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HOW ALCOHOL ACCESSIBILITY IMPACTS CRIME

by

PAUL DAVID HARRIS

A THESIS

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for the degree of Master of Science in
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1994

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Abstract

This thesis attempts to answer the question, "What impact does controlling the accessibility to alcoholic beverages have on crime?" There is a substantial body of research showing a relationship between alcohol and aggressive behavior, but no research was located which compares like areas which do and do not allow the sale of alcohol. The relationship between crime and alcohol is clear, but there seems to be only assumptions that restricting alcohol availability would reduce crime. This thesis compares like communities which have a different wet/dry status using a number of variables which could influence crime rates. These variables include poverty rate, racial mix, single parent families, military installations, distance to the nearest wet area, rate of growth, median age, percentage of urban population, median family income, per capita income, unemployment rate, net migration rate, education level, and population density.

Introduction

This thesis attempts to answer the question, "What impact does alcoholic beverage availability have on crime?" The question has merit because in recent decades alcohol consumption has been viewed as an important factor in the occurrence of crime. Research has repeatedly shown that alcohol is present in significant percentages of violent events. In addition, serious criminal offenders have also been found to have drinking problems at rates higher than non-offenders (Collins, 1981).

It seems reasonable to infer that drinking and crime are related because of findings showing that drinking often precedes criminal events, and a disproportionate number of criminal offenders have drinking problems. The complexity of the drinking-crime relationship and the absence of scientific rigor in research on the issue make it difficult to spell out particular ways in which drinking contributes to the occurrence of crime (Collins, 1981).

The question is also important to any person or agency associated with the criminal justice system or the regulation of alcoholic beverages. Police officers, probation officers, parole officers, the Alabama Beverage Control (ABC) Board, state legislatures, and voters in counties considering referendums all make alcohol and crime related decisions.

The question is of special concern to the Department of Defense (DOD) because the consumption of alcohol may adversely affect the health, social life, family relationships, and the work of users. It may, therefore, have particularly serious consequences among military personnel who are responsible for protecting and defending the nation. In addition, certain aspects of the military lifestyle may promote the use of alcohol such as relocation overseas, separation from family, and perceived acceptance of substance abuse (Bray, 1991). A Rand Corporation survey of 3,148 active-duty Air Force personnel revealed that 13.9% are effected by alcohol problems and 4.6% are "alcohol dependent." The great majority of the latter have also suffered serious impairments involving work, health, family, or law enforcement problems. This group's typical rate of alcohol consumption is eight times greater than the norm, and their alcohol related working time losses are 27 times the norm (Polich & Orvis, 1979). The 1985 Worldwide Survey of Alcohol and Nonmedical Drug Use and 1985 National Household Survey of Drug Abuse comparing the use of alcohol between military personnel and civilians reported that military men tended to drink heavily. These results suggest that although military policies and programs have been effective in controlling the use of drugs, efforts to reduce alcohol consumption should be increased (Bray, 1991).

Because totally eliminating the use of alcohol within the DOD or American society may not be practical, the question about the impact of present restrictions on alcohol and what projected impact further

restrictions are likely to produce remains. Because trying to ban the production and consumption of alcohol in America is neither a workable nor an acceptable solution, regulation of alcohol-related conduct through liquor code enforcement, detoxification units, and peer pressure appear to have the best chance of attaining some success in reducing frequency of violent crime (Garner, 1979).

To better understand the context of the questions this thesis will attempt to answer, this paper briefly examines a theoretical model, the relationship between alcohol and crime, a history of prohibition, why the state of Alabama was chosen for the study, and the results of a research project designed to examine the relationship between the legal sale of alcohol and crime.

Chapter 1

Review of Literature

History of Alcohol and Crime

The first recorded effort to control the consumption of alcoholic beverages in America was in 1681 when Louis XIV of France issued a decree prohibiting the sale of intoxicating liquors in New France. This territory included portions of the Saint Lawrence Valley and the Great Lakes Region--Michigan, Illinois, Indiana, and parts of Ohio. Cadillac, who was in command of this French territory, was not in sympathy with the king's mandate and refused to enforce the order. He did, however, make an appeal to the king to reverse the decree, but no record appears to show that Louis XIV rescinded his action (Douglass, 1931).

Enrico Ferri tracked wine consumption and criminal rates in France between 1829 and 1887. He wrote "Despite a certain inevitable variation from year to year, there is a manifest correspondence of increase and decrease of homicides, assaults, and malicious wounding, and the more or less abundant vintage" (Ferri, 1900, p.117).

Lombroso, the Italian criminologist considered by many to be the first modern criminologist, was convinced that alcohol was an important factor in criminality. Writing in the late 19th and 20th early centuries, Lombroso based his conclusions on such diverse empirical

evidence as the increases of crime and the level of alcohol consumption in modern society, and the correlation between the peaks in alcohol consumption and those in criminal activity.

> Alcohol, then, is a cause of crime, first, because many commit crime in order to obtain drinks, further, because men sometimes seek in drink the courage necessary to commit crime, or an excuse for their misdeeds; again, because it is by the aid of drink that young men are drawn into crime; and because the drink shop is the place for meeting of accomplices, where they not only plan their crimes but also squander their gains . . . . it appears that alcoholism occurred oftenest in the case of those charged with assaults, sexual offenses and insurrections. Next came assassinations and homicide; and in the last rank those imprisoned for arson and theft, that is to say, crime against property. (Lombroso, 1968, pp. 95-96)

Since Lombroso wrote these words over three-quarters of a century ago, the dominate opinion about the role of alcohol in criminal behavior has not changed much (Collins, 1981).

Rorabaugh (1979) pointed out that per capita consumption of alcohol in this country was much higher in the 18th and 19th centuries than it is now. Yet this high level of consumption began to be considered a serious social problem only in the 19th and 20th centuries. When alcohol first began to be viewed as a problem in the United States, it was seen as a threat to pubic order and political stability, rather than as a criminogenic force related to violent and acquisitive crime directed against individuals. In recent years attention

has shifted from the concern to maintain public order to one of alcohol's effects on violent and property crime (Martin, 1993).

The Anti-Saloon league was the driving force in getting prohibition to pass through four stages on the way to becoming the national policy. The steps were as follows:

> First. Regulations and restrictions were thrown around the liquor traffic by the states and municipalities to eliminate as far as possible the evils arising from the distribution and use of liquor. Laws were adopted prohibiting the sale of liquor on Sunday, after certain hours, to minors or persons in the habit of getting intoxicated, etc. As long as the saloons were legalized it was impossible to prevent the trade from making increasing numbers of regular drinkers.
>
> Second. After the attempt to restrict and regulate the traffic, efforts were made successfully to secure local option laws giving the people in townships, villages, residential districts, and counties the opportunity to eliminate the saloon when a majority of the electors voted to abolish it. Vast areas were made dry. These were experiments and showed that a dry locality was benefited economically, socially, and morally by the policy of prohibition. This was the entering wedge that resulted in state-wide prohibition.
>
> Third. When a large part of a state had eliminated the liquor traffic by vote of the people under local option laws, it then by action of the legislature or by a referendum vote of the people abolished the liquor traffic in the entire commonwealth. After each step of progress the liquor interests tried to break down the law in dry communities. This made it necessary in order to protect the citizens and enforce the law, to extend the amount of dry territory.
>
> Fourth. The last step in the fight against the liquor traffic was to prohibit it throughout the nation. This could be done only by a constitutional amendment. It requires a two-thirds majority of each branch of Congress to submit a

> constitutional amendment, and then it must be ratified by a majority vote of both branches of the legislature of three-fourths of the states. The Eighteenth Amendment was ratified by forty-six of the forty-eight states, a larger majority than was received by any other part of the Constitution. (Cherrington, 1932, pp. 14-15)

Thirty-three states and four territories adopted prohibition before national prohibition went into effect. Alabama was one of eight states to adopt prohibition by legislative enactment prior to national prohibition. Alabama's law became effective on June 30, 1915. Alabama was the 29th state to ratify the Eighteenth Amendment to the Constitution providing for national prohibition on January 14, 1919. The vote was 23 to 11 in the state senate and 64 to 34 in the house. This vote was much closer than it was in the majority of states ratifying the Eighteenth Amendment (Cherrington, 1930).

Scientific temperance instruction laws were adopted in Alabama in 1915. These laws dictated that presidents of all schools and colleges supported in whole or in part by public money would provide regular instruction in all grades on the nature of alcoholic drinks, tobacco and other narcotics, and their effects upon the human system. Enforcement of prohibition was difficult, and in 1927 a state law was passed making the possession or transportation of five gallons of liquor or more a felony (Cherrington, 1930).

The Alcohol Information Committee, which ardently opposed prohibition and was the chief opponent to the Anti-Saloon league, published numerous books in an attempt to overturn prohibition. Their

position was that the Eighteenth Amendment was a crime against the Constitution of the United States because it violated the principle which lies at the bottom of respect for law (Franklin, 1922). The average anti-prohibitionist thought prohibition was a fanatical movement, a law contrary to the best traditions of the country, completely unenforceable, and the worst piece of sumptuary legislation on record (Douglass, 1931).

> The Eighteenth Amendment is treated with contempt, the Volstead Act for its enforcement is violated without compunction, by countless thousands of our citizens. It is ideal to try to find out what is the matter with these people; they are the best we have, or can ever hope to have. The thing to do is to find out what is the matter not with the lawbreakers but with the law. (Franklin, 1922, p. iii)

Prohibition was a failure and was overturned in 1933 by the 21st Amendment to the Constitution (Kerr, 1985). Regulatory and tax policies are now used to effect the course of alcoholism and its related problems in American society. Regulatory policy is generally aimed at lowering the availability of alcohol either to the general public or to certain segments of the population that are deemed especially vulnerable. These regulatory policies include restrictions on the sale of alcohol to people below a certain age, laws preventing alcohol from being sold on certain days or hours of the day, laws regulating the number of alcohol outlets and sale by the drink, and laws attempting to guarantee that beverages are not sold to those already intoxicated. These laws are often enforced through a regulatory mechanism, through

attempting to ensure that those who sell alcohol are of good moral character, and through the use of civil liability in cases of accidents (Kaplan, 1984).

Alcohol and Crime Relationship

When drinking, a lot of people tend to get high-spirited and friendly. All too many, however, turn mean and violent. According to John Langone (1974), author of Bombed, Buzzed, Smashed or Sober, studies show that alcohol can make people more aggressive at the same time it makes them less afraid. Therefore, it is not surprising that one of the first things officials do during riots or other major public disturbances is to close liquor stores, bars, and taverns (Goodman, 1990). For example, alcohol abuse figured prominently in the 1992 Los Angeles riots. Two out of three looters were regular alcohol and drug abusers (Whitman, 1993).

Alcohol plays an important role in violent crimes (Goodman, 1990). The presence of alcohol, drinking, and intoxication is an established fact in many cases of violent crime as evidenced by the relationship to homicides, assaults, and sexual offenses. Alcohol as a catalyst or starter is obviously not necessary for violence to occur; however, alcohol consumption, particularly in excessive amounts, is reported in the background of enough assaults of various types so as to make it a factor which must be considered. At times, the intoxication of the offender may appear as the only logical explanation for irrational

behavior on the part of a normally restrained and controlled person (Garner, 1979).

A striking relationship between alcohol consumption and assaultive behavior has been established beyond any reasonable doubt through the efforts of numerous studies, case histories, incident analyses, and other research. The empirical data indicate a clear relationship between alcoholic influence or intoxication and the occurrence of assault and battery, rape, and murder. What is less clear is whether intoxication is actually a direct cause of such criminally assaultive actions or is merely another symptom of the lifestyle which perpetuates criminal activity (Garner, 1979). There is a lot of research that focuses on alcohol's relationship to aggression. Findings from this research are not conclusive but tend to show that ingestion of alcohol in some dosages is associated with higher levels of aggression (Collins, 1981).

The 1967 President's Commission of Law Enforcement and Administration of Justice Task Force Report on Drunkenness concluded that homicide is an alcohol-related crime. Shupe (1954), in an Ohio study, found that 43% of homicide offenders had been drinking. Spain, Bradess, and Eggston (1951) found that 87% of a small sample of homicide offenders were using alcoholic beverages at the time the crime was committed. Wolfgang (1958), in the most comprehensive study of homicide to date, reported that among 588 cases in Philadelphia, alcohol was absent from both victim and offender in only 36% of the cases. In 9% of the cases alcohol was present in the victim only and in

11% of the cases it was present in the offender only. In 44% of the cases it was present in both the victim and the offender. Consequently in 64% of the homicide cases alcohol was a factor, and in the majority of these, alcohol was present in both parties to the crime (Kaplan, 1984).

In a similar study in Chicago, Voss and Hepburn (1968) found that alcohol was present in 53% of 370 homicide cases. Amir (1971) found that alcohol was present in either offender, victim, or both in 34% of the 646 cases of rape he analyzed from Philadelphia for the years 1958-1960. In a study of rape in Winnipeg between 1966 and 1975, Johnson, Gibson, and Linden (1978) found that either the offender, the victim, or both were drinking in 72% of the cases. Rada (1975) collected data from 77 convicted rapists and found that 50% were drinking at the time of the offense (Collins, 1981). In 1976, a study which interviewed 307 male inmates convicted of "assaultive" crime found that 58% were drinking at the time of the crime. In a study of violent crime in Sweden, 68% of the offenders were found to have been drunk when committing their crime (Roslund & Larson, 1979).

The National Academy of Science has established that alcohol is involved in 49 to 70% of homicides (Kaplan, 1984). According to a report from the Commission on Behavioral and Social Science, about 10,000 murders a year occur in situations involving alcohol (Goodman, 1990).

Alcohol has not only been implicated in general homicide statistics, but also in the type of murder weapon as well. Wolfgang (1958), in his

Philadelphia study of 588 homicide cases from 1948 to 1952, concludes that there is a significant association between alcohol in the homicide situation and the method of inflicting death. More stabbings occurred with alcohol present during the act of homicide than did any other assault method. Beating by fists, feet, or blunt instrument ranked second. Both of these are methods usually put the offender in more physical danger than using a firearm, because the offender can not usually remain a safe distance from the victim (Kaplan, 1984).

Between March and October of 1959, a total of 2,324 new inmates in California's state penitentiaries were interviewed. Over 60% of those involved in crimes of great personal risk (aggravated assault, sexual crimes, etc.) had been drinking just prior to the commission of the crime (Kaplan,1984).

In a 1954 study, conducted by L. M. Shupe, a chemist associated with the police department of Columbus, Ohio, this view was also supported. Shupe examined the urine-alcohol concentration of 882 persons arrested either during or immediately following the commission of a felony. Only 27% of this total showed no alcohol whatsoever; by comparison, 83% of those arrested for 30 homicide offences in the sample showed alcohol in their system (Shupe, 1954).

In a study published in 1940, Selling examined one hundred male sex offenders and reported that 8% were chronic alcoholics and that 35% had been under the influence of alcohol at the time of the offense (Kaplan, 1984). A study from the University of New Mexico revealed that 35% of rapists were found to be alcoholics and half were drinking

at the time they committed rape. Another study found that alcohol plays a part in the vast majority of rapes on college campuses (Goodman, 1990). A recent survey showed that 90% of campus rapes occurred when either the assailant, the victim, or both used alcohol (Connell, 1994).

