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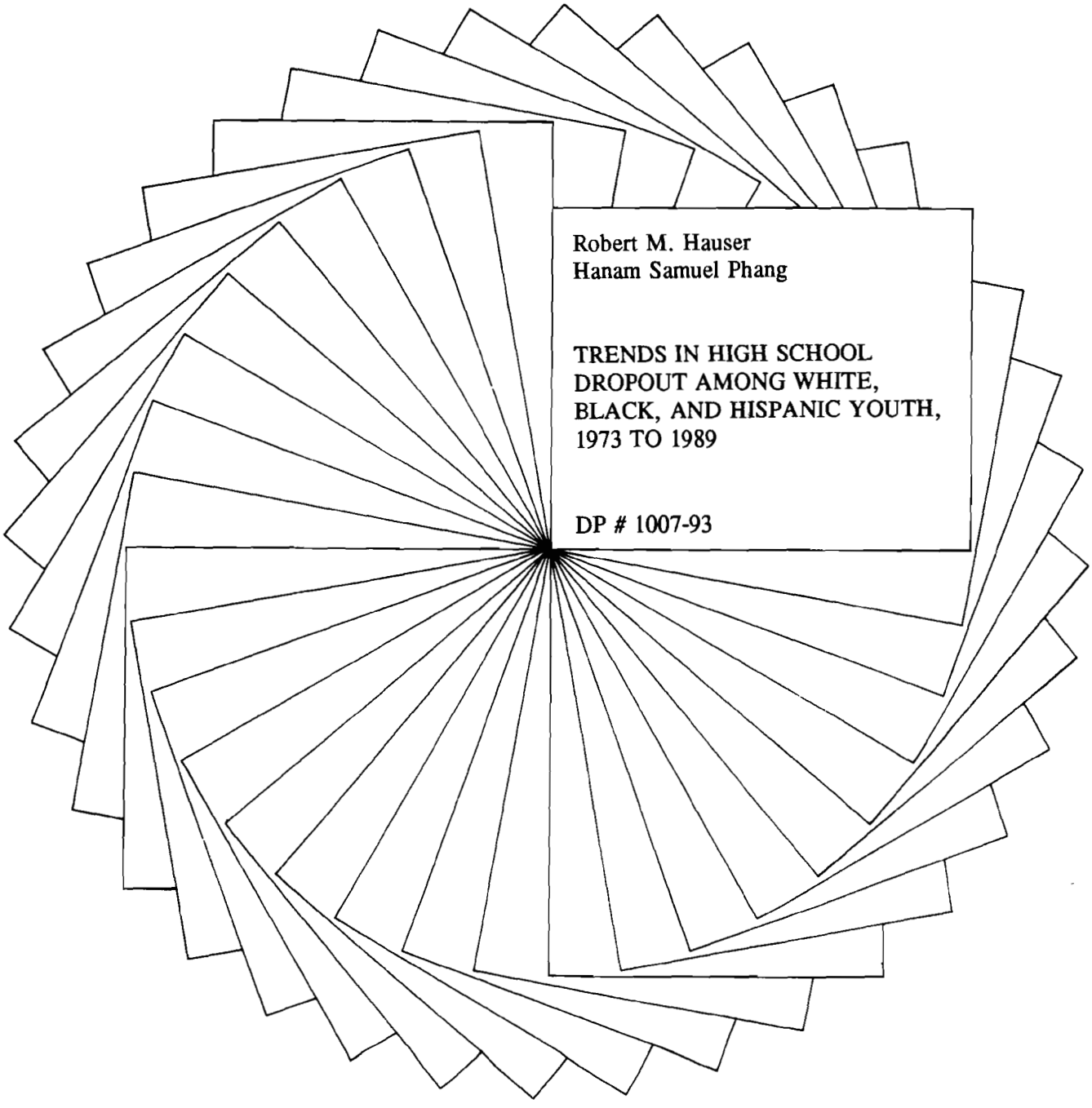

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TRENDS IN HIGH SCHOOL DROPOUT AMONG WHITE, BLACK, AND HISPANIC YOUTH, 1973 TO 1989

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Trends in High School Dropout among White, Black, and Hispanic Youth, 1973 to 1989

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Abstract

Between 1973 and 1989, data from October Current Population Surveys show that annual dropout rates are successively higher in each of the last three years of high school, and men drop out more than women, especially at the twelfth-grade level. Dropout is least among whites and greatest among Hispanics, and it has declined among whites and blacks since the late 1970s. Social background favors school continuation among whites relative to blacks or Hispanics, but trends in background were favorable both to whites and blacks. Residence in a large central city increases high school dropout sharply among blacks. The end of compulsory school attendance increases dropout, especially among minorities. Female household headship increases dropout, especially among whites, and postsecondary education of parents sharply lowers dropout. After controlling social background, high school dropout rates were greatest among whites and least among blacks in the 1970s, but a steady decline in dropout among whites, regardless of social background, has almost eliminated net racial and ethnic differentials.

Trends in High School Dropout
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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. 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 begun to produce a regular series of annual reports on trends and differentials in high school dropout (Frase 1989; Kaufman and Frase 1990; Kaufman and McMillen 1991). 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 was essentially level during the 1970s, but has declined steadily since then.

In this paper, 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 twenty years in light of changes in the social and economic circumstances of their families of orientation. We have little that is new to report about the effects of family background on high school dropout, or about overall trends and differentials in dropout, but we do have new findings to report 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 115,000 youths aged fourteen to twenty-four, covered in October Current Population Surveys (CPS), 1973 to 1989, who were subject to the risk of high school dropout in transitions from the ninth to tenth, tenth to eleventh, or eleventh to twelfth grades. We use a definition of the transition from school enrollment to completion or nonenrollment 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 someone who completed the ninth grade in the survey year and was not enrolled that October or someone 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 nondropouts.

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 academic year preceding the survey, as if they were in the same cohort. It also fails to identify return enrollees among this year's students at each grade level. 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.[1]

The data file of potential high school dropouts, which includes approximately 95,000 whites, 15,000 blacks, and 6,400 Hispanics, is drawn from the Uniform October Current Population Survey file, 1968–1990 (Hauser, Jordan, and Dixon 1993; Hauser and Hauser 1993). 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, head without occupation, number of children in household, education of household head, education of spouse of head, occupation of household head, family income, and housing tenure. Fewer than 5 percent of youths are nondependent at the tenth-grade transition; fewer than 10 percent are nondependent at the eleventh-grade transition; and fewer than 15 percent are nondependent at the twelfth-grade transition.[2] In general, nondependency is greater among women than men, and it is greater among Hispanics than among whites or blacks. 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. In order to obtain greater precision in the estimates for minority youth, and to avoid excessive and unreliable detail, we have pooled the analysis across grade levels, introducing interactions in the effects of variables with grade level only where they proved to be statistically significant.

TRENDS IN SOCIAL BACKGROUND

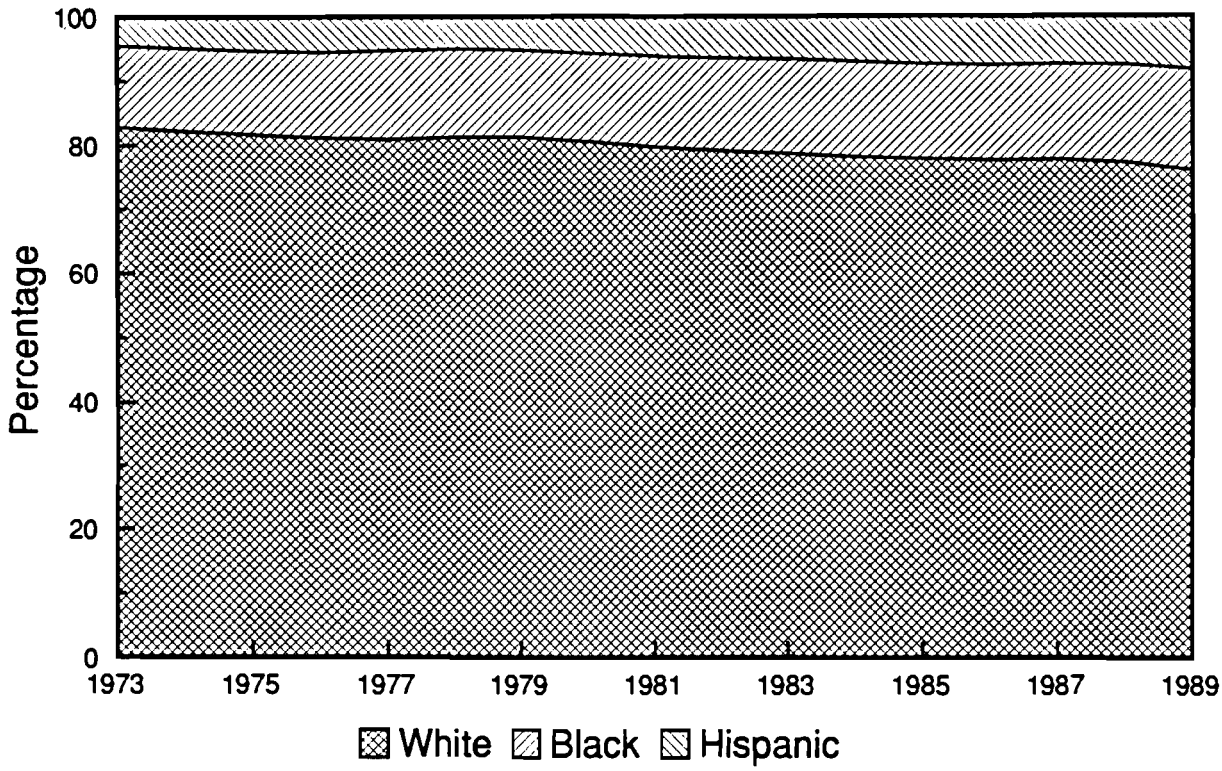
Trends and differentials in high school dropout should be viewed in the context of population change. Thus, we begin by reviewing trends and differentials in the characteristics of high school students, combining the data across grade levels in each survey year.[3] In passing, we also comment on the measurement of the social and economic background characteristics, which 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, not all children do so, so 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.

