	140.1
1982	119.3	141.6	118.7	126.0	93.2	112.2	129.8	127.6	172.5	141.3
1983	120.6	145.5	120.7	128.4	105.9	118.8	131.3	128.2	181.3	144.0
1984	121.8	153.8	126.3	135.9	116.5	123.9	137.6	134.4	192.8	151.9
1985	123.0	158.4	128.8	140.3	123.0	127.2	141.4	137.8	205.0	157.6
1986	124.2	164.5	132.5	144.8	133.5	131.4	144.0	140.0	214.1	161.0
1987	125.2	168.8	134.8	148.6	137.8	134.0	147.8	143.5	223.9	165.6

TABLE 10 (continued)
Wal-Mart Study - U.S.
Statewide Indices for All States
Real Earnings in Retail Trade

YEAR	BUILDING MATERIAL DEALERS	GENERAL MDSE STORES	FOOD STORES	AUTOMOTIVE DEALERS	APPARE STORES	FURNITURE STORES	EATING PLACES	MISC
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1970	97.2	102.2	103.6	100.0	99.8	97.8	102.9	101.1
1971	103.6	105.2	107.5	106.0	103.3	102.4	106.0	104.3
1972	112.0	111.6	113.7	114.7	107.6	110.4	109.4	107.7
1973	119.2	116.1	118.4	123.6	111.5	121.0	122.0	110.9
1974	116.7	115.0	122.4	115.5	105.4	112.1	120.1	111.4
1975	92.4	87.5	127.6	108.1	108.7	108.7	126.2	131.0
1976	96.6	90.0	135.1	115.1	112.4	121.6	138.0	142.9
1977	104.6	91.1	137.4	119.3	120.2	123.5	148.0	143.9
1978	109.8	92.9	144.3	122.3	126.8	129.1	158.5	146.4
1979	109.8	90.7	142.9	120.4	118.3	120.3	160.5	147.2
1980	97.2	84.9	139.9	101.7	109.3	110.1	155.0	136.1
1981	91.4	82.9	138.2	93.7	106.3	104.2	152.9	137.8
1982	87.7	80.6	138.6	91.7	104.6	104.0	154.7	131.7
1983	86.4	80.9	140.3	98.9	111.7	121.1	167.4	144.4
1984	99.8	84.2	141.4	107.3	115.8	120.0	171.6	150.5
1985	101.3	86.0	139.7	113.5	115.2	128.5	182.2	148.4
1986	99.2	89.2	142.3	112.5	114.5	134.8	193.2	161.9
1987	100.8	90.7	141.4	113.9	117.4	138.7	200.7	166.4

TABLE 11
Wal-Mart Study - U.S.
Statewide Indices for All Rural Areas by State
Real Earnings in Retail Trade

FIPS STATE CODE=ALABAMA

YEAR	BUILDING MATERIAL DEALERS	GENERAL MDSE STORES	FOOD STORES	AUTOMOTIVE DEALERS	APPARE STORES	FURNITURE STORES	EATING PLACES	MISC
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1970	101.2	103.2	102.3	99.6	99.7	97.3	104.3	103.5
1971	108.6	104.3	110.9	105.6	106.5	106.2	109.3	102.6
1972	116.8	123.5	116.0	118.6	114.8	111.6	115.7	105.1
1973	126.5	125.3	123.5	123.3	140.4	121.8	128.7	108.7
1974	125.2	132.5	125.3	119.7	114.2	107.6	122.5	103.8
1975	92.9	89.8	134.7	112.8	126.5	107.6	127.4	120.8
1976	95.5	92.6	154.0	123.9	131.1	129.8	144.9	135.7
1977	104.1	94.4	155.3	124.9	143.9	124.4	162.1	133.5
1978	108.1	89.9	165.3	128.1	161.2	124.3	175.1	133.7
1979	106.5	93.2	145.6	127.7	147.2	110.4	176.4	131.6
1980	92.2	87.4	134.7	103.5	129.3	97.2	169.8	116.4
1981	83.8	87.6	127.9	88.1	120.2	87.5	165.3	119.0
1982	74.7	84.9	127.4	79.7	109.5	86.6	173.1	112.4
1983	66.5	83.0	127.9	87.4	124.7	104.2	193.3	128.9
1984	71.3	80.2	126.2	90.8	123.7	87.7	199.4	132.2
1985	71.5	74.3	124.6	95.8	118.8	98.4	218.4	123.8
1986	67.9	72.4	122.6	93.1	120.8	103.1	243.1	140.8
1987	62.5	66.6	123.3	98.3	121.3	104.8	260.2	142.5

