The Effects of 9/11 on Racial Identification

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December 19, 2024

Abstract

This study analyzes the effects of the September 11 attacks on racial identification in the U.S. for individuals affected by the discriminatory backlash following the event. Using data from the Current Population Survey, we implement difference-in-differences and event study difference-in-differences approaches to assess the effects of 9/11 on the reported racial identity of mixed race children of South Asian or Muslim-majority country descent. Results indicate that 9/11 increased the propensity for parents in the treatment group to classify their children as non-White compared to the control group of mixed race children of East Asian descent. Results are more pronounced for younger children and are driven by families with White fathers and non-White mothers.

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1 Introduction

Self-reported race is an important component in many surveys and administrative datasets. Racial representation affects perceptions of group disparities and representation which in turn influences policymaking. While race is commonly viewed as an exogenous and fixed characteristic, a growing body of research has demonstrated the malleability of race. Specifically, studies have highlighted race to be responsive to socioeconomic incentives.[1] This study provides novel evidence on the effects of a shock in discriminatory sentiment towards a group on racial identification in the immediate aftermath.

The September 11 terrorist attacks were unexpected events that created a large amount of upheaval both in the U.S. and around the world. In addition to loss of lives and increase in geopoltical tension, another negative effect of the attacks was increased discrimination and animosity towards people who were perceived to be members of groups affiliated with those behind the attacks. This included those perceived to be Muslim, Sikh, Arab, and South Asian.[2] Prior research has found that the attacks had negative effects on labor market and assimilation outcomes for groups on the receiving end of discrimination (Dávila & Mora, 2005; Gould & Klor, 2016; Kaushal, Kaestner, & Reimers, 2007). The presence of these negative effects of discrimination suggests that the September 11 attacks may have changed how discriminated groups perceived their standing and perception in their communities, potentially leading to shifts in racial identity.

This paper uses monthly survey data from the Current Population Survey (CPS) to assess the effects of the September 11 attacks on the racial identity of mixed race children who have a parent belonging to a group that experienced discrimination in the wake of September 11. Specifically, our treatment group focuses on children with one White parent and one non-White parent that was born in a Muslim-majority or South Asian country. We restrict our sample to children who live with two parents at home in order to observe

[1] See: Antman and Duncan (2015, 2023); Dahis, Nix, and Qian (2019); Darity, Mason, and Stewart (2006-07-01).

[2] https://www.justice.gov/crt/combating-post-911-discriminatory-backlash-6

information on parent race. During the time period around the September 11 attacks, the CPS allowed respondents to choose from one of four racial identity categories: White, Black, Asian or Pacific Islander, and American Indian/Aleut/Eskimo. In the CPS, one responder is interviewed for each household, and the responder provides information for all other members of the household, including information on their race. Individuals must be at least 15 years old to serve as the household responder. For the large majority of our sample, one of a child's parents is the responder, meaning we are measuring the effects of the September 11 attacks on how parents classify their child's race.

We analyze our research question using difference-in-differences and event study difference-in-differences specifications. Our control group in our estimations is mixed race children with one White parent and one non-White parent that was born in an East Asian country. We choose these children as our control group for multiple reasons. First, our control group shares several similarities with the treatment group. It is also made up of mixed race children, for whom racial identity is more likely to be malleable since they have parents of different races. In both the treatment and control group, the non-White parent is also foreign-born. Additionally, most individuals born in a South Asian or Muslim-majority country in the CPS identify their race as "Asian or Pacific Islander," and the same is true for individuals born in East Asian countries. Second, while the control group shares similarities with the treatment group, individuals of East Asian background differ from individuals with individuals with South Asian or Muslim-majority country background in that they were not targets of discriminatory backlash following the September 11 attacks. Thus, we would not expect this event to have an effect on racial identification for individuals of East Asian descent. They key identifying assumption underlying our empirical approach is that in the absence of the September 11 attacks, the propensity for individuals in the treatment and control groups to identify as White would have followed the same trend. Reassuringly, our event study difference-in-difference estimates show no evidence of pre-trends in the quarters leading up to September 2001.