Figure 1 shows that black and Hispanic high schoolers are increasing as a share of all high school students.[4] From 1973 to 1989 the share of African American high school students rose from 13 to 16 percent, while the share of Hispanics rose from 4.5 to 8.4 percent; the share of whites fell from 83 to 76 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.[5]

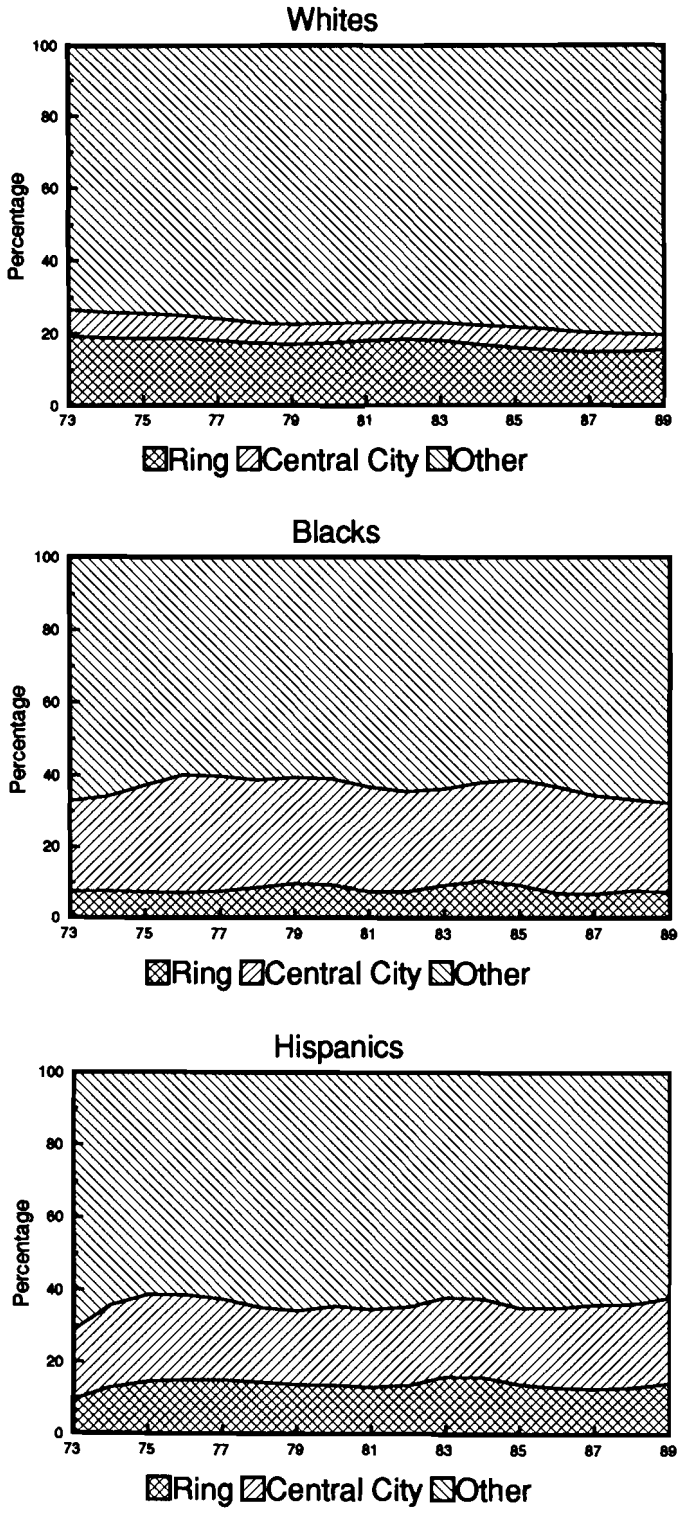
The October CPS permitted us to classify students consistently across time by their residence in the central city or suburban ring of twenty large metropolitan areas.[6] Figure 2 shows trends in the distribution of each racial-ethnic group by metropolitan status. White high school students are increasingly less likely than blacks or Hispanics to reside within one of the major metropolitan areas. From 1973 to 1989, the share of white students in the large central cities declined from 7 to 4 percent, and the share in the suburban rings of those cities declined from 19 to 15 percent, while the share of whites living outside the large metropolitan areas rose from 74 to 80 percent. Within metropolitan areas, whites are much more likely than black students to live in the suburban ring, rather than in the central city. About 8 percent of black high school students and 14 percent of

Figure 1. Race and Ethnicity of High School Students at Risk of Dropout, 1973 to 1989



Note: Data are 3- year moving averages for youth in October Current Population Surveys.

Figure 2. Trends in Metropolitan Location by Race-Ethnicity: High School Students at Risk of Dropout, 1973 to 1989



Note: Data are 3-year moving averages of residence in 20 large metropolitan areas among youth in October Current Population Surveys

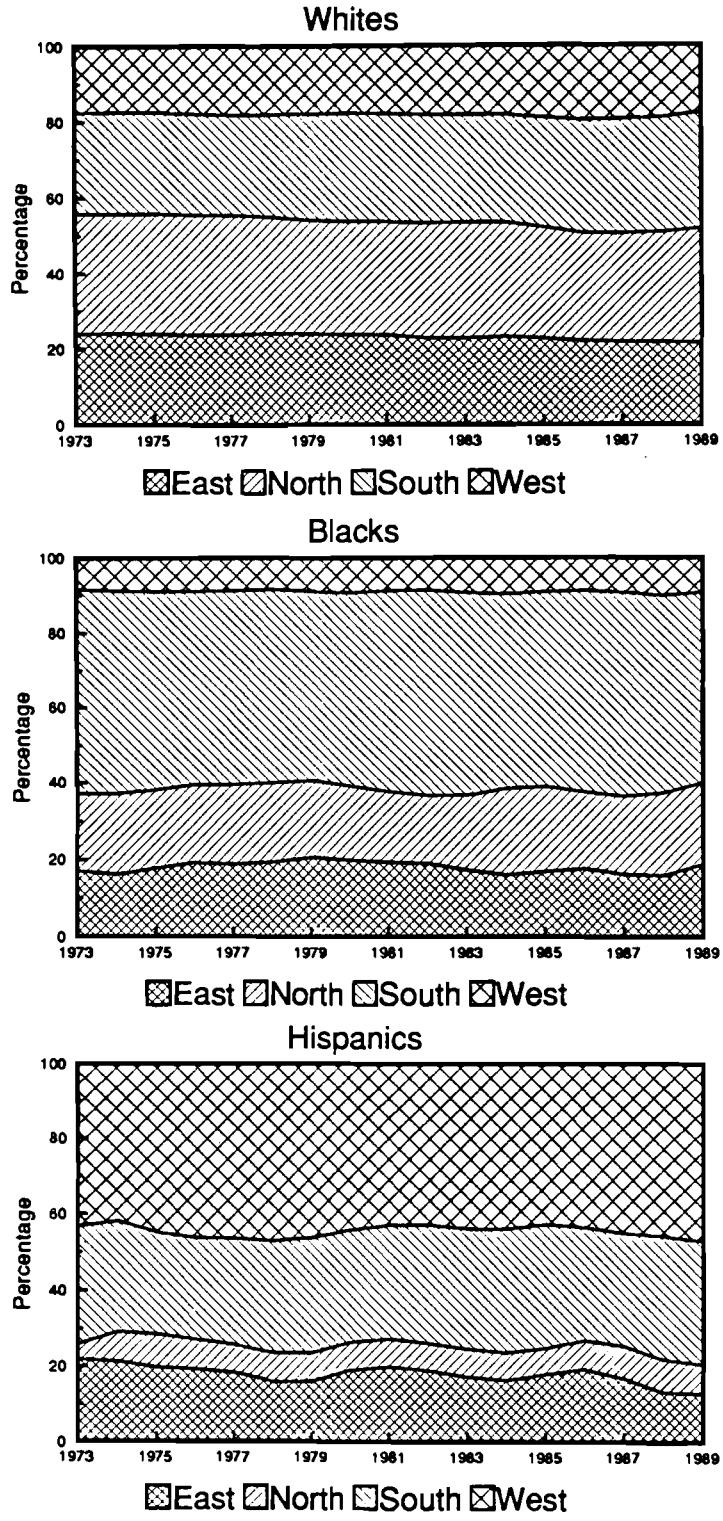
Hispanic students lived in suburban rings of the large metropolitan areas, while 29 percent of African Americans and 22 percent of Hispanics lived in the central cities of those areas.

The regional distribution of high school students has been stable over the past twenty years. As shown in figure 3, whites are almost equally distributed over the four Census regions. African Americans remain concentrated in the South--where almost half reside--and only about 10 percent of black high school students live in the West. A growing share of Hispanic high school students--more than 40 percent--live in the West, and there was a decline in the share of Hispanic students who live in the East from almost 22 percent to less than 15 percent.

There are also characteristically different age distributions among white, African American, and Hispanic high school students. These reflect differentials in age-grade progression as well as high school dropout. As shown in figure 4, the most visible difference in age distributions is that blacks and Hispanics are more likely than whites to be age nineteen or older when they are still in high school. There is also a hint of trend toward increasing age in all three racial-ethnic groups. This may reflect the overall decline in high school dropout, or it may reflect increases in grade retention during elementary and secondary school. There has been no major study of age-grade progression in recent years,[7] even though there is scattered evidence that the rates at which students fail to be promoted to the next grade are on the rise.

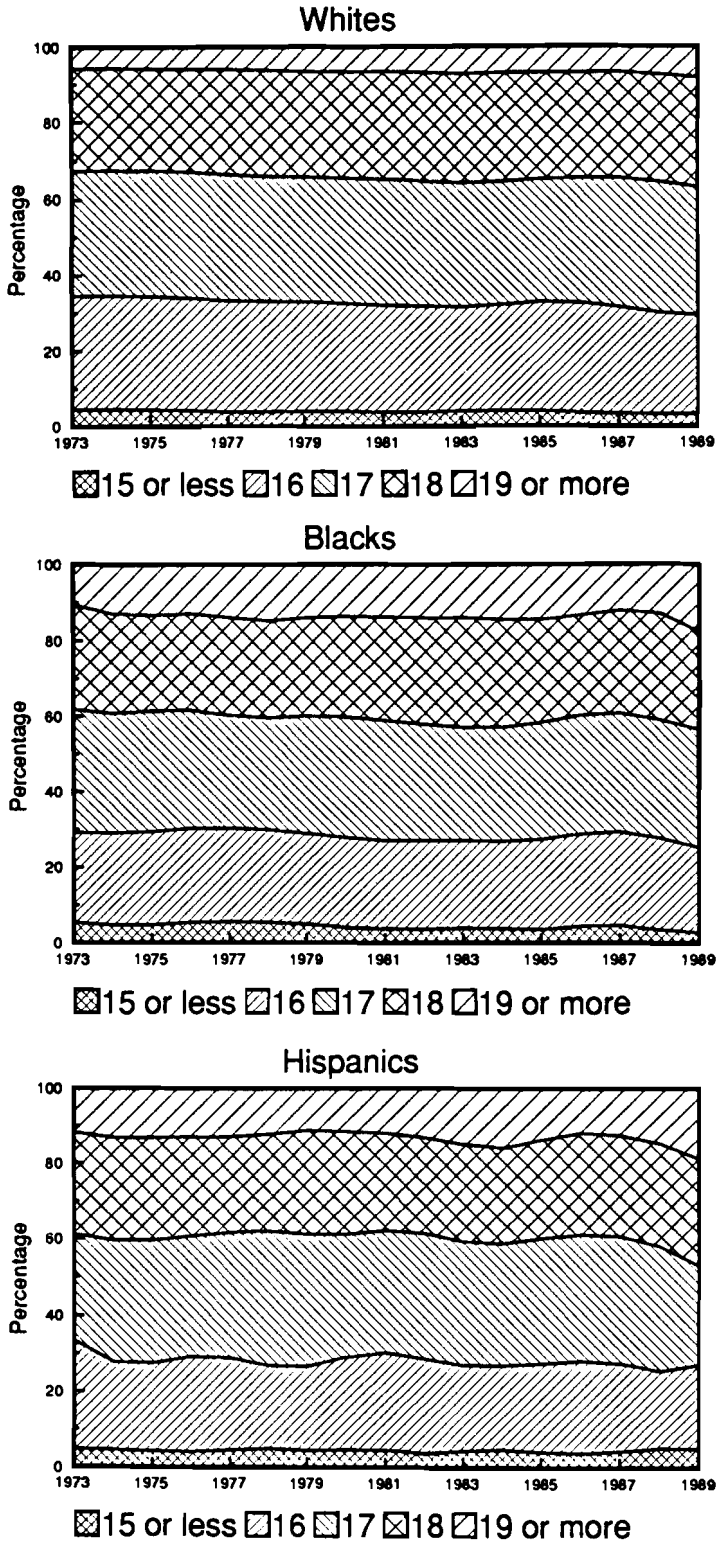
Figure 5 shows three indicators of the family structure of high school students: the percentage of students living in female-headed households, the percentage of household heads without occupations, and the mean number of children (younger than nineteen years old) in the household. Female headship increased in the households of African American high school students from 41 percent in 1973 to about 56 percent in 1989. Among Hispanics, female headship increased from 20 to 33 percent, and among whites, it grew from 14 to 21 percent.