Comparison of Store Area with Reference Areas

As an example Brent Alabama, the first Wal-Mart county in the dataset, will be considered (see Table 12). Brent has a population area index for 1982 of 108.0. The state index for 1982 is 114.7, showing that the state population, with a 14.7% increase over 1969 population, has grown faster than Brent's county population, which has only increased 8%. The relative state ratio is 0.942, computed by dividing 108 by 114.7. Thus the Brent county population has grown at a slower rate than the state population as a whole. Ratios of 1.0 will show equal growth of the area and reference group, value greater than 1.0 show faster area growth. When Brent's 1982 (the year the Wal-Mart store opened) ratios are examined, the Brent relative to state ratio is 0.942, Brent relative to non Wal-Mart rural is 1.086, and Brent relative to Wal-mart Rural in Alabama is 0.945. This shows that Brent's population growth lags behind all reference groups except non Wal-Mart rural area. When real personal income ratios are examined for 1982, it can be seen that Brent's personal income is growing slightly faster than that of the entire state (ratio = 1.016), faster than that of the non Wal-Mart rural areas (ratio = 1.060), and about the same as the Wal-Mart rural areas (ratio = 0.999). By 1987, five years after the opening of the Wal-Mart store in Brent, real personal income is performing much better than the reference groups of state (ratio = 1.079), non Wal-Mart (ratio = 1.171) and Wal-Mart rural (ratio = 1.066).

Store Impact by Opening Year

The sets of indices can be run in a variety of ways. One of the more useful aggregates all the stores in the 26 states opening during a given year, and creates ratios using the aggregate state and rural indices. Tables of these results for real earnings in retail trade, one for each opening year, are available by special request.

Plots of these results, illustrating the strength of the Wal-Mart counties on select economic variables, vis a vis the other rural and state reference groups are available, one for each opening year, by special request as well. It can be seen that, in general, the Wal-Mart rural areas performed better on almost every economic indicator than the state and other rural reference groups. Selected plots for Brent, Alabama are presented in Table 13.

TABLE 12
 Wal-Mart Study - U.S.
 Relative State, Wal-Mart & Non Wal-Mart Indices - by County
 Real Personal Income
FIPS CODE (STATE-COUNTY)=01007