The U. S. Bureau of the Census conducted a survey of more than 10,000 inmates in state correctional institutions for the National Criminal Justice Information and Statistics Service, which showed that substantial percentages of individuals serving sentences for property offenses reported that they were drinking at the time of the offense. The percentage of inmates who reported that they were drinking at the time of the offense for which they were currently incarcerated were as follows for selected property offenses: robbery, 39%; burglary, 47%; larceny, 38%; motor vehicle theft, 46%; forgery, 38%; and arson, 67% (Collins, 1981).

Alcohol exaggerates mood and also impairs judgment. It has been claimed that as many as one-third of apprehended offenders in England had been drinking shortly before the offense. Bouts of heavy drinking tend to be characteristic of those groups which are disproportionately involved in crime (Gunn & Farrington, 1982). The regularity with which intoxication or signs of alcohol influence show up at scenes of assaultive violence indicates a very real relationship between violence and the bottle (Garner, 1979).

Alcohol abuse is undeniably a predictive factor in violent crime; and there are good reasons to believe it is a causal factor as well (Kaplan,

1984). The increasing statistics on violence and crime in the United States are pressuring scientists to come up with more definitive research on what really causes violence. Violence research is the new trend, and many are preoccupied with the idea that something must be done to prevent crime (Wheeler, 1992). Therefore, the question of what impact present restrictions are having and what future restrictions would probably have needs to be answered.

Theoretical Model

One theoretical model which seeks to explain the relationship between laws and criminal behavior is the containment theory developed by Walter Reckless at the beginning of the 1960s (Siegel, 1986). Reckless suggests that a variety of factors including biophysical forces, psychological pressures, and social conditions "push" a person toward crime or delinquency, while other factors may "pull" one toward misbehavior (Lilly, Cullen, & Ball, 1989). These are countered by inner and outer containments, which help to insulate the individual from criminality. In this theory, outer containments are the normative constraints that society and social groups ordinarily use to control their members. They provide a constant moral front and the reinforcement of norms and values (Siegel, 1986).

Inner containments tend to control an individual to some extent regardless of the person's external environment. Key factors in inner containment are self-concept, goal orientation, frustration tolerance,

and norm retention. Reckless and his associates conducted studies which suggest that an image of oneself as a law abiding person helped keep potential delinquents in relative conformity. Goal orientation, defined as a sense of direction in life involving legitimate goals and aspirations, also provided a sense of direction which helps keep an individual on the path to conformity. Low frustration tolerance to ordinary upsets, failures, and disappointments in life result in the inability to exert self-control, to tolerate frustration, to recognize limits, and to relate to others. Inner containment also includes a sense of norm retention which allows a person to adhere to, accept, and identify with society's values, norms, laws, codes, institutions, and customs.

The outer containments include restrictions, laws, common values, morals, reenforcement of group significance, supportive relationships, acceptance, and the creation of a sense of belonging. All of these are used by society to different extents in an attempt to influence the conformity and behavior of its members. If society can get its members to internalize its rules, norms, and values or to even just comply with them, it has been very successful. If society uses the outer containments available to them to minimize infractions or hold violations within tolerable levels, it has been successful (Lilly et al., 1989).

These inner and outer containments act as a defense against potential deviation from legal and social norms and work to insulate a person from the pressures of criminal influences (Siegel, 1986). With

rare exceptions, only when these powerful containing forces are weakened will deviance occur (Lilly et al., 1989). Individuals who have weak inner and outer containments are the most prone to criminality (Siegel, 1986). Because the containment theory is considered a "risk theory," dealing in probabilities, each weakening of the containments is seen as tending to increase the odds for nonconformity by opening a breach in the armor provided by outer social control and inner self-control (Lilly et al., 1989).

Every community has a strategy to control its population in which outer containments are used in the form of laws, codes, restrictions, customs, and accepted norms. It is obvious that dry counties and cities restrict the sale of alcoholic beverages as one of their methods of using outer containment to establish the morals and values wanted in their communities. One reason they use this outer containment is because the evidence indicates that alcohol breaks down a person's inhibitions and therefore increases the possibility of a person committing a criminal act or exhibiting undesirable behavior.

According to the containment theory, as outer containment makes it more difficult for a person to obtain alcoholic beverages, the likelihood that the person will obtain them and become involved in related criminal activity decreases. Likewise, when outer containment is relaxed, such as a county or city becoming wet, the less difficult or inconvenient it is for a person to use alcoholic beverages and thus the odds of becoming involved in alcohol related criminal behavior are increased.

Although restricting the sale of alcoholic beverages is only one element in a community's outer containment strategy, it does strengthen outer containment and therefore should have a positive impact on alcohol related crime. According to the containment theory, alcohol related crime should be higher in wet counties and cities then in dry counties and cities because of weaker outer containment. In addition, restricting the sale of alcoholic beverages may be an indication that different levels of morals and values exist in the outer containment of the dry communities than in wet communities.

Controlling the Sale of Alcohol in Alabama

The State of Alabama was selected as the basis for studying the impact of alcohol availability on crime because counties and cities within the State individually decide their wet/dry status. Figure 1 contains a map showing the wet/dry status of Alabama's counties as well as which dry counties have wet cities. Alabama is one of 18 states in which the state constitution mandates state operated liquor control and sales. All states license and regulate the sale of alcoholic beverages, but only in eighteen states and one county in Maryland is liquor also sold by the state. The Alabama state operated system pays for itself, controls the distribution of alcoholic beverages, and provides substantial revenue to the state. Revenues returned to the state from the Alcohol Beverage Control (ABC) Board have steadily increased during recent years. Refer to Appendix A and B for examples of alcohol

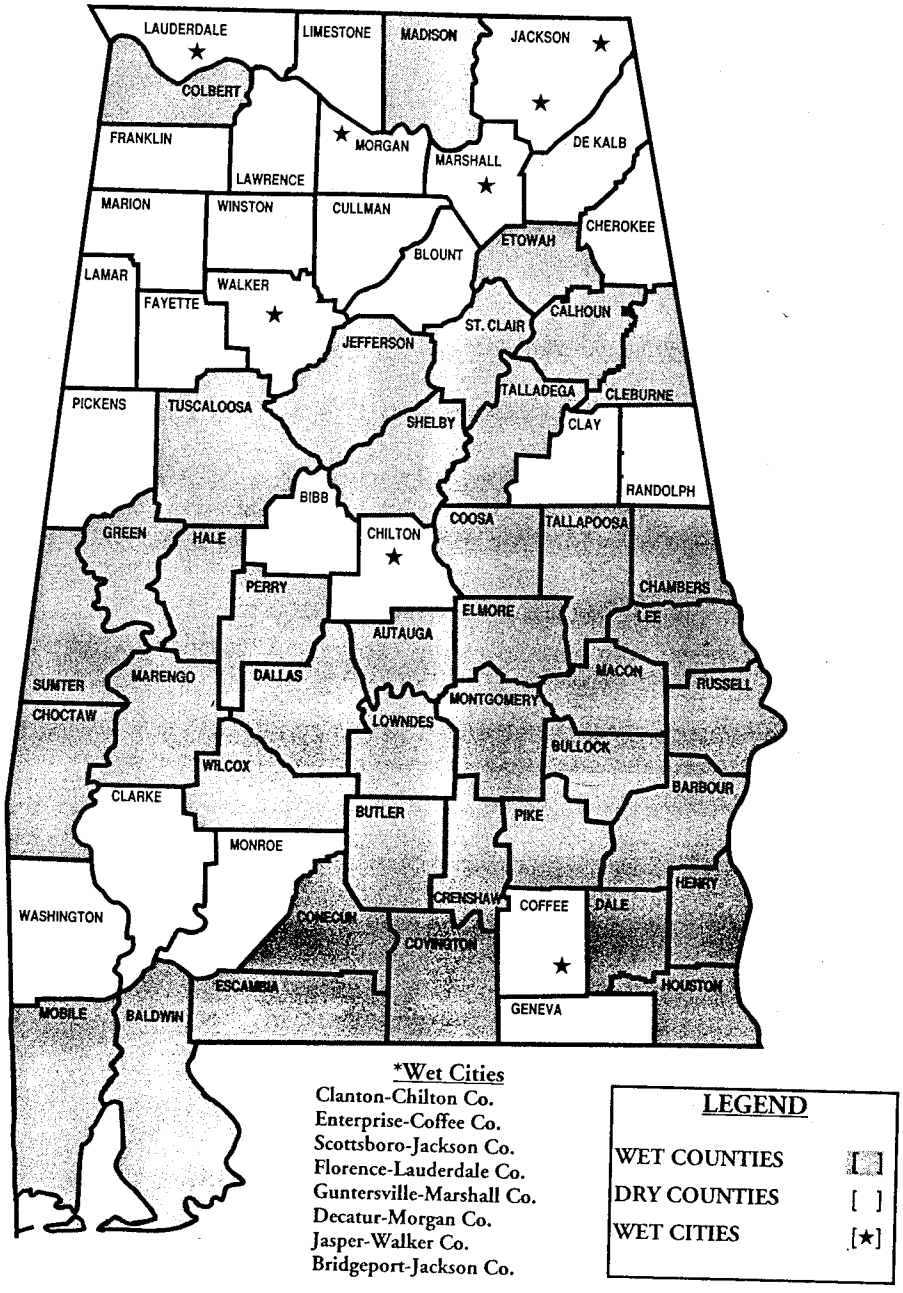
revenues that are distributed to the counties. Since the repeal of prohibition in 1937, Alabama has experienced greater control and faster collection of revenue than any other license state (Alcohol Beverage Control Board, 1991).

The decision to permit the sale and consumption of alcoholic beverages in the state of Alabama was made by the people at the ballot box and through their elected officials. Alabama counties may individually vote to be wet and allow the sale of alcoholic beverages or dry and not allow alcoholic beverages within their boundaries. Certain municipalities in the state also have wet/dry options. The state has responsibility for controlling the use of intoxicating beverages through an appointed Alcohol Beverage Control Board (ABC Board, 1984).

The ABC Board controls alcoholic beverages through the distribution, licensing, and enforcement of ABC Board Regulations and Alabama intoxication laws. The Board operates a chain of retail stores which sell most of the liquor purchased in Alabama. The Board's goal is to operate in an efficient and cost effective manner to ensure that Alabamians who choose to purchase beverages are able to do so at a fair price while generating considerable revenue for State and local governing authorities.

The ABC Board also licenses commercial firms to sell alcoholic beverages. These range from restaurants and nightclubs to small stores selling alcohol for off-premise use. Applicants for a license are examined carefully to ensure that the individuals involved have solid moral character and that they will adhere to the laws of Alabama and

Figure 1. Wet/Dry Status Map.



Source: ABC Board Revised 1992 - 1993 Annual Report

the rules of the Board. The proposed site for selling or dispensing of beverages is checked to ensure that it will not be offensive to the community. After a license is issued, the ABC Board continually inspects operations of the business, conducts audits, collects taxes, and distributes revenue obtained from those taxes and the revenue from ABC stores (ABC Board, 1988).

The State of Alabama is comprised of 67 counties. Appendix C gives a history of county and municipal wet/dry elections. At the present time, 41 Alabama counties are wet. The process of these counties arriving at this decision has varied from a single referendum on March 10, 1937, to as many as twelve referendums over the years. Twenty-five counties went wet in 1937, and all but three have remained thus. Eight of these counties never had another vote on the wet/dry issue. The last country to change from a dry to a wet status was Butler County on March 13, 1984.

Twenty-six counties are dry. Only four of these counties have any history of being wet. The most recent vote to overturn a wet status was in 1940. These counties have had as few as a single county vote on the issue in 1937 to as many as seven separate referendums over the years. The issue is still active, as evidenced by 23 separate wet/dry referendums making the ballot in dry counties since 1980. Since 1980, 15 counties have considered the issue three times (ABC Board, 1991).

On May 21, 1984, the Alabama legislature approved a bill that for the first time allowed certain cities the option of holding wet-dry referendums. To qualify, the cities in dry counties must have a

population of 7000 or more. If a dry county has a city vote to go wet then any other city within that county with a population of 4000 or more may also hold a wet-dry election. Since that time, thirteen cities have held wet-dry referendums. Of the thirteen, seven have decided to become wet (ABC Board, 1989).

Although a county or city may have a dry status, it does not mean that illegal alcohol sales and other violations of the beverage control laws are not occurring. Excluding sales to minors, underage possession of alcohol and Sunday sales, 46% of all cases handled by the enforcement division of the Alabama Alcohol Control Board in calendar year 1993 were in dry counties (ABC Board, 1994).

Revenue generated for wet counties has steadily increased over the last few years. In 1988, Alabama had a 56% state liquor tax, which was the highest in the nation. Beer excise tax revenue in Alabama amounted to $4, 354,370 in 1990. These funds were distributed equally to wet counties with each one receiving $106,204.16. ABC Store tax revenue is distributed based on store sales in a particular county (ABC Board, 1991).

The unique system employed by the State of Alabama to control the sale and distribution of alcoholic beverages makes it ideal for a study accessing how the availability of alcohol impacts crime. Having distinct wet and dry areas allows for the comparison of crime rates in communities which allow the legal sale of alcoholic beverages with those that do not. It also allows for the analysis of how crime rates are affected by a change in the wet/dry status, the presence of a military

installation in the community, or even the location of a community in relationship to legal alcohol sales. While the possibilities for research and analysis in this area are extensive, it was necessary to limit the scope of this project as explained in the next chapter.

Chapter 2

Methodology

Throughout the United States, numerous local ordinances place restrictions on the sale, and distribution of alcoholic beverages within a particular jurisdiction. Alabama allows counties to decide their own wet-dry status through county wide referendums. Cities within a dry county can choose a wet status within certain statutory requirements and limitations. When voters go to the polls to consider a wet-dry referendum, they are primarily deciding between the need for increased revenues brought by alcohol sales and the negative impact on the community, i.e., morality and increased crime. To look at the question in the context of containment theory, the community is deciding whether it will employ the available option of using the restriction of alcoholic beverage sales as part of their outer containment strategy, which is only one portion of the community's outer containment strategy. It is intertwined with attitudes, moral beliefs, social norms, and restrictions which work together in an attempt to shape the behavior of the individuals living within a particular area. It is almost impossible to objectively evaluate the morality of people exposed to alcohol sales but it is possible to assess the probable crime impact of county and city wet/dry decisions. This project attempts to answer the

question, "What impact do city and county restrictions on the sale of alcoholic beverages have on crime?"

Thesis Statement

Because there is such a strong, documented relationship between the use of alcoholic beverages and crime, the wet-dry status of counties and cities must have some impact on the amount of violent and property crime. Although the mobile nature of American society makes alcoholic beverages available to practically any adult who wants to obtain them, the fact that it is not readily available or inconvenient decreases the frequency and amount used by a significant portion of the population in dry areas. Therefore, if a county or city decides to become dry, crime rates will decrease. Likewise, if a county or city decides to become wet, crime rates will increase. For this reason, people making wet-dry referendum decisions should weigh the benefit of revenues generated from the sale of alcoholic beverages against the probable increase or decrease in the crime rates.

A survey of recorded demographic data was used to conduct a correlational study to assess the impact of wet/dry status on crime rates. The study compares crime rates between similar cities and counties which have a different wet/dry status.