Figure 3. Trends in Regional Location by Race-Ethnicity: High School Students at Risk of Dropout, 1973 to 1989



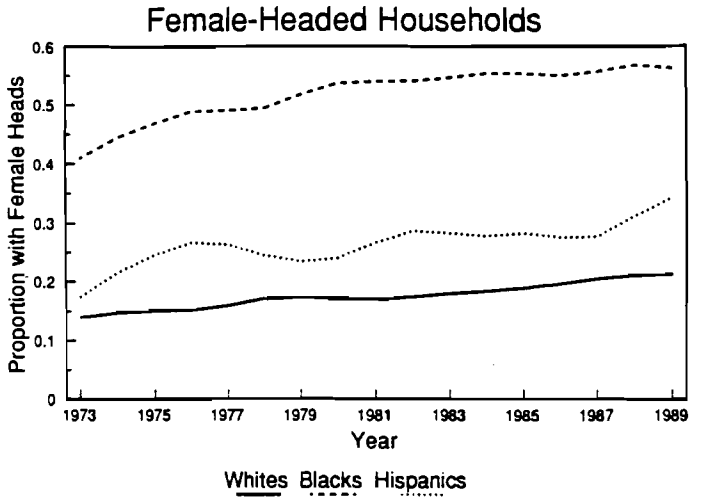
Note: Date are 3-year moving averages for youth in October Current Population Surveys.

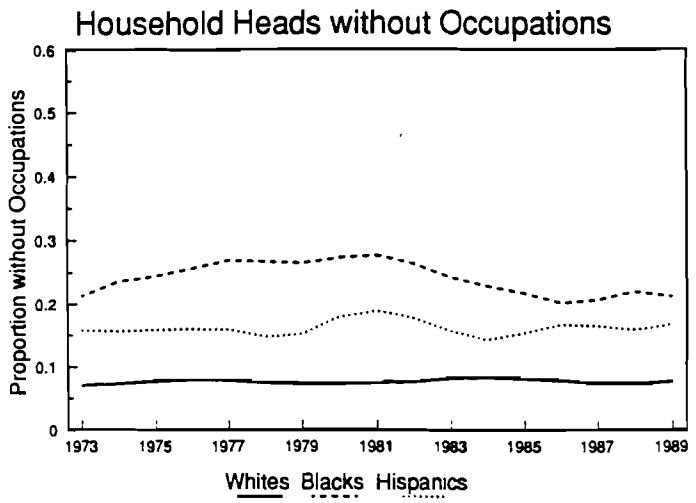
Figure 4. Trends in Age by Race-Ethnicity: High School Students at Risk of Dropout, 1973 to 1989

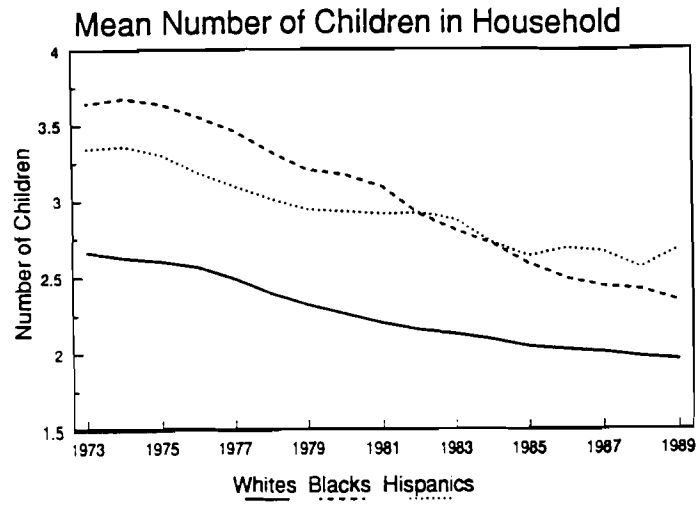


Note: Data are 3-year moving averages for youth in October Current Population Surveys.

Figure 5. Trends in Household Structure by Race-Ethnicity: High School Students at Risk of Dropout, 1973 to 1989







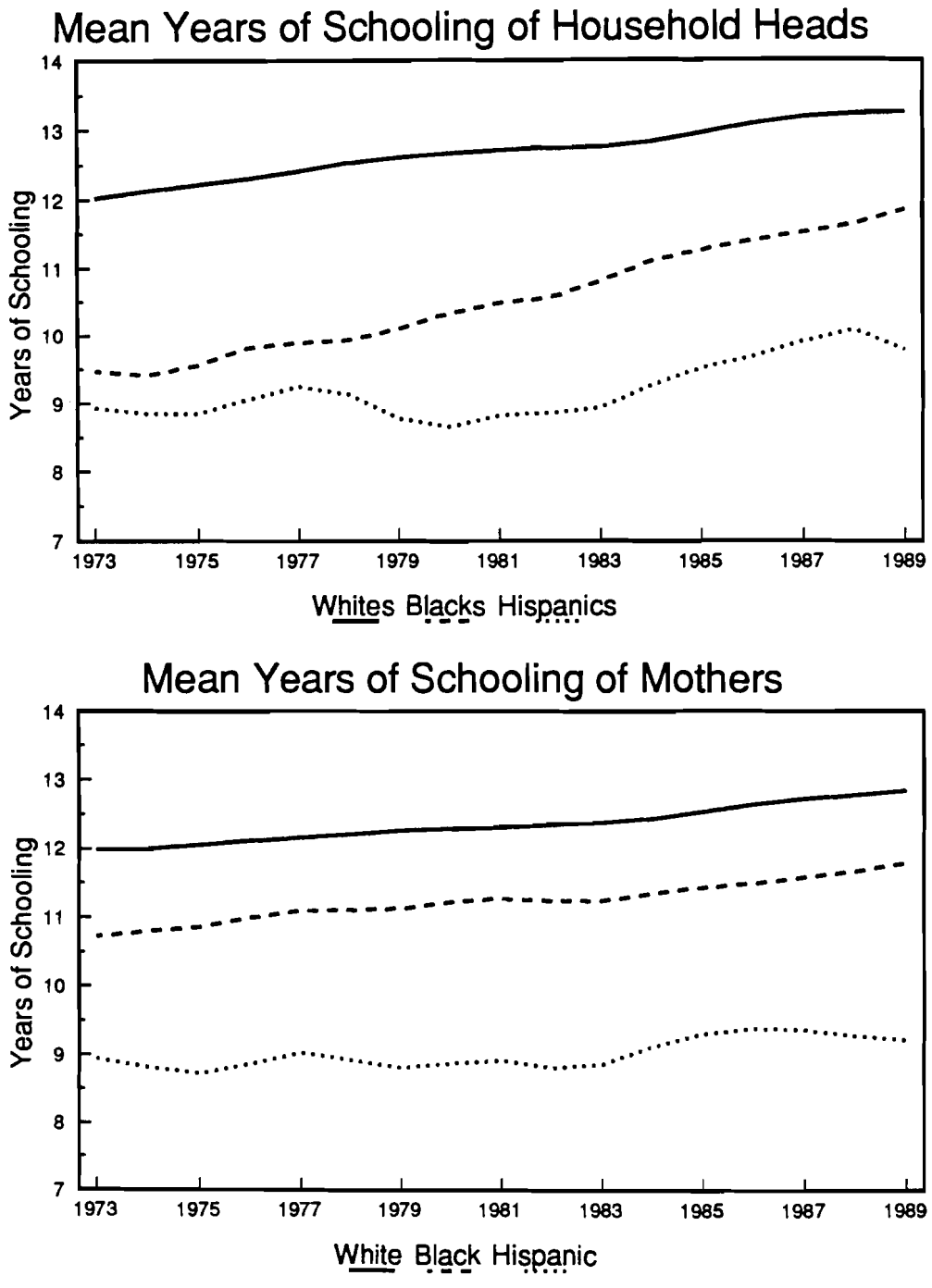
Excepting blacks, there has been no trend in the share of household heads without occupations, but there are persistent ethnic differentials. Only about 8 percent of white high school students live in a household without a working head, compared to 16 percent of Hispanics. Among African Americans, the percentage of high school students living in households without a working head grew from 21 percent to 28 percent between 1973 and 1981, and thereafter it declined back to about 21 percent in 1989.

The declining number of children per household is as dramatic a change in family structure as the rise of female headship. 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 2.3 children by 1989. Among Hispanics, the mean number of children per household fell from 3.3 to 2.7, and among whites it decreased from 2.6 to 2.0. 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.

