GETTING DOWN TO FACTS II

Technical Report

Setting the Stage: Trends in Student Demographics and Enrollment in California

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About: The *Getting Down to Facts* project seeks to create a common evidence base for understanding the current state of California school systems and lay the foundation for substantive conversations about what education policies should be sustained and what might be improved to ensure increased opportunity and success for all students in California in the decades ahead. *Getting Down to Facts II* follows approximately a decade after the first *Getting Down to Facts* effort in 2007. This technical report is one of 36 in the set of *Getting Down to Facts II* studies that cover four main areas related to state education policy: student success, governance, personnel, and funding.

Stanford University

PACE Policy Analysis for California Education

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Key Findings

- Public school enrollment in California has been fairly constant in the last two decades, while private enrollment has declined slightly.
- Charter school enrollment has increased dramatically as a share of public enrollment and varies considerably across racial/ethnic groups. Black students have the highest rates of charter school enrollments.
- The Hispanic share of public enrollment in California has increased consistently since 1990, and Hispanics are now the largest racial/ethnic group in California schools.
- The share of students who are English Language Learners has been fairly stable in recent decades, and students whose home language is Spanish are by far the largest group of English Learners.
- The socioeconomic conditions of California's children have improved in the last decade by some measures: Children are more likely to have at least one parent with a Bachelor's degree or higher, more likely to have parents who speak English well, and somewhat less likely to be living in a single-parent household.
- About one in five California schoolchildren live in poverty and poverty rates are persistently higher for black, Hispanic, and American Indian children, compared to white and Asian children.
- California's schools are relatively segregated by race/ethnicity, English Language Learner status, and free lunch eligible status. Trends in segregation differ across these groups.

Introduction

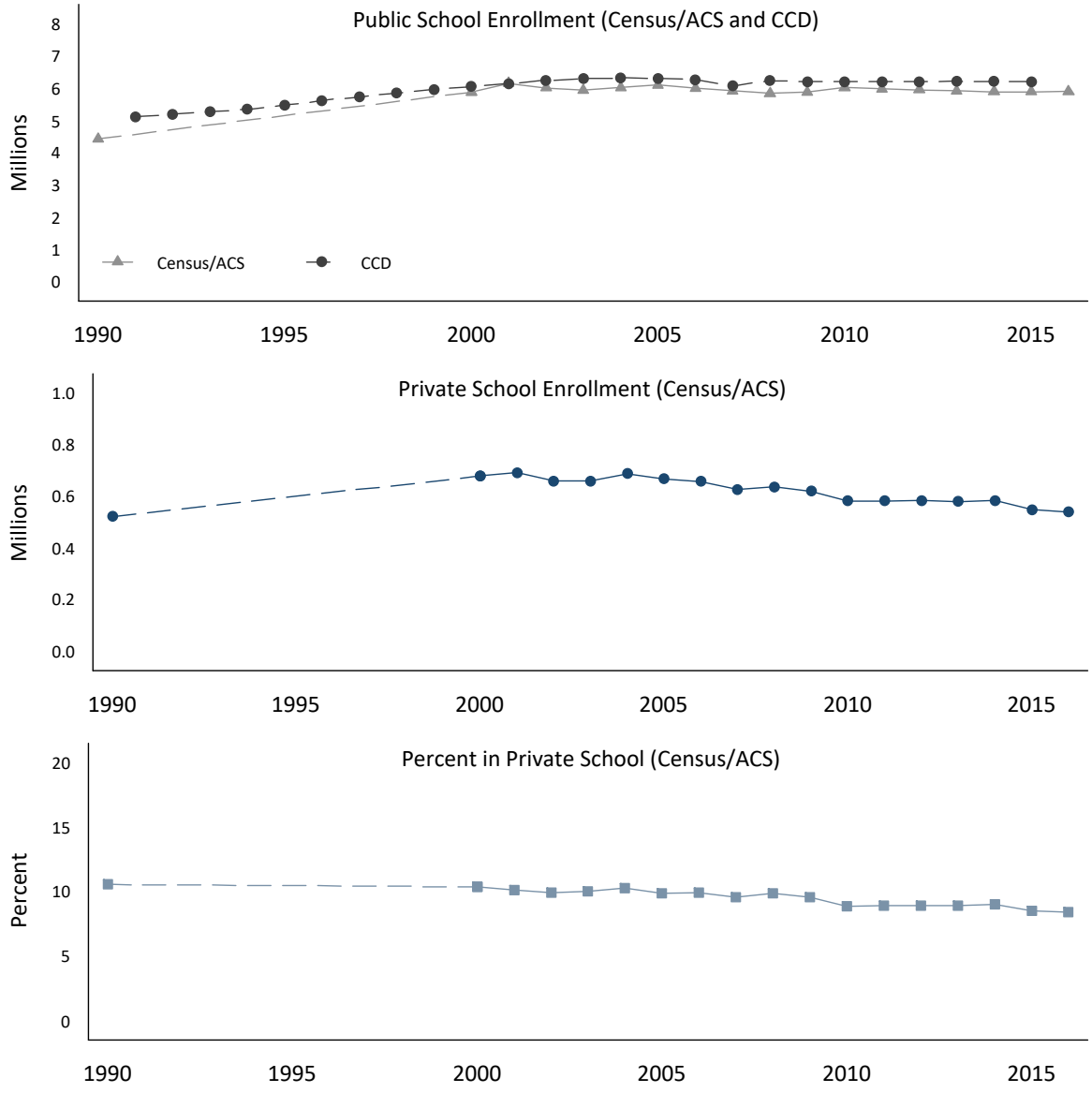
This paper provides a brief overview of key trends in enrollment, demographics, and segregation in California's schools in recent decades. Total public school enrollment has been relatively stable, and charter schools account for an increasing share of public enrollment. The Hispanic share of public enrollment has increased dramatically, and the white share declined. Increasingly, Hispanic Californian children are second and third generation Americans, and the share of students who are English Learners has remained relatively consistent. The share of Asian students has remained consistent over time but with a decline in the share of first generation and an increase in the share of second and third generation Asians. Trends in the socioeconomic conditions of California's schoolchildren are positive. Their parents are more educated and more likely to speak English well, and they are no more likely to be growing up in a single-parent household. On the other hand, overall child poverty has not declined to pre-recession levels, and there are persistent and large differences in poverty across racial and ethnic groups. Black and Hispanic children are substantially more likely to both be in families with incomes below the poverty line and to attend schools with high poverty rates. This is because California's schools are fairly segregated by race. We present data and discuss these trends below.

Enrollment

Figure 1 shows trends in public and private school enrollment since 1990. Both public and private enrollment increased somewhat between 1990 and about 2005. Estimates of public school enrollment based on the Census (1990 and 2000) and the American Community Survey (Census/ACS) track closely with estimates based on the Common Core of Data (CCD) from the National Center for Education Statistics (NCES), though the latter is about 5 percent higher. Since the early 2000s, total public enrollment has been steady at around 6 million students (top panel), and private enrollment has declined slightly (middle panel). The share of students enrolled in private school declined from a peak of 10.3 percent in 2004 to 8.4 percent in 2016. Other data on private school enrollments from the NCES private school survey show similar trends (Western Interstate Commission on Higher Education 2016).

The California Department of Finance projects that public school enrollments will decline over the next decade. About 6.2 million students were enrolled in public schools in California in 2016, but that number is expected to drop to about 6.05 million by 2026. Enrollment changes are expected to vary considerably across counties throughout the state, with some counties projected to experience enrollment declines as high as 10 percent, while others are projected to experience enrollment gains.

