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**AN ANALYSIS OF NATIONAL AVERAGE CAR RENTAL RATES  
AND ECONOMIC INDICATORS**

by

**AMY S. PETERSON**

A thesis submitted to the faculty of the  
School of Food, Hotel, and Tourism Management  
at Rochester Institute of Technology in partial  
fulfillment of the requirements for the degree  
of  
Master of Science

June 1993

**FORM K**

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Title of Research: An Analysis of National Average Car Rental Rates  
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## Abstract

Travel suppliers have depended largely on business travel as their main source of business and profit because it is less price conscious and finicky compared to the pleasure travel market. The past recession has caused corporations to scale-down by drastically reducing business related travel; therefore, it is understood, as a majority, that the condition of the economy usually dictates future business. Car rental companies are a significant part of the travel supplier industry and it is wondered if the fluctuations in car rental rates are a direct reflection of the rise and fall of the economy also.

The study will use four key economic indicators (housing starts, retail sales, car sales and unemployment) as a direct reflection of the economy. Car rental rates will then be added to notice any correlation between the two.

## ACKNOWLEDGEMENTS

I would like to extend my sincere thanks and appreciation to a number of important people. First, I would like to thank my parents and my husband, Dean, for their support and love though this very difficult year. Without them, I could not have succeeded this far.

I would also like to thank Dr. Marecki for his patience and direction throughout the year especially considering my unusual circumstances. Other special thanks go to Dr. Stockham and Dr. Domoy for their generous help and advice.

## TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF GRAPHS	vi
CHAPTER I. INTRODUCTION AND STATEMENT OF STUDY	1
Introduction	1
Background	2
Problem Statement	6
Pupose of Study and Significance	6
Hypothesis	6
Definition of Terms	7
Scope and Limitations	8
CHAPTER II. REVIEW OF LITERATURE	9
Car Rental Companies	9
The Economy and Economic Indicators	12
Housing Starts	14
Car Sales	17
Retail Sales	19
Unemployment	21
CHAPTER III. METHODOLOGY	24
Data Collection	24
Procedure of Analysis	26
Findings	36
Conclusion	37
CHAPTER IV. SUMMARY AND RECOMMENDATIONS	38
Summary	38
Recommendations	39
REFERENCES AND BIBLIOGRAPHY	40

## LIST OF GRAPHS

<u>Figure</u>	<u>Page</u>
1. Change in Business Travel	5
2. Average National Car Rental Rates	11
3. Annual Housing Starts	16
4. New Car Sales	18
5. Retail Trade Sales	20
6. Unemployment	23
7. Housing Starts/Car Rental Rates	27
8. Car Sales/Car Rental Rates	28
9. Retail Trade Sales/Car Rental Rates	29
10. Unemployment/Car Rental Rates	30
11. Housing Starts/Car Rental Rates-best fit line	32
12. Car Sales/Car Rental Rates-best fit line	33
13. Retail Trade Sales/Car Rental Rates-best fit line	34
14. Unemployment/Car Rental Rates-best fit line	35



# CHAPTER I

## INTRODUCTION AND STATEMENT OF THE STUDY

### Introduction

Has any one ever been to a psychic to find out what the future holds for them? Does any one remember the psychic looking through their crystal ball and conjuring up a vivid image of what the person's life will be like down the road? One wonders if psychics have special powers or do they just use some basic common factors and a little common sense. The people who believe in a psychic's power will usually accept their predictions and fate without question. The psychics must be able to forecast the future and who are we to question such a power?

When Corporate Travel Planners look into their crystal ball, they see complete fog and haziness as they try to predict future car rental rates. Just when they think they know if prices are going to increase or decrease, just the opposite happens. What makes these rates fluctuate from year to year? One would think that due to inflation, the rental rates would steadily increase also.

## Background

Business travel is by far the most important part of the travel industry in terms of dollars spent, especially for the big suppliers-airlines, rental car companies, and lodging (Tschikof, 1988, p. 91). It is best to begin with how the business travel market differs with the pleasure travel market, which in turn will explain why the business market is so imperative to the suppliers' survival.

1. **Timing** - Business trips often come up on short notice and travel peaks by time of day and day of week. Pleasure trips are planned well in advance and is highly peaked by season and weekends.
2. **Sensitivity** - Business travel is most sensitive to timing and convenience, while pleasure travel is more concerned with price and bargains.
3. **Experience** Business travelers are well experienced in traveling; therefore, they are more demanding and have strong opinions as to what services are required. Pleasure travelers tend to be more naive and adapt easier to offered conditions.

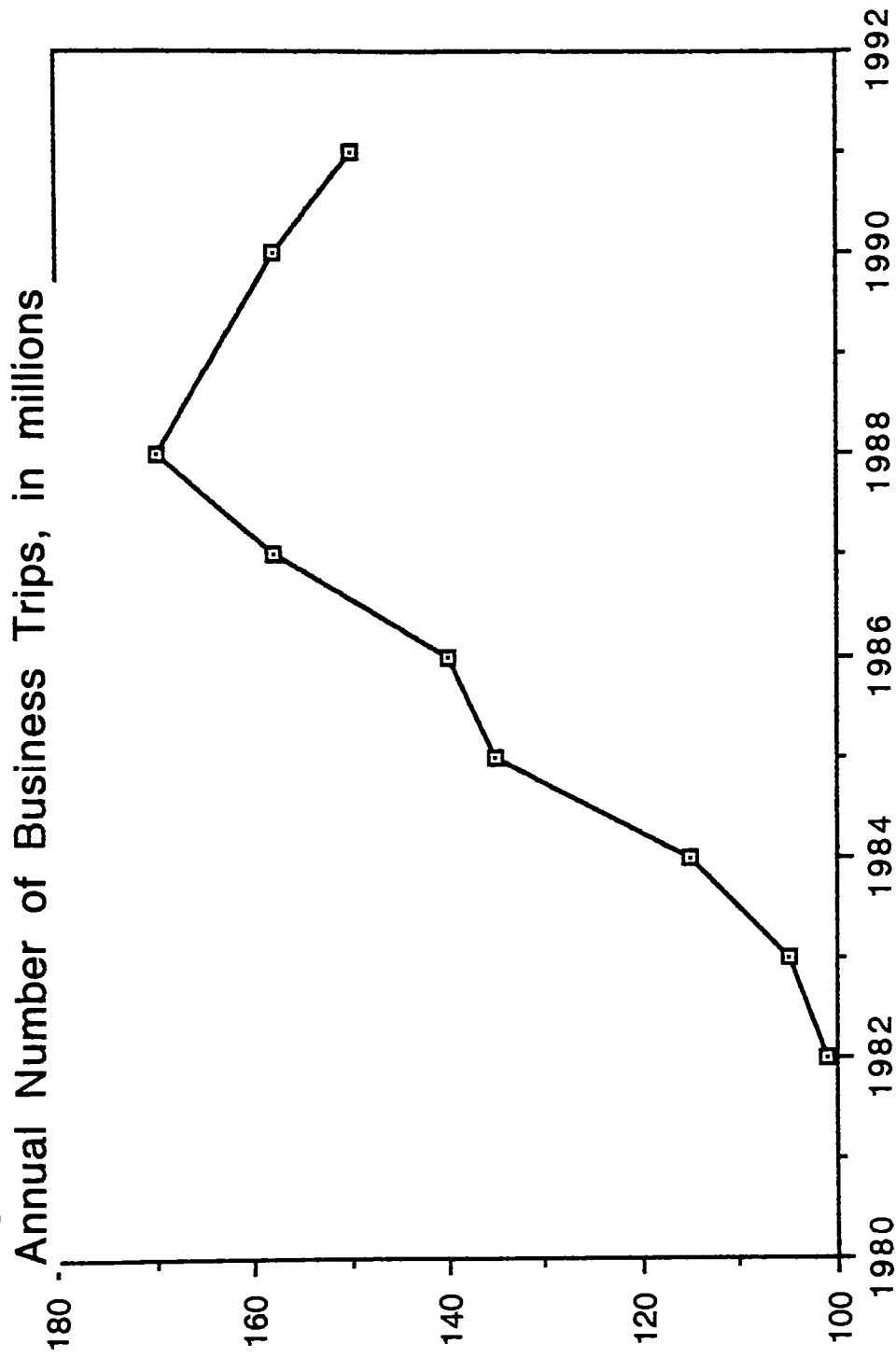
4. **Demographics** - Business travelers tend to be upper-income males (this trend is now changing and women business travelers are on the rise) who usually travel alone. Pleasure travelers are predominantly women, whose income ranges widely and travel is usually within groups.

The past recession has caused corporate travel budgets to be squeezed. Attention to costs has always been on controlling payroll, inventory and maximizing cash flows, but travel and entertainment costs, until recently, were often loosely controlled. Budget-conscious corporations are now taking action to control those costs, by cutting back or cutting out unnecessary travel. Because of this, the travel industry has now become a buyer's market: too much supply and not enough demand. The travel industry is trying to promote service and reliability as their main marketing tools now.(Brandt, 1990, p. 104). Corporations have become increasingly clever because they are aware it is a buyer's market and that the industry is desperate for business. The corporations now have the power to not only get service and reliability for their travelers, but also negotiated pricing.

In 1993, the economy is slowly rejuvenating, but it has put a perverse twist on the tourism industry because the very thing that cures the recession for the nation, may be almost as bad for travel as the recession itself (Hirsch, 1992, p. B1) The massive number of white-collar layoffs, for example, may be helping corporate profits, but it also means fewer people take trips out of town (Figure 1). It was these workers who were the heavy business travelers.