Figure 6 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 postsecondary 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 6, 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 to a lesser degree among Hispanics. The mean years of school

Figure 6. Trends in Parental Schooling by Race-Ethnicity: High School Students at Risk of Dropout, 1973 to 1989



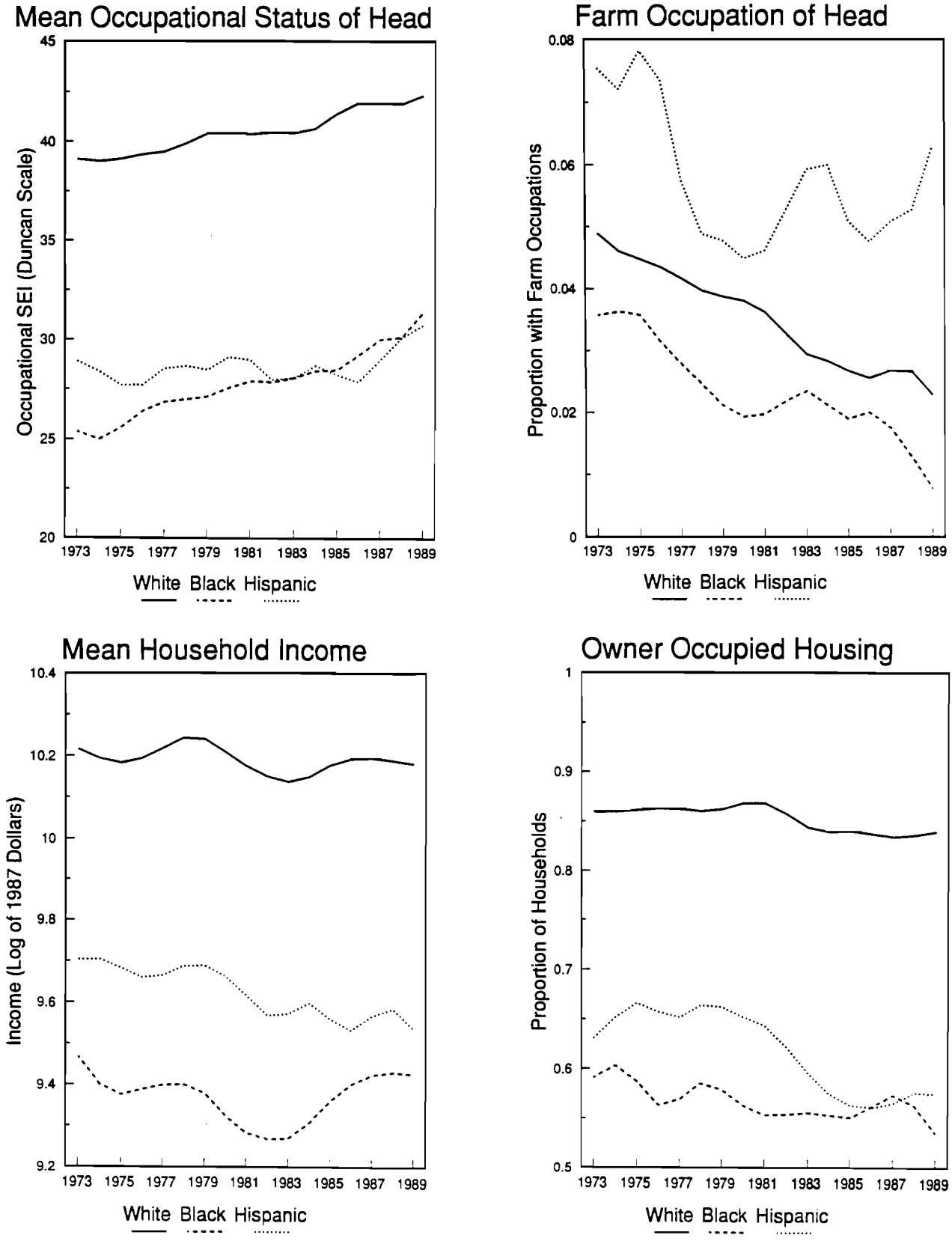
Note: Data are 3-year moving averages for youth in October Current Population Surveys.

completed by white parents was about 12 years in 1973, and it grew to about 13 years by 1989. Among blacks, the mean schooling of household heads grew from about 9.5 years in 1973 to more than 11.5 years in 1989, and the mean schooling of African American mothers grew from about 10.5 years to about 11.5 years.[8] 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.[9] We suspect that the meager growth in schooling among the parents of Hispanic high school students partly reflects the continuing immigration of Hispanics.

Figure 7 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.[10] Occupational status of household heads has increased regularly among whites and blacks. Other things being equal, these trends will tend to reduce high school dropout in these two groups. Farm occupations are rare among the heads of households of high school students, and they are declining in all three racial-ethnic groups. 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 three racial and ethnic groups. Thus, other things being equal, the decline in farm origins will tend to increase high school dropout.[11]

The CPS household income item is not of high quality (Hauser 1991); 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 7 shows that in constant 1988 dollars white families earned about $27,000, Hispanic families about $15,000, and black families about $11,000. White household income declined slightly from 1973 to 1975, rose through 1978, and declined again through 1983,

Figure 7. Trends in Socioeconomic Status by Race-Ethnicity: High School Students at Risk of Dropout, 1973 to 1989



after which it rose almost to the level of the early 1970s. Black household income declined from 1973 to 1975 and from 1979 through 1983, after which it rose sharply back to the levels of the early 1970s. Hispanic income declined irregularly throughout the period from 1973 to 1989, from a high of about $16,000 to a low of about $13,500.[12]

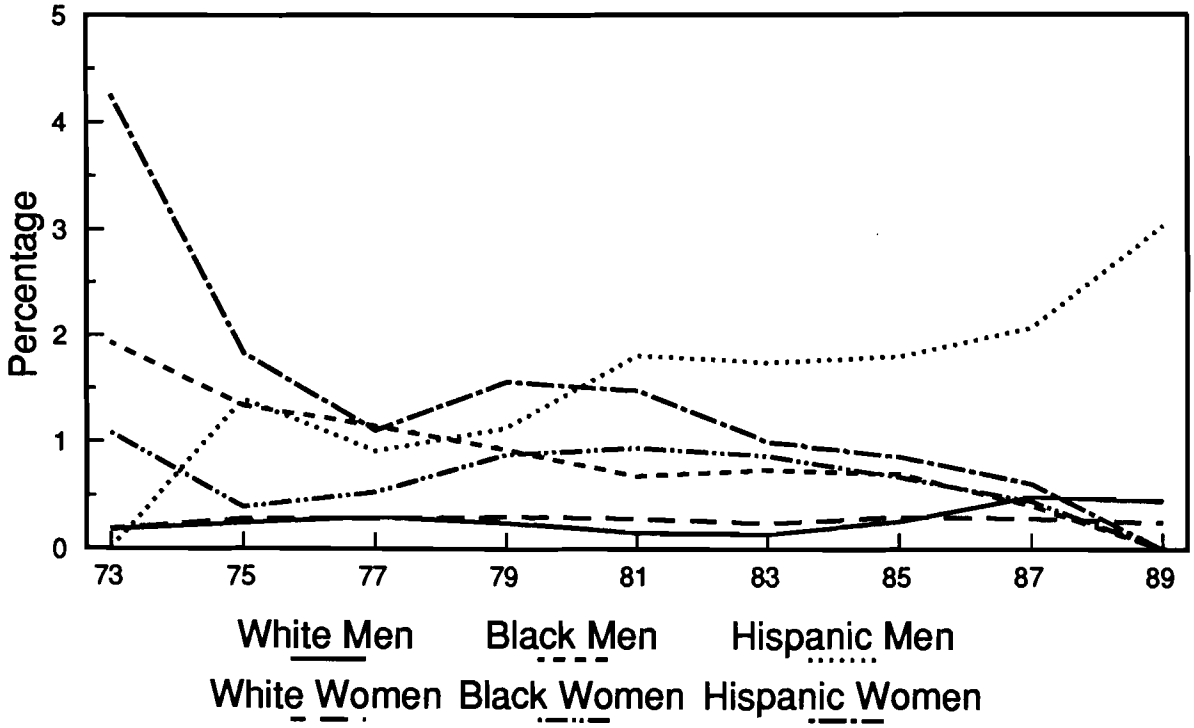
Home ownership is a crude measure of wealth, and it may also reflect stability in the economic and social situation of a household. In either case, we would expect home ownership to decrease the chances of high school dropout. The racial-ethnic differentials in home ownership are similar to those in household income. About 85 percent of white high school students came from families in owner-occupied housing, compared to about 55 percent of blacks and 65 percent or fewer of Hispanics. There was a slight decline in home ownership among the families of white graduates after 1981, and there was an even sharper fall in home ownership among Hispanic households. Among blacks, there was a slight and irregular decline in home ownership throughout the period. Owner occupancy is associated with reduced dropout, so we would expect the declining prevalence of home ownership to increase high school dropout.

TRENDS IN HIGH SCHOOL DROPOUT

Before turning to trends and differentials in high school dropout at grades ten to twelve, we briefly consider whether our focus on dropout at these grade levels ignores a substantial, early school dropout. We believe that it does not. For example, figure 8 shows trends and differentials in the percentage of eighteen- and nineteen-year-olds who had not completed more than eight grades of school and were not currently enrolled in school. In principle, this measure of early dropout covers nearly everyone who could have dropped out of school before becoming subject to the risk of high school dropout at the tenth, eleventh, or twelfth grade, as specified here. That is, by ages eighteen and nineteen, almost all young men and women are old enough to have completed the ninth grade, if

Figure 8

Percentage of 18 and 19 Year Old Persons Not Currently Enrolled and with 8 or Fewer Years of Schooling, 1973 to 1989



they had already completed the eighth grade. Among blacks and whites, early school dropout has become very rare. Among whites of both sexes, it is consistently less than 0.5 percent. Early dropout was initially as high as 2 percent among black men and 1 percent among black women, but it declined throughout the period for black men and after 1981 among black women. Among Hispanic women, early dropout was relatively common, 4 percent, in the early 1970s, but it has declined to approach the levels among whites and blacks. The one more problematic group is Hispanic men, among whom the share of early dropouts had risen steadily to about 3 percent by the end of the 1980s. All the same, early dropout is very rare among men and women of all three racial-ethnic groups.

Table 1 shows estimated annual high school dropout rates by grade level, sex, and race-ethnicity from 1973 to 1989. The estimates are based upon a logistic regression model that includes main effects on dropout of grade level, sex, and race-ethnicity; interaction effects between grade level and sex, race-ethnicity and sex, and race-ethnicity and grade level; and interaction effects between year and grade level and between year and race-ethnicity. This model has the effect of smoothing the data, for it does not include the three-way interaction effects of dropout with grade level, sex, and race-ethnicity or any of the higher-order interaction effects of dropout with year and grade level, sex, or race-ethnicity. All of these higher-order interaction effects were tested and found not to be statistically significant. Thus, the model estimates distinct trends in dropout by grade level and race-ethnicity, but not by sex, and the trends for combinations of grade level and race-ethnicity are combinations of the trends for each grade level and each race-ethnicity.