Figure 1. Trends in Public and Private School Enrollment in California

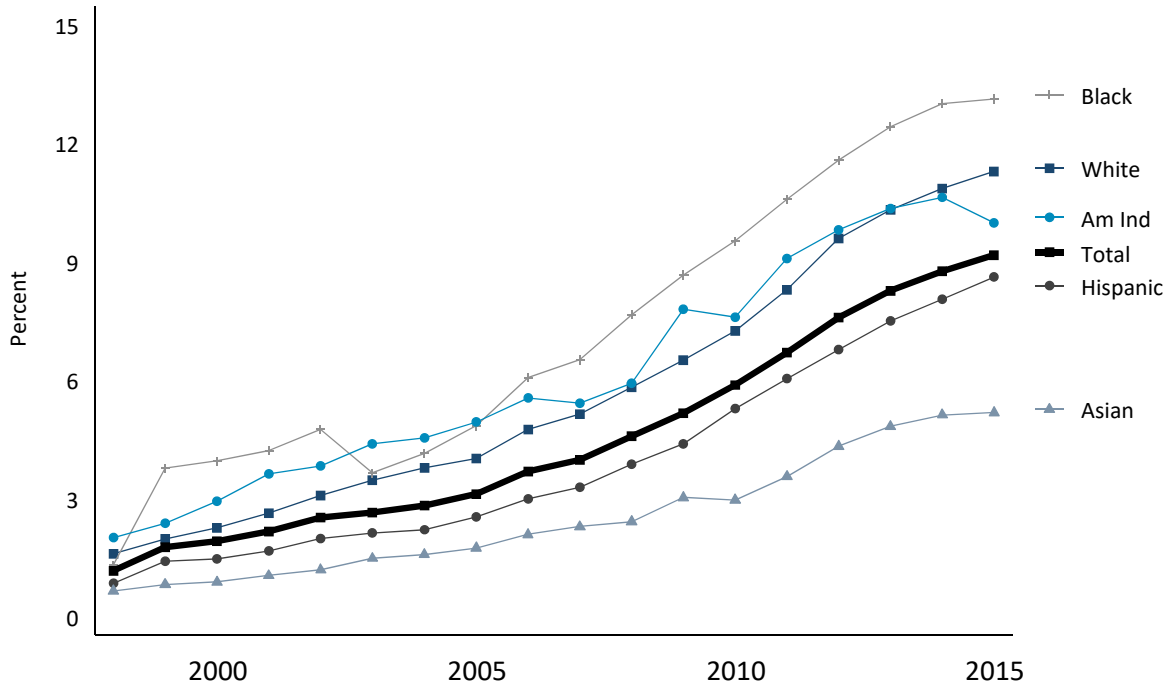


Source: Common Core of Data and Census/American Community Survey

While private school enrollment declined slightly, enrollment in charter schools has increased substantially. Figure 2 shows that in 1998, the first year for which we have data, charter school enrollment accounted for just over 1 percent of total public school enrollment in California. Charter school enrollment increased steadily since then, and accounted for more than 9 percent of public enrollment in 2015. While charter schools have become more popular for all racial/ethnic groups in California in recent decades, charter enrollment rates vary substantially across groups. Black students enroll in charter schools at the highest rate (13.1 percent in 2015), and are two and a half times more likely to enroll in a charter school than the group with the lowest charter school enrollment rate (5.2 percent), Asians. Whites and

American Indians enroll in charters at higher than average rates, while Hispanics have slightly below average charter enrollment rates. In 2015, 55 percent of charter school enrollment was in cities compared to only 38 percent of non-charter school public school enrollment. Charter and non-charter public schools have similar enrollments of students eligible to receive free lunches (not shown).

Figure 2. Percent of Public Enrollment in Charter Schools, by Race/Ethnicity

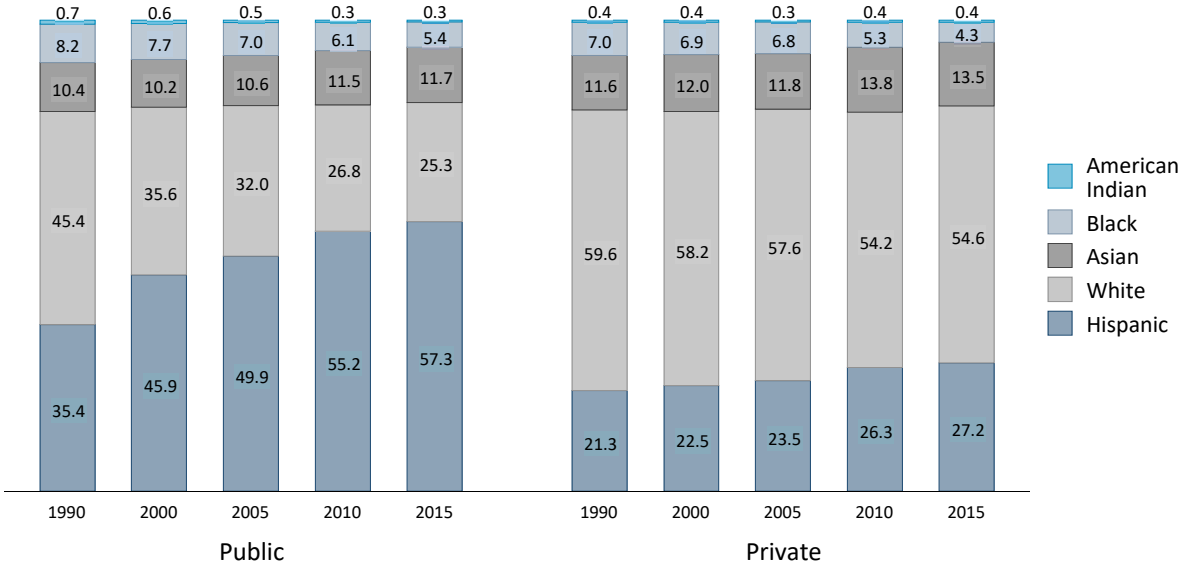


Source: Common Core of Data

Demographics and Socioeconomic Conditions

Figure 3 shows how the racial and ethnic composition of California's public and private schools has changed since 1990. The Hispanic share of public enrollment has steadily increased and the white share has declined since 1990. Hispanics have comprised a majority of public enrollment since the mid-2000s and accounted for 57 percent of enrollment in 2015. Whites accounted for about a quarter of public enrollment in 2015. The black share of enrollment has declined from 8.2 percent in 1990 to 5.4 percent in 2015, while Asians consistently accounted for 10 to 12 percent of enrollment and American Indians accounted for less than 1 percent. Black, Asian, and American Indian representation is similar in public and private schools, but whites are much more likely to enroll in private compared to public school and Hispanics are much less likely to enroll in private compared to public school.

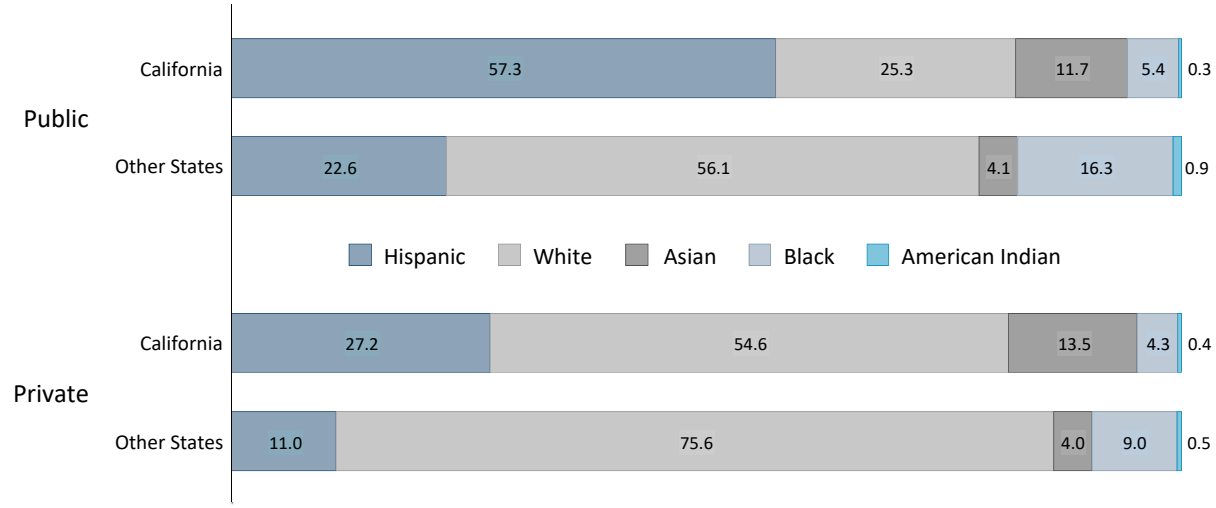
Figure 3. Racial/Ethnic Composition of Public and Private California Schools



Source: Census/American Community Survey

Figure 4 shows how the race/ethnicity composition of California public and private schools compares to that in the rest of the country. California's school-age population is significantly more Hispanic and Asian and less white.

