High School Dropout, Race-Ethnicity, and Social Background from the 1970s to the 1990s

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Abstract

Between 1972 and 1998, data from October Current Population Surveys show that dropout is least among whites and greatest among Hispanics, and it has declined among whites and African-Americans since the late 1970s. Annual dropout rates are successively higher in each of the last three years of high school, and men drop out more than women. Social background favors school continuation among whites relative to minorities, but trends in background were favorable both to whites and blacks. Residence in a large central city increases high school dropout among whites and blacks. The end of compulsory school attendance increases dropout, especially among minorities. Female household headship increases dropout, especially among whites, and post-secondary education of parents and home ownership sharply lower dropout. Social location and background should inform our understanding of changes in high school dropout, along with the dynamics of the economy and of educational policy.

Trends in High School Dropout

among White, Black, and Hispanic Youth, 1972 to 1998

Just as the earning power of high school graduates has declined relative to that of college graduates (Murphy and Welch 1989; Murnane and Levy 1993; Hauser 1993), so has the earning power of high school dropouts. Indeed, in most cases, high school dropouts are already unable to compete for jobs that pay enough to keep one out of poverty; clearly, the economic consequences of dropping out of high school have never been as severe. In this context the highly publicized National Goals for Education (U.S. Department of Education 1990) have proclaimed 90 percent high school completion among six primary goals.[1] Since the middle 1980s, there has been a steady stream of new reports about the familial and economic origins of high school dropout (McLanahan 1985; Ekstrom, Goertz, Pollack, and Rock 1986; Krein and Beller 1988; Astone and McLanahan 1991; Haveman, Wolfe, and Spaulding 1991; Sandefur, McLanahan, and Wojtkiewicz 1992), and the National Center for Education Statistics has produced a regular series of annual reports on trends and differentials in high school dropout (for example, Frase 1989; Kaufman and Frase 1990; Kaufman and McMillen 1991; Kaufman, Kwon, Klein, and Chapman 2000). Thus, the association of high school dropout with educational and economic deprivation, minority status, and family disruption is well documented, as is the global trend in high school dropout, which has generally – but not always – declined since the 1970s.

The possible consequences for high school dropout of higher educational standards – especially test-based promotion and graduation – have stimulated new interest in dropout. Many believe that higher standards – or the expectation of eventual failure – will accelerate decisions to leave school on the part of marginal students. Some argue that high standards create pressure on school administrators, as well as on students, to leave school early if they have poor chances of graduation (Haney 2000). Others declare that lower rates of high school completion are acceptable if that is the price of higher demonstrated competence among those who persist to graduation. However, there is as yet little evidence about the effects of higher standards on school dropout, eventual high school completion, or –

for that matter – on the academic achievements of high school graduates. That is, we are as yet poorly equipped to assess the costs and benefits of tradeoffs between the quality and quantity of high school graduates that may be entailed in standards-driven educational reforms.

This paper will not greatly reduce our ignorance about these important matters. Indeed, it is not clear how long we may have to wait to observe the effects of educational change on dropout rates, or whether the effects of visible policy changes may be swamped by other changes, for example, in overall economic activity. Rather, it attempts to outline the recent social and historic context of high school dropout: Who drops out of high school? What are the major social and economic characteristics affecting high school dropout? And how, over the past three decades, have changes in social and economic background interacted with and contributed to trends in high school dropout?

NATIONAL DROPOUT DATA OVER THREE DECADES

We use a large set of repeated national cross-sectional surveys to assess trends and differentials in high school dropout among whites, African Americans, and Hispanics over the past 27 years in light of changes in the social and economic circumstances of their families of orientation. We describe the overall trends and differentials in dropout, the changing social background of high school students, the effects of social background on high school dropout, and – most important – we report new findings about the racial and ethnic trends and differentials in high school dropout that remain after family background has been controlled statistically.

The analysis is based upon some 167,400 youths aged fourteen to twenty-four, covered in October Current Population Surveys (CPS), 1972 to 1998, who were subject to the risk of high school dropout before completing the tenth, eleventh, or twelfth grades. We use a definition of the transition from school enrollment to completion or non-enrollment developed by Kominski (1990) at the U.S. Bureau of the Census and featured in the annual reports on trends in high school dropout that have been made by the National Center for Education Statistics since 1988. Briefly, a tenth- or eleventh-grade dropout is someone who has completed at most the ninth or tenth grade, who is not enrolled in school

in October of the survey year, and who was enrolled in school in the previous October. Thus, a tenth-grade dropout is a non-enrolled youth who completed the ninth grade in the survey year or who had completed the ninth grade in an earlier year, was enrolled in school in the previous October, but did not complete the tenth grade. A similar definition applies to eleventh-grade dropout. At the twelfth-grade level, the definition is the same except persons who completed high school during the survey year are separately identified and counted as non-dropouts.

This definition is less than ideal because it combines persons who did not continue from one grade to the next in the survey year with persons who dropped out from the next higher grade level during the previous academic year, as if they were in the same cohort. For example, dropout in the 10th grade includes youth who left school after completing the 9th grade as well as those who left school after starting the 10th grade in the previous academic year. It also fails to identify return enrollees among this year's students at each grade level. Finally, the base of students at risk for 10th grade dropout does not include students who failed the 10th grade in the previous academic year unless they dropped out before the October survey.[2] Despite these problems, the definition is useful, perhaps more so than definitions based upon grade completion and enrollment by a specific age, which fail to take account of variation in age-grade progression (Hauser 1997, Hauser 2000).[3] It probably assesses high school dropout more accurately in the Hispanic population than measures based on high school completion or current school enrollment because it excludes youth who have never been enrolled in regular high schools in this country.[4] That is, it is truly a measure of school-leaving, not merely of non-enrollment. Moreover, because the definition of high school dropout focuses on enrollment and grade completion in the year preceding the survey, for the vast majority of high school students it is possible to link survey data on enrollment and dropout to social and economic characteristics of the parental household.

The data file of potential high school dropouts, which includes approximately 129,000 non-Hispanic whites, 21,500 blacks, 11,100 Hispanics, and 5,800 persons of other race-ethnic groups, is drawn from the Uniform October Current Population Survey file, 1968–1990 (Hauser, Jordan, and

Dixon 1993; Hauser and Hauser 1993), as updated and supplemented by similar files for 1991 to 1998. For all potential dropouts, we know age, sex, race-ethnicity, grade at risk, region of residence, and metropolitan location. Except among nondependent youth–those who are a householder or spouse of a householder–and who are not a child or other relative of the householder, we have linked several relevant social and economic characteristics of the household and householders to the youth's record: female-headed household, employment status of household head, number of children in household, education of household head, education of spouse of head, occupation of household head, family income, and housing tenure.

Over the past three decades, 3.1 percent of youths are nondependent at the tenth-grade transition; 5 percent are nondependent at the eleventh-grade transition; and 11.8 percent are nondependent at the twelfth-grade transition.[5] In general, non-dependency is greater among women than men, and it is greater among Hispanics and others than among whites or blacks. For example, at the 10th grade level, non-dependency is 2.4 percent among men and 3.9 percent among women; at the 12th grade level, non-dependency is 8.3 percent among men and 15.1 percent among women. At the 12th grade level, 13.3 percent are nondependent among Hispanics, and 14.7 percent are non-dependent among those in other race-ethnic groups. At the same transition, 12.0 percent of whites and 9.2 percent of African-Americans are non-dependent. Throughout the analysis, we have normed most findings on dependent youth. Social background effects have been estimated only among dependent youth, but effects of grade level, race-ethnicity, sex, age, region, and metropolitan location are based upon all youth at each grade level, as are estimated trends in dropout rates.

TRENDS IN HIGH SCHOOL DROPOUT

Figure 1 shows estimated rates of high school dropout from 1993 to 1997 by race-ethnicity. The estimates shown in the figure are three-year moving averages of data from 1992 to 1998.[6] They are based on the annual dropout rates, tabulated across grades 10 to 12 as in the annual NCES dropout reports.[7] However, we have transformed the annual rates to approximate the rates of dropout

that would be observed across all three years of high school.[8] These are only approximations for several reasons. First, they are based on annual, cross-section data, rather than on the experience of real cohorts across time. Second, they assume constancy in the probability of dropout across grades, rather than the observed tendency for dropout to increase with grade level. From 1972 to 1998, the dropout rate was 3.7 percent in the 10th grade, 4.7 percent in the 11th grade, and 8.9 percent in the 12th grade. Third, they ignore repeated school re-entry and dropout, and they include only enrollment in regular school. Despite these drawbacks, we think the estimates provide valid information about the order of magnitude of dropout from secondary schools during the high school years.

Dropout among African-Americans and Hispanics was similarly high throughout the 1970s – 25 to 30 percent. It rose toward the end of that decade, but was still lower among blacks at the end than at the beginning of the 1970s. However, the black and Hispanic rates diverged in the late 1970s. Dropout gradually declined among African-Americans to between 15 and 20 percent, while it peaked at close to 30 percent until 1985 among Hispanics and then declined to about 20 percent in 1993 – when the black rate was a lower 15 percent. Both minority groups (and non-Hispanic whites) experienced a sharp rise in dropout in the early to mid-1990s – perhaps partly an artifact of changing survey methods in the early 1990s or a result of improving economic conditions[9] – but the overall decline resumed after 1995. Thus, dropout has been consistently higher among Hispanics than among African-Americans since the late 1970s.

Dropout has been much lower among non-Hispanic whites (hereafter, whites) and persons of other race-ethnicity than among African-Americans or Hispanics. With the exception of brief periods in the mid 1970s and late 1980s, the level and trend among "others" has closely tracked that among whites. Among whites, dropout was 15 to 17 percent through the mid to late 1970s and then began a slow and consistent decline to about 11 percent by the early 1990s. The white series shows a rise from 1993 to 1995 that mimics – in muted form – that observed among blacks and Hispanics. Despite the more rapid decline of dropout rates among African-Americans than among whites, race-ethnic differentials remain large. Based upon the most recent NCES report for October 1999, we estimate

the three-year high school dropout rates to be 11.5 percent among whites and others, 18.3 percent among African-Americans, and 21.6 percent among Hispanics.

Two of the most important factors associated with school dropout are metropolitan and suburban residence. Thus, before undertaking a more detailed analysis of the correlates of school dropout, we have examined trends and differentials in school dropout by location. In order to obtain reliable estimates by race-ethnicity as well as residential location, we have grouped years into three nine-year categories: 1972 to 1980, 1981 to 1989, and 1990 to 1998. Figure 4 shows overall trends in cumulative (three-year) high school dropout within five residential categories. Major central cities (and their rings) are 17 large metropolitan areas, which are identified consistently throughout the October CPS series.[10] The third and fourth categories include all other relatively large metropolitan areas.[11] The fifth category comprises smaller metropolitan areas, for which the Census Bureau does not distinguish between central cities and suburban rings, combined with non-metropolitan areas.[12]

The clearest contrast in Figure 4 is between central cities and their suburban rings: Dropout is consistently greater in central cities. For example, during the 1990s, the cumulative dropout rate was 18.0 percent in major central cities and 19.2 percent in other central cities, while it was 10.2 percent and 11.9 percent in their respective suburban rings. In addition, the overall decline in school dropout appears in all areas with but one exception. There was essentially no change in dropout in other central cities between the 1980s and 1990s. The decline is most consistent in the large central cities, from 23.1 in the 1970s to 21.6 in the 1980s and 18.0 in the 1990s. The largest decrease in dropout occurred in the other (small metropolitan and non-metropolitan) areas between the 1970s and 1980s – from 19.0 percent to 13.7 percent.

Figure 5 shows separate trend data by area for each major race-ethnic group. There are clear differentials by area and time period among whites and African-Americans, which mirror those in the total population. That is, clear differences in dropout between central cities and their rings occur in both groups, along with a decrease in dropout rates across time. For example, in the 1990s, the cumulative dropout rate was 12.8 percent among whites and 15.0 percent among African-Americans in the major

central cities, while it was 8.3 percent among whites and only 7.3 percent among blacks in the suburban rings of those cities. In other metropolitan areas, dropout was 17.0 percent among whites and 19.9 percent among blacks in the central cities, but there was a much larger differential in the suburban ring – 10.3 percent among whites and 17.3 percent among blacks. Thus, neither the differential in dropout between African-Americans and whites, nor that between central cities and their rings is merely a consequence of racial separation between schools in those two types of areas.

The trends and differentials are less clear among Hispanics and persons of other race-ethnicity. Dropout decreased steadily in small metropolitan areas and non-metropolitan areas among Hispanics and persons of other race-ethnicity. However, Hispanic dropout rates show little change in the major metropolitan areas.

While major metropolitan areas are identified by name in the October CPS data, the sample is not necessarily representative at that level, and the numbers of observations are often small for specific combinations of race-ethnicity, time-period, and central city vs. suburban location. However, we think it is appropriate to mention a few observations for the very largest metropolitan areas. In New York City, for example, there were at least 1200 observations for whites, African-Americans, and Hispanics, and there – over the past 27 years – the estimated dropout rates were 15.0 percent for whites, 18.4 percent for blacks, and 23.1 percent for Hispanics. In the Los Angeles suburbs, the dropout rates were 11.5 percent for whites and 26.4 percent among Hispanics. In the city of Los Angeles, the dropout rates were 15.1 percent among whites, 20.0 percent among African-Americans, and 28.0 percent among Hispanics. In the city of Chicago, the dropout rate was 14.7 percent among whites, 26.2 percent among African-Americans, and 30.2 percent among Hispanics. Thus, these data support our overall finding that race-ethnic differentials in dropout are large within residential sectors of major metropolitan areas.

TRENDS IN SOCIAL BACKGROUND

Trends and differentials in high school dropout should be viewed in the context of population change. Thus, we begin by reviewing trends and differentials in the characteristics of high school

students, combining the data across grades 10 to 12 in each survey year. In passing, we also comment on the measurement of the social and economic background characteristics that later enter our multivariate analysis of dropout. While there are no great surprises in store, we believe this review of the evidence is necessary because the characteristics of high school students may differ both from those of all families with children in high school and from those of all children of high school age in families. That is, because of the variance in number of children per family and its association with other family characteristics, the social characteristics of high school students may differ from those of families containing high school students. Also, while most children attend and complete high school, there is selectivity in the population of high school students, relative to all children of high school age. This selectivity is presumably larger among populations, like minority youth, for whom high school dropout is greater. For example, since dropout is greater among Hispanic than among non-Hispanic youth, one might find fewer socioeconomic differentials between the households of Hispanic and non-Hispanic youth who attend high school than between the households of all Hispanic and non-Hispanic youth.

Basic Demographic Characteristics

Figure 6 shows the rise of African-American, Hispanic, and other persons as a share of all high school students.[13] From the 1970s to the 1990s the share of African American high school students rose from 13.1 to 15.8 percent, while the share of Hispanics rose from 5.3 to 11.6 percent, and the share of other persons rose from 1.5 to 4.3 percent. Consequently, the share of whites fell from 80.0 to 68.3 percent of high school students. This is partly a result of differential fertility and immigration, but it is also a result of decreasing high school dropout among minorities, relative to the white majority.[14]

Figure 7 shows trends in the distribution of all high school students by residence. The largest share of high school students – between 34 and 38 percent – lives in small metropolitan areas or in non-metropolitan areas. There has been a very slight decline in the share of students in the 17 largest metropolitan areas – both in their central cities and suburban rings – from just over 10 percent to just under 10 percent in the central cities and from 17 percent to 15 percent in the suburbs. The share of students in other metropolitan centers has also declined, from 15.5 percent to 13.2 percent. However,

the share in suburban rings of other metropolitan centers rose between the 1970s and 1980s, when it was about 23 percent, to almost 26 percent in the 1990s.

Figure 8 shows trends in the distribution of high school students in each racial-ethnic group by metropolitan residence. Each group has a distinctive residential distribution, which has persisted in spite of major population redistribution. Few whites are in central cities: More than 80 percent are almost equally divided between suburban rings and small cities or non-metropolitan areas. Half or more of African-Americans and almost as large a share of Hispanics live in central cities of metropolitan areas. However, about 30 percent of African-American high school students, but only 20 percent of Hispanics live outside the large metropolitan areas. Other race-ethnic minorities are roughly similar in residential distribution to Hispanics, but they are increasingly less likely to live in major central cities.

White students are becoming less likely to live in one of the major metropolitan areas, while the shares in smaller cities and non-metropolitan areas have been stable. A constant share of whites – 36 to 39 percent – resides in the other large metropolitan areas – those that were not among the top 17 in 1970. Within both types of areas, there has been a relative shift of whites from central cities to suburbs. Among blacks, there has been a declining share of students in central cities – from 54 percent in the 1970s to 47 percent in the 1990s, roughly balanced by an increasing share in suburbs of other metropolitan areas – from 10 to 16 percent, but not by growth in the suburbs of the major metropolitan areas.

Among Hispanics, there was little change in metropolitan distribution from the 1970s to the 1990s. The main trend was a shift away from central cities other than in the 17 major areas. However, among other race-ethnic groups there was a pronounced shift away from central cities and into suburban rings. The percentage of students in central cities dropped from 42 to 34, while the share of other students in suburban rings rose from 58 to 66 percent.

As shown in Figure 9, there has been a modest regional redistribution of high school students over the past three decades, away from the East and Midwest into both the South and the West. The share of students in the East declined from 23 to 19 percent, while that in the Midwest declined from 29

to 25 percent. In the South, the share of high school students grew from 30 percent to 34 percent, while in the West it rose from 18 to 22 percent.

There are distinctive distributions of race-ethnic groups by region. Figure 10 shows that whites are almost equally distributed over the four Census regions, and there have been small inter-regional shifts corresponding to those in the total population. African American students remain concentrated in the South–where more than half reside–and only about 10 percent of black high school students live in the West. The largest share of Hispanic high school students–about 45 percent–live in the West, and there was a decline in the share of Hispanic students who live in the East from almost 21 percent to about 16 percent. Students of other race-ethnic groups are even more concentrated in the West than Hispanics, but their share in other regions has gradually increased from 33 percent to 46 percent.

Figure 11 shows the age distribution of students at risk of dropout at the tenth to twelfth grade levels. The vast majority are aged 16 to 18 at the time of the October surveys, but a modestly increasing share is 19 or older or 15 or younger. There are also characteristic differences in age distributions between white students and African-American, Hispanic, or other high school students. These reflect strong differentials in age-grade progression as well as high school dropout (Hauser 2000; Hauser, Pager, and Simmons 2000). As shown in Figure 12, blacks and Hispanics are more likely than whites to be age nineteen or older when they are still in high school. Among whites, even in the 1990s, no more than 8 percent of high school students are 19 years old or older, but 13 percent or more of blacks and Hispanics were 19 or older in each period, and the percentage was only slightly lower among students of other race-ethnic groups. Since the likelihood of dropout increases with age, the difference in age distributions could partly account for observable differences in dropout between whites and minorities.

Family and Socioeconomic Background Factors

Figure 13 shows three indicators of the family structure of high school students: the percentage of students living in female-headed households, the percentage of household heads without occupations, and the mean number of children (younger than nineteen years old) in the household. Female headship

increased in the households of African American high school students from 38 percent in 1973 to about 54 percent in 1994. Among Hispanics, female headship increased from 20 to 29 percent. Among whites, female headship grew from 11 to 16 percent, and the level and trend were similar among students of other race-ethnic groups.