Variables

The dependent variables in the study include the rates of the different types of crime that are monitored by the State of Alabama. All the dependent variables were derived from the 1980-1993 Alabama Crime Reports, published by the Alabama Criminal Justice Information Center. Technical definitions for each variable are contained in the center's reporting guidelines. The dependent variables used in the study are as follows:

1. Crime rate. The number of reported violent and property crimes in a designated area per 100,000 in population.

2. Violent crime rate. The number of reported homicides, rapes, robberies, and assaults in a designated area per 100,000 in population.

3. Homicide rate. The number of reported homicides in a designated area per 100,000 in population.

4. Rape rate. The number of reported rapes in a designated area per 100,000 in population.

5. Robbery rate. The number of reported robberies in a designated area per 100,000 in population.

6. Assault rate. The number of reported assaults in a designated area per 100,000 in population.

7. Property crime rate. The number of reported burglaries, larcenies, and motor vehicle thefts in a designated area per 100,000 in population.

8. Burglary rate. The number of reported burglaries in a designated area per 100,000 in population.

9. Larceny rate. The number of reported larcenies in a designated area per 100,000 in population.

10. Motor vehicle theft rate. The number of reported motor vehicle thefts in a designated area per 100,000 in population.

The independent variables in the study include the wet/dry status of a county or city, demographic information of a county or city, the locations of dry cities, and whether a military installation is located within a particular county.

The first set of independent variables were derived from the 1980-1993 Alabama Alcohol Beverage Control Board (ABC) annual reports. These variables are as follows:

1. Wet or dry status. Wet counties or cities are those which allow the sale of alcoholic beverages within their legal boundaries. Dry counties or cities are those which prohibit the sale of any alcoholic beverage within their legal boundaries.

2. Change of wet/dry status. The date that a particular county or city changed from wet to dry or dry to wet through a local referendum since 1980.

Measures of demographic variables for the study were derived from the United States Bureau of the Census 1980 Census of Population and Housing , 1990 Census of Population and Housing, and the 1990 Census - Social and Economic Characteristics. Definitions for the

variables correspond with these references. The demographic variables used in the study are as follows:

1. Population. This is the number of people residing in a designated area as estimated by the 1980 and 1990 U. S. Census. The annual population figures used in the analysis were obtained using extrapolation with the known 1980 and 1990 census figures. The increase or decrease in the population between 1980 and 1990 was divided into 10 equal units. This amount was added to the 1980 population figures, progressing each year, to provide an incremental increase or decrease in the individual years between the known population figures. The same rate of increase or decline was continued for the three individual years of the study after 1990.

2. Per capita personal income. Income from all sources received by, or on behalf of, all persons residing within a particular county. Per capita income is computed by dividing the total income by current population estimates.

3. Population density. The number of people per square mile of land area.

4. Racial composition. Percentage of the population composed of nonwhites.

5. Unemployment rate. The percentage of adult citizens who are unemployed.

6. Percentage of single parent families. Based on the number of family households composed of single parents with children under 18

years of age. Related subfamilies and unrelated subfamilies are excluded.

7. Net migration rate. The number of migrants between 1980 and 1990 per one thousand inhabitants in 1980.

8. Percentage of the population on food stamps. Average number of recipients per month in a county as compared to the total population.

9. Rate of growth. The percentage of change in the population of a county from 1940-1990.

10. Median age. The point at which one half of the people are above the age indicated and one half are below that age.

11. Percentage of urban population. The percentage of the population which live in places of 2500 or more.

12. Median family income. The point at which one half of the families are above the value indicated and one half are below that value in income.

13. Percentage below the poverty level. Poverty status is determined for all persons except inmates of institutions, persons in military group quarters and in college dormitories, and unrelated individuals under fifteen years of age. Persons are classified as to poverty status on the basis of an index incorporating income level, family size, and age of the family householder. For a family of four in 1989 (two adults and two children under 18 years of age), the poverty threshold was $12,575.

14. Percentage with a high school or higher education. The percentage of the population over 25 years of age with 12 or more years of schooling.

The third set of independent variables focused on the actual location of dry cities in relationship to locations where alcohol is legally sold. The distance used is equal to the mileage by road from the legal boundary of a designated dry city to the legal boundary of the nearest wet county or city. The Rand McNally Commercial Atlas and Marketing Guide (1993) was used to estimate the distance.

The final independent variable was whether a military facility was or was not located within a particular county. Military facilities are defined as major Department of Defense installations located within the State operated by the U.S. Army, U. S. Air Force, or U. S. Coast Guard. These include Fort McClellan, Maxwell Air Force Base, Gunter Air Force Base, Anniston Army Depot, Redstone Arsenal, Fort Rucker, and Mobile Coast Guard Base (Commercial Atlas, 1993).

Hypotheses

Seven hypotheses were tested in analyzing the relationship between the accessibility of alcohol and crime. The hypotheses are as follows:

1. Wet counties and cities will have higher crime rates than dry counties and cities.
2. Wet counties will have higher crime rates than dry counties.
3. Wet cities will have higher crime rates than dry cities.
4. If a county or city votes to go from dry to wet then the crime rates will increase.

5. If a military installation is located within a county, the crime rates in that county will be higher than similar counties without a military installation.

6. If dry cities are not located in counties adjacent to a wet county or a wet city in a dry county, as the distance to a wet county or city increases the crime rates will decrease.

Instrument

Individual data collection sheets for each county and city in the study were used to consolidate data from the 1980-1993 Alabama Crime Reports; the 1980-1993 Alabama Alcohol Beverage Control (ABC) Board annual reports; the 1980 and 1990 U. S. Census; and the 1983, 1991, and 1993 Center for Demographic and Cultural Research Population Data Sheets. Refer to Appendix D for an example of the collection sheet. The collected data was recorded on optical scanning sheets to allow for transfer to the university's main frame computer.

Population and Example

The population for the study was the counties and cities within the State of Alabama. Of the counties, 41 are wet and 26 are dry. Seven of the dry counties have wet cities within their boundaries. These counties are still considered dry for the purposes of this study even though some alcohol is legally sold with the county's boundaries. This

is because the majority of the people in the county still believe that restricting the sale of alcoholic beverages is an appropriate element in their outer containment strategy for that area. If this were not true, a county wide referendum would simply change the county's status to wet. The cities were selected based on the criteria that they had a population of over 5000, were not located in one of the 11 metropolitan statistical areas within the state, and/or they had a change in wet/dry status since 1980. Thirty-six cities fit this criteria with 25 being wet and 11 dry. Seven of the wet cities were located within dry counties. Data was collected for all sampling units in the population.

Setting

Alabama is a southern state whose constitution mandates that the state control alcoholic beverage sales. The ABC system allows counties and cities to individually decide their wet/dry status based on what their citizens think is best for their individual communities. The result of having this option is that of the 67 counties in the state, 41 counties have decided to become wet and 26 to remain dry. Within these dry counties, seven cities have passed referendums to become wet (ABC Board, 1988).

Alabama entered the union December 14, 1819, as the 22nd state. It is now ranked 22nd in total population with 4,040,587 people as of the 1990 census. Alabama ranks 26th in persons per square mile with 80 and 28th in land area with just over 50,750 square miles. The

State has a little over twice the black population of the national average and is one of the poorer states in the union, ranking 43rd in per capita income (Center for Demographic and Cultural Research, 1993). Alabama traditionally is considered conservative in both local and national elections. The state is primarily Democratic, and in 1986 elected its first Republican governor since the 1870s.

Today only one percent of the population is foreign born. African Americans make up about one fourth of the population and are largely concentrated in the central part of the state. It ranks 13th nationally and 7th among Southern states in the number of African Americans. Nonviolence, used as a strategy of social change in the civil rights movement, had its first major success in the United States with the bus boycott of 1955-56 in Montgomery. Dr. Martin Luther King, Jr. culminated his crusade in the five day march from Selma to the State Capital that eventually lead to the passage of the federal Voting Rights Act of 1965.

For a century, Alabama was considered the land of cotton because of the dominance of the crop. Although it is still important, diversified agriculture has resulted in more acreage being devoted to growing soybeans and corn. Other field crops that flourish in the state's mild climate are peanuts and melons. The manufacturing and construction industries account for more than 25% of the total employment. Rich resources of iron ore, coal, and limestone have helped make Alabama a major steel-producing state, and Birmingham the iron and steel capital

of the South. The state also has one of the best water transportation systems in the South (Compton's Encyclopedia, 1994).

Collection of Data

Because data for this project were available in source documents, the primary concern was for accuracy in the transfer of data to the data collection sheets and the optical scanning sheets. This was a potential problem because of the extensive amount of information which comprised the data base and because some data items in the study were contained in several separate source documents. The following four step strategy was used to ensure consistency and accuracy. First, a master data collection sheet was developed to identify the source document on which each specific item of data was found. Second, only one trustworthy individual with the ability to pay close attention to detail was used to assist in data collection. The assistant received a thorough briefing on her role and was trained in the use of the data collection instrument during an orientation process. Third, a quality control system was established to double check figures inserted on both the data collection and computer scanning forms. Initially all data sheets were scrutinized until a satisfactory level of confidence was achieved in the data recorder's abilities. Randomly conducted periodic spot checks were also conducted to monitor the transcribing process. And fourth, any unique occurrence or peculiarity noticed while collecting the data which could impact validity or reliability was

recorded in the space provided on the collection form. Any irregularities noted were analyzed for their potential impact on the study prior to transferring information to the forms scanned by the university mainframe computer.

Data was derived from the 1980-1993 Alabama Crime Reports; the 1980-1993 Alabama Alcohol Beverage Control (ABC) Board annual reports; the 1980 and 1990 U. S. Census; the Center for Demographic and Cultural Research, Auburn University at Montgomery, Alabama; and 1983, 1991, and 1993 Population Data Sheets.

Study Limitations

Instead of focusing on alcohol as a direct cause of crime, this study focuses on the indirect relationships between the presence of legal alcoholic beverage sales and crime rates. Variables such as poverty, racial mix, population density, and unemployment, which could influence the findings of the study, are not fully assessed.

Another limitation is that the crime statistics reported to the Alabama Criminal Justice Information Center for inclusion in their yearly report were not always complete and in some cases the reported numbers were suspect. The limitations for the counties are as follows: Bibb County, data was not reported in 1981-1983 and 1986-1993; Cherokee County, probable underreporting in 1993; Choctaw County, probable underreporting in 1982-1984, and 1990-1993; Clarke County, rates not reported in 1990-1993; Clay County, rates not reported 1988-

1993; Conecuh County, probable underreporting in 1981, 1982, 1985, and 1986; Lowndes County, probable underreporting in 1982 and 1983; Washington County, data not reported in 1985-1993; and Winston County, probable underreporting in 1988 and data not reported in 1989. Limitations in the data available for the cities used in the study are as follows: Valley, rates not reported in 1980; Audalusia, rates not reported in 1984; Millbrook, probable underreporting in 1985 and 1988; Russellville, possible underreporting in 1993; and Troy, probable underreporting in 1992 and 1993.

Chapter 3

Findings

The data was analyzed using Pearson's r and the t-test to assess the differences in crime rates between areas which are wet and those which are dry. The findings in this study consistently indicate that the decision to allow alcoholic beverages to be sold in a particular area is related to higher crime rates. When alcohol is not available for legal sale in a particular area, the crime rates tend to be lower.

Once the crime rates and demographic data were collected and optically scanned into the university's main frame computer, a frequencies program was developed for all variables. The distributions of the variables were analyzed in an attempt to identify any values which occurred too often or did not logically fit into a given category. No problems were noted between the information collected and the values which were entered into the data base.

To analyze the data that were compiled, statistical tests were first conducted between all the wet counties and cities in the study and all the dry counties and cities in the study. Wet counties were then compared with dry counties and wet cities with dry cities. Next, statistical tests were used to determine if significant relationships would exist between crime rates and wet and dry status for counties and dry cities of the same approximate size. To examine the impact of

the decision of a county or city to change from a dry to wet status, t-tests were conducted comparing the average crime rate for the four years before the change in status with the year of the change and each of the four years after the change. Counties with military installations were compared to wet counties without military installations because no military facilities are located in dry counties. T-tests were conducted to determine if a positive or negative relationship existed between the distance to legal alcohol sales and crime. To accomplish this, the dry cities in the study were first compared to wet cities of the same approximate size. Then the actual distances from the dry cities to the nearest wet county or city were compared with crime rates.

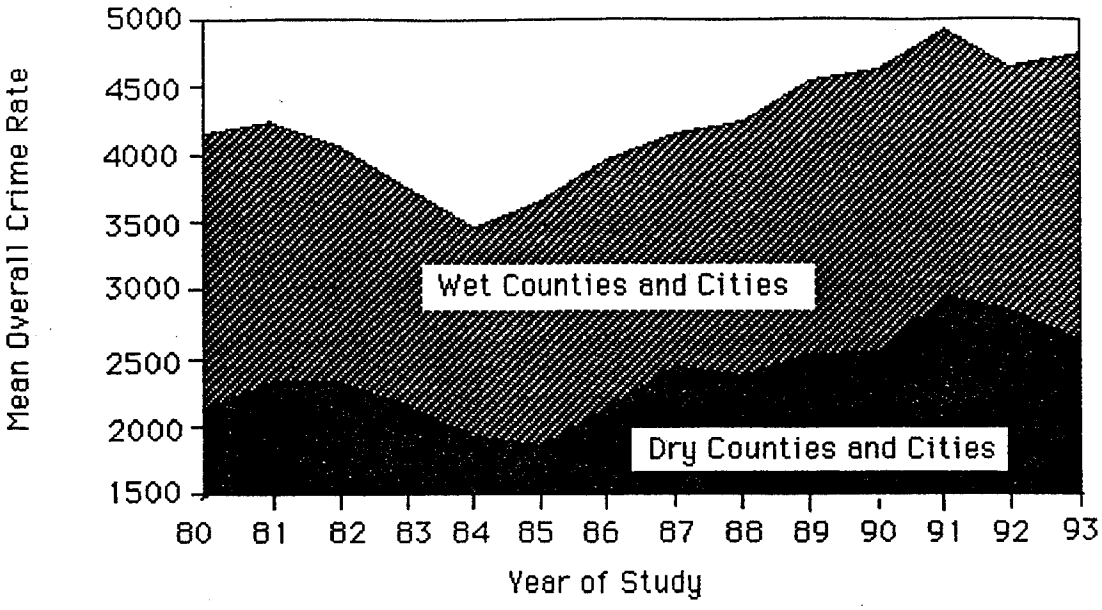
Six separate hypotheses were tested in the process of analyzing the collected data to determine the impact of alcohol availability on crime rates. The first assessment provides an overall view of the relationship between wet/dry status and crime then proceeds to focus on smaller segments of the data in an attempt to identify any notable conflicts or inconsistencies. The results of the tested hypotheses are as follows:

Hypothesis #1. Wet counties and cities will have higher crime rates than dry counties and cities.

Strong support was found for this hypothesis. All wet counties and cities in the study were compared to all dry counties and cities to determine the differences in the crime rates (Table 1). The findings revealed that overall crime rates were significantly higher in the wet counties and cities in every year from 1980 through 1993 (Figure 2).

The mean wet overall crime rate ranged from 3484 to 4921 per 100,000 in population (2 tail probability < .001 for t) while the dry overall crime rate ranged from 1885 to 2939 per 100,000 in population (2 tail probability < .001 for t).