We find that the September 11 attacks decreased the propensity for mixed race South Asian/Muslim children to be identified as White by 27.9 percentage points in the five quarters following the event, a 34 percent decrease from the mean pre-9/11 propensity for this group to identify as White. Event study difference-in-differences estimates indicate there were no pre-trends in differences between the treatment and control groups to identify as White. Furthermore, even study estimates indicates the divergence in the propensity for the treatment and control groups to identify as White after the September 11 attacks was driven by a decrease in White identification by the treatment group. We do not observe significant gender differences in results, and effects are more pronounced for children under the age of nine than for children between the ages of nine and 17. Furthermore, we find that changes in racial identity are driven by households with a White father and non-White mother, rather than households with a White mother and non-White father, regardless of the gender of the parent responding to the survey. Overall, our findings indicate that the September 11 attacks and animosity towards groups perceived to be affiliated with the attacks that followed decreased the propensity for parents of children affected by the discrimination to perceive their children as White. These results indicate that changes in racial identity respond quickly to discrimination. Furthermore, in this context, discrimination led individuals to identify more strongly with their discriminated background.

This study builds on multiple areas of research. First, we contribute to research on factors that affect racial and other group-level identification. Although race is often treated as an exogenous characteristic of an individual, a growing body of work demonstrates that racial identification is malleable and influenced by external incentives. For example, studies have shown that racial identification responds to economic motives. Antman and Duncan (2023) find that when states allow tribes to open casinos, those with American Indian ancestors become more likely to identify as Native American. Similarly, in their analysis Jia and Persson (2021), reveal that provincial policies in China that provide re-

sources to ethnic minority groups increase the propensity for children of mixed ethnic backgrounds to identify with their minority ethnicity. Cassan (2015) look at the effects of a caste-based land allocation policy on caste identification, and results indicate that this policy led to a significant increase in identification in the caste that benefited from the law. Antman and Duncan (2015) find that mixed race individuals change racial identification in response to state-level affirmative action policy changes in ways that are incentive-compatible with maximizing college admissions chances.

A few studies have also shown that racial and ethnic identification responds to discrimination and social pressures. Two studies have looked at the effects of how ethnic self-identification responds to the political landscape. Antman and Duncan (2024) provide evidence that local support for a California ballot measure perceived to be anti-immigrant in nature had polarizing effects on the propensity for individuals to identify as Mexican. Specifically, people with stronger ties to Mexican ancestry became less likely to self-identify as having Mexican Ancestry while those with weaker ties to Mexican ancestry became more likely to self-identify as having Mexican ancestry. Holian and Wolowyna (2024) look at changes in ethnic identity in the U.S. before and after the Russia invasion of Ukraine in early 2022. The authors find that changes in ethnic identity varied based on the political climate where individuals live–in Democratic counties, counts of individuals identifying as ethnically Russian decrease and counts of individuals identifying as ethnically Ukrainian increase. The opposite patterns emerge in Republican counties. With regard to changing racial identity, Dahis et al. (2019) find evidence consistent with Black men "passing" for White during the late 19th and early 20th centuries in response to discrimination. This study presents novel evidence on the effects of an unexpected shock leading to increased animosity and stigmatization towards a group on racial self-identification.

Second, this paper adds to our knowledge of how the September 11 attacks affected various segments of the U.S. population. Kaushal et al. (2007) and Dávila and Mora (2005)

look at the effects of the September 11 attacks on labor market outcomes for Muslim and Arab men, respectively, and find that the event led to decreased earnings for these groups. Lauderdale (2006) assesses birth outcomes of women with Arabic names following the September 11 attacks using a regression discontinuity design and finds that the event led to a greater risk of poor birth outcomes for these women relative to other women. McConnell and Rasul (2021) find evidence that the September 11 attacks also had negative spillover effects for other groups, leading to worse outcomes for Hispanic defendants in the criminal justice system. Gould and Klor (2016) find that the September 11 attacks decreased long-run assimilation of Muslim immigrants in the U.S., leading to higher fertility rates, lower female labor force participation, lower fertility, and a higher propensity to marry someone of the same ethnic background. Our study provides novel information on how the September 11 attacks led to immediate changes in racial identity for groups that experienced increased animosity from the event.

Third, this paper contributes to our understanding of the experiences of mixed race individuals in the U.S. Mixed race individuals make up over 10 percent of the U.S. population and are a rapidly growing group (Jones, Marks, Ramirez, & Rios-Vargas, 2021). However, economics research on this group is still fairly limited. Some exceptions are Fryer, Kahn, Levitt, and Spenkuch (2012) and Ruebeck, Averett, and Bodenhorn (2009-03-05), which assess factors shaping the identities and subsequently behaviors of mixed race adolescents. Antman and Duncan (2015) also focus on mixed race kids in their study looking at the effects of incentives generated by higher education affirmative action policies on racial self-identification. This paper contributes to research on mixed race individuals in the U.S. by providing novel insight on how racial identification for this group responds to stigma and discrimination.