We expect that a household without a working head – that is, whose head is unemployed or not in the labor force – is not only likely to be economically deprived, but also, in many cases, it will not provide a normative model of market-oriented behavior or of success in that endeavor. There have been no consistent trends in the share of household heads without occupations – possibly excepting a slight downward shift among African-Americans after the early 1980s. There are persistent ethnic differentials in the share of student households with working heads. Only about 11 percent of white high school students live in a household without a working head, compared to 31 percent of African Americans, 25 percent of Hispanics, and 21 percent of students of other race-ethnicity.

The declining number of children per household is as dramatic a change in family structure as the rise of female headship. Since large numbers of siblings (of which the number of resident children is a somewhat defective proxy) have long been associated with low education, we would expect this trend to contribute to a decline in high school dropout.[15] In the early 1970s, there were an average of 3.6 children younger than nineteen in the households of African American high school students, but this had fallen to 2.2 children by 1997. Among Hispanics, the mean number of children per household fell from 3.3 to 2.5, and among whites it decreased from 2.6 to 2.0. Among students of other race-ethnicity, the number of children per household declined as much as among whites, from 2.8 to 2.2.

Figure 14 shows trends and differentials in the schooling of parents. As a matter of convenience, we show the mean years of schooling of household heads and of mothers, but we later show that there are distinct effects of the elementary and secondary schooling of parents and of their post-secondary schooling. For this analysis, we define two parental variables: one refers to the household head, who may be male or female, but is always defined as the male in a two-parent household; the other refers to mothers, who are the female spouses of heads in two-parent households.

Thus, in Figure 14, students' mothers who are single parents are classified as “household heads,” not as “mothers.”

In terms of parental education, whites are consistently advantaged relative to African Americans, who are consistently advantaged relative to Hispanics. Parental education increased among whites and blacks, but mainly undulated among Hispanics. The mean years of school completed by white household heads was 12.2 years in 1973, and it grew to 13.6 years by 1997. Likewise, the educational attainment of white mothers rose from 11.8 to 13.2 years. Among blacks, the mean schooling of household heads grew from 9.2 years in 1973 to 12.3 years in 1997, and the mean schooling of African American mothers grew from 10.0 years to 12.4 years.[16] Among Hispanics, the mean years of schooling of parents was about 9 years for the decade after 1973, and there may have been some growth in the schooling of household heads after 1983.[17] We suspect that the meager growth in schooling among the parents of Hispanic high school students partly reflects the continuing immigration of Hispanics. The mean educational attainment parents of students of other race-ethnicity was just short of 11 years in 1973, and by 1997, it had increased to 13.3 years among household heads and 12.7 percent among mothers. We would expect these trends in parental schooling to lead to lower rates of school dropout among all groups except Hispanics.

Figure 15 shows trends and differentials in four indicators of the socioeconomic status of high school students: occupational status of the household head, percentage of household heads with farm occupations, mean annual household income, and percentage of households in owner-occupied dwellings. Occupational status is much higher among the heads of white than of black or Hispanic households.[18] Occupational status of household heads has increased regularly among whites, blacks, and others, but not among Hispanics. Other things being equal, these trends will tend to reduce high school dropout in the first three groups. Farm occupations are rare among the heads of households of high school students, and they are declining among whites and blacks. At one time, farm background was associated with lower life chances, but, as reported later, we find that the net effect of farm

background on dropout is negative in all racial and ethnic groups. Thus, other things being equal, the decline in farm origins will tend to increase high school dropout.[19]

The CPS household income item is not of high quality (Hauser 1991), but it is a useful, if rough, indicator of economic standing. It is based upon a single, grouped item pertaining to the twelve months preceding each household's entry into the Current Population Survey. There were great differences in household incomes among whites, blacks, and Hispanics; Figure 15 shows that in constant 1988 dollars white families earned about $27,000, Hispanic families about $14,500, black families about $12,000, and other families about $20,600. The economic cycles of the past 30 years are evident within each race-ethnic category, but they are more clearly defined among African-Americans and others than among whites or Hispanics. In the case of Hispanics, cyclical effects are overlaid on a gradual decline of real income from the 1970s to the 1990s, from about $17,000 to about $13,300.[20] There appears to be no overall trend toward growth or decline in the real family incomes of the other three categories of student households over the past three decades.

Home ownership is a crude measure of wealth. It may also reflect stability in the economic and social situation of a household, or in the quality of neighborhoods where students live. In any of these cases, we would expect home ownership to decrease the chances of high school dropout. The white advantage in home ownership is even sharper than that in household income. About 85 percent of white high school students came from families in owner-occupied housing, compared to about 65 percent of Hispanics and 55 percent of blacks and others. There was a slight decline in home ownership among the families of white graduates after 1981, and there has been a sharp fall in home ownership among Hispanic households. Among blacks, there was a slight and irregular decline in home ownership throughout the period. Only among students from other race-ethnic groups has home ownership been relatively stable. Owner occupancy is associated with reduced dropout, so we would expect the declining prevalence of home ownership among blacks and Hispanics to increase rates of high school dropout.

RACE-ETHNICITY AND HIGH SCHOOL DROPOUT

The observed association between race-ethnicity and high school dropout may be explained in part by differences in residential location and in family and socioeconomic background. Moreover, we have seen that the distributions of those explanatory factors have changed over time. Thus, we have looked to see how well the potential explanatory factors help account for trends and differentials in high school dropout among race-ethnic groups. Figure 16 shows estimated effects of race-ethnicity on high school dropout in selected logistic regression models, estimated separately at each grade level. The simplest model includes only race-ethnicity, gender, and calendar year. The next model adds effects of regional and metropolitan location, and the final model also adds effects of family and socioeconomic background variables. By comparing effects of race-ethnicity across the three models, we can see whether the explanatory variables account for the effects of group membership.

In each model, the effects shown for blacks, Hispanics, and others, in each case contrast the odds of high school dropout in the named group with the odds among non-Hispanic whites. The contrasts are expressed as the difference between the odds of dropout in the named group with the odds among whites. For example, at the 10th grade level and in the first model, the odds of high school dropout are slightly more than 0.4 greater among Hispanics than among whites. Equivalently, we could say that the odds of dropout are 1.4 times as large among Hispanics as among whites. The patterns of the effects are similar at each grade level. Hispanics and – to a lesser extent – blacks have higher overall dropout rates than whites or members of other race-ethnic groups. The observed differences are larger in the 11th grade than in the 10th grade, and larger in the 12th grade than in the 11th grade. Regional and metropolitan location explain only a small fraction of the observed race-ethnic differentials. As shown earlier, race-ethnic differentials in dropout appear within local areas; they are not merely a matter of residential location. However, when family and socioeconomic background factors are controlled, the effects of minority status are reversed. That is, among persons of equivalent social origins, minorities are less likely to drop out than are whites. For example, at the 10th grade

level, in all three minority groups the odds of dropout are about 0.6 less than among whites. This reversal is largest in the 10th grade, and it is much smaller at the 12th grade level. However, the finding strongly suggests that differentials in high school dropout between minority and majority students are primarily a function of family and socioeconomic background and only secondarily depend on residential location.

We have tested this finding by looking at the October CPS data in other ways. Figure 17 reports an analysis parallel to that in Figure 16, except the models have been run independently in each of three, successive, nine-year time periods. The findings are similar in each time period, and they closely parallel those of Figure 16. Overall differentials in dropout are largest between Hispanics and whites, but the differentials between blacks and whites are also quite large. These effects are reduced modestly when metropolitan and regional location are controlled, and they are reversed when family and socioeconomic background is controlled. In Figure 18, we report a parallel analysis where the sample has been split into four age groups – 16 and under, 17, 18, and 19 and older. Again, Hispanic-white dropout differences exceed those between blacks and whites. The differentials are reduced slightly when metropolitan and regional location are controlled, and they are reduced or eliminated when family and socioeconomic background is controlled.

Our finding that family and socioeconomic background account for – or even reverse – minority disadvantage in school dropout is not unique. It is also not widely known, and the reasons for the reversal are also not well understood. While the CPS data cannot tell us why this happens, one plausible explanation is that opportunities outside of school are greater for whites than for minorities. That is, other things being equal, minorities stay in school longer than whites because they lack attractive opportunities outside of school. This explanation is consistent with the pattern of effects throughout Figures 16, 17, and 18, and it is also consistent with the smaller reversals in the 12th grade, relative to lower grades, and at ages 18 and higher, relative to younger ages. That is, as youth complete more schooling or grow older, differentials in labor market opportunity between majority and minority populations grow smaller.

DEMOGRAPHIC AND SOCIOECONOMIC FACTORS IN DROPOUT

Figures 19 to 25 display effects on dropout in the full model estimated separately in each race-ethnic group. That is, the model includes gender, age, grade level, dependency status, and the full set of family and socioeconomic background variables. We examine the effect of each variable – after other effects have been taken into account – and we compare each effect among whites, blacks, Hispanics, and youth of other race-ethnicity.

Figure 19 shows the changes in odds of dropout associated with grade-level. Each effect is expressed relative to the odds of dropout among 10th graders of the same race-ethnicity. The estimated effects of grade level are independent of those of age. In the 11th grade, the odds of dropout among whites and Hispanics are increased by about 50 percent (0.5) relative to the 10th grade, and the differential in dropout is slightly smaller among youth of other race-ethnicity. Among blacks, there is a very small difference in dropout between the 10th and 11th grades. In all four groups, the odds of dropout are much higher in the 12th grade. It is largest among Hispanics, where the odds increase by 3.5 relative to the 10th grade and by 3 relative to the 11th grade. Among whites the increase is more than 2.5, and among blacks and others, it is about 1.5. Overall, dropout increases with grade level during the high school years, and the chances of dropout are much larger in the 12th grade than in the 10th or 11th grades.

In Figure 20, we show the effects of age on high school dropout; here, the contrast of each age is with the chances of dropout at age 17 within the same race-ethnic group. The estimates are independent of the effects of grade level. Note that the range of the vertical scale in Figure 20 is much broader than that of Figure 19; that is, the effects of higher ages on dropout are larger by far than those of grade level. The estimates show increased risk of dropout at exceptionally young as well as at older ages; we have no explanation for this anomaly.[21] The effects of ages 16 vs. 17 and 18 vs. 17 are rather modest – at least by comparison with older ages – but at ages 19 and higher the risk of dropout increases sharply and rapidly. Also, there are consistent race-ethnic differentials in the effects of older ages. The effects are much larger among Hispanics and others than among whites or blacks.

However, we do not want to place too much emphasis on the large effects of ages above 19; recall that these effects pertain to a small fraction of students enrolled in regular schools.

Much of the difference in dropout among metropolitan locations is associated with the different populations of students in those areas. However, as shown in Figure 21, metropolitan residence remains significant and consistent source of differences in the chances of school dropout. In this figure, for each race-ethnic group, the effects compare a given place of residence with residence in the central city of one of the 17 major metropolitan areas. The main findings are that persons of other race-ethnicity have much higher chances of dropout in locations other than one of those central cities, while the chances of dropout are almost always reduced in the other three race-ethnic groups. In particular, among blacks the odds of dropout are reduced in any other area, and the effects are substantial – -0.33 and -0.46 – in major suburbs and in smaller and non-metropolitan areas. There is relatively little variation in Hispanic dropout across the categories of metropolitan residence.

In every race-ethnic group, dropout is consistently greater in the Midwest, South, and West than in the East. Figure 22 shows the regional differentials in dropout for each race-ethnic group, relative to the East. The odds of dropout are at least 0.08 higher in every ethnic group and in every region; in most cases the odds of dropout are higher by at least 20 percent (0.2). Whites do better in the South and West than in the East or Midwest. Among blacks, excepting the lower dropout rates in the East, there is relatively little regional variation. In particular, African-Americans are not at a much larger disadvantage in the South – relative to the Midwest or West. Yet it is in the South where about half of all black high-school students live and where discriminatory traditions and practices are most deeply entrenched. A similar observation holds for Hispanics, that there is relatively little variation in dropout among the Midwest, South, and West. The largest regional differentials occur among youth of other race-ethnicity. Their chances of high school dropout are much larger in the Midwest and South, than in either the East or the West. Those effects may be accountable in terms of the differing ethnic composition of the "other" category in different regions of the nation, but the CPS data do not permit a more thorough investigation of that issue. It is worth noting, however, that because of the heavy

concentration of "others" in the West, the large effects in the Midwest and South do not pertain to a large number of students.

Figure 23 shows the effects of household structure on high school dropout within each race-ethnic group. Each estimate gives the effect of a one unit change in an explanatory variable; these are comparable across race-ethnic groups, but not necessarily across variables. In the case of female headship and non-employed, the coefficient tells us the effect of a shift between the two values of the variable. Thus, among whites, a female head (vs. male head of household) increases the odds of high school dropout by 0.47, and a non-employed head (vs. an employed head of household) increases the odds of high school dropout by 0.28. It is striking that the effects of female headship and non-employment of the household head are much larger among whites than in minority populations – excepting the enormous disadvantage of non-employment – 100 percent – among youth of other race-ethnicity. The most salient comparison in the effect of female headship is between whites – for whom the effect is 0.47 – and African-Americans – for whom the effect of female headship on high school dropout is only 0.06. The coefficient of total number of children gives the effect of one additional child; the increase in the odds of dropout is about 8 percent (0.8) among whites, blacks, and Hispanics, but it is 18 percent among persons of other race-ethnicity.

The effects of parental education on high school dropout in each race-ethnic group are shown in Figure 24. Here, the estimates are strictly comparable across variables and groups because each pertains to a one-year change in educational attainment. We have estimated separate effects of K-12 and post-secondary schooling because the effects of post-secondary schooling are typically larger than those of K-12 schooling. Except in the case of spouse's (usually mother's) K-12 education, there are only modest differences among race-ethnic groups in the effects of parental schooling. In the exceptional case, spouse's K-12 education has a much larger effect among whites than in any of the minority groups. The scale of Figure 24 is compressed because the effects pertain to a shift of a single year of schooling, but the effects are actually quite large and important. For example, each year of a mother's post-secondary schooling is associated with a 10 percent (-0.10) decline in the odds of high

school dropout. This implies a difference of 40 percent between youth whose mothers completed high school and those whose mothers completed college.

Figure 25 shows the effects of socioeconomic background variables on the odds of dropout in the four race-ethnic groups. A 10 point shift in head's occupational status (on the Duncan scale) reduces the odds of dropout by 10 to 14 percent among whites and others, but by only 3 to 5 percent among African-Americans and Hispanics. The effects of a head with a farm occupation are enormously variable by race-ethnicity. Farm occupation reduces the odds of high school dropout by almost half among white youth, but by only 14 percent among African-Americans. However, among Hispanics, it increases the chances of dropout by about 5 percent, and among other race-ethnic groups it increases the chances of dropout by 273 percent. The latter effect is not shown on the diagram because it would distort the scale of all of the other effects. The effect of a one unit rise in the log of income is larger among whites than among minorities, and the effects are successively smaller among blacks, Hispanics, and others. The effects shown in Figure 26 are misleadingly large, for a one unit change in the natural log of income corresponds to a very large dollar change. For example, at the mean of the respective groups, the dollar increases would be $46,000, $20,500, $25,000, and $35,000 among whites, blacks, Hispanics, and others.

Home ownership has a consistently large and salutary effect on dropout in every race-ethnic group. It is associated with at least a 30 percent (-0.3) decline in the odds of dropout in every group, and among whites the effect is 46 percent. These large effects are rather difficult to interpret. They may indicate influences of neighborhood quality or stability or of family wealth.

SOCIAL BACKGROUND AND TRENDS IN DROPOUT

The significant effects of residential location and social background on dropout, together with changes in location and background, imply that observed trends in dropout may, in part, be explained by changes in student population characteristics. In Figure 26 we show the implications of our analyses for the explanation of trends in dropout. The analysis was carried out separately in each of the four

race-ethnic groups. Each plot shows two trend lines: observed and adjusted. The observed line shows the odds of dropout by calendar year (in three-year moving averages) in a logistic regression model that includes only effects of gender, grade-level, age, and dependency status. The adjusted line shows the odds in the full logistic regression model that also includes regional and metropolitan location and family and socioeconomic background. In each case, the odds of dropout in 1972 are taken as the reference point for the time series.

There are large differences in findings among the four race-ethnic groups. Within each group – as we should expect from the glacial speed of population change – the overall shape of the observed and adjusted trend lines is similar. Among whites – and to a lesser degree among African-Americans – the adjusted trend lines always lie above the observed trend lines. This implies that changes in location and background have tended to reduce the chances of dropout. That is, dropout would be higher if it were not for favorable changes in location and background. The effect of those changes is given by the distance between the two trend line. Thus, among whites in the late 1990s, the odds of dropout would have declined by only about 10 percent from 1972, except for favorable changes in location and background. Because of those changes along with the secular trend, the odds of dropout are less than 70 percent as large as in 1972. The effect of changing population composition is less among African-Americans than among whites, but the secular trend is larger. Were it not for changes in location and background, the odds of dropout among blacks would have declined by about 25 percent since 1972, but the combined effects of the secular trend and of changes in social background have reduced those odds by more than 40 percent. In the case of Hispanics and of other race-ethnic groups, there has been no consistent effect of the changing residential location and social background of students. Population change has neither improved nor reduced the chances of dropout in those groups.

DISCUSSION

We think that our analysis provides a strong factual basis for discussions about the sources of high school dropout and policies that may affect the future trajectory of dropout. To be sure, we should

not rest with analyses that necessarily leave out the all-important factor of academic achievement and that gloss over the more proximate social processes of school leaving. At the same time, our work does provide a long-term perspective on current policies and – unlike the larger share of dropout research – it applies consistent, if imperfect, methods and standards to the measurement of dropout across time and place.

If nothing else, we think that our analysis has identified three major sources of trend in dropout.[22] The first – about which we have said very little, despite its great importance – is the changing state of the economy, especially as it affects the demand for labor among youth with varying levels of education and skill. The second is the changing geographic and social composition of high school students. These changes include not only the growth of African-American, Hispanic, and other minority groups, but also the changing residential location, family structure, and socioeconomic standing of those groups. The third major source of change is educational policy. The focus of this conference lies squarely on changes in educational standards and in the implementation of those standards – especially through high stakes testing – but we should not forget that the dynamics of high school dropout occur in the context of other social and economic changes.

Endnotes

[1] However, the operational definition of 90 percent high school completion has varied from time to time (Hauser 1997).

[2] To identify students repeating the 10th grade, one would have to know the grade in which students were enrolled in the year preceding the survey, as well as the highest grade completed. This problem occurs only at the 10th grade level, not at grades 11 or 12.

[3]The NCES reports distinguish among event, status, and cohort dropout rates. The measure used herein is an event rate. A status rate pertains to the share of persons at a given age, e.g., eighteen and nineteen years old, who have neither completed the twelfth grade nor are currently enrolled in high school at the survey date. A cohort rate is similar conceptually to an event rate, but the NCES reports use the former term for dropout over a single year and the latter for dropout over a longer time period in a cohort that has been followed longitudinally. For further discussion of the conceptualization and measurement of high school dropout, see Kominski (1990), Pallas (1989), and Hauser (1997).

[4] That is, in a population experiencing substantial in- and out-migration, school dropout may be quite different from a failure to have completed schooling.

[5]One of the reasons we have declined to analyze a status dropout rate, e.g., the share of eighteen- and nineteen-year-olds who are neither high school graduates nor enrolled in high school, is that the event measure yields higher coverage of youth who still reside in their parental household, thus linking the social and economic characteristics of parents to those of their children.

[6] Thus, although the analysis is based upon data from 1972 through 1998, most graphics show lower and upper limits of 1973 and 1997.

