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Socioeconomic Change and Deviance: Homicide and Suicide

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by

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VITA

The author, Conrad M. Kozak, is the son of Louis Joseph Kozak and Justine (Domanski) Kozak. He was born on February 2, 1949, in Chicago, Illinois.

His elementary education was obtained at Holy Trinity Grammar School in Chicago, Illinois. His secondary education was completed in 1967 at Loyola Academy in Wilmette, Illinois.

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TABLE OF CONTENTS

INTRODUCTION

The relationship between various forms of social deviance and the economic structure of society is a topic which has preoccupied social scientists, criminologists and historians as far back as the early nineteenth century (Vold, 1958). The early studies were essentially descriptive with little emphasis placed on complicated statistical techniques. It was not until the twentieth century that more advanced statistical methods were applied to this issue.

The application of "modern" statistical procedures to the study of suicide, crime and economic conditions did little to clarify the relationship between these variables. Some studies indicated a positive relationship between crime and the economy while others have found inverse relationships. In addition, as we shall see, the relationships between these variables have differed based on the particular historical time-span studied.

While these differences would leave open the strong possibility of anomic social change being a major independent variable effecting crime, this Durkheimian proposition has yet to be empirically tested in a direct manner. To complicate matters, contemporary developments in econometric time-series statistics have cast serious doubts upon the validity of the coefficients obtained in previous studies. Thus, with the possible exception of suicide studies, the relationships between serious crime and economic conditions have yet to be determined.

For purposes of this study, the literature review will be divided into three sections each dealing with a different aspect of the relationships between these variables. The sections are (1) homicide, crime and the economy, (2) suicide and the economy, and (3) homicide and suicide. A statement of the problem will follow with a description of the proposed methodology being provided.

Homicide, Crime and the Economy

Attempts to analyze the relationship between homicide, other crimes and economic conditions have a long historical tradition within the social sciences. In one manner or another, various researchers have tackled this issue from as early as 1829 (Sellin, 1937).

Rather than review all of the earlier studies which have been conducted on this topic, the readers are referred to the excellent and exhaustive reviews provided by Thomas (1927), Sellin (1937), and Vold (1958). However, certain studies, due to the quality of their research and influence on the field, do warrant a presentation.

The first empirical attempt to study the relations between crime and economic change was published by Davies (1922), who correlated U.S. wholesale prices as published by the Bureau of Labor Statistics with annual admissions to the stste prisons of New York for the years 1886-1915. His findings yielded a correlation coefficient of $-.41 \pm .13$. In the same year, Ogburn and Thomas (1922) created a composite index of U.S. economic conditions covering the years 1870 to 1920 and found that convictions for criminal offenses (all) in New York State increased during business depression ($r=.35 \pm .08$). However, it was also found that convictions for crimes against the

person only correlated -.12±.09 for the same period. Their conclusions are that despite the various inadequacies found in crime statistics, the relationship between crime and economic conditions is negative. In a sequel to the paper with Ogburn, Dorothy Thomas (1927) sought to examine the relation between a composite business index for 1852-1913 and prosecutions for various crimes in Great Britain. Thomas utilized a bivariate times-series analysis with the secular trend eliminated from the data. Her correlations were -.25±.13 for all prosecutions (1857-1913), -.25±.13 for prosecutions of crimes against property without violence (1857-1913), +.06±.13 for crimes of violence against the person (1857-1913), and +05±.13 for prosecutions for crimes against morals (1857-1913). The author's conclusions were that although it appeared that crimes against property were negatively related to economic conditions and crimes of violence against the person were positively related to the same conditions, the correlation coefficients were not sufficiently large enough to warrant any real conclusions regarding the true nature of the relationships between the variables involved.

Phelps (1929) conducted a study of cycles of crime in Providence and Bristol Counties, Rhode Island for the years 1889-1926. The number of persons indicted for various crimes was used as the crime index. The economic index utilized was the amount of relief furnished by the Department of Public Aid. A rise in relief rates would indicate hard economic times with high positive correlations pointing to a significant relationship between the variables. The findings were as follows: (a) Total offenses. A positive .41 correlation

was found between total offenses and poverty relief; (b) Crimes against the person. A positive but insignificant +.16 correlation was found between crimes of physical violence and poverty; (c) Crimes against property. The coefficient was +.36 for crimes against property and poverty; (d) Crimes against sex morality and public order. A coefficient of +.25 was obtained between poverty relief and crimes against sex morality and public order. Again it appeared that crimes against property were more closely related to economic fluctuations than did violent crimes against the person and crimes against morality.

Winslow (1931) in a study sponsored by the National Commission on Law Observance and Enforcement, compared manufacturing unemployment rates for Massachusetts with two series of crime statistics--the number of admissions to criminal institutions and to probation and the number of prosecutions begun in lower courts. The years covered were 1883-1926. No comparisons were made between economic rates and murder and manslaughter. Her findings were that unemployment tended to coincide with increases in (a) assault crimes, (b) trespassing crimes, (c) family crimes (neglect of family, abuse, bastardy, etc.) and, to a lesser degree, (d) offenses against chastity. The findings tend to contradict those presented above.

Vold (1935) was particularly interested in the fluctuation of crime rates during the early and most severe time of the Depression (1929-1934). His dependent variables were the commitment rates to state and federal penal institutions and the rates of known crimes reported to police in 71 cities with more than 100,000 population. His findings, briefly stated, were that while overall crimes gradu-

ally increased up to 1932 they very quickly declined after that. His conclusions were that "there has been no increase in crime at all commensurate with the extent or duration of the Depression" (p. 803). Hence, he found no overall relationship between crime and the economy for the time period covered.

Wagner (1936) compared arrests for murder, manslaughter, aggravated assault, larceny, burglary and robbery in Philadelphia with wage payments, retail trade and the cose of living as prepared by the United States Bureau of Labor Statistics. Crimes against the person correlated +.54 with the cost of living, +.54 with age payments and +.62 with retail trade. The coefficients for arrests for crimes against property were practically zero, although the respective coefficients for burglary were -.92, and -.95.

Maller (1936) studied juvenile delinquency in New York City with emphasis on the effects of the Depression. The data utilized covered 1925-1934. The measure of delinquency were the arraignments for offenses reported in Children's Court. His findings were that delinquency increased to a peak in 1930-1931 with a decrease in the following year--1932-1933 which was, incidentally, the year of the highest unemployment in the recorded history of the United States (24.9). His conclusion was that for the most part, the Depression tended to inhibit delinquent behavior due to an increase in social service organizations. Similar findings were reported by the Lynds (1937) in their study of Middletown and by Sanders and Exell (1937).

Wiers (1945) correlated delinquency rates (based on court hearings--1921-1943) with non-agricultural employment (r = .71), depart-

ment store sales (r = .66), gross national product (r = .72), and industrial production (r = .72). What is unique to his particular study is Wier's inclusion of social indices relating to urgan-rural differentiation. Percentage of farm families, percentage of farm workers and percentage of rural population over the total population correlated -.83, -.86, and -.83 respectively with his delinquency rates. Finally, and most interestingly enough, the percentage of the population aged 7 to 17 as a percent of the total population correlated -.66 with delinquency. The implications of this study were that not only was delinquency not related to economic decline, but it was positively related to urbanization and negatively related to the percentage of youth in the population. Similar findings regarding the positive relationship between juvenile delinquency and economic conditions were found by Bogen (1944) in his study of Los Angeles.

Glaser and Rice (1959) correlated time-series data (1930-1956) on various crime arrest rates and unemployment among males in various age categories. Their data included national arrest rates (United States) and specific rates for Boston, Chicago and Cincinnati. The findings indicated that whether the relationship was positive or negative depended upon the age category of the arrestees, i.e., there was an inverse relationship between juvenile crime and unemployment and a positive relationship between adult crimes and unemployment. Interestingly enough, the only exception to these findings occurred with the Chicago data where no relationships were found. The authors attribute the discrepancies with the Chicago findings as being due to

statistical and criminal justice procedures between the urban municipalities.

Lunden (1968) analyzed court commitments to prisons in nine states (1930-1962) with United States unemployment rates for the same period. While utilizing an impressionistic approach to the analysis of his data, Lunden's conclusions were that while there appeared to be a relatively strong positive relationship between unemployment and court commitments during the Depression (1930-1941), the trend seemed to reverse itself in the post-Second World War years so that unemployment was either negatively (slightly) or not at all related to court commitments. In a comparison with a sample of European, Asian and African societies during the post-war years, Lunden found that the general trend was for a steady increase in crime rates over time. Given the consistency of this finding for both other societies and our own, Lunden concluded that the rapid and radical social changes which have been taking place in both Western and non-Western societies since the Second World War were probably more closely related to increasing crime than are economic conditions per se.

Bourdouris (1971) analyzed 6389 homicides occuring in Detroit during 1926-1968. Although economic conditions were included as variables, the primary emphasis was on the interactions between family members preceding familial homicides. Bourdouris utilized the Michigan Personal Income index as an indicator of economic conditions and correlated it with the annual proportion of all homicides involving family relations. He found a synchronous time correlation of +.45 (p .001) between the MPI and familial homicide. This contradicted

Boudouris' assumption that there would be a negative relationship between economic conditions and familial homicide. As a possible explanation Boudouris proposes that those involved in familial homicide may be of an ambiguous social status and do not enjoy the rewards of a prosperous economy and therefore "feel no incentive to adhere to the norms of society, and are likelier to engage in criminal and violent behavior" (p. 675).

Allison (1972) investigated unemployment rates as one of 14 variables in a regression analysis of crime rates and socio-economic variables. The other socioeconomic variables which he included were such factors as relative stability of population, density of the population, strength of the police force, mean number of years of education . . . etc. The data utilized was for the Chicago SMSA. Unemployment alone accounted for 57 percent of the variances in the crime rate and had a significant T values of 3.78. The second variable of importance in the equation was the proportion of males to females in the population. This explained an additional 10 percent of the variance. The implications of his study are that where one finds both high male unemployment and a larger proportion of males to females one will also find high crime rates.

Spector (1975) was concerned with the relationship between population density, unemployment and violent crime in 103 SMSAs with populations over 100,000. He utilized a multiple-regression analysis on various measures of population density and unemployment. His findings indicated that there were no significant relationships between violent crimes, unemployment and population density for these SMSAs.

Rather, he found a strong positive relationship between city size and fiolence and area of the country and violence (p. 401). Hs conclusions were that "it is the specific characteristics of large cities vis-a-vis smaller cities that contain the causes of violence" (p. 401).

Ehrlich (1973) attempted to develop an econometric model of criminal activity. National rates of known crimes (across all categories) were the dependent variables. His model is essentially a utilitarian one in that crime becomes a function of the amount of payoffs derived from such activity balanced against payoffs derived from legitimate activities with the community. In addition, both the probability and severity of punishment must be included in the equation as "costs" for the participation in the illegal activities. Crime will increase if there is a decrease in legitimate economic opportunities available coupled with a low estimate of the probability of apprehension and punishment by imprisonment (p. 545). This is especially relevant for crimes against property (robbery, burglary, larceny, and auto theft) but negligible for crimes against the person. Thus, according to Ehrlich's model, crime against property should increase during economic depressions if there also exist the subjective estimate that the probability of apprehension and punishment are low. (For an interesting discussion on the controversey surrounding Ehrlich's theoretical perspective see McGahey, 1980).

Flango and Sherbenou (1976) in a similar but more extensive study looked at the relationships between crime, poverty and what they termed factors of urbanization for 840 American cities. While their findings indicated that poverty and urbanization explained 25 percent

of the variance for violent crimes for all of their cities combined, when broken down geographically, poverty had little or no explanatory power for the Southern cities in their sample. Their hypothetical rationale for this finding was that the South was not subject to the "culture of poverty" usually associated with lower income in the North (p. 343). Although the authors acknowledged that crimes of violence are more prevalent in the South than elsewhere in the nation (p. 340) their explanation for their findings implies (without their explicitly stating it) a "culture of violence" concept.

A recent study by Brenner (1976) is directly related to our present research. Given the nature of Brenner's findings and their relationship to our own (see below), it would be advantageous to summarize his research in greater detail.

Brenner begins by accepting the basic sociological notion that traditional societal bonds relating to primary groups gradually lose their importance as society tends to industrialize and urbanize.

This, according to Brenner, includes a shift in societal values regarding the prerequisites for social status, i.e., there is a movement from ascribed status to achieved status. Achieved status is primarily attained through economic achievement since the societal power base is now invested in the national political economy with the result being that "there is a gradual increase in the degree to which social integration is dependent on the economic functions of society" (p. 555). Concommitant with the above view, Brenner also stresses the problems of urbanization, especially in regards to the heterogeneity of the urban population and the diverse cultural norms and

values which such a situation engenders. This leads to what Brenner calls a state of "moral relativism" (equivalent to Durkheim's concept of anomie). Coupling moral relativism with the psychological stress of economic change can lead to violence and utilitarian crime.

Given this perspective Brenner utilized a variety of time-series techniques (not including first-differences) to examine the relationships between economic change and homicide rates in England, Scotland, Canada and the United States. His economic independent variables were the Gross National Product (GNP), unemployment, income and inflation (measured by the Consumer Price Index). Brenner found two interesting findings: (1) there is a persistently positive long-term relationship between economic growth and rising homicide rates and (2) there is a strong positive relationship between radical declines in the economy (short-term) and increasing homicide rates. While these two findings appear contradictory, Brenner attempts to reconcile them by referring to Henry and Short's study. Henry and Short found a positive relationship between economic growth and homicide attributing this to the frustration-aggression hypothesis and the notion of relative deprivation. While Brenner partially accepts the Henry and Short hypotheses, he faults their methodology in that they failed to analyze their coefficients specifically during the period of the Great Depression. Using only the years 1929-1936, Brenner found a drastic reversal of the long-term positive relationship between economic growth and homicides which directly contradicts the Henry and Short findings (Brenner, op. cit., p. 569). Brenner attempts to explain these discrepancies in findings by postulating two basic subpopulations which might contribute to the

homicide findings. The first group correspond to those experiencing relative deprivation, i.e., they find their own economic condition deteriorating or stagnating while other groups are experiencing increasing prosperity. The second group involves those individuals who experience "absolute economic loss" during period of economic downturns of great intensity.

Suicide and Economic Conditions

While there have been somewhat fewer studies correlating suicides with economic conditions, the findings have been more consistent than those found in homicide and other crimes studies. As early as 1822 Falret contended that suicide rates varied with economic conditions and social change. In addition, he also observed that suicide rates were positively related to one's social class position.

While Durkheim (1951) was not specifically interested in the relationship between economic conditions and social suicide rates, his work did touch on the issue. Durkheim's major hypothesis was that suicide varies inversely with the degree of integration of the social groups of which the individual forms a part (p. 209). Hence, suicides are the result of social causes and not individual causes.

As part of his analysis, Durkheim developed four basic categories of suicide—the egoistic, the altruistic, the anomic, and the fatalistic. Egoistic suicide was the result of excessive individualism, that is, the individual ego transcends the group with the result that the individual is only concerned with his/her own interests. Altruistic suicide was a result of inadequate individuation. That is, while egoistic suicide may have no meaning for life, the altruistic suicide

will find his/her rationale in some circumstance or belief beyond human existence. Those who engaged in altruistic suicide generally did so for the sake of the group, e.g., Japanese Kamikazi pilots during World War II. Anomic suicides were the result of a state of anomie or relative "normlessness." Anomie, according to Durkheim, occurs when there is a period of both rapid and radical social change. Such changes disrupt the equilibrium of the social order by upsetting the prescribed norms regulating means and ends. For Durkheim, anomic suicie was and is a product of urban industrial societies. The social change most conducive to the development of anomie is essentially economic change--whether it be in the direction of poverty or prosperity. In terms of social class, Durkheim felt that employers and managers would exhibit greater rates of anomic suicide than would workers. Urban society would have higher suicide rates than agrarian societies since the former display greater levels of normlessness.

Finally, Durkehim developed the category of fatalistic suicide which was meant to be the opposite of anomic suicide. Fatalistic suicide resulted from excessive regulation. That is, a situation whereby the individual's future is viewed as being so appressively bleak that suicide is preferred to a continued existence under those circumstances. Durkehim felt that such suicide is rare in contemporary society.

Halbwachs (1930) in a replication of Durkheim's work, confirmed the relationship between fluctuations in the business index and suicide in Germany from 1880 to 1914. For Halbwachs suicide rates were consistently high during all levels of economic prosperity--a point which Durkheim emphasized.

Thomas and Ogburn (1922) correlated the suicide rate for 100 U. S. cities for 1900-1920 with cycles of business conditions and found a correlation -.74±.07. In a later study, Thomas (1927) correlated British suicide rates with a composite economic index for the years 1858-1913. Her correlation coefficient as -.50±.10 for the relationship between these variables.

Hurlburt (1932) analyzed the relationship between various economic indices (The American Telephone and Teletype Index and the Babson Index of Economic Productivity) with both the census rate of urban suicides and the suicide rates calculated by the Metropolitan Life Insurance Company. His analysis was for the years 1902-1925. Hurlburt found that suicide declined in years of prosperity and advanced in years of depression with its greatest increases in years of acut economic destress (1907, 1908, and 1921). Suicide's greatest decreases were during the period of greatest prosperity between 1961 and 1920.

Dublin and Bunzel (1932) analyzed suicide both in terms of socio-economic class and economic conditions. In terms of social class distribution (based on occupation), the authors found the highest suicide rates among the age 16-45 years old unemployed category. The next highest suicide group was found among those classified as being in Class I--"professionals and highest ranks of business" (p. 94).

In terms of economic trends and suicide, Dublin and Bunzel correlated the suicide rates for New York, New Jersey and Pennsylvania (1910-1931) with an unspecified index of economic activity and obtained a coefficient of -.55±.15 for annual data. This relationship was more prominent among white males than among white females

(-.51±.16 to -.32±.20). This high negative correlation was less pronounced for wage earners than for the general population as a whole.

In a later study (1963) Dublin compared the gross national product with suicide rates for 1910 to 1960. Again suicide was negatively correlated with economic rates. As Dublin puts it, "Periods of decreasing business activity and rising unemployment usually are also periods of higher suicide rates. However, a business crisis is not always followed by a rise in the suicide rate and the severity of the crisis is no measure of the attendant increase in suicide" (p. 66).

The post-World War II researches in suicide tended to ignore--at least for the first two post-war decades--time-series studies of economics and suicide. Emphasis was placed on either more in-depth community studies of suicide or on individual case studies (Douglas, 1967). The major consensus of the pre-war time-series researchers was that suicide varied inversely with economic conditions. On possible effect of negative economic circumstances is a loss of status through occupational unemployment. Theoretically, the loss of one's job could be a stimulant to suicide. Sainsbury (1955) conducted a study of suicide in London and concluded that indigenous poverty per se does not stimulate suicide. Rather, suicide is best considered in relation to a loss of occupational status. This, according to Sainsbury, is especially true during periods of economic depression.

Gibbs and Porterfield (1960) studied 955 suicides recorded in New Zealand between 1946 and 1951. Their concern was with the suicide subjects' social situation from birth to death. The study involved a comparison of the proportion of suicides who had experienced a status-

loss with the proportion of status-loss found in the general population. Status was defined in terms of occupational prestige. Their main findings were that both downward and upward mobility were associated with significantly more suicide, but that downward mobility seemed to be related with a higher suicide rate than upward mobility. However, this loss of occupational status is but the first step in a process leading to a suicidal demise. Status change leads to a "personal crisis." It is this crisis which becomes the precipitating event leading to suicide.

Powell (1958) proposes an additional theory of suicide coming from Durkheim's tradition. He analyzed all recorded male suicides in Tulsa, Oklahoma for the years 1937 to 1956). This resulted in a total of 426 suicides over the age of 14. These suicides were then divided into various occupational categories based on the occupation held immediately prior to death. His basic findings were that for males, suicide predominated in professional, unskilled laborer and retired occupational categories. Powell attributes his findings to various reactions to social anomie. However, his theory does not really indicate that downward or upward mobility are actually responsible for suicide among males. He does show that there is an occupational level susceptibility to suicide without indicating its relation to social change.

Warren Breed (1963) in an intensive study of 105 consecutive white male suicides in New Orleans for the years 1954-1959, found that there was a significantly greater degree of downward inter-generational occupational mobility among suicides prior to their death

than was found in a control group. This was found to be the case regardless of one's original occupational category (e.g., professional, managerial, unskilled labor, etc.).

Maris (1967) studied all of the recorded suicides for Chicago-Cook County for 1959 to 1963. His basic proposition was that high status categories doe not have the highest suicide rates and that status change is a greater stimulant of suicide than is status position. His findings, consistent with others mentioned above, indicated that suicide varied inversely with the social status hierarchy. However, Maris did not statistically show that status change was related to the data findings. His basis for implicating status change comes from a review of the above described hypotheses made by Sainsbury, Powell, and Breed.

Rushing (1968) analyzed the relationship between income, unemployment, occupation and suicide. His findings were that suicide was positively related to unemployment in the lower income levels. However, unemployment was found to be "negatively related to suicide at high income levels and positively related to suicide (in high income levels) under conditions of lower unemployment" (pp. 502-03).The implications are that for the lower classes (lower occupational categories) suicide is positively related to unemployment with the opposite being true for the upper occupational categories. Thus, the upper occupational categories will show increases in suicide during periods of economic prosperity and low unemployment. Rushing interprets his findings to indicate that anomie may be the major social structural variable effecting suicides among the upper-classes while fatalism

plays the same role for the lower-classes.

Vigderhous (1977) in an article meant to describe the forecasting applications of the Box-Jenkins technique for social science use, applied the technique to U.S. white male suicide rates for the years 1920-1969. His findings indicated that for white males, unemployment appeared to be the most important variable in explaining suicide rates over time. Female suicides were more closely related to divorce rates over time. In terms of the Box-Jenkins technique as a forecasting methodology, Vigderhous reaches the conclusion that "it is difficult to generalize the superiority of one forecasting technique over the other" (ibid., p. 48).

Myron Boor (1980) correlated the unemployment rates and suicide rates in Canada, France, Italy, Germany, Britain, Japan, Sweden and the United States for the years 1962-1976. Despite certain methodological problems (e.g., if we can only dubiously accept the statistics of the United States, what can we assume regarding the comparability of statistics from eight different nations?). Boor found that there was a significantly positive statistical relationship between suicide and unemployment for four of the eight nations (United States, Canada, France and Japan). Findings for Germany, Sweden and Italy were statistically insignificant while the finding for Britain was in the opposite direction of that predicted ($r = 0.59$, $p < .05$).

Boor next correlated the annual variations in suicide rates for persons in various age and sex categories. According to Boor the relationships between the sex categories and suicide rates were indistinguishable, i.e., both sexes had similar coefficients.

However, with regards to age differences and suicide, Boor found that the most significant correlations between suicide and unemployment occurred in the younger to middle-age categories (15-24, 25-34, 35-44). In Sweden and Italy there were no significant correlations for any age category while in Britain suicide and unemployment were significantly correlated in a negative direction for all age categories.

Marshall and Hodge (1981) utilized a time-series technique in looking at the relationship between white male suicides and unemployment for the years 1933 to 1976. The authors began by analyzing Pierce's (op. cit) contention that rapid and radical change in the economy, regardless of direction, will positively increase suicide rates. Their assumption was that Pierce's findings were due to a misspecification of the regression model he utilized. Employing a different model, Marshall and Hodge found that suicide was positively related to unemployment. This was especially true when unemployment increased over time. Thus, Pierce's contention that either positive or negative changes in the economy would lead to increases in suicide was refuted. Only negative changes in the economy were related to increasing suicide rates.

Schapiro and Ahlburg (1982) take the Durkheimian position that the disparity between "needs" (socially conditioned expectations) and the "means" to satisfy those needs may result in suicidal behavior. While other studies, according to the authors, have concerned themselves with economic means, their study was meant to concentrate on aspirations. The authors develop an econometric model in which economic aspirations are tied to the age structure of the labor force

and to fluctuations in relative income (defined as the ratio of expected income to income aspirations). These two variables are, in turn, related to individual behavior. Thus, when relative income is low "the disparity between means and needs leads to psychological stress" (p. 2) and increases in deviant behavior such as suicide and homicide. Unemployment results in low relative income especially among various cohort groups within the labor force. According to the authors, the post-World War II baby boom has resulted in a negative effect of the younger cohort sizes on relative earnings and relative income. Thus, "while suicide rates for both males and females aged 15-34 have been increasing, rates for both males and females aged 35-64, have basically been declining" (p. 3). However, a continued recession and high rate of unemployment can reinforce and magnify the already high suicide rates for older males (since they came from large cohort groups with high needs and expectations). Thus, Schapiro and Ahlburg attempt to attribute the differential in suicides among various age categories over time as being a function of the size of the age cohort, the aspirations resulting from this based upon their ability to successfully compete in the labor force and the level of national unemployment.

Suicide and Homicide

In this section those particular studies which deal specifically with both homicide and suicide will be reviewed. Generally, such studies have been most basically concerned with two issues. First, the specific relationship between homicide and suicide as social pathologies. Second, the relationship between homicide, suicide,

and other socioeconomic variables.

Durkheim (1951) noted that as early as 1833 Andre-Michael Guerrey showed that homicide and suicide varied inversely with one another in the French Departments with suicide being high in the North and homicide being high in the South. As Durkheim further noted, the inverse relationship between homicide and suicide was first given theoretical significance in the Italian school of criminology--especially in the works of Ferri and Morselli. The theoretical position of this school was that both homicide and suicide were effects of the same individualistic cause. Under one set of circumstances an individual will commit suicide while under another set of circumstances homicide will be the path chosen. The same individual temperament will predispose the individual to some type of violent action--either homicide or suicide. Which choice the individual accepts, according to these theorists, depended upon the norms and values of society regarding which path was most appropriate.

Durkheim went on to investigate this hypothesis and concluded that "suicide sometimes coexists with homicide, sometimes they are mutually exclusive; sometimes they react under the same conditions in the same way, sometimes in opposite ways, and the antagonistic cases are the most numerous" (p. 355).

Durkheim's explanation for this conclusion was that the type of relationship found between homicide and suicide depended upon the type of suicide which was being compared to the homicide. Thus, egoistic suicide, stemming from an over-individuation, is inversely related to homicide. Opposed to this was altruistic suicide which

varied positively with homicide. However, Durkheim did not consider modern suicides and homicides as having their sources in altruistic social conditions and relegated this phenomena to primitive societies. The final type of suicide, i.e., anomic suicide, also varied positively with homicide and was most common in modern industrial society (p. 358).

Durkheim concludes that "certain types of suicide, instead of depending on causes opposed to those which occasion homicide, are on the contrary expressions of the same social condition and develop in the midst of the same moral environment" (p. 358). Whatever checks egoism in society will serve to increase the homicide rate while whatever checks anomie in society will serve to diminish both homicide and suicide.

Porterfield (1949) found that the U.S. states with low suicide rates tended to have high homicide rates, while those states with high suicide rates tend toward having low homicide rates. Southern states and cities indicated higher rates of homicide than did non-Southern states and cities which had high suicide rates. The adjusted correlation between homicide and suicide for all of the states in his study was -.35. Porterfield also indicated correlations of +.50 between suicide and social well-being, -.75 between homicide and alcoholism; what constituted Porterfield's measure of well-being was not indicated. Although Porterfield's research indicated regional differences in the relationship between homicide and suicide and that on a national basis homicide and suicide vary inversely under normal circumstances, he also found that homicide and suicide vary positively during periods of national crisis with the general direction

being downward. Hence, according to Porterfield, crises such as war and economic depression tend to inhibit both homicide and suicide.

In a later study, Porterfield (1952) attempted to develop a concept which would explain the ecological relationships which he found in his earlier study. His suggestion was that the factor which determined the preponderance of either homicide or suicide was the degree of secularization within the society. His distinction was between "folk" and "secular" societies. Folk society was characterized by a high degree of integration with great stress being placed on interpersonal ties and the external constraint of behavior. Secular society was characterized as involving high degrees of urbanization and industrialization, a lack of population indigenousness, a loosening of community ties and breakdown of mores and norms. His results indicated that his suicide was associated with the secular society while high crime and homicide rates were related to the "depressed" of socially dissatisfied folk societies.

Straus and Straus (1953) analyzed homicide and suicide rates in Ceylon and attempted to formulate a psycho-cultural theory to explain the relationship between the two variables and between them and society. Suicide and homicide were both viewed as being the result of individually experienced frustration. However, in contradiction to Durkheim's theory of suicide, homicide and anomie, Straus and Straus positively related suicide to a "closely structured" society while homicide was inversely related to such a structure and positively related to a "loosely structured social system" which was a "culture in which considerable variation of individual behavior is sanctioned" (p. 468).

Wood (1961) also considered homicide and suicide in Ceylon. His position was that homicides are related to a low-status, achieved (not ascribed) social position which was undergoing a period of subjective status deprivation. These individuals were most frequently alienated, demoralized and hostile. In contrast to these individuals, those who committed suicide were apt to be of a higher social status and have a higher achievement orientation. However, these individuals were subjected to the stress of possible status-loss as well. What seemed to determine the choice as to whether one chose suicide or homicide was the degree of commitment to one's social status position.

Quinney (1965) analyzed the homicide and suicide rates for 48 countries in an attempt to determine what their relationship was to economic development. His findings were similar to Porterfield's (op. cit., 1952). High homicide rates were related to rural, non-industrial societies while high suicide rates were found to be related to high urbanization and industrialization. If traditional rural society is viewed as being more "closely structured" than urban industrial society, then it would appear that Quinney's findings are the opposite of those presented by Straus and Straus (op. cit., 1953). His conclusions were that urbanization resulted in a decrease in status integration which, in turn, stimulated an increase in suicide. Homicides were related to socioeconomic underdevelopment and a population "with a low level of education, lack of sophistication, isolation from heterogeneous values, and a limited frame of reference" (p. 405).

Palmer (1965) investigated a group of nonliterate societies and

rated them for the frequency of homicide and suicide. His belief was that societies high in one variable would be low in the other variable. Those societies which were "closely structured" and which punished crimes severely were thought to have high homicide rates and low suicide rates. The findings did not confirm these expectations. Instead it appeared that as the severity of punishment increase in the various societies, so did both the homicide and suicide rates.

Lalli and Turner (1968) analyzed 9,709 suicides and 5,183 deaths by homicide for white and non-white males ages 20 to 64 according to occupational level. Their findings indicated that whites had a higher suicide rate than blacks while the reverse was true for homicide. In terms of social class (as measured by occupational level) and suicide and homicide, the relationships were strongly negative regardless of race. For whites, the highest suicide and homicide rates were found among laborers and farm workers. For blacks, suicides were more diffusely distributed among various occupational groupings. The highest suicide rate was found among agricultural workers with clerical and skilled workers and common laborers in second place. Black homicides were highest among unskilled laborers and agricultural workers.

The authors interpret these findings in terms of "open" and "closed" societies. Blacks had a higher homicide rate due to their occupation of a "closed" society which is essentially a tribal or caste-like society which emphasizes ascribed status as opposed to achieved status. In such a society, a greater reliance is placed on primary group relations with few associational ties. The economic problems of such societies are quite precarious with the result that

manifestations of masculinity become associated with other-directed violence. The "open" society has a high suicide rate due to its emphasis on impersonal and contractual interpersonal relations. Thus, social isolation can only result in self-directed aggression.

Henry and Short (1954) conducted what is now a classic study of the relationship between homicide, suicide, and economic conditions. For Henry and Short, suicide and homicide were acts of aggression which found their stimulus in frustration. Whether an individual committed an act of homicide or suicide was determined by the degree to which the individual was subjected to restraints. Two types of restraints were postulated: internal restraints and external restraints. Internal restraints were the result of love-oriented techniques of child rearing practices which inculcated a strong superego and a tendency to internalize guilt. Thus, during periods of high frustration aggression becomes turned towards the self as opposed to becoming other directed. External restraints were the result of socialization practices which were primarily punitive. For those individuals subjected to external restraints aggression becomes other directed, i.e., assaultive or homicidal in nature.