Since the economy is so unpredictable, it is disconcerting for travel suppliers as well as other businesses to predict its (the economy) future trends. One common way is to track key economic indicators. There are a myriad of economic indicators one can follow, but this report concentrates on the following four: housing starts, car sales, retail sales and unemployment. The key is to monitor changes in the indicators over time to follow the fluctuations between expansion and growth, and recession and decline (Franklin, 1990). While the absolute volume or level of economic activity is of some value, movements from one period to the next are more important for tracking the economy. The changes in percentages or index numbers give indications as to what stage (recession or growth) the economy is in.

Figure 1: BUSINESS TRAVEL



Note: One business trip is one person who travels 100 miles.

Source: U.S. Travel Data Center, 1992

## Problem Statement

Car rental rates vary from year to year. What economic indicators effect the auto rental rates for the big four companies (Avis, National, Budget and Hertz) for the past 5 years (1988-1993).

## Purpose of the Study and Significance

The purpose of this study is to examine national car rental rates from 1988 to 1991 and observe any variations in trend or behavior. This study will either prove or disprove if the four economic indicators used in this study (housing starts, car sales, unemployment and retail sales) have a direct effect on the car rental rates.

This study will discuss the business of car rental companies and also explain and describe the purpose of the economic indicators used in this study.

## Hypothesis

This study will examine specific correlations between car rental rates and key economic indicators. Economic indicators are used to measure economic activity in the United States and it is hypothesized that car rental rates are a direct reflection of the economy. This direct relationship between car rental rates

and the economic indicators will give corporate travel planners the power to predict future trends of car rates, by following and analyzing certain economic indicators.

**Definition of Terms:**

1. **Business Cycles** - an economy which continually operates in recurring phases of rising and falling activity (Marriott, 1990).
2. **Economic Indicators** - are used to measure overall economic activity to classify it as rising (expansion) or falling (recession), as well as to determine the cyclical turning points of these expansions and recessions (Marriott, 1990).
3. **Volatile** - describes an economy which is characterized by changes that are numerically large in a relatively short time period (Franklin, 1990).
4. **Intermediate sized car** - a 4 door, automatic transmission car that can hold more than 4 people (Gee, Choy, Makens, 1984).

## Scope and Limitations

This study's limitation will be effected by the selection of car rental companies. The study be analyzing the top four rental companies (Avis, Hertz, National, and Budget), which tend to gravitate towards a higher price scale then of those of smaller companies. This study will also only be looking at the years 1988-1993.

Current, complete data concerning economic indicators, were available for the years from 1988-1991. Therefore, the analysis was limited to only four years. The collection of economic indicator data were retrieved from various sources, and may not be consistent due to used methods of measurement.



## CHAPTER II

### LITERATURE REVIEW

#### Car Rental Companies

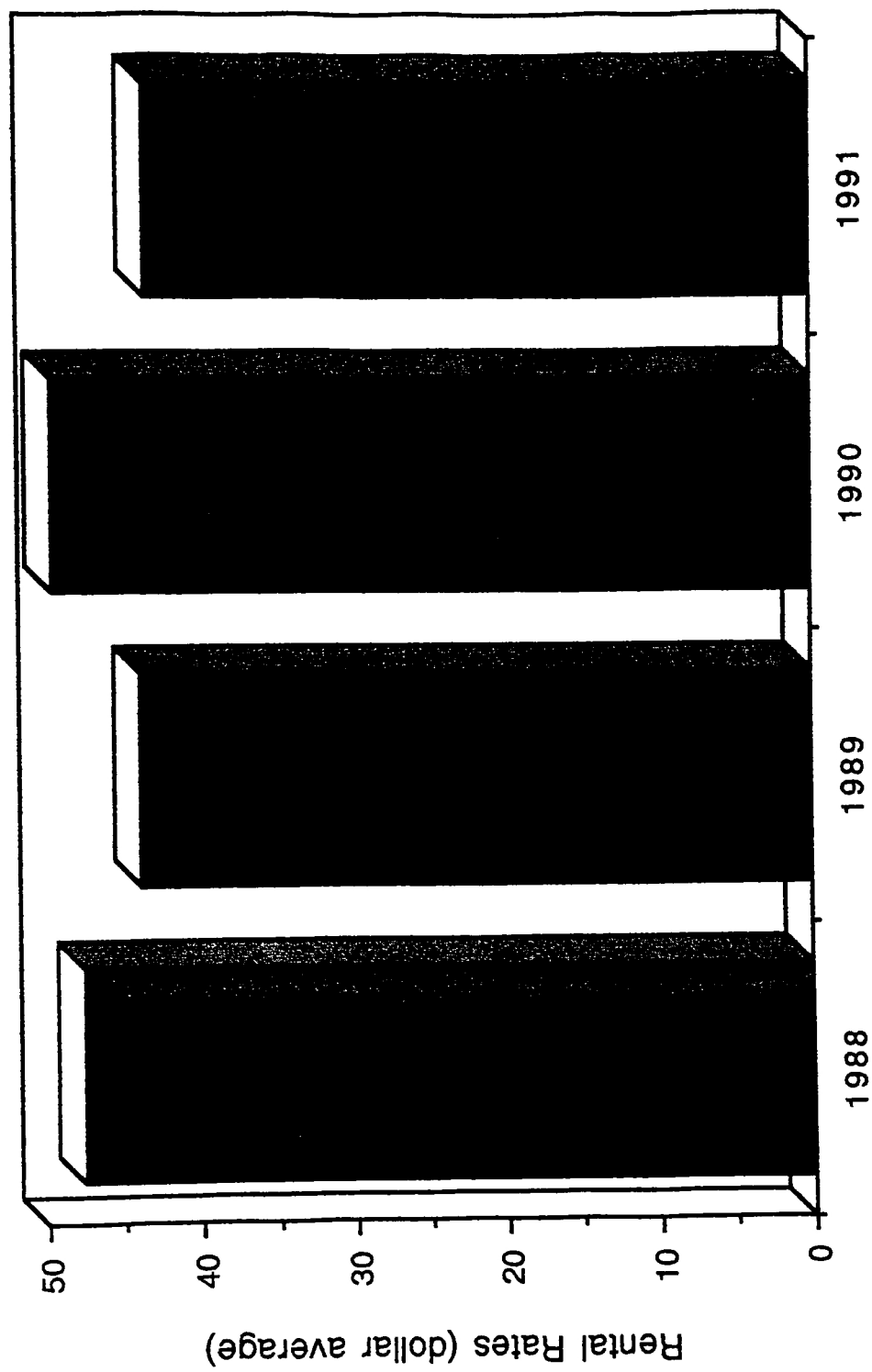
The car rental industry was founded in 1918 when a Chicago car dealer started to rent out secondhand Model T's. In 1924, the company was bought by a gentleman named John D. Hertz, an owner of a local cab company. General Motors, who was impressed by the success of this new idea and company, bought the company in 1925. Hertz's biggest competitor, Avis, was founded in 1946 by Warren E. Avis who was a retired U.S. Air Force officer. At that time, Avis specialized in airport rental locations. It wasn't until 1948 that the company branched out and pioneered into downtown city locations. At about this same time, National Car Rental Company was organized. It wasn't long before car rental companies were found at all major airports throughout the country. Today, Avis, National, and Alamo are partially owned by General Motors; Budget and Hertz are partially owned by Ford Motor Company; and Thrifty, Dollar Rent A Car, and Snappy Rent A Car are fully owned by Chrysler Corp (Teinowitz, 1992).

The success and growth of this industry is closely linked to the increase of people flying by air and the increase in business traveling (van Harssel, 1986). Actually, business travelers make up 85-90% of the car rental business (Gee,

Choy, Makens, 1984). As people started to travel more for business by air, they rented cars wherever they landed. This evolved into the concept known as fly/drive. It encouraged travelers not to use their own or corporate automobiles, but instead benefit from the convenience of flying and renting a car. Of course, this concept became and is still the most popular in high tourism locations such as Florida and California. This, in part, accounted for the car rental industry not to be critically affected during the gas shortage crisis in the late 1970's. The idea of renting an automobile with a full tank of gas became a strong and successful selling point at that time.

Historically, the car rental industry has had a strong and steady price growth through the late 1980's. However, in 1989 car rental prices prices dropped sharply. In 1990, the rates increased again, but took another plunge in 1991-1992. During early 1993, the rates are increasing again (Figure 2). Historically, inflation increases the price of products yearly, so it is quite confusing as to why the rates had suddenly started to fluctuate. There are a host of explanations that might answer this dilemma such as international and domestic threats, altered relationships with car makers, an unfavorable change in law, and/or a direct reflection on the rise and fall of the economy.

Figure 2: NATIONAL CAR RENTAL RATES



Source: Ward's Automotive Yearbook, 1992

## The Economy and Economic Indicators

In order to understand and interpret economic indicators, it is best to understand the U.S. economy first.

Government policy makers believe that the ultimate objectives of high economic growth and stable prices are paramount (Plocek, 1991). This objective was institutionalized over 40 years ago in the *Full Employment Act of 1946*. Federal Reserve and U.S. Treasury operations are aimed at manipulating intermediate targets such as money supply growth and the Federal funds rate (the overnight rate on reserves that commercial banks lend to each other). These are used as "transmission mechanisms" to the three main financial markets (stocks, the dollar, and bonds) which adjust in price.

These markets have feedback effects on particular economic indicators. Bond and mortgage interest rates affect the housing market and are a factor in investment making decisions; the dollar affects the pricing of exports; and the stock market in part determines wealth and thus affects consumption. All these items together determine the *Gross National Product* (GNP), the sum of the goods and services produced by the economy. Broken down, the GNP is the sum of consumption plus investments plus government spending plus net exports (exports minus imports).

Indicators can also help explain the economy. The motor vehicle industry has a significant ripple effect on the economy. First, expenditures on cars are discretionary, so they could be a swing factor in an economic forecast. An estimated one-third of domestic industrial production (in areas such as steel rolling, energy consumption, and glass and plastic production) depend to a great extent on demand from the auto manufacturers. Thus, changes in auto spending patterns could be the first signal that the income and production components of an economic forecast must be altered (Plocek, 1991, pg.116).