Figure 2. Comparing overall crime rates in wet counties and cities to dry counties and cities.



The violent crime rate was also consistently higher in wet counties and cities when compared to the dry counties and cities. This proved true for every year from 1980 through 1993. The mean violent crime rate for all wet counties and cities ranged from 382 to 854 per 100,000 in population (2 tail probability < .001 for t). The mean violent crime

rate in dry counties and cities ranged from 138 to 419 per 100,000 in population (2 tail probability < .001 for t).

The homicide rate was significantly higher in wet counties and cities when compared to dry counties and cities in 8 of the 13 years of the study. Significant differences were found in years 1980-1984, 1986, 1991, 1993. The mean wet homicide rates during these years ranged from 8 to 12 per 100,000 in population. The mean dry homicide rate ranged from 3 to 9 per 100,000 in population (2 tail probability $\leq$ .011 for t).

The rape rate was significantly higher in the wet group when compared to dry counties and cities in every year of the study. The mean rape rate for the wet group ranged from 19 to 34 per 100,000 in population while the mean number of rapes in dry group ranged from 7 to 20 per 100,000 in population (2 tail probability $\leq$ .045 for t).

There were also significantly higher rates of robberies in the wet group than the dry group. The mean robbery rate for wet counties and cities ranged from 53 to 151 per 100,00 in population. The mean robbery rate for the dry group ranged from 13 to 50 per 100,000 in population (2 tail probability $\leq$ .023 for t).

Assault rates were also higher in the wet group. A significant difference was shown in every year of the study except 1993. The mean assault rate for the wet counties and cities ranged from 274 to 697 per 100,000 in population. The mean assault rate for the dry counties and cities ranged from 103 to 360 per 100,000 in population (2 tail probability $\leq$ .007 for t).

Property crime rates, like the violent crime rates, were substantially higher in the wet counties and cities than the dry counties and cities. For overall property crimes a significant difference was present in very year except 1990. The mean property crime rate for the wet group ranged from 2988 to 4988 per 100,000 in population. The mean property crime rate for the dry group ranged from 1701 to 2546 (2 tail probability $\leq$ .016 for t).

The rate for burglaries was significantly higher in the wet counties and cities for every year except 1990. The mean burglary rate for the wet group ranged from 832 to 1324 per 100,000 in population. The mean burglary rate for the dry group ranged from 471 to 689 per 100,000 in population (2 tail probability < .001).

Larceny rates in the wet counties and cities were also significantly higher than the dry group in every year of the study except 1990. The larceny rate mean for the wet group ranged from 2042 to 3398 per 100,000 in population. The larceny rate mean for the dry group ranged from 1108 to 1729 per 100,000 in population (2 tail probability $\leq$ .019 for t).

With the exception of the year 1984, motor vehicle theft did not show a significant difference until a trend began in 1990. In each year from 1990 to 1993, a significant difference existed in the mean motor vehicle theft rates between the group of wet counties and cities and the group of dry counties and cities. The mean motor vehicle theft rate during these years ranged from 196 to 209 per 100,000 in population

while the dry group mean was 121 to 132 per 100,000 in population (2 tail probability $\leq$ .029 for t).

There are several variables which could impact the crime rates between these two groups. The group of wet counties and cities were significantly higher in the percentage of the population on foodstamps (16.4% to 10.4%, 2 tail probability = .001 for t), percentage of minorities (34.1% to 14.9 %, 2 tail probability < .001 for t), percentage of single parent families (31.4% to 20.6%, 2 tail probability < .001 for t), net migration rate (11.2% to 4.9%, 2 tail probability = .016 for t), percentage of urban population (45.3% to 27.3%, 2 tail probability = .001 for t), percentage below the poverty level (23.8% to 18.8%, 2 tail probability < .001 for t), percentage of high school graduates (62.7% to 58.8%, 2 tail probability = .009 for t), and rate of growth (48.4% to 25.3%, 2 tail probability = .001 for t). The dry group had a higher median age (34.5 to 32.6, 2 tail probability < .001 for t) than the wet group. On the whole, the wet counties and cities were poorer than dry counties and cities. No significant differences were noted between the groups in per capita income, population density, or the unemployment rate.

In order to examine the relationship between wet and dry status, other significant independent variables, and crime rates a series of regression were performed. Each regression focused on crime rate for a specific year with wet or dry status entered in the equation first as a dummy variable. The other variables were then entered in order of importance. In the resulting regression equations, percentage of urban

population was entered as the second variable in each case. Considerable variation existed in other variables entered into the equation but population density and the percentage of single parent families occurred most frequently. The fact that all counties with large urban populations are wet distorts the more sophisticated statistical procedures.

Table 1. Crime Rates per 100,000 in Population in Wet Counties and Cities as Compared to Dry Counties and Cities.

	YEAR						
CRIME	1980	1981	1982	1983	1984	1985	1986
All Crime							
wet	4127	4224	4093	3682	3484	3674	3962
dry	2155(3)	2335(3)	2344(3)	2181(3)	1923(3)	1885(3)	2122(3)
Violent							
wet	382	447	462	450	496	546	616
dry	138(3)	172(3)	193(3)	189(3)	177(3)	184(3)	210(3)
Homicide							
wet	12	12	11	9	11	9	10
dry	6(3)	7(2)	6(2)	4(2)	3(3)	6	6(1)
Rape							
wet	21	21	21	19	21	22	24
dry	7(3)	7(3)	8(3)	12(1)	8(3)	16(3)	8(3)
Robbery							
wet	74	61	65	57	53	58	58
dry	22(3)	27(3)	19(3)	13(3)	18(3)	17(3)	16(3)
Assault							
wet	274	345	366	368	409	456	523
dry	103(3)	130(3)	160(3)	160(3)	148(3)	150(3)	170(3)
Property							
wet	3755	3729	3631	3244	2988	3129	3344
dry	2017(3)	2167(3)	2151(3)	1992(3)	1746(3)	1701(3)	1910(3)
Burglary							
wet	1285	1192	1099	936	832	855	965
dry	611(3)	639(3)	626(3)	558(3)	495(3)	471(3)	524(3)
Larceny							
wet	2276	2365	2367	2171	2042	2127	2228
dry	1263(3)	1562(2)	1392(3)	1284(3)	1156(3)	1108(3)	1258(3)
Auto Theft							
wet	183	166	165	137	133	147	154
dry	142	134	136	118	97	122	129

Table 1 (continued).

CRIME	YEAR 1987	1988	1989	1990	1991	1992	1993
All Crime							
wet	4155	4237	4525	4615	4921	4664	4757
dry	2430(3)	2386(3)	2508(3)	2553(3)	2939(3)	2858(3)	2619(3)
Violent							
wet	635	606	651	715	827	839	854
dry	273(3)	301(3)	301(3)	328(3)	392(3)	419(3)	393(3)
Homicide							
wet	8	10	8	10	11	9	11
dry	9(3)	6	9	7	5(2)	6	6(2)
Rape							
wet	23	28	28	29	29	32	34
dry	11(3)	14(3)	12(3)	15(3)	14(3)	20(1)	17(3)
Robbery							
wet	58	72	83	94	92	101	151
dry	19(3)	23(3)	17(3)	50(3)	26(3)	30(3)	26(1)
Assault							
wet	545	496	532	581	695	697	1088
dry	233(3)	257(3)	263(2)	332(3)	347(3)	362(3)	344
Property							
wet	3520	3631	3842	4228	4090	3825	4988
dry	2146(3)	2085(3)	2208(3)	3366	2566(3)	3439(3)	2226(1)
Burglary							
wet	997	1029	1054	1270	1140	1014	1324
dry	582(3)	604(3)	593(3)	907	689(3)	625(3)	574(3)
Larceny							
wet	2370	2430	2608	3348	2753	2709	3398
dry	1426(3)	1339(3)	1472(3)	2295	1729(3)	1688(2)	1533(1)
Auto Theft							
wet	152	172	179	196	200	202	209
dry	152	142	142	132(1)	128(1)	126(2)	121(3)

Notes: Significant differences are identified as follows: (1) = $\leq$ .05, (2) = $\leq$ .01, and (3) = $\leq$ .001.

Hypothesis # 2. Wet counties will have higher crime rates than dry counties.

The findings of the study gave strong support for this hypothesis. To test this, an examination was made between the 41 wet counties and the 26 dry counties in the State (Table 2). Here again, the findings revealed that crime was consistently higher in wet counties than in dry counties (Figure 3). The findings contained the same trends in crime rates that were present when testing the first hypothesis. Just like the combined counties and cities, significant differences were noted in the overall crime rate, violent crime rate, rape rate, and the property crime rate during every year of the study. Homicide rates were even more consistent when comparing counties alone. The homicide rate went from showing a significant difference in 8 years of the study in the combined group to all but one year of the study when comparing wet and dry counties.

The trend continued for robbery, assault, and burglary. Significant differences were noted in every year of the study for these areas with the following exceptions: robbery, 1989; assault, 1990; and burglary, 1990. The same trend was also present in motor vehicle theft but it began in 1991 instead of 1990. The motor vehicle theft rates in wet counties were higher than dry counties from 1991 to 1993. During these years, the mean motor vehicle theft rate for wet counties ranged from 178 to 187 per 100,000. The mean rate in dry counties ranged from 101 to 108 per 100,000 in population (2 tail probability $\leq .037$ for t).

Figure 3. Comparing overall crime rates between wet and dry counties.

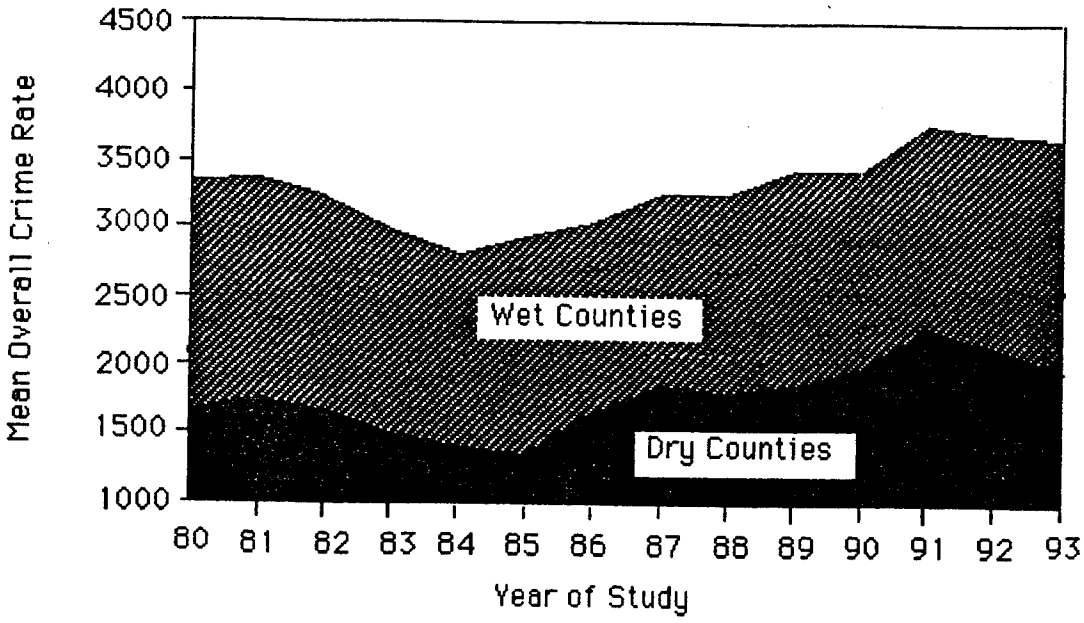


Table 2. Crime Rates per 100,000 in Population in Wet Counties as Compared to Dry Counties.

	YEAR						
CRIME	1980	1981	1982	1983	1984	1985	1986
All Crime							
wet	3354	3368	3231	2973	2804	2914	3072
dry	1695(3)	1762(3)	1668(3)	1501(3)	1403(3)	1376(3)	1693(3)
Violent							
wet	357	374	369	362	390	421	476
dry	132(3)	134(3)	135(3)	128(3)	115(3)	116(3)	153(3)
Homicide							
wet	12	12	9	9	11	9	9
dry	7(2)	6(2)	5(2)	3(3)	3(3)	4(2)	5(1)
Rape							
wet	21	16	19	16	19	20	20
dry	6(3)	5(3)	9(2)	8(2)	6(3)	9(3)	7(3)
Robbery							
wet	69	53	58	56	51	52	53
dry	19(3)	19(3)	15(3)	11(3)	13(3)	12(3)	5(3)
Assault							
wet	253	278	283	285	309	338	394
dry	100(3)	100(3)	106(3)	106(3)	92(3)	91(3)	110(3)
Property							
wet	2995	2918	2863	2611	2414	2493	2593
dry	1563(3)	1634(3)	1533(3)	1372(3)	1288(3)	1259(3)	1540(3)
Burglary							
wet	1098	1010	902	812	719	756	812
dry	561(3)	558(3)	490(3)	415(3)	427(3)	398(3)	495(3)
Larceny							
wet	1750	1771	1832	1688	1611	1613	1656
dry	888(3)	1216	946(3)	831(3)	785(3)	769(3)	946(3)
Auto Theft							
wet	151	125	130	110	110	124	128
dry	114	107	97	81	80	92	99

Table 2 (continued).

CRIME	YEAR 1987	1988	1989	1990	1991	1992	1993
All Crime							
wet	3239	3262	3424	3407	3793	3690	3683
dry	1876(3)	1797(3)	1876(3)	1994(3)	2295(3)	2134(3)	1963(3)
Violent							
wet	480	451	488	534	640	681	650
dry	187(3)	216(3)	209(3)	236(3)	287(3)	315(3)	303(3)
Homicide							
wet	8	9	7	10	11	9	10
dry	5(1)	5(1)	7	5(2)	4(3)	4(2)	6(1)
Rape							
wet	20	22	23	22	26	28	27
dry	8(3)	11(3)	13(2)	12(2)	11(3)	15(2)	13(3)
Robbery							
wet	52	59	68	75	79	83	87
dry	16(3)	20(3)	17(3)	62	20(3)	26(3)	22(3)
Assault							
wet	400	361	390	426	523	562	589
dry	158(3)	180(3)	173(2)	275	252(3)	270(3)	263(3)
Property							
wet	2759	2812	2911	3379	3153	3009	3179
dry	1670(3)	1581(3)	1666(3)	3498	2008(2)	1818(2)	1660(3)
Burglary							
wet	869	901	864	2812	968	885	934
dry	532(3)	499(3)	512(3)	1019	653(3)	523(3)	469(3)
Larceny							
wet	1764	1777	1900	2822	2008	1941	2042
dry	1045(2)	977(2)	1046(3)	2321	1240(2)	1194(2)	1090(3)
Auto Theft							
wet	126	134	147	162	178	183	187
dry	113	104	108	108	108(1)	101(1)	101(2)

Notes: Significant differences are identified as follows: (1) = $\leq$ .05, (2) = $\leq$ .01, and (3) = $\leq$ .001.