[7] We have cross-checked our estimates against those in the most recent NCES report (Kaufman, Kwon, Klein, and Chapman 2000, Table B3).

[8] The estimates are the complement of the third power of year-to-year persistence in high school. That is, if d is the probability of dropout in a single year, the estimated percentage of three-year dropout

is $D = 100 \times [1 - (1 - d)^3]$.

[9] There were two major changes in the October CPS that affected dropout rates in the early 1990s. First, the new Census educational attainment measure was introduced in 1992. It distinguished high school graduation (including completion of the GED) from completion of the 12th grade. This new measure led to a sharp increase in estimated dropout rates in the 12th grade (McMillen, et al. 1994). Second, the CPS shifted from paper and pencil to computer assisted interviewing in 1994, and this tended to improve the quality of responses by reducing branching errors by interviewers.

[10] These are New York, NY; Los Angeles–Long Beach, CA; Chicago, IL; Philadelphia, PA; Detroit, MI; San Francisco-Oakland, CA; Washington, DC-MD-VA; Boston, MA; Pittsburgh, PA; St. Louis, MO-IL; Baltimore, MD; Cleveland, OH; Houston, TX; Newark, NJ; Minneapolis–St Paul, MN; Dallas, TX; and Milwaukee, WI.

[11] In some cases, the other metropolitan areas are now larger than those originally recognized as the 17 largest areas in the October CPS data.

[12] We are unable to separate the non-metropolitan areas from smaller cities because these have not been classified consistently across time in the October CPS data.

[13]Here and throughout, the titles of the figures refer to "high school students at risk of dropout." By this, we do not intend the current reference to "at risk students," meaning "high risk students," but rather the fact that any student who attends high school may conceivably leave school without completing a grade or may fail to re-enroll after completing a grade.

[14]For convenience in the analysis, and because it makes little difference in the findings, we have partly ignored the official convention that "Hispanics may be of any race." All blacks, regardless of other ethnic origin, are classified as black. Hispanic refers to persons who would otherwise be classified as white or other.

[15] Number of children in the household is a proxy for the student's number of (biological or social) siblings, but it is far from a perfect measure. The main issue is that students of high school age may well have older siblings who no longer live in the parental household.

[16]Because of our definition of household headship, the growth of schooling among African American household heads reflects both the increasing schooling of parents and the increasing prevalence of female headship. Historically, black women have been more likely to complete high school than black men.

[17]Because of the small number of Hispanics in the sample, the trend data fluctuate more than one could reasonably believe, and we are not sure whether this trend is reliable.

[18]Occupational status is based on the Duncan scale, as updated by Stevens and Featherman (1981) and Stevens and Cho (1985). It is a weighted average of the share of occupational incumbents with high education and with high earnings, where the weights were chosen to predict survey-based ratings of occupational prestige.

[19]This may be an artifact of the low placement of farmers on the Duncan scale of occupational status. That is, the negative effect of farm occupations on high school dropout may be read as a contrast between the effect of the low education and income of farm occupations and the actual dropout behavior of farm youth.

[20]We estimated household income by taking the antilogarithms of mean log incomes; thus, on the assumption that the log of income is distributed symmetrically, the reported figures are rough estimates of median household income.

[21] Staff at the Census Bureau have suggested to us that this may be an artifact of age misreporting.

[22] We ignore methodological changes in survey measurement and population coverage, those these have also certainly affected our findings in the 1990s.

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Figure 1. Cumulative High School Dropout Rate
by Race-Ethnicity: Persons 14 to 24 Years Old, 1973 to 1997

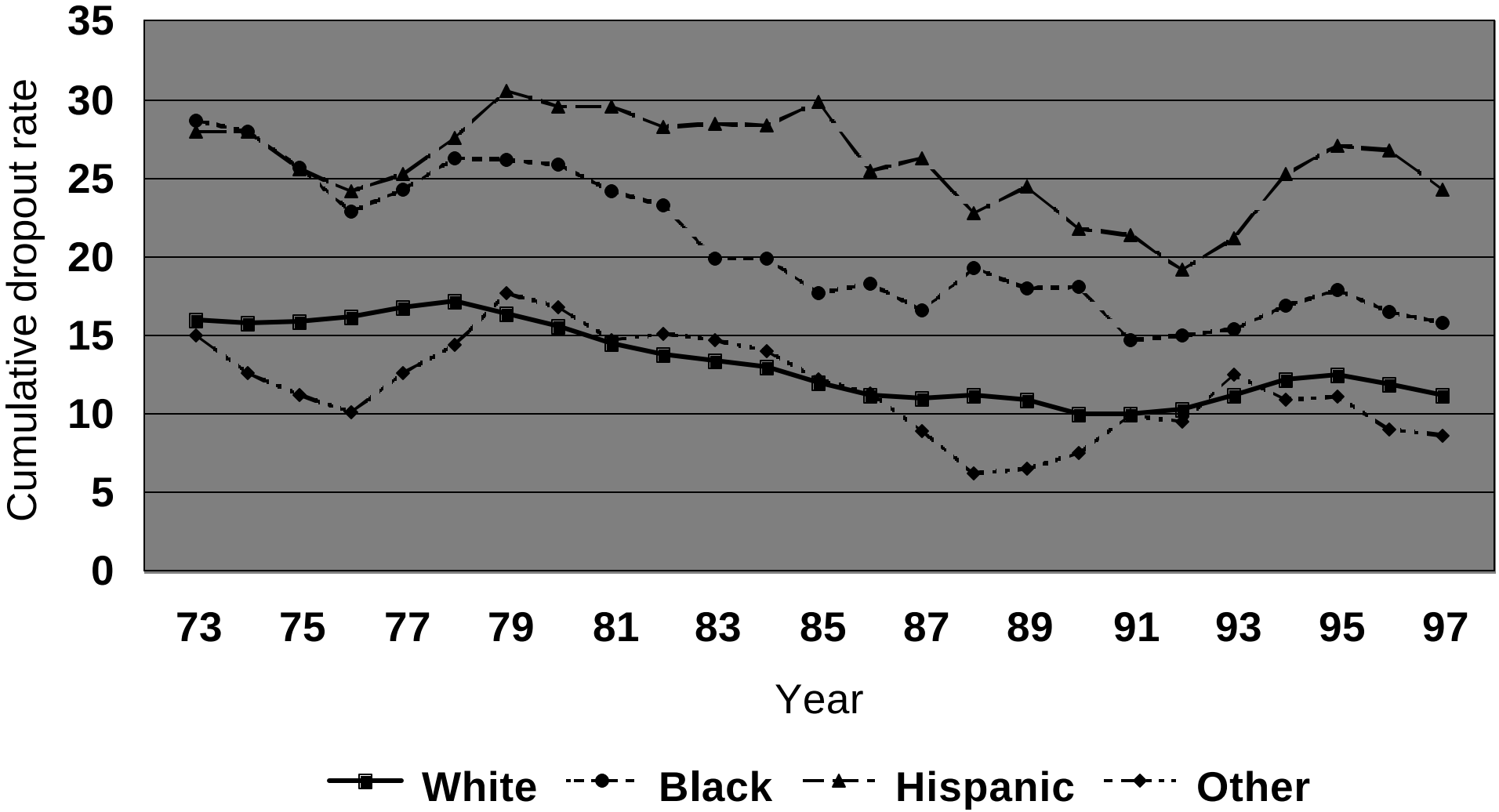


Figure 2. Cumulative High School Dropout Rate by Gender: Persons 14 to 24 Years Old, 1973 to 1997

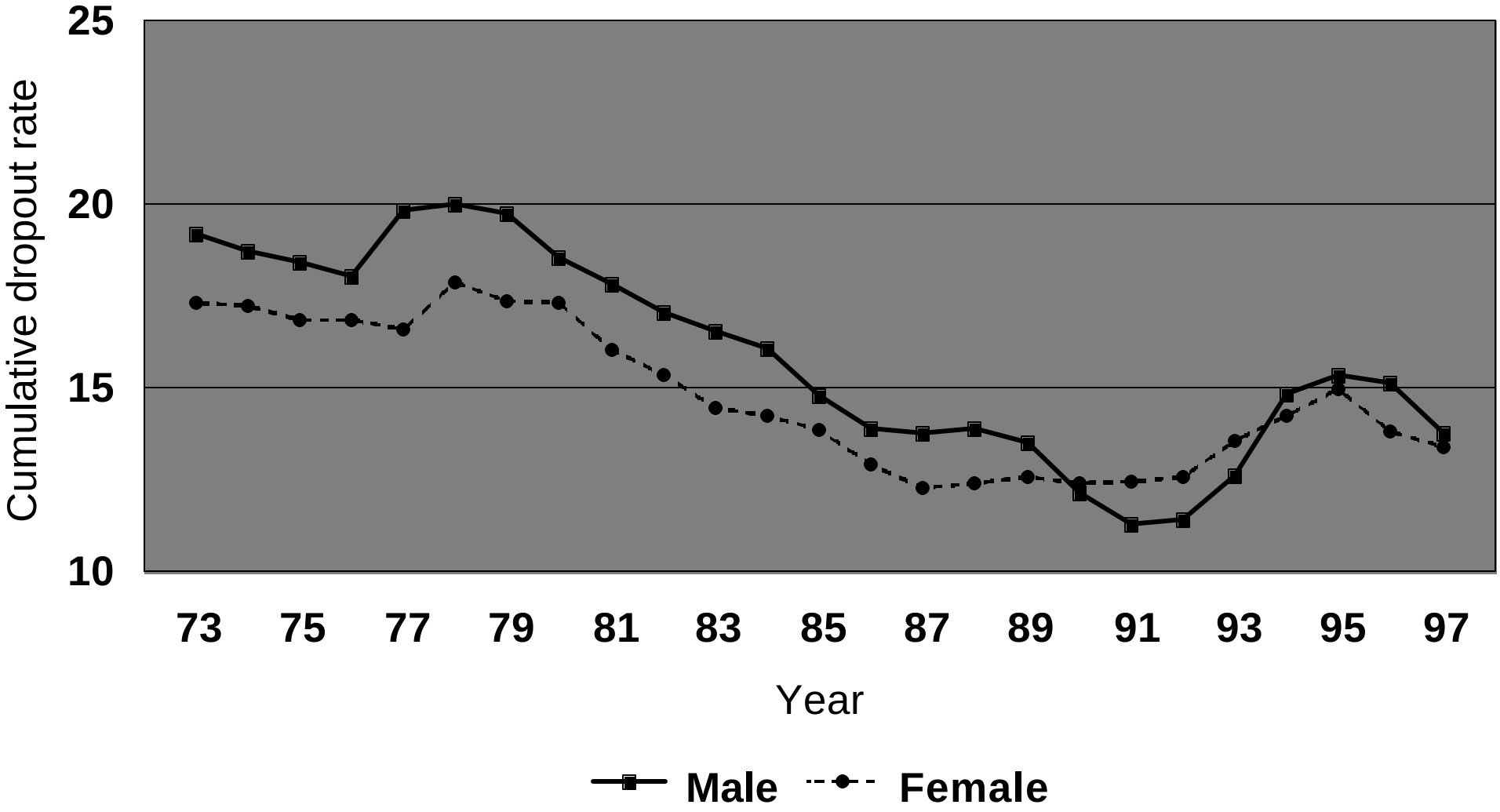
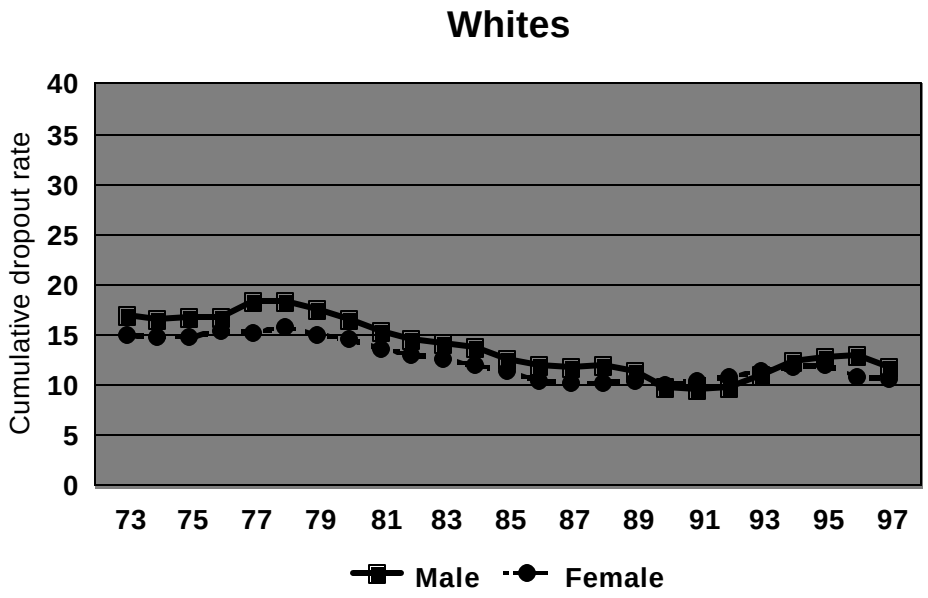
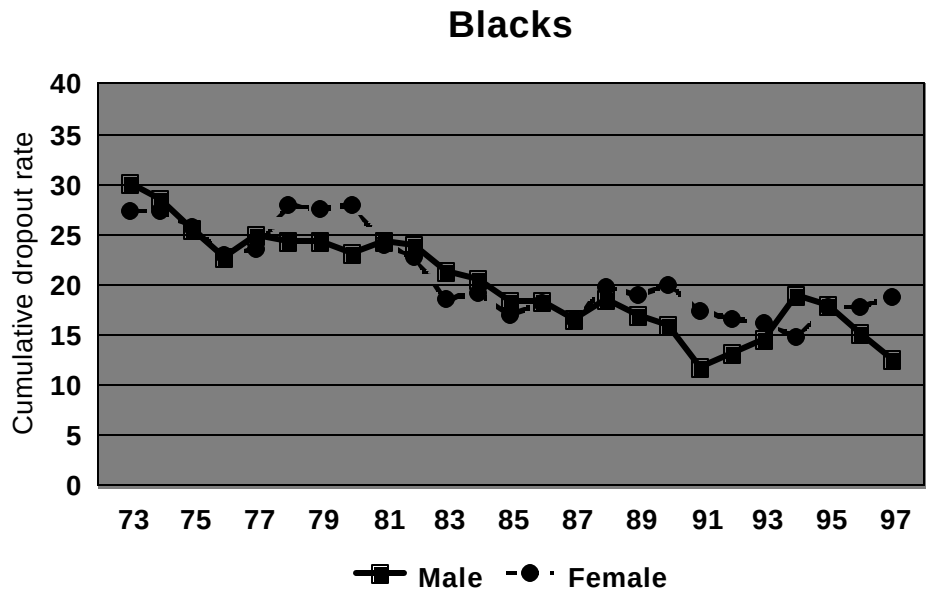
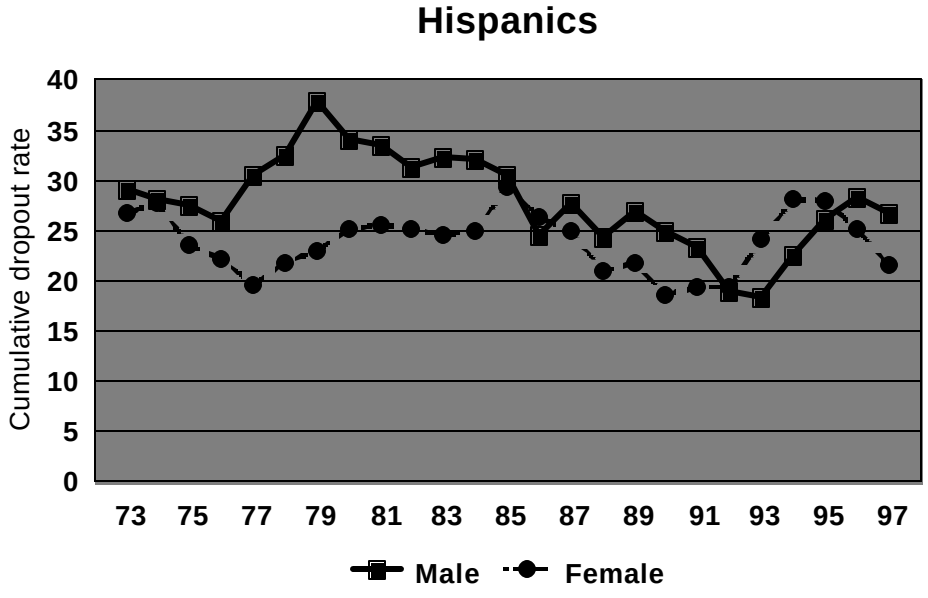


Figure 3. Trends in Cumulative High School Dropout by Race-Ethnicity and Gender: High School Students at Risk of Dropout, 1972 to 1998







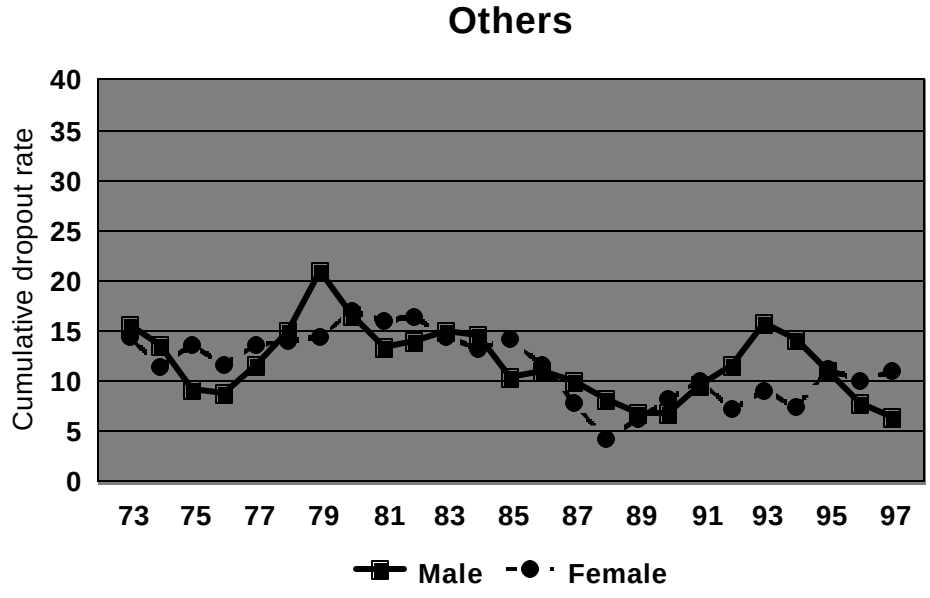


Figure 4. Trends in Cumulative High School Dropout by Metropolitan Location: High School Students at Risk of Dropout, 1972 to 1998