The unemployment rate is a confirming indicator of payrolls and a measure of labor market pressures. Payrolls give an overall measure of the health of the economy. A large rise in this number implies a speed up in growth, while a slowing indicates an economy that is not so robust.

Housing starts are widely watched because they are an early sensitive indicator of the consumers' willingness to spend (Grant, 1992). Income and wealth effects, from employment change, the market for homes in the short run, while demographics determines whether there is a market. Therefore, the amount of spending can be broken down into such areas as birth and death rates, immigration, household formations, and the age and health of the population (Plocek, 1991, pg. 216).

Lastly, retail sales show evidence of durable goods being bought and consumed. It shows signs of the consumers' confidence in the economy and the willingness to spend.

## Housing Starts

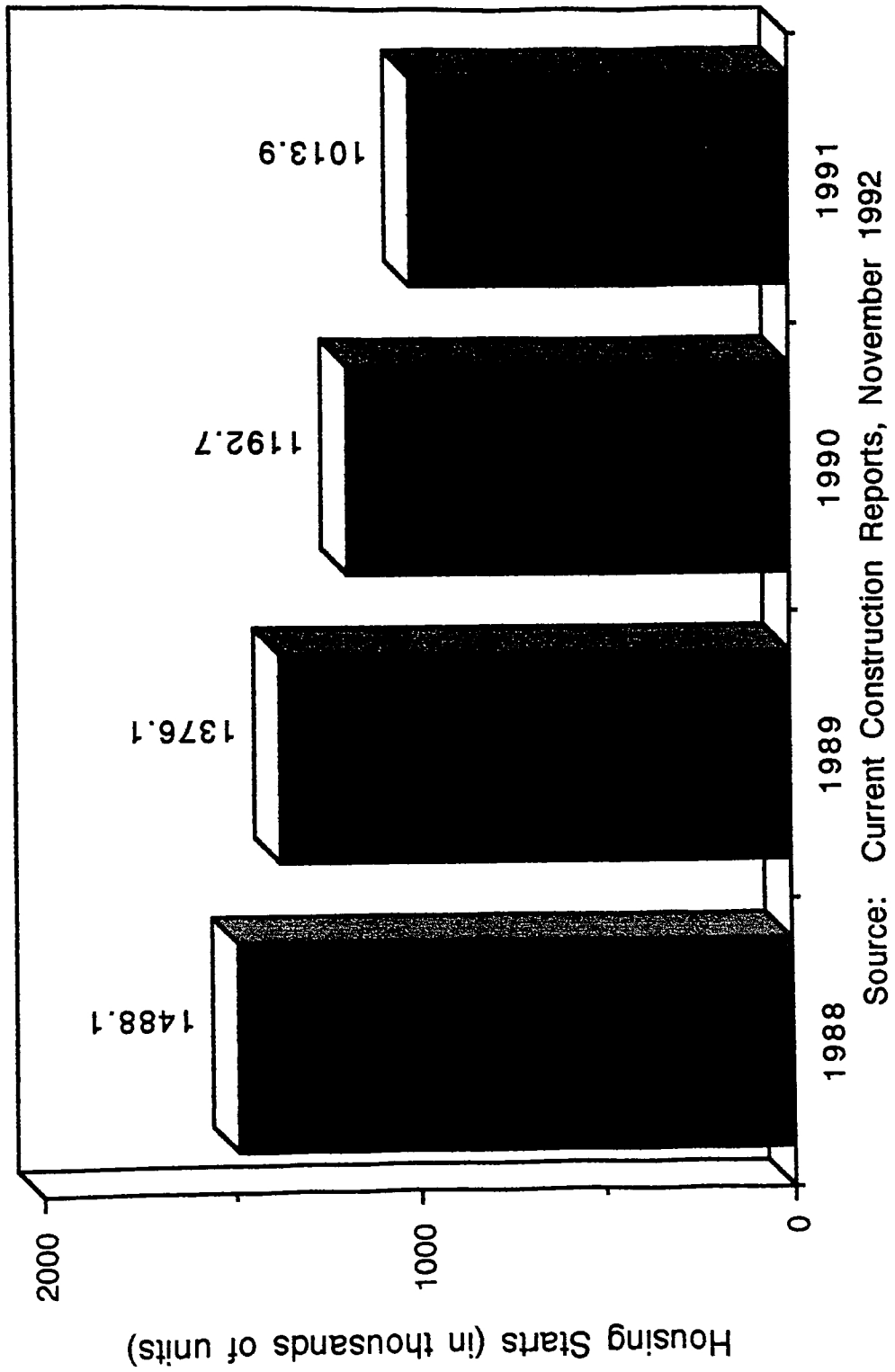
Housing starts are divided into three categories: single units, two to four units, and five units and up. A 'start' is counted in the month that excavation work begins for the foundation. It should be noted that most housing starts are for privately owned housing. Housing starts are very healthy for the economy because construction results in the hiring of workers, the production of construction materials and equipment, and the sale of large household appliances such as ranges and refrigerators. In addition, when owners or tenants occupy the housing, they often buy new furniture, carpeting, and other furnishings (Frumkin, p. 129).

Housing starts data is reported on a monthly basis and it tends to fluctuate widely because of such things as time of year or season. Housing starts are quite volatile and are quite susceptible to weather (Cammarota, May 1988). In addition to increasing costs of materials and equipment, winter weather likely reduces worker productivity; therefore, boosting labor costs. On the demand side, spring marriages, school vacations, and the ease of house hunting in milder weather, all increase housing demand in the spring and summer. It is therefore,

better to look at housing starts on a annual basis to determine its predominant trend.

After five years of falling housing starts (Figure 3), new housing construction is clearly turning around (Johnson, 1992, p. 22). For the first seven month of 1992, housing starts increased 20% over the same period in 1991. However, in the last two recessions, housing starts averaged 50% to 60% during the first year of recovery; therefore, the economy is recovering at a slower rate than in the past.

Figure 3: HOUSING STARTS





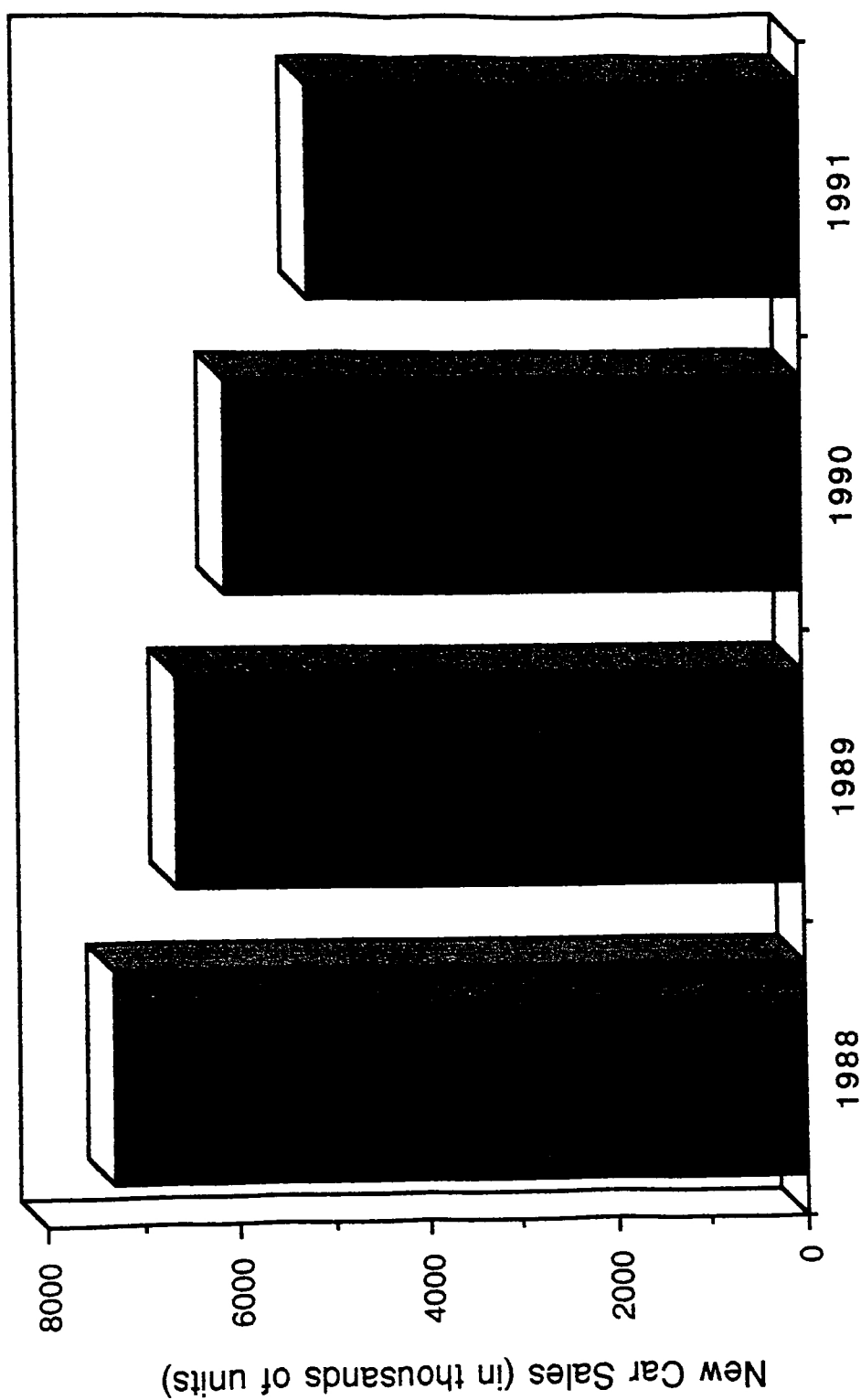
## Car Sales

The definition of car sales is the number of units sold in a given time frame (monthly and annual). Even though new auto sales account for only a small proportion of consumer spending on goods, it is their volatility which makes them important (Grant, p. 149). Automobile demand is driven by the need to replace aging vehicles and by declining interest rates (Spiers, p. 17). They are not only sensitive to interest rates, but incentive programs also and may rise or fall sharply, with a large impact on real GNP growth.