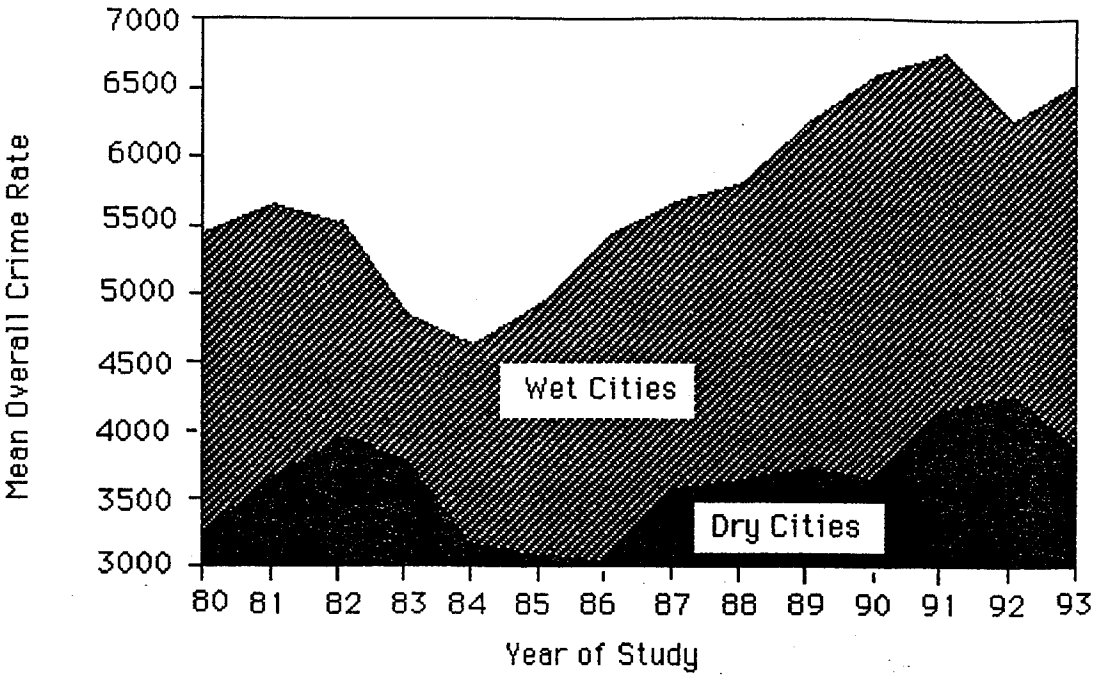
Hypothesis # 3. Wet cities will have higher crime than dry cities.

Strong support exists for this hypothesis. The 36 Alabama cities selected for the study were not located in metropolitan statistical areas, had populations of over 5000 residents, and/or changed from a dry to wet status during the study period. When these cities were compared, the 25 wet cities had higher crime rates then the 11 dry cities. The findings for cities were basically the same as when wet counties were compared to dry counties. The main differences are that the crime rates are higher in the cities and there are more years in which significant differences are not present. But even when significant differences were not present, the trend toward wet cities having higher crime rates was still present (Table 3).

Overall crime rates, with the exception of 1983, showed significant differences in every year from 1980 to 1993 (Figure 4). The mean overall crime rate for the wet cities ranged from 4645 to 6771 per 100,000 in population. The mean overall crime rate for dry cities ranged from 3017 to 4240 per 100,000 in population (2 tail probability $\leq .044$ for t.).

The violent crime rate was significantly higher in the wet cities than in the dry cities in every year of the study except 1982, 1983, and 1992. The mean violent crime rate during the years with significant differences ranged from 426 to 1187 per 100,000 in population. The mean violent crime rate in dry cities ranged from 154 to 594 per 100,000 in population (2 tail probability $< .041$ for t).

Figure 4. Comparing overall crime rates between wet and dry cities.



In over half the years in the study the mean rape rate was significantly higher in wet cities than in dry cities. The mean rape rates, based on 100,000 in population, for years with significant differences are as follows: 1980-23 to 10 (2 tail probability = .027 for t), 1981-28 to 11 (2 tail probability = .011 for t), 1982-26 to 8 (2 tail probability = .001 for t), 1986-31 to 9 (2 tail probability = .001 for t), 1989-38 to 9 (2 tail probability < .001 for t), 1990-40 to 23 (2 tail probability = .050 for t) and 1993-46 to 26 (2 tail probability = .041 for t).

The robbery rate in wet cities was also higher than in dry cities. A difference was evident in every year of the study except 1981, 1984, and 1993. The mean robbery rate during the years with significant differences ranged from 55 to 129 per 100,000 in population and the mean rate in dry cities ranged from 16 to 46 per 100,000 in population (2 tail probability $\leq$ .014 for t).

In eight years of the study the assault rate in wet cities was higher than in dry cities. Assault rates based on 100,000 in population are as follows: 1980-310 to 111 (2 tail probability = .001 for t), 1981-455 to 201 (2 tail probability = .022 for t), 1985-650 to 288 (2 tail probability = .022 for t), 1986-736 to 292 (2 tail probability = .004 for t), 1987-782 to 392 (2 tail probability = .014 for t), 1988-712 to 419 (2 tail probability = .041 for t), 1989-765 to 445 (2 tail probability = .033 for t), and 1990-836 to 442 (2 tail probability = .024 for t).

Wet cities had higher property crime rates than dry cities. Overall property crime rates proved to be significant in every year of the study except 1983, 1992, and 1993. The mean property crime rates in wet cities during the years with significant differences ranged from 3967 to 5637 per 100,000 in population. The dry city property crime rates during these years ranged from 2684 to 3575 per 100,000 in population (2 tail probability $\leq$ .044 for t).

In ten years of the study a significant difference was evident showing wet cities had higher burglary rates than dry cities. The only years showing no significant difference were 1982, 1983, 1992 and 1993. The mean burglary rate for wet cities during the years with significant

differences ranged from 1017 to 1607 per 100,000 in population and the mean rate in dry cities ranged from 585 to 831 per 100,000 in population (2 tail probability $\leq$ .022 for t).

The larceny rate was also higher in wet cities than in dry cities. Significant differences were evident in every year but 1982, 1983, 1992, and 1993. The mean larceny rate for wet cities during the years with significant differences ranged from 2971 to 3973 per 100,000 in population. The mean larceny rate in dry cities ranged from 1908 to 2380 per 100,000 in population (2 tail probability $\leq$ .045 for t).

Two variables which could impact the outcomes of this analysis are minority concentration and poverty. Wet cities have a significantly higher percentage of minorities (28.6% to 15.1%, 2 tail probability = .026 for t) and people living below the poverty level (23.4% to 19.2%, 2 tail probability = .046 for t).

Table 3. Crime Rates per 100,000 in Population in Wet Cities as Compared to Dry Cities.

	YEAR						
CRIME	1980	1981	1982	1983	1984	1985	1986
All Crime							
wet	5447	5630	5506	4846	4645	4921	5422
dry	3244(2)	3693(2)	3943(1)	3788	3153(2)	3088(2)	3017(3)
Violent							
wet	426	568	616	594	676	749	846
dry	154(3)	265(1)	331	332	323(1)	345(1)	328(2)
Homicide							
wet	10	11	13	8	10	8	12
dry	3(2)	7	8	6	1(2)	9	7
Rape							
wet	23	28	26	23	23	26	31
dry	10(1)	11(1)	8(3)	20	13	18	9(3)
Robbery							
wet	83	75	76	58	55	66	67
dry	30(2)	46	29(2)	19(3)	30	29(2)	20(3)
Assault							
wet	310	455	502	504	581	650	736
dry	111(3)	201(1)	286	286	279	288(1)	292(2)
Property							
wet	5022	5062	4891	4282	3969	4172	4576
dry	3090(2)	3427(2)	3612(1)	3457	2830(1)	2743(2)	2684(3)
Burglary							
wet	1607	1490	1421	1138	1025	1017	1216
dry	732(3)	831(2)	945	896	653(2)	643(1)	585(3)
Larceny							
wet	3177	3340	3244	2964	2780	2971	3166
dry	2149(1)	2382(1)	2446	2356	2030(1)	1908(1)	1910(3)
Auto Theft							
wet	238	234	225	179	164	184	195
dry	209	200	221	204	147	192	191

Table 3 (continued).

CRIME	YEAR 1987	1988	1989	1990	1991	1992	1993
All Crime							
wet	5556	5797	6287	6597	6771	6262	6520
dry	3595(3)	3618(2)	3773(2)	3619(3)	4169(2)	4240(1)	3873(2)
Violent							
wet	888	854	919	1012	1134	1097	1187
dry	451(1)	479(1)	482(2)	503(2)	594(1)	616	565(3)
Homicide							
wet	8	11	9	11	10	10	12
dry	18	9	14	12	7	9	7
Rape							
wet	28	37	38	40	34	38	46
dry	16	21	9(3)	23(1)	19	30	26(1)
Robbery							
wet	70	93	107	125	114	129	256
dry	26(3)	29(3)	16(3)	27(3)	39(3)	38(3)	33
Assault							
wet	782	712	765	836	976	920	1905
dry	392(1)	419(1)	443(1)	442(1)	529	539	499
Property							
wet	4768	4942	5368	5585	5637	5165	7956
dry	3143(3)	3139(2)	3290(2)	3116(3)	3575(2)	3624	3308
Burglary							
wet	1207	1234	1367	1391	1429	1227	1960
dry	688(3)	823(1)	756(3)	695(2)	758(3)	820	774
Larceny							
wet	3365	3475	3769	3945	3973	3706	5622
dry	2221(3)	2095(3)	2323(2)	2246(2)	2664(1)	2632	2378
Auto Theft							
wet	197	234	232	252	235	232	246
dry	235	220	211	177	165	172	160

Notes: Significant differences are identified as follows: (1) = ≤ .05, (2) = ≤ .01, and (3) = ≤ .001.

Hypothesis # 4. If a county or city votes to go from dry to wet then the crime rate will increase.

Support exists for this hypothesis. To determine if crime rates would increase or decrease if a county or city changed their status from dry to wet, analysis was conducted on the 2 counties and 7 cities which changed their status from dry to wet during the evaluated period. The crime rates for the four years before the change in status were averaged to obtain a baseline. The study then compared these crime rates to the year of the status change and for every year for four years after the change in status. Although the findings were not always significant, crime rates tended to be higher after a county or city became wet (Table 4).

The overall crime rate was not significantly higher after the change in status, but an increase in crime rates was evident from the second through the forth year after becoming wet. In the overall violent crime rate, a trend was present from the second to the fourth year after the change in status. The mean violent crime rate was 276 per 100,000 in population for the four years before the change in status. During the year of the change and the first year after, no significant difference was noted but increases were present. In the second year after the change the mean rate was 483 per 100,000 in population (2 tail probability = .015 for t), in the third year the mean rate was 547 per 100,000 in population (2 tail probability = .010 for t) and in the forth year it was 593 per 100,000 in population (2 tail probability = .004 for t). Significant increases were evident in the robbery rate during the third

year after the change. For the four years prior to the change the mean robbery rate was 50 per 100,000 in population. In the third year after the change, the mean rate was 82 per 100,000 (2 tail probability = .040 for t). A trend was also evident in the assault rate. The mean assault rate before the change in status was 202 per 100,000 in population. Although the assault rates were higher in the year of the change, it was not significant. In the first year after the change the mean assault rate was 348 per 100,000 in population (2 tail probability = .037 for t), in the second year after the change it was 393 per 100,000 in population (2 tail probability = .016 for t), in the third year after the change it was 424 per 100,000 in population (2 tail probability = .012 for t) and in the fourth year after the change it was 478 per 100,000 in population (2 tail probability = .005 for t).

Property crime rates did not show the same trends as the violent crime rates. Significant differences in the overall property crime rate were not present but the crime rates increased after the change in status. The burglary, larceny, and motor vehicle theft rates all increased after the communities became wet but were not significant.

Table 4. Crime Rates per 100,000 in Population for Counties and Cities Which Changed from a Dry to Wet Status.

	Years in Relation to Change in Status					
CRIME	Before	Change	1st	2nd	3rd	4th
All Crime	4317	3658	4130	4847	5107	5477
Violent	276	331	403	483(1)	547(2)	593(3)
Homicide	9	8	6	10	11	10
Rape	17	11	11	15	30	24
Robbery	47	31	36	65	82(1)	81
Assault	202	281	348(1)	393(1)	424(1)	478(2)
Property	4041	3327	3727	4363	4560	4884
Burglary	1018	881	798	1038	1090	1045
Larceny	2763	2265	2705	3060	3192	3503
Auto Theft	257	180	223	265	278	336

Notes: Significant differences are identified as follows: (1) = $\leq .05$, (2) = $\leq .01$, and (3) = $\leq .001$.

Hypothesis # 5. If a military installation is located within a county, the crime rates in that county will be higher than similar counties without a military installation.

Some support was found for this hypothesis. Because alcoholic beverages are sold on military installations at generally lower prices than the civilian community and evidence exists that heavy drinking is prevalent among military personnel, analysis was conducted to determine if the presence of an military installation influenced crime rates. All military installations within the State of Alabama are located within metropolitan statistical areas and within counties which already allow for the sale of alcoholic beverages. Therefore, the comparison was made between counties containing military installations and wet counties which do not contain military installations.

From 1980 to 1989, counties containing military installations had significantly higher rates of overall crime than wet counties without military installations (Table 5). The mean overall crime rates in counties containing military installations ranged from 4581 to 6034 per 100,000 in population. The mean overall crime rate for wet counties without military installations ranged from 2543 to 3564 per 100,000 in population (2 tail probability $\leq$ .048 for t). No significant differences were evident from 1989 through 1993.

Significant differences in violent crime rates showing higher rates in counties containing military installations were only present in two years of the study. In 1980, the mean violent crime rate was 581 to 330 per 100,000 in population (2 tail probability = .047 for t) and in

1993, the rate was 916 to 613 per 100,000 in population (2 tail probability = .042 for t). No significant differences were noted between the two groups in the homicide, robbery, or the assault rate.

The rape rate was higher in counties with military installations in four years of the study. The mean rape rate in 1980 was 39 to 19 per 100,000 in population (2 tail probability = .025 for t); in 1988, it was 35 to 20 per 100,000 in population (2 tail probability = .041 for t); and in 1989 it was 36 to 21 per 100,000 in population (2 tail probability = .027 for t).

Counties with military installations had higher rates of overall property crime in eight years of the study. The mean property crime rates per 100,000 in population for counties with military installations showed significant differences as follows: 1980-5443 to 2645 (2 tail probability = .025 for t), 1981-5159 to 2606 (2 tail probability = .025 for t), 1982-5010 to 2564 (2 tail probability = .043 for t), 1984-4147 to 2173 (2 tail probability = .030 for t), 1985-4276 to 2245 (2 tail probability = .020 for t), 1986-4508 to 2327 (2 tail probability = .030 for t), 1987-4692 to 2491(2 tail probability = .044 for t) and 1988-4823 to 2524 (2 tail probability = .037 for t).

Larceny rates were higher in counties with military installations than in wet counties without military installations. The findings revealing significant differences in the mean larceny rates per 100,000 in population for counties with military installations as follows: 1980 - 3247 to 1542 (2 tail probability = .012 for t), 1981-3230 to 1567 (2 tail probability = .008 for t), 1982-3289 to 1630 (2 tail probability = .030 for

t), 1983-3028 to 1501 (2 tail probability = .033 for t), 1984-3008 to 1417 (2 tail probability = .026 for t), 1985-2812 to 1446 (2 tail probability = .016 for t), 1986-2934 to 1478 (2 tail probability = .022 for t), 1987-3081 to 1581 (2 tail probability = .028 for t), and 1988-3112 to 1585 (2 tail probability = .036 for t).