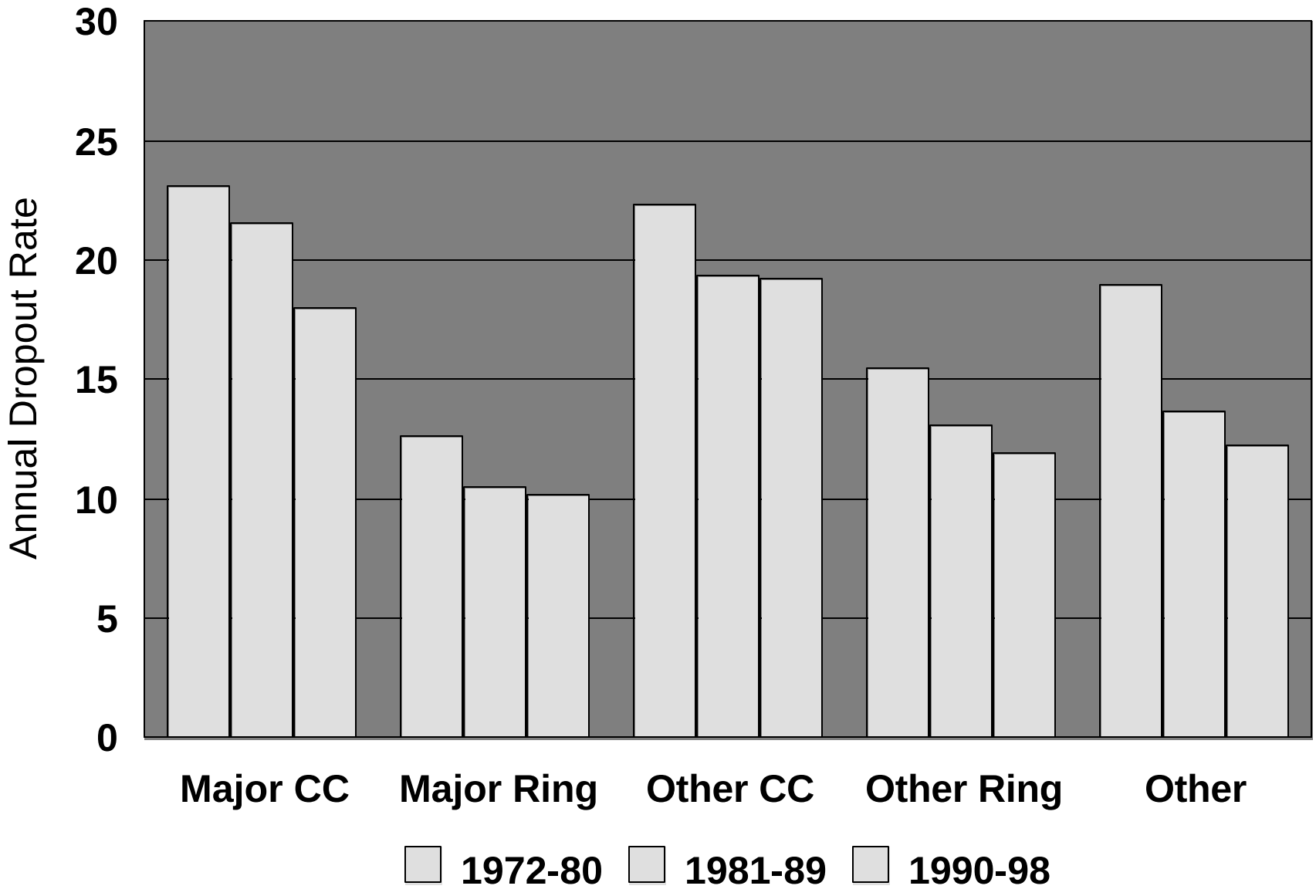


Figure 5. Trends in Cumulative High School Dropout by Race-Ethnicity and Metropolitan Location: High School Students at Risk of Dropout, 1972 to 1998

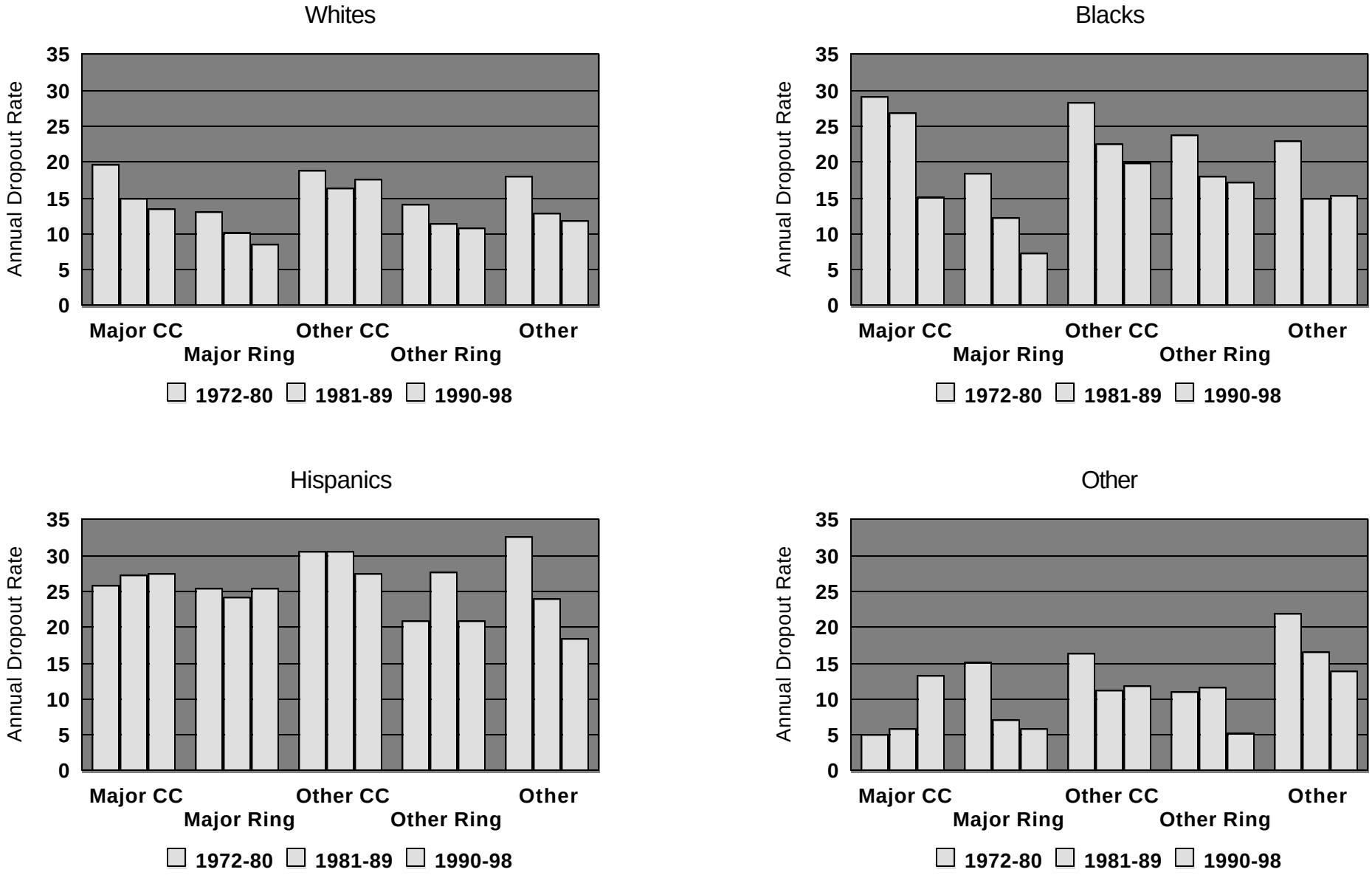


Figure 6. Persons 14 to 24 Years Old and at Risk of High School Dropout by Race-Ethnicity, 1973 to 1997

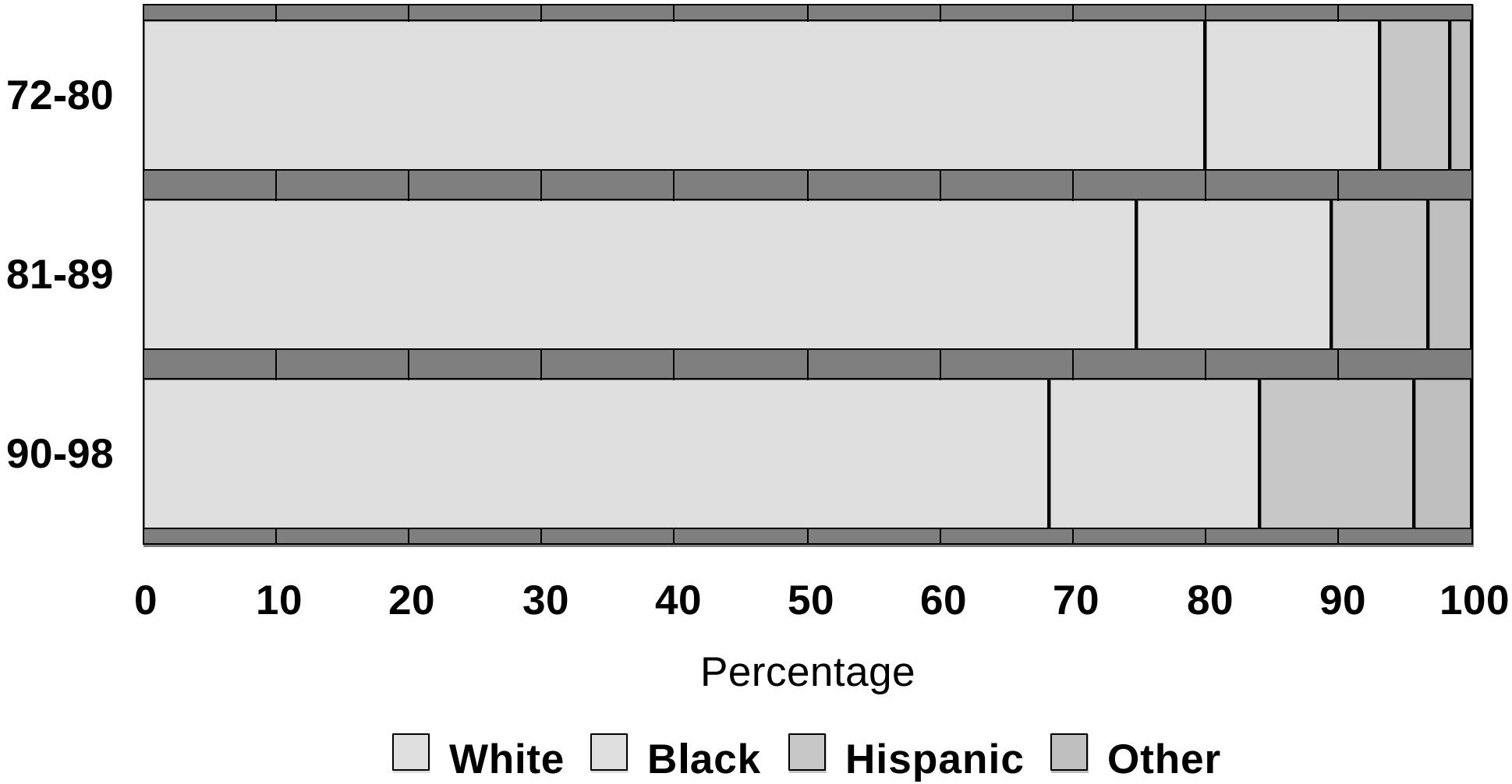


Figure 7. Trends in Metropolitan Distribution:
High School Students at Risk of Dropout, 1973 to 1997

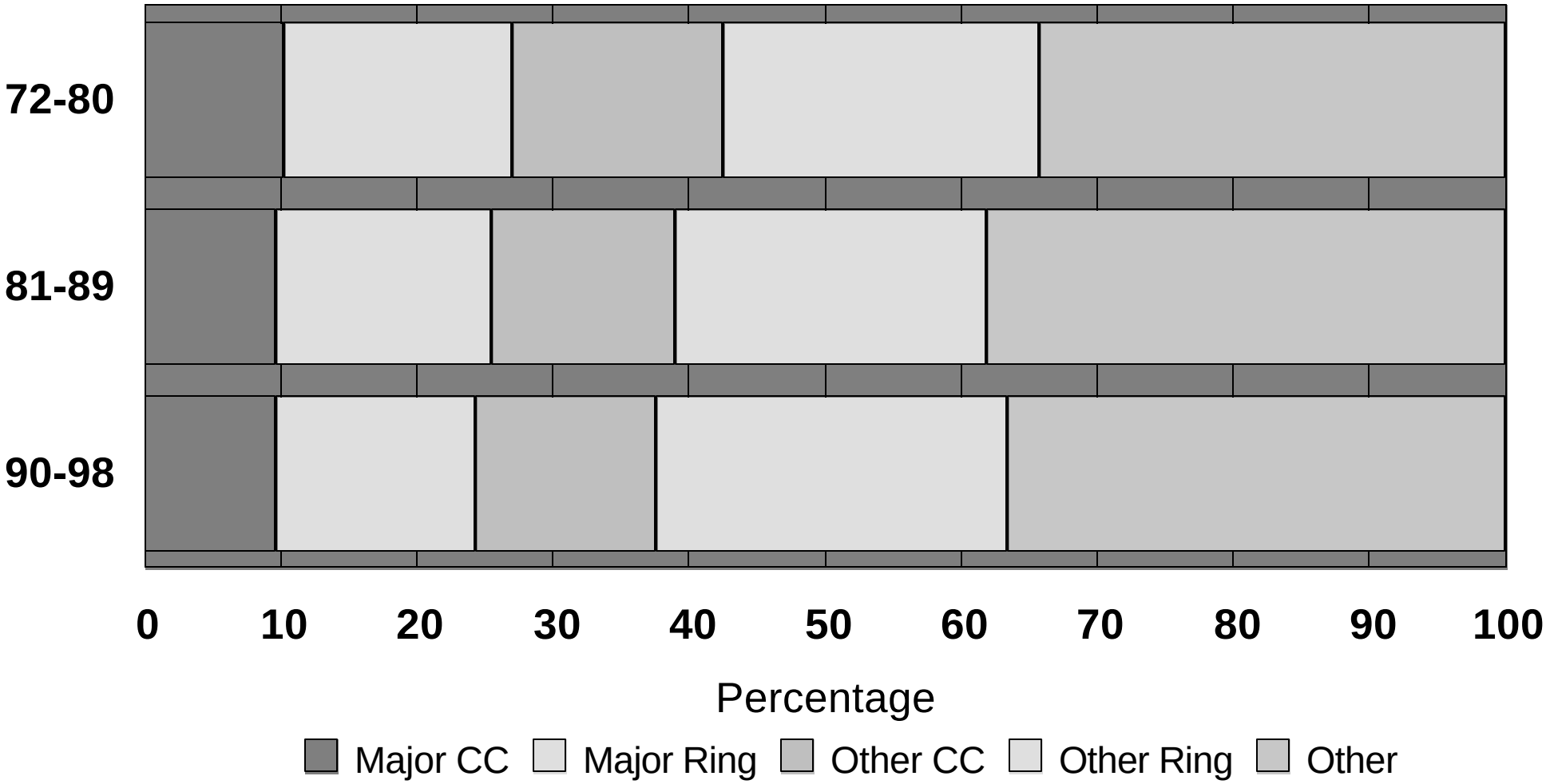
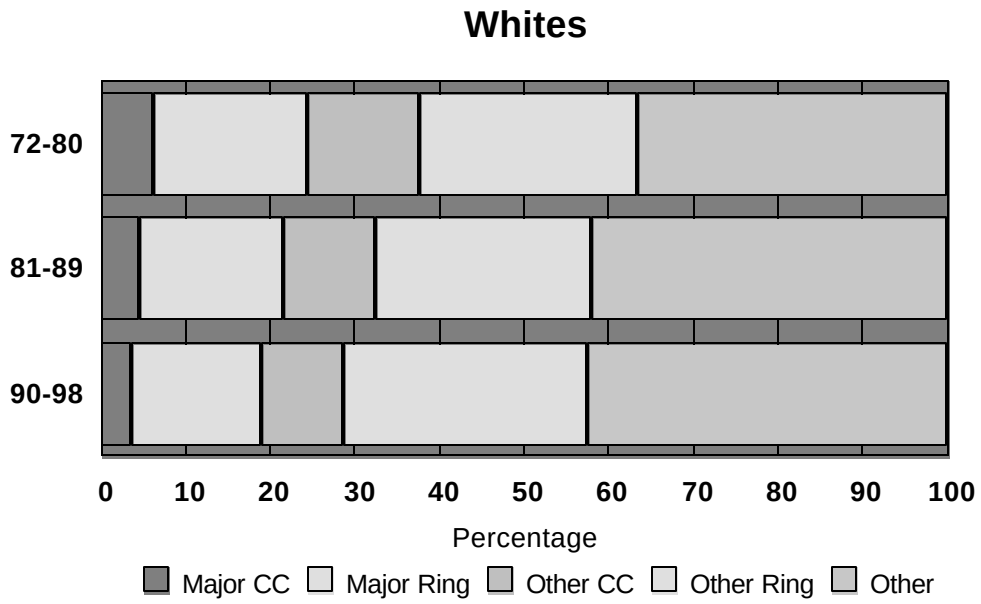
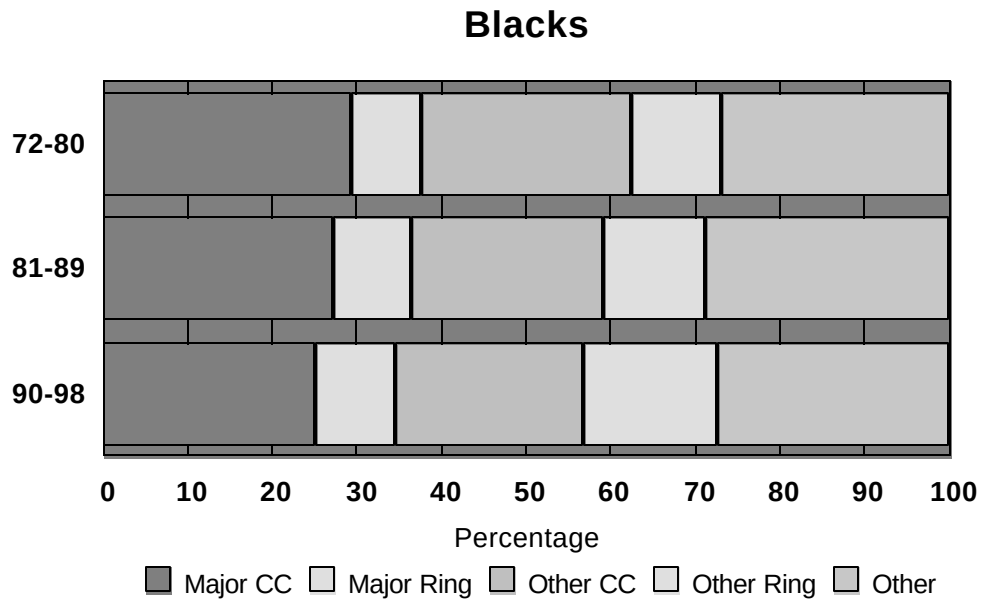
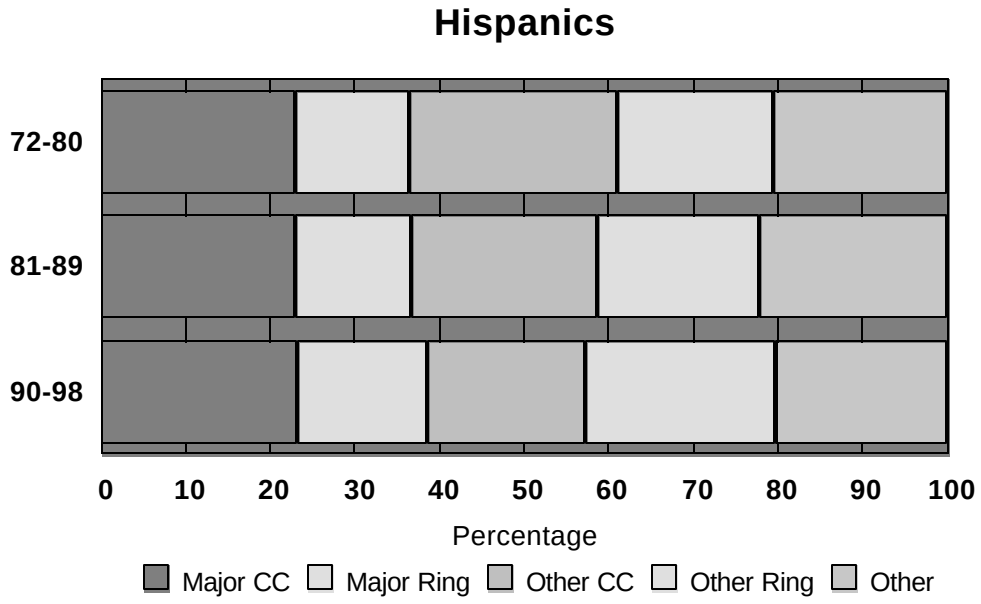