As mentioned, aggression was more or less a function of frustration, which for Henry and Short, was measured by the fluctuations of the economic business cycles in the United States. It was hypothesized that "high status" individuals (males, whites, aged 25-34, Army officers, singles) would be internally restrained and less predisposed toward more assaultive and homicidal expressions of aggression.

Statement of the Problem

The purpose of my proposed research is to both replicate and expand upon the work of Henry and Short. To reiterate, Henry and Short attempted to correlate (in a time-series model) national economic conditions, as measured by the Ayres Index of Industrial Productivity, with suicide, homicide and other crime rates. They predicted that (1) suicide was negatively related to economic trends, and (2) homicide and crime rates were positively related to economic trends. Their first prediction was supported by the data. However, their second prediction was not generally supported in that while homicide was negatively correlated with economic conditions for whites, the inverse was true for blacks.

Henry and Short also attempted indirectly to test Durkheim's proposition that prosperity can as easily result in anomic suicide as does economic depression. The authors felt that a straightforward counting and comparison of years for economic conditions and suicide rates would adequately test this proposition. That is, those years in which there was an increase in the economy were counted and compared with the suicide rates for the synchronous period.

A similar technique was used for those years in which the economy was declining. Their findings were that suicide increased during 80 percent of the years in which the economy was declining and that regarding prosperity, there was only a minimal positive relationship between suicide and "those years when the rise in the business index was very slightly but not during those years of abrupt growth of power and wealth" (Henry and Short, p. 27).

It was further postulated that (1) suicide rates would rise during economic depressions and decline during periods of economic prosperity while personal injury crimes would rise during economic prosperity and decline during business depression, and (2) the correlation between suicide and economic conditions would be higher for high status groups than for low status groups while the correlation between homicide and economic conditions would be higher for low status groups than for high status groups.

Henry and Short utilized the Burns-Mitchell time-series technique in their analysis of economic conditions, homicide and suicide. The economic index used was the Ayers' Index of Industrial Productivity which is a secular trend removed indicator. The crime and suicide rates used were both national, regional and local and generally covered the years 1900-1947 (not all variables covered the same time period). Best fitting lines were applied to each regression equation and correlation coefficients were calculated between economic conditions and crime and suicide rates (controlling for the various age, sex, and race categories).

The suicide rates for white males (high status) was found to be more sensitive to business fluctuations than the rates of non-whites and white females (low status). All of the correlations between suicide rates and business conditions (regardless of race, sex or age category) were highly negative. Homicide rates for whites correlated negatively with business conditions while for blacks the correlation was positive. No homicide correlations were made controlling for age or sex.

Henry and Short's postulated second point (cited above) was confirmed in that the correlation coefficient between suicide and the economy was higher for whites (-.81) than for blacks (-.38). However, the blacks' homicide and economy correlation was not higher than that of whites. The correlation between homicide and economic prosperity was strongly negative for whites (-.80) and positive for blacks (+.26). This finding partially contradicted point two which predicted a higher positive relationship between homicide and prosperity for low status groups with regards to suicide. Henry and Short's overall findings were that there was a strong negative relationship between suicide and economic prosperity regardless whether one controlled for sex, race or age. Finally, in terms of crimes against property and the business cycle, burglary correlated, -.74 (1929-1941) and robbery correlated -.65 (1929-1941) with economic conditions.

David Lester (1971) in a small but scathing study investigated the correlational relationships between suicide and homicide over time, locale and various status categories. The resulting correlations differed greatly for each of the three methods of correlation. For instance, over time (1950-1964) homicide correlated positively with suicide (.62). Correlated over states and over status categories, the coefficient relationships for the two variables were zero. It was concluded by the author that no available theory was able to explain the complex pattern of correlations found and that more individualized social-psychological studies were needed to truly explain the relationships between these two variables.

In addition, this minor increase in suicide rates during years of slight economic growth existed only for females and not for males who are considered as being more involved in and susceptible to the influences of economic fluctuations. Thus, Henry and Short felt that these results failed to substantiate Durkheim's proposition that abrupt increases in prosperity lead to concomitant increases in anomic suicide. (Henry and Short, 1954: pp. 27, 42). Although it is considered as being the most comprehensive study of its type, time has made obvious certain inadequacies which make a replication and expansion both valuable and desired.

First, while admittedly advanced for its time period, there are certain methodological inadequacies in the Henry and Short work which casts a degree of doubt upon their results.

Pierce (1967), in a very limited, but interesting replication of Henry and Short's study observed that the researchers failed to consider the possibility of autocorrelations influencing their correlations. The presence of such autocorrelation can result in speciously high correlation coefficients. In order to test this point, Pierce applied the Durbin-Watson "d" statistic to some of Henry and Short's data. This statistic allows a researcher to determine if such autocorrelation is present. The d-statistic attained indicated that there was a high degree of autocorrelation in Henry and Short's findings rendering them inconclusive since the "true" correlations are not known. Pierce felt that the autocorrelation was due to the inherent nature of the Ayres' Index and went on to construct an index which would reflect, what he called, "the subjective definition of the

economy by the general public," as opposed to an objective index. This "subjective" index was the absolute values of the first differences of the index of common stock prices as correlated by a one year lead with the deviant behavior being studied. This technique resulted in an acceptable d-statistic and a high positive correlation between stock prices and suicide indicating a direct contradiction with Henry and Short's findings.

An additional point which Pierce makes is that Henry and Short failed to adequately test Durkheim's contention regarding the influence of anomie on suicide. If anomie is a result of a both rapid and radical degree of socioeconomic change (Durkheim, 1951: pp. 241-243, 247), regardless of the direction of the economic change, then the correlation of absolute rate levels or the counting and comparison of rates within years will not truly address itself to the problem. Instead, Pierce suggests that the first-differences between years should be utilized as the indicator of change. Hence, an important point was made in that suicide, homicide, and other crimes were never really studied in terms of radical social change and its effect on social disorganization. While Porterfield (1952), Quinney (1965), Wood (1961), and Straus and Straus (1953) all postulate a differential susceptibility to either homicide or suicide, based upon the level of modernity and social organization of a society, no one has yet empirically tested the relationship of rapid social change to homicide and suicide within a single society.

A second point to be made is that although published in 1954, the data used by Henry and Short extends only up through 1947. Hence,

there has been no analysis of post-World War II trends in the United States. A replication utilizing data up to 1974 (latest figures available) would allow us to determine if there are any differences between pre- and post-war periods. Recent research, while not conclusive, would seem to indicate that the trends between homicide, suicide and economic conditions previously reviewed below may not presently be as constant as might be assumed. For instance, Lester (1971) found a +.61 correlation between homicide and suicide in the United States for the years 1950-1964. This is in direct opposition to the results of Henry and Short who generally found homicide and suicide inversely related to each other.

Related to this issue of trends over time, is the fact that there is also a great deal of inconsistency between the various researchers regarding the relationship between homicide, crime and economic conditions. As Table 1 indicates, only delinquency is consistently related in a positive direction with economic conditions. Homicide, property crimes and assaults are, at best, inconclusive regarding their relationships with social prospecity. Nettler (1978: 140), after reviewing the research over the years on this topic, goes so far as to state that "serious crimes are associated ecologically (in social and physical space within a society) with relative economic deprivation. However, such crimes are not associated historically (in time) or comparatively (across cultures) with relative impoverishment" (original emphasis).

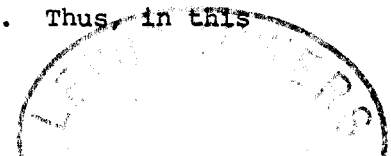
Sellins' (1937) contention is that the nature of the crime index may be the major influence in these results. What is required is not

an index of the number of prison admissions for certain crimes or the number of arraingments for various crimes, but rather, the actual number of crimes known as having been committed. Any other crime index is essentially reflective of the process between the commission of certain crimes and society's disposition of the accused culprit. These indices do not reflect the actual crime rate, but rather, reflect society's reaction to the crime. This reaction may or may not be congruent with the actual incidence of crime in society. Given this argument, it is proposed that the rates of actual crimes committed be used as the main index of crime. It is hoped that such an analysis of homicide and other crimes will result in clearing up the inconsistencies found to date.

Methodology

In order to replicate Henry and Short's research this study used similar dependent and independent variables. The dependent variables are national homicide and suicide rates (broken down by sex, race and change categories). The independent variables are such economic indicators as national unemployment rates, the Federal Reserve Board Indicators of Industrial-Manufacturing Production, the Consumer Price Index, Personal Per Capita Income and Personal Per Capita Savings.

Although each of these indices measure different aspects of the economy, there does exist a high degree of multicollinarity between them. Using all these indicators enables us to (1) determine which particular index is most closely related to crime and social pathology and (2) is there is a consistent relationship between these economic variables and the dependent variables. Thus, in this



second instance, the use of more than one economic indicator allows us to determine whether whatever statistical association is established is a function of a true relation between the economy and social pathology and not merely a specious correlation due to the peculiar qualities of one index.

The data was acquired from various governmental agencies and sources. Such primary sources as the Uniform Crime Report, The Mortality Statistics of the United States, the Statistical Abstract of the United States and the Historical Statistics of the United States as well as other reports and publications were utilized in order to obtain the necessary statistics. It is important to note that the rates of the dependent variables should be viewed as underestimates of the actual occurrence rate of these social phenomena. For various social, economic and religious reasons, suicides are often not reported officially as such with the result that estimates of under-reporting are as high as 17-25 percent (Dublin, 1963). Similar criticisms have been made regarding official tabulations of crime rates. For example, prior to the establishment of the Uniform Crime Report (UCR) in the early 1930s there were no fully national homicide statistics. What statistics were available, such as those used by Hoffman (1925) and Brearly (1932) were very much dependent upon regional reporting sources. The UCR has been subject to various criticisms regarding the techniques it utilizes in establishing the various crime rates (Wolfgang, 1963; W. J. Chambliss and Nagassawa, 1969). Some of the criticisms lodged against the UCR involve regional differences in reporting crime rates as well as organizational influ-

ences which affect crime tabulations (for a review of some of the problems regarding crime rate statistics, see Zahn, 1980).

However valid these particular critiques may be, Block (1977) reviewed the validity of such alternatives to the UCR as victimization studies and concluded that both "the UCR and victimization surveys are equally good indicators of trends in crimes . . ." (p. 18). Since this particular study is concerned with longitudinal trends in crime rates, it is felt that the use of official statistics was both adequate and valid. With regards to the suicide rates, it will be assumed (cautiously) that underestimates are uniformly distributed (there is little or nothing in the literature to indicate otherwise) and accordingly, national rates are adequate indicators of trends (Gibbs, 1971). A second, weaker argument may be made that the use of such rates have both a historical and sociological tradition (e.g., Durkheim). Given this tradition and since "truer" estimates are not available, it is felt that a cautious use of such rates is valid for this study.

The statistical model which is most appropriate for our study is that of multi-variate regressive time-series analysis. Various time-series techniques have been developed for the analysis of the data used in our research. However, as Land and Felson (1978) point out, each method has its advantages and disadvantages. For instance, the Box-Jenkins method is not suitable for causal hypothesis while spectral analysis requires at least 100 time points for suitable application. Our data only allows for a maximum of 52 (1919-1974) time points. (Although Vigderhouse (1977) has developed a Box-Jenkins method for

multivariate causal analysis, he takes the position that other techniques may be more applicable depending upon one's theoretical perspective and type of data being used). The third and most commonly used method involves a structural equation model, i.e., a variation of a multiple-regression model. Leabo (1976) states that the procedure most used by econometricians is that of stepwise regression.

A major difficulty with utilizing time-series correlations is that of autocorrelation (or serial correlation), which can be defined as the correlation of members of a time series with themselves. Since time-series analysis does not involve the randomly sampling of variables but rather a totality of successive observations over a period of time points, a major problem may arise with regards to the non-independence of these time points. For example, the homicide rate for 1960 may partially be a result of the crime rates of previous years (for an excellent description of the factors which influence autocorrelation see Kennedy, 1980). Leabo (op. cit) lists five specific techniques which may allow one to develop a trend-free regression model which controlling for autocorrelation. They are (1) the correlation of first-differences, (2) transforming the raw data of each variable into its logarithmic function (natural log or log 10), (3) the correlation of the first-differences of the logarithmic transformations, (4) the correlations of the percentage differences (annual) of the logged data, and (5) the correlation of the annual percentage differences of the raw data. As Leabo points out, the determination as to which technique is "best" is usually based on the

degree of autocorrelation within the data used, i.e., the technique which offers the highest non-autocorrelated coefficients is generally considered the most efficacious. In terms of our data, the only statistical technique which provided non-autocorrelated coefficients was the correlation of the first-differences of our variables. All of the other techniques suggested by Leabo provided speciaously high autocorrelated coefficients. What is significant for our research is that first-differences specifically measure the absolute rate of change between both the dependent and independent variables over time--the theoretical concept with which we are most concerned with (Land and Felson, op. cit.).

As was mentioned above, a major difficulty with time-series correlations is that of autocorrelations. The test most applicable for the determination of autocorrelation is the Durbin-Watson (d) statistic. As Leabo (op. cit., p. 499) points out, "If the D-W statistic is between 1.5 and 2.5 serial correlation is not significant. If the D-W computed values is below 1.5 there might be positive serial correlation between residuals of the fitted data and the actual data. If the D-W statistic is greater than 2.5 negative serial correlation might be present."

A final point should be made, as many authors have noted (Wigderhouse, op. cit.; Leabo, ibid.; Kennedy, op. cit.) time-series analysis is a statistical technique which utilized various approaches and models based on the researcher's theoretical perspective and practical (statistical) skills and abilities. Thus simpler models may actually provide more insight into social phenomena than more complex models.

ANALYSIS OF DATA

The Early Pre-War Period

(1919-1929)

The purpose of this section is to analyze and discuss our data. We will begin by comparing our pre- and post-war economic coefficients with the findings of Henry and Short (1954).

To briefly reiterate, Henry and Short postulated two basic sets of hypotheses: (1) suicide rates vary negatively with economic activity while homicide rates vary positively with economic conditions, and (2) that due to certain childrearing practices and their resultant personality predispositions, higher status individuals will be prone towards suicide while lower status individuals will be prone towards homicides.

However, as pointed out earlier, there is some question whether Durkheim's theory of anomie and social deviance was adequately operationalized by Henry and Short. For instance, as Marshall (1981) and Pierce (op. cit.) rightly point out, Durkheim's emphasis was upon economic change rather than economic activity per se. Henry and Short, as well as other researchers, have singularly dealt with economic change. Our use of first-differences measures changes in both the independent and dependent variables, i.e., the annual differences over time as opposed to simply correlating absolute annual rates. Thus, our coefficients represent the relationship between annual changes in the dependent and independent variables.

Our pre-war data tend to partially contradict the Henry and Short proposition regarding economic conditions and homicides and suicides. For each of our aggregate suicide and homicide groups (Table 2) there is an inverse relationship between the annual changes in suicide and homicide and the annual changes of our economic indicators. In terms of suicide, the strongest relationship between economic change and changes in suicide rates was for males (r^2 = .61) with the lowest c change relationships found among white females and blacks (r^2 = .32 respectively). Given the directionality of our coefficients--negative for industrial-manufacturing production and the consumer price index and positive for unemployment--it is apparent that negative economic change tends to positively influence changes in the suicide rates. The only category which does not reflect this trend was female suicides (especially white female suicides). While all other categories showed a positive long-term relationship with unemployment for this period, white females exhibit a negative relationship.

Looking at changes in homicide rates, we find a similar directionality in our coefficients even though the r-squares are lower than for the suicides. The highest r^2 is found for the rate of change among white males (r^2 = .46) with the lowest being for black females (r^2 = .04). This finding is interesting in the light of Henry and Short's findings. Henry and Short postulated that homicide would vary positively with economic conditions and that this relationship would be stronger for blacks than for whites. Our findings again indicate the opposite. Changes in economic conditions have little or no effect upon the changes in homicide rates among blacks. What slight

tendency does appear to exist, would seem to indicate that the direction of economic change on black homicides is negative (an extremely weak finding) for this time period.

Pre-War Plots

In looking at our plots for this prewar period (Plots 1-16) we can better visualize the relationships between our variables. Plot 1 shows the negative relationship which exists between changes in white male suicides and changes in industrial-manufacturing production. From 1920 to 1929, the suicides of white males consistently changed in a direction opposite to that of changes in the economy. This trend is more strongly exemplified in Plot 2 where, during the same time period, changes in white male suicide rates are virtually synchronous with changes in unemployment rates. Exceptions to these trends appear to occur during the Depression years (1929-1941). For example, while yearly increases in unemployment peaks in 1932, yearly increases in white male suicides peaked in 1930 and declined to their lowest point in 1933. A similar anomalie exists during the 1934-1937 time period whereby unemployment is basically declining while the white male suicide rates are either decreasing at diminishing annual rates or are increasing positively. In 1937-1938 unemployment rates experienced a drastic increase while white male suicide rates experienced a slight decline.

Plots 3 and 4 indicate the change between annual fluctuations in the white female suicide rates and industrial-manufacturing production and unemployment. These plots exemplify our coefficients quite

well (Table 2). While both of our independent variables indicate great variations in terms of annual changes, white female suicide rates exhibit little or no variance indicating a random walk pattern.

Regarding black male suicides (Plots 5-6) we find that prior to 1929, the annual variation in black male suicides was almost synchronous with yearly changes in industrial-manufacturing production ($r = -.78$). A short-term discrepancy occurs during the 1929 to 1933 Depression period. Here, despite the drastic annual declines in industrial-manufacturing production, the annual changes in the black male suicide rates show very little variation. A second anomaly occurs between 1934- and 1936 when both the suicide and industrial-manufacturing rates increased in a positive direction. During the 1937-1938 recession black male suicides show little variance despite the large drop in industrial-manufacturing production. For the rest of the period (1939-1941) the relationship between the two variables appears more stable. In terms of black male suicide and unemployment, we again find that prior to the Depression, black male suicides moved concomitantly in a positive direction with annual changes in unemployment. There is little variation in the suicide rates from 1929 to 1932. From that point on, both variables appear positively synchronized until 1939-1940 when there occurs a positive increase in suicide rates and a sharp decline in unemployment.

Black female suicides (Plots 7-8) present a similar pattern for this period. With industrial-manufacturing production, black female suicides show a fairly consistent negative relationship from 1920 to 1927. From 1927-1933 the black female suicide rates show little

yearly change despite radical annual fluctuations in our economic independent variable. In the next period from 1934 to 1941 we find a somewhat greater degree of annual change in the suicide rates negatively concomitant with industrial-manufacturing production. In terms of black female suicides and unemployment again we find a greater synchronicity between our variables during the pre-1930 period than during the Depression. Here the differences between the two periods are quite noticeable.

Between 1929 and 1933 we find very little change in the annual suicide rates relative to unemployment. In the 1933-1934 period we find an increase in suicide rates while unemployment declined for that period. An additional discrepant finding occurs during the 1937-1938 recession when unemployment increased while black female suicides declined slightly. A similar situation occurred from 1939-1940 when unemployment declined drastically and suicide rates increased.

Turning to our homicide graphs for this pre-war period, the findings indicate that the strongest relationship between annual changes in the economy and changes in homicide rates occurred for while males (Plots 9 and 10). Prior to 1929 white male homicides changed negatively with industrial-manufacturing production and positively with yearly changes in unemployment. Anomalies occur in 1924-1925 and 1927-1928 when both indudstrial-manufacturing production increased positively as did the white male homicide rates. In the Depression period (1929-1941) we find white male homicides increasing from 1929 to 1930 and then changing in a downward direction as industrial-manufacturing production increased in 1931-1932. From 1933 to 1941 white male homicides experienced negative annual changes while industrial-

manufacturing production basically moved in a positive direction (the exception to this occurs during the 1937-1938 recession which does not appear to have had much of an effect on changes in the white male homicide rates). Looking at our graph for changes in unemployment and white male homicides we notice a fairly consistent synchronicity between the two variables. Again, changes in homicide rates reach a positive peak in 1929-1930 while unemployment reaches its peak in 1931-1932. It appears that the 1937-1938 recession had little or no impact on changes in the white male homicide rates. For that matter, all of the yearly changes in homicide rates from 1933 to 1941 were negative changes indicating annual declines in the variable declines in the homicide rates.

Changes in white female homicide rates show very little variability in our graphs (Plots 11 and 12). Neither of our two independent variables produced very much in terms of drastic fluctuations in the homicide rates for this category. Despite this seeming lack of variability our coefficients (Table 2) indicates that the fluctuations in our independent variables were not wholly without any effect.Despite the lack of radical change in our dependent variable, the directionality of what changes did occur are consistent--especially for the 1920-1929 time period. The Depression period shows a lesser consistency between changes in white female homicide rates and our two independent variables.

Changes in the homicide rates for black males indicates a high degree of variability but very little synchronicity of direction (Plots 13 and 14). This is especially true with industrial-manu-

facturing production (r = -.03). Looking at changes in the unemployment rates and black male homicides, we can discern two basic patterns regarding the yearly changes between our two variables. Prior to the Depression we find negative fluctuations between unemployment changes and changes in black male homicides. During the Depression the direction our variables change tends toward a more slightly positive direction. During the 1919-1929 period black male homicides appear to increase annually as unemployment decreases (e.g., 1921-1923) and decrease when unemployment increased (e.g., 1926-1928).

During the onset of the Depression period we find black male homicides changing from annual declines during the late twenties to positive increases from 1929 to a peak in 1931. There was a drastic decline in 1932 (the peak year for unemployment) with a radical increase from 1932-1933 when unemployment declined. The next radical anomaly occurred from 1937-1938 when unemployment increased drastically while black male homicide rates declined.

Changes in black female homicides (Plots 15-16) also exhibit a great deal of variability over our pre-World War II time period. Again we find that prior to 1929 there is a greater synchronicity between annual changes in our dependent and independent variables. During the 1927-1928 period black female homicides declined while industrial-manufacturing production moved upwardly. However, there were no changes in the homicide rates from 1929-1930 with an actual decline from 1930 to 1931 and only a slight increase in 1932. In 1935-1936 black female homicides increased concomitantly with industrial-manufacturing production only to decline during the 1937-

1938 recession. In terms of unemployment, again a weak consistency exists between the annual changes of our two variables. However, after 1929 the relationship between the variables reflects an almost random pattern which is also indicated by our coefficient for that period (Table 4, $r = -.04$).

These findings are also somewhat inconsistent with those found by Brenner (1976). Considering the nature of our findings and those of Brenner (as well as those of Henry and Short) it is useful to review Brenner's theory.

As we stated in a previous section, Brenner asserts that while there exists a long-term positive relationship between homicide and economic growth, there is also a strong positive relationship between short-term radical declines in the economy and growth in the homicide rates. The proof for this, according to Brenner, is that homicide rates increased during a period of the Great Depression (1929-1936). He explains the discrepancy in relationships between the economy and homicide in terms of the stress response of two different subpopulation groups. Although Brenner never explicitly states this, he certainly implies that those who commit homicide during economic prosperity may be subject to relative deprivation while those who engage in the same behavior during period of radical economic decline may be responding to "absolute deprivation" or absolute economic loss.

Although the notion of absolute economic loss is being applied to homicides in terms of his theoretical perspective, it is also applicable for explaining suicide rates during economic recessions. For instance, Breed (1963) found that a majority of suicides occurred

in situations in which there was an intergenerational diminution of occupational status (this is also similar to the status-loss position of Gibbs and Porterfield, 1960). Whether such a decline in achieved status is due to personality variables (a certain possibility regarding suicides) or to socioeconomic conditions per se is a problematic issue beyond the scope of this paper. However, our statistics, as well as those of other researchers, lends empirical credence to the logical notion that drastic economic declines, such as the Great Depression, can lead to status declines in the population. Rushing (1968) found that the highest rates of suicide dichtomously occurred among those who occupied high occupational status positions and those who occupied low status positions. If the theoretical implications of the two studies mentioned above are applied to Brenner's findings, absolute deprivation may be responsible for the economic decline in status among upper-income individuals while relative deprivation may account for lower-status suicides.

In order to better analyze and explain our own results, we have partially replicated Brenner by dividing the time periods 1920-1929, 1930-1941. It should be emphasized that there are certain methodological problems in dividing our data into two such time periods. Statistically such a division lowers the number of data points available for analysis. Since we are dealing with a regression model having three economic variables in one time period and five in another, this may cast some doubt on our findings in terms of the total amount of variance explained. However, there is some justification for this approach. To start, we are doing this to either contend or reinforce Brenner's findings which utilized a similar

number of data points (1929-1936). Secondly, we are not dealing with a random sample of data but rather a continuity of time points in the hope of discerning short-term trends between our variables. Should there be a strong correlation between our variables for one time period but no relationship in the next time period, it becomes obvious that some social phenomenon is taking place which requires theoretical explain explaining. Lastly, as our plots graphically illustrate, there is a greater consistency in the relationships between our variables during the 1920-1929 period than during the Great Depression. This, in itself, would warrant an analysis of the coefficients for both periods. Thus, despite the statistical drawbacks in utilizing a small number of data points, we feel that there are certain theoretical justifications for doing so.

Theoretically, following Brenner's results we should find a positive relationship between economic growth and homicide for the first period and a negative relationship in the latter period. Our findings for both time periods--both homicides and suicides are presented in Tables 3 and 4. These findings contradict those reported by Brenner and by Henry and Short.

What is interesting about our findings is that Brenner attributed the pre-war negative relationship between economic growth and homicide to the radical declines in the economy occurring during the 1929-1936 Great Depression period. His implication is that for the pre-war period the radical decline in the economy for those specific years, and the concomitant increase in homicide rates was so great as to change the direction of the coefficients from a positive to a

negative relationship. Our data, however, show that the negative relationship between changes in homicide rates and economic change is even stronger during the pre-depression period than is found during the Great Depression (1920-1929-r^2 = .80, 1930-1941-r^2 = .52).

A possible explanation for our differences with Brenner and Henry and Short may have to do with our statistical model. While we have been primarily concerned with the nature of economic change and its relationship with changes in homicide and suicide, Vigderhous (1978) found that economic change does not exert as important an effect as economic acitivity on the suicide rate. Thus, our findings could be an artifact of using economic change as opposed to economic activity. If, in fact, economic change has less of an influence on deviance than economic activity, then Durkheim's proposition is not truly substantiated. Durkheim, however, posited that rapid and radical change would lead to anomie, i.e., a state of relative normlessness ("society cannot change its structure suddenly . . . any grave and rapid . . . alteration must be morbid," 1951, p. 369). This change could be either positive or negative, i.e., if viewed in terms of economics it may be positive economic growth or negative economic growth. Theoretically this would lead to increase in forms of deviance due to the disruption of the value systems of society. These disruptions may not necessarily be of a quantitative nature; they could also be a result of qualitative factors (Hinkle, 1976). Hence, economic activity reflects basic qualitative changes in the value structure of society at any given historical period.

For example, Pierce (1967) showed that the suicide rates coin-

cide with popular expectations as to what future socioeconomic conditions will be like. Marshall (1981) in a study of the effects of war on suicide, showed that the diminution of the suicide rates during wartime could be attributed to declines in the unemployment rates. However, these unemployment rates only declined due to a war situation. Archer and Gartner (1976), in studying the increases in homicide rates occurring during war periods and immediately afterwards found that such increases were more a function of the residual legitimation of wartime violence than of economic growth or declines. Ted Robert Gurr's (1979) study of the history of crime in Western society also found that while crime could be attributed to anomic conditions, these conditions themselves may be the result of factors other than economic ones, e.g., the mass media, technological growth, the age of the population, the degree of urbanization, etc. Other researchers, in both criminology and suicidology, have shown that the form of behavior aggression may take can be a result of subcultural norms (e.g., Wolfgang and Ferracuti, 1967; Porterfield, 1952; Archer and Gartner, op. cit.).

Although our coefficients and findings tend to contradict those of Brenner and Henry and Short, they do indicate that economic changes did have some variable effects on changes in both homicide and suicide rates. Perhaps, the theoretical concepts of relative and/or absolute deprivation can help us to explain our pre-war findings. In order to determine this we must look at specific aggregate categories for both per-war periods.

During the 1920-1929 period all of our aggregate categories,

with the exception of black males, show high coefficients between homicides and negative economic growth (Table 3). The black male categories show a reverse tendency, while the black female homicides correspond to the other aggregate groups. These trends could correspond to a situation of economic relative deprivation insofar that black males would experience unemployment during economic growth and prosperity when unemployment is generally low. For black females, who generally occupied a greater participation in the labor force vis-a-vis their male counterparts, the situation would be the opposite. One would expect these black females to be primarily involved in unskilled occupations, given their social status relative to the white labor force; hence they would be among the first to experience unemployment during an economic recession or depression.

Although the above explanation may account for black homicide rates, how does one explain the high coefficients for the other aggregate categories, especially for a decade traditionally noted for its prosperity and economic growth? A possible solution might be found in looking at some of the statistical and social conditions of that period.

First, with regards to statistics and homicide data accumulated prior to the development of the Uniform Crime Reports (UCR), in the early 1930s the data available for national homicide statistics was essentially local in character--as was the data found in the Vital Statistics (Zahn, 1980). Early studies, such as Brearly (1932), tended to utilize these statistics in order to discern trends in the United States. Brearly tried to show that there was a steady

increase in homicide rates which reached a peak in 1928. (Actually, as a matter of public record, the homicide rate began a steady annual increase in 1923 and reached its peak in 1933.) Brearly felt that part of the explanation for this increase in homicide rates as being due to the inclusion of Western and Southern states into the UCR. These states traditionally have had higher homicide rates. An additional variable used to explain the rise in homicides was the impact of prohibition and its relationship to criminal violence (Zahn, op. cit.).

As is well known, the 1920s was the period of the notorious "beer wars" in which various underworld criminal factions viciously fought among themselves for "territorial" rights to illegal liquor sales and distribution. This, of course, led to the ultimate development of organized crime as we know it today. (Block and Block, 1981, cite a report which indicates that law enforcement in Chicago practically broke down due to these violent gang wars.) How do these factors relate to our findings? In order to answer this question we must briefly look at American society in the decade of the 1920s. (All references substantiating our description of this period come from Allen, 1931; Hacker and Zahler, 1952; Hacker and Kendrick, 1949; Freidel, 1976; and Dubofsky and Theoharis, 1978).

Traditionally the period of 1919-1929 has been known as the "era of prosperity and growth." In addition to the economic changes we will describe below, it was a period of radical changes in societal morals, norms and values. The 1920s saw the start of feminist movements, increases in the divorce rate and what Edmund Wilson

called "the spirit of hedonism." Change in social values were both exemplified and stimulated by the popular and formal cultures of the time. Popular music, socially diffused by the rapid spread of radio in the late twenties, personified the frenzy and amorality of the upper-classes. In literature, the major themes were of sexual experimentation, moral disillusionment and a disenchantment with traditional American values. In reaction to these trends came a surge of conservatism and traditionalism. The Ku Klux Klan found a new resurgence, not only in the South but in the North as well, gathering support against blacks, Jews, Catholics, new immigrants and antiprohibitionists. Prohibition was passed with the Volstead Act. Fundamentalist preachers rallied against sexual immorality, gambling, drinking and even Darwin's theory of evolution. The period of the early twenties was marked by violent strikes and anti-union feelings. Immigration was curtailed because of a fear of European Communists and Anarchists. A fear which culminated with Attorney General Palmer's notorious "red raids."

As for the economy, both the media and politicians hailed the prosperity of the era and even predicted the coming end to all poverty in the United States. Although all economic predictors heralded good times, a closer look indicates that this prosperity was precarious. Productivity was geared toward the creation and marketing of durable consumer goods. By 1927, 11 percent of all goods were purchased on installment contracts at a retail value of nearly $6 million; yet, in 1929, 71 percent of American families earned incomes of under $2,500 annually--a level considered by the govern-

ment minimal for health. Other figures further describe this unequal distribution of wealth. After taxes, the top 5 percent of the population received over 33 percent of the national income (1929). The same skewed distribution of wealth occurred among businesses. In 1929 the top 5 percent of business corporations earned 84 percent of business income.