Figure 9 displays the trends in annual high school dropout rates by grade level within each of the six combinations of gender and race-ethnicity. The six panels of this and following graphs are all prepared to the same scale in order to facilitate comparison. Dropout rates are consistently higher with each successive grade level and, among blacks and Hispanics, they are substantially higher at the

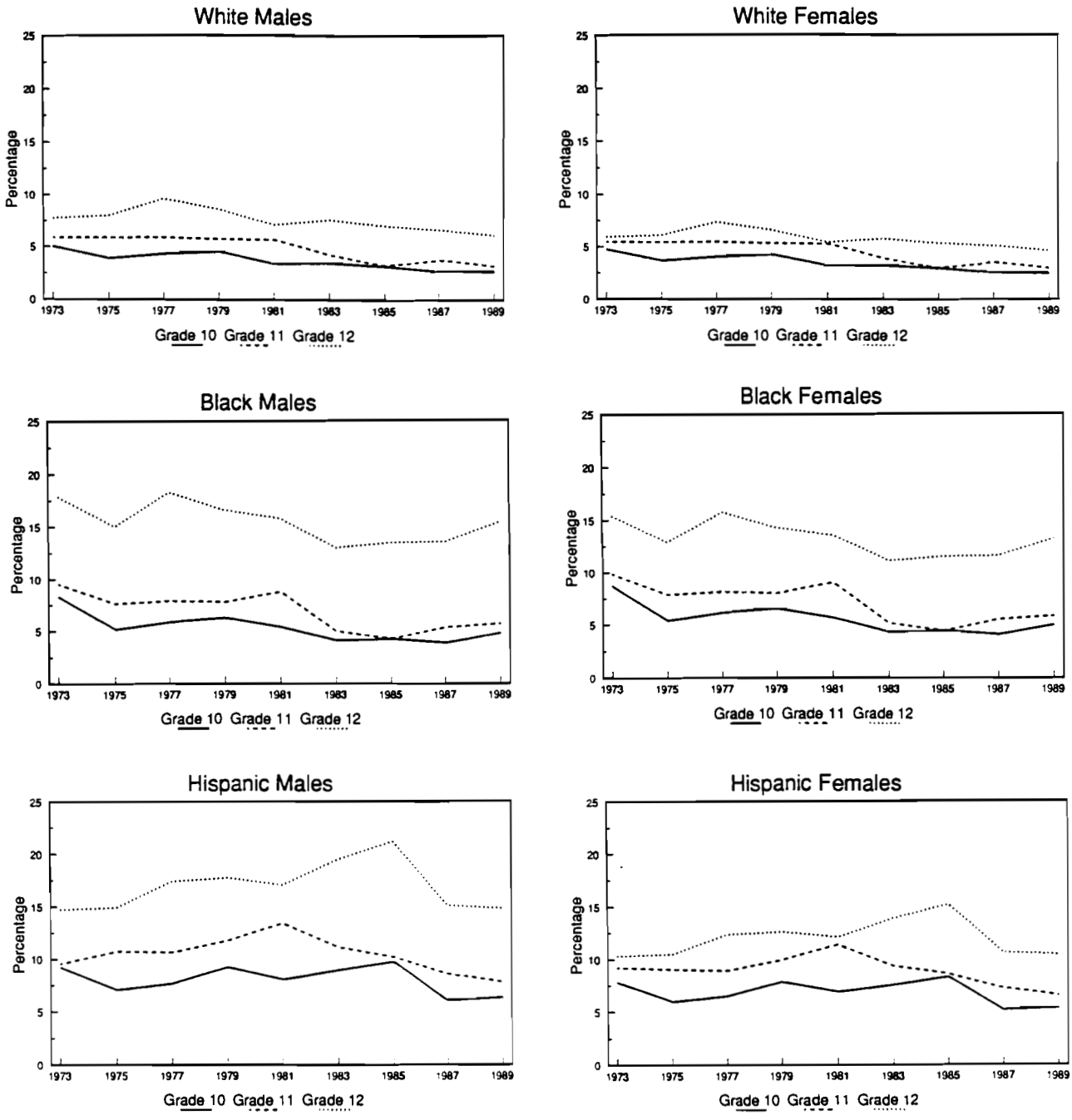
Table 1

Estimated Annual High School Dropout Rates by Grade, Sex, and Race-Ethnicity, 1973 to 1989

	White men			White women		
	Grade 10	Grade 11	Grade 12	Grade 10	Grade 11	Grade 12
1973-74	5.0	5.9	7.8	4.7	5.5	5.9
1975-76	3.9	5.9	8.0	3.7	5.5	6.1
1977-78	4.3	5.9	9.6	4.1	5.5	7.4
1979-80	4.5	5.7	8.6	4.3	5.3	6.6
1981-82	3.4	5.7	7.1	3.2	5.3	5.4
1983-84	3.4	4.2	7.6	3.2	3.9	5.8
1985-86	3.2	3.2	7.0	3.0	3.0	5.4
1987-88	2.7	3.8	6.7	2.6	3.5	5.1
1989	2.6	3.2	6.1	2.5	2.9	4.6
	Black men			Black women		
	Grade 10	Grade 11	Grade 12	Grade 10	Grade 11	Grade 12
1973-74	8.3	9.5	17.9	8.7	9.9	15.4
1975-76	5.2	7.6	15.0	5.4	7.9	12.9
1977-78	5.9	7.9	18.3	6.2	8.2	15.8
1979-80	6.3	7.7	16.6	6.6	8.0	14.3
1981-82	5.4	8.8	15.7	5.6	9.1	13.5
1983-84	4.1	5.0	13.0	4.3	5.2	11.1
1985-86	4.3	4.3	13.5	4.5	4.4	11.5
1987-88	3.9	5.3	13.5	4.1	5.5	11.6
1989	4.8	5.6	15.3	5.0	5.8	13.2
	Hispanic men			Hispanic women		
	Grade 10	Grade 11	Grade 12	Grade 10	Grade 11	Grade 12
1973-74	9.2	9.5	14.7	7.8	9.2	10.3
1975-76	7.1	10.7	14.9	6.0	9.0	10.5
1977-78	7.7	10.7	17.4	6.5	9.0	12.3
1979-80	9.2	11.8	17.7	7.9	9.9	12.6
1981-82	8.1	13.4	17.1	6.9	11.4	12.1
1983-84	9.0	11.1	19.5	7.6	9.4	13.9
1985-86	9.8	10.2	21.2	8.3	8.6	15.2
1987-88	6.1	8.6	15.1	5.1	7.2	10.6
1989	6.3	7.8	14.8	5.4	6.5	10.4

Note: Estimates are based on a logistic regression model that includes main effects on dropout of grade level, sex, and race-ethnicity; interaction effects between grade level and sex, race-ethnicity and sex, and race-ethnicity and grade-level; and interaction effects between year and grade level and between year and race-ethnicity.

Figure 9. Annual High School Dropout by Grade Level: White, Black, and Hispanic Men and Women, 1973 to 1989



twelfth-grade level than at the tenth or eleventh grades. Among whites at all grade levels there was a steady decline in high school dropout during the 1980s. Among blacks, dropout rates were generally lower in the 1980s than in the 1970s. The trends are less clear among Hispanics, but the data suggest an increase in dropout through the early to middle 1980s, followed by a decline to the level of the middle 1970s.[13]

Figure 10 rearranges the data of table 1 in six panels of grade level by sex, thus highlighting the differences among racial-ethnic groups. In each combination of grade level and sex, rates of dropout are almost always highest among Hispanics, followed by African Americans; dropout rates are lowest among whites. However, black and Hispanic dropout rates are similarly high at the twelfth-grade level, where the gap between the minority groups and whites is larger than in the tenth or eleventh grade. Fewer than 10 percent of white men or women have dropped out of school in any year or grade level since the early 1970s. Among blacks, fewer than 10 percent drop out of school at the tenth or eleventh grade, but about 15 percent drop out in the twelfth grade. Among Hispanics, about 10 percent drop out in the tenth and eleventh grade, but 15 percent or more of men and 10 to 15 percent of women drop out in the twelfth grade. At the twelfth-grade level, there is also a higher rate of dropout among men than among women in each racial-ethnic group.

SOCIAL BACKGROUND AND DROPOUT

Table 2 reports estimates of the effects of social background characteristics in a logistic regression analysis of dropout from grades ten, eleven, and twelve. The equations are estimated separately for whites, African Americans, and Hispanics, but the estimates are pooled across the three grade levels within each racial-ethnic group. The equation also includes effects of the years of the surveys, but no interactions between gender and year or between grade at risk and year. Characteristics of the household and its members, other than the reference person, were treated as

Figure 10. Annual High School Dropout by Race-Ethnicity: Tenth to Twelfth Grade Males and Females, 1973 to 1989

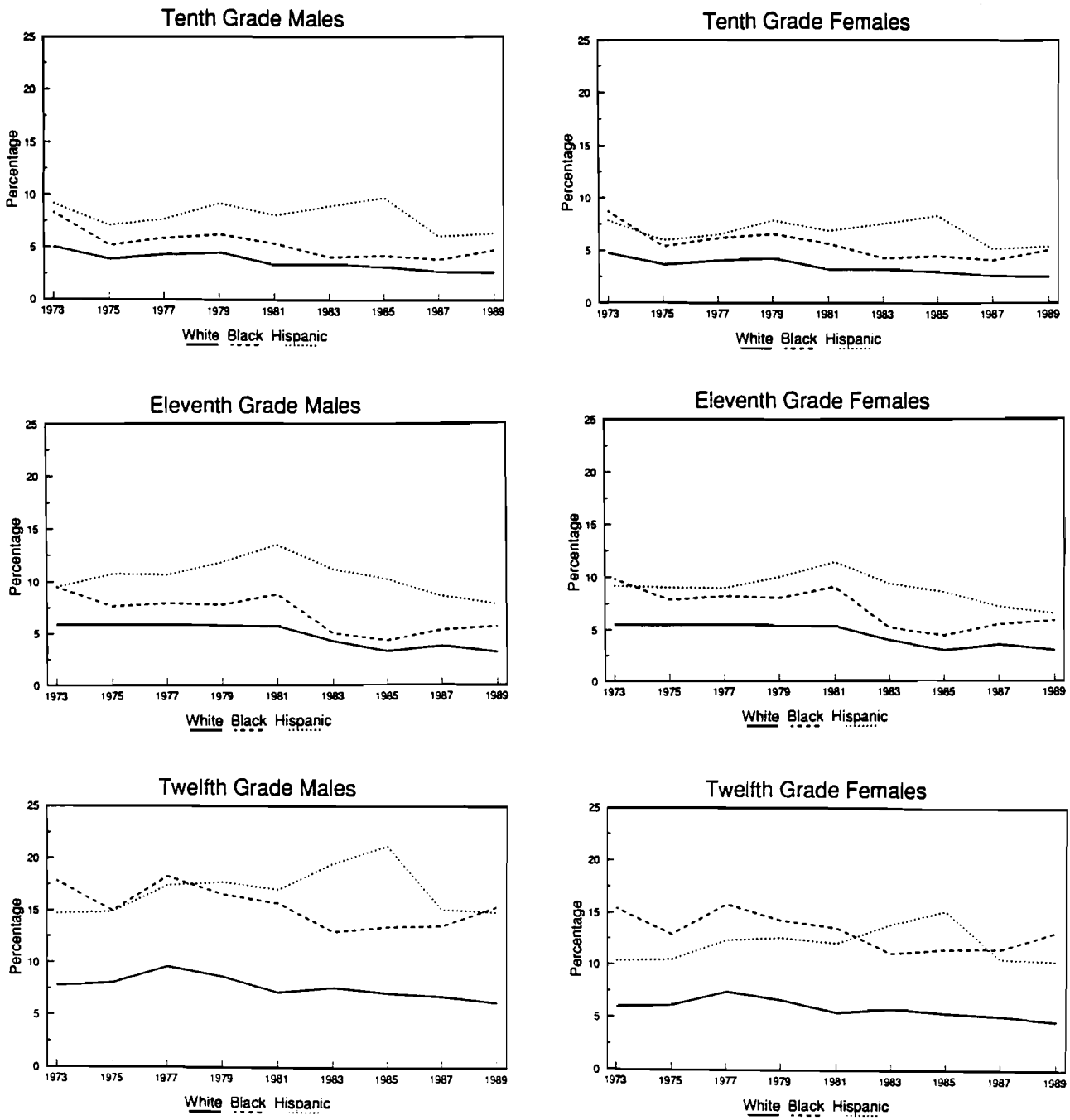


Table 2

Effects of Sex, Grade at Risk, Nondependency, and Social Background on Dropout from 10th to 12th Grade: White, Black, and Hispanic High School Students, 1973 to 1989