Figure 4. Racial/Ethnic Composition of Public and Private Schools, 2015

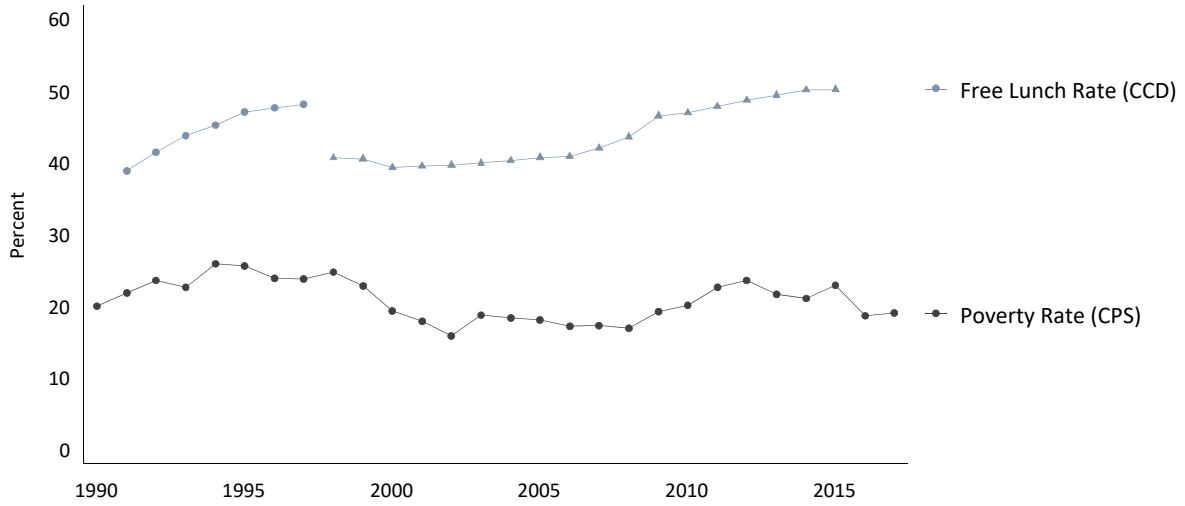


Source: Census/American Community Survey

Figure 5 shows trends in two measures of economic disadvantage among public schoolchildren in California since 1990. The light blue (top) line shows the share of public school enrollees qualifying for free lunch calculated using CCD data. We break the time-series before and after 1998 due to a change in the survey in 1998 that impacted reporting. Prior to 1998

only counts of free lunch students were collected, while in 1998 and later counts of free and reduced lunch students were both collected. The dark blue (lower) line shows the poverty rate for school-aged children calculated from the Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC). The child poverty rate has fluctuated with economic activity. In the most recent recession, the child poverty rate increased from about 17 percent in 2008 to a peak of almost 24 percent in 2012. The child poverty rate has still not returned to its pre-recession level but fell to 19 percent in 2017. Trends in the school-aged child poverty rate as measured in the CPS and the share of students participating in the free lunch program roughly track each other, though the latter is higher than the former (this is expected, since the cutoff for eligibility for free lunch is 130 percent of the poverty line). More recently, the two series have diverged more, perhaps reflecting increased prevalence of school-wide free lunch programs or other improvements in enrollment of eligible children in the school lunch program.

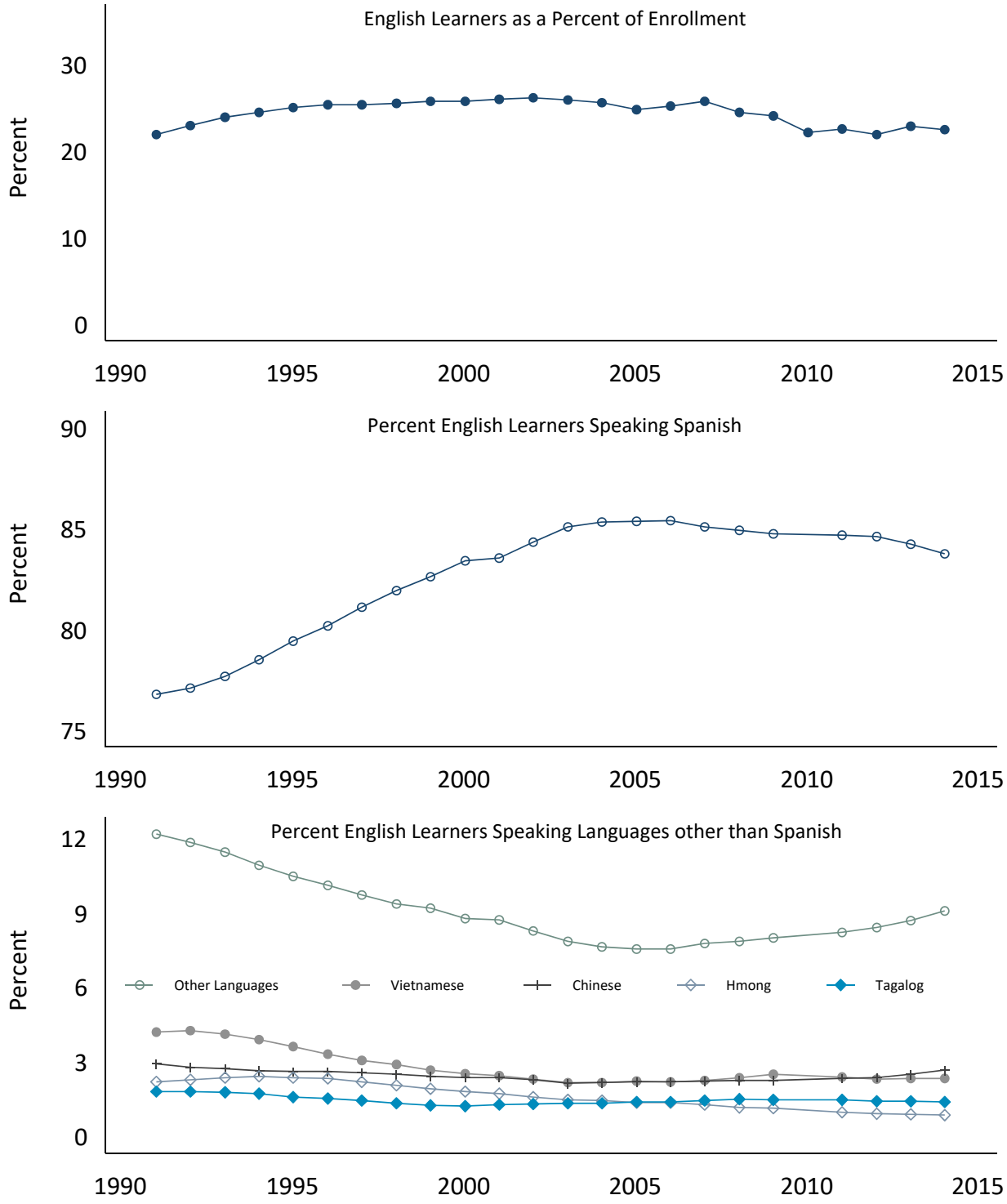
Figure 5. Trends in Poverty Rates among California Children



Source: Common Core of Data and CPS Annual Social and Economic Supplement (ASEC)

Figure 6 shows that the share of public school students who are English Language Learners has been relatively stable, starting at about 22 percent in 1991, peaking at 26 percent in 2002, and falling to 22 percent in 2014 (the most recent year available). This tracks well with the share of students who have parents who do not speak English well (see Figure 7). Throughout the period, Spanish is by far the most common first language for ELLs, increasing from about 77 percent in 1991 to a peak of about 85 percent in the mid-2000s and dropping slightly to 84 percent in the most recent year. The third panel of Figure 3 shows the share of ELLs speaking Vietnamese, Chinese, Hmong, or Tagalog. All of these languages were spoken by less than 5 percent of ELLs throughout the period and have declined in prevalence over time, although they remain the most common languages spoken by ELLs in California, aside from Spanish. Between 6 and 12 percent of ELLs speak another language not already listed, depending on the year. This points to the great diversity of languages spoken by California's schoolchildren.