In the remainder of the paper, Section 2 describes the data and analytic sample in this paper. Section 3 outline the empirical strategy used to identify the effects of the September 11 attacks on racial identification, and Section 4 presents results of our analysis. Section 5

concludes the paper.

2 Data and descriptive statistics

2.1 Data

Data for this project come from the Current Population Survey (CPS), which is a monthly survey of U.S. households and is conducted jointly by the U.S. Census Bureau and Bureau of Labor Statistics. Households in the survey are interviewed for eight months–four months on, eight months off, and another four months on. Information is collected for all members of a household, and one survey responder for each household provides information for all other members. In our extended analyses, we use individual-level data from the basic monthly surveys from September 1999 up to June 2005. We drop observations from September 2001 since we do not know whether survey responses for that month were collected before or after the September 11 attacks. One challenge to our analysis is that the CPS changed race reporting options in the survey starting in January 2003. Specifically, before 2003, respondents had to select a racial identity from one of four options: White, Black, Asian or Pacific Islander, American Indian/Aleut/Eskimo. From 2003 onward, respondents were able to select multiple racial identities from the aforementioned options. This presents a challenge to our analysis since the change in survey design may affect racial identification for the treatment group relative to the control group in a way that is unrelated to the treatment of interest. Thus, in our preferred specification, we focus on survey responses through December 2002.

Our analysis focuses on mixed race children, so we restrict our analysis to individuals less than 18 years of age. This is because we need information on parental race to determine whether children are mixed race, and we only observe parental race for people who live with their parents. After kids become adults, they are much less likely to live with parents, and those who do are a selected sample. Additionally, we restrict our sample to

children who live in a two-parent household. The CPS also provides data quality flags on an individual's race to indicate whether the reported race was changed or imputed, and we drop individuals for whom this is the case. We also drop individuals whose parents' races are changed or imputed since parental race is a key component of determining the analytic sample.

In our preferred specification, the treatment group is mixed race kids with one parent who identifies as White (who could be born anywhere) and either one parent who identifies as non-White and was born in a South Asian or Muslim-majority country. Following Antman and Duncan (2015) and Jia and Persson (2021), we focus on kids from mixed identity backgrounds because these are individuals for whom identity is likely less fixed. We focus on children of parents born in south Asian or Muslim-majority countries since this group was subject to animosity and discrimination after the September 11 attacks. We follow the methodology used in Kaushal et al. (2007), who also use CPS data, to define individuals from Muslim-majority countries. These countries are Afghanistan, Algeria, Bahrain, Bangladesh, Egypt, Indonesia, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Malaysia, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, Turkey, and United Arab Emirates. Additionally, we include parents born in South Asian countries that were not already in the list above to define the treatment group because the U.S. Department of Justice identified this group as also experiencing discriminatory backlash after the September 11 attacks.[3] In practice, this means we add India to the list.[4]

We estimate the causal effects of the September 11 attacks on racial identification for our treatment group using difference-in-differences and event study difference-in-differences approaches. The control group we use in our preferred specification is mixed race East Asian kids. Specifically, we define this group analogously to how we define mixed race South Asian/Muslim kids: mixed race kids with one parent who identifies as

[3]https://www.justice.gov/crt/combating-post-911-discriminatory-backlash-6

[4]Bangladesh and Pakistan are included in the list of Muslim-majority countries, and Nepal and Sri Lanka are not listed as birthplace options in the CPS.

White (who could be born anywhere) and either one parent who identifies as non-White and was born in an East Asian country. East Asian countries include China, Hong Kong, Taiwan, Japan, and South Korea. We choose these individuals as our control group because they also come from a mixed race background and have a non-White foreign born parent. However, these individuals were likely not a targeted group for discrimination after the September 11 attacks.

We define mixed race kids based on parental racial identification to identify a population for whom racial identity is likely the most flexible. Parental racial identification may also be endogenously determined influenced by social factors. This does not challenge our identification strategy as long as parental racial identification is not affected by the September 11 attacks. We provide robustness checks to assess for this concern in Section 4.2.