	White		Black		Hispanic	
Variables	Effect	Std. Error	Effect	Std. Error	Effect	Std. Error
Sex (female = 1, male = 0)	-0.343	0.063	-0.119	0.124	-0.275	0.166
Grade at risk (relative to Grade 10):						
Grade 11	0.392	0.065	-0.031	0.125	0.520	0.161
Grade 12	1.038	0.072	0.724	0.130	1.041	0.185
Female at grade 11	-0.099	0.084	0.022	0.167	-0.273	0.222
Female at grade 12	-0.253	0.081	-0.268	0.160	-0.424	0.227
Nondependency:						
Nondependent	2.199	0.103	0.354	0.267	1.122	0.289
Female nondependent	0.707	0.080	0.848	0.207	1.302	0.253
Grade 11 nondependent	-0.201	0.110	0.267	0.265	-0.727	0.320
Grade 12 nondependent	-1.213	0.104	0.383	0.255	-1.035	0.308
Metropolitan location (relative to suburban ring):						
Central city	0.107	0.076	0.433	0.146	0.035	0.171
Not large metropolitan	0.025	0.048	0.083	0.147	0.115	0.146
Region (relative to East):						
North	0.143	0.047	0.105	0.104	0.309	0.197
South	0.434	0.046	0.086	0.102	0.219	0.159
West	0.299	0.051	0.072	0.136	0.187	0.144
Age (relative to age 17):						
Age 14-15	0.581	0.091	0.343	0.187	0.834	0.232
Age 16	0.008	0.056	-0.309	0.125	0.083	0.153
Age 18	-0.200	0.049	0.337	0.095	0.001	0.134
Age 19	0.227	0.065	0.843	0.111	0.449	0.164
Age 20	0.855	0.099	1.254	0.144	1.041	0.216
Age 21-22	1.317	0.103	1.801	0.162	1.485	0.237
Age 23-24	1.171	0.131	1.775	0.218	1.938	0.303

(table continues)

Table 2, continued.

	White		Black		Hispanic	
Variable	Effect	Std. Error	Effect	Std. Error	Effect	Std. Error
Family background:						
Female-headed household	0.481	0.046	0.134	0.098	0.204	0.134
Head without occupation	0.166	0.058	0.184	0.083	-0.006	0.142
Children in household	0.084	0.012	0.080	0.017	0.076	0.027
Head's education (graded)	-0.063	0.011	-0.064	0.015	-0.036	0.019
Head's education (college)	-0.124	0.015	-0.118	0.041	-0.062	0.058
Spouse's education (graded)	-0.048	0.014	0.031	0.030	-0.030	0.023
Spouse's education (college)	-0.157	0.022	-0.122	0.058	-0.125	0.090
Head's occupational status (SEI)	-0.100	0.014	-0.044	0.038	-0.093	0.050
Head's farm occupation	-0.571	0.110	-0.098	0.232	-0.063	0.213
Family income not reported	0.060	0.069	0.201	0.136	-0.015	0.232
Family income (log)	-0.324	0.028	-0.205	0.052	-0.227	0.078
Housing tenure (own = 1, rent = 0)	-0.535	0.043	-0.439	0.076	-0.341	0.113
Sample size	94,682		14,955		6,351	

Note: Excepting race-ethnicity, sex, age, regional and metropolitan location, grade at risk, and dependency status, all variables pertain only to dependent students at risk. The effect of occupational status is reported for a unit of 10 points on the Duncan SEI.

missing for all students who were not classified as dependents. Estimated effects of variables other than age, sex, regional and metropolitan location, and year pertain only to dependent students, and those effects could be somewhat different among all students. Within each racial-ethnic group, we recoded the characteristics of nondependents at the mean values of the variables for dependents. Thus, the estimated effects of nondependency contrast dropout among nondependent students with dropout among the average dependent student in that racial-ethnic group.[14] There were also some households for which income was not reported, some heads without occupations, and a large number of female-headed households where, by construction, there were no data for spouse's education. In these cases we recoded the missing cases at the mean values for nonmissing cases in the racial-ethnic group and introduced a dummy variable for the cases with missing data. Thus, within each racial-ethnic group the dummy variable for female-headed household contrasts the chances of dropout among students from female-headed households with those of students from two-parent households whose mothers had completed the average level of schooling among mothers in those households.[15]

Because we have already examined the overall effects of gender and grade level on dropout, we omit discussion of the first two panels of table 2. Among all three racial-ethnic groups, nondependents are far more likely to drop out--or to have dropped out--of high school than are dependents, and this effect is stronger among women than among men. Among whites and Hispanics, but not blacks, nondependency and dropout are not as closely associated at the eleventh and twelfth grades as they are at the tenth grade. Although we have specified an association between dependency and dropout in the models, we are agnostic about the source of this relationship; our main purpose is simply to use as much of the data as possible in estimating overall trends by including both dependent and nondependent youth.

Residence in a central city of one of the largest metropolitan areas is associated positively with high school dropout among all racial-ethnic groups; that is, central-city residents are more likely

to drop out than residents of the suburban rings of the same major metropolitan areas. However, the effect is statistically significant only among blacks, who are by far the most likely to live in central cities. About 29 percent of black high schoolers live in the central city of one of the twenty large metropolitan areas, and--controlling social background--central city residence increases the odds of dropout by more than 50 percent relative to the chances in the suburban rings of those same areas.[16] In contrast, central-city residence vis-à-vis suburban residence increases the odds of dropout by only 11 percent among whites and by 3.6 percent among Hispanics, and the effect of central-city location is significantly larger among blacks than among whites.[17] Over the period 1973 to 1989, the annual dropout rates at the twelfth-grade level were about 6.8 percent among whites, 14.3 percent among blacks, and 14.6 percent among Hispanics. Near these averages, residence in a central city, rather than a suburban ring, raises the dropout percentages to 7.5 among whites, 20.5 among blacks, and 15.0 among Hispanics.

Although central-city residence affects dropout only among blacks, it is also significantly correlated with dropout among whites. When other social background factors are not controlled, the odds of high school dropout are 51.2 percent higher in central cities than in suburban rings among whites, and they are twice as high in central cities than in suburban rings among blacks.[18] However, social differences between central-city and suburban residents account for about three quarters of the association between central-city residence and dropout among whites and for about 40 percent of the association between central-city residence and dropout among blacks. Social differences between suburban and central-city residents account for just about the same difference in the odds of dropout among whites and blacks--about 35 percent--but the remaining disadvantage of central-city residence is much larger among blacks. We believe this is striking evidence of the disadvantaged position of black youth in large American cities; unlike many previous findings, our

estimates are strictly comparable among the parts of metropolitan and nonmetropolitan areas (Hammack 1986).

Dropout rates among each racial-ethnic group are higher in the North, South, and West than in the East. The regional differentials are not statistically significant among African Americans or Hispanics, but they are highly significant among whites. One notable differential is the higher odds of dropout among whites in the South, which are 54 percent greater than in the East, and the East-South difference is significantly larger among whites than among blacks or Hispanics.

Excepting singularly high dropout rates at ages 14-15 in each racial-ethnic group,[19] there is a regular upward gradient in dropout by age within each group. While the rates are not markedly different among ages 16 to 18, there is a sharp differential between the rates at ages 18 and 19 in each racial-ethnic group. Presumably these are associated with the end of compulsory schooling. This effect may appear to occur at too high an age, but it should be recalled that ages pertain to the time of the October CPS, while dropout could have occurred at any time in the preceding year. Another possible interpretation of the age gradient in dropout is that age within grade is a proxy measure of ability; that is, persons who are old relative to their grade may already have done poorly in school.

Even after other personal, social, and economic characteristics of students and their households are controlled, residence in a female-headed household appears to raise the chance of dropout in every racial-ethnic group; however, these effects are not statistically significant in either the African American or Hispanic populations. Although most attention has been focused on the effects of single-parent families in the black population, the effect is much larger among whites than among African Americans or Hispanics. When other social background characteristics are controlled, the odds of dropout increase by 62 percent among whites, by 14 percent among blacks, and by 23 percent among Hispanics when the household head is a woman with no spouse present.

There is, to be sure, a strong correlation between female headship and high school dropout in each racial-ethnic group; however, the association between female household headship and high school dropout in the minority groups is primarily due to the association of female headship with other background characteristics that lower the chances of school continuation. When other social variables are not controlled, female headship is associated with a 130 percent increase in the odds of dropout among whites, with a 79 percent increase in the odds of dropout among blacks, and with a 51 percent increase in the odds of high school dropout among Hispanics.[20] However, differences between female-headed families and other families account for about 40 percent of the association of female headship with dropout rates among whites, for about 75 percent of the association of female headship with dropout rates among blacks, and for about half the association of female headship with dropout rates among Hispanics.

In the period 1973 to 1989, annual dropout rates at the twelfth-grade level were about 6.8 percent among whites, 14.3 percent among blacks, and 14.6 percent among Hispanics. Near these averages, residence in a female-headed household increases dropout rates to 10.6 percent among whites, to 16.0 percent among blacks, and to 17.3 percent among Hispanics; the dropout percentage increases by 3.8 points among whites, by 1.7 points among blacks, and by 2.7 points among Hispanics. Among blacks, the effect on high school dropout of residence in a female-headed household, rather than a two-parent household, is substantially less than that of living in a central city, relative to a suburban ring. Obversely, among whites, central-city residence is no great disadvantage, but residence in a female-headed household is a real obstacle to high school completion.

Living in a household without a working head significantly increases the chances of dropout among whites and blacks, but not among Hispanics, even though residence in a household without a working head is strongly correlated with dropout in each racial-ethnic group. That correlation is

primarily due to the disadvantaged standing of nonworking heads on other social and economic variables.

Increasing numbers of children in the household are strongly associated with larger chances of dropout, and this effect is virtually the same in each racial-ethnic group: one additional child in a household raises the odds of dropout by about 8 percent. This may underestimate the educational disadvantage of large sibships, for the variable used in our analysis counts children currently residing in the home, not all brothers and sisters of the student.