For this study, the concentration is on data from the big three American automobile makers (Ford, GM, and Chrysler), which included their domestic, import and transplant subsidiaries. This is so because the car rental companies being studied are partially owned by any one of the American automobile makers. Since car rental companies mainly rent cars, this study limited its data analysis to only car sales. It did not include trucks or the like.

As it can be seen in Figure 4, car sales have also been on the steady decline. The lack of consumer confidence in the recovery of the recession, may be a viable explanation. Other reasons could include increases in interest rates and the start of quality improvement programs, which helps cars last longer.

Figure 4: NEW CAR SALES



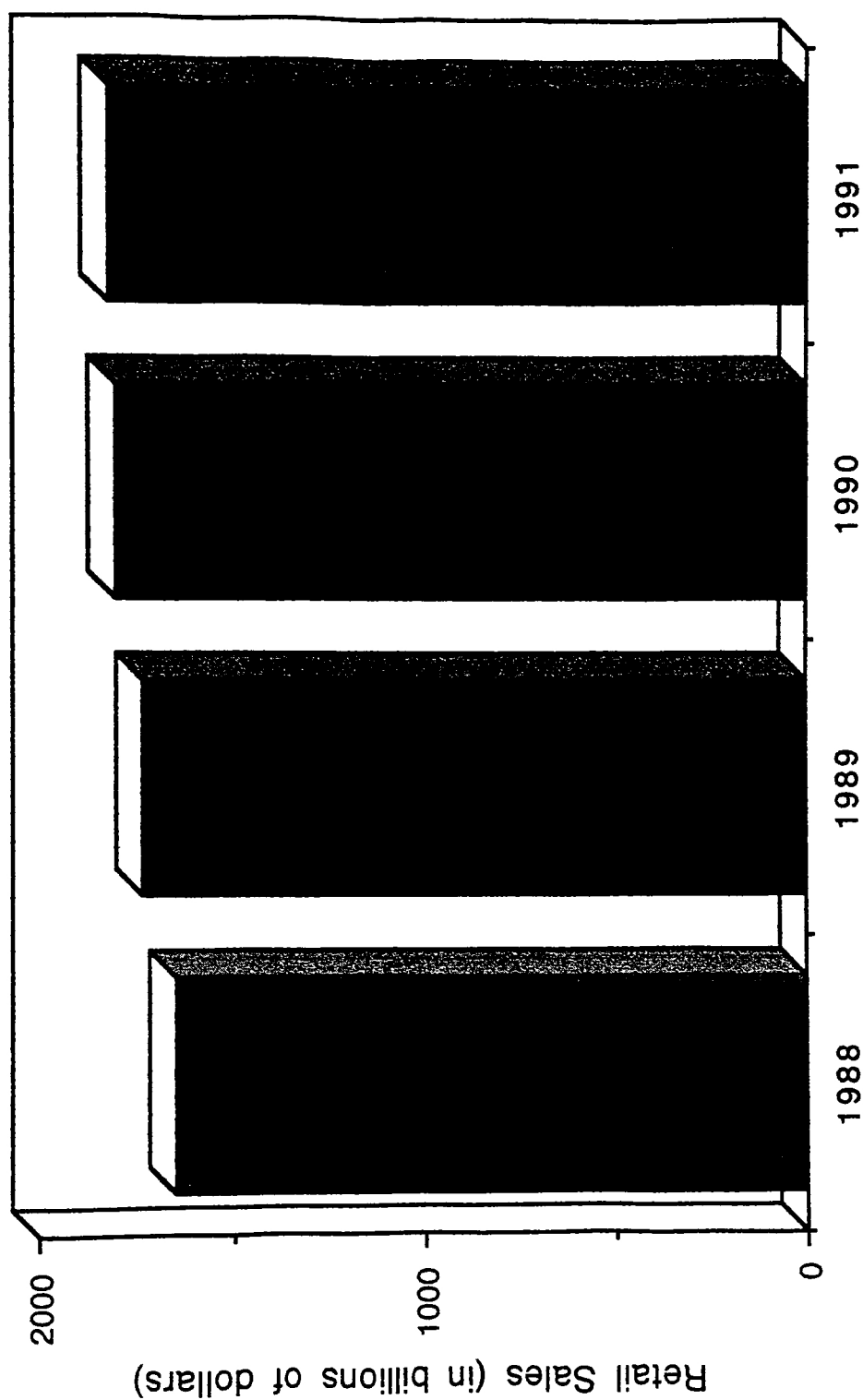
Source: Ward's Automotive Yearbook, 1992

## Retail Sales

Retail sales data represent the sales and receipts of establishments engaged primarily in retail trade. It does not include sales by manufacturers, wholesalers, and service establishments (Grant, p. 178). It includes the sale of durable goods, such as: automotive dealers, auto and home supply stores, building materials and supply stores, and furniture/home furnishing stores. Non-durable goods stores are also considered. They include apparel and accessory stores, Drug and propriety stores, eating and drinking stores, food stores, gasoline service stations, general merchandise (department stores), liquor stores, and non-store retailers (mail-order retailers). Even with the recent recession, total annual sales have been steadily increasing yearly (Figure 5). Individual markets that were affected by the recession of 1991 were automotive dealers, furniture/home furnishing stores, and gasoline service stations (Statistical Abstract of the US, 1992). Each of these market's sales dropped considerably in 1991.

The significance of retail sales data is that it is the first comprehensive indication of consumers' purchases of goods. However, it does not measure consumption of services (including car rentals), which is the largest part of US consumer spending.

Figure 5: RETAIL TRADE SALES



Source: U.S. Department of Commerce, 1992

## Unemployment

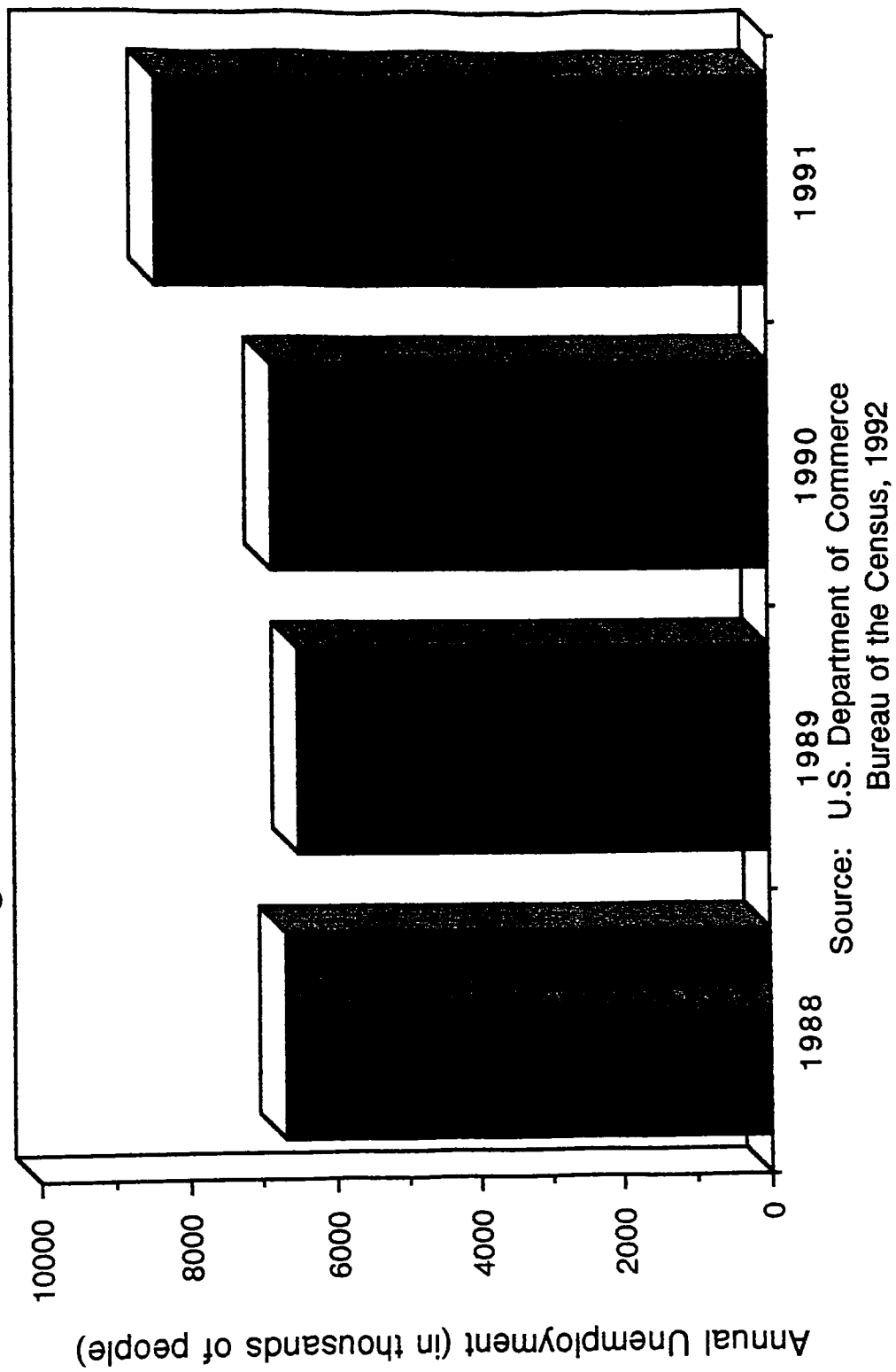
Unemployment enumerates the number of persons without jobs who are available for and actively seeking work. It includes all persons 16 years and older who lost or quit previous jobs as well as school graduates, students, and others with no work experience or who re-enter the workplace (Frumkin, p. 224). As a relative measure of additional workers available for employment, the unemployment rate reflects the slack or the tightness in the labor markets. For example, if unemployment is high, this could indicate a lack of sales necessary to maintain production levels. If sales are slackening, layoffs are a natural result (Hildebrand, p. 63).