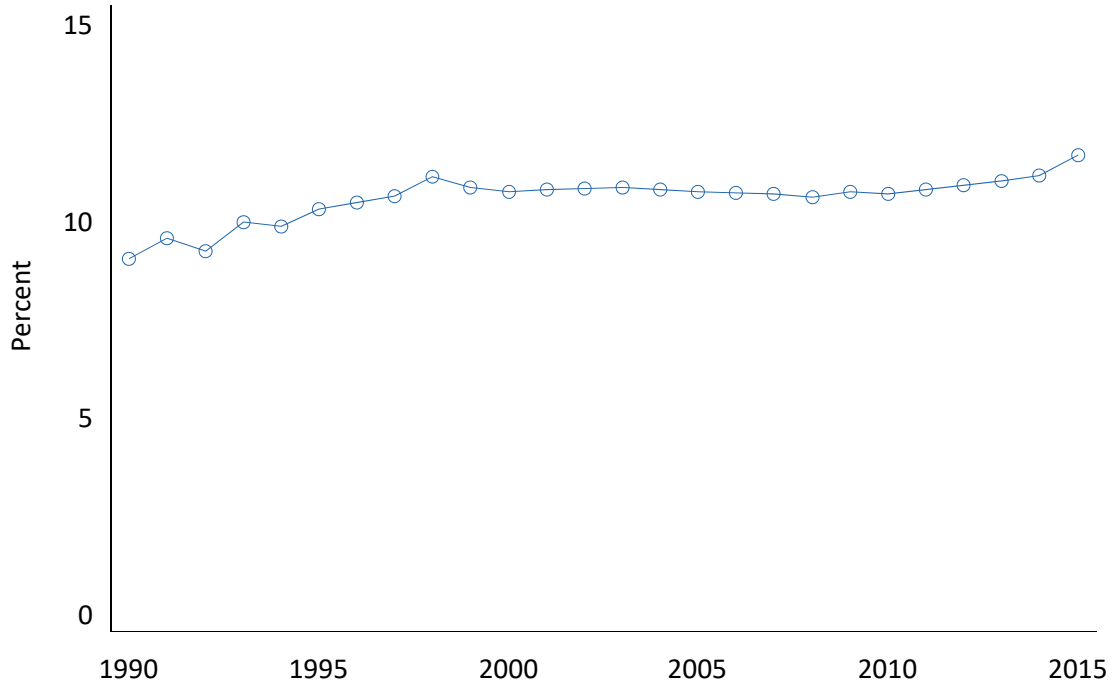
Figure 6. Trends in English Language Learner Enrollment



Source: California Department of Education

In Figure 7 we use data from the Common Core of Data to show trends in the proportion of California public school students classified as receiving special education services. The proportion of students in special education increased from about 9 to 11 percent between 1990 and 2000 and then remained stable for about a decade. Special education enrollments began to increase again slowly around 2010 reaching about 12 percent by 2015.

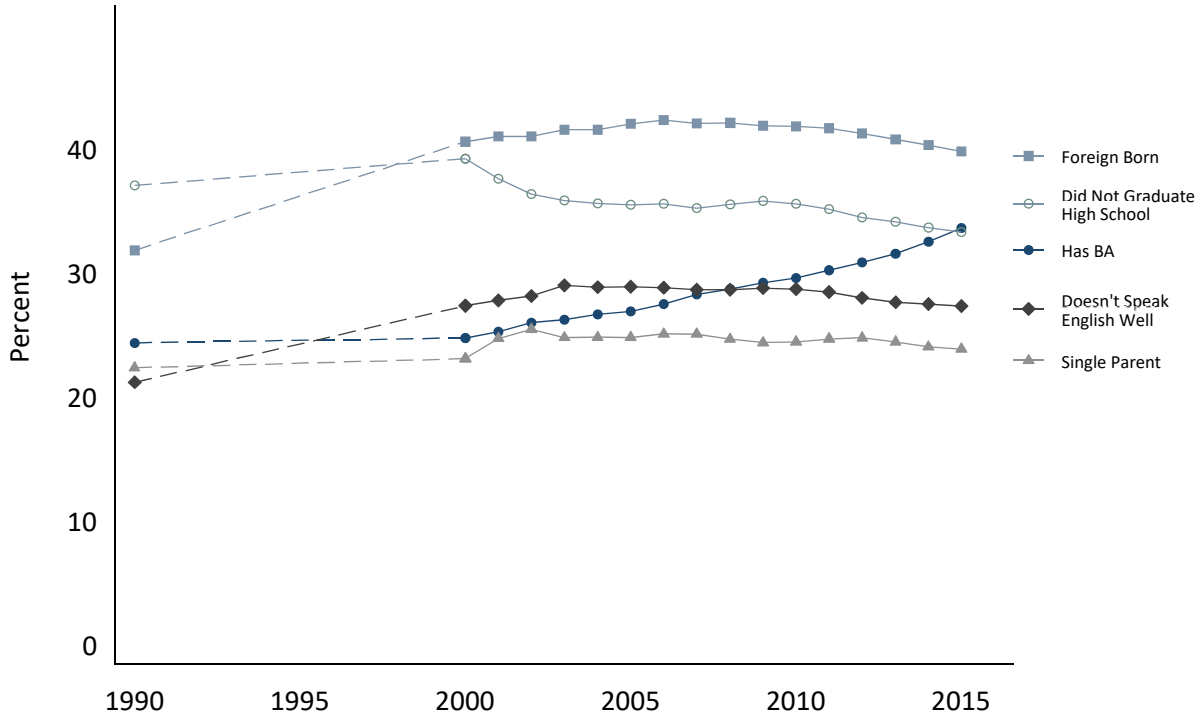
Figure 7. Trends in Special Education Enrollments



Source: Common Core of Data

Figure 8 shows that the family circumstances of California's public schoolchildren have improved in the last 15 years. The parents of California's schoolchildren have become more educated over time: the share of students with at least one parent with a BA or higher increased from 24 percent in 1990 to 34 percent in 2015. The share of students with a parent that is a high school dropout declined from 36 percent in 1990 to 33 percent in 2015. The share of students living in single-parent households was relatively constant throughout this period. Between 1990 and the early 2000s, the share of schoolchildren with parents who did not speak English well increased, but has declined somewhat since then.

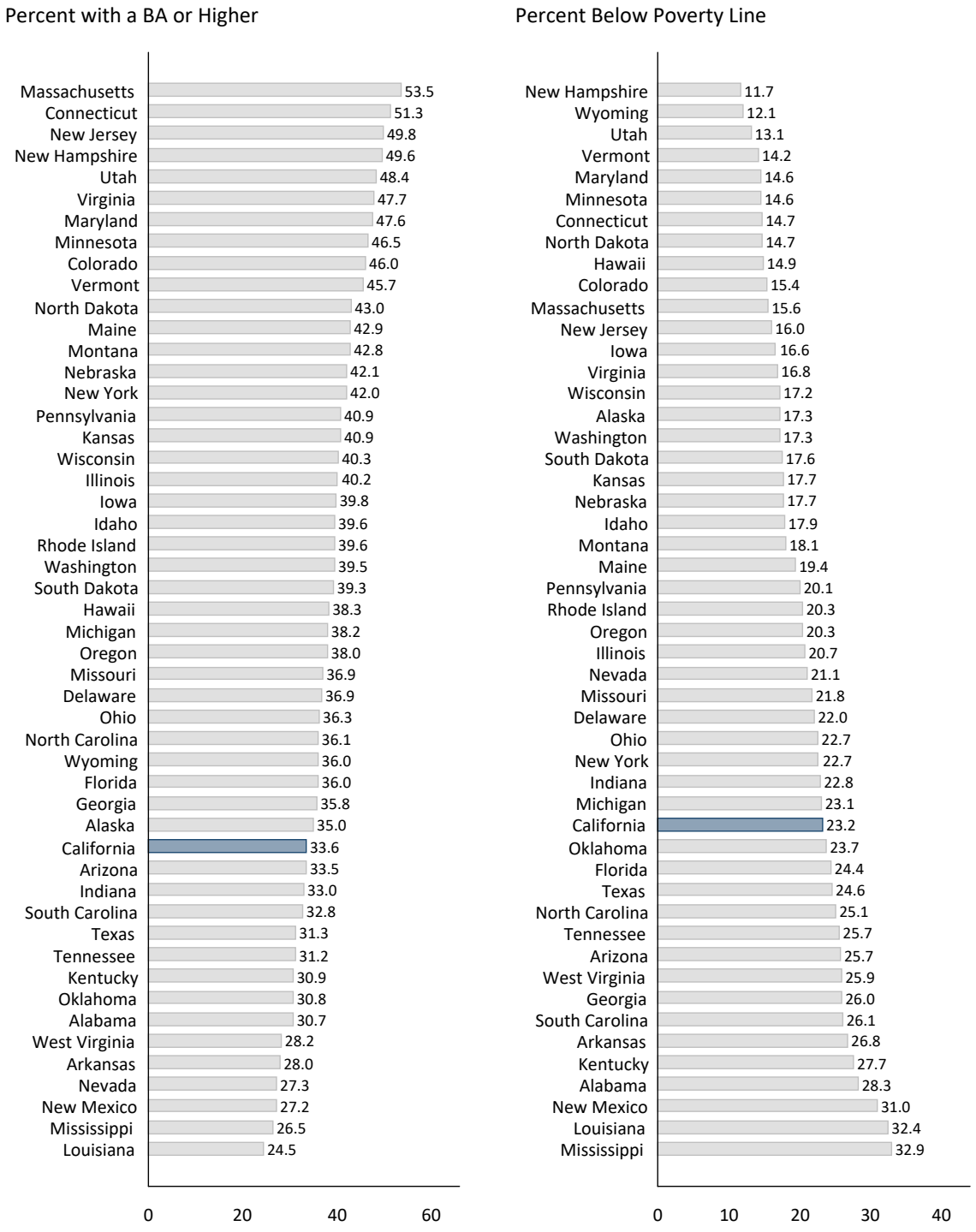
Figure 8. Parental Characteristics for California Children Attending Public Schools