We have separated the effect of each parent's education into two components, an effect of primary and secondary (graded) schooling and an effect of postsecondary (college) education. After some experimentation, we found that this treatment of the data captured the significant nonlinearity in the effect of parental schooling. The effect of each year of college among parents is almost twice that of each year of graded schooling. This finding holds for white, black, and Hispanic household heads. Among average twelfth graders, the percentage dropping out is 2.5 points less among whites, 4.9 points less among blacks, and 2.8 points less among Hispanics if the head of household is a college graduate rather than a high school graduate. However, if the head of household is a high school graduate rather than an elementary school graduate, the percentage dropping out is 1.4 points less among whites, 2.9 points less among blacks, and 1.7 points less among Hispanics. A similar finding holds for the effect of mother's education among whites and Hispanics, except there is an anomalous, nonsignificantly positive estimate of the effect of mother's graded schooling among blacks; we are inclined to conclude that, below the high school level, maternal schooling has little effect on dropout chances among minorities--black or Hispanic--in two-parent households.[21]

The negative effect of head's occupational status on dropout is large and significant among whites and Hispanics, but not among blacks. To be sure, there is a strong inverse correlation between occupational status and dropout in all three racial-ethnic groups, but 60 percent of that

correlation is explained among whites and Hispanics by the association of occupational status with other family background characteristics, and 80 percent of that correlation is explained by other background characteristics among blacks.[22] In all three groups the effect of head's farm occupation on dropout is negative, but it is statistically significant only among whites. That is, other things being equal, white farm children are less likely to drop out of high school than are white nonfarm children. This shows quite clearly that the historic net disadvantage of farm children in the educational system has disappeared. Black and Hispanic youth whose family heads hold farm occupations are observed to drop out of high school more than nonfarm youth, but that correlation is fully explained by the low standing of farmers on other background variables.

Household income and home ownership each have a large and significantly negative effect on dropout in each racial-ethnic group. We have expressed household income in the natural log of dollars, so its effect on dropout can literally be interpreted as an elasticity. Thus, a one percent increase in household income among whites leads to a one-third percent decrease in high school dropout. The effect of income is about 50 percent larger among whites than among blacks or Hispanics. As in the case of several other social or family background characteristics, the correlation of household income with high school dropout is much larger than its effect. In the three racial-ethnic groups 50 to 55 percent of the association of income with dropout is explained by its correlation with other background variables.

The reduction in the odds of dropout associated with home ownership is 41 percent among whites, 36 percent among blacks, and 29 percent among Hispanics. These are large effects; they are comparable to the effect of the difference between high school completion and college graduation among household heads. Among average twelfth graders, home ownership reduces the percentage dropping out by 4.7 points among whites, by 4.6 points among blacks, and by 3.8 points among

Hispanics. We wonder whether this large effect is entirely an influence of family wealth, or whether it also reflects other values, practices, or circumstances that are associated with home ownership.

TRENDS AND DIFFERENTIALS WHEN BACKGROUND IS CONTROLLED

Our ability to control social background in comparisons of dropout among racial-ethnic groups and across time depends on our willingness to ignore the absence of social background data among nondependent youth. To illustrate the size of this problem, we have estimated rates of nondependency by grade level, sex, and race-ethnicity, which are reported in table 3 and displayed in figure 11. These estimates are based on a logistic regression model that is similar to our initial model of trends and differentials in dropout.

Generally, nondependency peaks at about 5 percent at grade ten, at 10 percent at grade eleven, and at 15 percent at grade twelve. In most groups and grade levels, nondependency is far below these peak levels, and we do not believe that it poses a serious threat to the validity of our analyses. For example, it does not loom especially large relative to rates of survey and item nonresponse that are routinely tolerated in survey analysis. At the same time, we do know that nondependency is strongly associated with high school dropout, that our estimates of the effects of some background variables do not pertain to nondependents, and that our findings apply most strongly to youth who are still living with their parents (or other adult relatives).

In order to measure net differentials and trends in high school dropout, we estimated a single logistic regression equation for all racial-ethnic groups. The model is similar to that used in our initial estimates of dropout rates, except it also includes all of the social background variables of table 2. Of course, we have done some damage to the data by assuming homogeneity in the effect of social background across the ethnic groups, but in most cases the slopes are not significantly different among whites, blacks, and Hispanics.

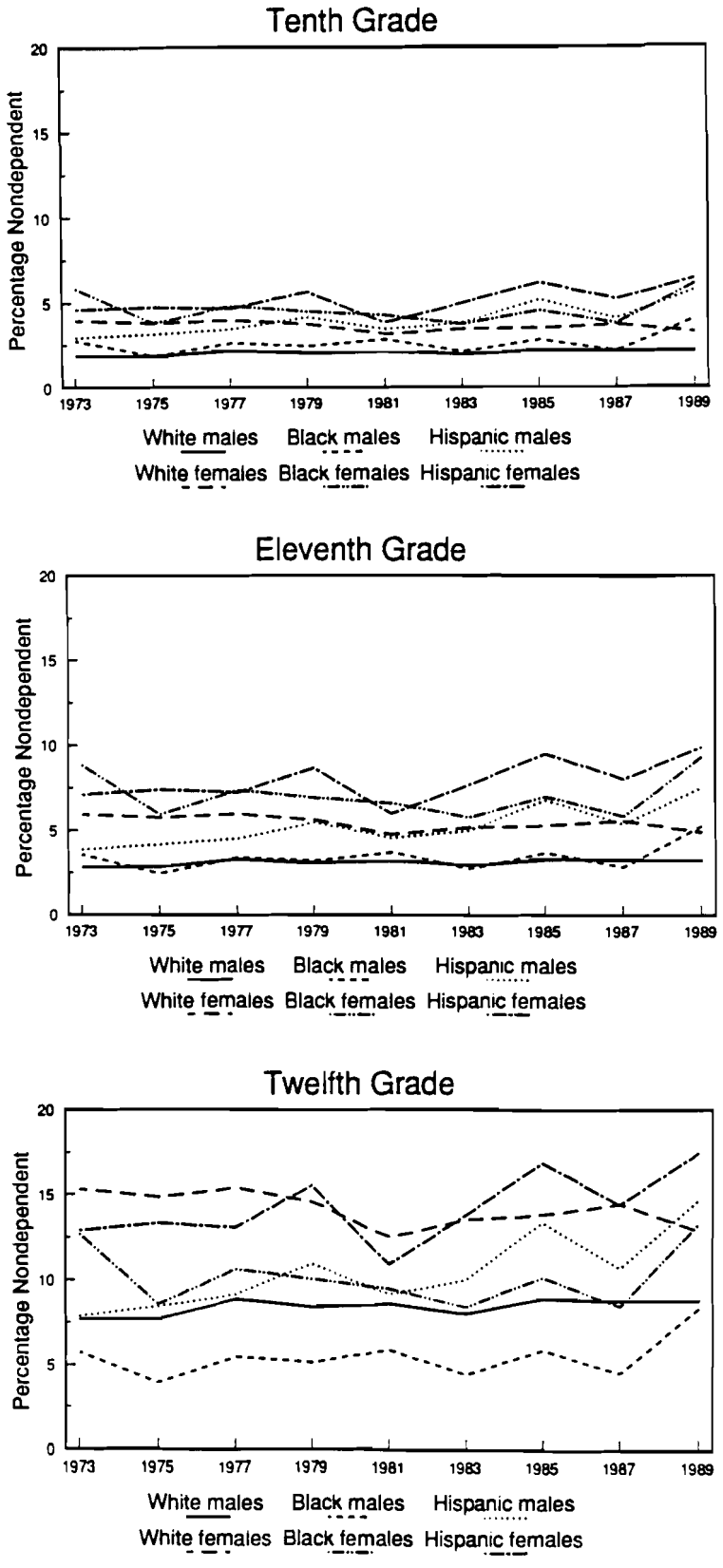
Table 3

Estimated Rates of Non-Dependency by Grade, Sex, and Race-Ethnicity, 1973 to 1989

	White men			White women		
	Grade 10	Grade 11	Grade 12	Grade 10	Grade 11	Grade 12
1973-74	1.9	2.8	7.7	3.9	5.9	15.3
1975-76	1.9	2.8	7.8	3.8	5.7	14.9
1977-78	2.2	3.3	8.9	4.0	5.9	15.4
1979-80	2.0	3.1	8.3	3.7	5.6	14.6
1981-82	2.1	3.2	8.6	3.2	4.7	12.6
1983-84	1.9	2.9	8.0	3.4	5.2	13.6
1985-86	2.2	3.3	8.9	3.5	5.3	13.8
1987-88	2.1	3.2	8.8	3.7	5.6	14.5
1989	2.1	3.2	8.8	3.2	4.9	12.9
	Black men			Black women		
	Grade 10	Grade 11	Grade 12	Grade 10	Grade 11	Grade 12
1973-74	2.7	3.6	5.7	5.8	8.8	12.7
1975-76	1.9	2.4	3.9	3.8	5.9	8.6
1977-78	2.6	3.4	5.5	4.8	7.4	10.6
1979-80	2.4	3.2	5.1	4.5	6.9	10.0
1981-82	2.8	3.7	5.9	4.3	6.6	9.5
1983-84	2.1	2.7	4.4	3.7	5.7	8.4
1985-86	2.8	3.6	5.9	4.6	7.0	10.1
1987-88	2.2	2.8	4.6	3.8	5.8	8.5
1989	4.0	5.2	8.3	6.1	9.3	13.3
	Hispanic men			Hispanic women		
	Grade 10	Grade 11	Grade 12	Grade 10	Grade 11	Grade 12
1973-74	2.9	3.8	7.9	4.6	7.1	12.9
1975-76	3.2	4.2	8.5	4.8	7.4	13.4
1977-78	3.4	4.5	9.2	4.7	7.2	13.1
1979-80	4.2	5.4	10.9	5.6	8.7	15.5
1981-82	3.5	4.5	9.2	3.8	6.0	10.9
1983-84	3.8	5.0	10.0	5.0	7.6	13.8
1985-86	5.2	6.8	13.4	6.2	9.5	16.9
1987-88	4.1	5.3	10.7	5.2	8.0	14.5
1989	5.7	7.5	14.7	6.4	9.8	17.4

Note: Estimates are based on a logistic regression model that includes main effects on dependency of grade level, sex, and race-ethnicity; interaction effects between grade level and sex, race-ethnicity and sex, and race-ethnicity and grade-level; and interaction effects between year and sex and between year and race-ethnicity.

Figure 11. Dependency Status by Grade Level, Sex, Race-Ethnicity, and Year



Estimated rates of high school dropout are reported in table 4 and displayed by racial-ethnic group within grade level and sex in figure 12. We have normed the rates in two ways. First, they pertain to dependent youth, not to all high school students. Second, we have normed the rates of dropout so the predicted log-odds among dependent black youth (of each sex and at each grade level) are set equal to the corresponding observed log-odds. By virtue of this normalization, the dropout rates of whites and of Hispanics can be said to pertain to youth in those groups with the average social background characteristics of blacks.