STORE LOCATION	YEAR	STORE OPEN	AREA INDEX	RELATIVE STATE RATIO	RELATIVE NON WAL-MART AREA RATIO	RELATIVE WAL-MART AREA RATIO	STATE INDEX	NON WAL-MART AREA INDEX	WAL-MART AREA INDEX
BRENT, AL	1969	N	100.0	1.000	1.000	1.000	100.0	100.0	100.0
BRENT, AL	1970	N	102.9	1.003	1.002	1.006	102.5	102.7	102.3
BRENT, AL	1971	N	110.5	1.031	1.033	1.034	107.2	107.0	106.9
BRENT, AL	1972	N	119.8	1.040	1.029	1.045	115.2	116.4	114.7
BRENT, AL	1973	N	129.1	1.050	1.022	1.037	123.0	126.3	124.4
BRENT, AL	1974	N	127.0	1.030	1.030	1.039	123.2	123.2	122.2
BRENT, AL	1975	N	127.7	1.017	1.038	1.010	125.6	123.0	126.5
BRENT, AL	1976	N	139.8	1.042	1.048	1.024	134.2	133.4	136.5
BRENT, AL	1977	N	147.6	1.057	1.079	1.044	139.7	136.9	141.4
BRENT, AL	1978	N	158.2	1.079	1.082	1.054	146.6	146.1	150.0
BRENT, AL	1979	N	160.5	1.091	1.099	1.063	147.2	146.1	151.0
BRENT, AL	1980	N	154.9	1.085	1.114	1.067	142.8	139.1	145.2
BRENT, AL	1981	N	145.9	1.018	1.046	0.998	143.3	139.5	146.1
BRENT, AL	1982	Y	143.9	1.016	1.060	0.999	141.6	135.8	144.1
BRENT, AL	1983	Y	151.4	1.035	1.071	1.014	146.3	141.3	149.4
BRENT, AL	1984	Y	163.2	1.062	1.108	1.031	153.8	147.4	158.3
BRENT, AL	1985	Y	168.1	1.061	1.132	1.042	158.4	148.6	161.4
BRENT, AL	1986	Y	179.8	1.084	1.168	1.066	165.9	154.0	168.7
BRENT, AL	1987	Y	184.2	1.079	1.171	1.066	170.7	157.3	172.7

Marginal and Long-run Impact of Store Opening

The ratios of the indexes also provide a means of quantifying the marginal and longer-run impact of the opening of a Wal-Mart store relative to the prevailing economic situation. The short-term or marginal impacts were measured by the change in the relative ratios of each index during the three periods centered on the opening date of the Wal-Mart store. The measure of the longer-run impact uses the period one year prior to opening to the end of the data base (1987).

The results of the analysis of marginal and long-run impact for the counties with Wal-Mart stores are available by special request. A table which summarizes the impact for stores opening in each year from 1971 to 1985 is available upon request. Other years are excluded, since not enough information exists to assess their long-term impact. The tables in supplementary appendices indicate the number of stores opening that year, as well as the number of stores which are exceeding the state index and the non Wal-Mart index, over the short-term (marginal) and long-run, on each of the economic variables. Also included, are the real earning in total retail trade and on each of the retail trade sectors.

Table 14 summarizes marginal and long-run impact by region. Wal-Mart rural areas are compared to State averages and rural non Wal-Mart averages, respectively.

Analyses of these tables confirms that Wal-Mart counties perform much better with respect to other rural areas, but not as well as state totals which include urban growth. It can be seen that over the long-run, when compared to non Wal-Mart areas, Wal-Mart counties do very well. The percentage of store areas with indices which exceed the non Wal-Mart indices on the economic variables is high. Comparison of the indices for marginal impact and long-run impact shows gains over the long-run in many areas.

TABLE 14
Wal-Mart Local Area Impact Study - U.S.
Marginal & Long-Run Relative Indices
Number and Percent with Higher Values

EAST SOUTH CENTRAL (NUMBER OF STORES = 120)