The unemployment rate is a major indicator of the degree to which the economy provides jobs for those who want to work. It is very highly considered, when the President, Congress, and Federal Reserve Board determine whether economic growth should be stimulated or held back. In general it has an inverse relationship with the economy as a whole.

The unemployment rate had fluctuated a bit during the years between 1988-1991 (see Figure 6). Starting in 1988-1989, with a 2.5% decrease in unemployment. The year 1989-1990 had a 5% increase and finally, the recession year of 1990-1991 had an incredible 22% increase in unemployment. Fortunately, it has been widely noted that the economy is

slowly pulling out of the recession. The new government budget plan, which includes heavy cuts in government spending and increased taxes on businesses and corporations may even further hurt the future of car rental companies. Unemployment may increase again and corporate travel decrease because corporations will want and need to save money.

Figure 6: ANNUAL UNEMPLOYMENT



## CHAPTER III

### METHODOLOGY

#### Data Collecting

The population of this study consists of the top 100 cities in the United States. Past and current data was taken from American Airlines; Sabre Reservation Systems to track each city's car rental average (the four car rental company's prices divided by four) for the past six years. All the averages from the 100 cities were then averaged again to give the national average of car rental rates from 1988-1993. The following cities, listed in their appropriate region, comprised the top 100 business travel cities in the United States as designated by Corporate Travel Index:

#### North

Albany, NY  
Boston, MA  
Hartford, CT  
Philadelphia, PA  
Rochester, NY  
Washington, DC

Allentown, PA  
Buffalo, NY  
New York, NY  
Pittsburgh, PA  
Stamford, CT

Baltimore, MD  
Harrisburg, PA  
Newark, NJ  
Providence, RI  
Syracuse, NY

#### South

Atlanta, GA  
Biloxi, MS  
Charleston, WV  
Columbia, SC  
El Paso, Tx  
Greensboro, NC  
(south con't)

Austin, TX  
Birmingham, AL  
Charlotte, NC  
Corpus Christie, TX  
Ft. Lauderdale, FL  
Houston, TX

Baton Rouge, LA  
Charleston, NC  
Chattanooga, TN  
Dallas, TX  
Greenville, SC  
Jackson, MS



Jacksonville, FL  
Little Rock, AR  
Miami, FL  
New Orleans, LA  
Orlando, FL  
Roanoke, VA  
Savannah, GA  
Tampa, FL

Knoxville, TN  
Louisville, KY  
Mobile, AL  
Norfolk, VA  
Raleigh/Durham, NC  
San Antonio, TX  
Shreveport, LA  
Tulsa, OK

Lexington, KY  
Memphis, TN  
Nashville, TN  
Okla. City, OK  
Richmond, VA  
Sarasota, FL  
Tallahassee, FL

### Midwest

Akron, OH  
Cleveland, OH  
Detroit, MI  
Dayton, OH  
Madison, WI  
Omaha, NE  
Springfield, MO  
Wichita, KS

Chicago, IL  
Columbus, OH  
Ft. Wayne, IN  
Indianapolis, IN  
Milwaukee, WI  
Peoria, IL  
St. Louis, MO

Cincinnati, OH  
Des Moines, IA  
Grand Rapids, MI  
Kansas City, MO  
Minneapolis, MN  
Rochester, MN  
Toledo, OH

### West

Albuquerque, NM  
Denver, CO  
Las Vegas, NV  
Sacramento, CA  
Santa Barbara, CA  
Spokane, WA  
Seattle, WA

Anaheim, CA  
Fresno, CA  
Oakland, CA  
Salt Lake City, UT  
San Francisco, CA  
Phoenix, AZ  
Tucson, AZ

Bakersfield, CA  
Honolulu, HI  
Portland, OR  
San Diego, CA  
San Jose, CA  
Los Angeles, CA

It has been the responsibility of the Food, Hotel and Travel Management program at the Rochester Institute of Technology to collect car rental rate data and various other data in order to assist Corporate Travel Magazine in creating the annually published Corporate Travel Index. Questionnaires were used to collect information of hotels and hotel restaurants, but to collect car rental rates, graduate students

used American Airline's Sabres System at RIT, which has up-to-date car rental information and rental rates. By using the correct formula or equation, a student is able to view and print rental rates for the four car rental companies being studied. Past year's data have been stored either on computer disc or hard copy.

All other data was collected by using either the 1992 Statistical Abstract of the United States, Housing Constructs Series, and Ward's 1993 Automotive Yearbook. Each gave yearly data and statistics on the chosen economic indicators used as a part of this study.

### Procedure of Analysis

The car rental rates with each of the economic indicators were plotted as data points, by year, on an x-y axis (see Figures 7 - 10). At the bottom of each graph, there is chart explaining the actual national car rental rates and the actual statistics of the economic indicator. These charts were constructed to determine whether the percentage changes in car rental rates and the economic indicators were related. A line pattern would form if there was any correlation between the two variables. As seen in Figures 7 - 10, there was no indication of a pattern being formed between the key economic indicators and the car rental rates.