Figure 8. Trends in Metropolitan Distribution by Race-Ethnicity: High School Students at Risk of Dropout, 1972 to 1998







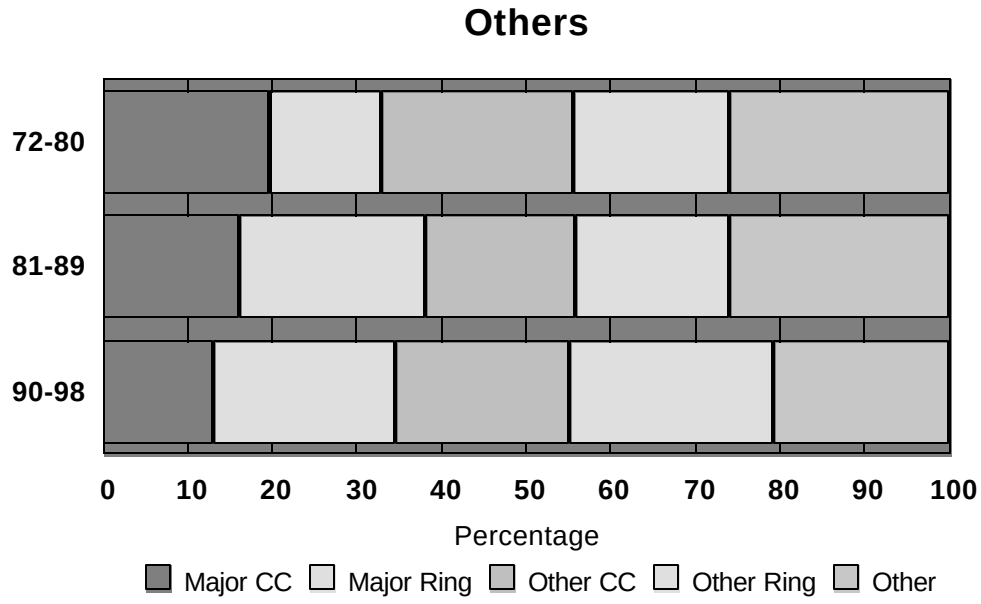


Figure 9. Trends in Regional Distribution:
High School Students at Risk of Dropout, 1972 to 1998

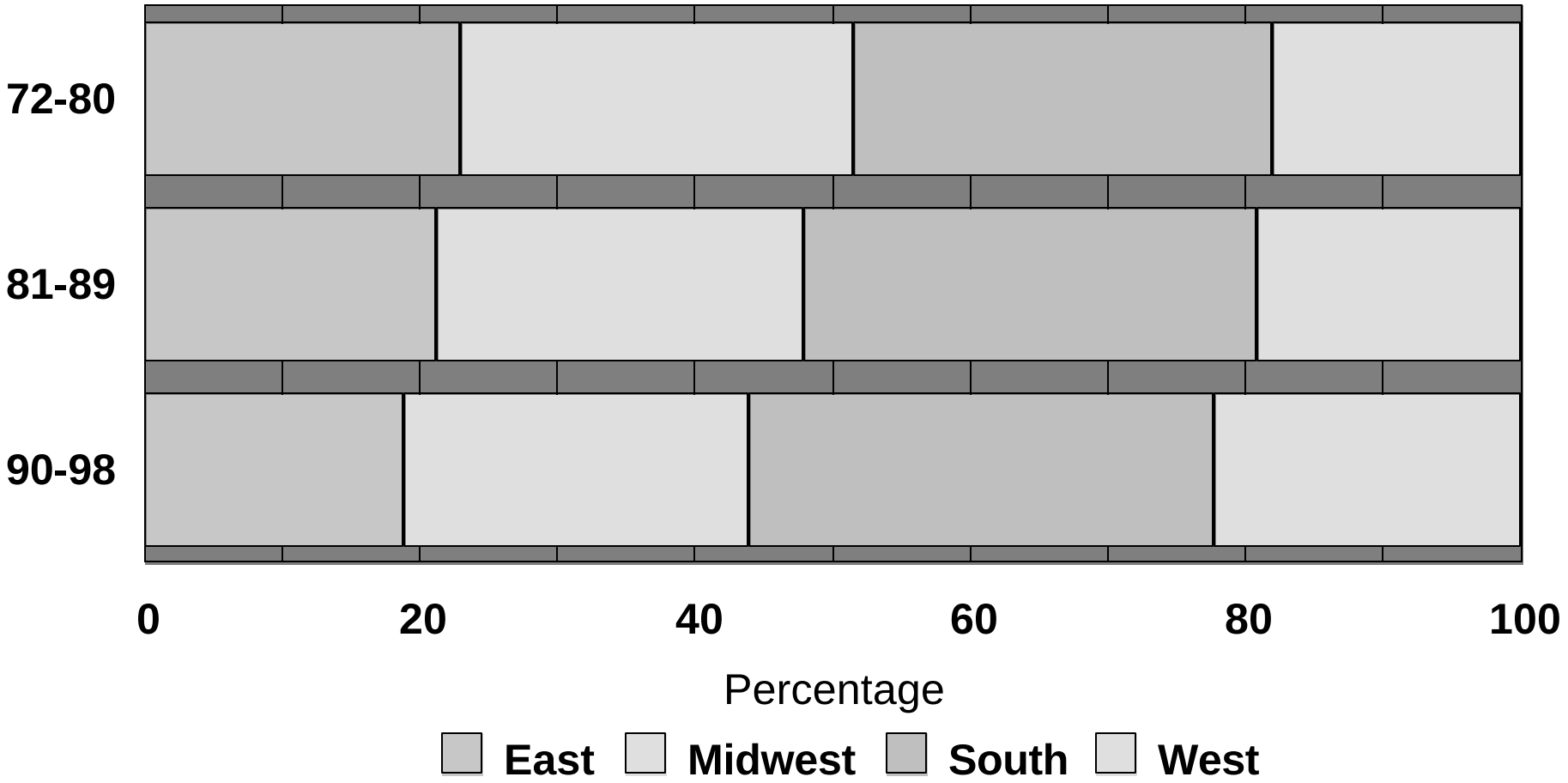


Figure 10. Trends in Regional Distribution by Race-Ethnicity: High School Students at Risk of Dropout, 1972 to 1998

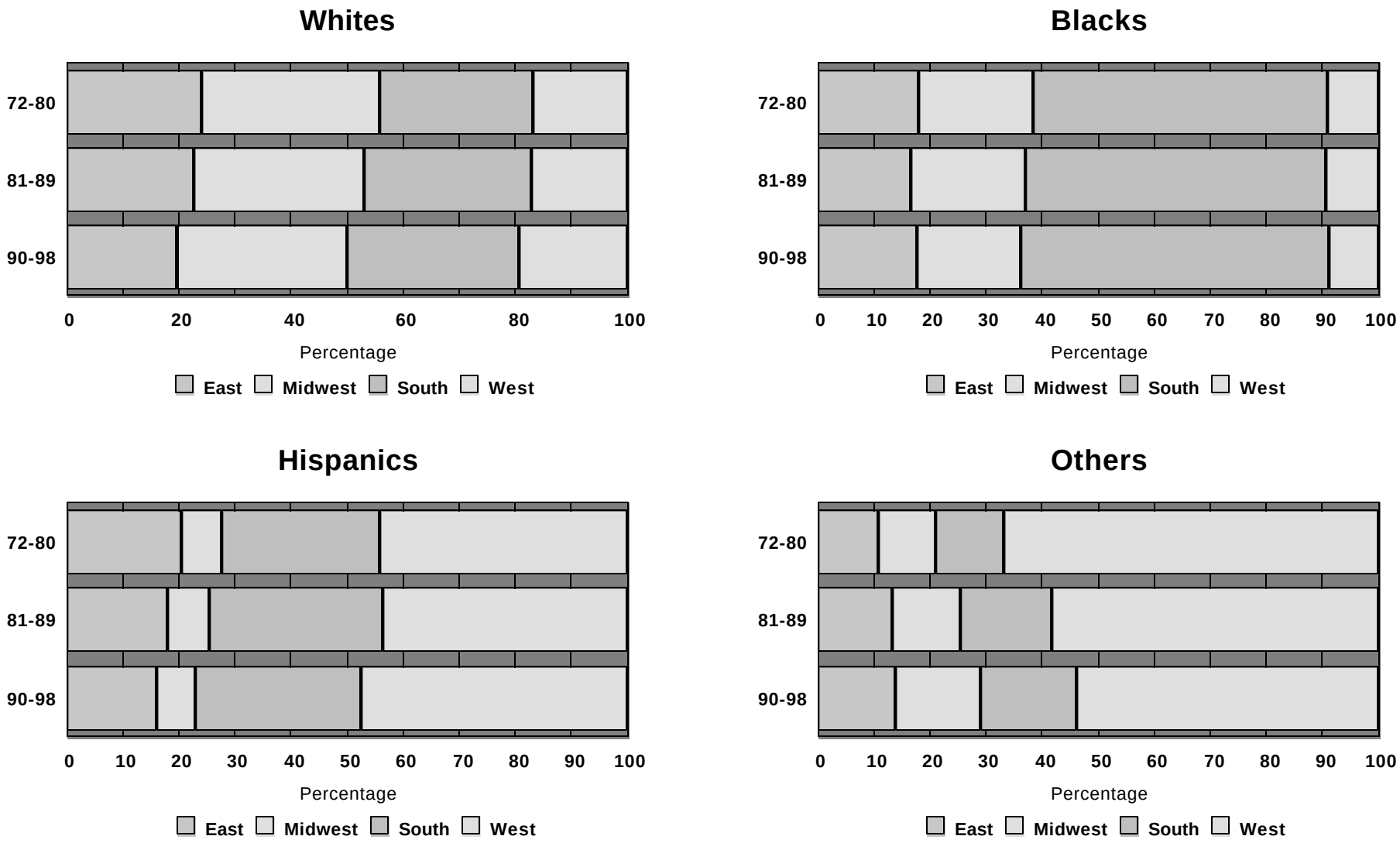


Figure 11. Trends in Age Distribution:
High School Students at Risk of Dropout: 1973-1997

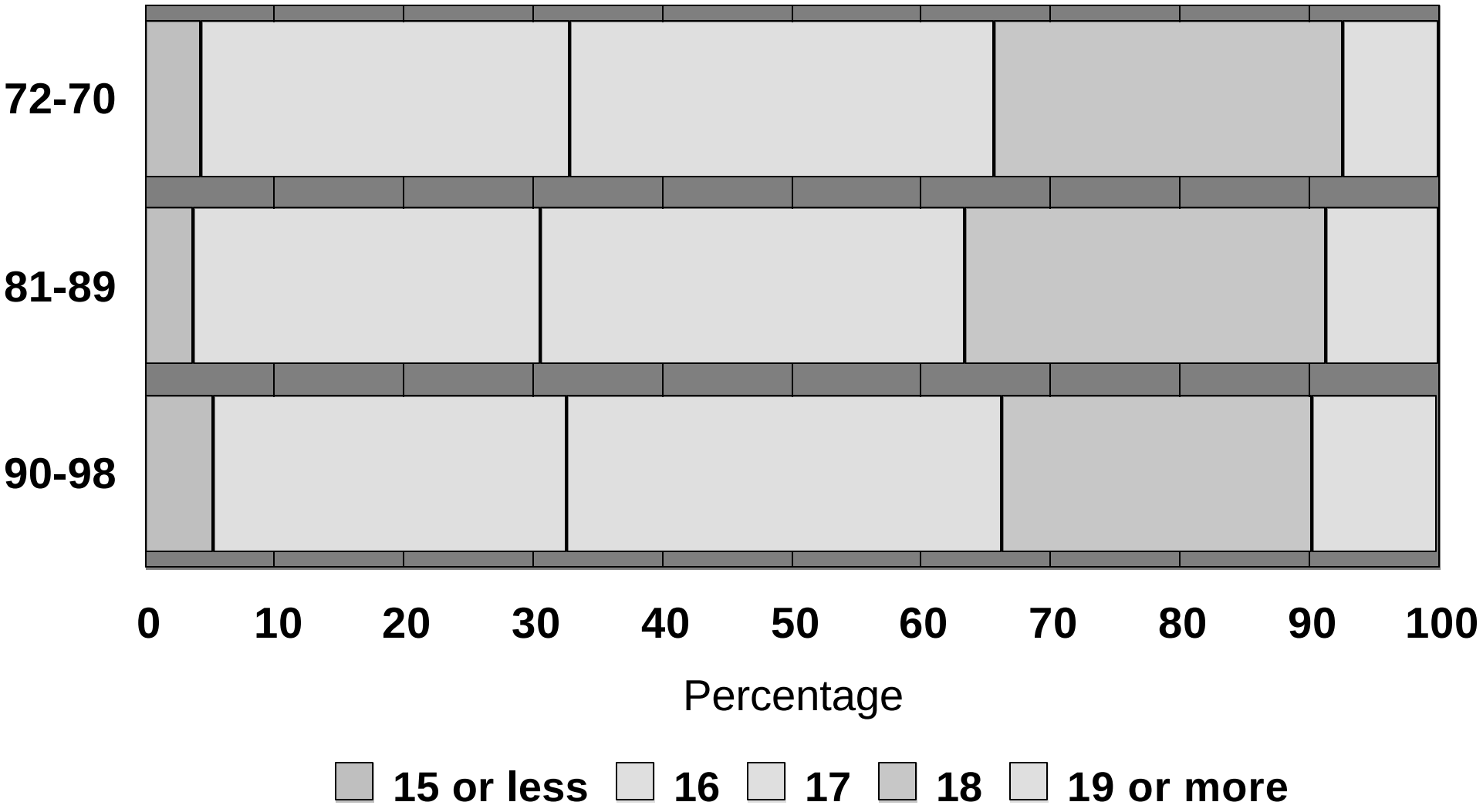


Figure 12. Trends in Age Distribution by Race-Ethnicity: High School Students at Risk of Dropout, 1972 to 1998

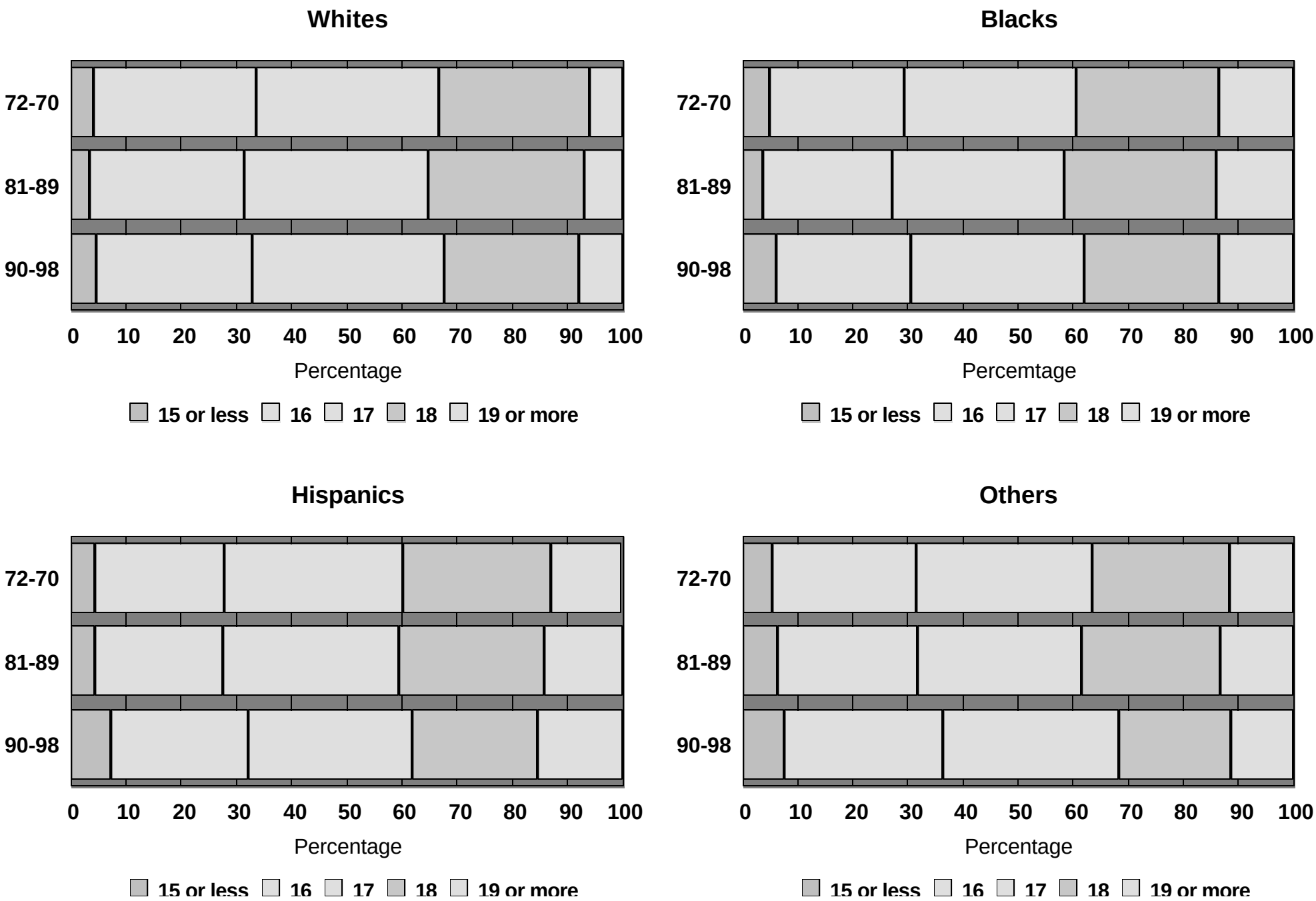


Figure 13. Trends in Household Structure by Race-Ethnicity: High School Students at Risk of Dropout, 1973 to 1997