ECONOMIC INDICATOR	RELATIVE TO STATE INDEX				RELATIVE TO NON WAL-MART AREA INDEX			
	MARGINAL IMPACT		LONG-RUN IMPACT		MARGINAL IMPACT		LONG-RUN IMPACT	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
POPULATION	50	41.7	47	39.2	76	63.3	77	64.2
REAL PERSONAL INCOME	51	42.5	46	38.3	69	57.5	75	62.5
REAL PER CAPITA INCOME	58	48.3	54	45.0	64	53.3	75	62.5
REAL WAGES AND SALARIES	59	49.2	61	50.8	81	67.5	89	74.2
REAL NONFARM PROPRIETORS' INCOME	42	35.0	33	27.5	65	54.2	71	59.2
REAL EARNINGS, TOTAL RETAIL TRADE	67	55.8	45	37.5	90	75.0	103	85.8
REAL EARNINGS, BUILDING MATERIAL DEALERS	58	48.3	30	25.0	68	56.7	60	50.0
REAL EARNINGS, GENERAL MERCHANDISE STORES	81	67.5	59	49.2	84	70.0	69	57.5
REAL EARNINGS, FOOD STORES	52	43.3	38	31.7	78	65.0	81	67.5
REAL EARNINGS, AUTOMOTIVE DEALERS	34	28.3	25	20.8	61	50.8	75	62.5
REAL EARNINGS, APPAREL STORES	43	35.8	25	20.8	62	51.7	48	40.0
REAL EARNINGS, FURNITURE STORES	49	40.8	30	25.0	64	53.3	71	59.2
REAL EARNINGS, EATING/DRINKING ESTAB	51	42.5	61	50.8	71	59.2	76	63.3
REAL EARNINGS, MISC RETAIL TRADE STORES	51	42.5	52	43.3	69	57.5	64	53.3
TOTAL EMPLOYMENT	59	49.2	45	37.5	79	65.8	91	75.8
WAGE & SALARY EMPLOYMENT	64	53.3	56	46.7	78	65.0	90	75.0
NONFARM SELF EMPLOYMENT	41	34.2	35	29.2	69	57.5	73	60.8
RETAIL TRADE EMPLOYMENT	76	63.3	55	45.8	89	74.2	100	83.3

TABLE 14 (continued)
Wal-Mart Local Area Impact Study - U.S.
Marginal & Long-Run Relative Indices
Number and Percent with Higher Values

GREAT LAKES (NUMBER OF STORES = 36)

ECONOMIC INDICATOR	RELATIVE TO STATE INDEX				RELATIVE TO NON WAL-MART AREA INDEX			
	MARGINAL IMPACT		LONG-RUN IMPACT		MARGINAL IMPACT		LONG-RUN IMPACT	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
POPULATION	13	36.1	8	22.2	22	61.1	22	61.1
REAL PERSONAL INCOME	13	36.1	7	19.4	19	52.8	22	61.1
REAL PER CAPITA INCOME	14	38.9	8	22.2	18	50.0	22	61.1
REAL WAGES AND SALARIES	16	44.4	8	22.2	21	58.3	19	52.8
REAL NONFARM PROPRIETORS' INCOME	9	25.0	1	2.8	21	58.3	22	61.1
REAL EARNINGS, TOTAL RETAIL TRADE	15	41.7	6	16.7	23	63.9	17	47.2
REAL EARNINGS, BUILDING MATERIAL DEALERS	9	25.0	3	8.3	9	25.0	8	22.2
REAL EARNINGS, GENERAL MERCHANDISE STORES	24	66.7	15	41.7	21	58.3	18	50.0
REAL EARNINGS, FOOD STORES	20	55.6	10	27.8	23	63.9	19	52.8
REAL EARNINGS, AUTOMOTIVE DEALERS	11	30.6	5	13.9	14	38.9	16	44.4
REAL EARNINGS, APPAREL STORES	12	33.3	2	5.6	13	36.1	6	16.7
REAL EARNINGS, FURNITURE STORES	11	30.6	7	19.4	20	55.6	12	33.3
REAL EARNINGS, EATING/DRINKING ESTAB	12	33.3	10	27.8	17	47.2	17	47.2
REAL EARNINGS, MISC RETAIL TRADE STORES	12	33.3	4	11.1	15	41.7	10	27.8
TOTAL EMPLOYMENT	17	47.2	7	19.4	21	58.3	21	58.3
WAGE & SALARY EMPLOYMENT	15	41.7	8	22.2	21	58.3	21	58.3
NONFARM SELF EMPLOYMENT	14	38.9	7	19.4	23	63.9	20	55.6
RETAIL TRADE EMPLOYMENT	21	58.3	14	38.9	26	72.2	21	58.3