Figure 7: HOUSING STARTS and CAR RENTAL RATES

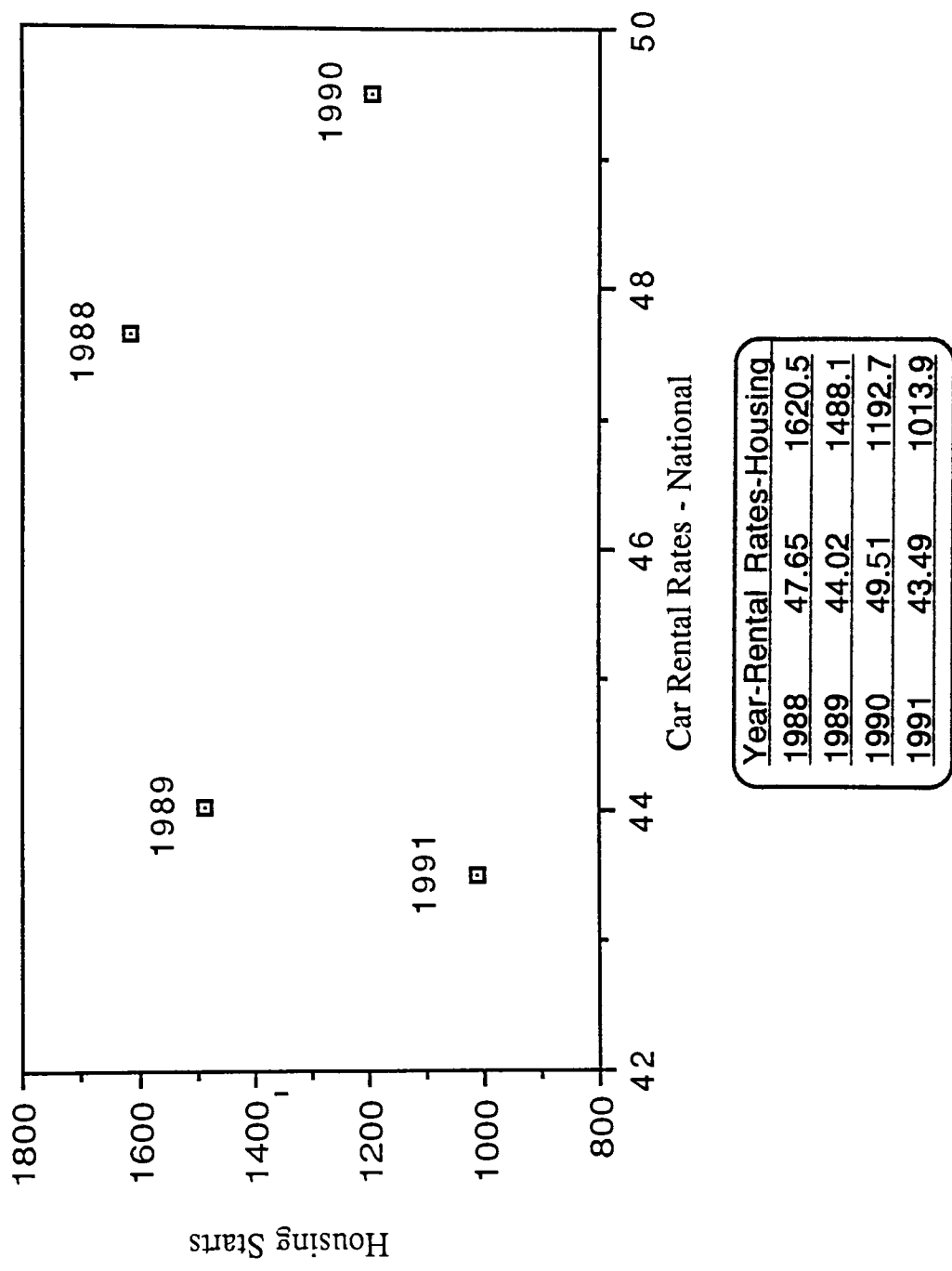


Figure 8: CAR SALES and CAR RENTAL RATES

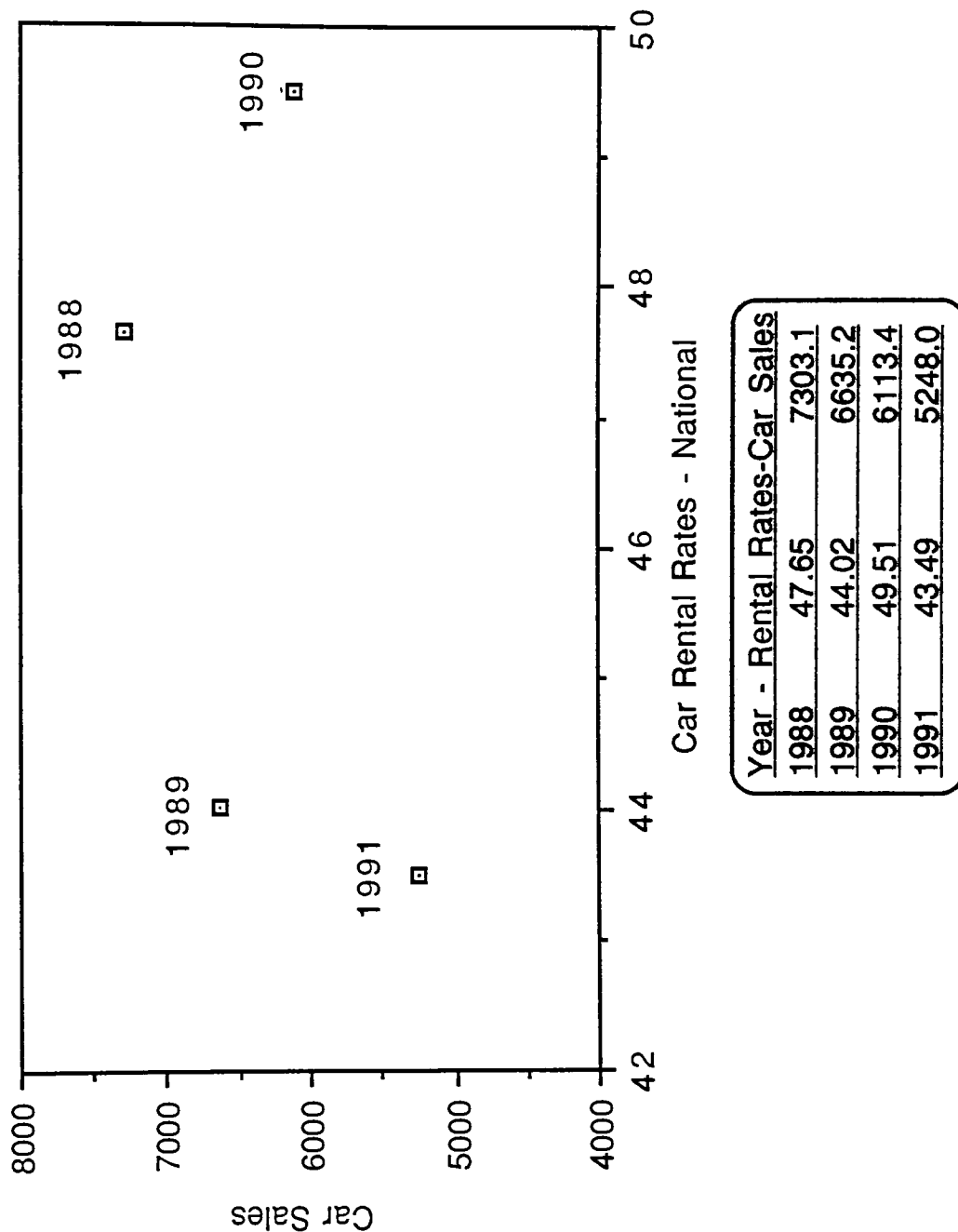


Figure 9: RETAIL SALES and CAR RENTAL RATES

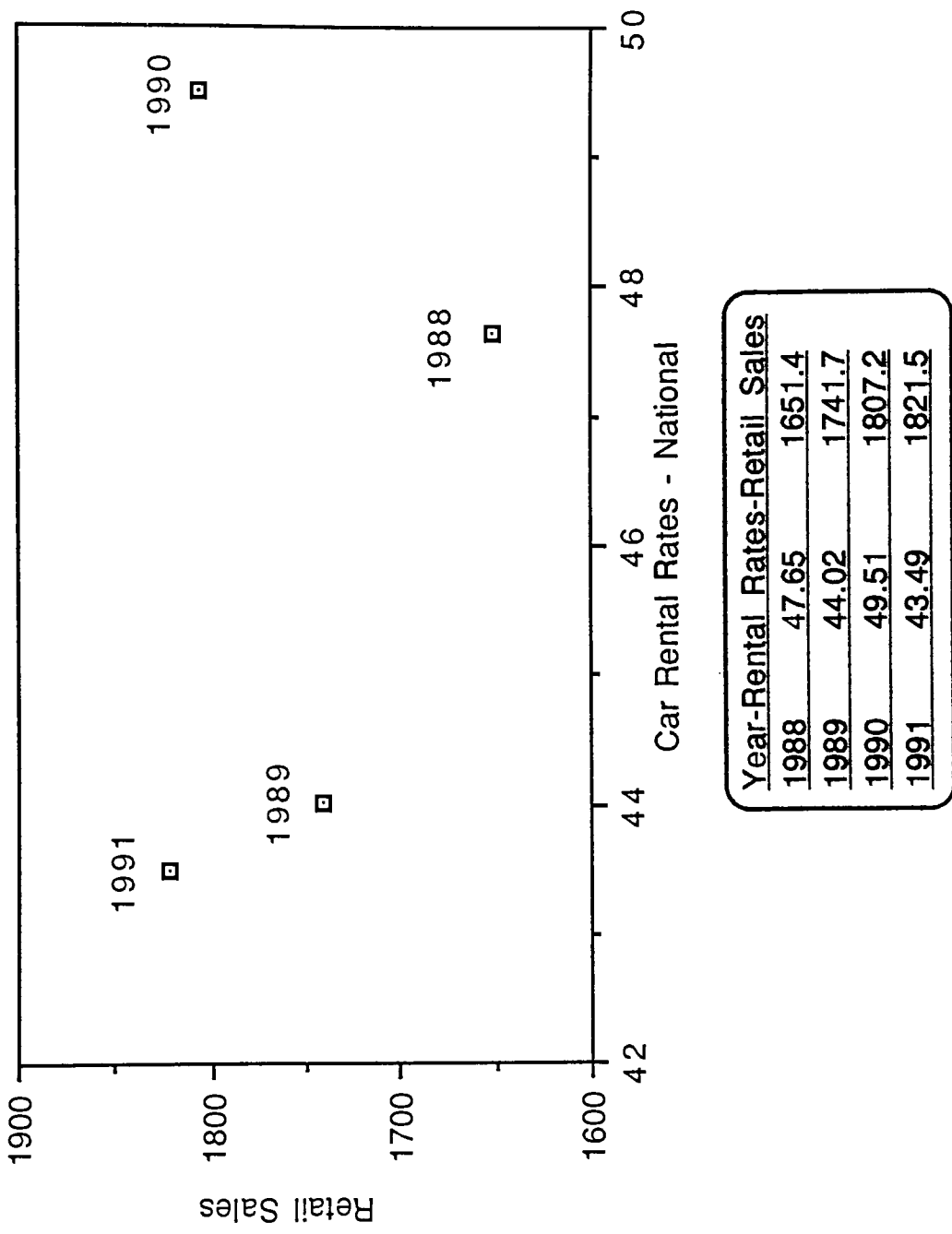
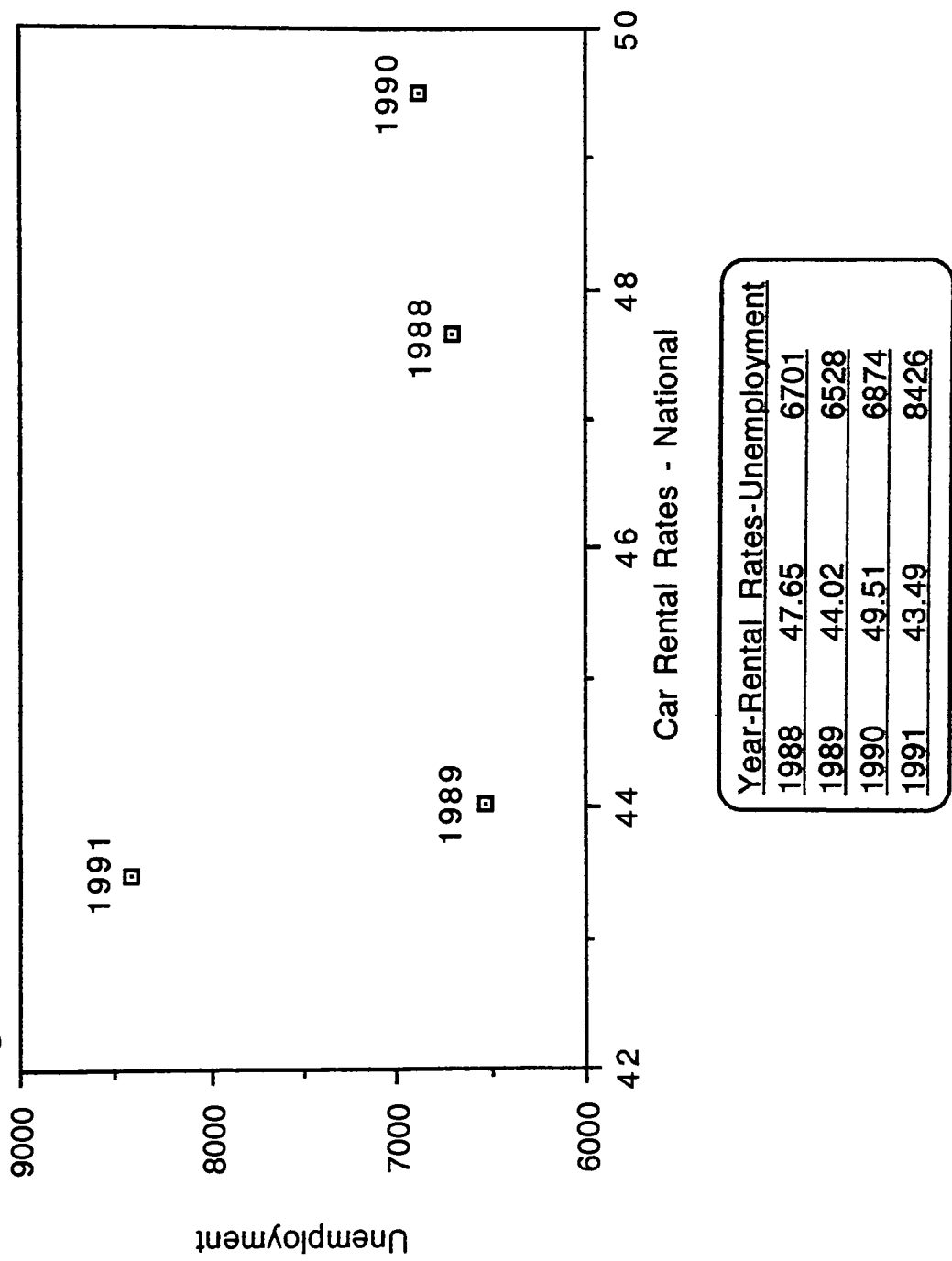
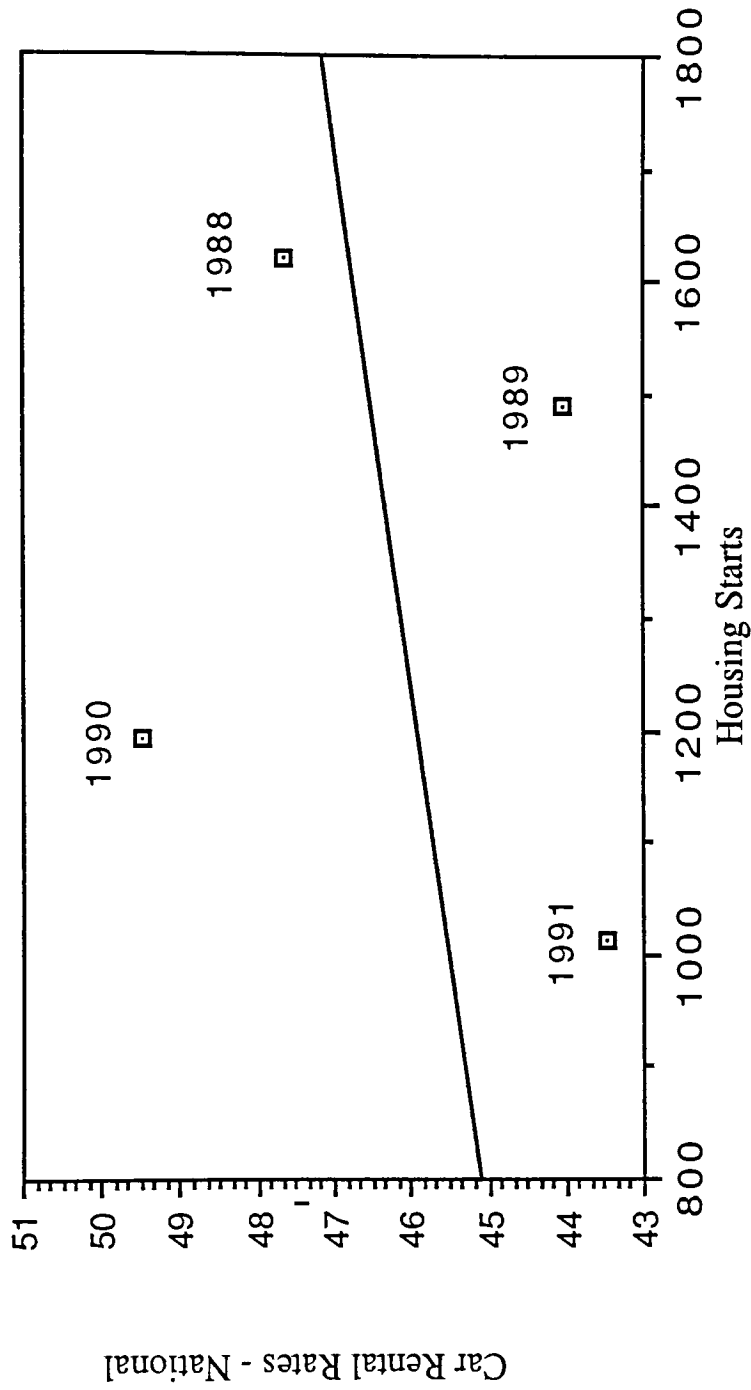