Although wages and earnings increased during the 1920s, unemployment continued to fluctuate and remain high among the working-classes. In the Northern states the increased use of technology and mass production eliminated the jobs of thousands of workers. Throughout the twenties, the New England states suffered from a chronic economic recession due to their declining textile and shoe industries. The main competition came from the South where women and children toiled in the mills from 54 to 70 hours per week, the average hourly wage for a male weaver was twenty-five cents and, for a female spinner, seventeen cents.

Thousands of coal miners--from western Pennsylvania to southern Illinois--were unemployed extensively throughout the twenties as were railroad workers. Both New England and the coal regions were chronically depressed. Nationally, the median unemployment rate for the twenties was 13 percent. Coupled with these geographic areas were the rural-agricultural regions. Due to growing technology, food production increased faster than consumer demand resulting in food surpluses. As a result, between 1919 and 1929 farm income declined 30 percent, farm property values declined 10 percent while indebtedness increased. One of the results of this agricultural depression

was a migration from rural to urban and other rural areas. From 1920 to 1928 the rural population declined over 3 million. During the same period, urban populations increased over 15 million (during a decade of declining birth rates and low foreign immigration). At the same time, black populations in such Northern cities such as Chicago, Detroit, Cleveland, Gary and New York increased from 108 to 239 percent.

The dislocation and migration of unskilled rural workers to urban areas generally leads to urban disorganization and anomic conditions with concomitant increases in both personal violence and property crimes. This can occur despite the fact that overall long-term economic growth may be on the rise--as was the case during the twenties. Although an economy may experience long-term economic growth, it will be subject to short-term declines or "mini-recessions" (a point which both Brenner and Henry and Short acknowledge). For Brenner, these "cyclic" declines are reflections of absolute loss or deprivation and are indicated by "declines in employment and income, as measured chiefly by fluctuations in the unemployment rate. Economic loss is additionally measured by annual percentage changes in the rate of inflation" (Brenner, op. cit., p. 571).

Our data indicate that changes in the rate of homicide for the twenties were sensitive to the rate of change in economic conditions (r^2 = .80). However, since not all members of society are equally affected by such "mini recessions" and the economy itself during the twenties was so variable, it is logical to assume that only certain subpopulations are represented in the homicide rates. For our white aggregate categories and for black females, absolute deprivation may

be an explanatory factor, while for black males relative deprivation could very possibly be a cause for their homicides. For this particular aggregate group, their homicide rate increased as economic conditions (especially unemployment) became better. Thus they experienced more economic deprivation, while our other groups experienced relatively "good" times.

If we consider the black rural to urban migration during this period, it may be that those black males who migrated to Northern urban areas experienced an increase in homicide rates due to the transposition of Southern "cultures of violence" and to the experience of social and personal disorganization in an urban environment perceived as being threatening by these newly arrived immigrants (Pettigrew and Spier, 1962).

For our purposes then, discounting the influential effects of organized crime on the murder rates of the twenties, we can largely attribute the homicide rates of that period to the deprivations experienced by the lower-working classes (urban) and to the rural indigent who participated in the great migrations of the period. As Brenner points out, "the major variation in criminal statistics lie in economic instability and inequality. In both of these cases, however, the common basis of causation lies in comparatively low socioeconomic status, whether that situation has occurred unexpectedly or represents a chronic pattern" (op. cit., p. 571).

It is also interesting to note that Brearly partially attributed the increase in homicide rates to the inclusion of Southern and Western states into the UCR. Many of these states were the same

which experienced a chronic agricultural recession during the twenties. Although there is no exact way of knowing, it may be that the traditionally high homicide rates of these areas were exacerbated by the depression and migrations of the times.

In looking at the suicide rates for the twenties we generally find a negative relationship between changes in the economy and changes in the suicide rate. This is interesting in light of the fact that suicide rates consistently increased on an annual basis from 1923 (reaching a peak in 1932). It would appear, then, that was the situation with our homicide groups, subpopulations were differentially affected by these changes in the economy. For example, while white male suicide rates varied negatively with economic conditions, unemployment did not enter into our regression equation, i.e., changes in unemployment rates did not contribute to any changes in the white male suicide rates for this time period. However, declines in manufacturing production and inflation did have an effect on white male suicide rates.

If we accept the numerous findings that suicide (especially among males) is related to either high or low occupational status positions we may be able to explain the findings we obtained for this particular aggregate group. In order to do this, we will try to identify particular groups most susceptible to suicide during this period.

The first group were probably those white males in upper-occupational status positions. These men would be susceptible to the stresses of a recession (as indicated by declines in industrial-manufacturing production and lowering inflation) but would not be

influenced per se by increases in unemployment. Those men most influenced by changes in the unemployment rates generally came from the skilled and particularly, unskilled laboring classes. There is additional evidence to support this position. Dublin and Bunzel (1933) correlated an index of business prosperity with suicides for the years 1910-1931. They found a strong negative correlation between suicide and business prosperity. However, when they correlated the same variables for unskilled laborers and wage earners, they found the coefficient to have diminished considerable. Given their economic indicator, they concluded that those most affected by declines in business prosperity were "men in positions of prominence and responsibility" (Dublin, 1963, p. 66). A related study by Rushing (1968) found that males in upper-occupational status categories tended to commit suicide to a greater extent during periods of high employment. Does not a decline in manufacturing production result in an increase in unemployment? As various econometricians have pointed out, industrial-manufacturing production is considered a lead variable, i.e., it generally precedes other economic variables such as unemployment (Leabo, 1976).

The second group of white males who would be susceptible to these economic conditions are the chronically unemployed, i.e., those who experienced unemployment during relatively "good" economic times and are now faced with the prospects of declining prosperity and job opportunity. Why these individuals were unemployed is a difficult question to answer. As Douglas (1967) points out, lack of employment for these "marginal" laborers may be due to a lack of occupational skills (e.g., migrant farm workers who move to urban-industrial

areas), personality variables such as mental illness or alcoholism, physical illnesses, various forms of social, ethnic and geographic prejudice, etc. For these chronically unemployed, the prospect of an advent of hard economic times may even increase their stress and sorrow and further lower their prospects for future employment. If one cannot get a job during economic "good" times, how is one to get a job during economic "bad" times?

A more problematic aggregate category is white female suicides. Their rates during this time period are positively related to changes in the economy. Thus, the more our economic indicators moved in a positive direction, the more the white female suicides increased. Despite this finding, it should be noted that our r^2 for this particular group was the lowest of all of our categories ($r^2 = .45$). While somewhat disconcerting this finding was not wholly unexpected. Dublin and Bunzel (op. cit.) found no significant relationship between the suicide of white females and economic prosperity. Although our results for this group are not high, they are high enough to merit some interpretation. To start, females (especially white) did not constitute a major portion of the labor force during the twenties. Thus, they would be influenced by economic conditions primarily through the activities of their spouses since their income and their family's income was dependent upon their spouse's earning capabilities. A situation of relative deprivation could occur if, for some reason, the spouse would be unable to work or provide economic support--especially if economic conditions were good or improving.

The opposite situation appears to apply to black female suicides.

Their coefficients are very negatively related to economic change. However, as we pointed out earlier, black females were participants in the labor force and so would be affected by negative economic changes.

A final point should be considered, that is, our black (both male and female) aggregate categories have much higher suicide coefficients than homicide coefficients, suggesting that changes in black suicide rates were more sensitive to changes in economic conditions than were black homicide rates. This is interesting in light of the fact that (1) homicides are much higher than suicides among blacks and (2) suicide was very seldom considered a culturally accepted "way out" among blacks (Lalli and Turner, 1968). A possible explanation for this finding may be that black homicide rates are more randomly distributed over time primarily being a result of the black cultural structure (Lalli and Turner, ibid.) and only marginally influenced by the frustrations of relative deprivation, while the suicides primarily occur among economically upwardly mobile blacks who experience relative deprivation and ultimately a form of psychological fatalism. This proposition is partially substantiated by the fact that, during the decade of the twenties, homicide rates for black males were positively though weakly related to economic conditions while suicide was negatively related to the same. The same was not the case for black females who, as we stated above, experienced a greater participation in the labor force. For them, both homicide and suicide were negatively related to changes in the economy. Since it is reasonable to assume that black female homicides mostly result from black male murderous behavior (as in the case for white groups), it may be that

black males (whatever the social or domestic relationship) vented their aggressions upon their female counterparts during periods of economic decline and loss of income.

Summary

Our purpose was to investigate the relationship between annual changes in certain economic indicators with changes in certain forms of deviant behavior, i.e., homicide and suicide. Our initial goal was to merely replicate the study conducted by Henry and Short which basically covered the years 1919-1949. However, a recent study by Harvey Brenner forced us to divide our pre-war historical period of analysis into two time periods--1919-1929, 1930-1941--which resulted in findings contrary to both of the above researches.

Despite certain possible methodological problems in dividing our pre-war time period, we found that the coefficients for our dependent variables for this early period (1919-1929) exhibited an extreme sensitivity (with certain exceptions) to annual fluctuations in our independent economic variables. We attempted to explain our findings in terms of the relative social changes which took place for certain segments of the population. That is, while there existed an aura of prosperity for the nation as a whole, certain segments of the population (skilled and especially semi-skilled and agricultural workers) were relatively deprived of what economic benefits existed. These individuals suffered from not only relative deprivation but also from the anxieties of radical fluctuations in the national economy at this time.

THE DEPRESSION YEARS

(1930-1941)

Turning now to the period of the Great Depression (1930-1941) we find a substantial drop in our coefficients (Table 4). This decline is contrary to Brenner's contention that the negative correlation between homicide and his economic indicators for the pre-war period was primarily due to the extreme effects of the 1929-1936 period, i.e., the radical effects of these years depressed the overall long-term positive relationship between homicide and economic growth.

Not only are the homicide coefficients negative during the twenties, but the relationships between homicide change and economic change were higher during that period than during the Great Depression period. This relation, is in fact, substantively stronger than the ones discussed in the preceding chapter because we have added two additional economic variables to the analysis--personal savings and personal income--for which there were no data available prior to 1929.

There are three basic changes in our homicide data in comparison with the previous time period. First, the general relationship between changes in homicide and changes in our economic indicators declined. Second, for the homicide of black females, their responses to changes in the economy during the 1920s were negative while during the Great Depression the responses in their homicide rates were random or very slight. Third, for the homicide of black males we find a reversal of the coefficients from one time period to another. Their r^2 coefficient remains basically the same for both time periods,

although during the 1920s black male homicide rates were positively related to the economy while during the 1930s the homicide rates were negatively related to our economic variables.

In order to deepen our understanding of the similarities and differences in our data for the two times periods, it is important to briefly describe the socioeconomic conditions of the Great Depression.

Historically, the Great Depression began on October 29, 1929 with the crash of the Wall Street stock market. Many factors contributed to the initial collapse of the market and subsequent deterioration of the economy. The "era of prosperity" of the 1920s was a precariously flawed prosperity which contained elements of chronic unemployment, depressed agricultural conditions, unequal distributions of wealth and increasing consumer debt. As early as 1925 automotive production and other areas of industrial manufacturing began to decline due to overproduction and increasingly large surpluses of goods which the majority of the population could ill-afford to purchase. Only corporate profits (due to price increases and speculation) prevented many industrial concerns from feeling these early declines in productivity (while corporate profits rose 65 percent from 1923 to 1929 wages only increased 11 percent; Hacker, 1949).

The initial political and economic response to the onset of the Depression was to view it as a temporary "cyclic" adjustment of the economy which, as on previous occasions, would soon ameliorate itself naturally according to the laws of economics and might, very well, even be beneficial for the economy in the long run. Since the political administration had been traditionally tied to a laissez-

faire economic theory, what few attempts were made by the government to aid economic conditions were insufficient to the task. Instead, appeals were made for voluntaristic aid for those who were suffering from economic deprivation. These efforts were soon overwhelmed by the intensity and extent of the depression; by 1932, for example, the Red Cross in Illinois could only allocate seventy-five cents a week per needy family on their rolls. The height of the Great Depression manifested itself in 1932-1933 when 37 percent of the civilian non-farm labor force (approximately 15 million individuals) were unemployed (an excellent account--both statistical and anecdotal regarding the effects of the Depression on individual lives can be found in Dubofsky, Theoharis and Smith, 1978).

Although the lower-working class was the earliest affected by the Great Depression, the middle-class and professionals were hit more traumatically by the economic adversity (Dubofsky, Theoharis and Smith, ibid.). The working classes had long experienced the fluctuations of unemployment which existed during the 1920s. Psychologically, there was the knowledge that the "era of prosperity" only intermittently, if not at all, included them and had sufficient experience in contending with the trials of seasonal, technological and cyclical unemployment. Middle-class America found itself in psychological disarray having been promulgated on the concept of "never ending prosperity" and then finding themselves unemployed and indigent. These individuals, raised on the values of individual competition and achievement now found themselves subject to economic forces beyond their control (or understanding) and subject to dependency upon

voluntaristic social service agencies for their economic survival. As Dubofsky, et. al. points out, "/T/he first three full years of the depression--1930 through 1932--witnessed fewer strikes and industrial disputes than the last year of prosperity, 1929. Indeed the prosperous years from 1923 through 1926 experienced 50 percent more industrial conflict than did the early depression years" (p. 213).

For the rural areas, which had experienced a chronic recession throughout the 1920s, the Great Depression presented an economic coup de grace for many farmers. Initially, those wiped out by the crash were mostly white tenant farmers and black sharecroppers who began migrating in search of economic sustenance. As conditions worsened toward 1932, farmers in Iowa, Nebraska and the Dakotas attempted to prevent food products from going into the market in order to raise prices. Other such direct action movements spread to Minnesota, Wisconsin and Illinois leading to unrest and violence.

Foreclosures on homes and farms increased drastically as the national income in 1933 approached only half of what it had been in 1929. However, these foreclosures provided little relief for the banks since no market existed for the sale of these properties. With loan defaults increasing numerous banks passed into insolvency. This stimulated even more panic and bank runs which eventually led to individual states declaring bank holidays. By March of 1933, scarcely a bank remained open in the United States.

As conditions increasingly worsened, the urban unemployed began marches and riots in various cities such as New York, Cleveland and Detroit. Clashes with police became more common and frequently

resulted in deaths. In the Spring of 1932 World War I veterans formed a "Bonus Army" and marched with their families on Washington. With drawn sabres, torches and tear gas they were routed out by real army troops.

Much urban violence was stimulated by the resurgence of the nearly defunct labor movement. Union membership increased from 2.85 million in 1933 to 8.94 million by 1940. In the same period the average annual number of strikes was never below 1,700 with a high of 4,740 in the recession years of 1937. The violence of these strikes peaked in 1934 when strikers battled militia, police and national guard troops in Toledo, San Francisco and Minneapolis-St. Paul. The initial alienation which the workers experienced at the start of the Depression began to dissipate as a decade of high unemployment and minimal economic opportunity began to stimulate a class consciousness (Bakke, 1940).

The effect of the Great Depression on family life was both positive and negative. In one respect the problems of unemployment and lost savings diminished the authority of the husband and father. In the lower middle-classes the losses of mortgages and savings deprived older people of the funds they hoped to depend on for their later years (Hacker and Zahler, 1952). Many households experienced father absence as the male heads migrated in search of work. Although female participation in the working world increased from 1930 to 1940, its rate was lower than for the three preceding decades as explicit attempts were made to exclude them from the labor force. In a more positive sense, there is evidence to suggest that in many

cases the Depression brought families together more as the home became the center of activity. Juvenile delinquency actually declined during this period as unemployed fathers were forced to remain at home for long periods (Maller, 1936; Lynds, 1937; Sanders and Exell, 1937, Wiers, 1945).

To begin, those individuals who initially experienced the greatest trauma from the Depression were those in the middle-classes and professional classes. These individuals would be less apt to commit homicide as a response to their absolute deprivation (Breed, 1962; Maris, 1967; Lalli and Turner, 1968; Henry and Short, 1954). In contrast, the lower-classes, who had experienced chronic fluctuations in unemployment throughout the 1920s and were more familiar with means of adaptation, experienced a comparative substantial increase in socio-economic status in relation to the middle-classes. Hence, the rich are no longer getting richer but instead are feeling the destitution of the lower-classes. As the Depression progressed, a greater militancy grew among the working-classes which did not exist during the 1920s. Violence was still other-directed but tended to manifest itself in the form of riots, strikes and protest movements (Dubofsky, et. al., op. cit.). It should also be noted that the period of the 1930s resulted in a greater distribution of wealth. While a total economic equality did not occur, a greater amount was distributed downward than during the laissez-faire period of the 1920s (Dubofsky, op. cit.). This could also aid the working-classes in terms of a perceived increase in status. It has been noted that lover and domestic homicides increased during the Depression. Much of these

might be attributed to the presence at home of unemployed males whose families experienced economic stress. According to Stauffer and Lazarsfeld (1937) chronic unemployment served to denegrade the father's authority and self-esteem within the familial household, especially in those situations where children were present or the wife was able to secure employment. For this reason, many industries, particularly government service, attempted to explicitly reduce or prohibit female employment (Hacker and Zahler, op. cit.).

In looking at our data, we find the highest homicide r^2 for white males (r^2 = .70) while the homicide change r^2 coefficient for black males is .53. This finding contradicts Henry and Short who found that black males had higher homicide coefficients than did their white counterparts. Statistically since our model is based on the correlations of changes in rates and not absolute values, we can state that white male homicides were more sensitive to negative changes in the economy than were black male homicide rates. Relative to the social status position of the blacks, white males experienced a greater absolute deprivation with the decline in the economy while blacks experienced a relative increase in status (race aside, both groups now suffered from unemployment). However, as economic conditions began to improve, white workers fared better than black workers (especially black males) so that the blacks then suffered a comparative loss of status.

Returning to the analysis of our data, we should note (contrary to Brenner) that despite the economic upheaval of the period, homicide rates tended to actually decline during the Depression period

(Zahn, 1980). After reaching its peak in 1933, homicide rates declined annually until the end of the Depression. Various studies also indicate that during this period the nature of homicide also tended to change. With the repeal of prohibition, homicides related to the notorious beer wars no longer occurred. Thus, while homicides related to organized crime diminished, domestic and love-related homicides increased in their importance (Wolfgang, 1958; Boudouris, 1970). While the decline in organized crime related homicide rates may partially explain the lower coefficients we find for the Depression period, we must still try and explain the coefficients and relationships as they exist for our other aggregate categories.

Even more interesting are the directionalities of the black female homicides. Although the multiple -r square is relatively low (r^2 = .19) the homicide trends are opposite from all of our other aggregate categories. That is, changes in our black female homicide rates are positively related to changes in our economic indicators. Although the size of the coefficient indicates a relative <u>insensitivity</u> to changes in the economy, it is important if we compare it with the black female suicide rates and their relationship to economic change. The black female suicide coefficient for the 1930s was the highest for our aggregate categories (r^2 = .71) and only equaled by the white male category (r^2 = .71). This lends credence to our previously stated positions that given the greater labor force participation of the black female versus her black male counterparts, a radical decline in the economy would result in not only an absolute economic loss but also a drop in status within their racial grouping.

This is a salient point which Henry and Short failed to consider. Namely, during the pre-war historical period, among whites, males had a higher economic status than females while among blacks, females had a higher economic status than the males. The fact that black males have the lower suicide sensitivity for this period (r^2 = .30) would indicate that their absolute or economic loss was not so great given the fact that they had the highest unemployment rate of this period to begin with. If anything, as we stated above, they may have a status increase relative to their white male counterparts. Thus, going back to our findings regarding the black female homicide rate of this period, as economic conditions improved after the initial shock of the early 1930s, black males would begin to suffer from relative deprivation as black females began to enter the working labor force again. This could possibly explain the findings for the positive relationship between black female homicides and changes in our economic indicators. However, due to the low level of our coefficient such an explanation could only be considered quite tentative.

In terms of white suicides for this period a somewhat similar situation occurs but with a sex reversal. White males had the highest suicide coefficient (r^2 = .71) with a negative directionality between suicide and economic changes. Again we could attribute this to the absolute loss experienced at the onset of the Great Depression. The fact that the white male coefficient is more than twice that of the black male coefficient would indicate that the white male suicide rate was much more sensitive to negative changes in the economy than was the black male suicide rate of change. An implication of this is

that upper-status individuals (regardless of race or sex) have more to lose or gain in radically fluctuating economies.

The increase in the white female suicide coefficient (r^2 = .60) from that of the 1920s can be explained in various ways. First, experience of absolute and relative deprivation as they or their spouses experience some of the more malevolent effects of the Great Depression, e.g., loss of income due to unemployment, loss of financial assets, foreclosure of property, loss of status, etc. These financial hardships, especially when coupled with having to raise a family can create a great deal of stress and anguish. Second, feelings of frustration for white females were probably exacerbated by government and business policies of the period not to hire females for job positions and to give males job priorities. This was based on the assumption that males needed job positions to a greater degree in order to support their families. Since the 1920s was a period of increasing female participation in the labor force (Dubofsky, et. al., op. cit.) the above situation was not only sexually discriminating but could also lead to feelings of relative deprivation. It should be noted that female suicides peaked in 1937 while male suicides peaked in 1932 (Vital Statistics of the U.S.). This corresponds to our data that males (especially white males) were more susceptible to changes in the economy than were white females (this cannot apply to black females since their r^2 was the same as white males).

Summary

1930-1941

The period of the Great Depression was characterized by drastic unemployment, poverty and social turmoil. Despite the severity of

these conditions, we found a substantial decline in our coefficients for this period. This was despite the fact that two additional economic variables were added to our equation.

For both suicide and homicide the relationship between their annual changes with the changes of our economic variables was negative. Changes in white male and black female suicide rates were most susceptible to the changes in our economic variables. In terms of changes in the homicide rates, the coefficients were highest for white males and black males with white males showing a higher r^2 than their black counterparts. Although their coefficients were much lower, white and black female homicides exhibited the same type of relationship with each other as did the males. These findings contradicted Henry and Short who postulated that black homicide coefficients would be higher than white coefficients.

THE POST-WAR ERA

(1947-1974)

In looking at our post-World War II data we notice a general decline in our coefficients from our pre-war data (Table 5). What is equally interesting is that, compared to the pre-war period, the directionality of the relationship between homicide and the economy changed. During the pre-war period negative changes in the economy generally resulted (with a few exceptions) in positive changes in our aggregate homicide rates. Now we find that changes in the homicide rates are positively related to changes in the economy. For our suicide data we find a similar (but weaker) set of relationships as existed in the pre-war period, i.e., negative changes in the economy generally resulted in positive changes in suicide (again with a few exceptions). Thus, at least for this post-war period Brenner's analysis appears correct.

Our homicide coefficients for this period indicate that white males and females are more sensitive to positive changes in the economy with white females being more sensitive than white males. Although their coefficients are lower, a similar pattern exists between black males and females. It appears, therefore, that black homicide rates are not as susceptible to changes in the economy as are the white homicide rates.

In terms of our suicide data, males (white and black) exhibit the greatest sensitivity to negative changes in the economy. Black and white females show little or no sensitivity to changes in the economy although their coefficients for our individual economic variables are consistently negative.

Post-War Plots

Our plots (17-32) for this period may better illustrate some of the relationships which exist between our variables. These plots differ somewhat from our previous ones in that rather than looking at national unemployment rates for the total labor force, our dependent variables are being plotted against unemployment rates for each specific sexual-racial aggregate category. This was not done previously, since such group specific unemployment rates were not available until 1948. Our coefficients for the yearly changes in these unemployment rates with annual changes in our dependent variables can be found in Table 6.

Our first pait of plots for this period (Plots 17-18) illustrate the relationships between annual changes in white male suicide rates and industrial-manufacturing production and white male unemployment. The coefficient between the yearly changes in these two variables is -.30 which indicates a fairly weak relationship relative to the pre-war period ($r = -.71$). It should be noted that with the exception of seven time points, most of our white male suicides involved negative rates, i.e., the rates declined in more years than they increased. This indicates that during this period there were a

a greater number of years in which white male suicide rates declined from the previous year as compared to increasing. As can be discerned from the low level of our coefficient, the synchronicity of our variables is somewhat weak. Theoretically, white male homicides should decline when industrial-manufacturing production increases and vise-versa. However, we find that in five time periods white male homicides increased positively with our independent variable (1953, 1962, 1965, 1968, 1972). In terms of unemployment and white male suicides we find a much stronger positive synchronization between annual fluctuations in our variables. This is exemplified in the correlation coefficient between these two variables ($r = .67$). Certain noticeable anomalies do exist, however.

For example, from 1960 to 1961 white male unemployment increased while the suicide rates decreased. In 1961-1962 the exact reversal occurred. A similar negative relationship between the annual changes in our variables took place in 1966-1967, 1971-1972 and 1972-1973. These paradoxical shifts in the relationship between our variables most probably accounts for the diminution of our coefficient from its pre-war value.

Plots 19 and 20 show the relationships between changes in industrial-manufacturing production, white female unemployment and white female suicides. Both our graphs and our coefficient tables indicate the weakness between changes in our variables. Although the coefficients for our independent variables and our dependent variable ($r = -.12$ and .11 for industrial-manufacturing and white female unemployment respectively with white female suicide) are quite weak,

theoretically they are in the right direction However, given the overall weakness of our other economic variable coefficients with white female suicide (Table 5), it appears that the relationships between our variables are insignificant or random.

Plots 21 and 22 illustrate the post-war relationships between annual changes in our two economic variables and black male suicides. As can be seen, there is no relationship of significance between yearly changes in industrial-manufacturing production and black male suicides ($r = -.06$). However, the relationship with black male unemployment and changes in black male suicides is stronger ($r = .25$) although still weak.

Annual changes in black female suicide rates appear to be more closely related to our graphed economic variables than is her male counterpart (Plots 23 and 24). With changes in manufacturing production we find a coefficient of -.25. Although weak, it is still theoretically in the right direction. What is interesting is that changes in black female suicides is more strongly related to changes in black female unemployment ($r = .30$). This is higher than the coefficient between black female suicide and the total national unemployment rate ($r = .18$). While there appears to be little fluctuation in our suicide variable there is a relative degree of positive directionality between our variables prior to 1960. From then until 1966 our variables exhibit a negative trend. This occurs again during the 1962-1972 time period.

In terms of changes in our homicide rates and their relationship with changes in our plotted economic variables, the coefficients are

very weak and almost suggest a random walk pattern. A possible exception to this is the homicides of black males (Plots 29-30) where the coefficient with black male unemployment is -.19. A point to note is the radical continuous yearly increase in black male homicides which occurs after 1963. The relationship with black male unemployment appears to be almost wholly nonexistent from then until 1974.

In order to begin analysis of our findings and their relationship to the major events of the post-war period we should look at some socioeconomic trends. Given the nature of our dependent variables and their possible relationship to various social, economic and political issues, we will begin our exposition with the start of the Second World War. Although our research does not include data from this period it is best to start at that point in time in order to maintain historical continuity.

With the beginning of the Second World War the American economy improved radically. Unemployment dropped from 14.6 percent of the labor force in 1940 to 9.9 percent in 1941. By 1944 the unemployment rate was only 1.2 percent. At the same time, homicide rates declined from 6.3 per 100,000 to 5.0. Suicides declined from a rate of 12.8 (1941) to 10.0 (1944). These changes are, of course, related to the war effort. While the Second World War was unofficially ended with the surrender of the Japanese in 1945, President Truman did not officially announce the end of hostilities until December 31, 1946. In 1948 the Soviet Union began its blockade of Berlin, which ended a year later in May of 1949. At the same time, United States homicide

rates experienced a slight increase from 1945 to 1946 (5.7 to 6.4) only to begin a decline which extended to 1952. Suicides increased in 1946 (11.5), stayed constant in 1947, declined in 1948 (11.2) and increased slightly again in 1949 (11.4). During the same period, unemployment rates rose from 1.9 in 1945 to 3.9 in 1946, stayed the same in 1947 and slightly declined to 3.8 in 1948. However, 1949 saw a rise in unemployment to a 5.9 level (Historical Statistics of the United States.

In 1950 the Korean Conflict began; it ended with a truce finally signed in June, 1953. During this period unemployment rates declined from 5.3 in 1950 to 2.9 in 1953. Homicide rates were not susceptible to great changes during this period. While they declined from 1950 to 1951 (5.3-4.9) they again increased in 1952 (5.2) only to decline again in 1953 (4.8). At this point the homicide rates levelled out and remained relatively constant until the early 1960s. Suicide rates declined from 11.4 in 1950 to 10.4 in 1951 and stayed relatively level at that point until the mid-1950s. The rest of the 1950s was generally a period of economic and technological growth. The unemployment rate remained relatively stable with an average rate of 5.1 (1954-1960). The only unusual increase occurred in the recession year of 1958 when unemployment rose to 6.8 from a previous 1957 rate of 4.3.

Although there were no wars during this period (1954-1960), international political tensions were high as a "Cold War" existed between the United States and the Soviet Union. The Allied victory in the Second World War resulted in the United States becoming the

dominant world power in the post-war years. This was an unusual position for the United States given its strong pre-war isolationism. The development of effective nuclear capacity also added to the international tensions of the time.

The nature of the American labor force changed during this period as the economy moved from emphasis on manufacturing-industrial production to a post-industrial technological society (Bell, 1960). Work became more white-collar and service oriented as opposed to production oriented. More and more the "organization man" came to supplant the assembly-line worker.

The 1960s issued in a period of social activism, protest movements, and unfortunate mass violence in the form of riots, protests and political assassinations which extended into the early and mid-1970s. The motivations for these movements were many--black equality and civil rights, feminist and women's rights, gay rights, the "hippie" movement with its value-free lifestyle, and last, but hardly the least in terms of termoil, the anti-war movement.

In 1963 the United States began its involvement in what is now known as the Viet Nam War. The war reached its peak in 1967-1968 (500,000 troops involved) and ended in defeat in 1973). This era was epitomized by the protests and more often than not, violent riots of anti-war organizations. Bombings, shooting, confrontations with police all contributed to a decade of domestic violence and tension.

The intensity of these riots, demonstrations and acts of terrorism were quite profound. For example, it is estimated that over six million Americans were involved in some form of protest demonstra-

tion or riot during this period. There were 350 deaths, 12,000 reported injuries and nearly 100,000 arrests. Nearly 250 of the deaths were the result of racial violence and rioting. Practically every Northern city with large black populations experienced rioting, looting and the sizeable destruction of property (Gurr, 1979). It was during this period that the homicide rates began to drastically increase. Up until 1963 the rates still reflected those of the 1950s. In 1963 the rates began to increase reaching their peak in 1974 (1963 = 4.5; 1975 = 9.7). Suicide rates for this same period remained relatively stable until 1969 when rates began to increase reaching their peak in 1974 (1969 = 11.1; 1974 = 13.7).

In terms of the economy, unemployment was at its top for the decade in 1961 (6.7 percent); it declined to a low of 3.5 in 1969 and then increased to 5.6 by 1974. Despite the employment fluctuations of this post-war period, it would appear that the economy progressed in a relatively steady and stable manner. There were no radical yearly fluctuations in the unemployment rates as existed during the 1920s and no Great Depression as there was during the 1930s. If anything, the post-war period was exemplified by relative prosperity and technological growth.

Our data reveals that the homicide rates for white males (r^2 = .66) and white females (r^2 = .71) were most sensitive to positive changes in our economic indicators. If we can assume a time period of relatively prosperity, what category of individuals might be expected to be inclined to commit homicide? The relative deprivation hypothesis would indicate that those most predisposed towards

homicide would be those individuals not sharing in the prosperity. Boudouris (1971), Wolfgang (1958) and others have found that the nature of homicide changed in the immediate post-war period and into the 1950s. As opposed to the pre-war period, homicides were now either of a "domestic relations and lover" category or of a "friend and acquaintance" category. Generally the domestic relations and lover group involved, in most cases, the male killing his spouse (lover) or his spouse's lover. The friend and acquaintance category usually involved one male killing another over an argument (Zahn, 1980).

Tne trend in murder changed somewhat in the 1960s and 1970s. Block (1977) studied homicides in Chicago from 1965 to 1974 and found that not only did homicide rates in that period increase from 11.4 in 1965 to 29.2 in 1974, but also that more homicides were being related to robbery. Although murders related to domestic feuds or arguments with friends still predominated, killings in the course of robbery were increasing.