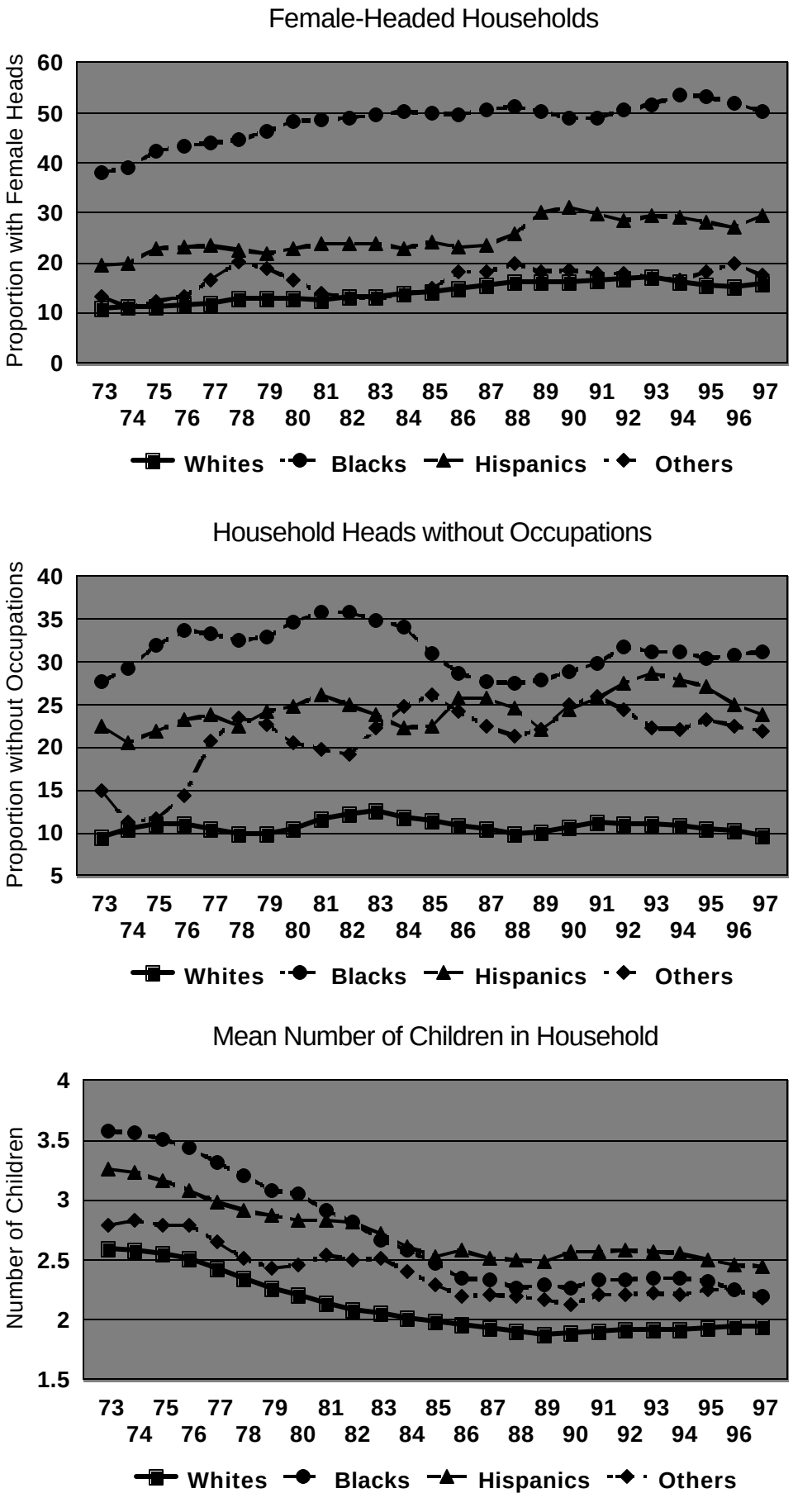
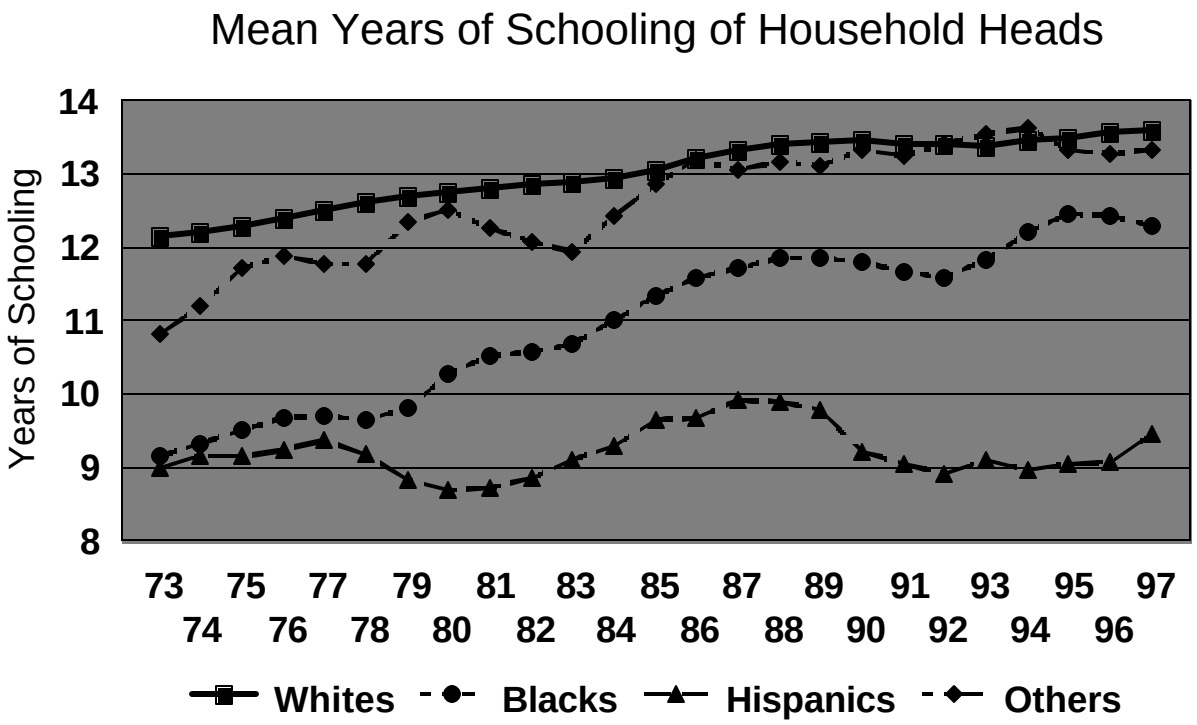


Figure 14. Trends in Parental Schooling by Race-Ethnicity: High School Students at Risk of Dropout, 1973 to 1997



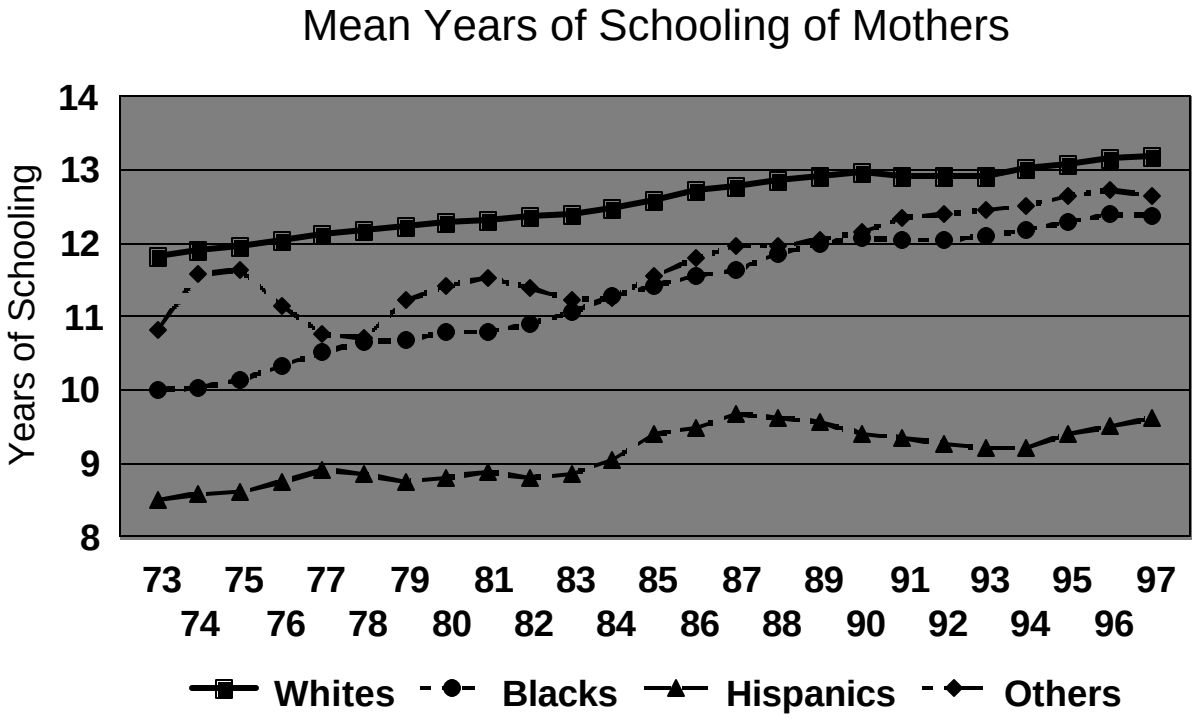
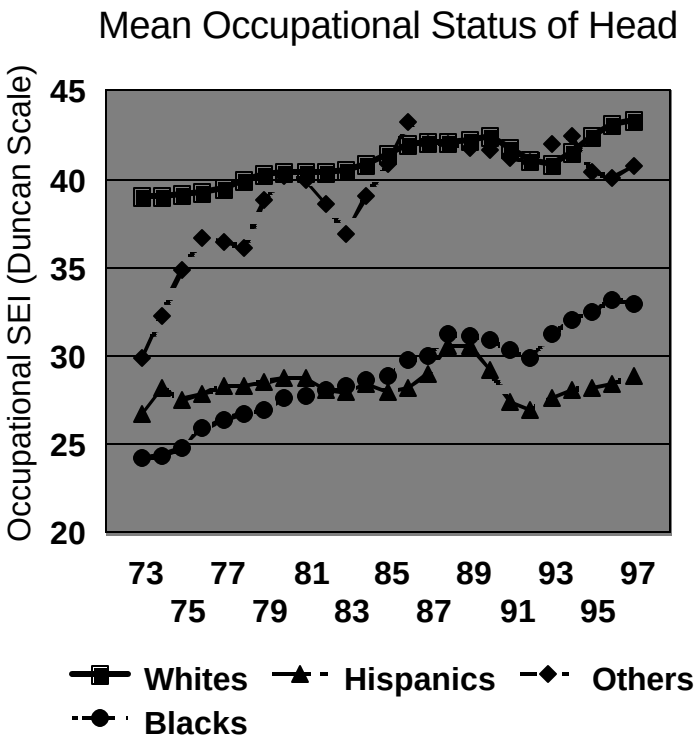
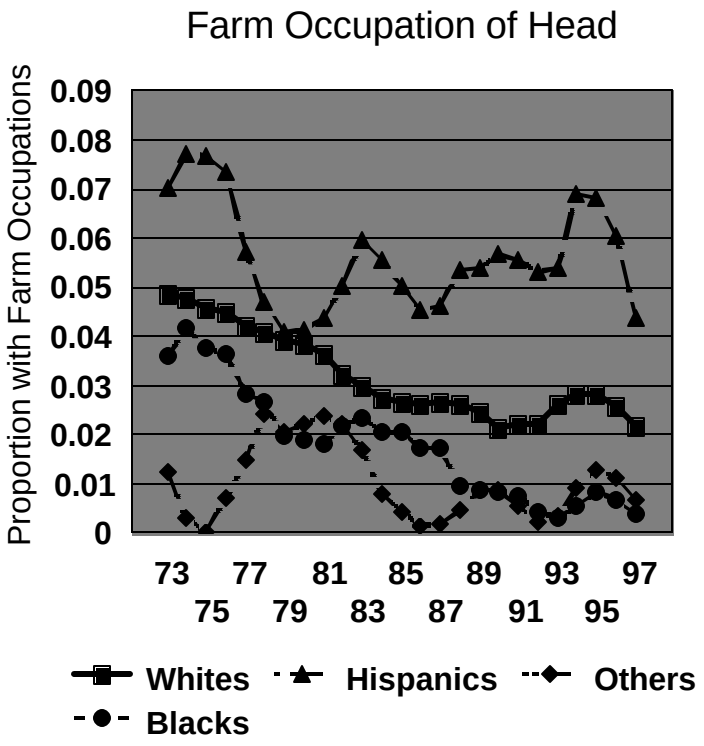
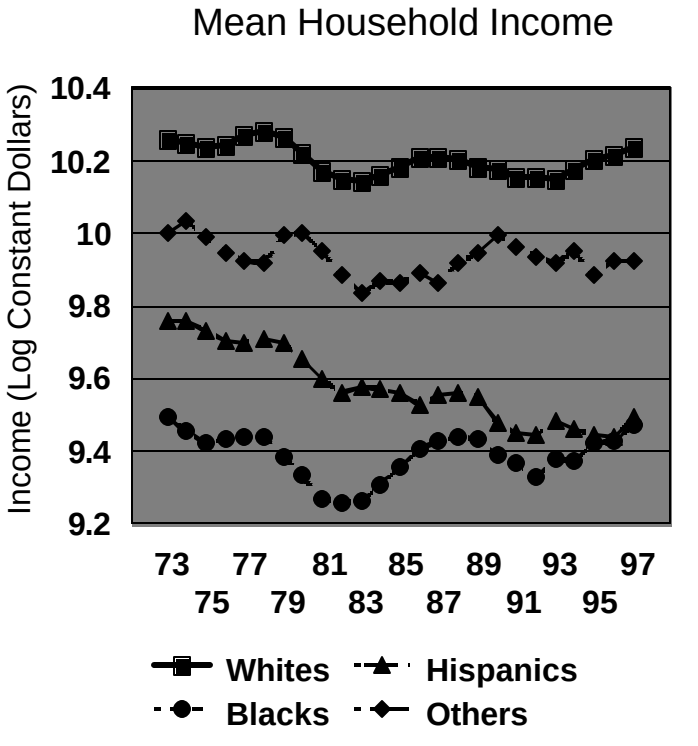


Figure 15. Trends in Socioeconomic Status by Race-Ethnicity: High School Students at Risk of Dropout, 1973 to 1997







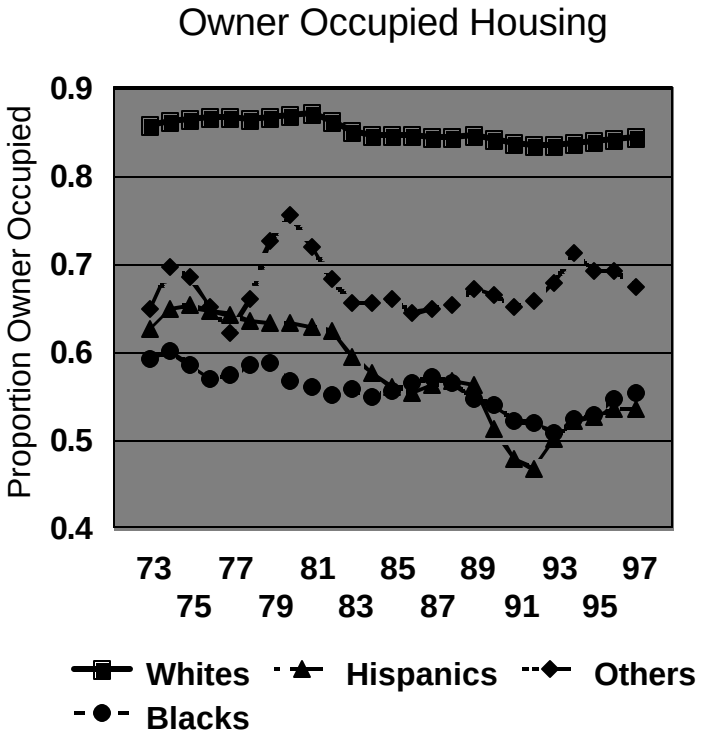
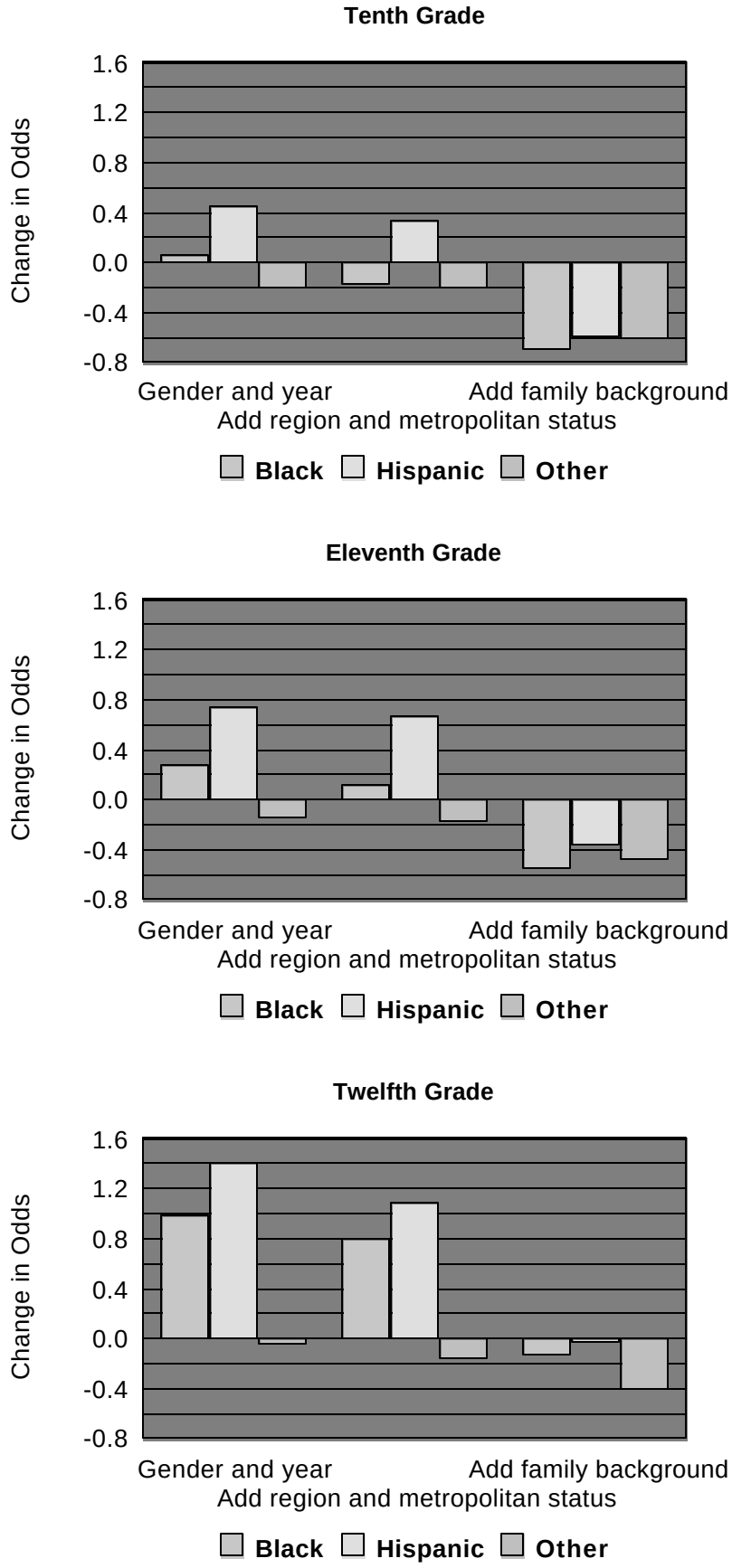
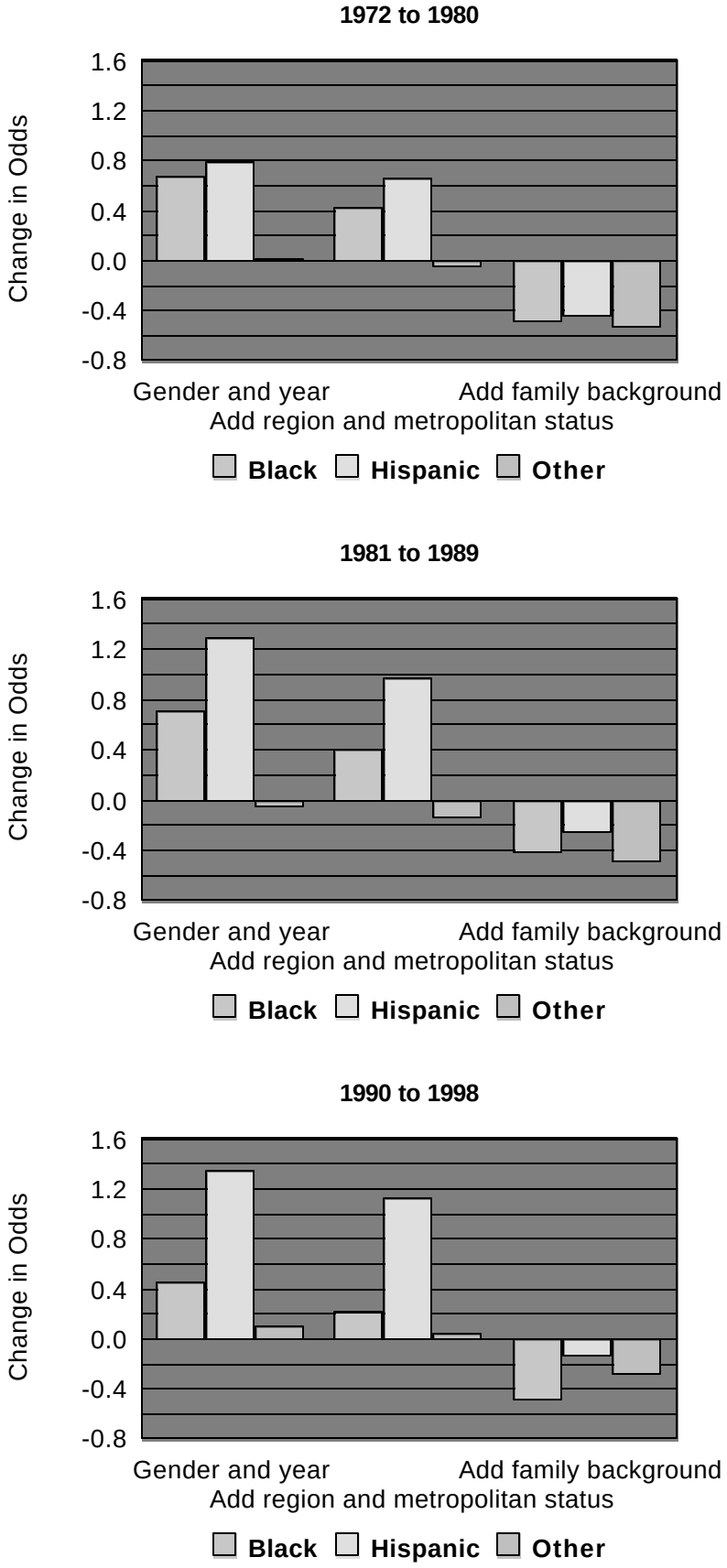