The rate of motor vehicle theft per 100,000 in population for counties with military installations was higher in five years of the study. The findings that were significant are as follows: 1980-313 to 128 (2 tail probability = .039 for t), 1983-210 to 97 (2 tail probability = .042 for t), 1987-230 to 110 (2 tail probability = .043 for t),1988-242 to 119 (2 tail probability = .046 for t), and 1989-274 to 129 (2 tail probability = .031 for t).

The other variables which showed significant differences which could influence these findings are that counties containing military installations have lower percentages of people on foodstamps (10.8% to 17.2%, 2 tail probability = .012 for t), percentages of people living below the poverty level (16.2% to 25.3%, 2 tail probability, = .002 for t), and unemployment rates (6.4% to 7.9%, 2 tail probability = .027 for t). Counties with military installations have higher population densities (97 to 49.5, 2 tail probability < .001 for t), per capita income ($14,300.00 to $11,522.20, 2 tail probability = .048 for t), percentage of urban population (76% to 41% 2 tail probability, < .001 for t), percentage of high school graduates (73.2% to 59.7%, 2 tail

Table 5. Crime Rates per 100,000 in Population for Counties With Military Installations as Compared to Wet Counties Without Military Installations.

	YEAR						
CRIME	1980	1981	1982	1983	1984	1985	1986
All Crime							
with	6024	5749	5569	4978	4679	4807	5201
without	2984(1)	3036(1)	2907(1)	2694(1)	2543(1)	2651(1)	2777(1)
Violent							
with	581	590	560	513	532	530	692
without	325(1)	344	342	341	370	406	446
Homicide							
with	14	11	11	9	10	8	11
without	12	12	9	9	12	10	8
Rape							
with	39	22	28	26	30	32	32
without	19(1)	15	17	15	18	18	19
Robbery							
with	165	93	146	122	115	118	117
without	55	48	46	47	42	44	45
Assault							
with	373	401	375	355	377	373	533
without	236	261	270	275	299	334	374
Property							
with	5443	5159	5010	4464	4147	4276	4508
without	2645(1)	2606(1)	2564(1)	2354	2173(1)	2245(1)	2327(1)
Burglary							
with	1884	1662	1485	1226	1198	1260	1351
without	988	919	820	755	653	686	737
Larceny							
with	3247	3230	3289	3028	3008	2812	2934
without	1542(1)	1567(2)	1630(1)	1501(1)	1417(1)	1446(1)	1479(1)
Auto Theft							
with	313	218	235	211	193	204	224
without	128(1)	112	114	97(1)	104	113	115

Table 5 (continued).

CRIME	YEAR 1987	1988	1989	1990	1991	1992	1993
All Crime							
with	5305	5450	5474	4581	5437	6034	5590
without	2952(1)	2950(1)	3131	3244	3564	3364	3418
Violent							
with	612	627	656	624	894	1093	916
without	461	425	464	522	604	624	613(1)
Homicide							
with	12	9	11	9	10	10	12
without	8(1)	9	7	10	11	8	10
Rape							
with	27	35	36	35	38	38	39
without	19	20(1)	21(1)	21	25	26	25
Robbery							
with	126	137	148	129	158	131	201
without	41	48	57	67	68	73	71
Assault							
with	447	447	460	450	671	840	664
without	393	348	380	422	502	522	579
Property							
with	4692	4823	4818	3957	4542	4942	4674
without	2491(1)	2524(1)	2647	3296	2960	2740	2971
Burglary							
with	1380	1468	1298	927	1286	1346	1308
without	798	819	804	730	925	820	882
Larceny							
with	3080	3112	3248	2790	2961	3208	3001
without	1581(1)	1585(1)	1713	2826	1876	1765	1909
Auto Theft							
with	233	242	274	242	312	387	365
without	111	119(1)	129(1)	151	160	155	162

Notes: Significant differences are identified as follows: (1) = ≤ .05, (2) = ≤ .01, and (3) = ≤ .001.

probability = .001 for t), and rate of growth (92.4% to 42.4%, 2 tail probability < .001 for t). No significant differences were evident in the percentage of single parent families, net migration rates, median age, and percentage of minorities.

Hypothesis # 6. If dry cities are not located in counties adjacent to a wet county or a wet city in a dry county, as the distance to a wet county or city increases then the crime rates decrease.

Some support was found for this hypothesis. When examining alcoholic beverage accessibility, it is necessary to consider if the distance to the actual legal alcohol sales impacts the crime rates. To determine this, the 11 dry cities were compared to the wet cities in the study based on the size of the cities. City size was grouped as follows; up to 25000, 25001-50000, 50001-100000, and above 100001. These cities were compared to determine if a positive or negative association was present based on the distance the dry cities were located from areas with legal alcohol sales.

The findings revealed that a positive association exists between distance and crime rates. Positive associations were present in the overall crime rate in every year from 1980 through 1990. The overall crime rate during these years ranged from r = .3416 to .5677 ($P \leq .01$ - .05). The overall violent crime, homicide and assault rates did not show any significant association during the years of the study. The rape rate did show a positive association during five years of the study: 1982, r =

.3608 ($P \leq .05$); 1986, $r = .3312$ ($P \leq .05$); 1989, $r = .4419$ ($P \leq .01$); 1991, $r = .3994$ ($P \leq .05$); and 1986, $r = .3312$ ($P \leq .05$).

Positive associations between distance and robbery rates were evident during 10 years of the study. The only years in which a positive association did not exist were 1984, 1987, 1992, and 1993. The findings are as follows: 1980, $r = .3957$ ($P \leq .05$); 1981, $r = .3470$ ($P \leq .05$); 1982, $r = .4069$ ($P \leq .05$); 1983, $r = .4413$ ($P \leq .01$); 1985, $r = .3731$ ($P \leq .05$); 1986, $r = .3788$ ($P \leq .05$); 1988, $r = .5280$ ($P \leq .01$); 1989, $r = .4419$ ($P \leq .01$); 1990, $r = .3841$ ($P \leq .05$); and 1991, $r = .3437$ ($P \leq .05$).

A trend in overall property crimes was evident in every year of the study from 1980 through 1990. The findings for property crime during these years ranged from $r = .4071$ to .6009 ($P \leq .01$-.05). No associations were evident for years 1991, 1992, and 1993. Positive associations in the burglary rate were present during seven years of the study. The findings are as follows: 1980, $r = .4369$ ($P \leq .01$); 1981, $r = .3466$ ($P \leq .05$); 1982, $r = .3520$ ($P \leq .05$); 1984, $r = .4679$ ($P \leq .01$); 1985, $r = .4281$ ($P \leq .01$); 1986, $r = .3694$ ($P \leq .05$); and 1988, $r = .3437$ ($P \leq .05$). From 1980 through 1990, a positive association between larceny rates and distance were evident. The findings for these years ranged from $r = .4098$ to .5864 ($P \leq .01$ - .05). A positive association in the motor vehicle theft rate was evident in only 3 years of the study: 1980, $r = .3692$ ($P \leq .05$); 1985, $r = .4376$ ($P \leq .01$); and 1993, $r = .4218$ ($P \leq .05$).

Discussion

From every angle in which the crime rates and demographic information were examined, the evidence seems to support the contention that a relationship exists between the legal sale of alcoholic beverages and crime. The findings in this study consistently indicate that the decision to allow alcoholic beverages to be sold in a particular area is related to higher crime rates. When alcohol is not available for legal sale in a particular area, the crime rates tend to be lower.

This trend was consistent for every hypothesis tested. When wet counties and cities were compared to dry counties and cities the overall crime rates, violent crime rates, and property crime rates were significantly higher in every year of the study. This trend of higher crime rates continued when comparing wet and dry counties and when comparing wet and dry cities. Changing to a wet status or having a military installation in the county also resulted in higher crime rates. Even the distance of a dry city to locations that allow the legal alcohol sales had an influence on crime rates. In those cases in which significant differences did not exist, crime rates still tended to be higher in wet areas than in dry areas.

With all this evidence, it is clear that a relationship exists between crime and the availability of alcoholic beverages. The findings imply that a county or city could reduce their crime rates by not allowing the sale of alcoholic beverages. Because totally eliminating the use of alcohol in America is not practical or even desirable, more research is

needed on the impact of present restrictions and on the projected impact further restrictions are likely to produce.

Chapter IV

Summary

In an attempt to determine how the accessibility of alcoholic beverages and crime are related, this study was conducted to examine crime rates in areas which do and do not allow the legal sale of alcohol. The State of Alabama was selected because counties and cities within the State individually decide their wet/dry status. In comparing counties and cities which have a different wet/dry status, this study concludes that the availability of alcoholic beverages and crime are related, supporting the contention that allowing the legal sale of alcoholic beverages within a city or county results in higher crime rates.

The link between alcohol and crime has been considered since Enrico Ferri tracked wine consumption and criminal rates in France in the 1800s. When alcohol first began to be viewed as a problem in the United States, it was seen as a threat to public order and political stability. In recent years attention has shifted from the need to maintain public order to concern with alcohol's effects on violent and property crime.

Studies show that alcohol can make people more aggressive; and it plays an important role in violent crimes. The presence of alcohol, drinking, and intoxication is an established fact in many cases of violent crime, as evidenced by the relationship to homicides, assaults,

and sexual offenses. In fact, the intoxication of the offender may appear as the only logical explanation for irrational behavior on the part of a normally restrained and controlled person.

A striking relationship between alcohol consumption and assaultive behavior has been established through numerous studies, case histories, incident analyses, and other research. The empirical data indicates a relationship between alcoholic influence or intoxication and the occurrence of assault and battery, rape, and murder. What is less clear is whether intoxication is actually a direct cause of such criminally assaultive actions or is merely another symptom of the lifestyle which perpetuates criminal activity (Garner, 1979).

Prohibition was tried in the United States and was a failure. Regulatory and tax policies are now used to modify the course of alcoholism and its related problems in American society. Regulatory policy is generally aimed at lowering the availability of alcohol either to the general public or to certain segments of the population that are deemed especially vulnerable.

Walter Reckless explains society's use of restrictive policies designed to curb unwanted behavior in his containment theory. The restrictions placed on alcoholic beverages are part of the outer containments used by society to help shape the behavior of its members by establishing the morals and values wanted in their communities. These outer containments are used by society to establish a defense against potential deviation from legal and social norms and help insulate a person from the pressures of criminal influences. Because

containment theory deals with probabilities, each weakening of the outer containments is seen as tending to increase the odds for nonconformity or criminal actions.

According to the findings in this study, communities which have employed restricting alcoholic beverage sales as part of an outer containment strategy have lower crime rates. As outer containment makes it more difficult for a person to easily obtain alcoholic beverages, the odds are reduced that the person will obtain them and become involved in related criminal activity. In counties and cities where they have not used the restriction of alcohol sales as part of their outer containment strategy, crime rates are higher. Containment theory explains that when outer containment is relaxed, such as a county or city becoming wet, the less difficult or inconvenient it is for a person to use alcoholic beverages and the more likely a person is to become involved in alcohol related criminal behavior. In the context of this study, containment theory in reference to the use of outer containments appears to be valid.

The findings in this study consistently indicate that the decision to allow alcoholic beverages to be sold in a particular area is related to higher crime rates. When alcohol is not available for legal sale in a particular area, the crime rates tend to be lower.

This trend was consistent for each hypothesis tested. Even when significant differences were not present, the wet areas still tended to have higher crime rates then the dry areas. When wet counties and cities were compared to dry counties and cities the overall crime rate

was significantly higher in every year of the study. This was true for both the category of violent and property crimes. When wet and dry counties were compared, here again significant differences were found in the overall crime rate, violent crime rate, and the property crime rate during every year of the study.

When examining wet and dry cities, the trend of wet areas having higher crime rates was evident. The findings for cities were basically the same as for counties. The main differences were that the crime rates are higher in the cities and there are more years in which significant differences are not present. In every year but one, significant differences were present in the overall crime rate. This was true in all but two years for violent crime rates, and all but three years for property crime rates.

When a county or city changed from a dry status to a wet status, there is some evidence that crime rates increased. For the cities and counties which had a change in status during the study period, the overall crime rate was not significantly higher, but the crime rates did increase after the change in status. A trend was present in the violent crime from the second to the fourth year after the change in status. Significant differences in the property crime rate were evident in the fourth year after the change.

When military installations are located within a county, the crime rates in that county are higher than in other wet counties. From 1980 to 1989, counties containing military installations had significantly higher rates of overall crime than wet counties without military

installations. Significant differences in violent crime rates were only present in two years of the study. Property crime rates showed significant differences in eight years of the study.

There was some support found for the suggestion that the distance to legal alcohol sales has an impact on crime rates. Positive associations were present in the overall crime rate in every year from 1980 through 1990 and during 10 years of the study for robbery rates. A trend in property crime rates were evident in every year of the study from 1980 through 1990.

The fact that all counties with large urban populations are wet distorts the more sophisticated statistical procedures. When regressions were conducted on individual years after the wet and dry status was inserted as a dummy variable, the percentage of urban population was the second most important variable in each case. There was considerable variation in other variables entered into the equation but population density and the percentage of single parent families occurred most frequently.

Because totally eliminating the use of alcohol in America is not a practical alternative, more research is needed on the impact of present restrictions and the projected impact further restrictions are likely to produce. While placing additional restrictions on the sale of alcoholic beverages in a community may well reduce the crime rates, it would also inevitably reduce tax revenues, affect businesses, employment, and community growth. Careful consideration should be given when

weighing the probable benefits of further alcohol restrictions and the impact these restrictions would have on a given community.