Given the above findings, the homicides for our white female aggregate category, could easily be seen as the result of domestic quarreling over finances or other problems the spouse may have in that regard (there are many physical and personality problems which can inhibit upward mobility during a prosperous period, e.g., alcoholism, lack of skills or education, etc.). The literature abounds with research indicating that one of the major causes of marital conflict is financial difficulties. That such conflict can lead to homicide is not implausible.

For our white males, relative deprivation could easily lead to homicide, not only of their wives, but also of other males. Lalli and Turner (1968) found that most white male homicides occurred among semiskilled workers, common laborers and agricultural workers. These individuals would be quite susceptible to economic changes in an economy moving in a technological direction. In terms of robbery victims, given the limitations of our data, we are necessarily discussing a theoretical scenario. According to Block (1976) the increases in this mode of homicide occurs mostly among blacks. This point is crucial, since the most drastic increase in homicide rates for the post-war period was for black males and most of these homicides were intraracial (Zahn, op. cit.). Yet, our coefficients indicate that black male homicides are little affected by positive changes in the economy (r^2 = .27). For the 1940s and 1950s period a possible explanation for our results may be that having been "frozen" outside of the mainstream of the American economy for so long, changes in the economy may have had little effect upon them. However, for the mid-1960s and early 1970s, our data may reflect another phenomenon. That is, the return of young black Viet Nam veterans who had no marketable occupational skills but who were relatively well trained in violence.

If we assume that black males are more predisposed toward the externalization of violence due to their past exploited social history (Henry and Short, op. cit.; Lalli and Turner, op. cit.), participation in war (this is the first American war in which blacks assumed major combat roles) can direct and reinforce this predisposition towards aggression. If we add to this the frustration of unemployment and

the disdain shown black veterans due to the nation's widespread antipathy towards the war, it is easy to see these men placing their martial skills into more violent directions. It should also be noted that (1) the Viet Nam war lasted for 11 years--longer than any other was in American history, and (2) it was not a "regular" war but rather a war in which the military tactics involved every form of "dirty" killing imaginable, and (3) there is considerable evidence of extensive drug abuse among the United States military personnel in Viet Nam. These factors combined to create a very volatile situation for those returning to the United States. That blacks and lower-class whites were overrepresented in U.S. combatant forces in Viet Nam is a point reiterated in the liberal media. It is feasible to assume that upon returning to the U. S. many of these men could turn to violent crime (Lifton, 1970; Archer and Gartner, 1976; Gurr, 1979).

The homicides of black females might be attributed to a situation similar to that of white females. This might be especially so beginning in the early 1960s when the black male unemployment rate began to decline (much probably due to the large number of blacks going into military service). Despite the decrease in black unemployment rates at this time, there were still many black unemployed males suffering from relative deprivation, since many of their compatriots found work (black male unemployment reached a low of 5.3 in 1969--the lowest it had been since 1953, (Historical Statistics of the United States, p. 135). It is feasible, therefore, that many of these men, experiencing relative deprivation, may have taken their frustrations out on their spouses, especially if the spouses were employed.

During the period prior to 1964, black females generally showed lower unemployment rates than their male counterparts. Thus, a similar situation of black male relative deprivation could have taken place. Especially in a social environment in which (almost like the 1920s) prosperity and technological growth exemplified the atmosphere of the times. Despite our theoretical specuations, these r^2 coefficients are low. Undoubtedly there exist other factors contributing to changes in these aggregate categories' homicide rates. For that matter, these other factors probably explain more of the variance in the rate of homicide change (especially for black males) than our economic indicators do.

In terms of our suicide results, the r^2s for white males and black males are .54 and .34 respectfully. The relationship between changes in their suicide rates and our economic indicators is negative. Lalli and Turner (op. cit.) found that for white males, suicides generally occur in the lower occupational status categories to a larger degree than in the upper status categories. For black males the suicide rates were pretty evenly distributed across occupational categories. Others researchers such as Gibbs and Porterfield (op. cit.) and Breed (op. cit.) related status-loss as being a major variable for male suicides. Looking at our data for white males, the high coefficient between changes in suicide rates and changes in unemployment would not seem to indicate individuals who were chronically unemployed (they would not be so sensitive to such rates) but mostly males whose occupations may be most susceptible to increasing unemployment, i.e., semiskilled workers, clerical, sales, etc. These individuals are generally employed during "good" times but are the first "to go"

when business conditions warrant it--even if the overall nature of the economy is not that bad. In this situation, the individual will suffer both relative and absolute deprivation. Relative deprivation would come from not having a job when others do. Absolute deprivation would come from the obvious absolute loss of income and means of livelihood. What seems to give substance to this interpretation is that, for white males, there were no radical periods of rapidly expanding rates of unemployment in this period nor were there exceptional yearly fluctuations in the rates. This is not to say that there was no unemployment or annual fluctuations in the rate. Rather, we take the position that in a changing economy, such as the move from a blue-collar production oriented economy to a service oriented post-industrial economy taking place during this period certain occupational categories would be more sensitive to even slight increases in unemployment rates.

Turning to black male suicide rates, it is surprising that the coefficient is so low (r^2 = .34). For black males, the low unemployment rates of this period certainly did not apply to them. In 1948 their unemployment rate was a modest 5.8, increasing to 9.6 and 9.4 for 1949 and 1950, then decreasing to 4.9 5.2 and 4.8 (1951, 1952, 1953 respectively). In 1954 it jumped to 10.3, declined slightly for the next three years, and then in 1958 rose to 13.8 where it remained above 10 percent until 1964. It began a decline after that (probably due to war conscription and service) and only began to increase in 1970. Given not only the high level of black male unemployment but also the radical fluctuations of these rates over time, it is no

surprise that their r^2 coefficient for this time period is higher than during the Great Depression.

In terms of black male suicides for this period we see two possible explanations--none of which are mutually exclusive. The first possibility involved the concept of fatalism. One of our more interesting findings is that changes in the black male suicide rates are more highly correlated with annual changes in black female unemployment rates than with their own ($r = .34$ and $.24$ respectively). This correlation is even higher than found for black female suicides ($r = .30$) with their own unemployment rates. We have pointed out above that black female participation in the labor force is generally greater and more "secure" than for the black male (black female unemployment rates did not fluctuate so drastically during this time period). For a black male to be unemployed in an economy which is basically prosperous and growing is certainly a form of relative deprivation especially if one's female counterpart is still employed. However, if one's spouse or female counterpart is also unemployed during such an economic period, then a form of fatalism can occur. If it is bad enough that a black male cannot provide an income for his household during "good" economic times, how much worse must it be if his spouse is also unemployed? A second point for consideration involves competition for work. Black female unemployment means that more individuals will be competing in the job market. Since not all black female job positions strictly involve domestic or secretarial-clerical positions, we can assume that under conditions of high black female unemployment many black females will be competing with black

males for semiskilled job positions (at probably a lower rate of wages) making it even more difficult for the black male to attain a job position. Thus, the black male's financial position becomes even more desperate and frustrating. A second possibility involves the frustration of rising expectations. The frustration of rising expectations occurs when unemployment rates shift in a radical direction on an annual basis.

For example, if unemployment rates fluctuate around 5 percent for three years (1951-1953) and then doubles to 10.3 percent (1954) in one year, we can assume that many rising expectations were shattered. Related to this is the moderately high negative coefficient between changes in personal savings ($r = -.36$) and changes in black male suicides. Swanson and Breed, in one of the few studies conducted on black suicides, investigated suicides in New Orleans covering the years 1954-1963. Over 40 percent of their black male suicides were attributed to financial difficulties (as compared to 19 percent for white male suicides in New Orleans, covering the same period). This was despite the fact that all of these black males were employed at the time of their suicide. The authors also bring up an interesting point in that while the white males viewed their jobs in terms of occupational prestige and status, the black males viewed their jobs as a means to attain a financial income and cared little about the status implications. What is significant regarding this study for our purposes is that 34 percent of their black male suicides had experienced a downward trend in income for the two years prior to their suicides. Thus, it was not so much as issue of "status loss"

for these men as much as a progressive income loss. It should be noted that it was during this time period that black unemployment was at its highest peak (1954-1963). Coupling these two concepts--economic fatalism and relative deprivation--it is easy to understand the black male suicide rate for this period.

In terms of our black female suicides, it first appears that the coefficients are so low as to indicate little or no relationship between our variables. However, if we substitute black female unemployment rates for the national total rates, we find that the r^2 rises considerably ($r^2 = .22$). Thus we see that changes in black female unemployment rates are an important variable in terms of black female suicides. Since black females participate in the labor force to a greater extent than black males, the economic stability of their households depended to a great extent on continued work. Radical fluctuations in unemployment can lead to anxiety over future financial and occupational prospects and a frustration of rising expectations.

Regarding our white female suicides, both our plots and coefficients show little or no relationship between our variables. It would be extremely tenuous for us to posit any explanation for this, especially since the motives for suicide are extremely diverse and very subjective to the victim.

If we have appeared somewhat reticent in our analysis of the post-war data it is because this period involved many qualitative changes which go beyond our quantitative economic measures. This time period of 28 years included two major American wars--Korea and Viet Nam. These wars consumed 15 years of our 28. As Archer and

Cartner (op. cit.) point out, the effect of war on one of the participant nations certainly not only institutes changes in that society but may also change its normative structure. Violence can certainly become legitimated--now more than ever, given the instantaneous media presentation of war front events. A second point which may have influenced our data, especially during the 1960s and early 1970s, were the riots and extreme violence associated with the various social movements of the time, e.g., black riots, anti-war riots, assassinations, bombings, etc. How much of this was the result of an unpopular war the result of pressures which had built up over time is beyond the scope of this research. However, if a foreign war can have the effect of legitimating personal violence in the homeland, we may assume that the synchronous violence of social movements within the homeland may exacerbate the diminution of personal inhibitions against violence as a means to attain personal ends.

Zahn (op. cit.) posits a third problem--the rise of a drug culture. If our homicide data for the 1920s was confounded by the notorious "beer wars" of the period, how much are we confounded by the homicides resulting from the insidious machinations and conflicts of the drug merchants? If not the drug merchants then it is their clients who must financially support them (Noble, 1977, claims that the recent increase in crime is predominantly due to illegal drug users who must finance their dependency). The relationship between alcoholism and suicide is well known. How many more suicides can be attributed to drug-abuse?

A fourth point relates to the exhibition of violence on the mass

media, e.g., television. While American society has historically tolerated and even condoned violent behavior, it is first in this time period that extensive violence has been visually shown to mass audiences. The psychological effects of exposure to violence have been well documented (Report to the Surgeon General, 1972). Responses include imitative behavior and a numbing of the senses regarding aggressive behavior. Janowitz (1979) describes riot situations during the 1960s where extensive media coverage either inadvertently aided or encouraged looting and other forms of violent street behavior.

A fifth point involves demographic shifts in the age structure of the population during the 1960s. Most violent crimes are committed by males in the 19-29 age category. It was during this time period that the post-World War II "baby boom" generation came into its adolescence and young adulthood. This change in the age structure of our society contributed greatly to the increase in crime rates for this period (Skogan, 1979). As this generation increased in age into the 1970s, the crime rates tended to decrease.

Sixth and finally, there has occurred a substantial increase in the suicide rates of white male adolescents and young adults (15-24) beginning in 1965 (9.6 with a peak of 17.8 in 1974). Studies have shown that these unfortunate youngsters come primarily from the mid- and upper-classes. Correlations with economic indicators would probably shed little light on their personal dilemmas.

Much more could probably be said about the qualitative conditions of our society during this time period. However, we feel that the above sampling is sufficiently representative of the many social

conditions and problems which elude the theoretical model of this research.

Summary

Post-War Years

Our post-World War II data showed a drastic decline in our coefficients from the pre-war period. A second noticeable difference is in the directionality of the relationship between our homicide variables and economic change. During the pre-war period the relationship was negative. Our post-war data indicates the opposite. Changes in homicide rates are now positively correlated with changes in the economy. Looking at our aggregate groups we found that white males and females suicide rates show a greater sensitivity to economic changes than do black males and females with the male coefficients being higher than the female. In terms of homicides, the female coefficients are higher than the male coefficients for this time period.

Socioeconomically, the immediate post-war years were a period of prosperity and relative tranquility. The 1960s issued in a period of social unrest epitomized by rioting, violent demonstrations and the Viet Nam War. It was also during this decade that homicide rates increased drastically as did suicide rates among the young. We attributed the post-war decline in our coefficients as being due to the various non-economic social conditions which took place at this time.

SUMMARY AND CONCLUSION

The relationship between society and the individual is a unique one. That is, while certain aspects of societal norms and values abide in all of us, socialization is never perfect. Deviant behavior, as Durkheim pointed out, is a fact of social life. However, the exact relationship between societal conditions and individual behavior is a problematic one. While we all live in society and depend upon societal norms to reinforce our role behavior and expectations, norms and values do change. Concomitant with this is the individual's ability to adhere to internalized norms or attain social goals or values. When social change occurs and norms are put "to the test" so to speak, individual frustration will also occur. For some individuals, the internalization or externalization of aggression becomes the primary means for adaptation.

The purpose of our research was to basically test and replicate the Henry and Short study of socioeconomic change and its relationship to homicide and suicide. Using a model of first differences for the years 1919-1941 and 1946-1974 we attempted to analyze what effect yearly absolute changes in various economic variables may have had on concomitant changes in race and sex specific homicide and suicide rates.

Henry and Short as well as others, e.g., Harvey Brenner, found that over time suicide tended to increase during economic recessions while homicides increased during periods of economic prosperity.

Both of the above authors make use of the concepts of "relative

deprivation," or "absolute deprivation," or "the frustration of rising expectations" as mediating variables to explain why individuals in certain social categories resort to violent behavior during periods of economic prosperity or recession. Henry and Short also utilize the perspective of internal versus external social constraints. These constraints are based upon one's social position in society and the type of socialization which is practiced at that level. Thus, individuals in "upper" status positions are subject to internal constraints and are more apt to commit suicide while "lower" status individuals are subject to high external constraints and are therefore prone toward homicidal behavior. While Henry and Short felt that their data substantiated their theoretical framework, other researchers, cited above, tend to disagree that this was wholly the case. Our own feeling tends to coincide with these latter researchers to a greater or lesser degree. However, before presenting our own theoretical explanation for our findings, it is best that we review some of the basic trends in our data.

If there is one overall trend in our data it is that downturns in the economy result in increases in the suicide rates over time. This long-term trend is especially strong for white males. For our other racial and sexual groups, the only discernable long-term trend is that our coefficients are higher for the pre-war period than for the post-war era.

In terms of homicides the pattern of relationships is somewhat different. Prior to World War II changes in homicide rates were negatively related to changes in the economy. This finding held true for both the 1920s and the 1930s. In the 1920s the coefficients were higher for white males and females than for blacks. During the 1930s

the rates were higher for males of either race than for females. Both sets of findings for these two time periods are contrary to Henry and Short's basic predictions and to Brenner's assumption that homicide is generally positively related to economic change except for certain Depression years (1929-1936).

These authors concluded from their research that the long-term trend in homicide is basically related to increases in economic prosperity. The pre-war deviation from this trend which they found in their data was assumed to be strictly the result of the economic trauma of the early Depression period (1929-1936); Brenner, op. cit.). Thus, for these authors, reversals in the overall positive relationship between homicide and prosperity could occur given certain severe declines in the economy.

In terms of specific social groupings, changes in homicide rates for all of our time periods were generally more strongly related to changes in the economy for white males and females (the only exception being during the 1930s when the coefficients were highest for both white and black males).

While the above describes the basic trends we are able to discern in our data, it does little to explain these trends. Our data indicates that economic conditions do influence changes in suicide and homicide rates. However, for these conditions to influence such highly volatile and personal acts, mediating factors must surely exist.

We agree with Brenner and Henry and Short that socioeconomic change can lead to stress, frustration and forms of deprivation, we also feel that our data indicates some other salient points. If, as Durkheim pointed out, social change can be either quantitative, as in terms of

rapid and radical fluctuations in the economy, or qualitative, as in terms of changes in value structures and belief systems, then either of that two types of societal changes--either separately or in combination, can lead to anomie and increases in deviant behavior (Hinkle, op. cit). Given this, it is reasonable to assume that the particular type of social which occurs will vary over time in any particular society. Assuming that this is true, then each historical time period may have to be examined for its own "unique" social change characteristics.

For example, an analysis of our data shows the decade of the 1920s as having the highest quantitative relational coefficients between our variables. A visual examination of our plots for this same period shows a great deal of concomitant variability from year to year. That is, there were radical yearly fluctuations in both the economy and homicide and suicide.

Thus, not only was the 1920s a period of great qualitative changes (described in ANALYSIS OF DATA (p. 37) but also extreme yearly quantitative changes . The period of the 1930s exhibited radical initial economic change (1930-1933) which was matched by our dependent variables. However, subsequent years did not indicate the closeness in the annual changes in our variables as was found during the decade of the 1920s. Our plots indicate that while economic conditions were bad throughout the decade, it was only the initial shock of the first few years of the Depression which apparently stimulated the greatest amount of reactive violence. Thus, it would appear that during this period an initial massive quantitative change at the beginning of the decade (and to a lesser degree during the 1937-1938 recession year) had the greatest influence on our coefficients. Again, both our homicide and suicide coefficients

were negative with the economy.

During the post-war period we see a decline in our coefficients as well as a reversal of the relational trend for homicide. A look at our plots shows little annual variability for our variables at least during the decade of the 1950s. During the 1960s variability increases for both our dependent and independent variables. Yet, there is little if any relationship between homicide and unemployment or industrial-manufacturing production. Thus, for the post-war period we find one decade in which there were minor annual fluctuations in our variables and a second decade in which there were radical fluctuations but with little or no relationship between the variables. Given our implicit notion that anomic social change may be quantitative or qualitative, rapid and radical or slow and mundane depending upon the historical period in question, it would appear that the post-war period initially exhibited little quantitative or qualitative change for our variables. During the 1960s, the social and economic changes which occurred were both quantitatively and qualitatively radical with our quantitative economic variables seeming to have little effect (with certain exceptions) on changes in the homicide and suicide rates.

For example, a look at our plots indicates that there were extreme yearly fluctuations in both our economic and non-economic variables for the period from 1960 on. However, these changes were not concomitant with each other and thus did not result in a strong quantitative relationship. The only reasonable explanatory assumption we can make from our data and a historical analysis of the times is that the qualitative changes which occurred, e.g., the Viet Nam War, the urban riots, the various social movements etc., had a greater influence on

changes in homicides and suicides than did changes in the economy.

We noted that there were certain exceptions to the above post-war trends and this brings us to the second point in our discussion. Namely, the differential susceptibility of various subgroups in our society to the positive or negative effects of economic change. We have seen that different aggregate groups show a greater or lesser suicide-homicide sensitivity relative to economic change depending upon the time period in question. While we agree with the theoretical notions of relative and absolute deprivation and the frustration of rising expectations and have utilized these concepts extensively to explain our own findings, they do have relatively subjective notions. As Lester and Lester (1971, 1975) point out, in order to fully be able to utilize the concepts of relative or absolute deprivation we should know which criteria groups the individuals committing homicide or suicide are referencing themselves with. For example, is a black male who is unemployed and commits homicide or suicide experiencing relative deprivation vis-a-vis whites who are employed, his wife who might be employed or other black males who are employed? Ot, might he be reacting to all three groups and individuals? We feel this is a significant issue which is yet to be adequately researched. One possible approach, if we accept that negative economic change is related to homicide and suicide, is to examine a subgroup's position within the labor force. Since the job market changes over time, certain groups of individuals will exhibit a greater or lesser vulnerability to negative economic conditions. Ahlburg and Schapiro (op. cit), in looking at white male suicide and unemployment, for example, have shown that not only was suicide related to unemployment, but also to the expectations an individual has regard-

ing his or her accessibility to the labor force. This, they felt, was in turn related to the size of the age cohorts beginning to enter into the labor market. While we find this model appealing and that it could probably apply to homicide as well as suicide, we feel that such variables as an individual job skills and personal abilities must also be considered. However, these variables are more difficult to quantify and often times can only be surmised.

An additional point which should be considered in this context is the increase in female participation within the labor force during the post-war period. What effect, if any, does this have on homicide and suicide rates? While we found that positive changes in unemployment (i.e., increases) lead to increases in male suicide, the same economic variable has little or no effect on female suicides. In terms of homicides, post-war changes in this variable are moderately related to positive changes in the economy, i.e., female homicides tend to increase with prosperity.

How can we explain these findings? At best we can only surmise. With regards to female suicide, although there has been an extensive increase in female participation in the labor force and a greater emphasis on female "careerism" as a means to attain personal growth and satisfaction, the residuals of traditional sex-role socialization may not as yet allow females to view the loss of employment with the same psychological and emotional intensity as males do. Thus, as some researchers point out (Ritzer, 1977; Garson, 1982) many women in the work force may be viewing their occupations as a means to an end as opposed to males who consider it an end in itself. Of course, as time progresses and women continue to participate in the labor force at every level, we

should theoretically assume that their suicide rates will become more negatively related to the economy than in the past.

In terms of female homicides, again we are limited to theoretical assumptions. Given that female homicides are generally committed by males and that the nature of homicide has changed over the last few decades, we can assume that much, if not most, female homicides involve some form of domestic conflict. Since, as we pointed out above, males are more effected psychologically by negative changes in the economy, it seems feasible to assume that many males may feel the frustration of relative deprivation if they are unemployed while their female counterparts (e.g., spouses or lovers) are employed. This situation can become exacerbated especially if female participation in the labor market is viewed as a competition for scarce job positions. Among certain segments of our society such a situation can lead to domestic conflict and violence (c.f. Elder, 1984).

In summation, we would like to reiterate some of our basic observations:

1. Changes in annual homicide and suicide rates exhibit a fluctuating sensitivity to changes in the economy depending upon the historical period studied;
2. Various racial and sexual subgroups exhibit a differential homicide-suicide susceptibility to changes in the economy depending upon the historical time period studied. The only long-term historically consistent relationship was between declines in the economy and white male suicides;
3. This differential susceptibility to economic change by any particular racial-sexual subgroups may be due to that group's position and expectations regarding their accessibility to the job market;
4. While economic change, as measured by our model, appears to have a relative effect on changes in homicide and suicide rates, qualitative changes in society may have an even greater influence in determining the levels of personal violence in society, depending upon the

historical period analyzed.

It would appear then that both quantitative and qualitative socioeconomic changes in society both influence the level of violence to be found.

In those historical time periods when economic change predominates as a stimulant to personal violence, individuals may be differentially affected depending upon their occupational position within the society.

In terms of future research we would like to suggest modifications of the model used in our research. First, additional independent variables should be looked at. For instance, changes in rural-urban populations might be included to determine how these influence homicide-suicide rates over time. This might be beneficial especially with regards to homicide since certain theoretical perspectives relate types of homicides to rural-urban migrations. A second variable which might be included could be an educational level indicator. Education has long been an indicator of modernization and on the individual level a means for attaining job skills and upward social mobility. Negative changes in the economy should have its greatest psychological impact on those whose expectations for future occupational positions were high but who find themselves locked out of the job market.

A second modification we would like to see attempted would be to look at each racial-sexual grouping broken down by age. Done over time, this would allow us to see which age categories were most sensitive, in terms of homicide and suicide, to fluctuations in the economy. Following the model of Ahlburg and Schapiro (op. cit.) this could allow us to see how changes in the age cohort structure might be reflected in changing homicide and suicide rates over time. We feel that these approaches

combined with aggregate studies such as those done by Breed (op. cit.) or Rushing (op. cit.) as well as individual case studies as suggested by Lester (op. cit.) for homicides, can provide us with a clearer picture as to what differentiates economic from noneconomic homicide and suicide.

While our data indicates that not all homicides or suicides are necessarily related to economic change, we feel that there are certain social policies and programs which might be instituted in order to help those who are effected by such changes.

In terms of our dependent variables one basic approach might involve an increase in public knowledge regarding the psychological and interpersonal effects of job and income loss. Such information should be presented on the local community level--especially in those communities most hurt by economic change. Various community organizations and church groups as well as the local media could be utilized to strenghten community solidarity as well as provide information regarding various counseling and social service organizations which could provide either psychological or economic support.

Local government as well as public and private health service agencies--in conjunction with private medical practitioners--could institute "awareness" programs for those individuals who begin to manifest the behavioral or psychological traits which economic stress might induce, e.g., depression, increased drinking, increased physical and psychosomatic disorders, etc. In the same manner, community sponsored discussion groups could help to explain the various interpersonal and domestic problems which might arise as a result of changes in economic conditions.

In the private economic sector, businesses and unions can work

together to alleviate the trauma of economic change or job loss. For example, businesses can institute job-skill training programs for employees whom they anticipate laying off or firing. Concomitantly, company personnel offices could serve as job-placement clearing houses in an attempt to provide jobs for those employees who would need them. Many corporations have instituted such programs with substantial success. In addition to this, both the federal government and private corporations can, through local banks, offer low-interest loans to workers who are unemployed allowing them to maintain an adequate lifestyle until new job opportunities arrive.

Unions can function to help ameliorate the stresses of possible income loss and unemployment by minimizing the economic and job expectations of their members. Many unions have already instituted such programs especially in conjunction with corporations who are facing dire economic conditions with negative implications for the union members working there.

We have been emphasizing local community "action" programs as opposed to national social policy programs for various reasons. First, homicide and suicide are highly personal acts which theoretically may be related to feelings of frustration and relative deprivation vis-a-vis others in an individual's own community as opposed to the nation as a whole. Secondly, economic conditions vary from one community to another. Thus, while one community may suffer economic deprivation due to its particular economic base, another community may be experiencing fewer economic problems or even prosperity. In such a situation, basic community problems will differ. It is our opinion that national policy may aid local community efforts through (1) economic aid to local communities for such "action" programs, (2) providing federal authorities who might

help in initiating and running such local community programs and (3) providing funds for further research into further homicide and suicide prevention programs. While these programs will never totally eliminate homicide and suicide in our society, it is hoped that they will at least minimize the human cost of radical change.

APPENDIX I

TABLE 1

RELATIONSHIPS FOUND BETWEEN ECONOMIC CONDITIONS AND CRIME BY STUDY

Study	Homicide and Economic Conditions	Property Crimes and Economic Conditions	Assault and Economic Conditions	Delinquency and Economic Conditions
Davies (1922)	Negative	Negative	Negative	. . .
Thomas (1922)	Negative	Negative	Inconclusive	. . .
Ogburn and Thomas (1927)	Inconclusive	Negative	Inconclusive	. . .
Phelps (1929)	Negative	Positive	Negative	. . .
Wagner (1936)	. . .	Negative	Positive	. . .
Winslow (1931)	. . .	Negative	Negative	. . .
Vold (1935)	Positive	Positive	Positive	. . .
Boudouris (1971)	Positive	. . .	. . .	. . .
Allison (1972)	Negative	Negative	Negative	. . .
Spector (1975)	Inconclusive	Inconclusive	Inconclusive	. . .
Henry and Short (1954)	Positive	Negative	Positive	. . .
Maller (1936)	. . .	. . .	. . .	Positive
Lynds (1937)	. . .	. . .	. . .	Positive
Sanders and Ezell (1937)	. . .	. . .	. . .	Positive
Wiers (1945)	. . .	. . .	. . .	Positive
Bogan (1944)	. . .	. . .	. . .	Positive
Brenner (1976)	Negative	Negative	Negative	. . .

TABLE 2

SUICIDES AND HOMICIDES

1920-1941

Suicides	Industrial-Manufacturing Production		Unemployment		Consumer Price Index		Amount of Variance Explained*
Total	-.68	(46)	.56	(02)	-.54	(08)	.56
Males	-.70	(50)	.62	(02)	-.56	(09)	.61
Females	-.23	(05)	-.02	(24)	-.32	(09)	.38
Whites	-.68	(47)	.57	(01)	-.56	(09)	.57
White Males	-.71	(51)	.62	(02)	-.55	(08)	.59
White Females	-.17	(03)	-.05	(20)	-.30	(09)	.32
Blacks	-.53	(28)	.48	(01)	-.39	(03)	.32
Black Males	-.54	(29)	.49	(01)	-.45	(06)	.36
Black Females	-.49	(24)	.28	(11)	-.05	(01)	.36
			Homicides				
Total	-.31	(10)	.38	(03)	-.52	(18)	.31
Males	-.38	(14)	.42	(02)	-.56	(20)	.36
Females	-.29	(08)	.40	(09)	-.37	(06)	.23
Whites	-.50	(25)	.58	(03)	-.53	(12)	.40
White Males	-.55	(30)	.61	(02)	-.56	(14)	.46
White Females	-.29	(09)	.39	(01)	-.21	(004)	.10
Blacks	-.005	(01)	.01	(004)	-.25	(06)	.07
Black Males	-.03	(001)	.03	(003)	-.24	(06)	.06
Black Females	-.02	(003)	.04	(007)	-.17	(03)	.04

* ( ) Variance explained.

TABLE 3

SUICIDES AND HOMICIDES

1920-1929

	Industrial-Manufacturing Production		Unemployment		Consumer Price Index		Amount of Variance Explained*
			Suicides				
Total	-.62	(39)	.47	(005)	-.74	(37)	.76
Males	-.73	(54)	.59	(000)	-.72	(32)	.86
Females	.38	(14)	-.49	(07)	-.45	(30)	.51
Whites	-.63	(39)	.47	(004)	-.76	(41)	.80
White Males	-.73	(53)	. . .		-.73	(32)	.85
White Females	.42	(17)	-.49	(03)	-.39	(25)	.45
Blacks	-.83	(68)	.68	(05)	-.55	(14)	.87
Black Males	-.78	(60)	.66	(001)	-.65	(23)	.83
Black Females	-.64	(141)	.51	(10)	-.12	(10)	.61
			Homicides				
Total	-.68	(47)	.52	(022)	-.71	(33)	.80
Males	-.61	(37)	.45	(01)	-.73	(37)	.75
Females	-.76	(58)	.65	(04)	-.45	(08)	.70
Whites	-.82	(67)	.73	(02)	,58	(17)	.86
White Males	-.76	(59)	.68	(03)	-.60	(19)	.81
White Females	-.77	(60)	.70	(04)	-.30	(003)	.64
Blacks	.07	(005)	-.25	(35)	-.29	(008)	.36
Black Males	.13	(02)	-.31	(33)	-.16	(01)	.36
Black Females	-.40	(16)	.23	(22)	-.29	(02)	.40

*( ) Variance explained.

TABLE 4

SUICIDES AND HOMICIDES

1930-1941

Suicides	Industrial-Manufacturing Production	Unemployment	Consumer Price Index	Personal Savings	Personal Income	Amount of Variance Explained*
Total	-.74 (55)	.63 (01)	. . .	-.58 (02)	-.63 (10)	.69
Males	-.75 (57)	.67 (003)	. . .	-.57 (03)	-.66 (08)	.69
Females	-.52 (27)	.32 (11)	-.17 (001)	-.52 (12)	-.39 (05)	.56
Whites	-.75 (57)	.65 (007)	. . .	-.59 (02)	-.66 (11)	.70
White Males	-.76 (59)	.68 (004)	. . .	-.57 (03)	-.66 (08)	.71
White Females	-.48 (23)	.29 (08)	-.20 (01)	-.49 (18)	-.38 (09)	.60
Blacks	-.48 (23)	.37 (01)	-.18 (04)	-.40 (01)	-.37 (01)	.31
Black Males	-.50 (25)	.42 (02)	-.23 (02	. . .	. . .	.30
Black Females	-.47 (22)	.15 (34)	-.007 (05)	-.52 (02)	-.23 (05)	.71
Homicides						
Total	-.22 (05)	.35 (21)	-.46 (04)	-.16 (03)	-.40 (19)	.52
Males	-.33 (11)	.45 (11)	-.55 (19)	-.23 (02)	-.48 (14)	.57
Females	-.12 (01)	.30 (06)	-.43 (01)	-.07 (03)	-.33 (24)	.36
Whites	-.45 (21)	.55 (23)	-.55 (02)	-.28 (09)	-.56 (12)	.67
White Males	-.54 (29)	.63 (10)	-.59 (02)	-.33 (03)	-.62 (24)	.70
White Females	-.12 (01)	.18 (10)	-.12 (02)	.03 (08)	-.16 (03)	.25
Blacks	-.03 (001)	.17 (12)	-.41 (28)	-.06 (09)	-.23 (04)	.54
Black Males	-.07 (006)	.20 (10)	-.43 (26)	-.09 (09)	-.27 (06)	.53
Black Females	.11 (01)	-.04 (09)	-.14 (09)	. . .	-.02 (003)	.19

* ( ) Variance explained.