As mentioned above, one survey responder for each household provides information for all other members. The CPS requires respondents to be at least 15 years old, meaning the reported racial identities for kids in our sample are largely not reported by the kids themselves. For the large majority of kids in our sample (98 percent), the responder is one of the child's parents. As such, we should think about the reported racial identity of a child as the race a parent reports their child to be. Thus, our paper aims to capture how the September 11 attacks affect how parents perceive their children's racial identity.

2.2 Descriptive statistics

As mentioned above, in the preferred specification, the treatment group consists of individuals who have one parent that identifies as White and one parent that identifies as non-White and was born in a South Asian or Muslim-majority country. The control group consists of individuals who have one parent that identifies as White and one parent that identifies as non-White and was born in an East Asian country. We first provide an overview of how parents from South Asian or Muslim-majority countries and East Asian

countries identify racially. Table 1 shows how individuals identify by place of birth. We restrict the sample to people who have at least one child under the age of 18 living with them since our analytic sample focuses on mixed-race children. The large majority of individuals born in a South Asian or Muslim-majority country or an East Asian country identify as either White or Asian/Pacific Islander. However, the relative breakdown within these racial categories differs significantly. While 25% of all parents in the CPS with at least one child under age 18 who are born in a South Asian or Muslim-majority country identify as White, this number is only 6% for parents born in an East Asian country. In contrast, 73% of parents born in a South Asian or Muslim-majority country identify as Asian/Pacific Islander, while this number is 93% of parents born in an East Asian country.

Table 1: Parental Racial Identification by Birthplace

Birthplace:	South Asia/Muslim-majority (1)	East Asia (2)
White	0.25	0.06
Black	0.01	0.01
Asian or Pacific Islander	0.73	0.93
American Indian/Aleut/Eskimo	0.01	0.00
N	1,145	13,780

Table includes monthly observations of individuals who are parents of at least one child under the age of 18 from September 1999 to December 2002, excluding September 2001. Column (1) includes individuals born in a South Asian or Muslim-majority country. Column (2) includes individuals born in an East Asian country.

In addition to our preferred specification for defining the treatment and control groups described above, we also perform our analyses on a couple of alternative sample specifications as a robustness check. As one alternative specification, to be included in the treatment group, we require a child's parent born who was born in a South Asian or Muslim-majority country (treatment group) or East Asian country (control group) to identify specifically as Asian, rather than any non-White race, motivated by the fact that al-

most all individuals born in these countries who do not identify as White identify as Asian. As a second supplemental analysis, we restrict the sample to children whose White parent was not born in a South Asian or Muslim-majority country or an East Asian country. In principal, we are interested in the malleability of racial identity for kids who have parents with different racial identities, regardless of ethnic background, as this is a population for whom racial identification is likely a more conscious decision. This is why our preferred specification does not place any requirements on the birthplace of the White parent. However, it may be the case that results are driven by kids who are mixed race, as defined by the racial identities of their parents, but not actually from a mixed background, in that both parents are from a South Asian or Muslim-majority country. These findings would help provide insight on who is driving our results. More information on these analyses can be found in Section 4.2.

Table 2 presents descriptive statistics for individuals in the sample. This includes monthly observations of people who are less than 18 years of age from September 1999 to December 2002, excluding September 2001. Column (1) and (2) provide information on kids in the treatment group—those with one White parent and one non-White parent that was born in a South-Asian or Muslim-majority country. Columns (3) and (4) provide information on kids in the control group—those with one White parent and one non-White parent that was born in an East Asian country. Columns (1)and (3) provide statistics on survey observations collected prior to September 2001, while columns (2) and (4) provide statistics on survey observations collected after that date. For the treatment group, the share of individuals identifying as White drops by almost half after September 2001, from 0.84 to 0.45. These shares are significantly different at a 99 percent confidence level. The share of individuals identifying as White also drops for the control group, although not nearly as dramatically, from 0.40 to 0.36, and these values are not statistically different from one another. The drop in identification as White is largely compensated by an increase in Asian/Pacific Islander identification for both groups.