The striking finding in figure 12, which does not depend at all on our normalization of the dropout rates, is that controls for social background reverse the observed ordering of dropout rates between whites and blacks or Hispanics, especially in the 1970s. That is, when social background is controlled, whites have the highest propensity to drop out of high school, followed by Hispanics and then by blacks. Moreover, by the end of the 1980s, and primarily because of a steady downward trend among whites, there was a substantial convergence in dropout rates among the three racial-ethnic groups. That is, one need not invoke either culture, motivation, or discrimination to account for the observed racial-ethnic differences in high school dropout; they are fully explained by easily observable factors of social and economic origin. Moreover, to the degree that we must offer some explanation of differences in dropout beyond the obvious, the problem is not to explain higher dropout among minorities, but to explain it in the majority population. One possibility is that economic opportunities outside of school are greater for whites than for minorities, but our preliminary efforts to account for the differential using areal and temporal differences in unemployment and wage rates have not proved successful.

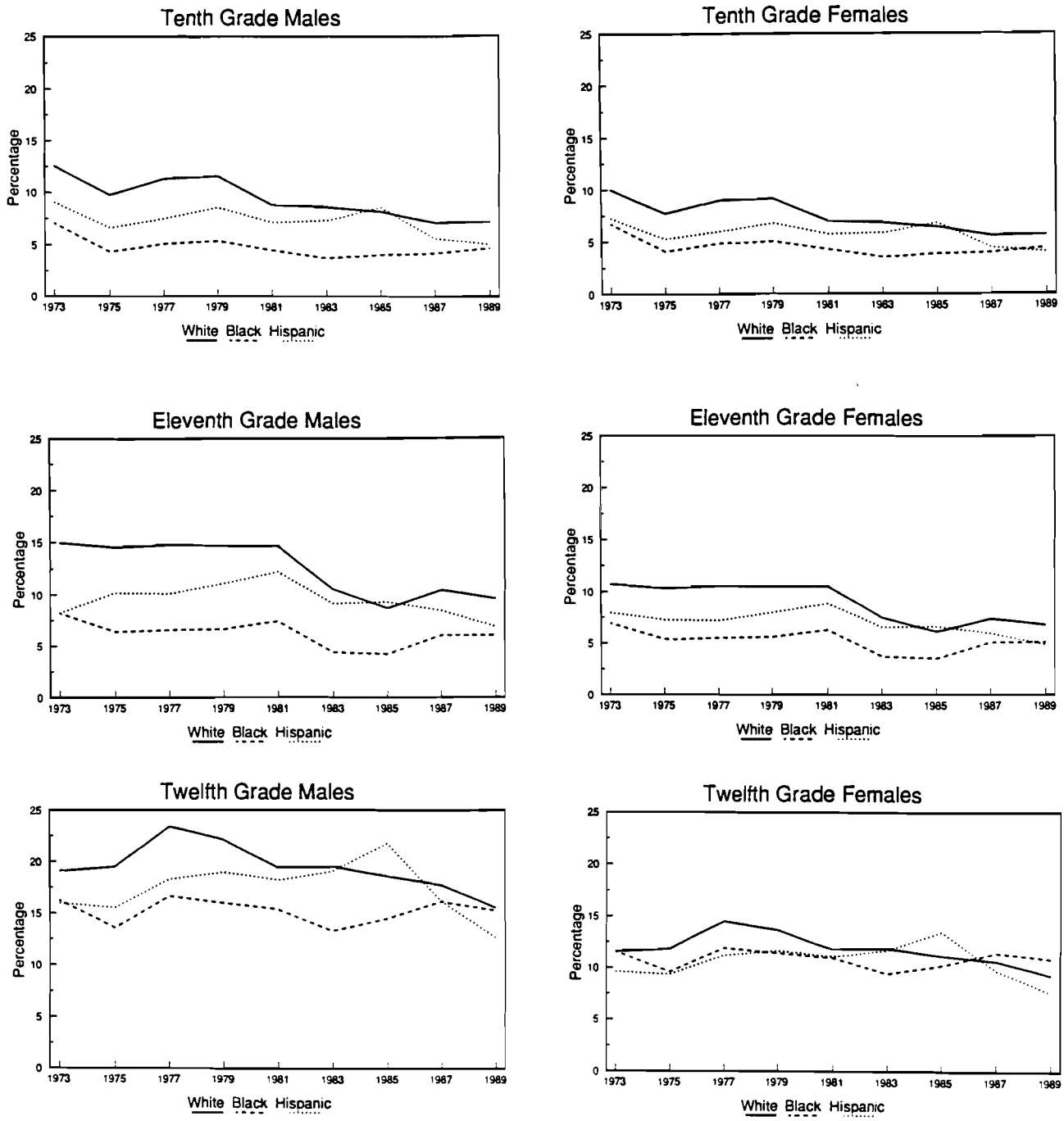
Table 4

Hypothetical Annual High School Dropout Rates of Dependents by Grade, Sex, and Race-Ethnicity, Based on Average Social Background of Blacks

	White men			White women		
	Grade 10	Grade 11	Grade 12	Grade 10	Grade 11	Grade 12
1973-74	12.6	15.0	19.1	10.0	10.7	11.6
1975-76	9.8	14.5	19.5	7.7	10.4	11.9
1977-78	11.3	14.8	23.4	9.0	10.6	14.5
1979-80	11.5	14.6	22.1	9.1	10.5	13.6
1981-82	8.7	14.7	19.4	6.9	10.5	11.8
1983-84	8.6	10.5	19.6	6.8	7.4	11.9
1985-86	8.1	8.7	18.6	6.4	6.1	11.2
1987-88	7.1	10.4	17.7	5.6	7.3	10.7
1989	7.1	9.5	15.5	5.6	6.7	9.2
	Black men			Black women		
	Grade 10	Grade 11	Grade 12	Grade 10	Grade 11	Grade 12
1973-74	7.1	8.2	16.2	6.7	6.9	11.6
1975-76	4.3	6.4	13.6	4.1	5.4	9.6
1977-78	5.1	6.5	16.7	4.8	5.5	11.9
1979-80	5.3	6.6	16.0	5.0	5.6	11.4
1981-82	4.4	7.4	15.4	4.2	6.3	10.9
1983-84	3.7	4.4	13.3	3.5	3.7	9.4
1985-86	4.1	4.2	14.5	3.8	3.5	10.3
1987-88	4.2	6.0	16.1	3.9	5.1	11.5
1989	4.6	6.0	15.2	4.4	5.1	10.8
	Hispanic men			Hispanic women		
	Grade 10	Grade 11	Grade 12	Grade 10	Grade 11	Grade 12
1973-74	9.1	8.2	15.9	7.2	7.9	9.6
1975-76	6.6	10.2	15.5	5.3	7.3	9.4
1977-78	7.5	10.1	18.4	6.0	7.2	11.2
1979-80	8.5	11.1	19.0	6.8	7.9	11.6
1981-82	7.1	12.2	18.2	5.6	8.8	11.1
1983-84	7.3	9.1	19.1	5.8	6.5	11.7
1985-86	8.5	9.2	21.8	6.8	6.6	13.5
1987-88	5.6	8.4	16.2	4.4	6.0	9.8
1989	5.0	6.8	12.6	3.9	4.8	7.5

Note: Estimates are based on a logistic regression model that includes main effects on dropout of grade level, sex, race-ethnicity, and dependency status; interaction effects between grade level and sex, race-ethnicity and sex, race-ethnicity and grade-level, grade-level and dependency status, sex and dependency status, and race-ethnicity and dependency status; and interaction effects between year and grade level and between year and race-ethnicity. Social background variables include age, mother's education, father's education, household head's occupational status, farm occupation, number of children in household, female headship, family income, housing tenure, region, and metropolitan location.

Figure 12. High School Dropout Adjusted for Social Background: Dependent Tenth to Twelfth Grade Men and Women by Race-Ethnicity, 1973 to 1989



Note: All graphs are plotted for persons with the characteristics of average black males or females at each grade level.

Endnotes

[1]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) and Pallas (1989).

[2]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.

[3]In the figures, we show three-year moving averages of the descriptive statistics.

[4]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 graduating.

[5]For convenience in the analysis, and because it makes little difference in the findings, we have not used the official convention that "Hispanics may be of any race." All blacks, regardless of other ethnic origin, are classified as black, and Hispanic pertains only to nonblacks. Because so few Asians appear in the CPS, and they are, in the aggregate, more similar to whites than to blacks and Hispanics, we have combined Asians and non-Hispanic whites throughout the analysis.

[6]The identifiable metropolitan areas include New York, NY; Los Angeles–Long Beach, CA; Chicago, IL; Philadelphia, PA; Detroit, MI; San Francisco, CA; Washington, DC-MD-VA; Boston,

MA; Nassau-Suffolk, NY; Pittsburgh, PA; St. Louis, MO-IL; Baltimore, MD; Cleveland, OH; Houston, TX; Newark, NJ; Minneapolis-St Paul, MN; Dallas, TX; Seattle-Everett, WA; Anaheim-Santa Ana-Garden Grove, CA; and Milwaukee, WI.

[7]The last was that by the U.S. Bureau of the Census (1979).

[8]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.

[9]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.

[10]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.

[11]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.

[12]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.

[13]Because several of the socioeconomic background variables are observed only for dependent students, that is, students who are neither a head of household nor a spouse of head, we have also

examined these trends among dependent students, and they are virtually the same as those among all students.

[14]Obviously, the data for nondependents add no information to the models about the slopes of variables for which those data were missing, but they do add information about the effects of sex, race, age, dependency status, regional and metropolitan location, and calendar year.

[15]For nondependent students the dummy variables for missing data were assigned the arithmetic means of those variables among dependent youth.

[16]That is, $e^{0.433} = 1.54$.

[17]We tested intergroup differences in effects by constructing t-statistics from the reported coefficients and their standard errors.

[18]These estimates are based upon a logistic regression model in which metropolitan residence is entered along with sex, grade at risk, calendar year, dependency status, and the two-way interaction effects among sex, grade at risk, and dependency status. However, the model does not include age, regional location, or other family background characteristics. The estimates from the model that does include age, etc., are available from the authors.

[19]We have been unable to come up with a good explanation for this.

[20]These estimates are based upon a logistic regression model in which female headship is entered along with sex, grade at risk, calendar year, dependency status, and the two-way interaction effects among sex, grade at risk, and dependency status. However, the model does not include age, metropolitan or regional location, or other family background characteristics.

[21]Recall that, in female-headed households, the effect of maternal schooling is carried by our variable for head's education.

[22]These estimates are based upon a logistic regression model in which household head's occupational status, head's farm occupation, and head's work status were entered along with sex,

grade at risk, calendar year, dependency status, and the two-way interaction effects among sex, grade at risk, and dependency status. However, the model does not include age, metropolitan or regional location, or other family background characteristics.

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