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Appendix A

Distribution of A. B. C. Stores Net Profit to Counties

ALABAMA ALCOHOLIC BEVERAGE CONTROL BOARD
DISTRIBUTION OF A. B. C. STORES NET PROFIT TO COUNTIES
OCTOBER 1, 1987 - SEPTEMBER 30, 1990

COUNTIES	POPULATION	10 PER CENT OF FIRST $2 MILLION	10 PER CENT OF REMAINDER	1 PERCENT OF FIRST $2 MILLION	TOTAL
AUTAUGA	32,259	$ 4,878.05	$ 10,264.48	$ 487.80	$ 15,630.33
BALDWIN	78,440	4,878.05	24,958.77	487.80	30,324.62
BARBOUR	24,756	4,878.05	7,877.09	487.80	13,242.94
BULLOCK	10,596	4,878.05	3,371.54	487.80	8,737.39
BUTLER	21,680	4,878.05	6,898.35	487.80	12,264.20
CALHOUN	116,936	4,878.05	37,207.78	487.80	42,573.63
CHAMBERS	39,191	4,878.05	12,470.17	487.80	17,836.02
CHOCTAW	16,839	4,878.05	5,358.00	487.80	10,723.85
CLEBURNE	12,595	4,878.05	4,007.60	487.80	9,373.45
COLBERT	54,519	4,878.05	17,347.37	487.80	22,713.22
CONECUH	15,884	4,878.05	5,054.12	487.81	10,419.98
COOSA	11,377	4,878.05	3,620.05	487.81	8,985.91
COVINGTON	36,850	4,878.05	11,725.27	487.81	17,091.13
CRENSHAW	14,110	4,878.05	4,489.63	487.81	9,855.49
DALE	47,821	4,878.05	15,216.11	487.81	20,581.97
DALLAS	53,981	4,878.05	17,176.15	487.81	22,542.01
ELMORE	43,390	4,878.05	13,806.22	487.81	19,172.08
ESCAMBIA	38,392	4,878.05	12,215.91	487.81	17,581.77
ETOWAH	103,057	4,878.05	32,791.62	487.81	38,157.48
GREENE	11,021	4,878.04	3,506.76	487.81	8,872.61
HALE	15,604	4,878.04	4,965.02	487.81	10,330.87
HENRY	15,302	4,878.04	4,868.92	487.81	10,234.77
HOUSTON	74,632	4,878.04	23,747.08	487.81	29,112.93
JEFFERSON	671,197	4,878.04	213,567.62	487.81	218,933.47
LEE	76,283	4,878.05	24,272.41	487.81	29,638.27

ALABAMA ALCOHOLIC BEVERAGE CONTROL BOARD
DISTRIBUTION OF A. B. C. STORES NET PROFIT TO COUNTIES
OCTOBER 1, 1989 - SEPTEMBER 30, 1990

COUNTIES	POPULATION	10 PER CENT OF FIRST $2 MILLION	10 PER CENT OF REMAINDER	1 PERCENT OF FIRST $2 MILLION	TOTAL
LOWNDES	13,253	$ 4,878.05	$ 4,216.95	$ 487.81	$ 9,582.81
MACON	26,829	4,878.05	8,536.69	487.81	13,902.55
MADISON	196,966	4,878.05	62,672.45	487.81	68,038.31
MARENGO	25,047	4,878.05	7,969.67	487.81	13,335.53
MOBILE	364,379	4,878.05	115,941.46	487.81	121,307.32
MONTGOMERY	197,038	4,878.05	62,695.36	487.80	68,061.21
PERRY	15,012	4,878.05	4,776.66	487.80	10,142.51
PIKE	28,050	4,878.05	8,925.21	487.80	14,291.06
RUSSELL	47,356	4,878.05	15,068.18	487.80	20,434.03
SHELBY	66,298	4,878.05	21,095.31	487.80	26,461.16
ST. CLAIR	41,205	4,878.05	13,111.00	487.80	18,476.85
SUMTER	16,908	4,878.05	5,379.95	487.80	10,745.80
TALLADEGA	73,826	4,878.05	23,490.64	487.80	28,856.49
TALLAPOOSA	38,676	4,878.05	12,306.30	487.80	17,672.15
TUSCALOOSA	137,473	4,878.05	43,742.43	487.80	49,108.28
WILCOX	14,755	4,878.05	4,694.89	487.80	10,060.74
TOTAL	2,939,783	$ 200,000.00	$ 935,407.19	$ 20,000.00	$ 1,155,407.19

Source: ABC Board Revised 1989 - 1990 Annual Report

Appendix B

Alcoholic Beverage Control Board Distribution of Beer Excise Tax to Counties

	1984	1985	1986	1987	1988	1989	1990
Autauga	$94,009.35	$94,447.34	$101,128.91	$103,127.95	$104,054.94	$104,778.73	$106,204.16
Baldwin	94,009.35	94,447.34	101,128.91	103,127.95	104,054.93	104,778.73	106,204.16
Barbour	94,009.35	94,447.34	101,128.91	103,127.95	104,054.93	104,778.73	106,204.16
Bullock	94,009.35	94,447.34	101,128.91	103,127.95	104,054.93	104,778.73	106,204.16
Butler	50,922.59	94,447.34	101,128.91	103,127.95	104,054.93	104,778.73	106,204.16
Calhoun	94,009.35	94,447.34	101,128.91	103,127.95	104,054.93	104,778.73	106,204.15
Chambers	94,009.35	94,447.34	101,128.91	103,127.95	104,054.93	104,778.73	106,204.15
Choctaw	94,009.35	94,447.34	101,128.91	103,127.95	104,054.93	104,778.73	106,204.15
Cleburne	94,009.35	94,447.34	101,128.91	103,127.95	104,054.93	104,778.73	106,204.15
Colbert	94,009.35	94,447.34	101,128.91	103,127.95	104,054.93	104,778.73	106,204.15
Conecuh	94,009.35	94,447.34	101,128.91	103,127.95	104,054.92	104,778.74	106,204.15
Coosa	94,009.35	94,447.34	101,128.91	103,127.95	104,054.92	104,778.74	106,204.15
Covington	94,009.35	94,447.34	101,128.91	103,127.95	104,054.92	104,778.74	106,204.15
Crenshaw	94,009.35	94,447.35	101,128.91	103,127.95	104,054.92	104,778.74	106,204.15
Dale	94,009.35	94,447.35	101,128.91	103,127.94	104,054.93	104,778.74	106,204.15
Dallas	94,009.35	94,447.35	101,128.91	103,127.94	104,054.93	104,778.74	106,204.15
Elmore	94,009.35	94,447.35	101,128.91	103,127.94	104,054.93	104,778.74	106,204.15
Escambia	94,009.35	94,447.34	101,128.92	103,127.94	104,054.93	104,778.74	106,204.15
Etowah	94,009.35	94,447.34	101,128.92	103,127.94	104,054.93	104,778.74	106,204.15
Greene	94,009.35	94,447.34	101,128.92	103,127.94	104,054.93	104,778.74	106,204.15
Hale	94,009.35	94,447.34	101,128.92	103,127.94	104,054.93	104,778.74	106,204.15
Henry	94,009.35	94,447.33	101,128.92	103,127.94	104,054.93	104,778.74	106,204.15
Houston	94,009.35	94,447.33	101,128.92	103,127.94	104,054.93	104,778.74	106,204.15
Jefferson	94,009.34	94,447.35	101,128.92	103,127.94	104,054.93	104,778.74	106,204.15
Lee	94,009.34	94,447.35	101,128.92	103,127.94	104,054.93	104,778.74	106,204.15
Lowndes	94,009.34	94,447.35	101,128.92	103,127.94	104,054.93	104,778.73	106,204.16
Macon	94,009.34	94,447.35	101,128.92	103,127.94	104,054.93	104,778.73	106,204.16
Madison	94,009.32	94,447.35	101,128.92	103,127.94	104,054.93	104,778.73	106,204.16
Marengo	94,009.34	94,447.35	101,128.92	103,127.94	104,054.93	104,778.73	106,204.16
Mobile	94,009.34	94,447.35	101,128.92	103,127.94	104,054.93	104,778.73	106,204.16
Montgomery	94,009.33	94,447.35	101,128.92	103,127.94	104,054.93	104,778.73	106,204.16
Perry	94,009.33	94,447.35	101,128.92	103,127.94	104,054.93	104,778.73	106,204.15
Pike	94,009.33	94,447.35	101,128.92	103,127.94	104,054.94	104,778.73	106,204.16
Russell	94,009.33	94,447.35	101,128.92	103,127.94	104,054.94	104,778.73	106,204.16
Shelby	94,009.33	94,447.35	101,128.92	103,127.94	104,054.94	104,778.73	106,204.16
St. Clair	94,009.33	94,447.35	101,128.92	103,127.94	104,054.94	104,778.73	106,204.16
Sumter	94,009.34	94,447.35	101,128.91	103,127.95	104,054.94	104,778.73	106,204.16
Talladega	94,009.34	94,447.35	101,128.91	103,127.95	104,054.94	104,778.73	106,204.16
Tallapoosa	94,009.34	94,447.35	101,128.91	103,127.95	104,054.94	104,778.73	106,204.16
Tuscaloosa	94,009.35	94,447.35	101,128.91	103,127.95	104,054.94	104,778.73	106,204.16
Wilcox	94,009.35	94,447.35	101,128.91	103,127.95	104,054.94	104,778.73	106,204.16
	$3,811,296.35	$3,872,341.14	$4,146,285.50	$4,228,245.73	$4,266,252.19	$4,295,928.08	$4,354,370.35

Source: ABC Board Revised 1989 - 1990 Annual Report

Appendix C

County and Municipal Option Elections

COUNTY AND MUNICIPAL OPTION ELECTIONS
WET COUNTIES (41)

Counties which permit the sale of alcoholic beverage with dates and results of county option voting:

Autauga	03-10-37 (Dry)	10-05-37 (Dry)	09-16-47 (Dry)	11-08-66 (Wet)	
Baldwin	03-10-37 (Wet)				
Barbour	03-10-37 (Wet)				
Bullock	03-10-37 (Wet)				
Butler	03-10-37 (Dry)	08-30-49 (Dry)	09-28-71 (Dry)	05-04-76 (Dry)	03-13-84 (Wet)
Calhoun	03-10-37 (Dry)	09-28-37 (Dry)	07-23-46 (Dry)	05-02-50 (Dry)	12-06-55 (Dry)
	09-19-61 (Wet)	05-04-76 (Wet)			
Chambers	03-10-37 (Dry)	11-06-72 (Dry)	05-04-76 (Dry)	11-07-78 (Wet)	
Choctaw	03-10-37 (Dry)	11-08-38 (Dry)	09-30-47 (Dry)	11-08-66 (Dry)	05-25-71 (Dry)
	07-14-73 (Wet)				
Cleburne	03-10-37 (Dry)	03-18-75 (Dry)	06-29-79 (Wet)		
Colbert	03-10-37 (Wet)	07-09-40 (Wet)	10-06-42 (Dry)	03-19-46 (Wet)	08-13-57 (Dry)
	12-12-59 (Dry)	03-20-62 (Dry)	06-24-64 (Dry)	09-22-66 (Dry)	05-05-70 (Dry)
	11-06-72 (Dry)	10-14-81 (Wet)			
Conecuh	03-10-37 (Dry)	11-08-38 (Dry)	11-06-62 (Dry)	05-02-72 (Wet)	
Coosa	03-10-37 (Dry)	02-20-68 (Wet)			
Covington	03-10-37 (Wet)	08-14-51 (Wet)	10-27-53 (Wet)	11-19-57 (Wet)	
Crenshaw	03-10-37 (Wet)	04-20-43 (Dry)	05-21-46 (Wet)	12-07-48 (Wet)	11-02-76 (Wet)
Dale	03-10-37 (Dry)	10-01-37 (Dry)	05-02-72 (Wet)		
Dallas	03-10-37 (Wet)	12-01-60 (Wet)			
Elmore	03-10-37 (Dry)	08-15-39 (Dry)	03-04-62 (Dry)	12-05-67 (Dry)	05-05-70 (Wet)
	11-02-76 (Wet)				
Escambia	03-10-37 (Wet)	04-30-43 (Wet)	06-26-56 (Wet)	07-29-58 (Wet)	
Etowah	03-10-37 (Wet)	12-01-42 (Dry)	07-23-46 (Dry)	09-14-48 (Dry)	12-11-51 (Dry)
	02-21-58 (Dry)	11-05-68 (Dry)	05-02-72 (Wet)		
Greene	03-10-37 (Wet)	11-25-46 (Wet)			
Hale	03-10-37 (Dry)	12-06-60 (Dry)	12-06-66 (Dry)	05-25-71 (Wet)	
Henry	03-10-37 (Wet)	06-22-43 (Wet)	01-23-51 (Wet)	05-03-66 (Wet)	
Houston	03-10-37 (Wet)	02-28-39 (Wet)	08-14-42 (Wet)	07-08-47 (Wet)	04-05-66 (Wet)
Jefferson	03-10-37 (Wet)				
Lee	03-10-37 (Wet)	10-05-43 (Wet)			
Lowndes	03-10-37 (Wet)	12-06-55 (Wet)			
Macon	03-10-37 (Dry)	11-02-48 (Dry)	06-05-51 (Dry)	04-27-54 (Dry)	09-04-62 (Wet)
Madison	03-10-37 (Wet)	09-23-41 (Dry)	06-07-46 (Wet)		
Marengo	03-10-37 (Dry)	06-14-38 (Wet)	06-04-43 (Dry)	06-17-46 (Dry)	10-20-66 (Dry)
	06-08-71 (Wet)				
Mobile	03-10-37 (Wet)				
Montgomery	03-10-37 (Wet)				
Perry	03-10-37 (Wet)	01-20-42 (Wet)	11-31-51 (Wet)		
Pike	03-10-37 (Wet)				
Russell	03-10-37 (Wet)				
St. Clair	03-10-37 (Dry)	11-05-68 (Wet)			
Shelby	03-10-37 (Dry)	09-28-38 (Dry)	12-11-56 (Dry)	05-30-72 (Wet)	
Sumter	03-10-37 (Dry)	10-09-47 (Dry)	11-01-66 (Wet)		
Talladega	03-10-37 (Dry)	10-19-37 (Dry)	05-07-46 (Dry)	06-29-48 (Dry)	05-29-51 (Dry)
	05-01-56 (Dry)	09-12-67 (Wet)			
Tallapoosa	03-10-37 (Dry)	05-21-46 (Dry)	07-25-50 (Dry)	10-22-59 (Dry)	06-04-68 (Wet)
	09-15-70 (Wet)	06-10-75 (Wet)			
Tuscaloosa	03-10-37 (Dry)	05-01-40 (Dry)	03-29-49 (Dry)	07-24-51 (Wet)	05-04-54 (Dry)
	06-26-56 (Wet)	05-05-64 (Wet)			
Wilcox	03-10-37 (Dry)	11-03-70 (Wet)			

DRY COUNTIES (26)

Counties which prohibit the sale of alcoholic beverage with dates and results of county option voting:

Bibb	03-10-37 (Dry)	05-07-46 (Dry)	07-13-74 (Dry)	04-24-79 (Dry)	11-08-83 (Dry)
	06-03-86 (Dry)	11-06-90 (Dry)			
Blount	03-10-37 (Dry)	03-11-80 (Dry)			
Cherokee	03-10-37 (Dry)	03-12-60 (Dry)	06-01-71 (Dry)	05-04-76 (Dry)	11-04-86 (Dry)
Chilton	03-10-37 (Dry)	11-05-68 (Dry)	11-06-72 (Dry)	04-29-75 (Dry)	11-02-82 (Dry)
Clarke	03-10-37 (Dry)	11-08-38 (Dry)	05-05-64 (Dry)	03-14-72 (Dry)	06-04-74 (Dry)
	09-08-81 (Dry)				
Clay	03-10-37 (Dry)	06-04-68 (Dry)	10-10-72 (Dry)	09-05-78 (Dry)	09-02-80 (Dry)
	11-04-86 (Dry)				
Coffee	03-10-37 (Dry)	09-17-46 (Dry)	11-06-72 (Dry)		
Cullman	03-10-37 (Dry)	09-28-37 (Wet)	04-02-40 (Wet)	01-22-43 (Dry)	04-20-48 (Dry)
	01-18-51 (Dry)	05-05-70 (Dry)	11-06-72 (Dry)	06-06-90 (Dry)	
DeKalb	03-10-37 (Dry)				
Fayette	03-10-37 (Dry)				
Franklin	03-10-37 (Dry)	11-04-69 (Dry)	03-13-84 (Dry)		
Geneva	03-10-37 (Wet)	11-09-37 (Wet)	08-26-47 (Dry)	11-08-66 (Dry)	09-04-73 (Dry)
	11-04-80 (Dry)	03-13-84 (Dry)	11-04-86 (Dry)	11-06-90 (Dry)	
Jackson	03-10-37 (Dry)	11-06-72 (Dry)	11-02-76 (Dry)		
Lamar	03-10-37 (Dry)	06-08-71 (Dry)			
Lauderdale	03-10-37 (Dry)	12-09-58 (Dry)	11-06-72 (Dry)	04-15-75 (Dry)	04-03-79 (Dry)
	03-02-82 (Dry)				
Lawrence	03-10-37 (Dry)				
Limestone	03-10-37 (Dry)	01-28-47 (Dry)			
Marion	03-10-37 (Dry)	06-20-67 (Dry)	02-02-82 (Dry)		
Marshall	03-10-37 (Dry)	10-05-48 (Dry)	10-22-60 (Dry)	11-05-68 (Dry)	11-02-76 (Dry)
	11-24-81 (Dry)				
Monroe	03-10-37 (Wet)	09-06-40 (Dry)	01-25-66 (Dry)	11-06-72 (Dry)	11-07-78 (Dry)
Morgan	03-10-37 (Dry)	09-23-52 (Dry)	05-16-67 (Dry)	11-06-72 (Dry)	03-11-80 (Dry)
Pickens	03-10-37 (Dry)	05-18-48 (Dry)	01-30-79 (Dry)	04-12-83 (Dry)	11-04-86 (Dry)
Randolph	03-10-37 (Dry)	07-30-46 (Dry)	11-06-72 (Dry)	11-07-78 (Dry)	11-04-86 (Dry)
Walker	03-10-37 (Dry)	09-09-52 (Dry)	06-10-75 (Dry)		
Washington	03-10-37 (Wet)	10-10-39 (Dry)			
Winston	03-10-37 (Dry)	03-24-70 (Dry)	05-04-76 (Dry)	09-17-85 (Dry)	

WET MUNICIPALITIES (13)

On May 21, 1984, the Alabama Legislature approved a bill that for the first time allowed certain cities the option of holding wet-dry referendums. To qualify, the cities must have a population of 7,000 or more. The law also provides that if a city of 7,000 or more in a dry county votes to allow the sale of alcoholic beverages, then any other city within that county with a population of 4,000 or more may also hold a wet-dry election.