Table 2: Descriptive Characteristics

	Mixed Race South Asian/Muslim		Mixed Race East Asian	
	Pre-9/11	Post-9/11	Pre-9/11	Post-9/11
	(1)	(2)	(3)	(4)
White	0.84	0.45	0.40	0.36
Black	0.00	0.00	0.02	0.03
Asian or Pacific Islander	0.16	0.55	0.58	0.61
American Indian/Aleut/Eskimo	0.00	0.00	0.00	0.00
Female	0.48	0.37	0.53	0.47
Age	9.09	6.45	8.23	8.22
	(5.37)	(4.71)	(5.12)	(5.44)
US-born	0.77	0.89	0.84	0.88
N	239	136	1,100	700

Table includes monthly observations of individuals who are less than 18 years of age from September 1999 to December 2002, excluding September 2001. Columns (1) and (2) include individuals in the treatment group—those with one parent who identifies as White and one parent who identifies as non-White and was born in a South Asian or Muslim-majority country. Columns (3) and (4) include individuals in the control group—those with one parent who identifies as White and one parent who identifies as non-White and was born in an East Asian country. Columns (1)and (3) provide statistics on survey observations collected prior to September 2001, while columns (2) and (4) provide statistics on survey observations collected after that date. Individuals who do not report racial information for both a mother and father are dropped from the sample.

These descriptive patterns are suggestive that the racial identification of mixed race kids with a parent from a South Asian or Muslim-majority country changed in the wake of the September 11 attacks. However, these differences in means should not be interpreted as causal because without controlling for changes in other characteristics in the sample or time trends. In fact, Table 2 suggests that other factors, such as gender, age, and whether an individual is born in the US, may also be different before and after September 2001, although this may be due to small sample sizes rather that systemic differences in survey respondents. The next section describes the methods used in this paper to estimate the

causal effect of the September 11 attacks on racial identification for the treatment group.

3 Empirical Strategy

We estimate the following event study difference-in-differences (ES-DID) specification to assess the effects of 9/11 on racial identification for our sample. We include treated and control observations in the estimation. In our preferred specification, the treatment group consists of mixed race children with one White parent and one non-White parent who was born in a South Asian or Muslim-majority country. The control group consists of mxied race children with one White parent and one non-White parent whowas born in an East Asian country:

$$White_{it} = \alpha + \sum_{\substack{j=-7 \\ j\neq 0}}^{5} \beta_j \times \mathbb{1}[Treat_{ij} = 1] + \mathbf{X}'\delta_{it} + \tau_t + \epsilon_{it} \tag{1}$$

where $White_{it}$ is an indicator variable that takes a value of one if individual i has a racial identification of White in year-month t and zero otherwise. $Treat_{ij}$ is an indicator variable that takes a value of one if an individual is treated and the observation occurs j quarters from the quarter immediately preceding September 2001, and zero otherwise. The coefficients of interest, β_j, capture the evolution of racial identification of the treatment group relative to the control group before and after September 11. The model also includes a vector of observable characteristics, $\mathbf{X}_{it}$, which controls for individual characteristics, namely age, sex, and birthplace. Finally, τ_t denotes a set of year-by-month fixed effects.

For statistical power, we also estimate aggregate difference-in-differences (DID) specifications in some estimations:

$$White_{it} = \gamma_0 + \gamma_1(Treat_i \times Post)_{it} + \gamma_2 Treat_i + \mathbf{X}'\phi_{it} + \pi_t + \upsilon_{it} \tag{2}$$

where as before, $White_{it}$ is an indicator variable that takes a value of one if individual i has a racial identification of White in year-month t and zero otherwise. $Treat_i$ is an indicator variable that takes a value of one if an individual is in the treated group and zero if they are in the control group. $Post_t$ is an indicator variable that takes a value of one if an observation occurs after September 2001, and zero otherwise. The coefficient of interest, γ_1, measures the effects of the September 11 attacks on the racial identification of the treatment group. We include the same vector of observable characteristic controls $\mathbf{X}_{it}$ as we do above, and π_t denotes a set of year-by-month fixed effects.

The key identification assumption underlying our ES-DID and DID estimations is that in the absence of the September 11 attacks, racial identification of the treatment and control groups would have evolved in parallel. We assess the plausibility of this assumption by looking at pre-trends in the evolution of racial identity gaps between the treatment and control groups in the quarters leading up to September 11, 2001. We also provide robustness checks for additional identification concerns, including endogeneity in sample selection and parent racial identification changes before and after the September 11 attacks in Section 4.2.