Source: Census/American Community Survey, 3 Year Moving Averages

Figure 9 shows how the parental education and poverty rates of California's public schoolchildren compares to that of other states. California ranks in the bottom third of states on both the percent of public schoolchildren who have at least one parent with a BA and percent of children in poverty.

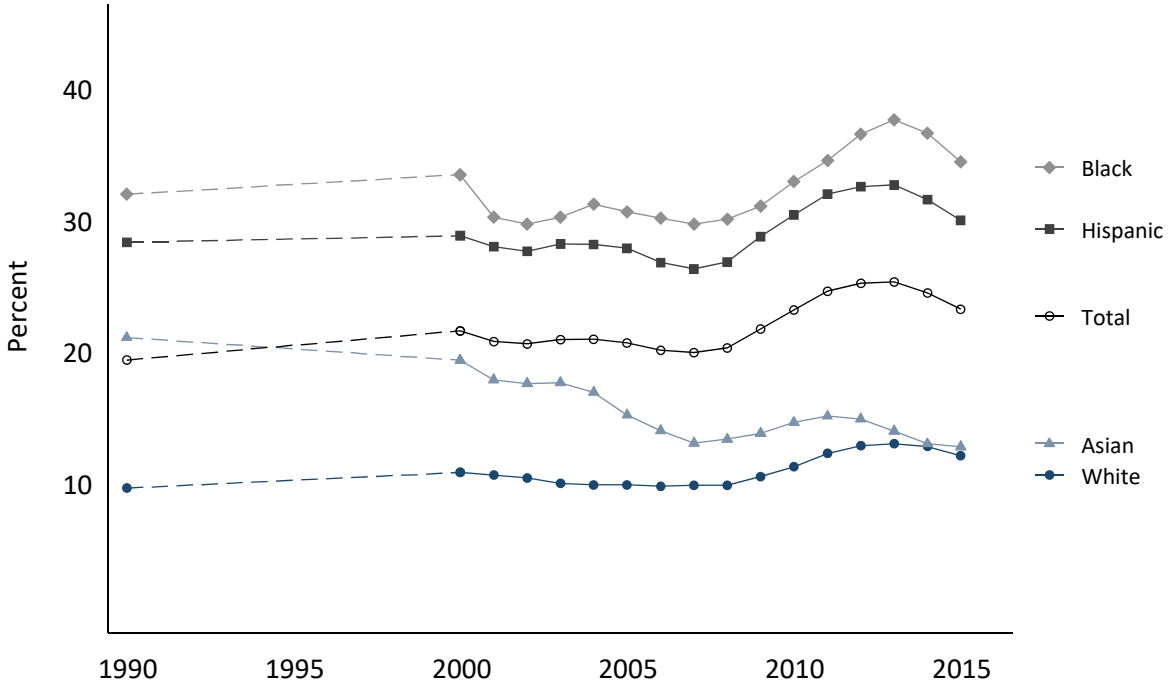
Figure 9. Parental Characteristics of Children Attending Public Schools, 2014-2016



Source: Census/American Community Survey

Figure 10 shows poverty rates by race/ethnicity (American Indian is not reported since the sample is small). Differences in poverty rates across racial and ethnic groups are large and persistent. The trends mostly move in parallel over time, though the poverty rate of Asians has converged with that of whites in recent years. The poverty rate of blacks and Hispanics is about 3 times that of Asians and Whites. We show below that blacks and Hispanics are not only in poorer families, on average, but they are also in schools serving more poor students. This is largely because schools are fairly segregated by race.

Figure 10. Trends in Poverty Rates, by Race/Ethnicity



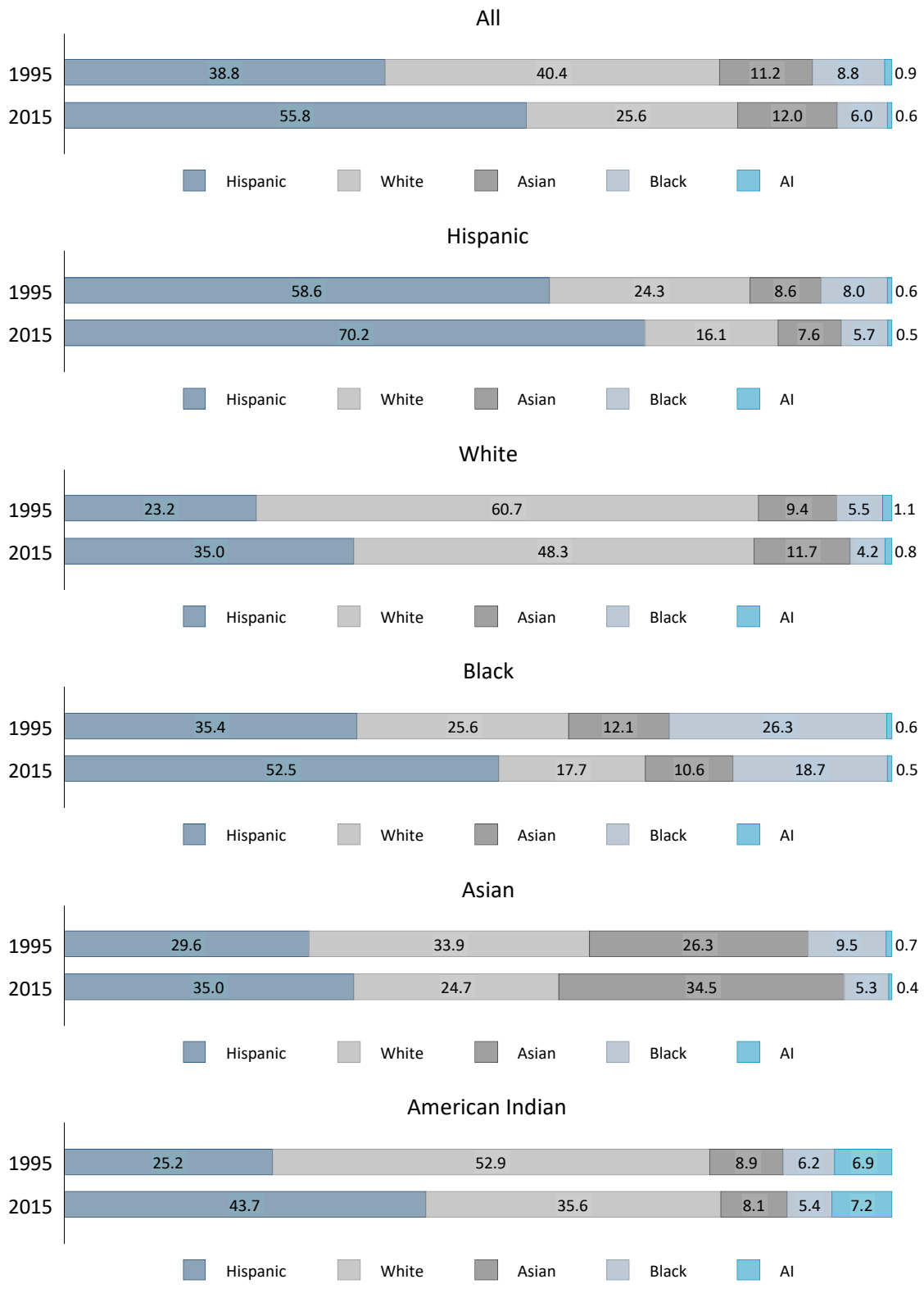
Source: Census/American Community Survey, 3 Year Moving Averages

Segregation

Figure 11 shows the racial composition of public schools for 1995 and 2015, separately by race/ethnicity. For example, the second panel shows the racial composition in the average Hispanic student's school. On average, in 2015, Hispanics were in schools that were about 70 percent Hispanic, even though the overall population is only 56 percent Hispanic. In contrast, the average white student attended a school that was 35 percent Hispanic and 48 percent white, while Hispanics and whites made up 26 and 56 percent of total enrollment, respectively.