TABLE 5

SUICIDES AND HOMICIDES
1947-1974

Suicides	Industrial-Manufacturing Production		Unemployment		Consumer Price Index		Personal Savings		Personal Income		Amount of Variance Explained*
Total	-.21	(04)	.47	(23)	-.02	(04)	-.12	(04)	.12	(02)	.47
Males	-.26	(07)	.60	(37)	.08	(01)	-.17	(04)	.17	(04)	.55
Females	.05	(002)	.06	(01)	-.21	(04)	-.15	(06)	-.20	(04)	.23
Whites	-.23	(05)	.48	(22)	-.01	(05)	-.14	(03)	.11	(02)	.39
White Males	-.30	(09)	.63	(38)	.07	(008)	-.11	(02)	.13	(03)	.54
White Females	-.12	(01)	.15	(003)	-.12	(11)	-.15	(02)	.02	(02(	.18
Blacks	-.17	(03)	.42	(20)	.07	(005)	-.33	(08)	.09	(07)	.40
Black Males	-.06	(004)	.29	(14)	. . .		-.36	(10)	.13	(09)	.34
Black Females	-.25	(06)	.18	(006)	-.13	(02)	. . .		-.08	(03)	.13
Homicides											
Total	.01	(05)	.08	(001)	.26	(15)	.39	(002)	.62	(39)	.60
Males	.08	(007)	-.08	(02)	.31	(04)	.18	(02)	.58	(34)	.44
Females	.13	(01)	-.01	(02)	.27	(001)	.75	(63)	.55	(05)	.73
Whites	.15	(02)	-.09	(006)	.43	(03)	.59	(08)	.77	(58)	.73
White Males	. . .		-.005	(01)	.44	(05)	.41	(000)	.73	(59)	.66
White Females	.17	(03)	.04	(12)	.26	(02)	.74	(54)	.52	(002)	.71
Blacks	.15	(02)	-.20	(05)	.16	(03)	.16	(008)	.41	(14)	.27
Black Males	.14	(01)	-.20	(04)	.16	(05)	.06	(03)	.37	(12)	.27
Black Females	.17	(03)	-.15	(001)	.14	(01)	.52	(27)	.39	(02)	.34

*( ) Variance explained.

TABLE 6

SUMMARY OF PLOT (1-16) VARIABLE RELATIONSHIPS*

	Industrial-Manufacturing Production	Unemployment
Sucides		
White Males	Negative (-.71)	Positive (.62)
White Females	Random (-.17)	Random (-.05)
Black Males	Negative (-.54)	Positive (.49)
Black Females	Negative (-.49)	Slight Positive (.18)
Homicides		
White Males	Negative (-155)	Positive (.61)
White Females	Slight Negative (-.19)	Slight Positive (.39)
Black Males	Random (-.03)	Random (.03)
Black Females	Random (-.02)	Random (.04)

*1920-1941

TABLE 7

SUMMARY OF PLOT (17-32) VARIABLE RELATIONSHIPS*

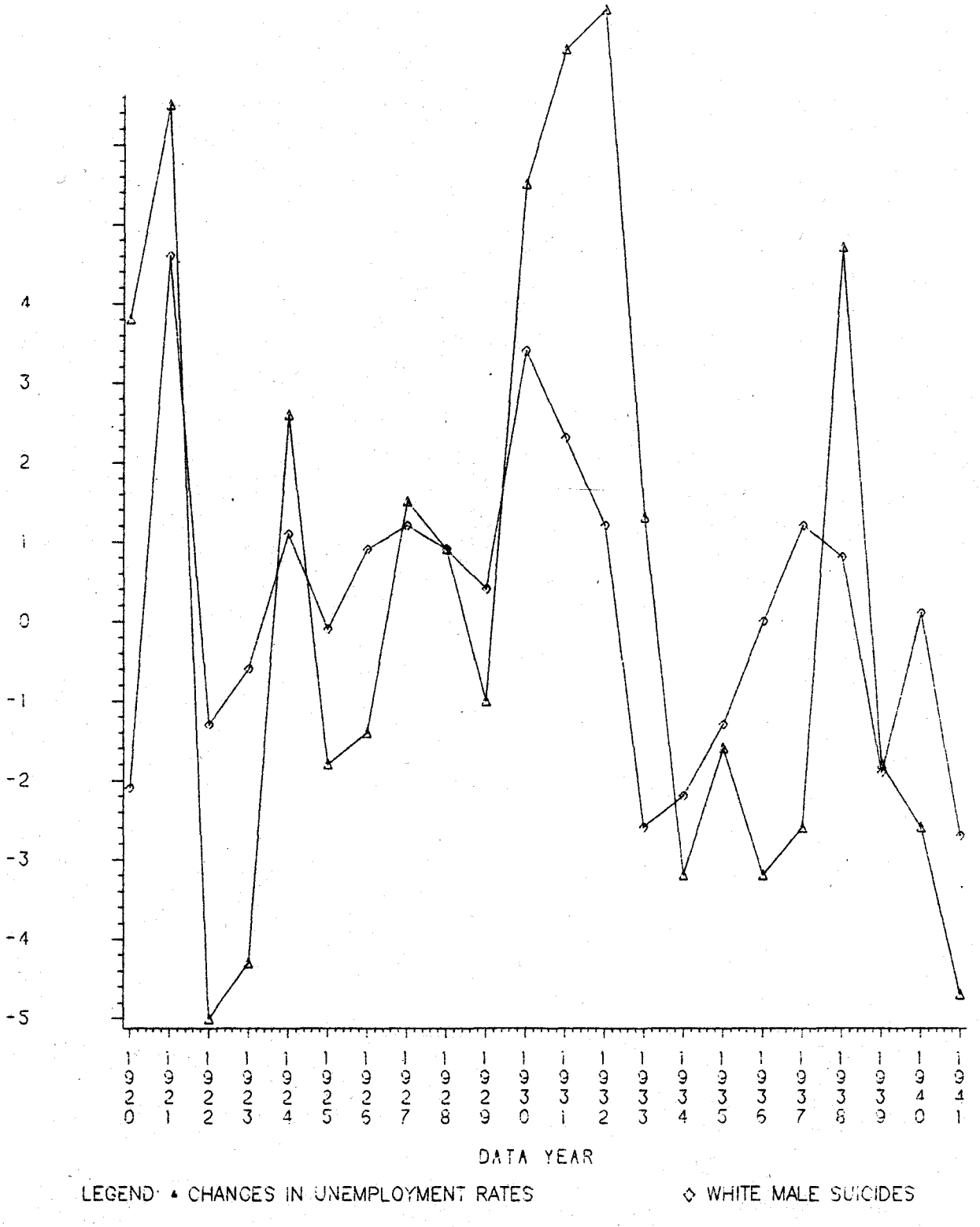
	Industrial-Manufacturing Production	Unemployment**
Suicides		
White Males	Negative (-.30)	Positive (.63)
White Females	Slight Negative (-.12)	Slight Positive (.15)
Black Males	Random (-.06)	Slight Positive (.29)
Black Females	Slight Negative (-.25)	Slight Positive (.18)
Homicides		
White Males	Random (.000)	Random (- .005)
White Females	Random (.17)	Random (-.04)
Black Males	Random (.14)	Slight Negative (-.20)
Black Females	Slight Negative (.17)	Slight Negative (-.15)

*1948-1974

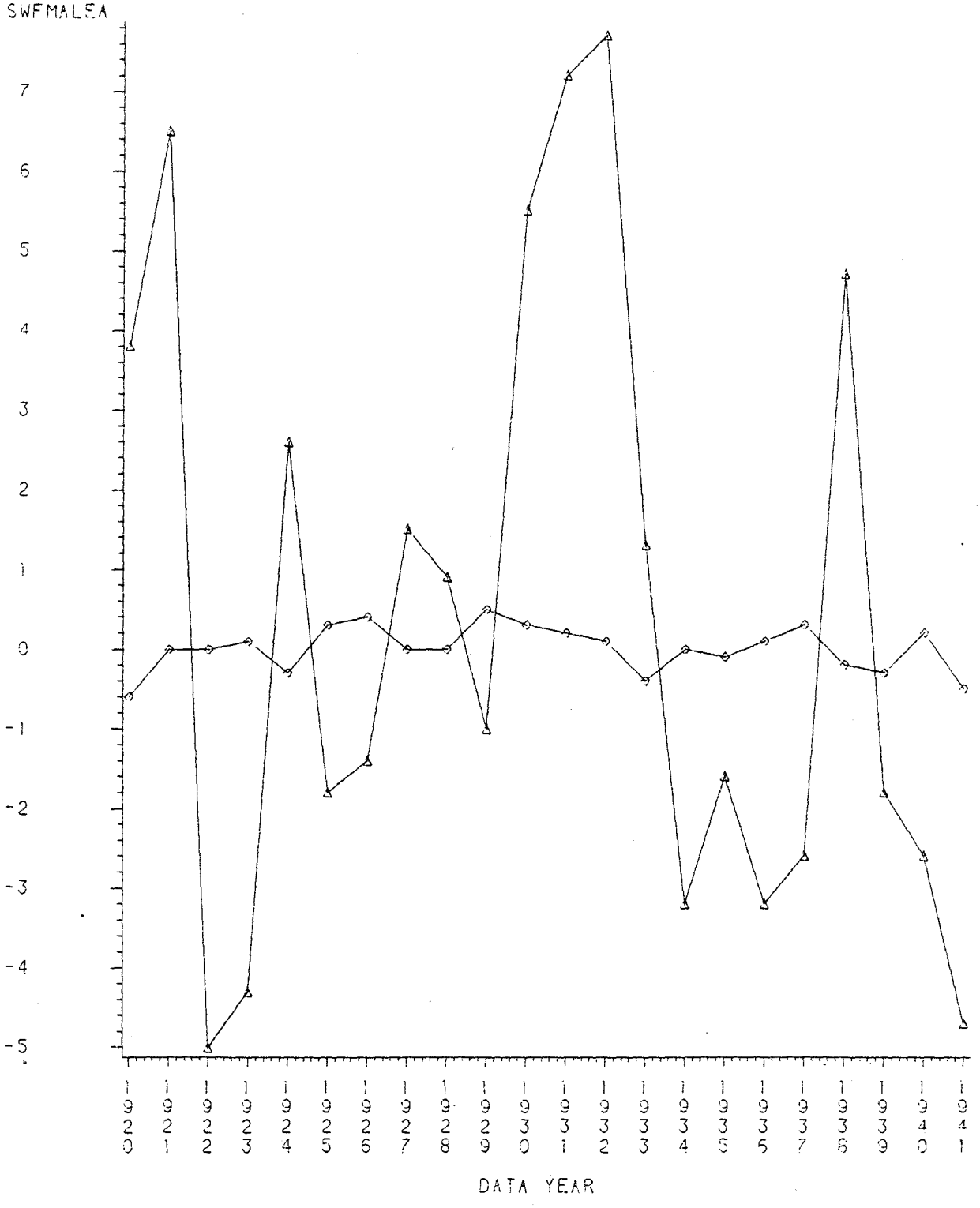
**Unemployment Rates are based on specific racial-sexual aggregate groupings.

APPENDIX II

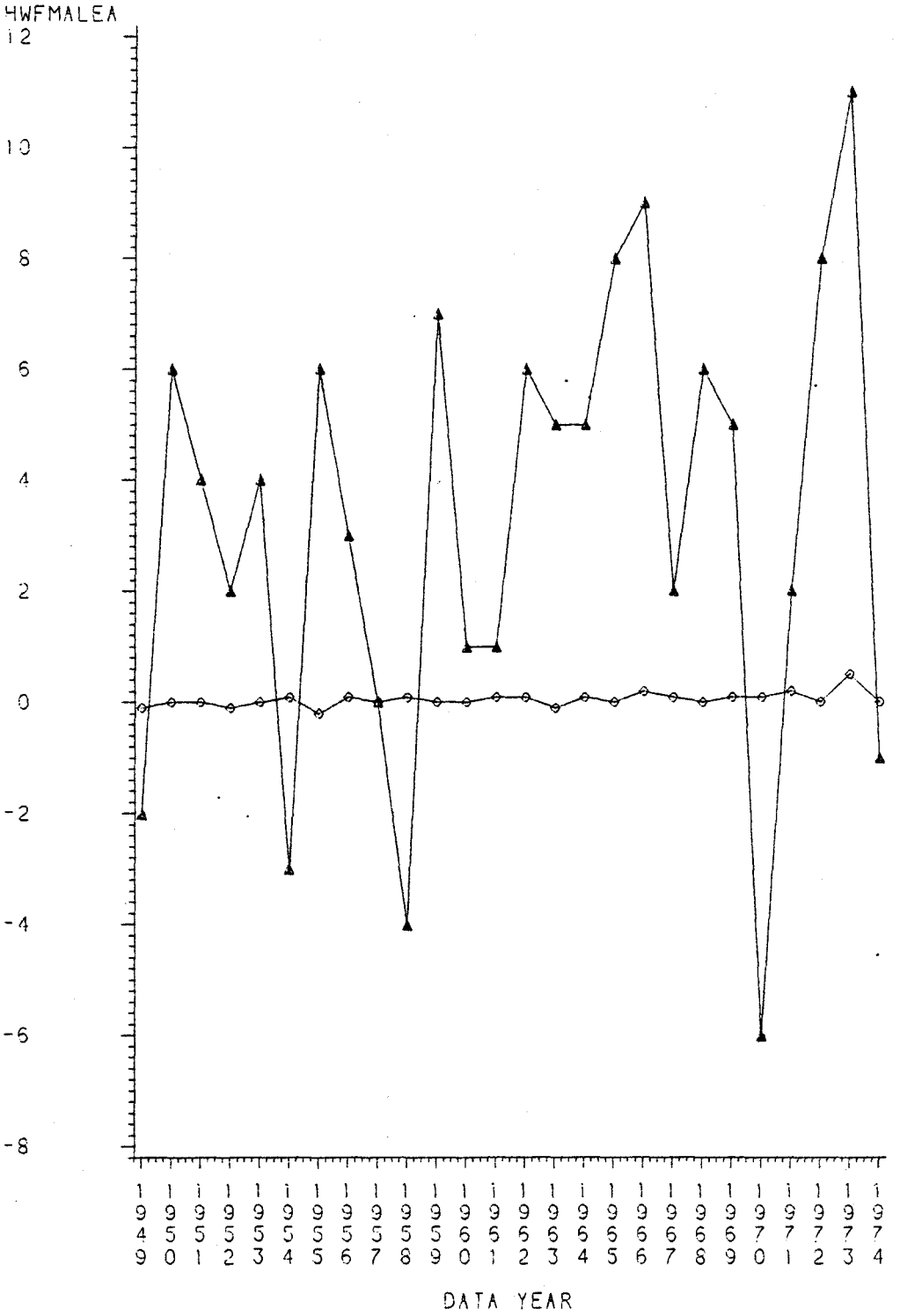
CHANGES IN UNEMPLOYMENT RATES
WITH WHITE MALE SUICIDES
(1920 - 1941)



CHANGES IN UNEMPLOYMENT RATES
WITH WHITE FEMALE SUICIDES
(1920 - 1941)

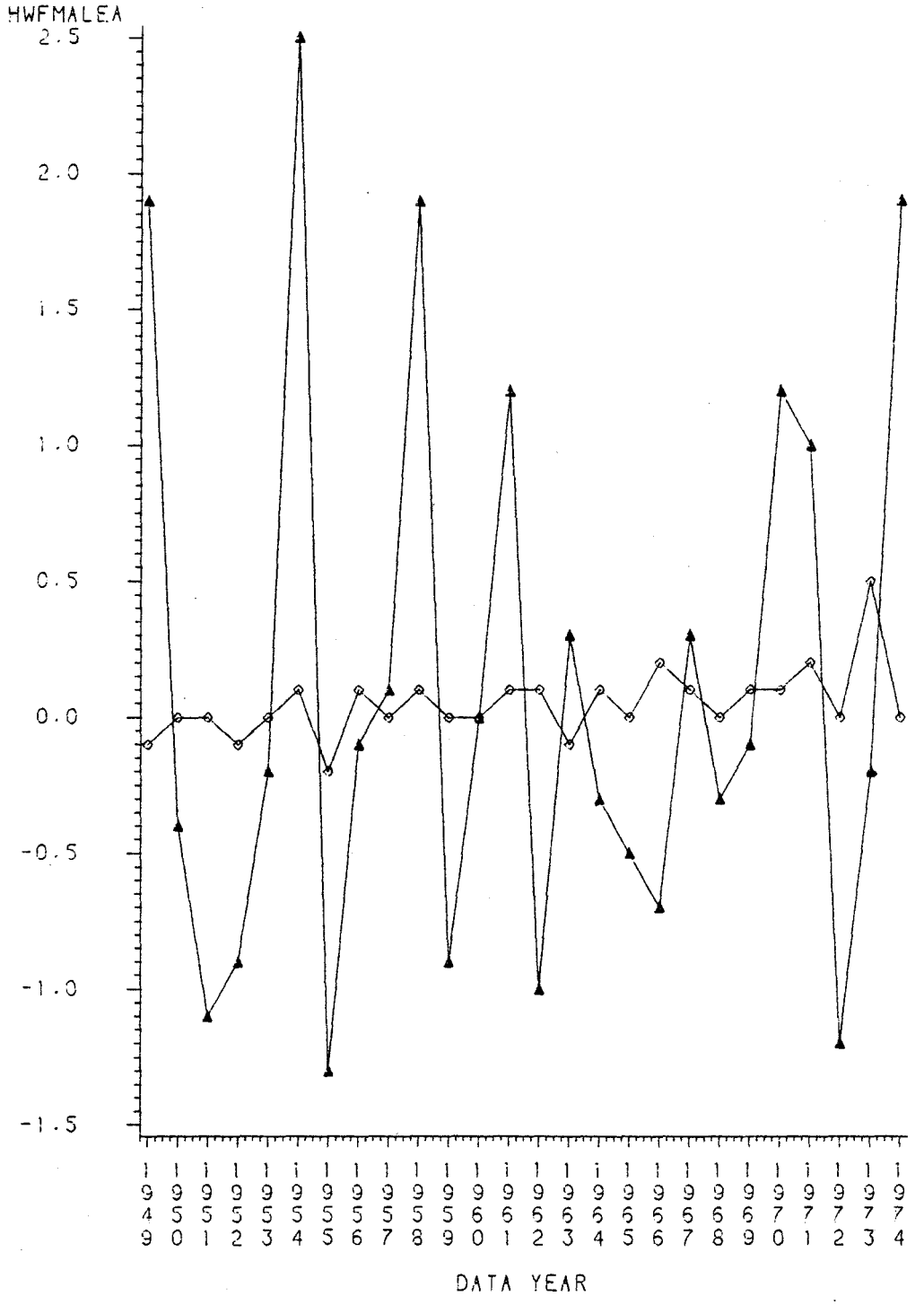


INDUSTRIAL – MANUFACTURING PRODUCTION
WITH WHITE FEMALE HOMICIDES
(1949 - 1974)



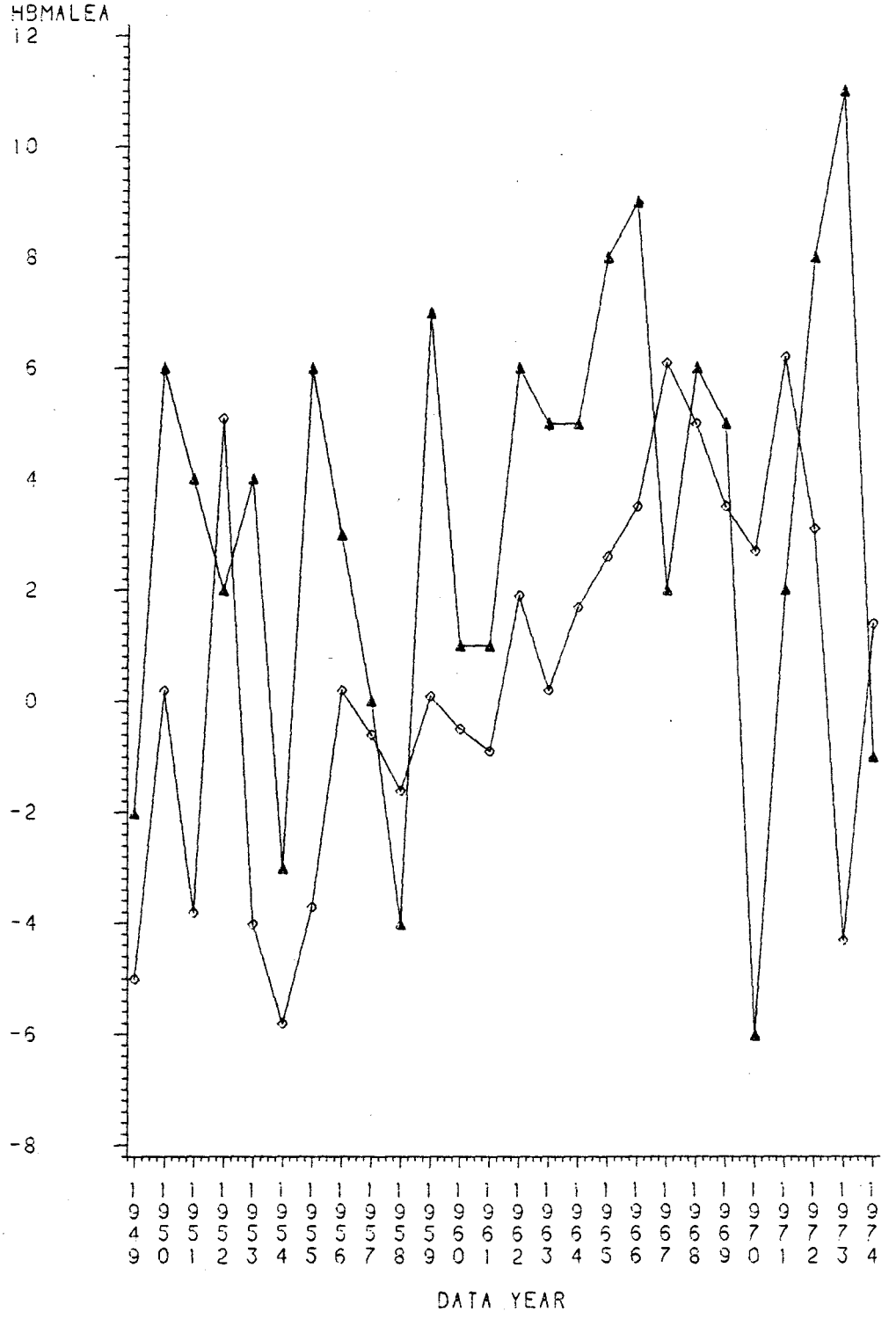
LEGEND: ▲ INDUSTRIAL–MANUFACTURING PRODUCTION ◇ WHITE FEMALE HOMICIDES

CHANGES IN UNEMPLOYMENT RATES
WITH WHITE FEMALE HOMICIDES
(1949 - 1974)



LEGEND: ▲ CHANGES IN UNEMPLOYMENT RATES ◇ WHITE FEMALE HOMICIDES

INDUSTRIAL - MANUFACTURING PRODUCTION
WITH BLACK MALE HOMICIDES
(1949 - 1974)



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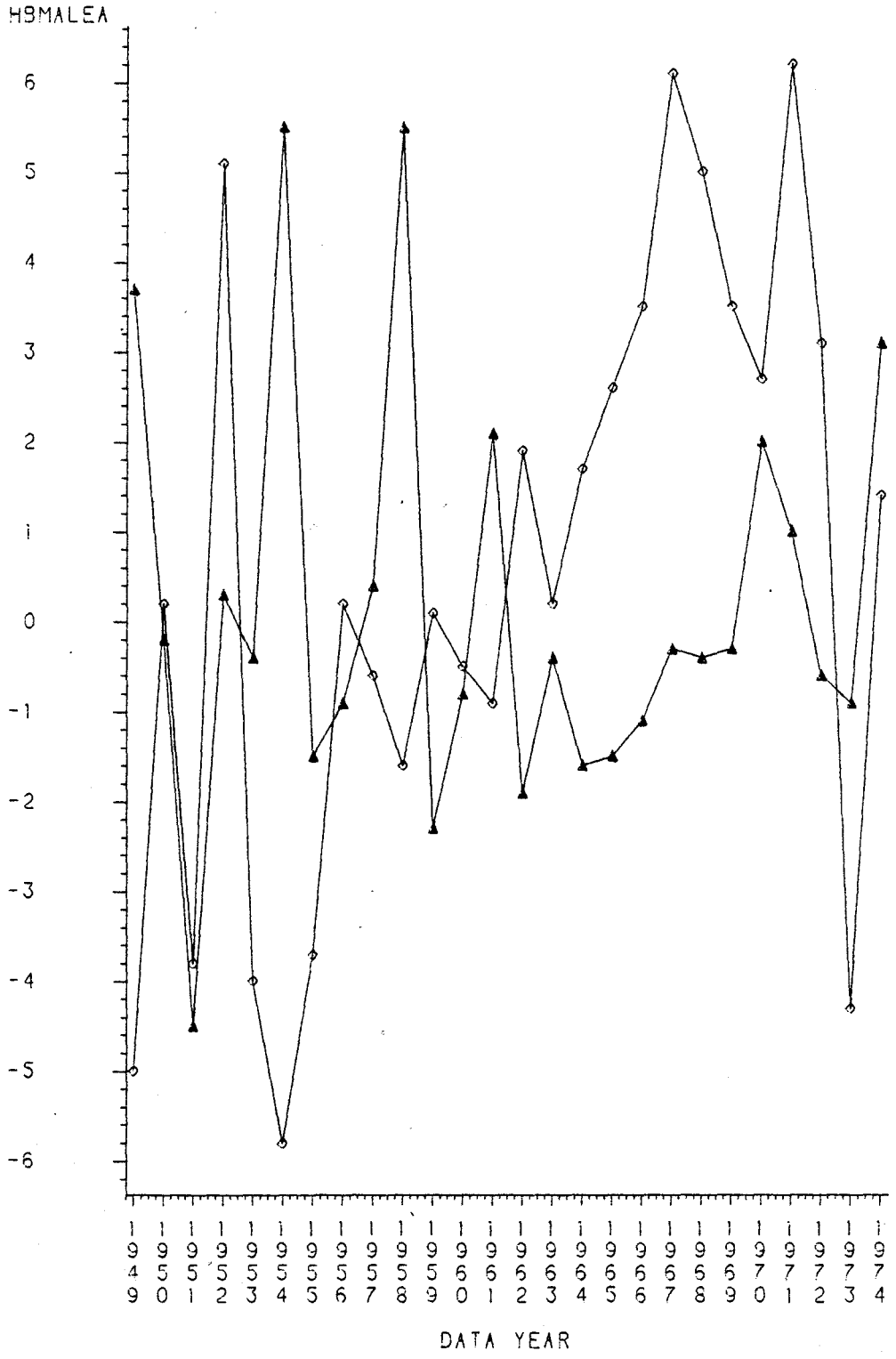
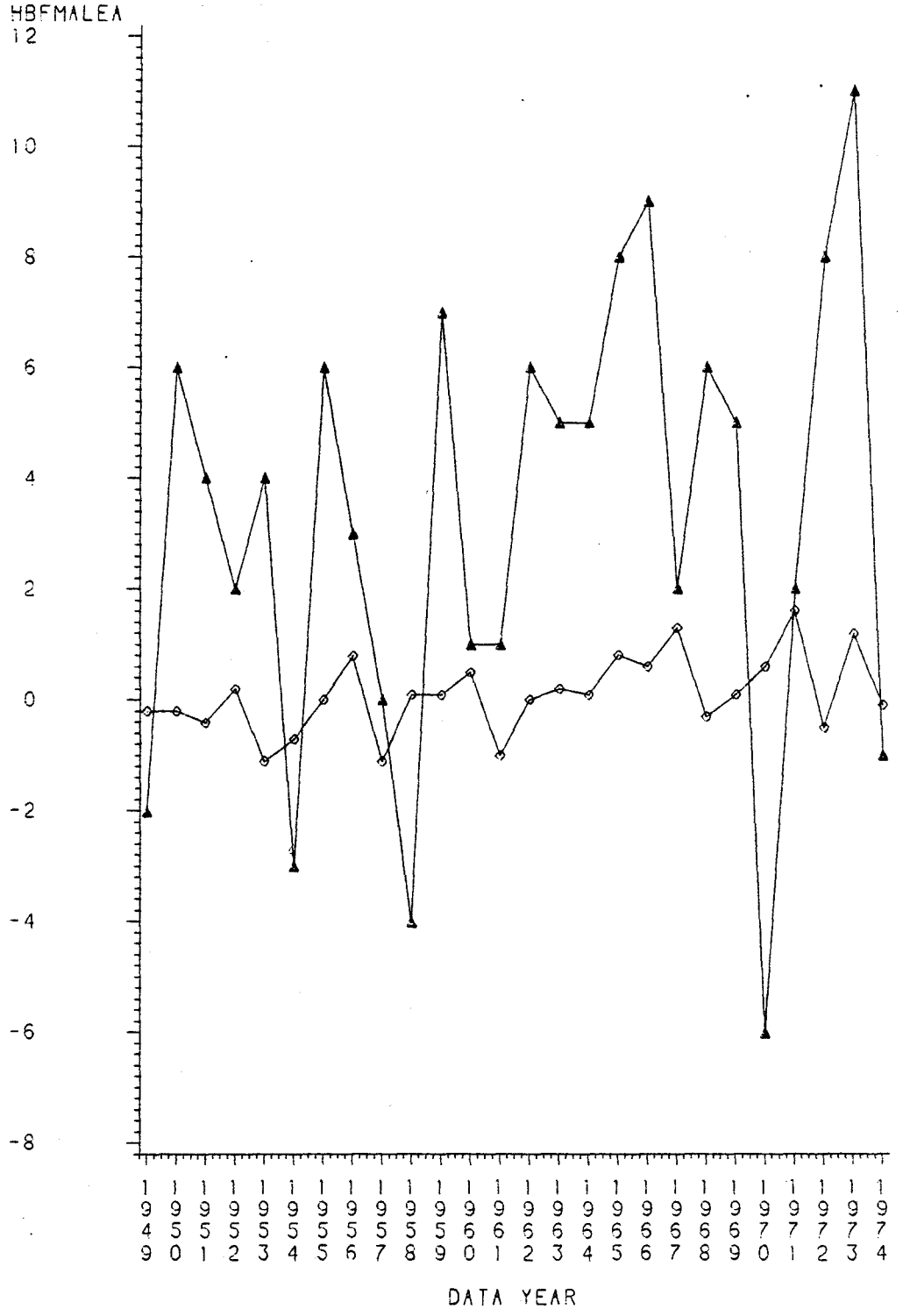
CHANGES IN UNEMPLOYMENT RATES
WITH BLACK MALE HOMICIDES
(1949 - 1974)