4 Results

4.1 Main Results

Figure 1 shows results estimating the effects of the September 11 attacks on the racial identification of mixed race kids with a non-White parent born in a South Asian or Muslim-majority country. As mentioned above, racial identification largely refers to how parents identify the races of their children in this setting. Prior to September 2001, there are no significant changes or trends in the propensity for kids in the treatment group to identify as White relative to kids in the control group. In the quarters following September 2001, there is a significant drop in the propensity for kids in the treatment group to identify as

White. These drops are statistically significant at a 99 percent confidence level in the first four quarters following September 2001. The magnitudes suggest that the propensity for mixed race kids with a non-White parent born in a South Asian or Muslim-majority country to identify as white dropped by over 30 percentage points in the quarters immediately following September 2001. The point estimate is not long significant for the fifth quarter following September 2001.

Figure 1: Event Study Difference-in-Differences Results: Effects of September 11 on Racial Identification

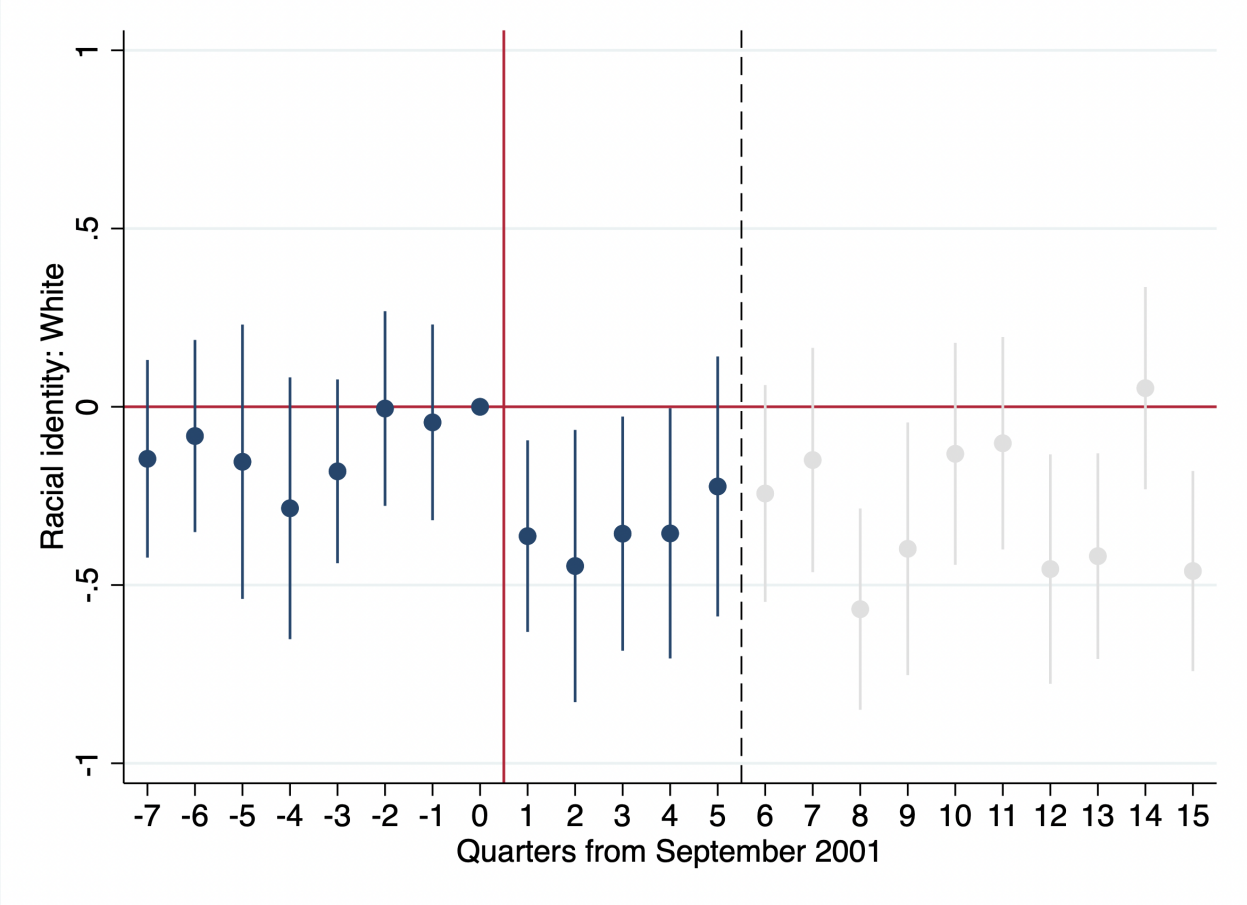


Figure displays event study difference-in-differences estimates of the difference in the propensity for mixed race kids with a non-White parent born in a South Asian or Muslim-majority country to identify as White compared to mixed race kids with a non-White parent born in an East Asian country. Observations are reported at the quarterly level, with time period 0 representing the quarter prior to September 2001. All estimates include time fixed effects and controls for observable individual characteristics (sex, age, whether individual was born in the U.S.). Standard errors are clustered at the individual level. Confidence intervals are reported at the 95% level. Observations taking place after time period 6 occur after the CPS changed racial identification options to allow individuals to choose more than one race.

Ideally, we would like to track the effects of the September 11 attacks on racial identification for several quarters to understand the long-term effects of the attacks on racial identification. However, this is challenging to do using this dataset because the CPS changed its options for racial identification in their survey questionnaire starting in 2003, six quarters after the September 11 attacks. Namely, starting in 2003, the CPS began giving individuals the option to report multiple races rather than restricting them to once race.[5] This creates multiple challenges for estimating causal effects. First, this potentially alters the individuals included in our treatment and control groups since the inclusion criteria is based on parental race, and parents are now able to identify with multiple races. Figure A1 in the appendix looks at how the propensity for an individual to be included in the treatment group changes over time. The figure indicates that the share of individuals in the sample out of the total population increases after 2003 suggesting that there is differential sample selection after the CPS changes race reporting categories. Second, the ability to choose multiple races for children may differentially affect the propensity for the treatment and control groups to identify as any one single race in a way that is independent of the September 11 