Blacks, Asians, and American Indians all attend schools that are more racially/ethnically mixed, on average, though the black share in the average black's school and the Asian share in the average Asian's school are both about three times their respective shares of enrollment overall. American Indians' schools have much higher American Indian shares of enrollment than average, but it is still less than 10 percent, owing to American Indian's small share (0.6 percent) of overall enrollment in California.

Figure 11. Racial/Ethnic Composition of Schools, by Race/Ethnicity

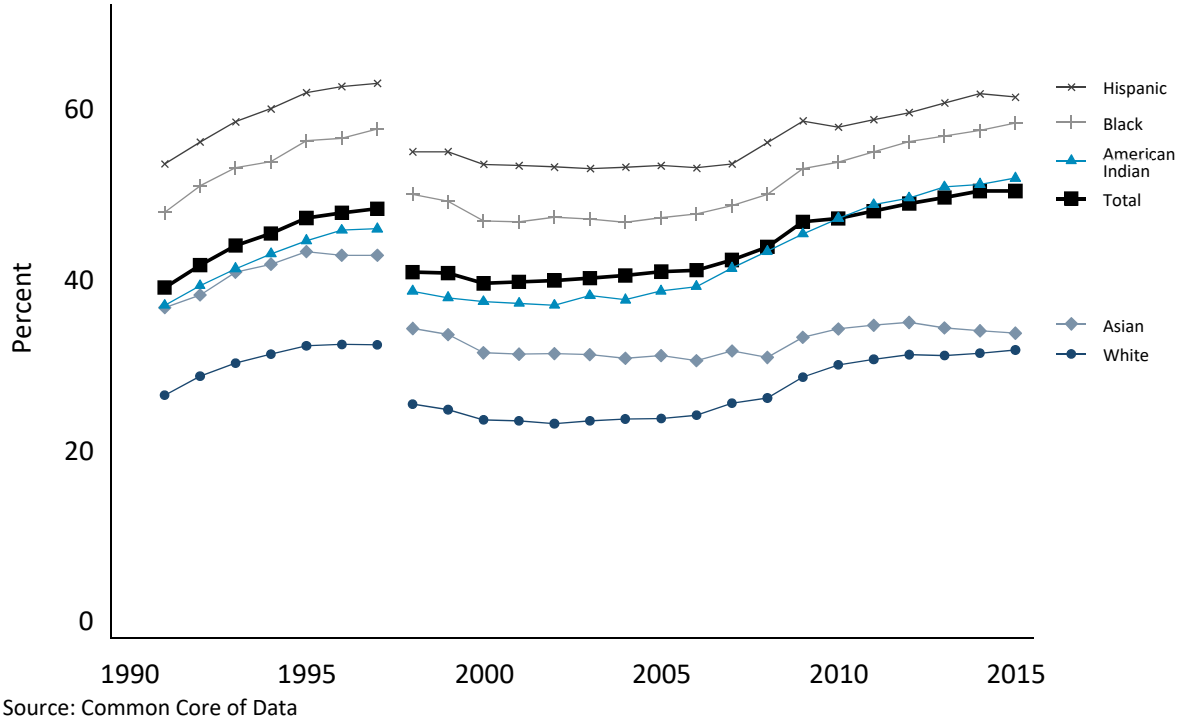


Source: Common Core of Data

Figure 12 shows how exposure to economic disadvantage in schools varies by race and ethnicity. The figure plots the share of students qualifying for free meals in the average student's school, overall and separately by race. The trend for the average student is the same as in Figure 4. Hispanics are consistently in schools with the highest rate of free lunch eligible students, followed by blacks, American Indians, Asians and Whites. These gaps are large: in the most recent year, the typical Hispanic student was in a school where over 6o percent of students qualified for free lunch, while the average white student's school was roughly half as poor by that measure. Trends for the different groups mostly move in parallel, although the share of free lunch eligible students in the typical Asian student's school has been declining relative to that of other groups and has nearly converged with that of whites.

The high level of economic disadvantage prevalent in schools attended by Hispanics and blacks on the one hand, compared to whites and Asians on the other hand, largely corresponds to differences in poverty rates by group (Figure 8). This pattern is not mechanical but arises as a result of differences in group-specific poverty rates and segregation by race. The typical Hispanic student is in a school that is more economically disadvantaged than the typical black student's school, even though black students are more likely to be in poverty themselves. This is because Hispanic students are more segregated from non-Hispanic students than black students are from non-black students. The convergence of Asians to whites is due to the decline in the Asian poverty rate, relative to other groups, as well as the increased concentration of Asians in schools with other Asians.

Figure 12. Trends in Percent Free Lunch in Average Student's School, by Race/Ethnicity



Source: Common Core of Data

Figures 13 and 14 show trends in segregation for racial/ethnic groups and for free-lunch eligible and ELL students, respectively. These figures use a measure of racial balance, the Theil index, also known as the information index (sometimes denoted H), to show how segregated each race is from all the other races. The index ranges from 0 (no segregation) to 1 (complete segregation) (Theil 1972). An advantage of the Theil index is that it is possible to decompose segregation into different components, so we can see how much of the overall segregation is due to sorting at different levels of geography. We decomposed overall segregation between schools in the state of California into three components: 1) segregation between commuting zones (CZs) within the state, 2) segregation between school districts within CZs, and 3) segregation between schools within school districts. Commuting zones are aggregations of counties intended to closely reflect the local economies in which people live and work. Unlike metropolitan areas, commuting zones cover the entire country. In 2000 there were 709 commuting zones nationwide and 18 in California.

The first panel shows trends in segregation of whites from all other groups. The overall level of segregation of whites from non-whites has been fairly consistent since the early 1990s, but the share of segregation due to sorting across schools within districts has increased. Similarly, segregation of Hispanics from non-Hispanics has been constant, but somewhat more segregation is within districts and segregation between CZs declined somewhat. Segregation of American Indians from non-American Indians declined and then returned to previous levels, and the source of segregation changed little over time.

Black and Asian students have experienced significant changes in segregation since the early 1990s, in opposite directions. Segregation of blacks from non-blacks declined substantially, largely due to a reduction in segregation across districts within CZs. Asians, on the other hand, are increasingly segregated from non-Asians, and segregation is increasing at all levels: between CZs, between districts within CZs, and between schools within CZs.