TABLE 14 (continued)
Wal-Mart Local Area Impact Study - U.S.
Marginal & Long-Run Relative Indices
Number and Percent with Higher Values

MOUNTAIN (NUMBER OF STORES = 4)

ECONOMIC INDICATOR	RELATIVE TO STATE INDEX				RELATIVE TO NON WAL-MART AREA INDEX			
	MARGINAL IMPACT		LONG-RUN IMPACT		MARGINAL IMPACT		LONG-RUN IMPACT	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
POPULATION	0	0.0	0	0.0	0	0.0	0	0.0
REAL PERSONAL INCOME	0	0.0	0	0.0	0	0.0	0	0.0
REAL PER CAPITA INCOME	1	25.0	1	25.0	0	0.0	0	0.0
REAL WAGES AND SALARIES	0	0.0	0	0.0	0	0.0	0	0.0
REAL NONFARM PROPRIETORS' INCOME	2	50.0	2	50.0	0	0.0	0	0.0
REAL EARNINGS, TOTAL RETAIL TRADE	1	25.0	0	0.0	0	0.0	0	0.0
REAL EARNINGS, BUILDING MATERIAL DEALERS	1	25.0	1	25.0	1	25.0	1	25.0
REAL EARNINGS, GENERAL MERCHANDISE STORES	2	50.0	1	25.0	4	100.0	3	75.0
REAL EARNINGS, FOOD STORES	2	50.0	0	0.0	1	25.0	0	0.0
REAL EARNINGS, AUTOMOTIVE DEALERS	2	50.0	2	50.0	2	50.0	2	50.0
REAL EARNINGS, APPAREL STORES	2	50.0	1	25.0	2	50.0	2	50.0
REAL EARNINGS, FURNITURE STORES	2	50.0	2	50.0	3	75.0	1	25.0
REAL EARNINGS, EATING/DRINKING ESTAB	0	0.0	0	0.0	1	25.0	0	0.0
REAL EARNINGS, MISC RETAIL TRADE STORES	2	50.0	0	0.0	3	75.0	0	0.0
TOTAL EMPLOYMENT	0	0.0	0	0.0	0	0.0	0	0.0
WAGE & SALARY EMPLOYMENT	0	0.0	0	0.0	0	0.0	0	0.0
NONFARM SELF EMPLOYMENT	0	0.0	0	0.0	1	25.0	0	0.0
RETAIL TRADE EMPLOYMENT	1	25.0	0	0.0	1	25.0	0	0.0

TABLE 14 (continued)
Wal-Mart Local Area Impact Study - U.S.
Marginal & Long-Run Relative Indices
Number and Percent with Higher Values

PLAINS (NUMBER OF STORES = 89)

ECONOMIC INDICATOR	RELATIVE TO STATE INDEX				RELATIVE TO NON WAL-MART AREA INDEX			
	MARGINAL IMPACT		LONG-RUN IMPACT		MARGINAL IMPACT		LONG-RUN IMPACT	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
POPULATION	48	53.9	39	43.8	62	69.7	65	73.0
REAL PERSONAL INCOME	46	51.7	35	39.3	38	42.7	48	53.9
REAL PER CAPITA INCOME	44	49.4	38	42.7	33	37.1	38	42.7
REAL WAGES AND SALARIES	40	44.9	35	39.3	51	57.3	65	73.0
REAL NONFARM PROPRIETORS' INCOME	31	34.8	31	34.8	57	64.0	69	77.5
REAL EARNINGS, TOTAL RETAIL TRADE	39	43.8	23	25.8	69	77.5	73	82.0
REAL EARNINGS, BUILDING MATERIAL DEALERS	30	33.7	16	18.0	42	47.2	33	37.1
REAL EARNINGS, GENERAL MERCHANDISE STORES	50	56.2	36	40.4	51	57.3	45	50.6
REAL EARNINGS, FOOD STORES	25	28.1	28	31.5	36	40.4	39	43.8
REAL EARNINGS, AUTOMOTIVE DEALERS	38	42.7	24	27.0	51	57.3	46	51.7
REAL EARNINGS, APPAREL STORES	37	41.6	14	15.7	38	42.7	35	39.3
REAL EARNINGS, FURNITURE STORES	33	37.1	22	24.7	40	44.9	59	66.3
REAL EARNINGS, EATING/DRINKING ESTAB	36	40.4	37	41.6	49	55.1	53	59.6
REAL EARNINGS, MISC RETAIL TRADE STORES	36	40.4	23	25.8	55	61.8	57	64.0
TOTAL EMPLOYMENT	38	42.7	35	39.3	58	65.2	69	77.5
WAGE & SALARY EMPLOYMENT	46	51.7	40	44.9	55	61.8	69	77.5
NONFARM SELF EMPLOYMENT	40	44.9	31	34.8	60	67.4	67	75.3
RETAIL TRADE EMPLOYMENT	55	61.8	38	42.7	71	79.8	82	92.1