Figure 16. Effects of Race-Ethnicity on the Odds of High School Dropout by Grade Level



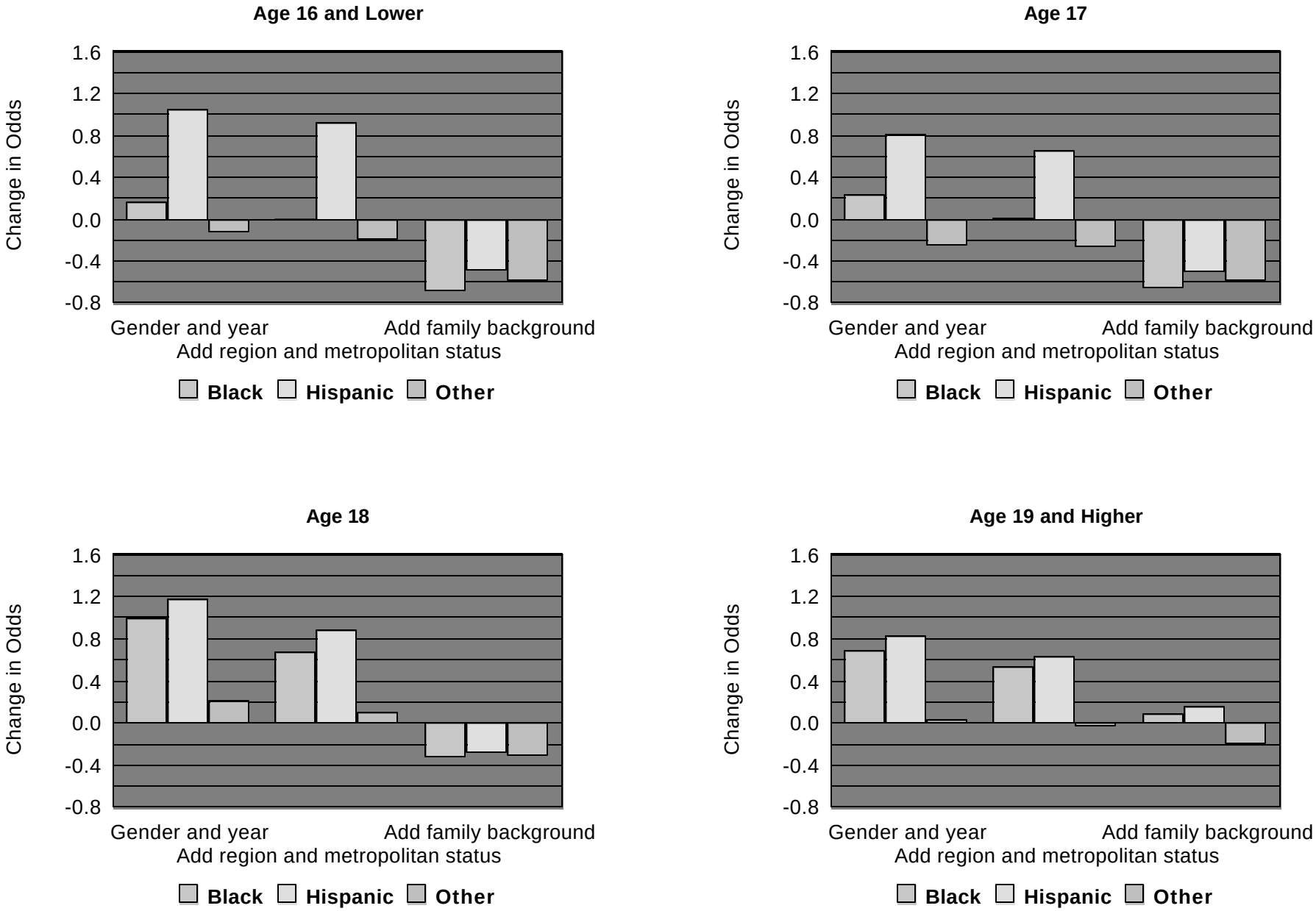
Note: Effects are differences in odds relative to whites.

Figure 17. Effects of Race-Ethnicity on the Odds of High School Dropout in the 1970s to the 1990s



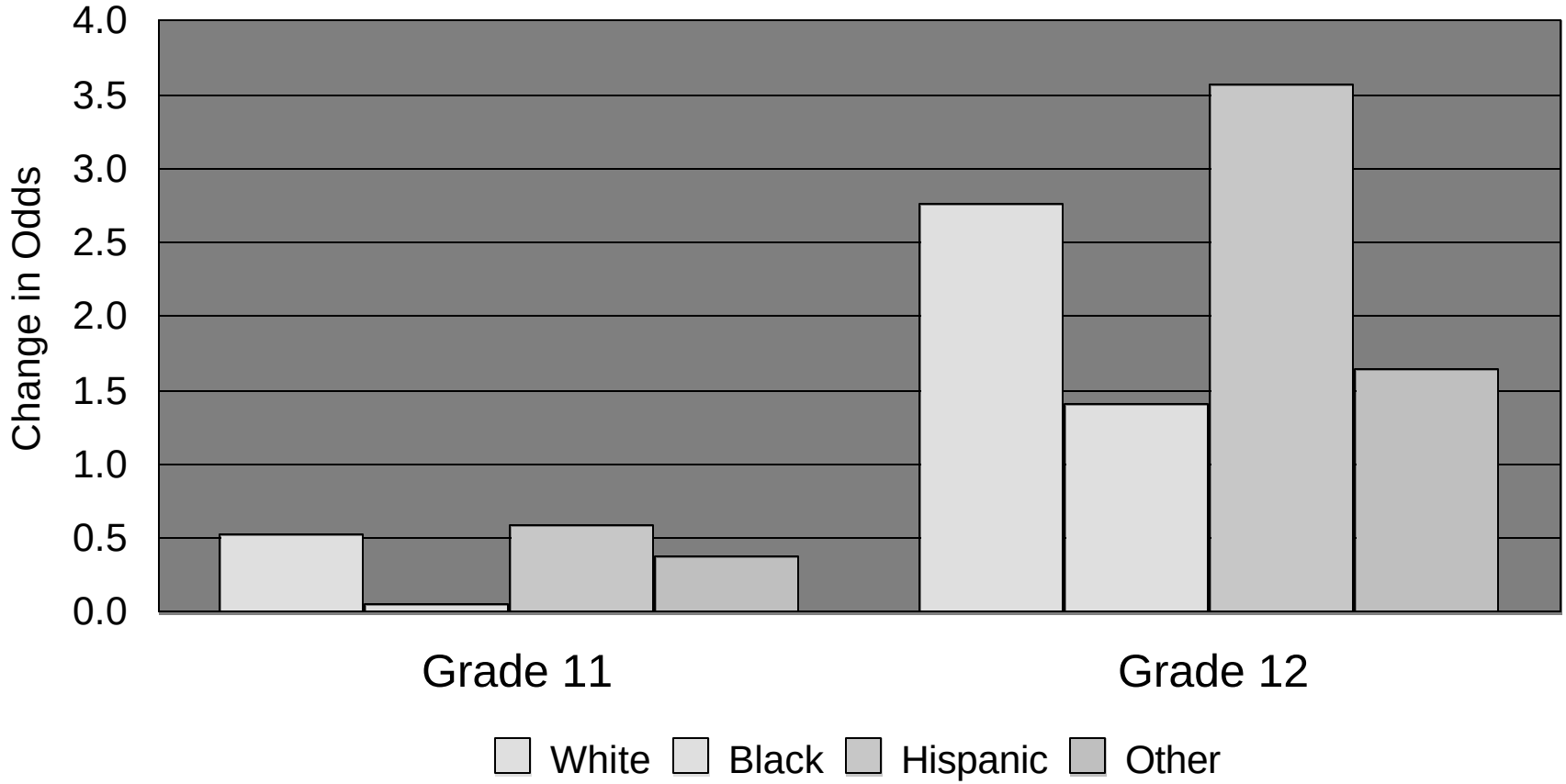
Note: Effects are differences in odds relative to whites.

Figure 18. Effects of Race-Ethnicity on the Odds of High School Dropout by Age



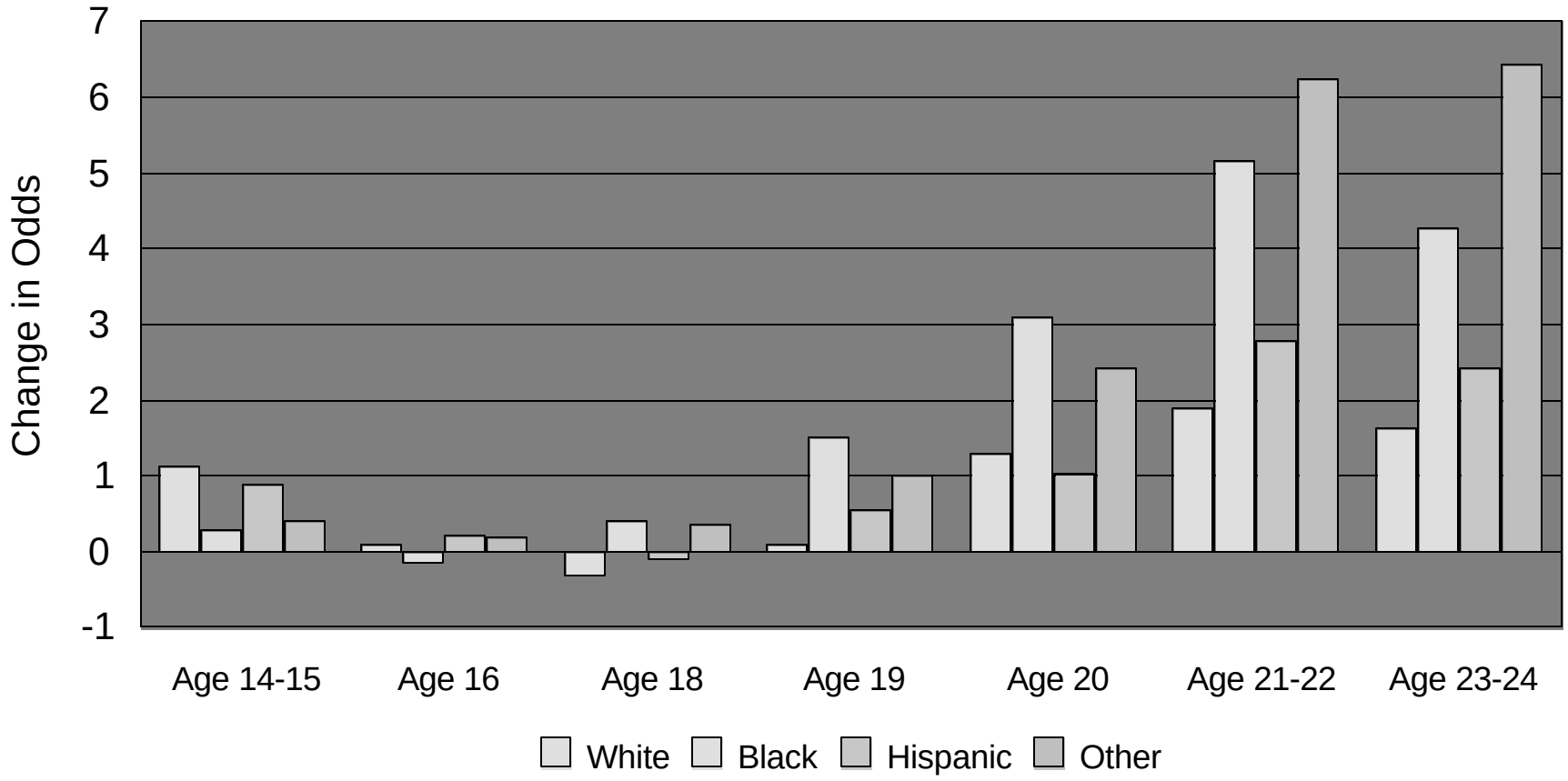
Note: Effects are differences in odds relative to whites.

Figure 19. Effects of Grade Level on
High School Dropout by Race-Ethnicity



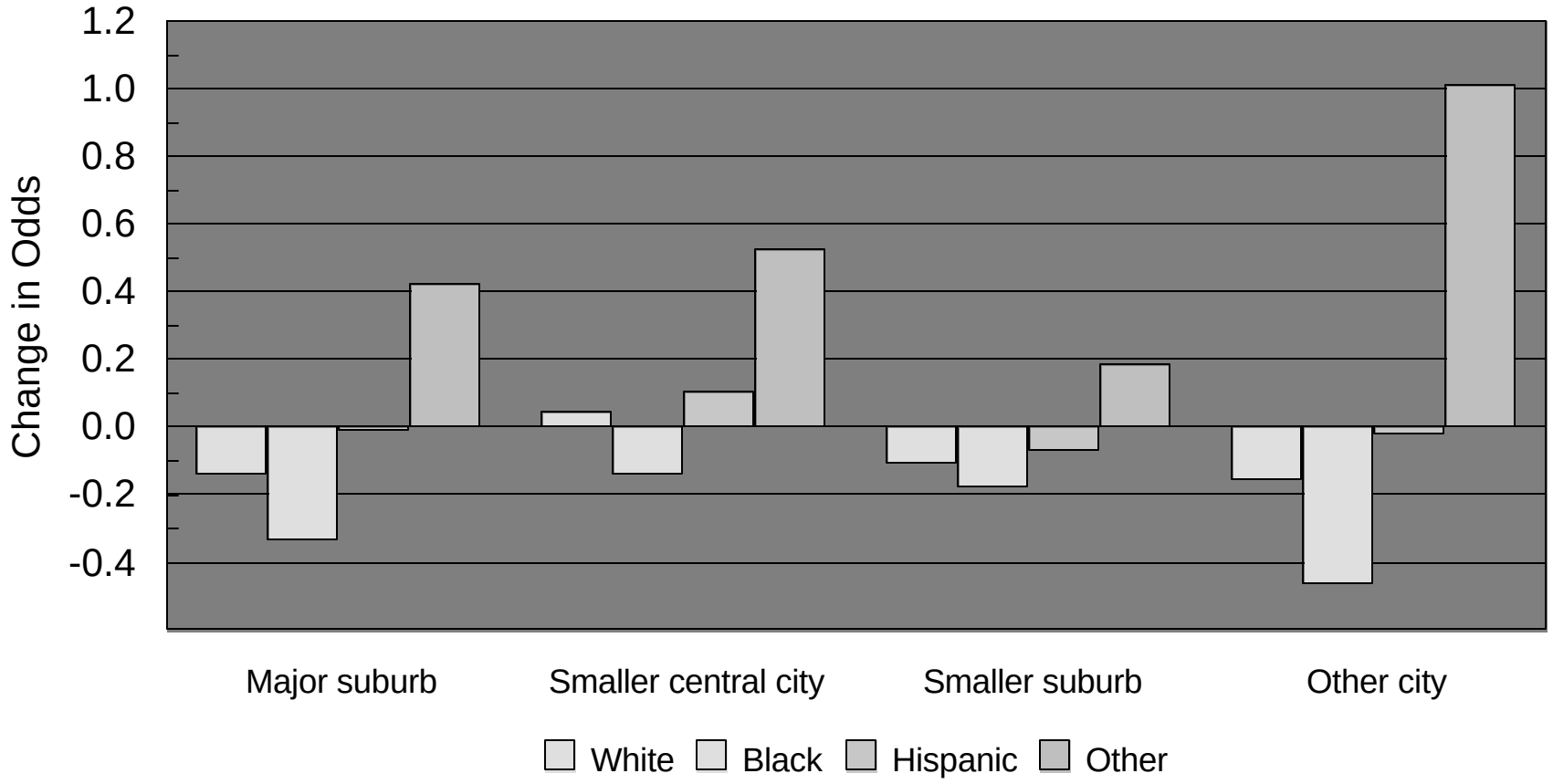
Note: Effects are differences
in odds relative to the tenth grade.