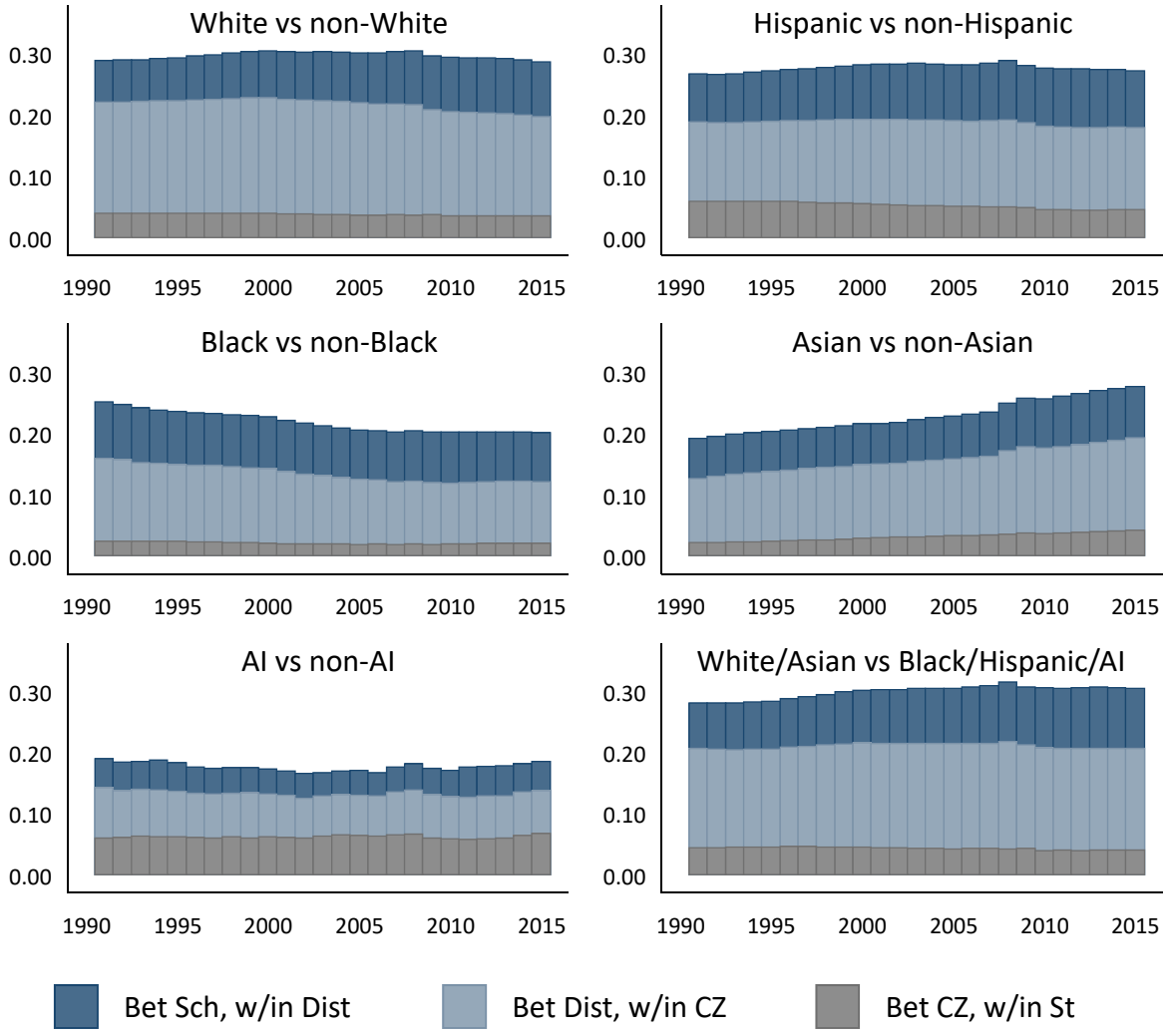
Finally, the last panel shows the segregation of whites and Asians (the two more-advantaged groups according to the poverty measures) from the other groups. There has been a small increase in segregation driven by increases in within-district segregation. Together with Figure 11, this suggests that Asians and whites are less segregated from each other over time, but Asians have become significantly more segregated from blacks and Hispanics.

Segregation of ELL students from non-ELL students has declined since the mid-1990s, mostly due to reductions in between-CZ and between-district segregation (Figure 14). Students eligible for free meals are highly segregated from those not qualifying for free meals, but segregation fell somewhat since the early 1990s.

Finally, Figure 15 shows how the segregation of different groups in California compares to that in other states—here we focus only on the total segregation between schools within the state (the total in Figure 13). The figure does not show a consistent pattern of high or low segregation in California relative to other states. Instead, where California ranks depends on the group; Asian students are more segregated from non-Asian students in California than in any other state, according to this measure. Segregation of black students from non-black students is relatively low in California, while white and American Indian segregation falls in the

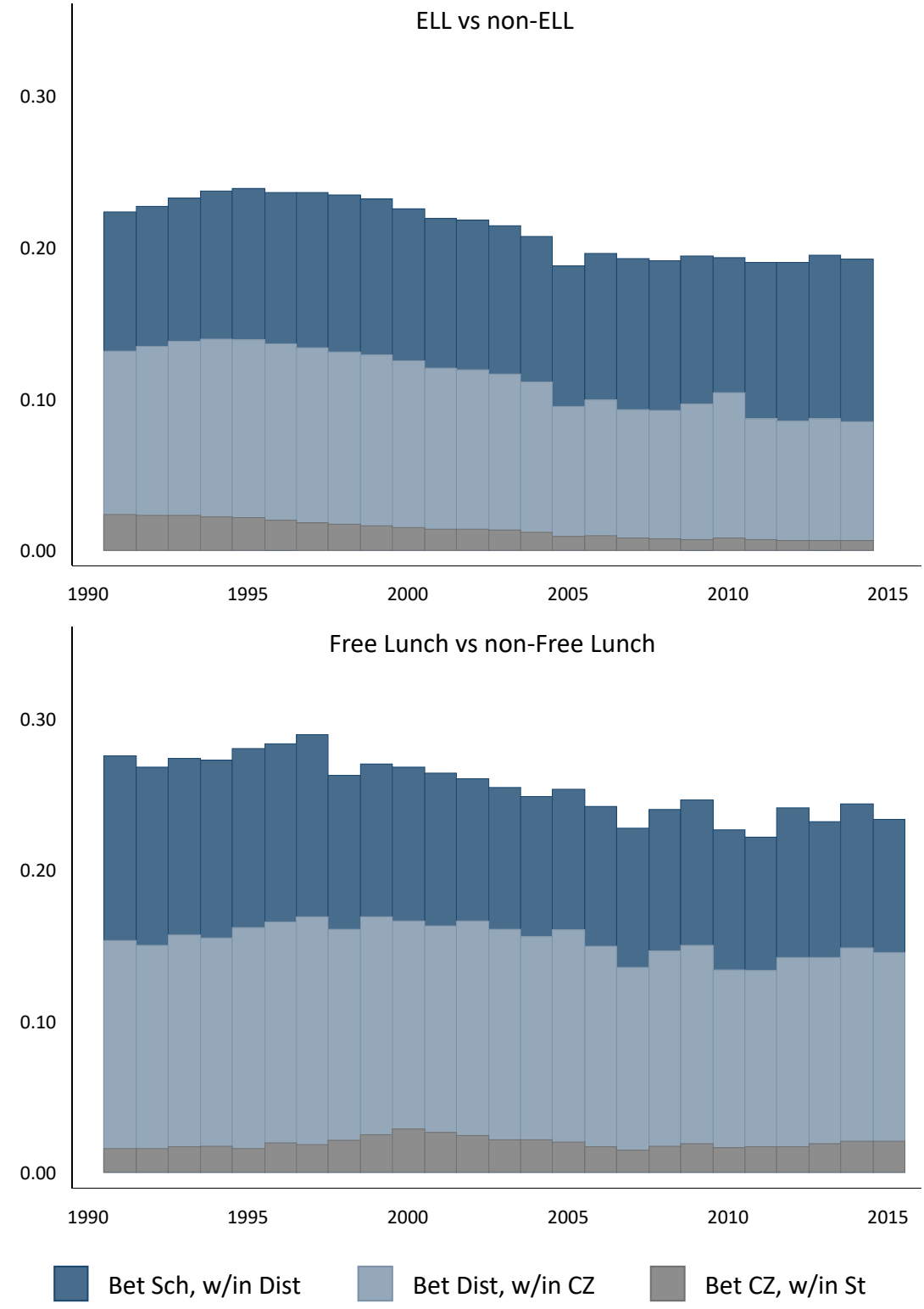
middle of the distribution of states. Finally, segregation of whites and Asians from the three less-advantaged groups is somewhat above the median among states.

Figure 13. Trends in Sources of Segregation, by Race/Ethnicity



Source: Common Core of Data

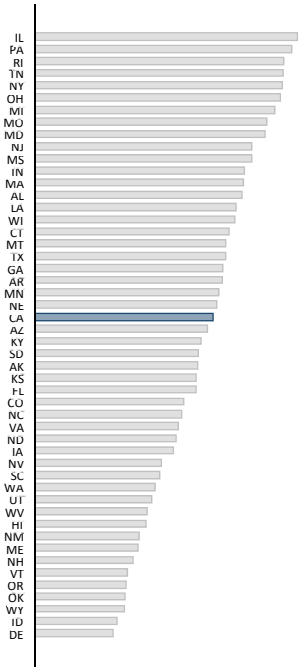
Figure 14. Trends in Segregation, by ELL and FLE status



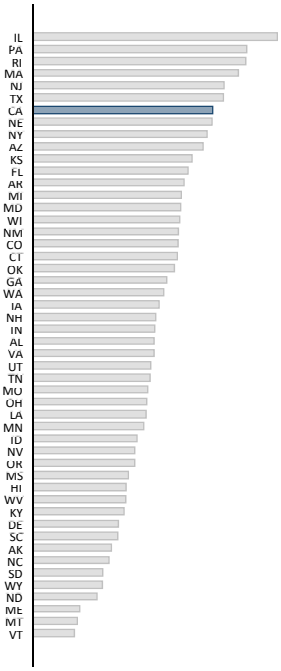
Source: California Department of Education and Common Core of Data