TABLE 14 (continued)
 Wal-Mart Local Area Impact Study - U.S.
 Marginal & Long-Run Relative Indices
 Number and Percent with Higher Values

SOUTH ATLANTIC (NUMBER OF STORES = 43)

ECONOMIC INDICATOR	RELATIVE TO STATE INDEX				RELATIVE TO NON WAL-MART AREA INDEX			
	MARGINAL IMPACT		LONG-RUN IMPACT		MARGINAL IMPACT		LONG-RUN IMPACT	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
POPULATION	15	34.9	15	34.9	29	67.4	29	67.4
REAL PERSONAL INCOME	12	27.9	13	30.2	19	44.2	24	55.8
REAL PER CAPITA INCOME	12	27.9	15	34.9	16	37.2	15	34.9
REAL WAGES AND SALARIES	13	30.2	14	32.6	19	44.2	25	58.1
REAL NONFARM PROPRIETORS' INCOME	12	27.9	11	25.6	17	39.5	19	44.2
REAL EARNINGS, TOTAL RETAIL TRADE	17	39.5	13	30.2	31	72.1	29	67.4
REAL EARNINGS, BUILDING MATERIAL DEALERS	21	48.8	13	30.2	25	58.1	18	41.9
REAL EARNINGS, GENERAL MERCHANDISE STORES	33	76.7	21	48.8	37	86.0	32	74.4
REAL EARNINGS, FOOD STORES	17	39.5	18	41.9	31	72.1	29	67.4
REAL EARNINGS, AUTOMOTIVE DEALERS	14	32.6	13	30.2	25	58.1	27	62.8
REAL EARNINGS, APPAREL STORES	10	23.3	12	27.9	18	41.9	20	46.5
REAL EARNINGS, FURNITURE STORES	10	23.3	12	27.9	21	48.8	25	58.1
REAL EARNINGS, EATING/DRINKING ESTAB	22	51.2	17	39.5	26	60.5	20	46.5
REAL EARNINGS, MISC RETAIL TRADE STORES	17	39.5	10	23.3	19	44.2	12	27.9
TOTAL EMPLOYMENT	11	25.6	10	23.3	28	65.1	28	65.1
WAGE & SALARY EMPLOYMENT	14	32.6	12	27.9	27	62.8	28	65.1
NONFARM SELF EMPLOYMENT	9	20.9	6	14.0	28	65.1	28	65.1
RETAIL TRADE EMPLOYMENT	22	51.2	14	32.6	28	65.1	30	69.8

TABLE 14 (continued)
Wal-Mart Local Area Impact Study - U.S.
Marginal & Long-Run Relative Indices
Number and Percent with Higher Values

WEST SOUTH CENTRAL (NUMBER OF STORES = 168)