Figure 10: UNEMPLOYMENT AND CAR RENTAL RATES



Figures 11 - 14 show the same plotted data points, but also the best fit line between the sets of data points. At the bottom of these graphs, there are two sets of figures. The one in the first column is the coefficient of correlation, which is the measure of the interdependence between two variables. This measures the strength of a linear relationship between the variables. The closer the number is to 1 or -1, the better the correlation. In another words, the closer the data points are to the best fit line, the more correlation there is between car rental rates and economic indicators. The figure in the last column is the coefficient of the determination. This is basically the coefficient of the correlation squared. This gives the percentage of the total variation of the y (car rental rates) values explained by x (economic indicators). Figures 11 14 show the data points as scattered and not in approximation to the line.

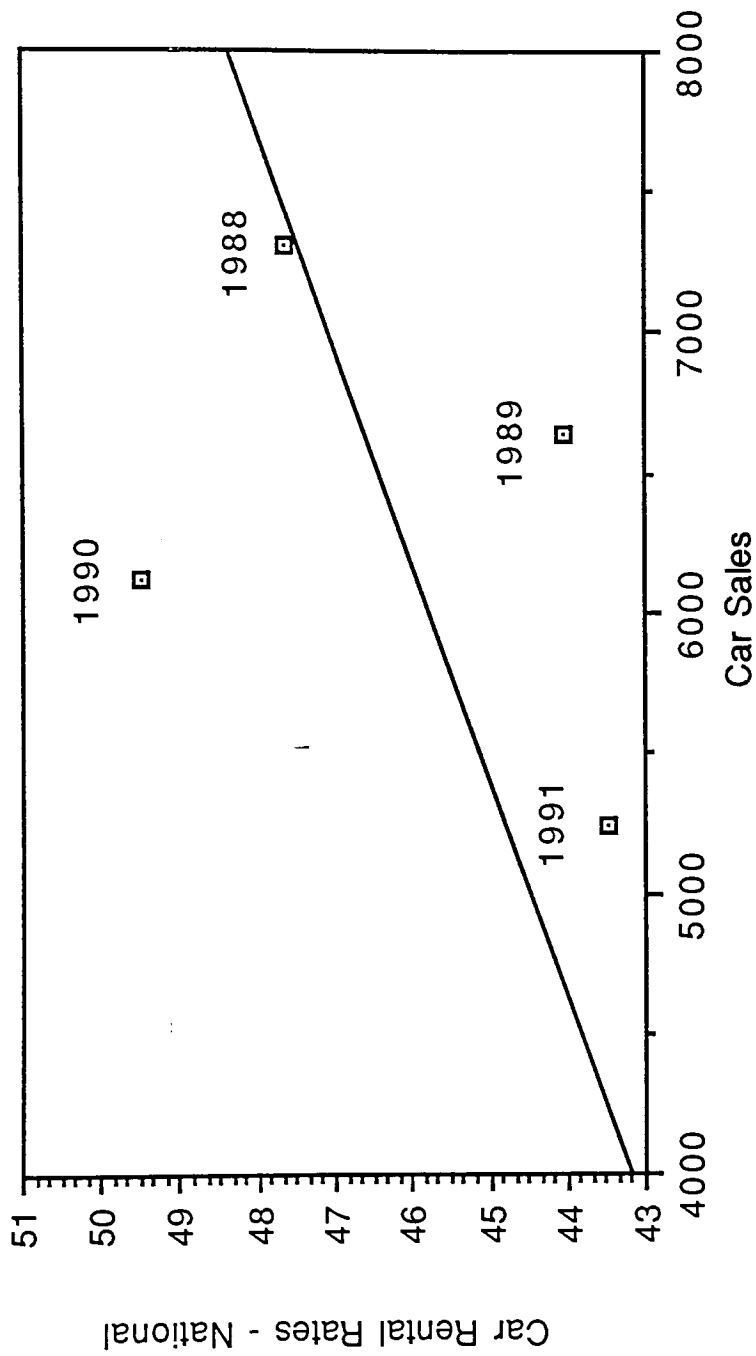
Figure 11: CAR RENTAL RATES AND HOUSING STARTS



	Rental Rates	Housing
Rental Rates	1	
Housing	0.199786565	1
Coeff.of Det.		0.039914672