Figure 15. Racial/Ethnic Segregation by State, 2015

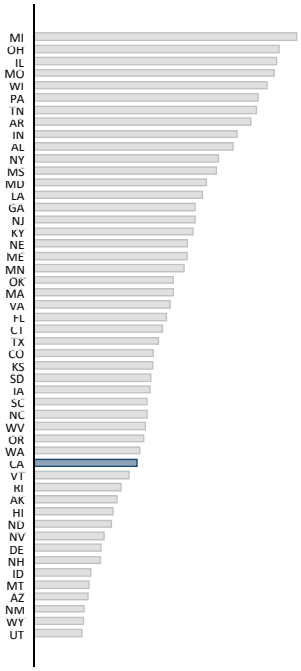
White vs non-White



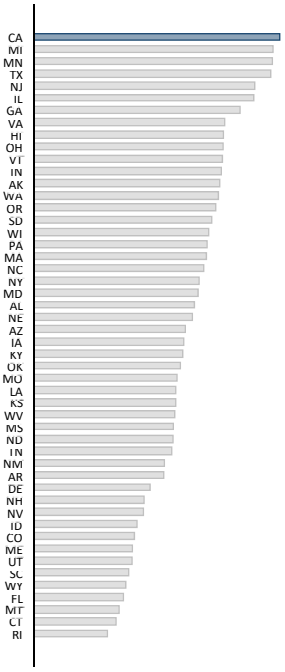
Hispanic vs non-Hispanic



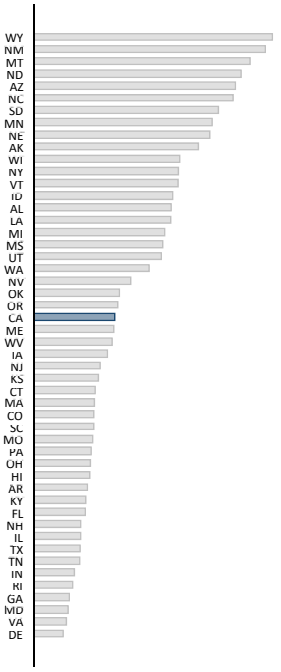
Black vs non-Black



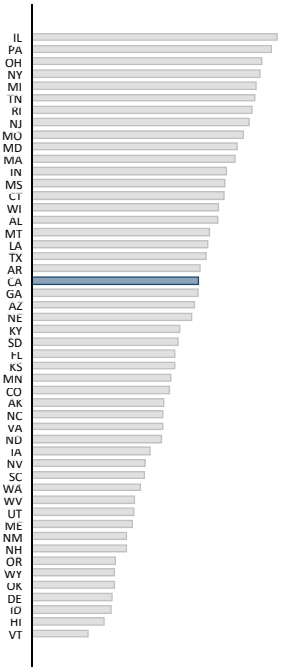
Asian vs non-Asian



AI vs non-AI



White/Asian vs Black/Hisp/AI



Source: Common Core of Data

Conclusion

While public enrollment in California has been fairly stable in recent years, the state has witnessed significant increases in charter school enrollment and important changes in demographics. The socioeconomic conditions of California families have improved in some ways—parents are more educated and more likely to speak English well—but nearly one-fifth of California's public schoolchildren still live in poverty. Gaps in economic disadvantage between racial and ethnic groups are large and persistent, though the relative economic circumstances of Asians have improved over time. Students are fairly segregated by race/ethnicity, ELL status, and poverty (as measured by free meal eligibility), so some groups—Hispanics, blacks and American Indians—are not only more likely to be poor themselves, but they are also more likely to attend schools with large numbers of other economically disadvantaged students.

References

Fahle, E.M., Shear, B.R., Kalogrides, D., Reardon, S.F., DiSalvo, R., and Ho, A.D. (2017). *Stanford education data archive: Technical documentation*. Retrieved from: https://cepa.stanford.edu/sites/default/files/SEDA_documentation_v20b.pdf

Flood, A., King, M., Ruggles, S., and Warren, J.R. (2017). Integrated public use microdata series, current population survey: Version 5.0 [dataset]" Minneapolis: University of Minnesota: https://doi.org/10.18128/D030.V5.0.

Ruggles, S., Genadek, K., Goeken, R., Grover, J., and Sobek, M. (2017). Integrated public use microdata series: Version 7.0 [dataset]." Minneapolis: University of Minnesota: https://doi.org/10.18128/D010.V7.0.

Theil, H. 1972. *Statistical decomposition analysis*. Amsterdam: North-Holland Publishing Company.

United States Department of Agriculture – Economic Research Service. (2012). *Commuting zones and labor market areas*. Data retrieved from: https://www.ers.usda.gov/data-products/commuting-zones-and-labor-market-areas.aspx#.UyhhGoWsDgd

Western Interstate Commission for Higher Education. (2016). *Knocking at the college door*: *Projections of high school graduates, 2016*, www.wiche.edu/knocking. Data accessed here on April 11, 2018: https://knocking.squarespace.com/s/Private-school-data-Dec2017-update.xlsx

Appendix: Description of Data Sources

Common Core of Data (CCD): The CCD is an annual survey of all public elementary and secondary schools and school districts in the United States. The data include basic descriptive information on schools and school districts, such as total enrollment, enrollment by race/ethnicity, and participation in the lunch program. The CCD data are currently available from the 1986-87 through 2015-16 school years. However, the quality of the data is poor in the early years (especially for racial/ethnic composition and free lunch data, key measures for our analyses) so we begin our panel with the 1991-92 school year. Still, there is some missing data on racial composition and free/reduced lunch receipt for some schools in some years. We therefore impute missing data on race/ethnicity and free/reduced counts at the school level prior to aggregating data to the district, commuting zone or state level and prior to the computation of the segregation measures. The imputation model includes school-level data from the 1991-92 through 2015-16 school years and measures of total enrollment, enrollments by race (black, Hispanic, white, Asian and American Indian), enrollments by free and reduced priced lunch receipt (note that reduced price lunch is only available in 1998 and later), an indicator for whether the school is located in an urban area and state fixed effects. More details about the imputation method can be found in Fahle, Shear, Kalogrides, Reardon, DiSalvo and Ho (2017).

Census/American Community Survey (Census/ACS): We use micro-level Census and ACS data downloaded from the IPUMS-USA website (Ruggles, Genadek, Goeken, Grover, and Sobek 2017). Data from 1990 and 2000 are 5% Census data while data from 2001-2016 are data from the American Community Survey. We use data from 5-17 year olds, including their own individual characteristics as well as characteristics of their households. The measures we construct from these data include public/private school enrollment, household poverty, whether anyone in the household has a bachelor's degree or higher, whether there is only a mother or only a father in the household (single parent household), whether there are any foreign born adults in the household, and whether there are any adults in the household that speak no English or little English. To reduce noise from smaller samples in the in the non-Census years, we use 3-year moving averages in most cases. For example, the value shown for 2012 is the average from 2011, 2012, and 2013.

California Department of Education (CDE): We downloaded school-level data with information on English Language Learners from the California Department of Education (CDE) from 1991-2017. The raw data include counts of English learners by language for each school in California. We use these data to compute the total number of ELL students in each school in each year and the number speaking each language. We choose to focus on the most commonly spoken languages across years: Spanish, Vietnamese, Chinese, Hmong and Tagalog. Since these files only include ELL counts (not total student counts), we compute the proportion ELL by dividing the total number of ELL students from the CDE by the total enrollment taken from the CCD.

Current Population Survey, Annual Social and Economic Supplement (CPS: ASEC): The Annual Social and Economic Supplement (ASEC) is a portion of the Current Population Survey (CPS) that contains detailed questions covering social and economic characteristics of each household

member from a sample of about 75,000 households per year. We download these data from the IPUMS-CPS website as a uniform file for 1990 through 2017 to compute poverty rates among 5 to 17 year olds (Flood, King, Ruggles, and Warren 2017).

Commuting Zone Data: We obtained a county-level file from the United States Department of Agriculture's Economic Research Service (USDA-ERS 2012). This file indicates the commuting zone in which each county was located in 2000, 1990, and 1980. The 2000 commuting zone definitions are used. We link these data to the Common Core of Data using county identifiers.