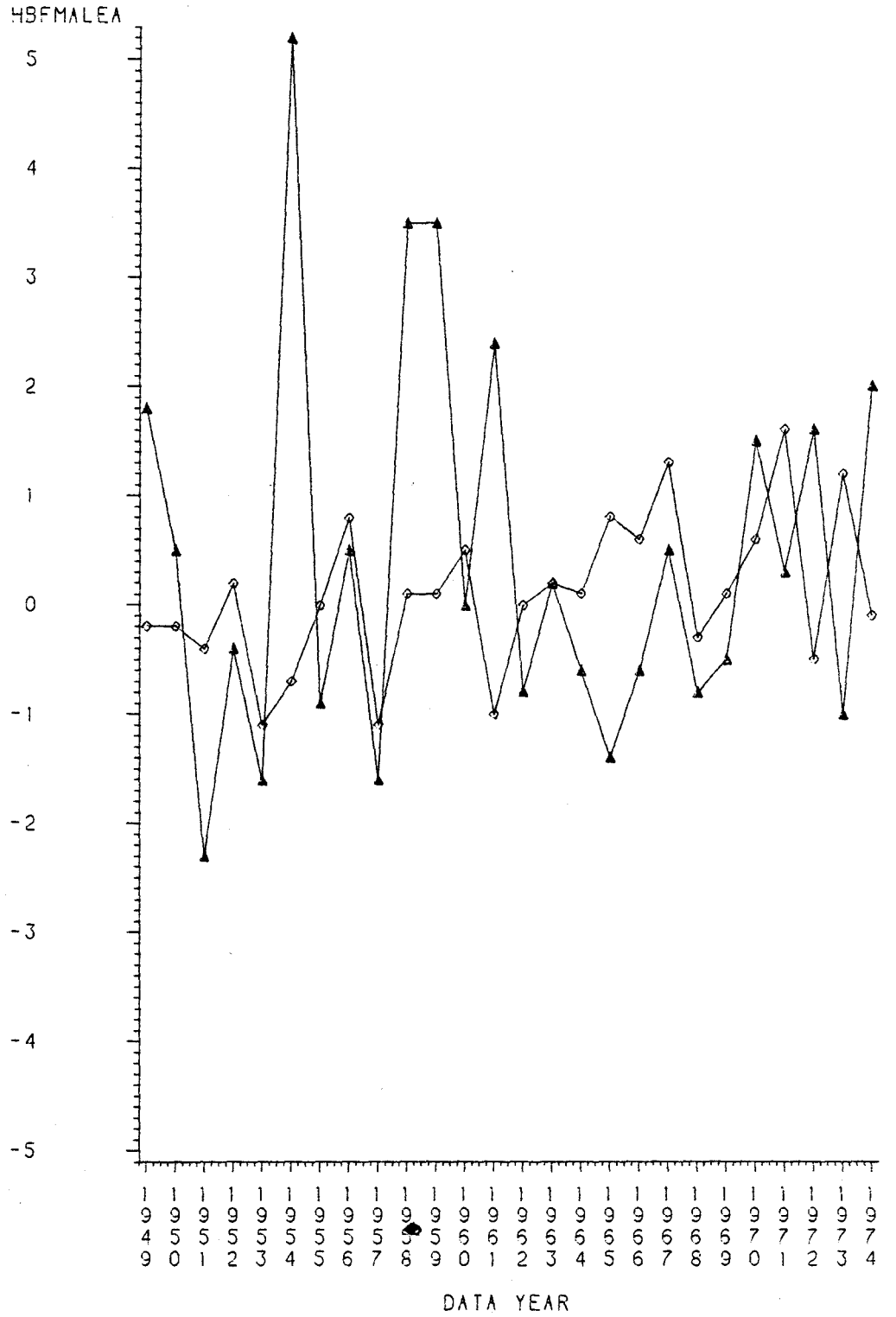
LEGEND: ▲ CHANGES IN UNEMPLOYMENT RATES ◇ BLACK MALE HOMICIDES

INDUSTRIAL - MANUFACTURING PRODUCTION
WITH BLACK FEMALE HOMICIDES
(1949 - 1974)



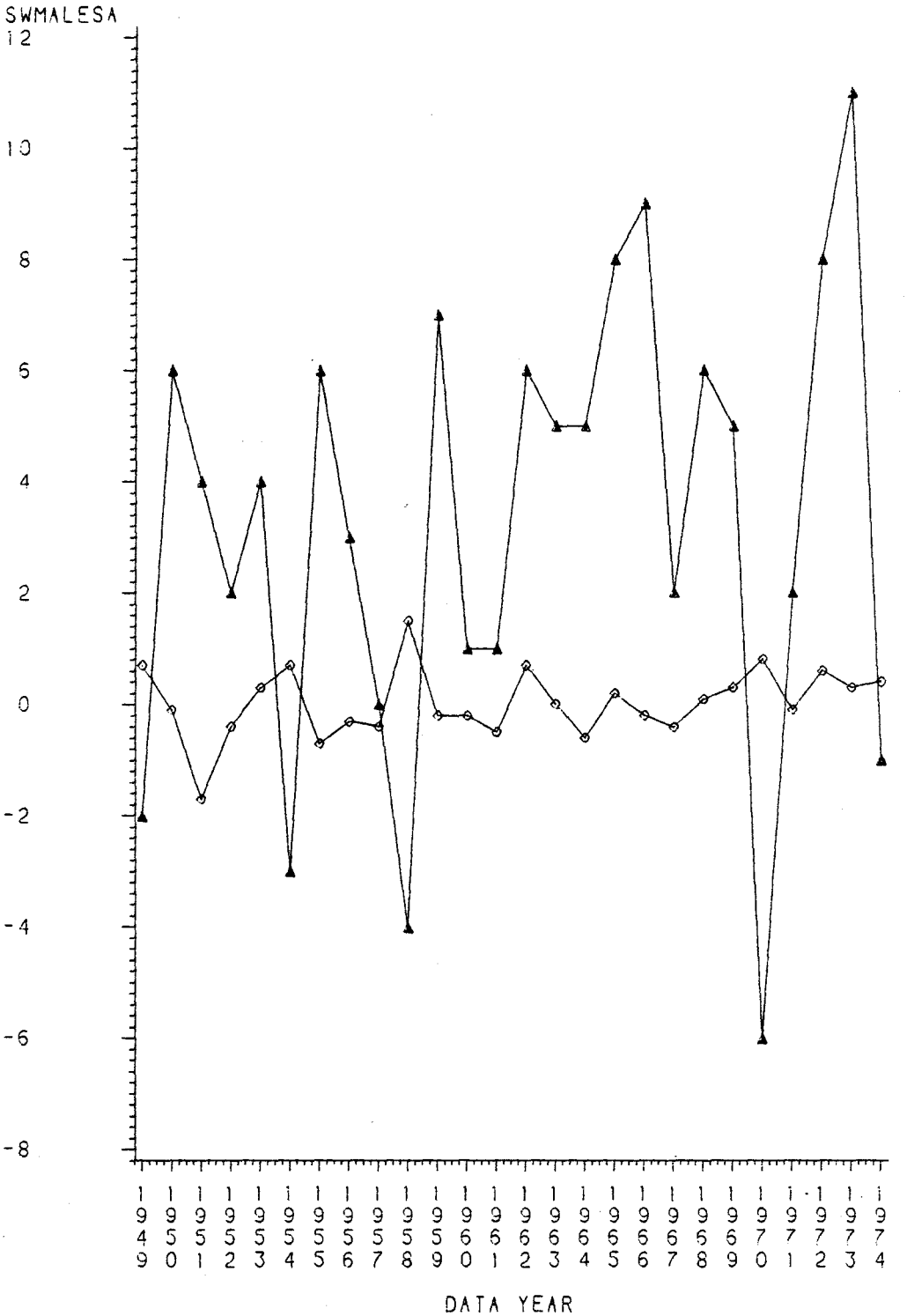
LEGEND: ▲ INDUSTRIAL-MANUFACTURING PRODUCTION ◇ BLACK FEMALE HOMICIDES

CHANGES IN UNEMPLOYMENT RATES
WITH BLACK FEMALE HOMICIDES
(1949 - 1974)



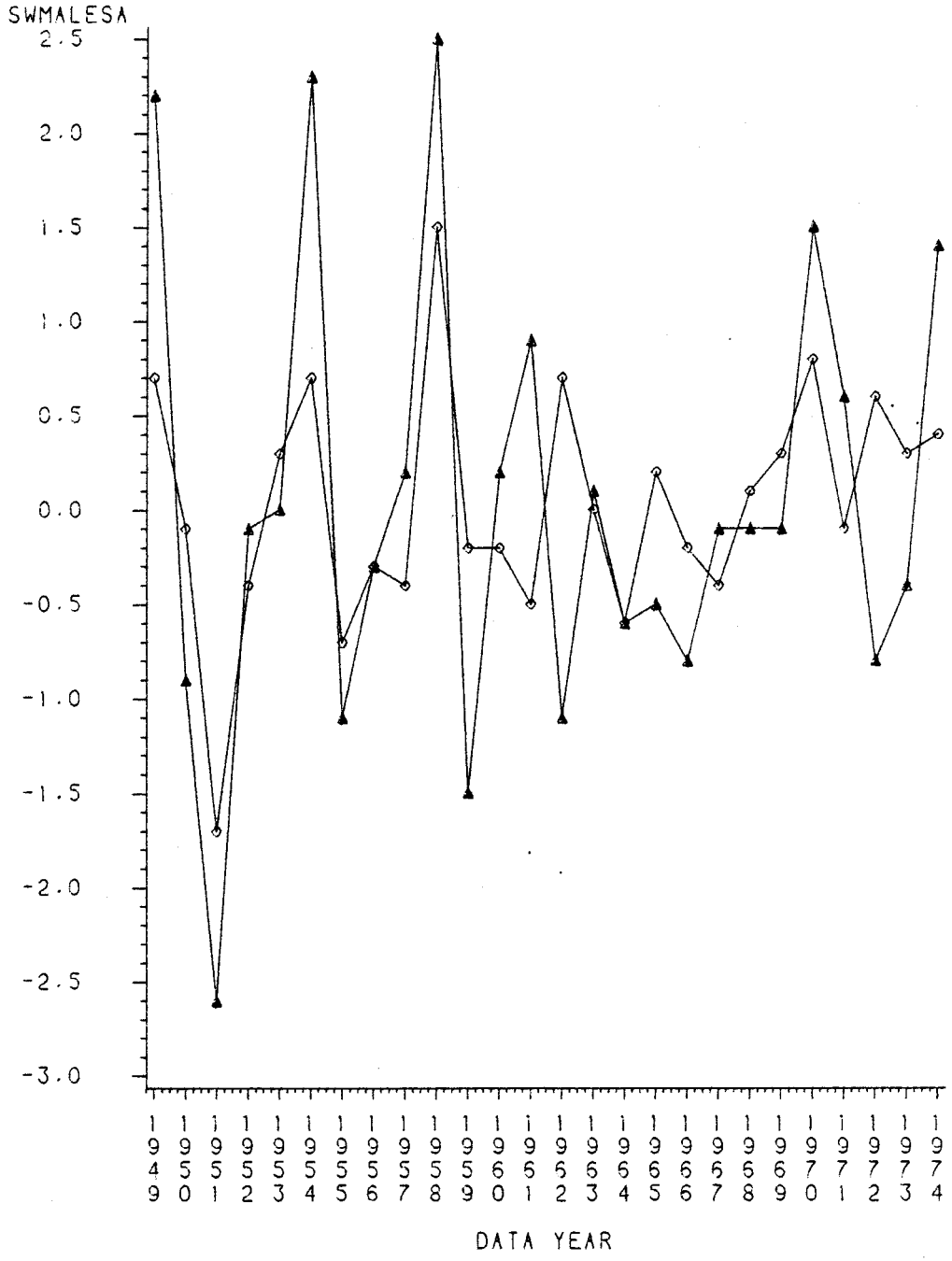
LEGEND: ▲ CHANGES IN UNEMPLOYMENT RATES ◇ BLACK FEMALE HOMICIDES

INDUSTRIAL – MANUFACTURING PRODUCTION
WITH WHITE MALE SUICIDES
(1949 - 1974)



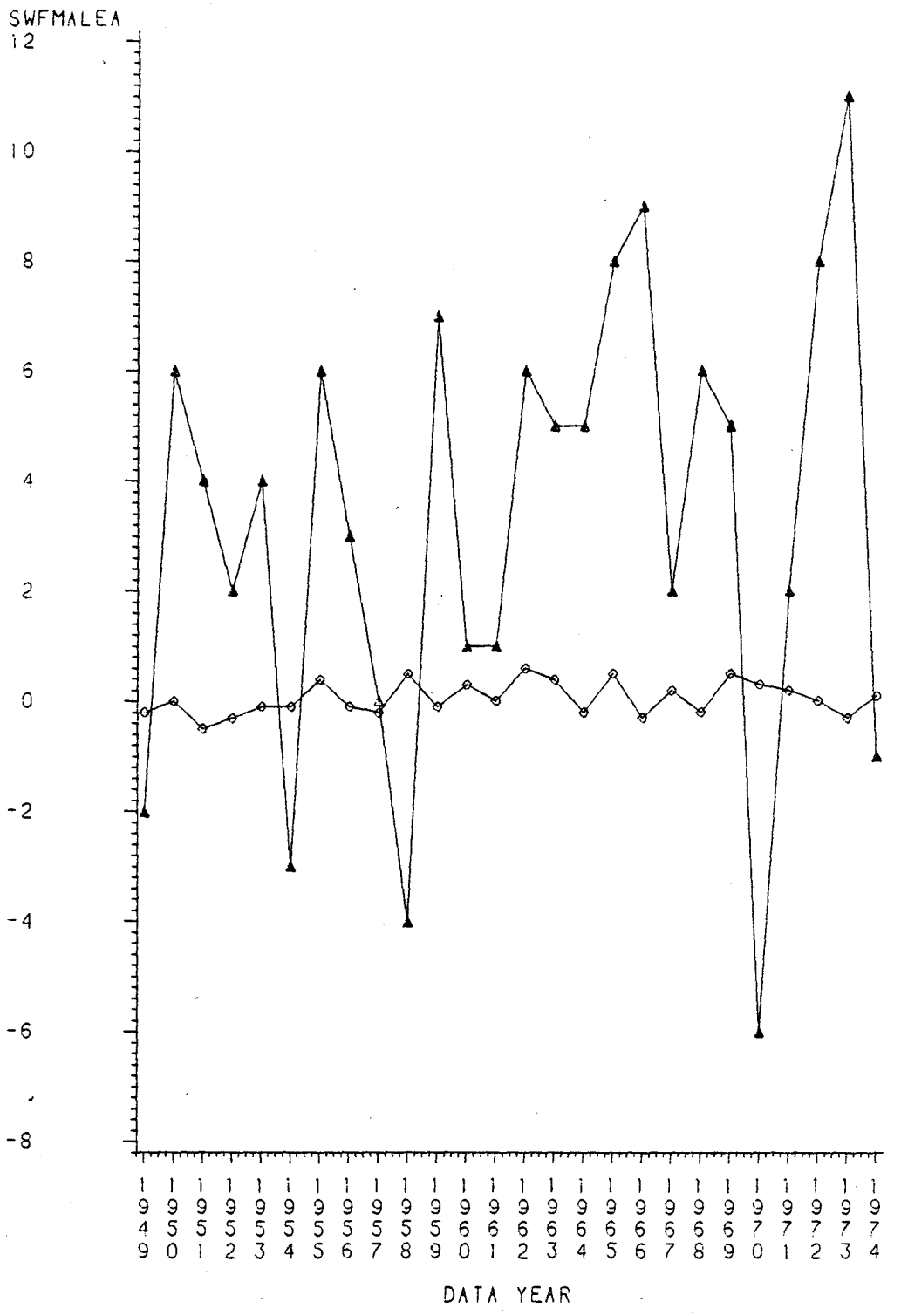
LEGEND: ▲ INDUSTRIAL–MANUFACTURING PRODUCTION ◇ WHITE MALE SUICIDES

CHANGES IN UNEMPLOYMENT RATES
WITH WHITE MALE SUICIDES
(1949 - 1974)



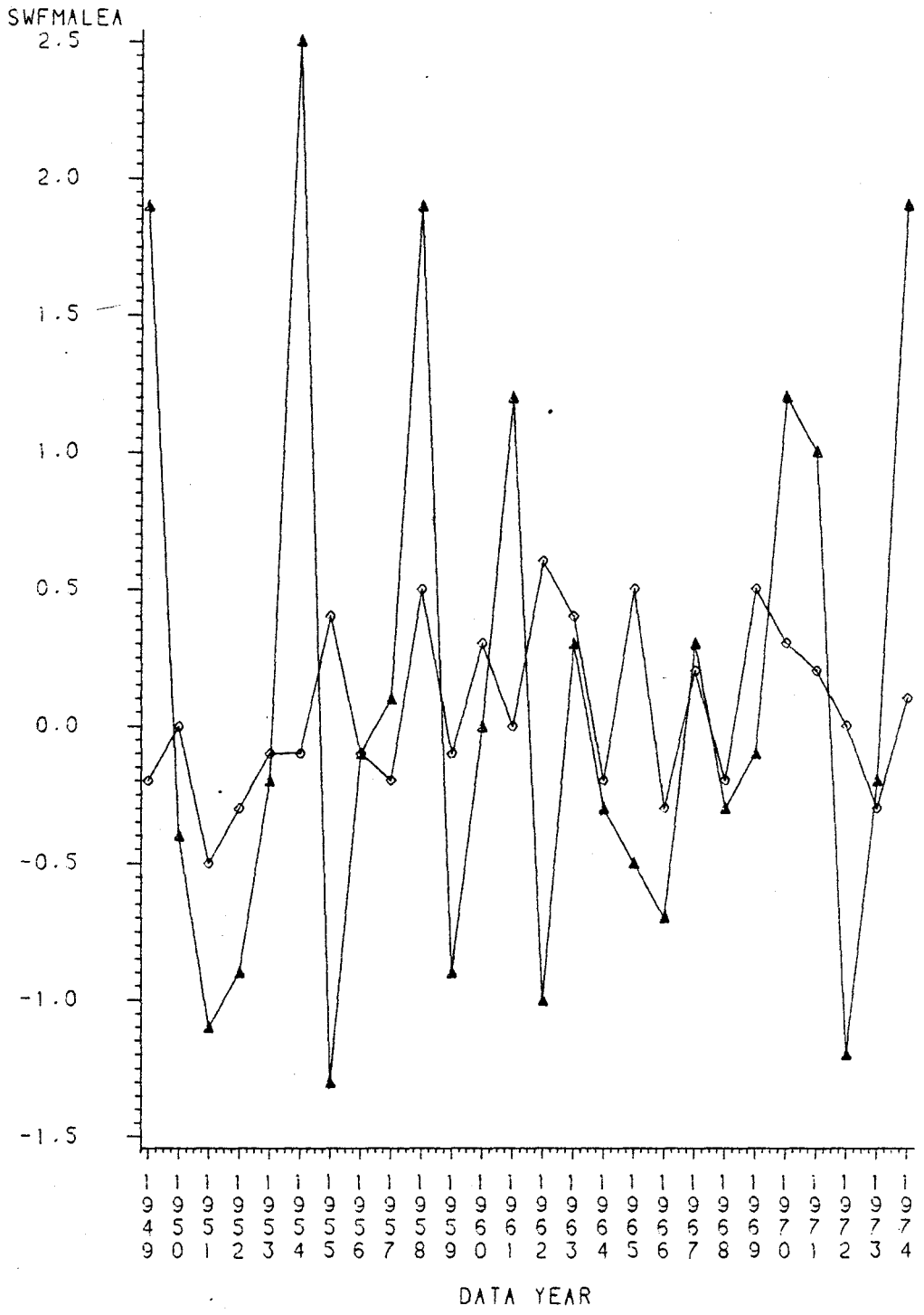
LEGEND: ▲ CHANGES IN UNEMPLOYMENT RATES ◇ WHITE MALE SUICIDES

INDUSTRIAL – MANUFACTURING PRODUCTION
WITH WHITE FEMALE SUICIDES
(1949 - 1974)



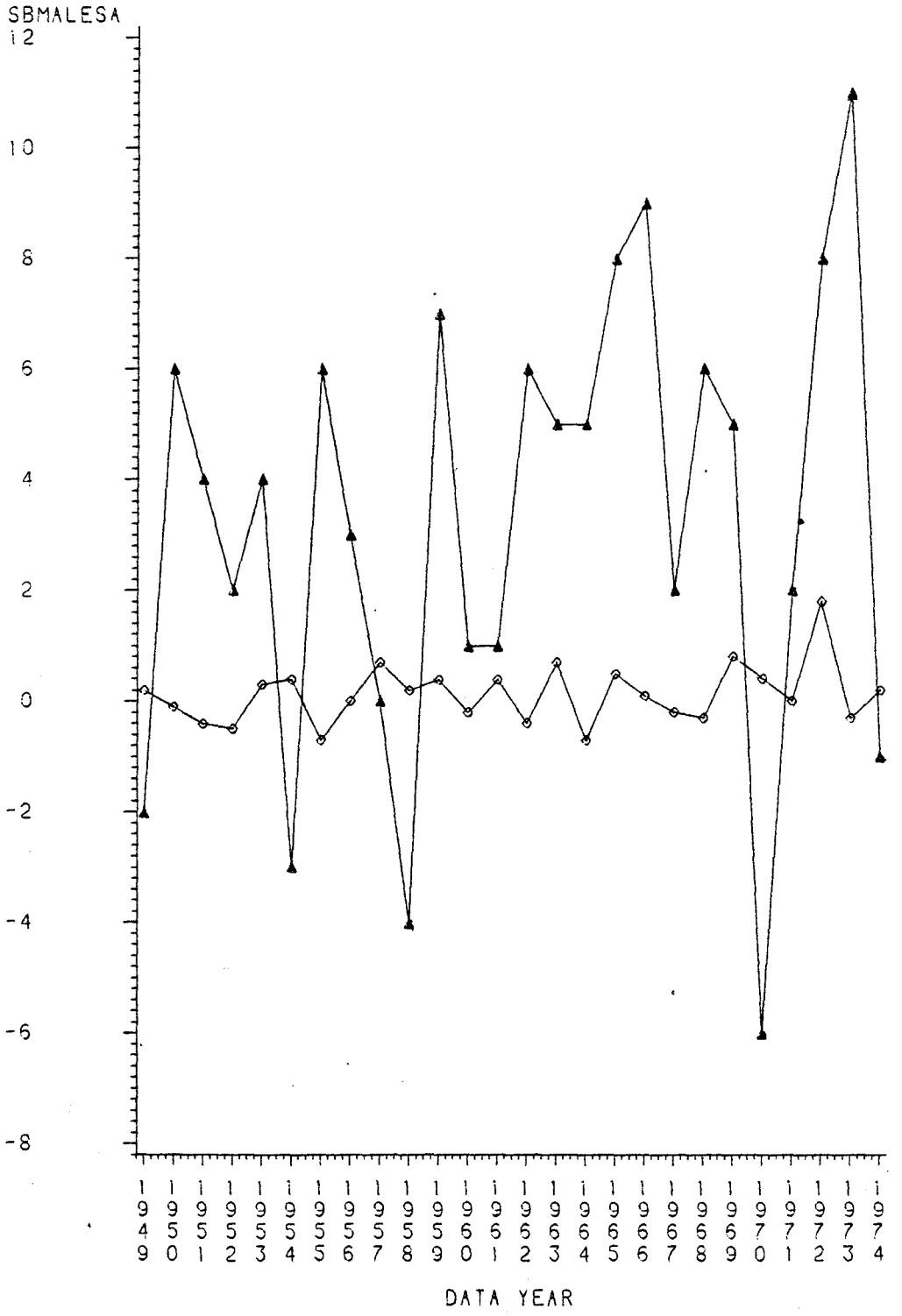
LEGEND ▲ INDUSTRIAL–MANUFACTURING PRODUCTION ◇ WHITE FEMALE SUICIDES

CHANGES IN UNEMPLOYMENT RATES
WITH WHITE FEMALE SUICIDES
(1949 - 1974)



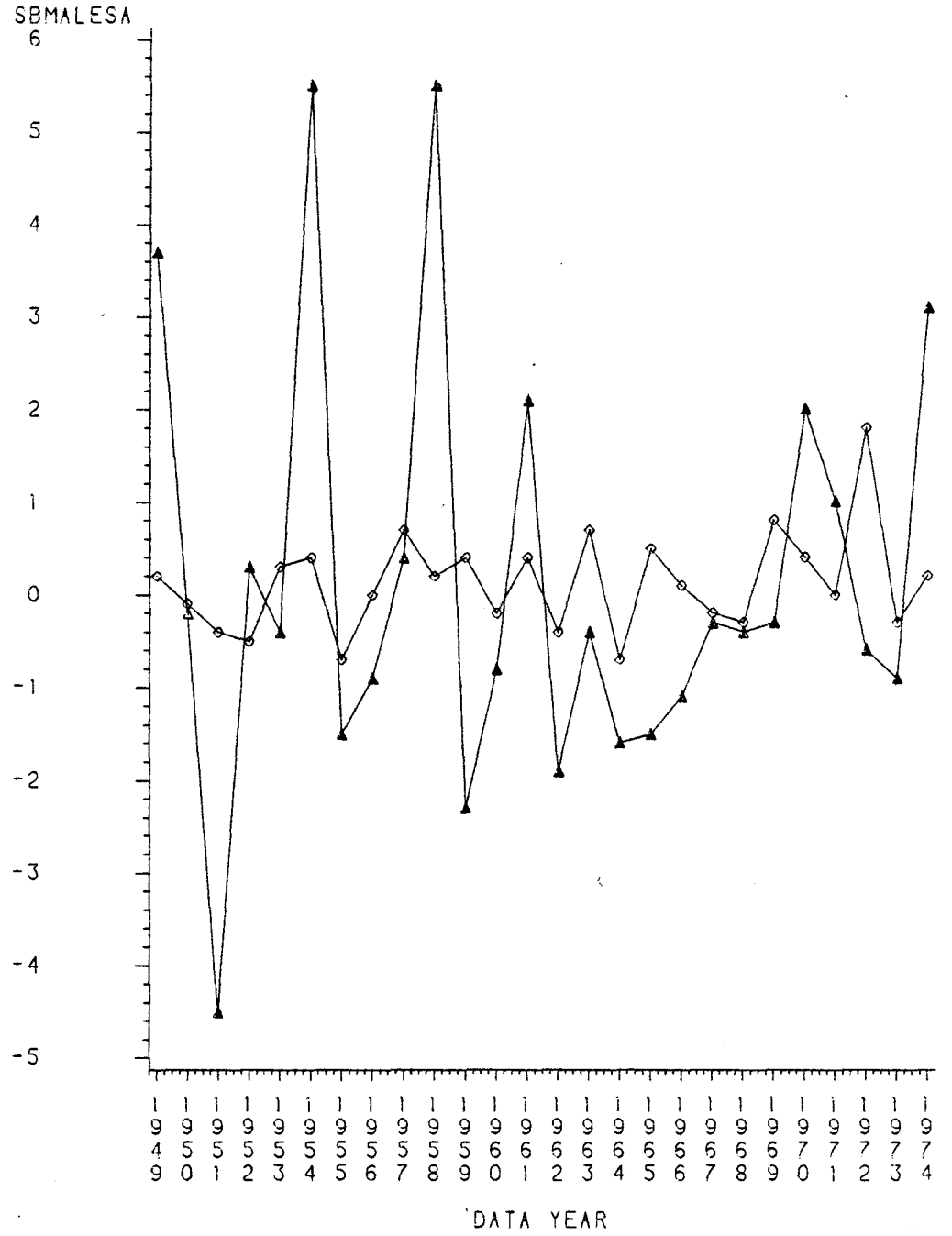
LEGEND: ▲ CHANGES IN UNEMPLOYMENT RATES ◇ WHITE FEMALE SUICIDES

INDUSTRIAL - MANUFACTURING PRODUCTION
WITH BLACK MALE SUICIDES
(1949 - 1974)



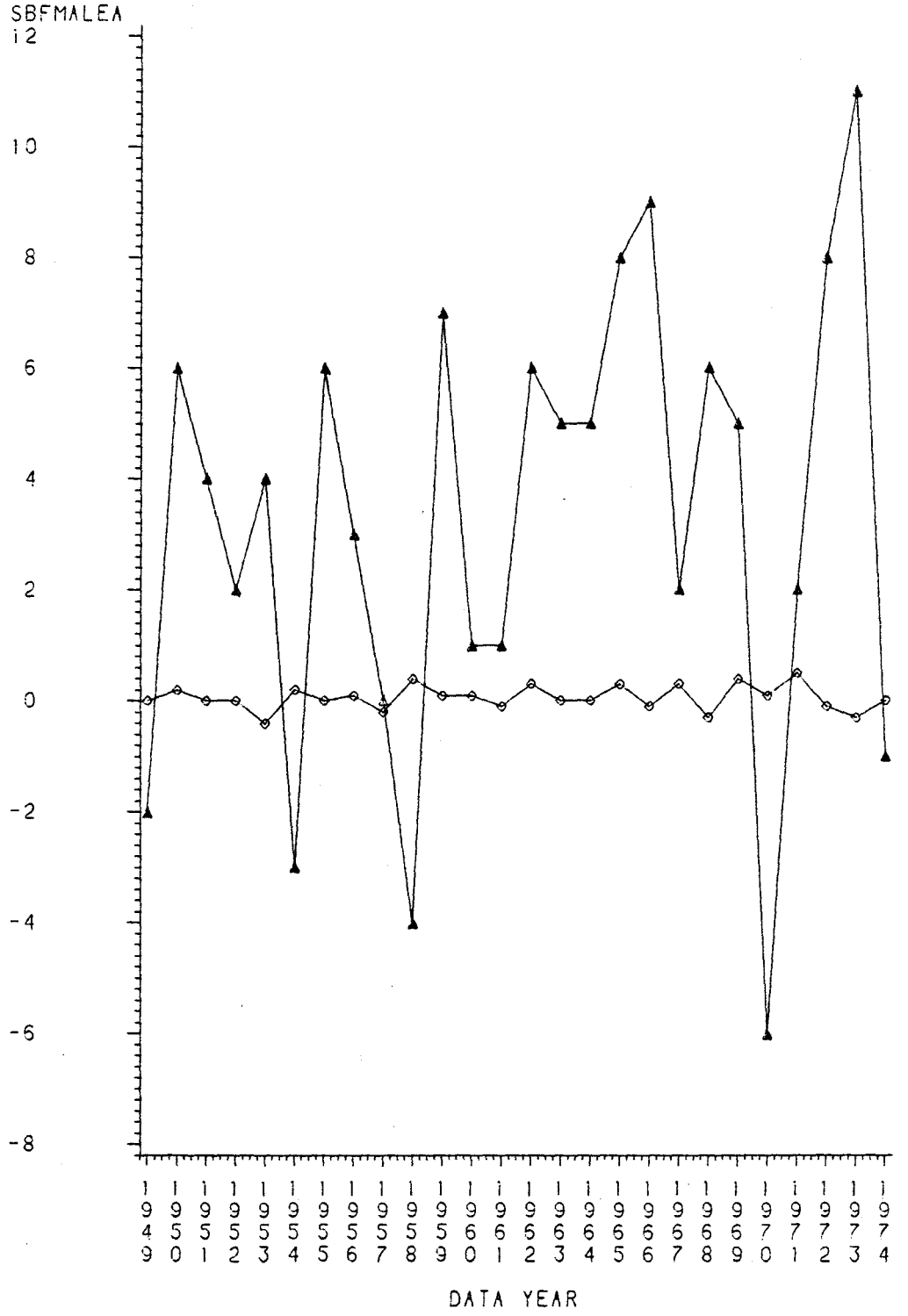
LEGEND: ▲ INDUSTRIAL-MANUFACTURING PRODUCTION ◇ BLACK MALE SUICIDES

CHANGES IN UNEMPLOYMENT RATES
WITH BLACK MALE SUICIDES
(1949 - 1974)