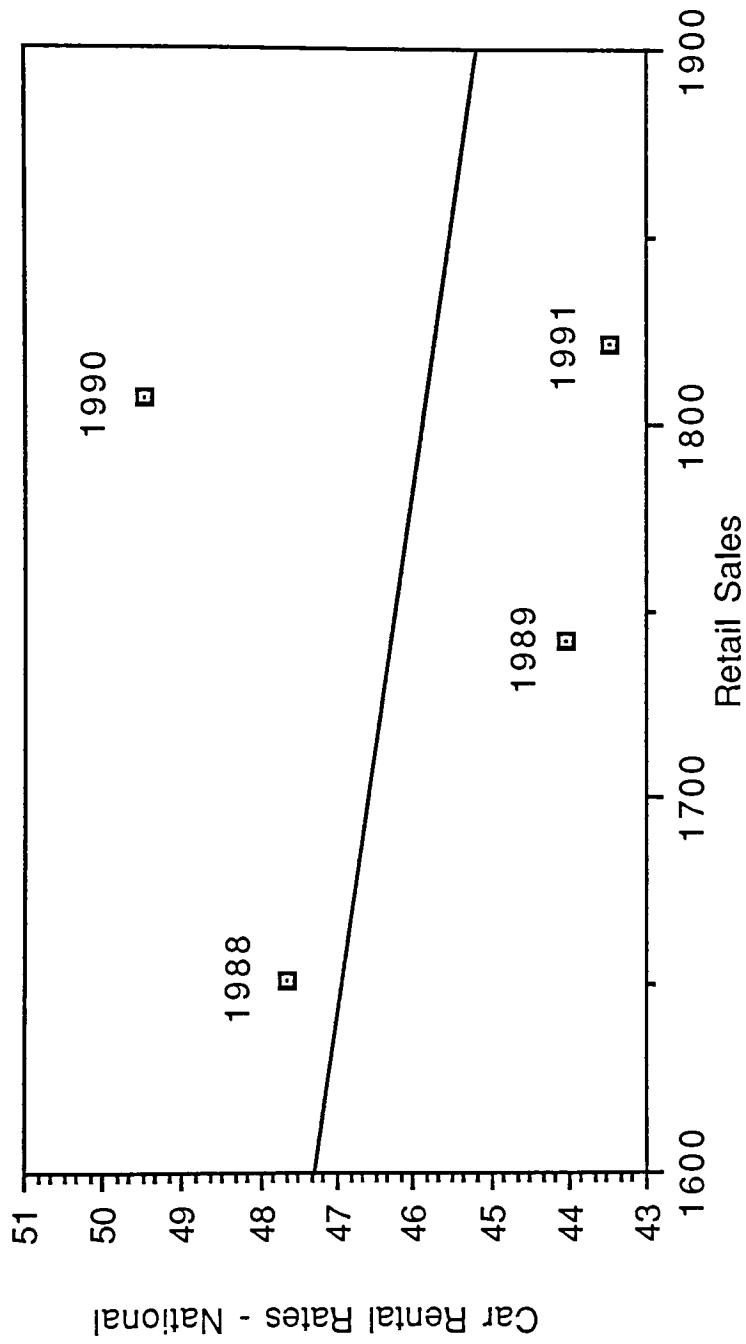


Figure 12: CAR RENTAL RATES vs. CAR SALES



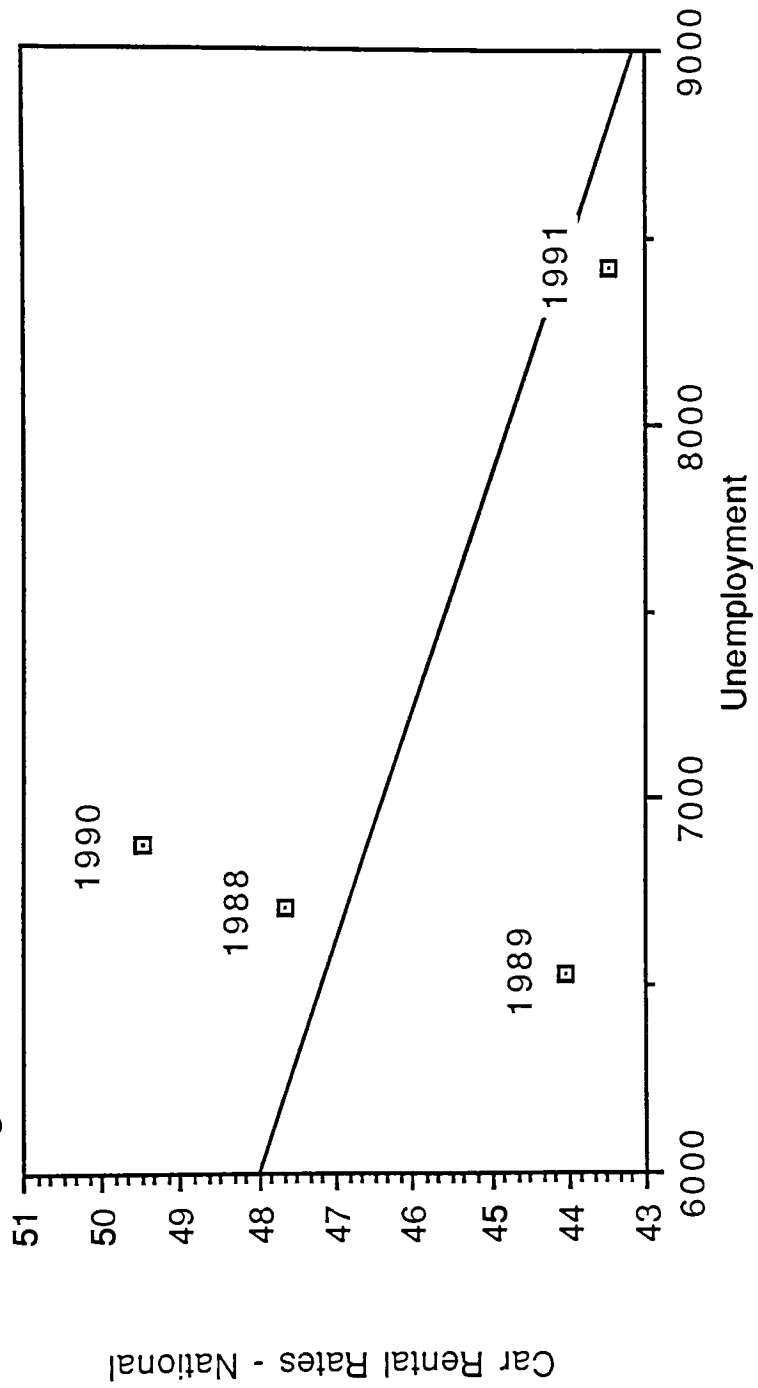
	Rental Rates	Car Sales
Rental Rates	1	
Car Sales	0.392853894	1
Coeff.of Det.		0.154334182

Figure 13: CAR RENTAL RATES vs. RETAIL SALES



	Rental Rates	Retail Sales
Rental Rates	1	
Retail Sales	-0.19083129	1
Coeff.of Det.		0.036417283

Figure 14: CAR RENTAL RATES vs. UNEMPLOYMENT



	Rental Rates	Unemploymt
Rental Rates	1	
Unemployment	-0.483274848	1
Coeff.of Det.		0.233554579

## Findings

### Car Rental Rates vs. Housing Starts.

The coefficient of determination for car rental rates and the number of housing starts is 0.0399 (Figure 11). This can be interpreted as 3.6% of the car rental rates can be explained by housing starts. This means there is very little correlation between these two variables and car rental rates are not greatly influenced by housing starts.

### Car Rental Rates vs. Car Sales.

One would expect to see a high correlation between these two variables, but the coefficient of determination is 0.154 (Figure 12). Only 15% of car rental rates can be explained by car sales. This again, is not very optimistic.

### Car Rental Rates vs. Retail Trade Sales

Retail sales is tabulated by how much the consumer is spending for durable and non-durable goods. It is usually a good indicator as to consumer confidence in spending. The coefficient of determination is 0.0364 (Figure 13), which only 3.6% of car rental rates can be explained by retail trade sales.

### Car Rental Rates vs. Unemployment

The coefficient of determination for this is 0.233 (Figure 14). This is the best correlation between car rental rates and an economic indicator, even though it is hardly considerable or

completely valuable. The percentage of car rental rates that can be explained by unemployment is 23%. A text interpretation of this is as unemployment goes up, car rental rates go down to some degree (and vice versa).

## Conclusions

Based on the research given, the economic indicators have no significant impact on the fluctuation of car rental rates from year to year. Therefore, the original hypothesis of this study is rejected and the null hypothesis accepted.

## CHAPTER IV

### SUMMARY AND RECOMMENDATIONS

#### Summary

Business travel is vital to the travel industry's survival. Without the business traveler, who usually pays full price for travel, the industry is rapidly losing profit. The industry depended on strong business travel because that is where their profit came from and that is how airlines are/were able to offer discount prices to pleasure travelers. The recession hit around the same time as the Persian Gulf War, which gave a double blow to the travel industry because not only was there a recession, but also people were afraid to leave their homes. Corporations were also effected by the recession and business travel had been cut drastically.

Economic indicators show the economy is slowly pulling out of the recession because the level of spending has increased for the first time since the recession. The key indicators studied were Housing Starts, Retail Trade Sales, Car Sales, and Unemployment. The purpose of this study was to analyze if these economic indicators could also explain the rise and fall of car rental rates, which is a part of the travel industry. Correlation analysis was done to see if there was any interdependence between the car rental rates and the economic indicators. The evidence showed there was very little

correlation between these variables. It is a safe assumption that corporate planners need not look at these indicators as a predictor of future car rental rate trends.

## Recommendations

This research can be expanded and analyzed more thoroughly if a longer time span, such as ten years or more, was studied. Collection of current data was extremely difficult to obtain because it was either erratic or not yet published. It is suggested that by researching a longer time span will not only give a better sampling size, but also a more accurate analysis. The collection of older data is not only more readily available, but the variety of economic indicators are more numerous. A regression analysis could then be done to test the hypothesis of this study.

It would be interesting to see if data from the past is available by geographic regions because, in this study, that type of data was rare. Analysis of this type would determine if variations of analysis would occur or if each region is in congruence with the national data analysis.

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