Since that time, thirteen cities have held wet-dry referendums.

The results and dates of the referendum are as follows:

Arab	11-04-86 (Dry)		Enterprise	11-06-84 (Wet)	
Athens	11-04-86 (Dry)	08-23-90 (Dry)	Florence	07-10-84 (Wet)	
Bridgeport	*06-05-90 (Wet)		Fort Payne	11-04-86 (Dry)	11-06-90 (Dry)
Clanton	11-04-86 (Wet)	11-06-90 (Wet)	Guntersville	07-10-84 (Wet)	
Cullman	11-04-86 (Dry)		Jasper	11-06-84 (Wet)	
Decatur	11-04-86 (Wet)		Scottsboro	07-10-84 (Wet)	
Elba	11-04-86 (Dry)				

*Election results contested; dry until court hears challeng due to annexation

Source: ABC Board Revised 1989 - 1990 Annual Report

Appendix D

Data Collection Instrument

	A	B	C	D
1	DATA FIELD	DATA		COLUMN #
2	SUBJECT #			1 -- 3
3	SHEET #	1		4
4	COUNTY OR CITY		1-COUNTY/2-CITY	5
5	Wet/Dry		1-WET/2-DRY	6
6	Year status change		EX:84	7--8
7	Population 1980		6 NUMBERS	9--14
8	Population 1990		6 NUMBERS	15-20
9	Distance wet city/county/state			21-22
10	% foodstamps 1990			23-24
11	% minority 1990			25-26
12	Population density 1990			27-28
13	Per capita income 1990		X 100	29-31
14	% single parent families 1990			32-33
15	Net migration rate 1980-1990			34-35
16	POS/NEG %		1-POS/2-NEG	36
17	College/University		1-YES/2-NO	37
18	Military installation		1-YES/2 NO	38
19	WI/AJ/NAJ MSD		1-WI/2-AJ/3-NAJ	39
20	% Urban			40-41
21	% below poverty level			42-43
22	% high school graduate/higher			44-45
23	Rate of growth			46-47
24	POS/NEG		1-POS/2-NEG	48
25	Median age			49-50
26	Unemployment rate			51-52
27	*1980		2 NUMBERS	53-54
28	Total # crimes		5 NUMBERS	55-59
29	Total # violent crimes		5 NUMBERS	60-64
30	# Homicides		3 NUMBERS	65-67
31	# Rapes		3 NUMBERS	68-70
32	# Robberies		4 NUMBERS	71-74
33	# Assaults		4 NUMBERS	75-78
34	Total # property crimes		5 NUMBERS	79-83
35	# Burglaries		5 NUMBERS	84-88
36	# Larcenies		5 NUMBERS	89-93
37	# motor vehicle thefts		4 NUMBERS	94-97
38	*1981		2 NUMBERS	98-99
39	Total # crimes		5 NUMBERS	100-104
40	Total # violent crimes		5 NUMBERS	105-109
41	# Homicides		3 NUMBERS	110-112
42	# Rapes		3 NUMBERS	113-115
43	# Robberies		4 NUMBERS	116-119
44	SUBJECT #			1 -- 3
45	SHEET #	2		4
46	# Assaults		4 NUMBERS	5--8
47	Total # property crimes		5 NUMBERS	9--13
48	# Burglaries		5 NUMBERS	14-18

	A	B	C	D
49	# Larcenies		5 NUMBERS	19-23
50	# motor vehicle thefts		4 NUMBERS	24-27
51	*1982		2 NUMBERS	28-29
52	Total # crimes		5 NUMBERS	30-34
53	Total # violent crimes		5 NUMBERS	35-39
54	# Homicides		3 NUMBERS	40-42
55	# Rapes		3 NUMBERS	43-45
56	# Robberies		4 NUMBERS	46-49
57	# Assaults		4 NUMBERS	50-53
58	Total # property crimes		5 NUMBERS	54-58
59	# Burglaries		5 NUMBERS	59-63
60	# Larcenies		5 NUMBERS	64-68
61	# motor vehicle thefts		4 NUMBERS	69-72
62	*1983		2 NUMBERS	73-74
63	Total # crimes		5 NUMBERS	75-79
64	Total # violent crimes		5 NUMBERS	80-84
65	# Homicides		3 NUMBERS	85-87
66	# Rapes		3 NUMBERS	88-90
67	# Robberies		4 NUMBERS	91-94
68	# Assaults		4 NUMBERS	95-98
69	Total # property crimes		5 NUMBERS	99-103
70	# Burglaries		5 NUMBERS	104-108
71	# Larcenies		5 NUMBERS	109-113
72	# motor vehicle thefts		4 NUMBERS	114-117
73	*1984		2 NUMBERS	118-119
74	SUBJECT #			1 -- 3
75	SHEET #	3		4
76	Total # crimes		5 NUMBERS	5--9
77	Total # violent crimes		5 NUMBERS	10--14
78	# Homicides		3 NUMBERS	15-17
79	# Rapes		3 NUMBERS	18-20
80	# Robberies		4 NUMBERS	21-24
81	# Assaults		4 NUMBERS	25-28
82	Total # property crimes		5 NUMBERS	29-33
83	# Burglaries		5 NUMBERS	34-38
84	# Larcenies		5 NUMBERS	39-43
85	# motor vehicle thefts		4 NUMBERS	44-47
86	*1985		2 NUMBERS	48-49
87	Total # crimes		5 NUMBERS	50-54
88	Total # violent crimes		5 NUMBERS	55-59
89	# Homicides		3 NUMBERS	60-62
90	# Rapes		3 NUMBERS	63-65
91	# Robberies		4 NUMBERS	66-69
92	# Assaults		4 NUMBERS	70-73
93	Total # property crimes		5 NUMBERS	74-78
94	# Burglaries		5 NUMBERS	79-83
95	# Larcenies		5 NUMBERS	84-88
96	# motor vehicle thefts		4 NUMBERS	89-92

	A	B	C	D
97	*1986		2 NUMBERS	93-94
98	Total # crimes		5 NUMBERS	95-99
99	Total # violent crimes		5 NUMBERS	100-104
100	# Homicides		3 NUMBERS	105-107
101	# Rapes		3 NUMBERS	108-110
102	# Robberies		4 NUMBERS	111-114
103	# Assaults		4 NUMBERS	115-118
104	SUBJECT #			1 -- 3
105	SHEET #	4		4
106	Total # property crimes		5 NUMBERS	5--9
107	# Burglaries		5 NUMBERS	10--14
108	# Larcenies		5 NUMBERS	15-19
109	# motor vehicle thefts		4 NUMBERS	20-23
110	*1987		2 NUMBERS	24-25
111	Total # crimes		5 NUMBERS	26-30
112	Total # violent crimes		5 NUMBERS	31-35
113	# Homicides		3 NUMBERS	36-38
114	# Rapes		3 NUMBERS	39-41
115	# Robberies		4 NUMBERS	42-45
116	# Assaults		4 NUMBERS	46-49
117	Total # property crimes		5 NUMBERS	50-54
118	# Burglaries		5 NUMBERS	55-59
119	# Larcenies		5 NUMBERS	60-64
120	# motor vehicle thefts		4 NUMBERS	65-68
121	*1988		2 NUMBERS	69-70
122	Total # crimes		5 NUMBERS	71-75
123	Total # violent crimes		5 NUMBERS	76-80
124	# Homicides		3 NUMBERS	81-83
125	# Rapes		3 NUMBERS	84-86
126	# Robberies		4 NUMBERS	87-90
127	# Assaults		4 NUMBERS	91-94
128	Total # property crimes		5 NUMBERS	95-99
129	# Burglaries		5 NUMBERS	100-104
130	# Larcenies		5 NUMBERS	105-109
131	# motor vehicle thefts		4 NUMBERS	110-113
132	*1989		2 NUMBERS	114-115
133	Total # crimes		5 NUMBERS	116-120
134	SUBJECT #			1 -- 3
135	SHEET #	5		4
136	Total # violent crimes		5 NUMBERS	5--9
137	# Homicides		3 NUMBERS	10--12
138	# Rapes		3 NUMBERS	13-15
139	# Robberies		4 NUMBERS	16-19
140	# Assaults		4 NUMBERS	20-23
141	Total # property crimes		5 NUMBERS	24-28
142	# Burglaries		5 NUMBERS	29-33
143	# Larcenies		5 NUMBERS	34-38
144	# motor vehicle thefts		4 NUMBERS	39-42

	A	B	C	D
145	*1990		2 NUMBERS	43-44
146	Total # crimes		5 NUMBERS	45-49
147	Total # violent crimes		5 NUMBERS	50-54
148	# Homicides		3 NUMBERS	55-57
149	# Rapes		3 NUMBERS	58-60
150	# Robberies		4 NUMBERS	61-64
151	# Assaults		4 NUMBERS	65-68
152	Total # property crimes		5 NUMBERS	69-73
153	# Burglaries		5 NUMBERS	74-78
154	# Larcenies		5 NUMBERS	79-83
155	# motor vehicle thefts		4 NUMBERS	84-87
156	*1991		2 NUMBERS	88-89
157	Total # crimes		5 NUMBERS	90-94
158	Total # violent crimes		5 NUMBERS	95-99
159	# Homicides		3 NUMBERS	100-102
160	# Rapes		3 NUMBERS	103-105
161	# Robberies		4 NUMBERS	106-109
162	# Assaults		4 NUMBERS	110-113
163	Total # property crimes		5 NUMBERS	114-118
164	SUBJECT #			1 -- 3
165	SHEET #	6		4
166	# Burglaries		5 NUMBERS	5--9
167	# Larcenies		5 NUMBERS	10--14
168	# motor vehicle thefts		4 NUMBERS	15-18
169	*1992		2 NUMBERS	19-20
170	Total # crimes		5 NUMBERS	21-25
171	Total # violent crimes		5 NUMBERS	26-30
172	# Homicides		3 NUMBERS	31-33
173	# Rapes		3 NUMBERS	34-36
174	# Robberies		4 NUMBERS	37-40
175	# Assaults		4 NUMBERS	41-44
176	Total # property crimes		5 NUMBERS	45-49
177	# Burglaries		5 NUMBERS	50-54
178	# Larcenies		5 NUMBERS	55-59
179	# motor vehicle thefts		4 NUMBERS	60-63
180	*1993		2 NUMBERS	64-65
181	Total # crimes		5 NUMBERS	66-70
182	Total # violent crimes		5 NUMBERS	71-75
183	# Homicides		3 NUMBERS	76-78
184	# Rapes		3 NUMBERS	79-81
185	# Robberies		4 NUMBERS	82-85
186	# Assaults		4 NUMBERS	86-89
187	Total # property crimes		5 NUMBERS	90-94
188	# Burglaries		5 NUMBERS	95-99
189	# Larcenies		5 NUMBERS	100-104
190	# motor vehicle thefts		4 NUMBERS	105-108

	A	B	C	D
145	*1990		2 NUMBERS	43-44
146	Total # crimes		5 NUMBERS	45-49
147	Total # violent crimes		5 NUMBERS	50-54
148	# Homicides		3 NUMBERS	55-57
149	# Rapes		3 NUMBERS	58-60
150	# Robberies		4 NUMBERS	61-64
151	# Assaults		4 NUMBERS	65-68
152	Total # property crimes		5 NUMBERS	69-73
153	# Burglaries		5 NUMBERS	74-78
154	# Larcenies		5 NUMBERS	79-83
155	# motor vehicle thefts		4 NUMBERS	84-87
156	*1991		2 NUMBERS	88-89
157	Total # crimes		5 NUMBERS	90-94
158	Total # violent crimes		5 NUMBERS	95-99
159	# Homicides		3 NUMBERS	100-102
160	# Rapes		3 NUMBERS	103-105
161	# Robberies		4 NUMBERS	106-109
162	# Assaults		4 NUMBERS	110-113
163	Total # property crimes		5 NUMBERS	114-118
164	SUBJECT #			1 -- 3
165	SHEET #	6		4
166	# Burglaries		5 NUMBERS	5--9
167	# Larcenies		5 NUMBERS	10--14
168	# motor vehicle thefts		4 NUMBERS	15-18
169	*1992		2 NUMBERS	19-20
170	Total # crimes		5 NUMBERS	21-25
171	Total # violent crimes		5 NUMBERS	26-30
172	# Homicides		3 NUMBERS	31-33
173	# Rapes		3 NUMBERS	34-36
174	# Robberies		4 NUMBERS	37-40
175	# Assaults		4 NUMBERS	41-44
176	Total # property crimes		5 NUMBERS	45-49
177	# Burglaries		5 NUMBERS	50-54
178	# Larcenies		5 NUMBERS	55-59
179	# motor vehicle thefts		4 NUMBERS	60-63
180	*1993		2 NUMBERS	64-65
181	Total # crimes		5 NUMBERS	66-70
182	Total # violent crimes		5 NUMBERS	71-75
183	# Homicides		3 NUMBERS	76-78
184	# Rapes		3 NUMBERS	79-81
185	# Robberies		4 NUMBERS	82-85
186	# Assaults		4 NUMBERS	86-89
187	Total # property crimes		5 NUMBERS	90-94
188	# Burglaries		5 NUMBERS	95-99
189	# Larcenies		5 NUMBERS	100-104
190	# motor vehicle thefts		4 NUMBERS	105-108