ECONOMIC INDICATOR	RELATIVE TO STATE INDEX				RELATIVE TO NON WAL-MART AREA INDEX			
	MARGINAL IMPACT		LONG-RUN IMPACT		MARGINAL IMPACT		LONG-RUN IMPACT	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
POPULATION	63	37.5	54	32.1	108	64.3	110	65.5
REAL PERSONAL INCOME	71	42.3	71	42.3	97	57.7	92	54.8
REAL PER CAPITA INCOME	81	48.2	97	57.7	84	50.0	69	41.1
REAL WAGES AND SALARIES	83	49.4	63	37.5	89	53.0	110	65.5
REAL NONFARM PROPRIETORS' INCOME	66	39.3	41	24.4	108	64.3	112	66.7
REAL EARNINGS, TOTAL RETAIL TRADE	70	41.7	39	23.2	125	74.4	131	78.0
REAL EARNINGS, BUILDING MATERIAL DEALERS	65	38.7	40	23.8	92	54.8	63	37.5
REAL EARNINGS, GENERAL MERCHANDISE STORES	102	60.7	49	29.2	115	68.5	77	45.8
REAL EARNINGS, FOOD STORES	68	40.5	58	34.5	101	60.1	106	63.1
REAL EARNINGS, AUTOMOTIVE DEALERS	57	33.9	43	25.6	83	49.4	104	61.9
REAL EARNINGS, APPAREL STORES	51	30.4	20	11.9	63	37.5	85	50.6
REAL EARNINGS, FURNITURE STORES	59	35.1	38	22.6	73	43.5	56	33.3
REAL EARNINGS, EATING/DRINKING ESTAB	61	36.3	51	30.4	102	60.7	112	66.7
REAL EARNINGS, MISC RETAIL TRADE STORES	67	39.9	56	33.3	96	57.1	92	54.8
TOTAL EMPLOYMENT	66	39.3	56	33.3	117	69.6	119	70.8
WAGE & SALARY EMPLOYMENT	77	45.8	61	36.3	110	65.5	118	70.2
NONFARM SELF EMPLOYMENT	51	30.4	26	15.5	108	64.3	118	70.2
RETAIL TRADE EMPLOYMENT	83	49.4	56	33.3	132	78.6	134	79.8

IMPACT ANALYSIS - PART III

The third part of the study presents a regression analysis of the individual county growth rates for all 18 economic measures. The inclusion of a dichotomous qualitative variable indicating the presence or absence of a Wal-Mart in the county was used to compare counties with and without Wal-Mart.

The data covers all the rural counties in the 26 states in which Wal-Mart had a retail outlet during the period 1969 to 1987. The statistics represent a regression analysis on the average annual rate of change of each of the 18 economic indicators.

The regressor set for the first analysis consisted of only three variables:

1. WMCD - a dummy variable for the presence of a Wal-Mart store (1 if a Wal-Mart present, 0 otherwise)
2. CCRPI - the average annual percent change in real county personal income
3. WM*CCRPI - the interaction term describing any interaction between Wal-Mart presence and county personal income change

The change in county real personal income was included to provide a measure of the economic activity in each county. All of the coefficients had the anticipated sign. The significant relationships, at the 95% confidence level, are presented below.

Change in real personal income is significantly related to

- % change in retail trade earnings
- % change in retail trade earnings in SIC 54 (food)
- % change in retail trade earnings in SIC 55 (automotive)
- % change in retail trade earnings in SIC 56 (apparel)
- % change in retail trade earnings in SIC 57 (furniture)
- % change in retail trade earnings in SIC 59 (misc retail)

The presence of Wal-Mart along with change in retail trade earnings is significantly related to

- % change in retail trade earnings in SIC 52 (building)
- % change in retail trade earnings in SIC 53 (gen merch)
- % change in retail trade earnings in SIC 58 (eat/drink)

None of the other 18 economic variables were significantly related to the three predictor variables.