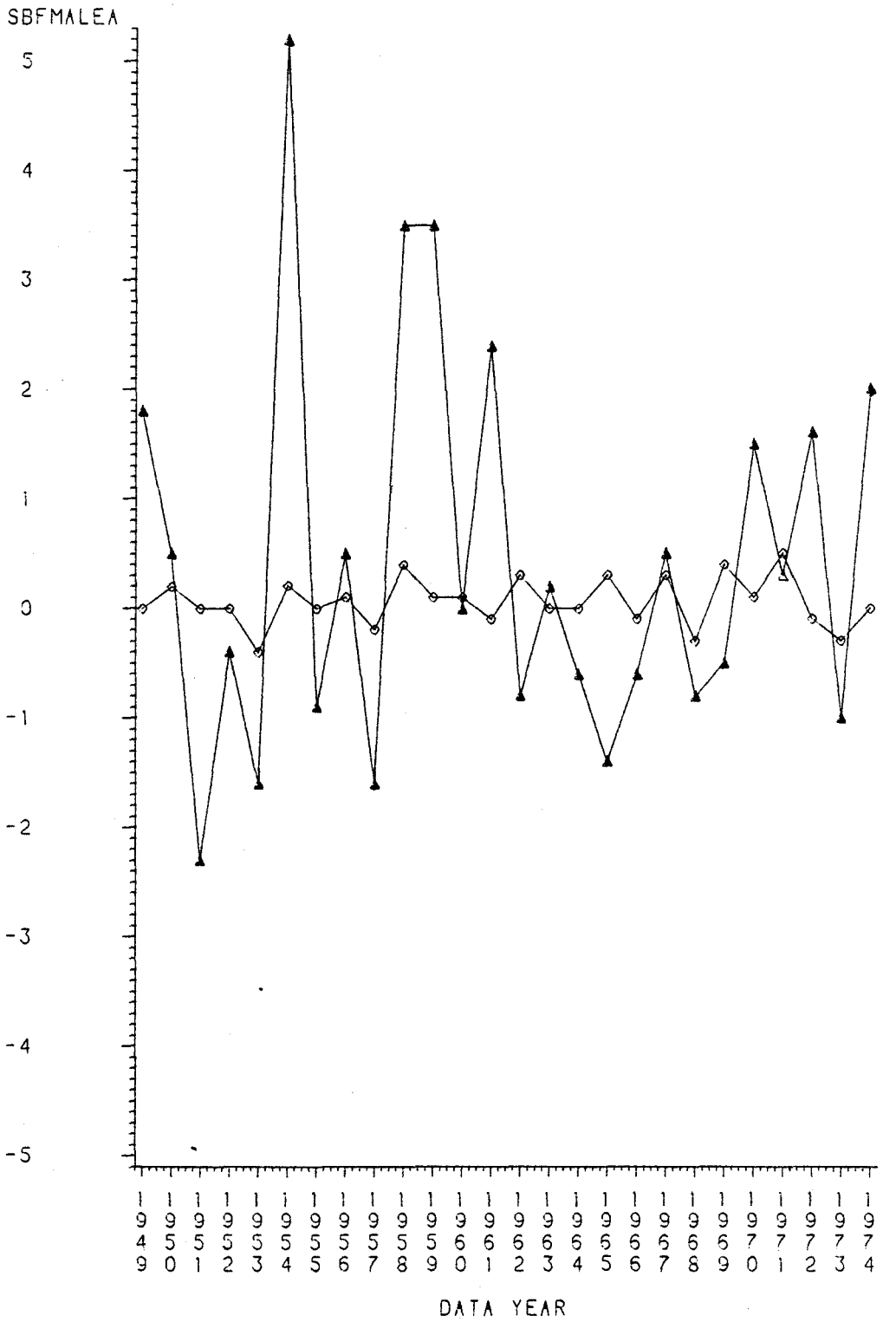
LEGEND: ▲ CHANGES IN UNEMPLOYMENT RATES ◇ BLACK MALE SUICIDES

INDUSTRIAL – MANUFACTURING PRODUCTION
WITH BLACK FEMALE SUICIDES
(1949 - 1974)



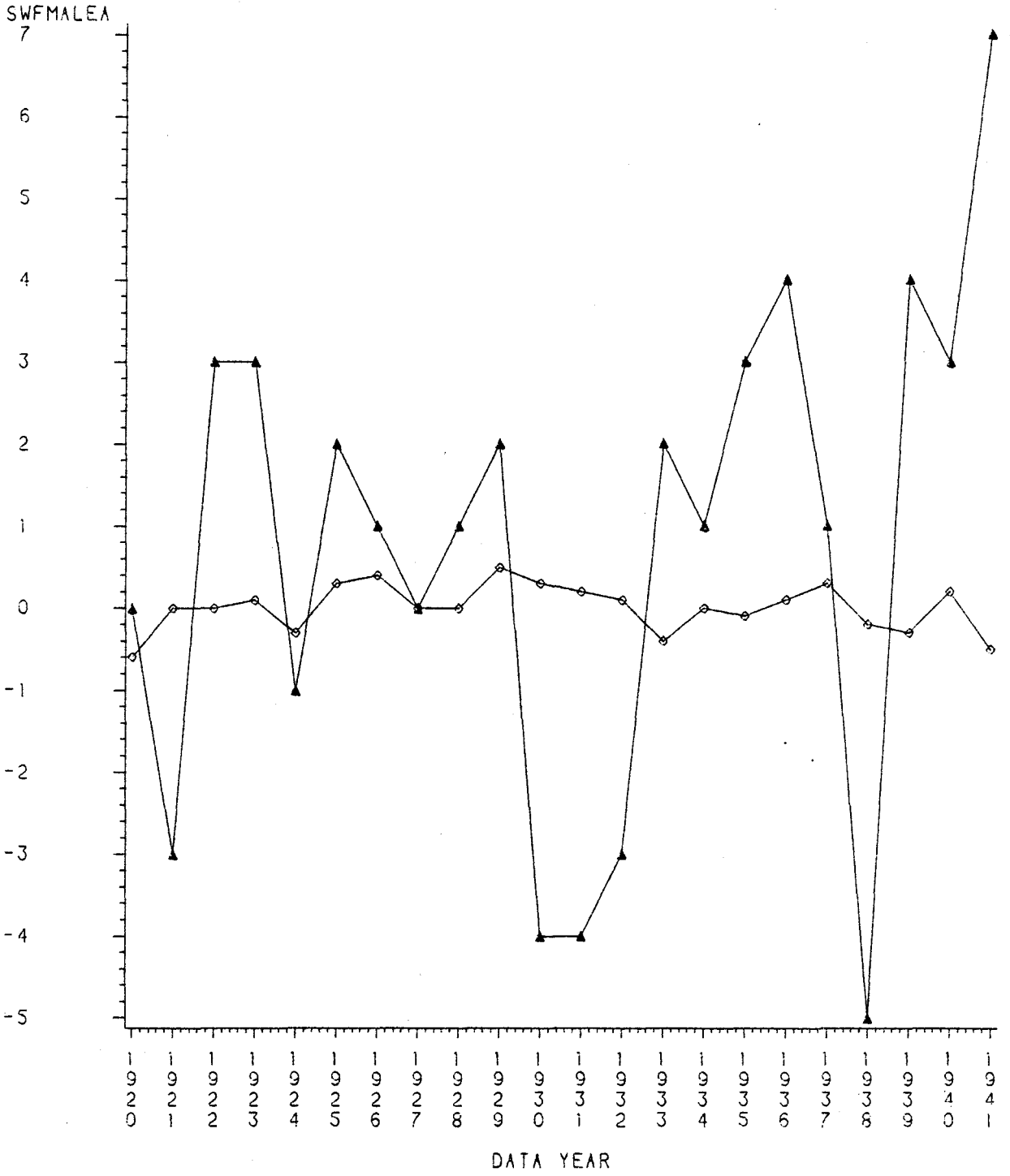
LEGEND: ▲ INDUSTRIAL–MANUFACTURING PRODUCTION ◇ BLACK FEMALE SUICIDES

CHANGES IN UNEMPLOYMENT RATES
WITH BLACK FEMALE SUICIDES
(1949 - 1974)



LEGEND: ▲ CHANGES IN UNEMPLOYMENT RATES ◇ BLACK FEMALE SUICIDES

INDUSTRIAL - MANUFACTURING PRODUCTION
WITH WHITE FEMALE SUICIDES
(1920 - 1941)



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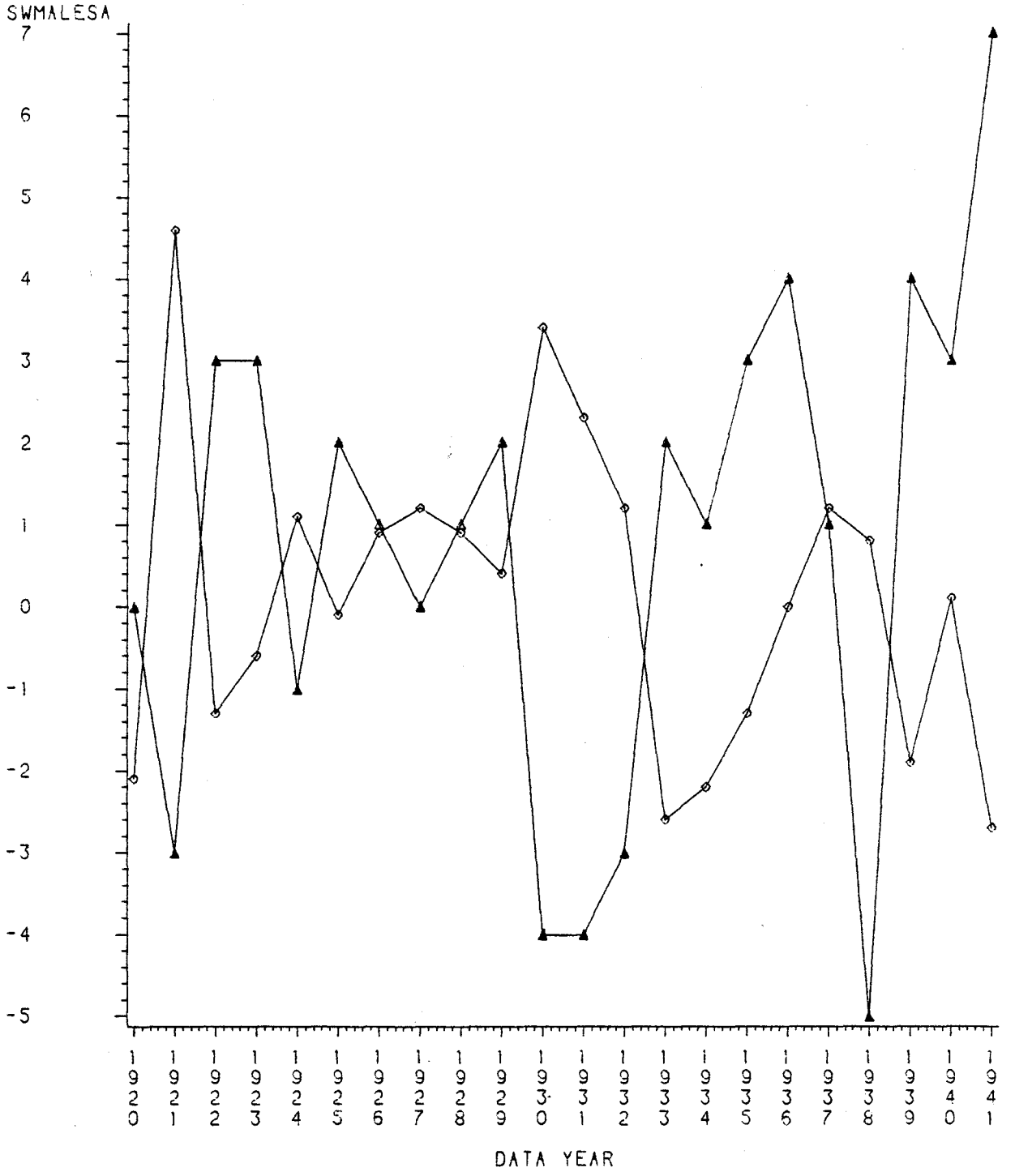
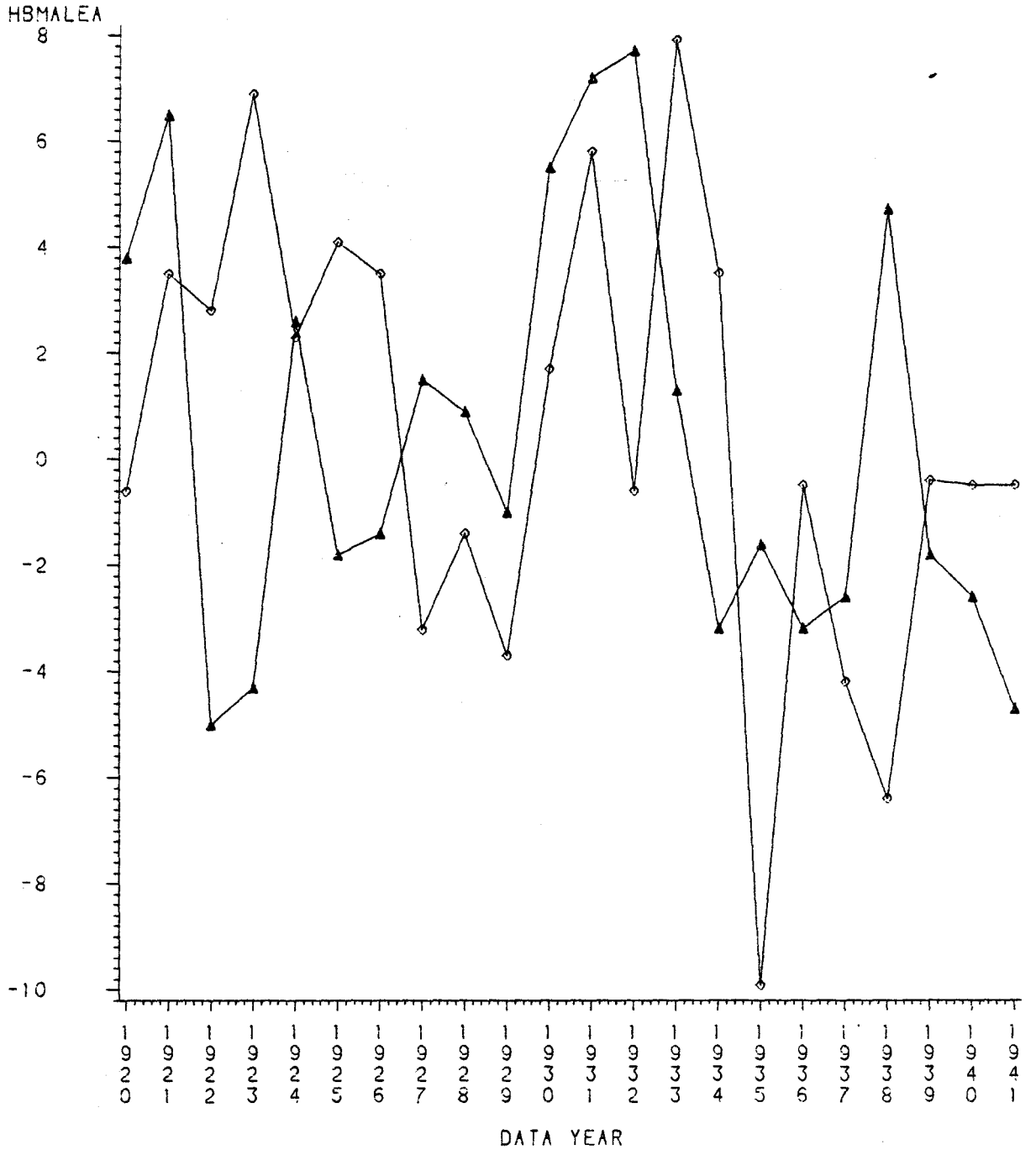


LEGEND ▲ INDUSTRIAL–MANUFACTURING PRODUCTION ◇ WHITE MALE SUICIDES

CHANGES IN UNEMPLOYMENT RATES
WITH BLACK MALE HOMICIDES
(1920 - 1941)



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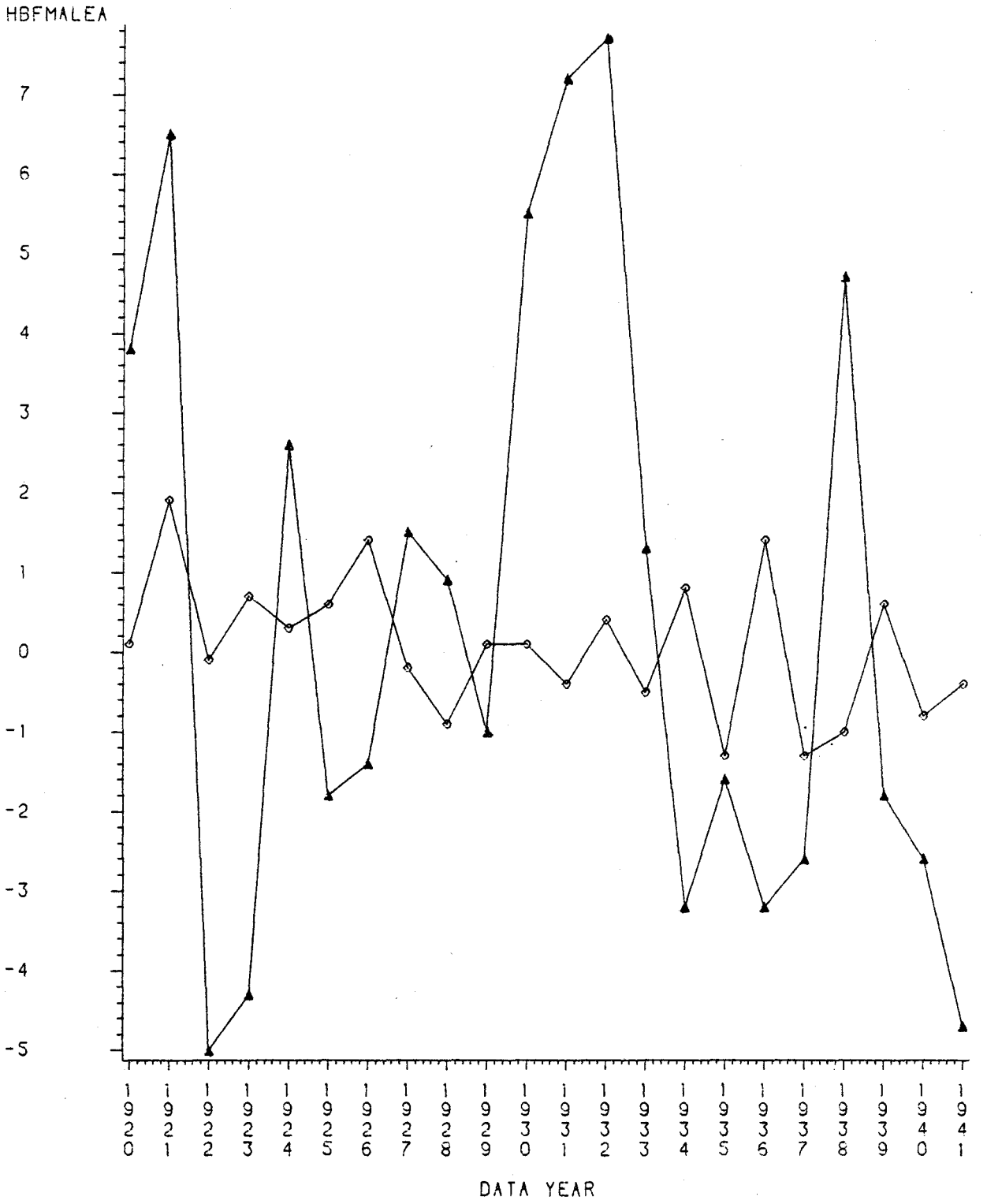

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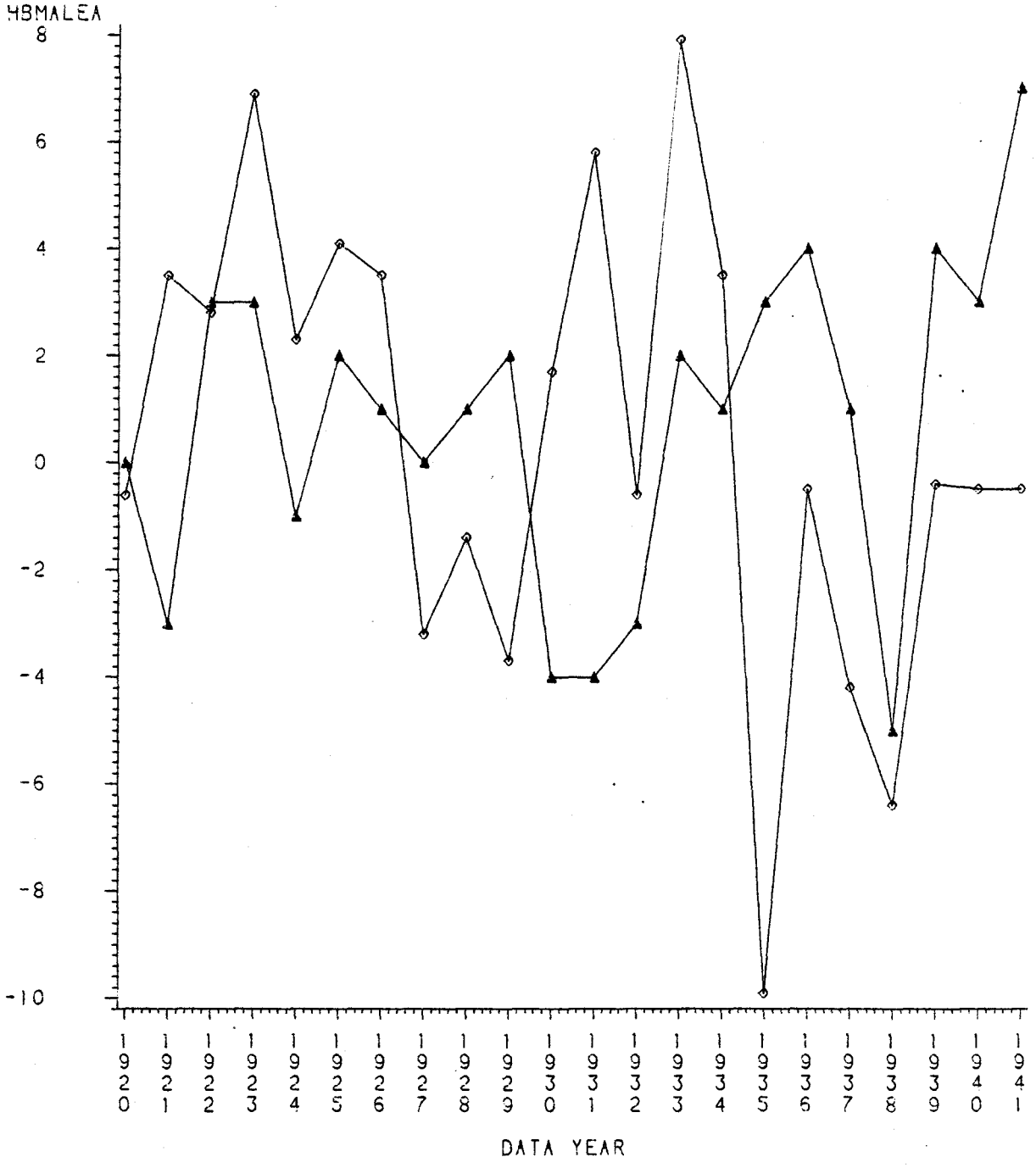

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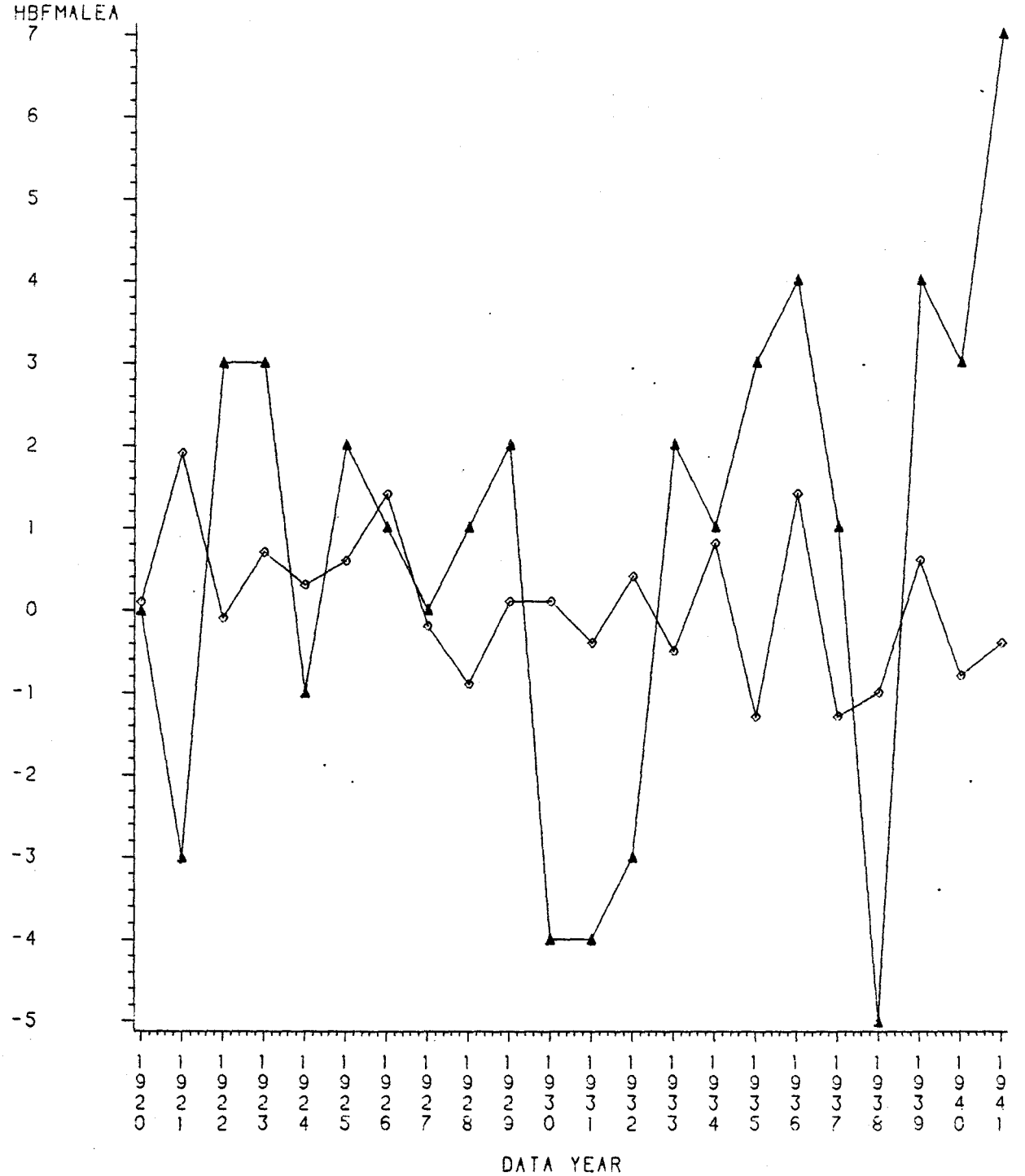

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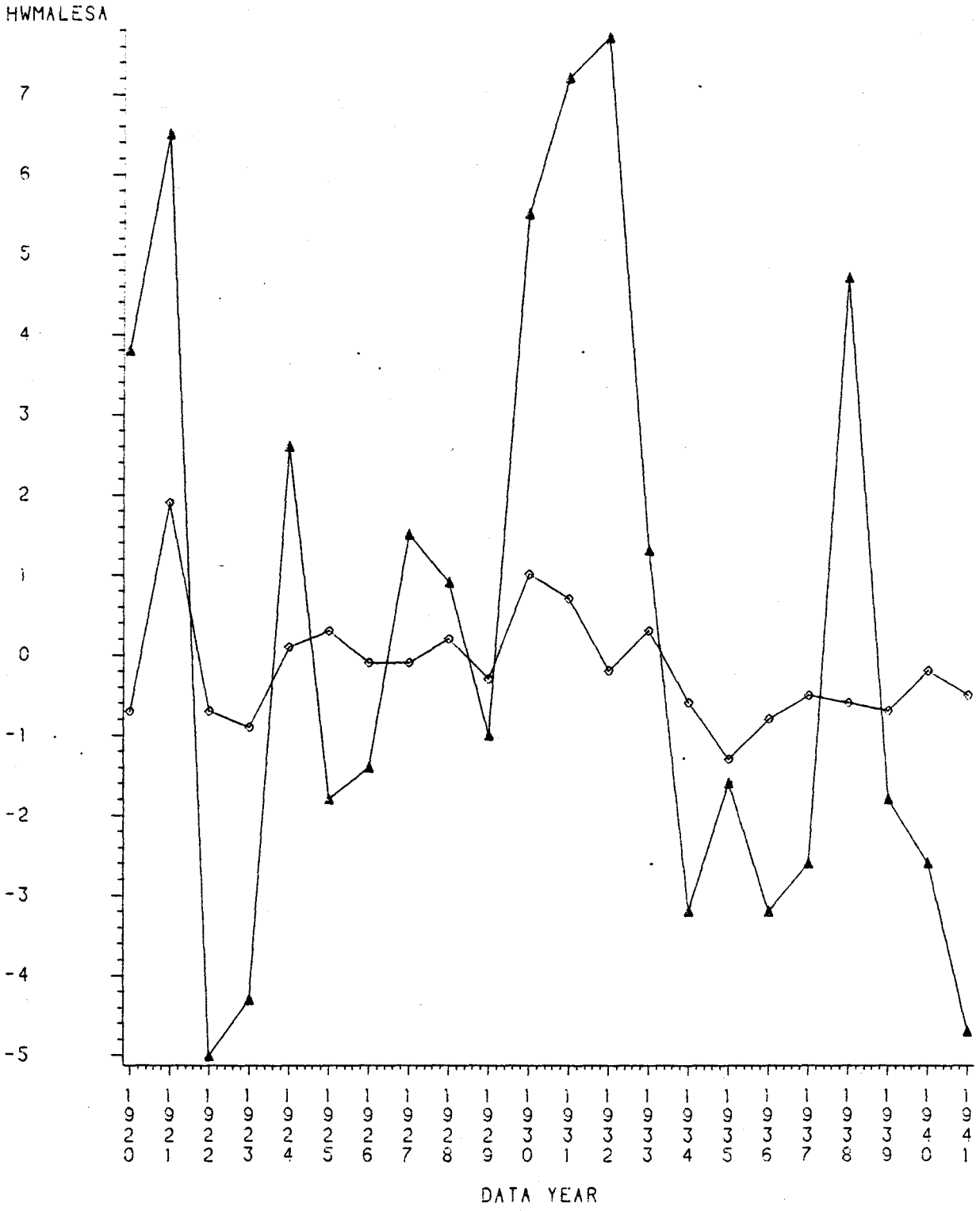

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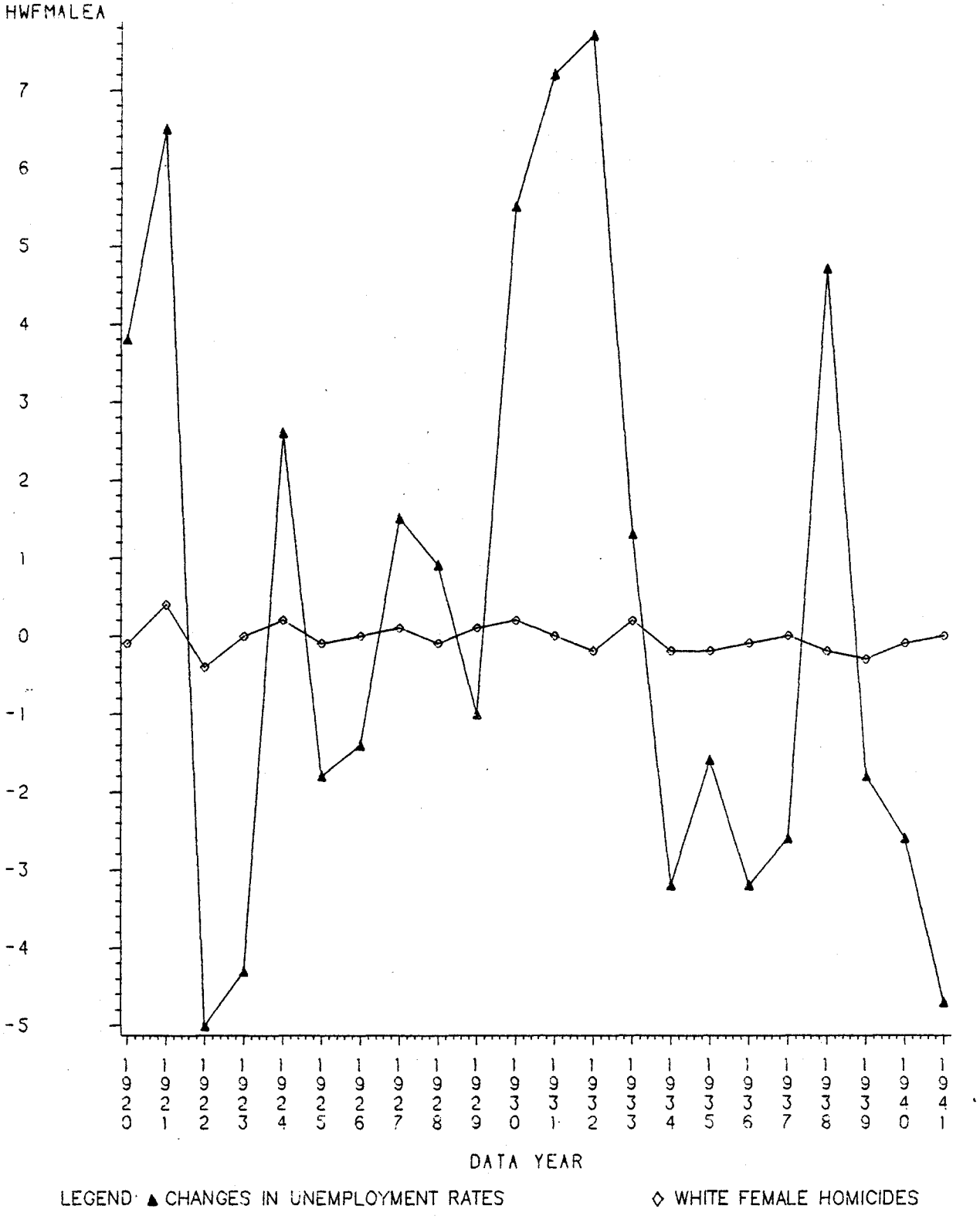