Figure 20. Effects of Age on
High School Dropout by Race-Ethnicity



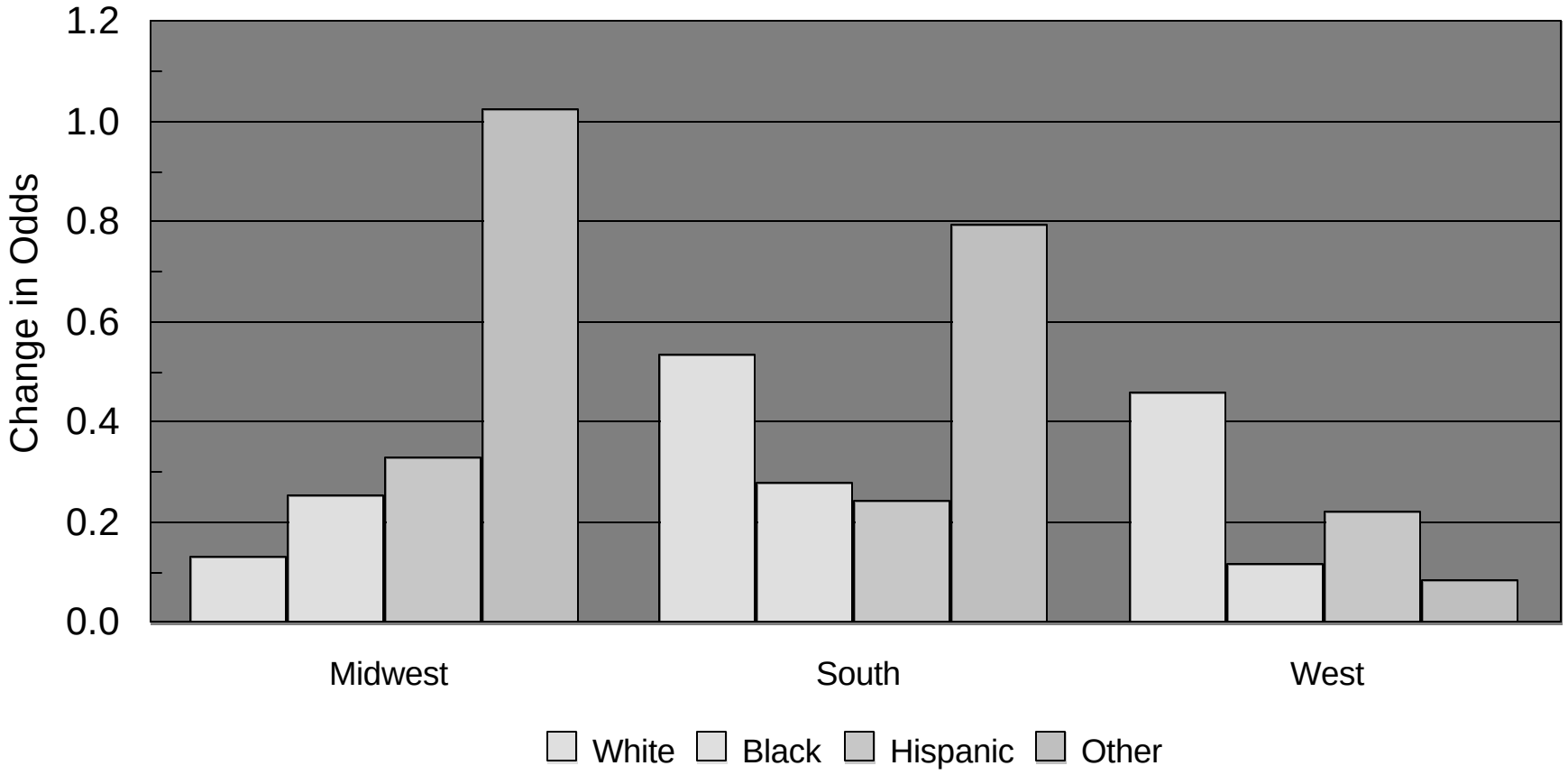
Note: Effects are differences
in odds relative to age 17.

Figure 21. Effects of Metropolitan Status on High School Dropout by Race-Ethnicity



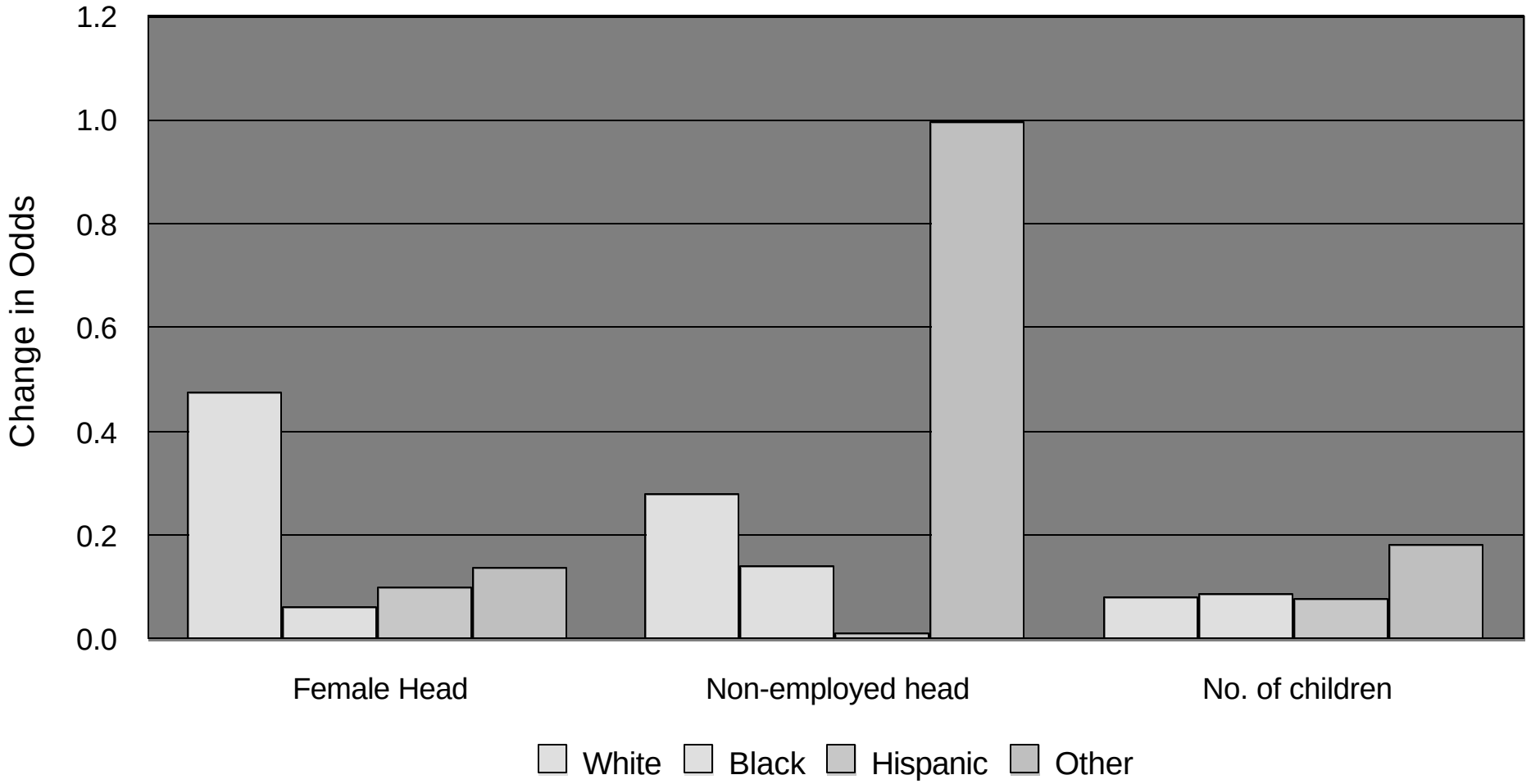
Note: Effects are differences in odds relative to central cities of 17 major metropolitan areas.

Figure 22. Effects of Region on
High School Dropout by Race-Ethnicity



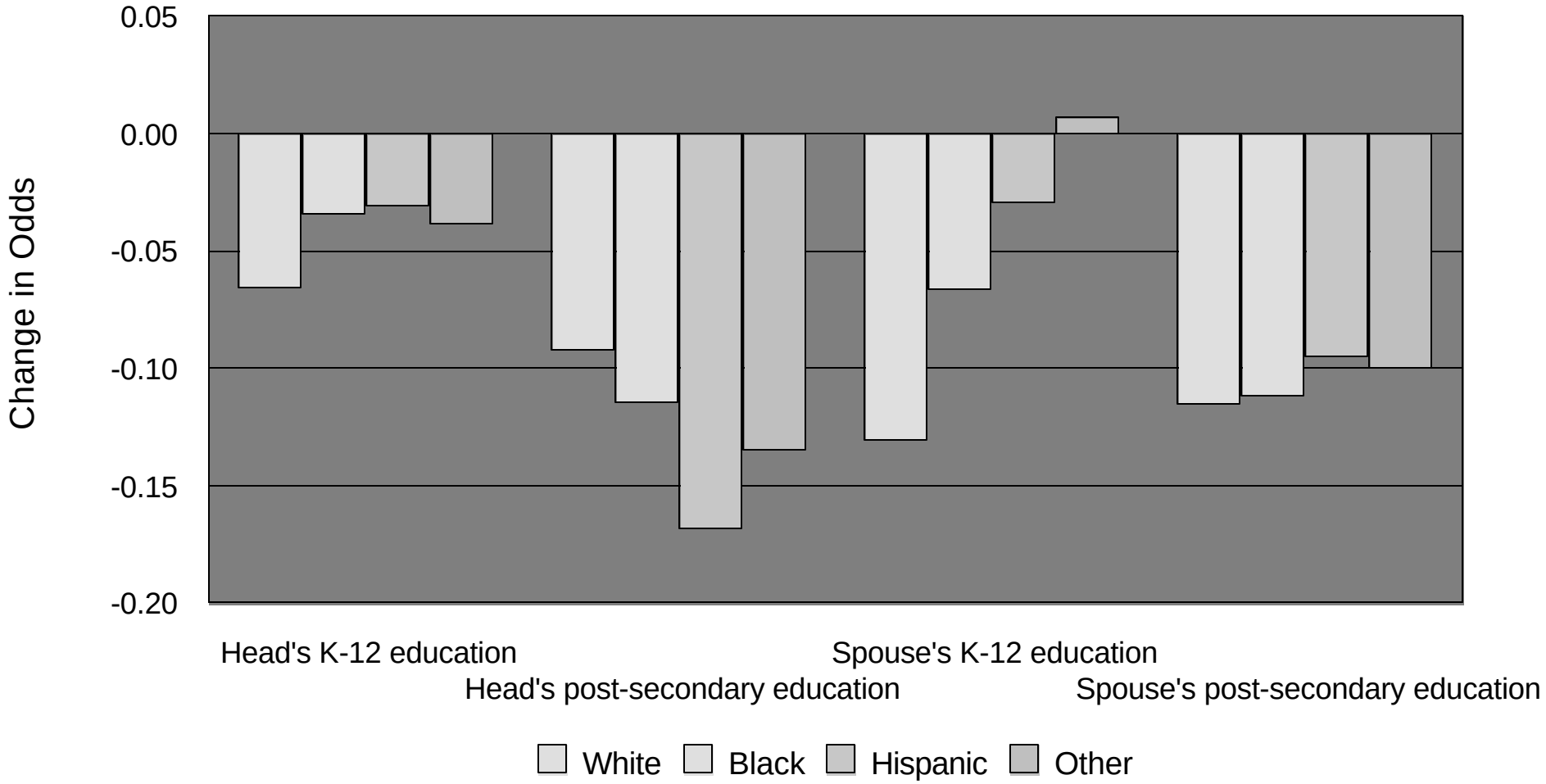
Note: Effects are differences
in odds relative to the East.

Figure 23. Effects of Household Structure on
High School Dropout by Race-Ethnicity



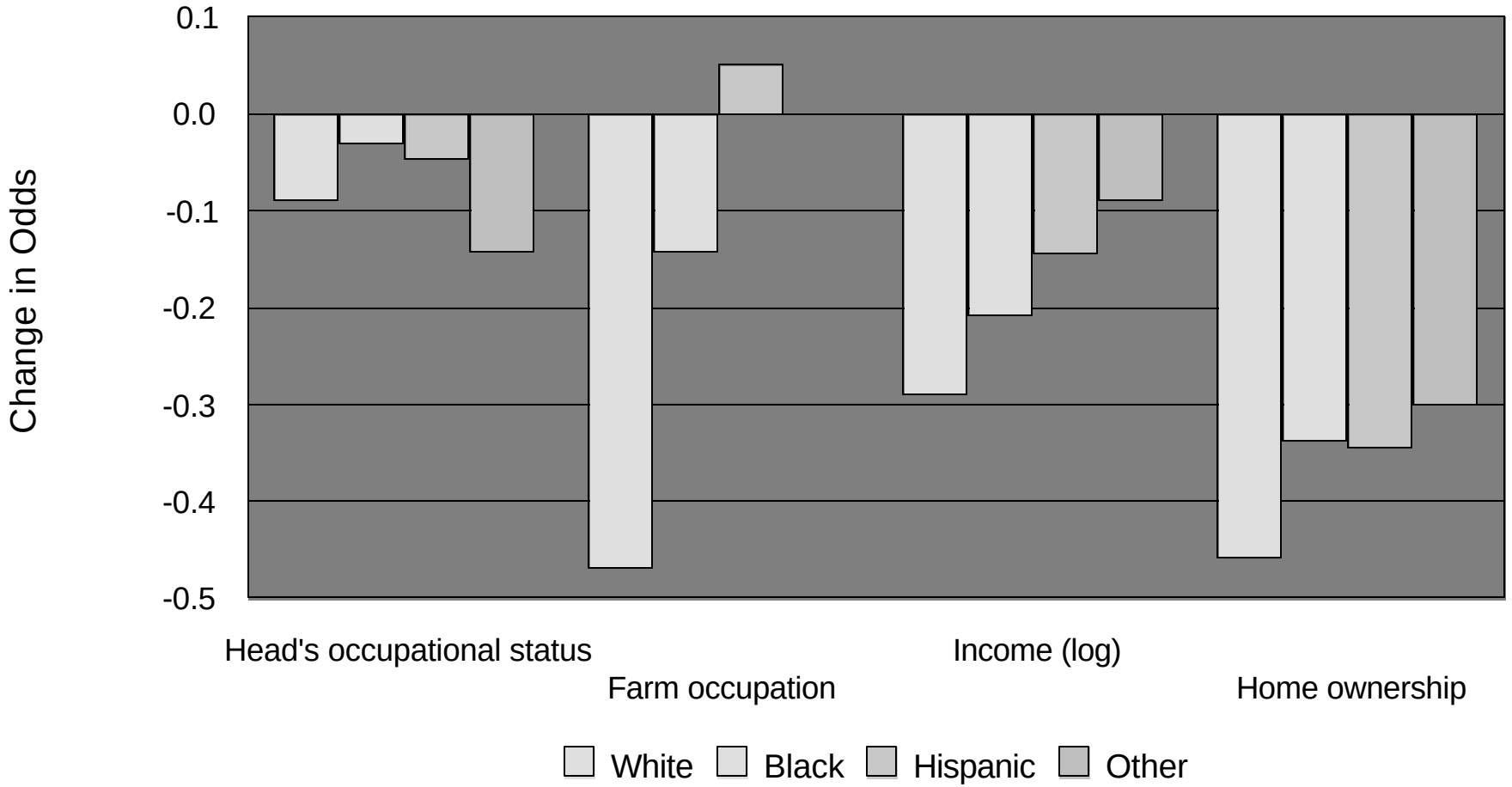
Note: Effects give the change in odds
associated with a one unit change in the variable.

Figure 24. Effects of Parents' Education on
High School Dropout by Race-Ethnicity



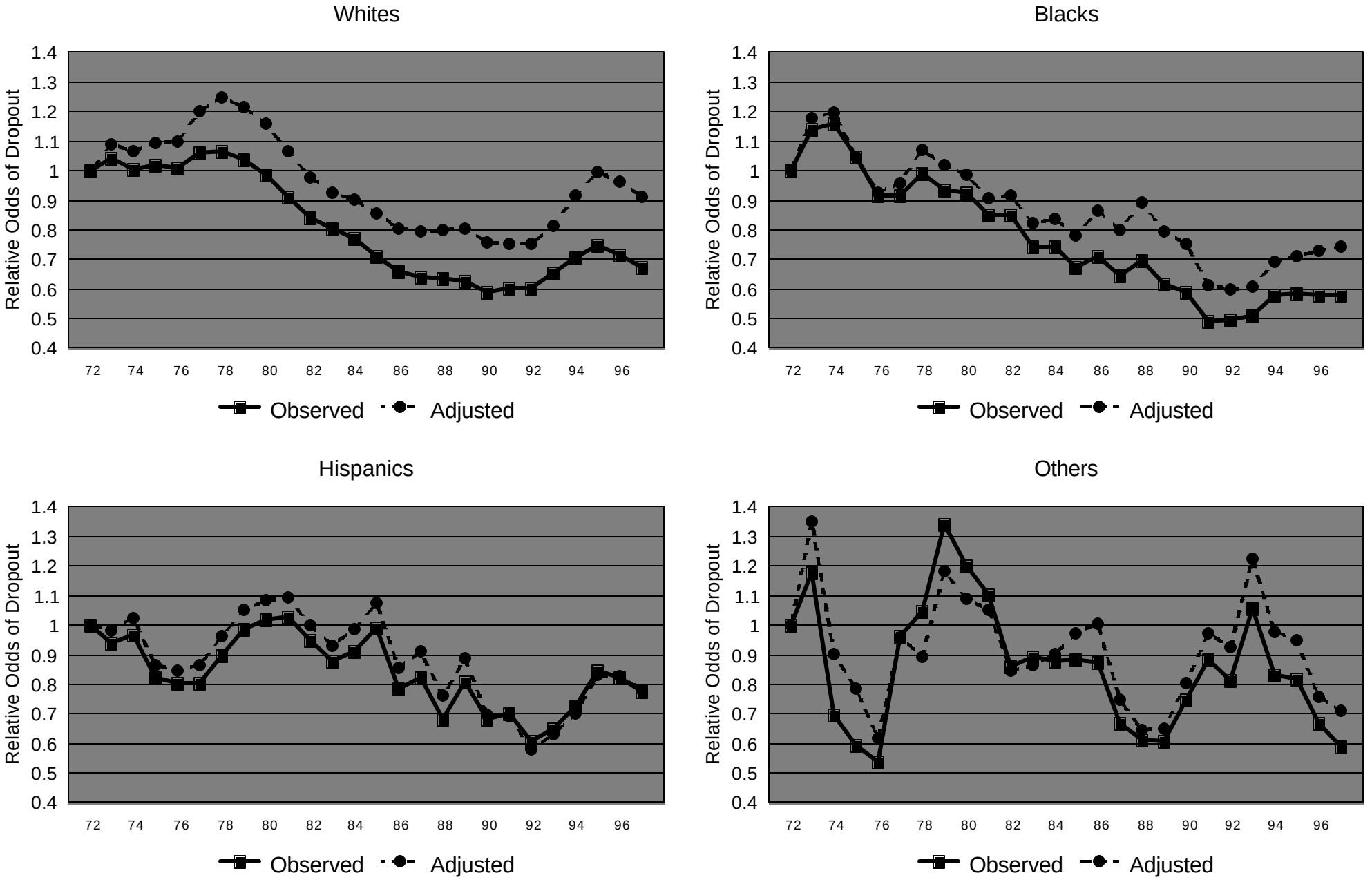
Note: Effects give the change in odds
associated with a one unit change in the variable.

Figure 25. Effects of Socioeconomic Status on High School Dropout by Race-Ethnicity



Note: Effects give the change in odds associated with a one unit change in the variable. Effect of farm among "others" not shown.

Figure 26. Trends in High School Dropout by Race-Ethnicty: Observed and Adjusted for Social Background



Note: Trends are shown as odds of dropout relative to 1972.