A second regression analysis was run using the following regressor set of three variables:

1. WMCD - a dummy variable for the presence of a Wal-Mart store (1 if a Wal-Mart present, 0 otherwise)
2. CCPOP - the average annual percent change in county population
3. WM*CCPOP - the interaction term describing any interaction between Wal-Mart presence and county population change

The change in population was included to provide a measure of the growth of each county. All of the coefficients had the anticipated sign. The significant relationships, at the 95% confidence level, are presented below.

Change in county population is significantly related to

- % change in retail trade earnings in SIC 52 (building)
- % change in retail trade earnings in SIC 54 (food)
- % change in retail trade earnings in SIC 55 (automotive)
- % change in retail trade earnings in SIC 56 (apparel)
- % change in retail trade earnings in SIC 59 (misc retail)

The presence of Wal-Mart along with change in county population is significantly related to

- % change in retail trade earnings
- % change in retail trade earnings in SIC 53 (gen merch)
- % change in retail trade earnings in SIC 57 (furniture)
- % change in retail trade earnings in SIC 58 (eat/drink)

None of the other 18 economic variables were significantly related to the three predictor variables.

For the rural counties in the twenty six states examined, the presence of Wal-Mart did not prove to be a statistically significant predictor of change in retail trade earnings in food, automotive, apparel, or miscellaneous retail market segments. Retail earnings in these segments appear strongly related to both changes in real personal income and growth in county population. Changes in retail trade earnings in building materials and furniture retail appears related more strongly to county population growth and personal income than the presence of Wal-Mart.

As expected, the presence of a Wal-mart store in the county impacts greatly on general merchandise retail trade earnings, because of the volume of the Wal-Mart operation. However, real personal income and population change were also explanatory variables. It appears that the eating and drinking retail trade industry was the retail trade group to benefit the most directly in growth by the presence of a Wal-Mart store along with either population growth and growth in personal income.

The regression coefficient can be interpreted as the change in the economic variable growth rate associated with the presence of the predictor variable. The significant coefficients range in size from 0.19 to 2.11, indicating that the presence of a significant predictor variable is coincidental with between a 0.19 to 2.11 percentage point increase in the growth rates of the specific indicator. Table 15 presents a summary of the regression coefficients associated with the significant predictors.

The regression analysis presented above provides a straight forward look at the massive dataset collected for this study. Future analysis can be focused on the development of a causal model which will better explain the complex interrelationships between the model variables.

TABLE 15
%Change Accounted For in Dependent Variable
by Predictor Variable
for All Significant Predictor Variable

Predictor Variable	Dependent Variable	%Change accounted for
%Change in Population	%Change RTE Building	1.55
	%Change RTE General Merchandise	0.73
	%Change RTE Food	1.43
	%Change RTE Automotive	0.71
	%Change RTE Furniture	0.86
	%Change RTE Apparel	0.67
	%Change RTE Eating/Drinking	1.62
	%Change RTE Miscellaneous	1.01
	%Change RTE Total	1.02
%Change in Population in the presence of Wal-Mart	%Change RTE Furniture	0.58
	%Change RTE General Merchandise	0.54
	%Change RTE Total	0.19
Presence of Wal-Mart	%Change RTE Eating/Drinking	1.25
	%Change RTE Total	0.42
%Change in Real Personal Income(RPI)	%Change RTE Building	0.98
	%Change RTE General Merchandise	0.48
	%Change RTE Food	0.95
	%Change RTE Automotive	0.48
	%Change RTE Furniture	0.80
	%Change RTE Apparel	0.64
	%Change RTE Eating/Drinking	1.66
	%Change RTE Miscellaneous	0.75
	%Change RTE Total	0.75
%Change in RPI in the presence of Wal-Mart	%Change RTE Building	0.30
	%Change RTE General Merchandise	0.24
	%Change RTE Eating/Drinking	-0.40
Presence of Wal-Mart	%Change RTE Eating/Drinking	2.11

(note: RTE = Real Retail Trade Earnings)