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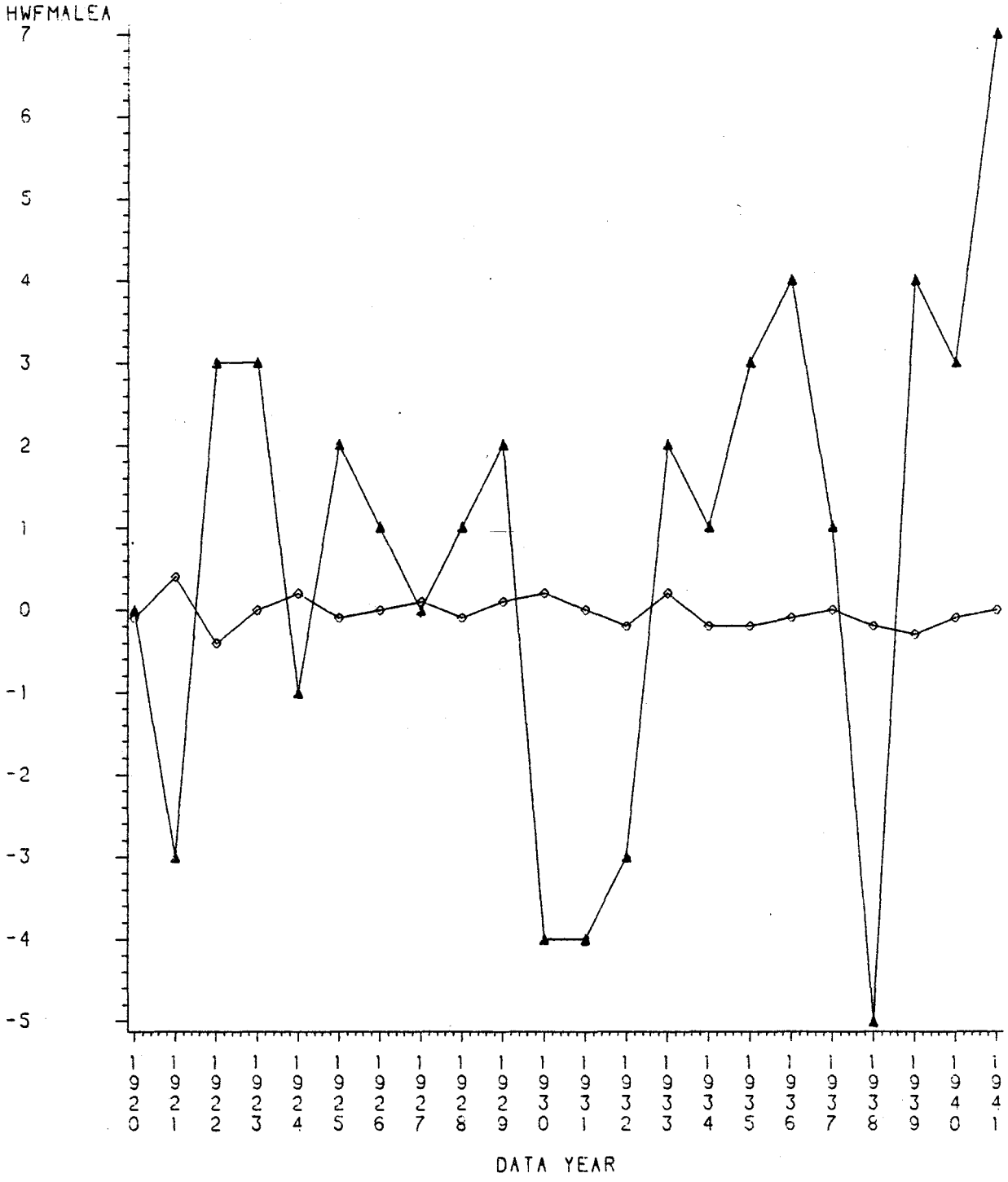

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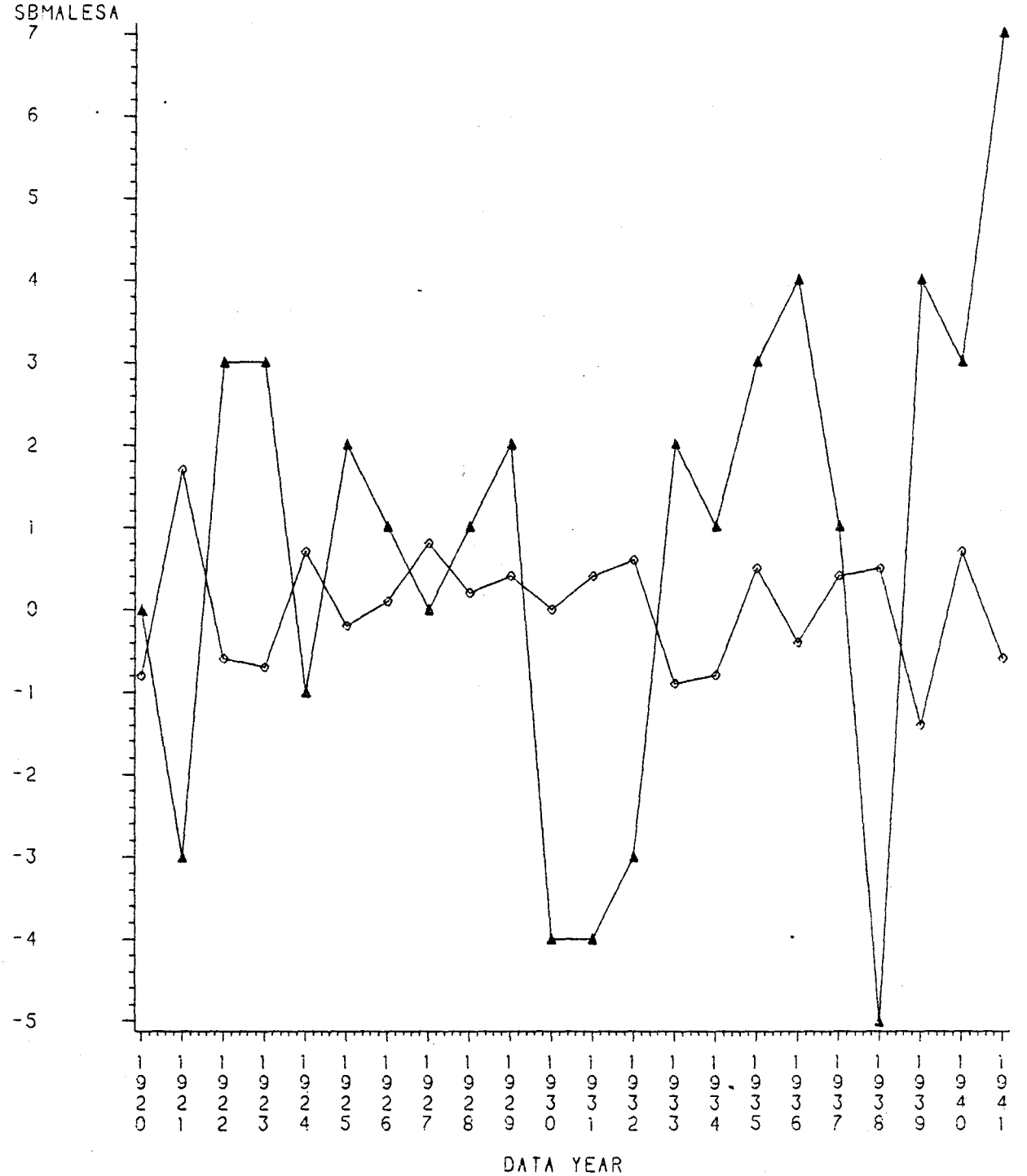

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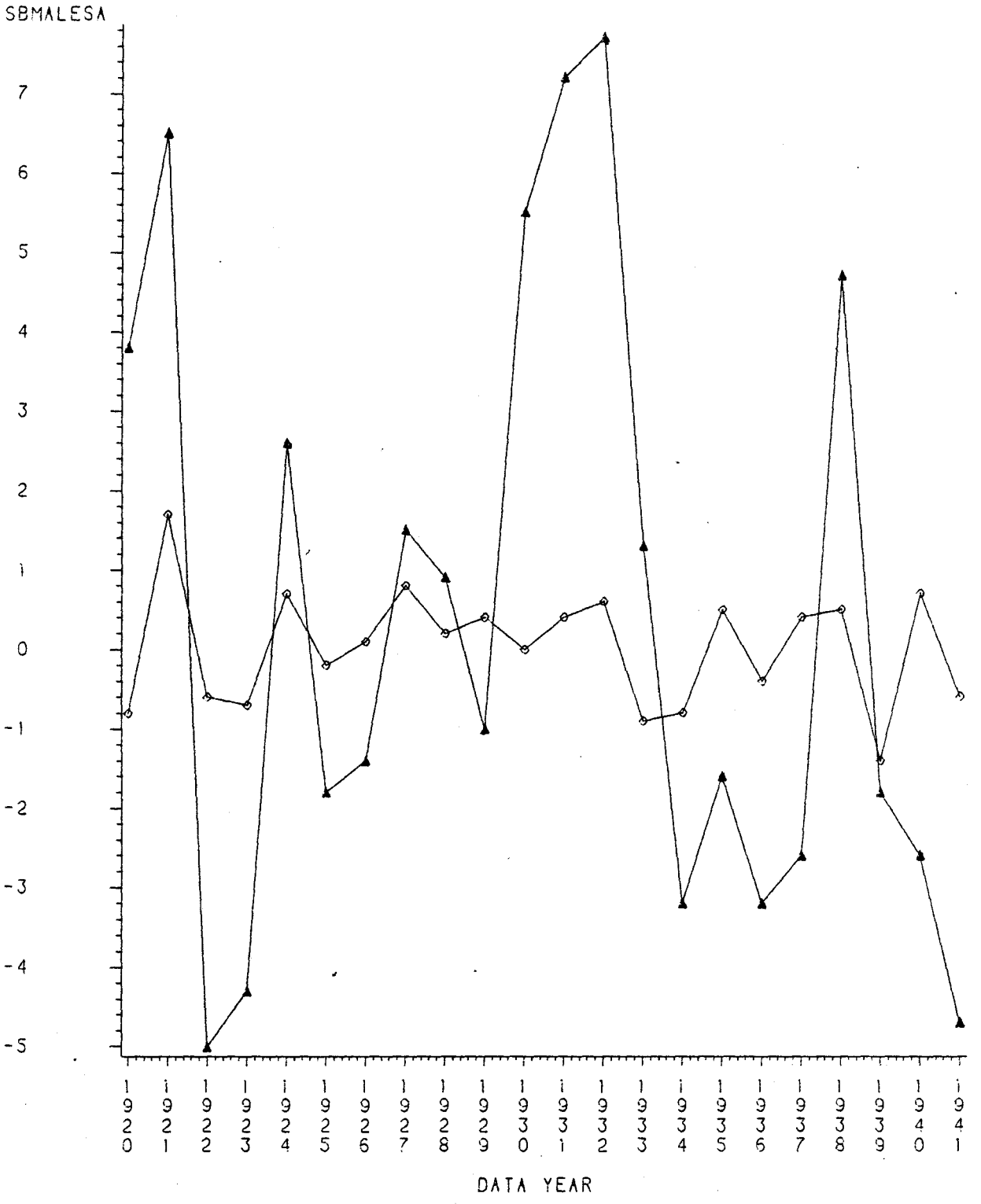

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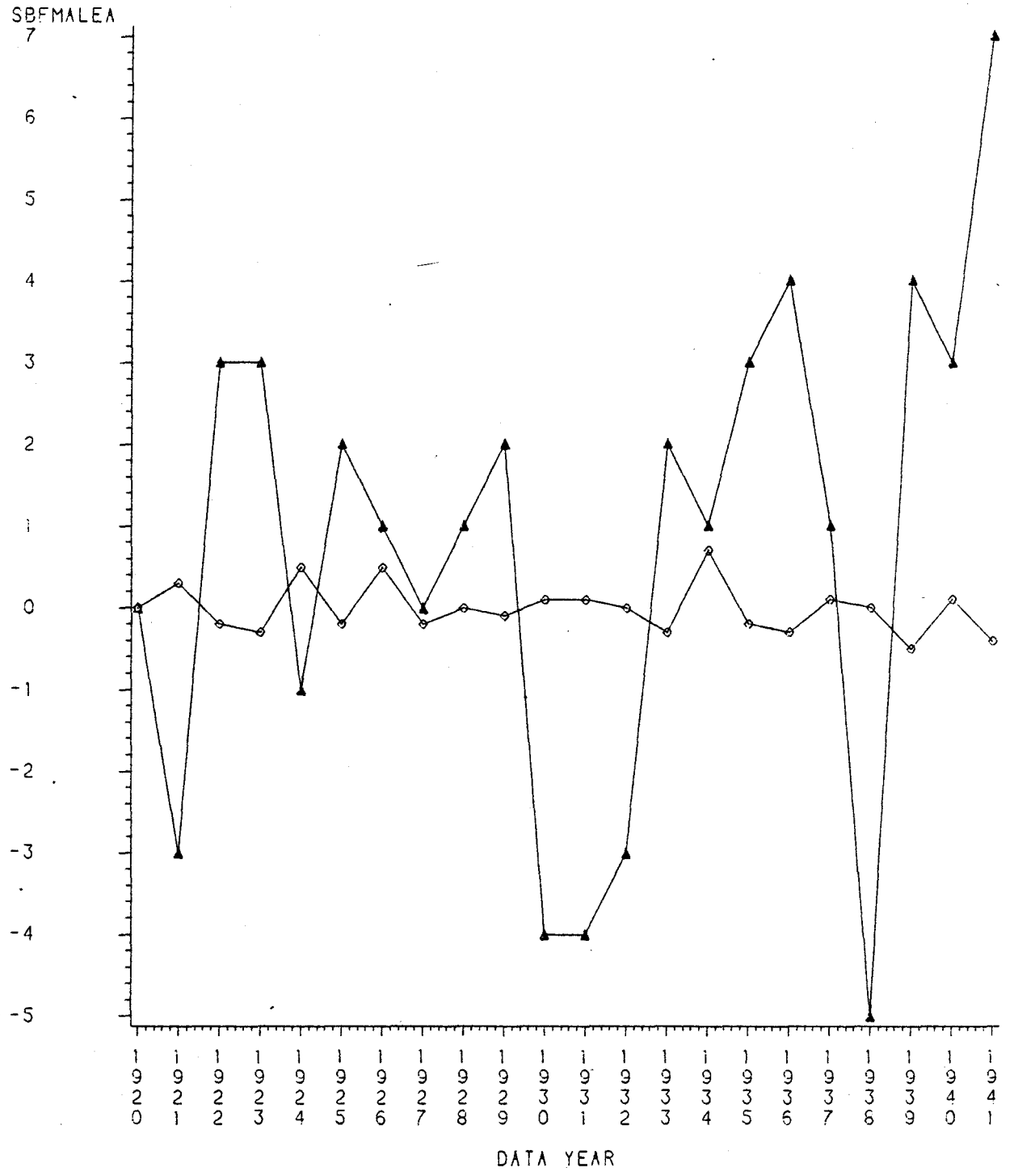

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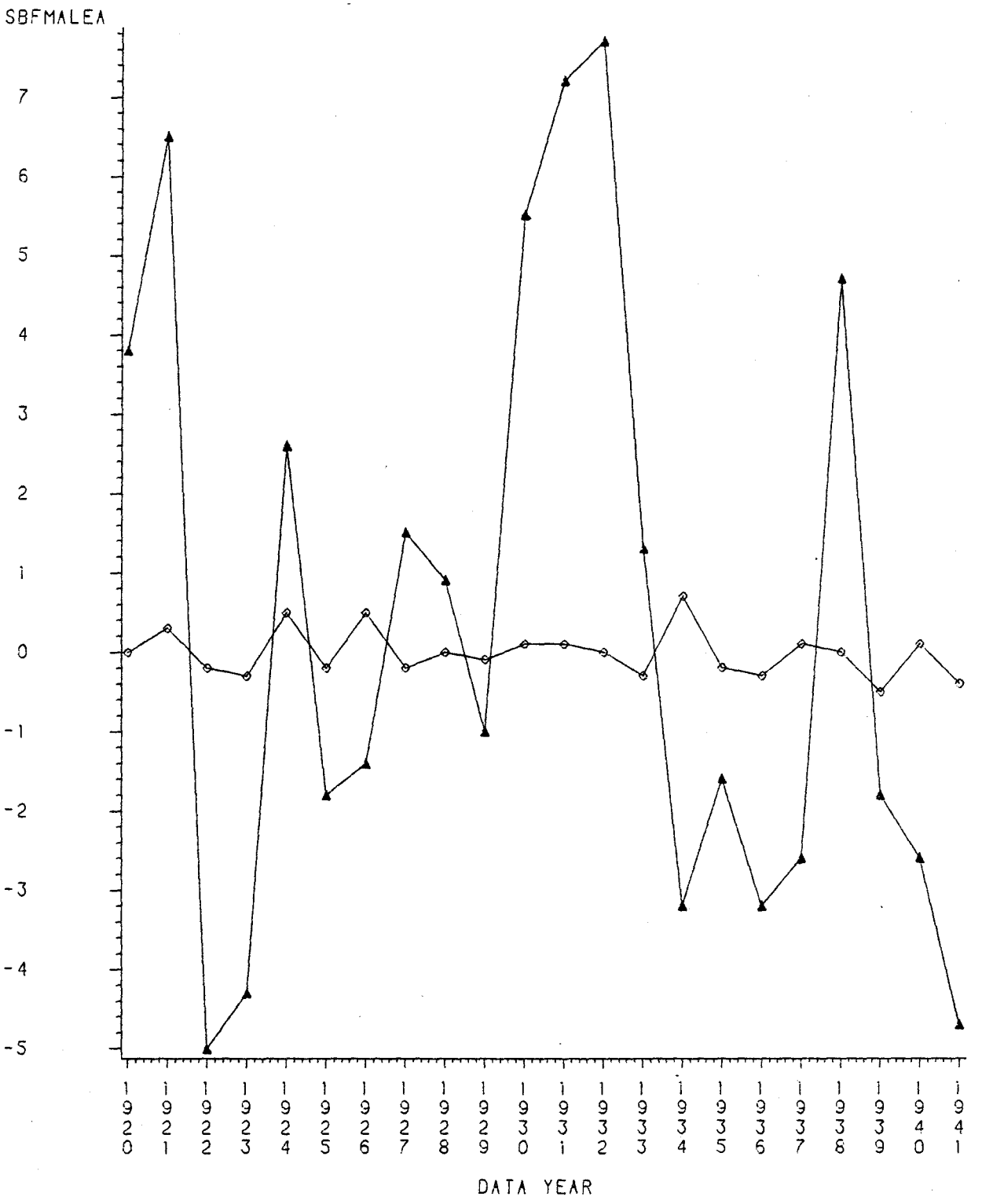

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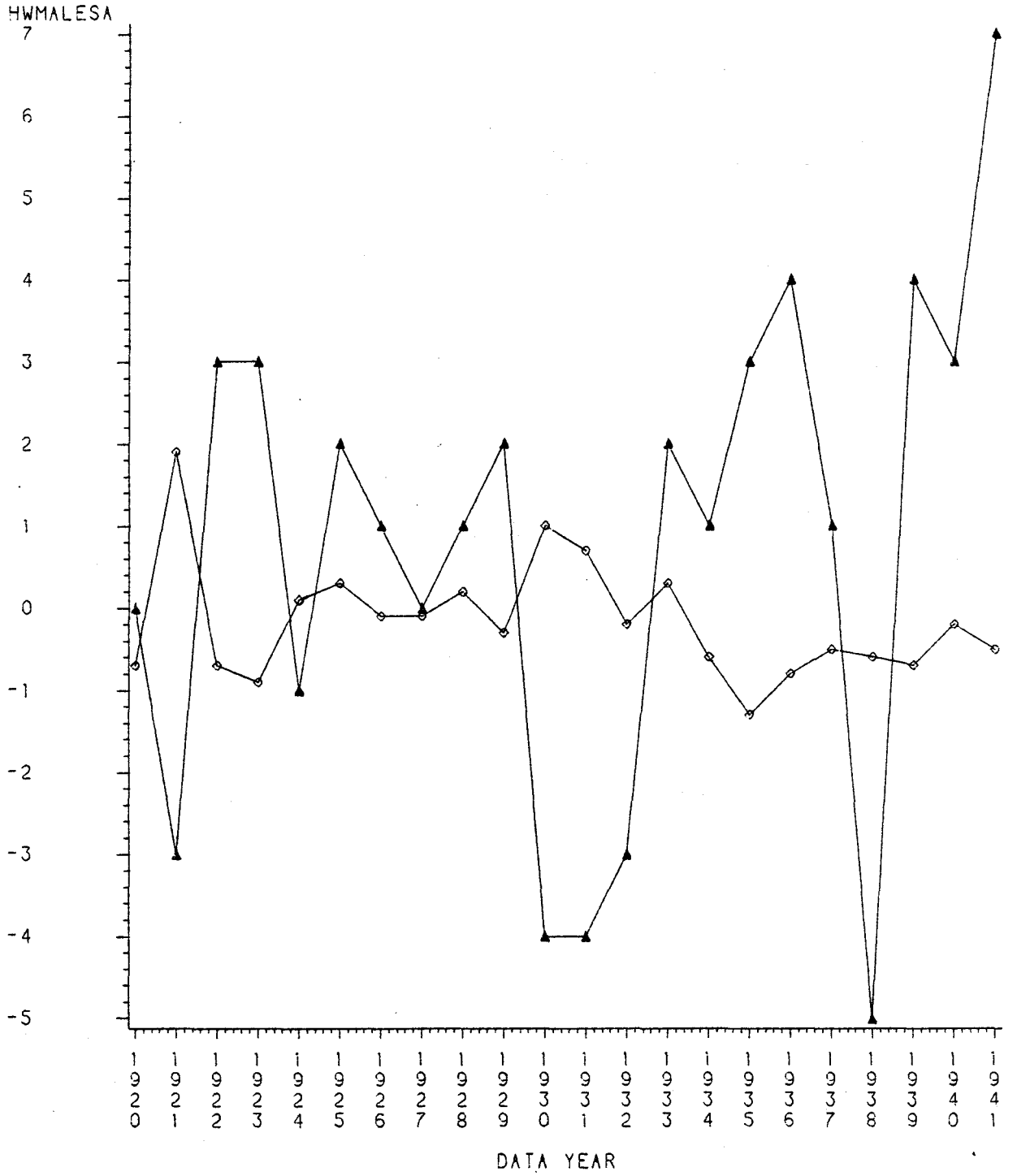

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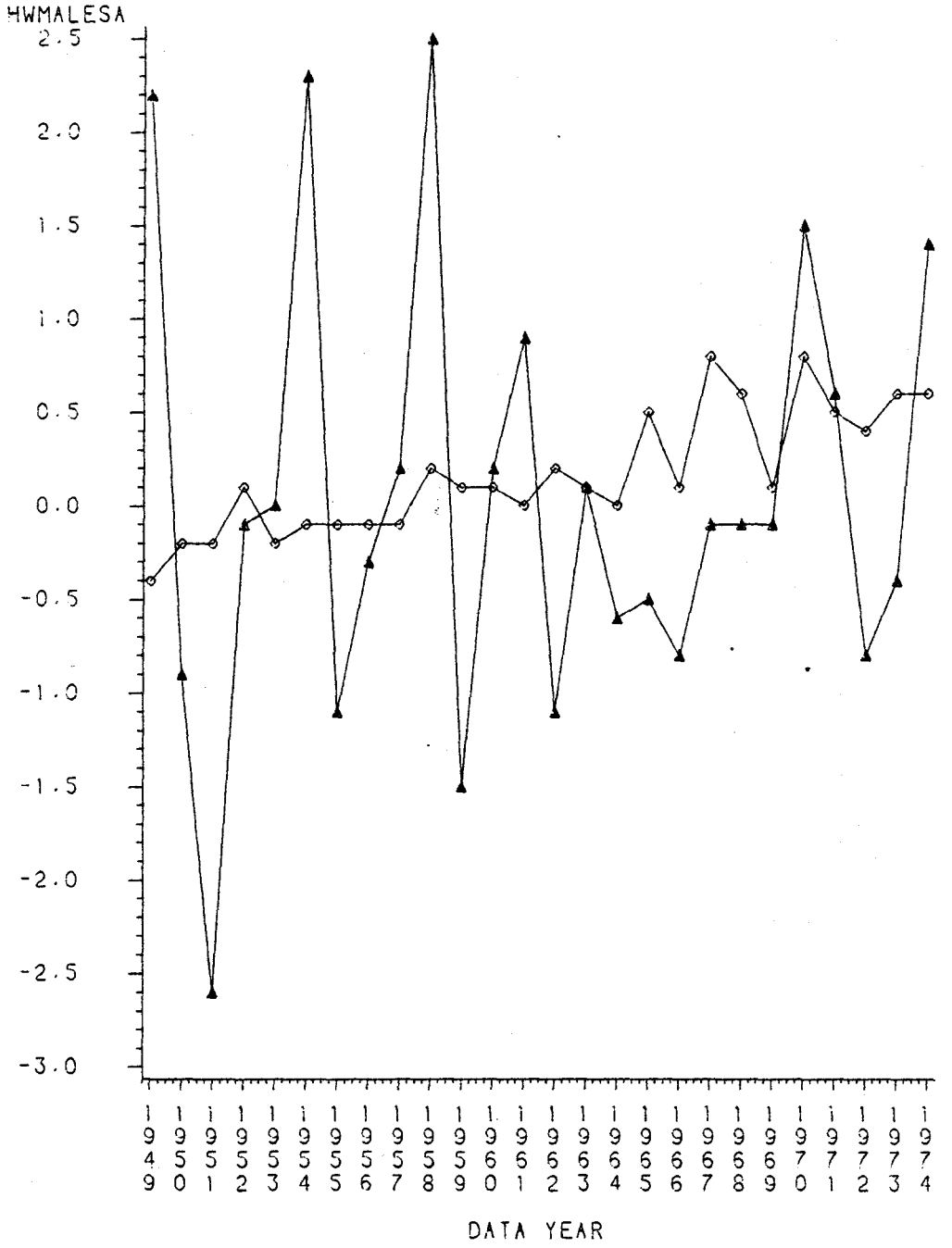

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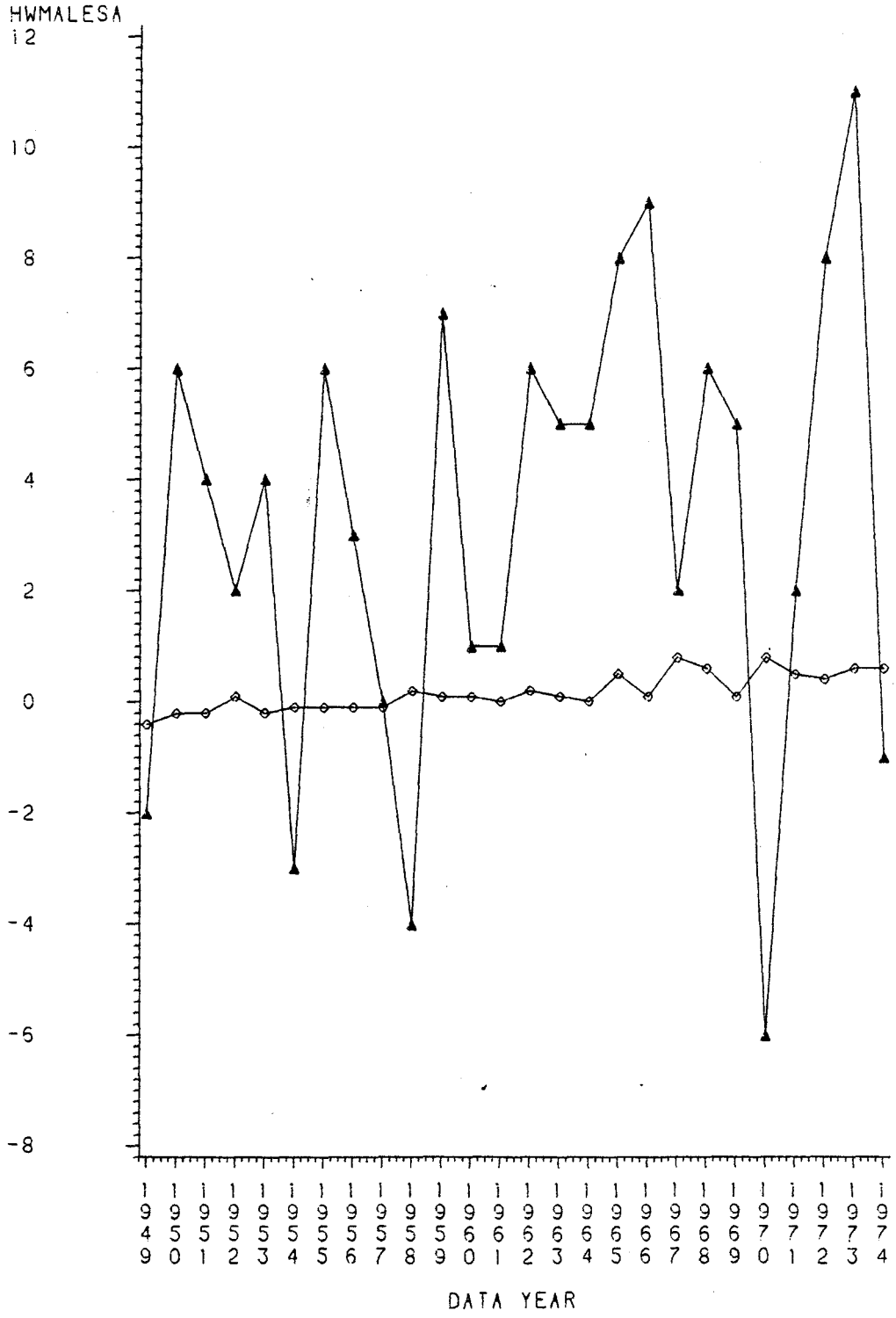

LEGEND: ▲ INDUSTRIAL–MANUFACTURING PRODUCTION ◇ WHITE MALE HOMICIDES

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The dissertation submitted by Conrad M. Kozak has been read and approved by the following committee:

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Dr. Richard Block
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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

April 17, 1984
Date

Lauren Langman
Director's Signature