attacks. Table A1 in the appendix shows how racial identification patterns for the treatment and control groups changed before and after 2003. Specifically, columns (3) and (6) augment the descriptive statistics found in Table 2 to show descriptive statistics for the post-2003 period. Table A1 suggests that individuals in the treatment and control groups reacted differently to the option of being able to report multiple racial identities. Namely, starting in 2003, mixed race, 39% of mixed rate kids with one white parent and one non-white parent born in a south Asian or Muslim majority country were reported to have multiple races compared to 64% for mixed race kids with one white parent and one non-white parent born in an east Asian country. Taken together, these two descriptive facts suggest that we should not place too much weight on the interpretation

[5]In our preferred specification, individuals are classified as "White" if they are identified as White and no other races. We have also used an alternative specification in which individuals are classified as "White" if they report White as one of their racial identities and results are very similar.

of the effects of September 11 on racial identification from 2003 forward.

Figure 2 shows event study results for the treatment and control groups separately. This figure illustrates the underlying trends driving the event study difference-in-differences estimates. Reassuringly, we see that racial identity for mixed race East Asian kids does not change sharply before and after September 2001 and actually is not changing at all in the quarters leading up to and following September 2001. The drop in the propensity to identify as White in Figure 1 is driven by changes in racial identification form mixed race South Asian/Muslim kids. Furthermore, consistent with numbers from Table A1, we see that while both the treatment and control groups experience a drop in the propensity to identify as White following the CPS racial reporting category changes in 2003, this drop is larger for the treatment group.

The results in Figure 1 and Figure 2 provide reassurance of the validity of the difference-in-differences research design. Namely, we find no evidence of any pre-trends in differences in outcomes between the treatment and control group. Furthermore, while the propensity to identify as White is constant for the treatment and control groups in the quarters leading up to Spetember 2001, the change in the relative propensity between the two groups to identify as White after September 2001 is driven by changes in the racial identification of the treatment group.

Next, we report difference-in-differences estimates from Equation 2 in Table 3. One benefit of estimating results using an aggregate DID framework is that we have more statistical powered to do heterogeneity analyses. Due to concerns with interpreting results after the CPS changed race reporting options mentioned above, we restrict our estimates to survey responses prior to 2003. Column (1) estimates overall effects of the September 11 attacks on racial identification. Results indicate the attacks resulted in a 27.9 percent decrease in the propensity for mixed race South Asian/Muslim kids to be identified as White. Column (2) estimates results for children under nine years old, while column (3) estimates results for children between nine and 17 years old. Findings indicate results

Figure 2: Event Study Results: Racial Identification over Time

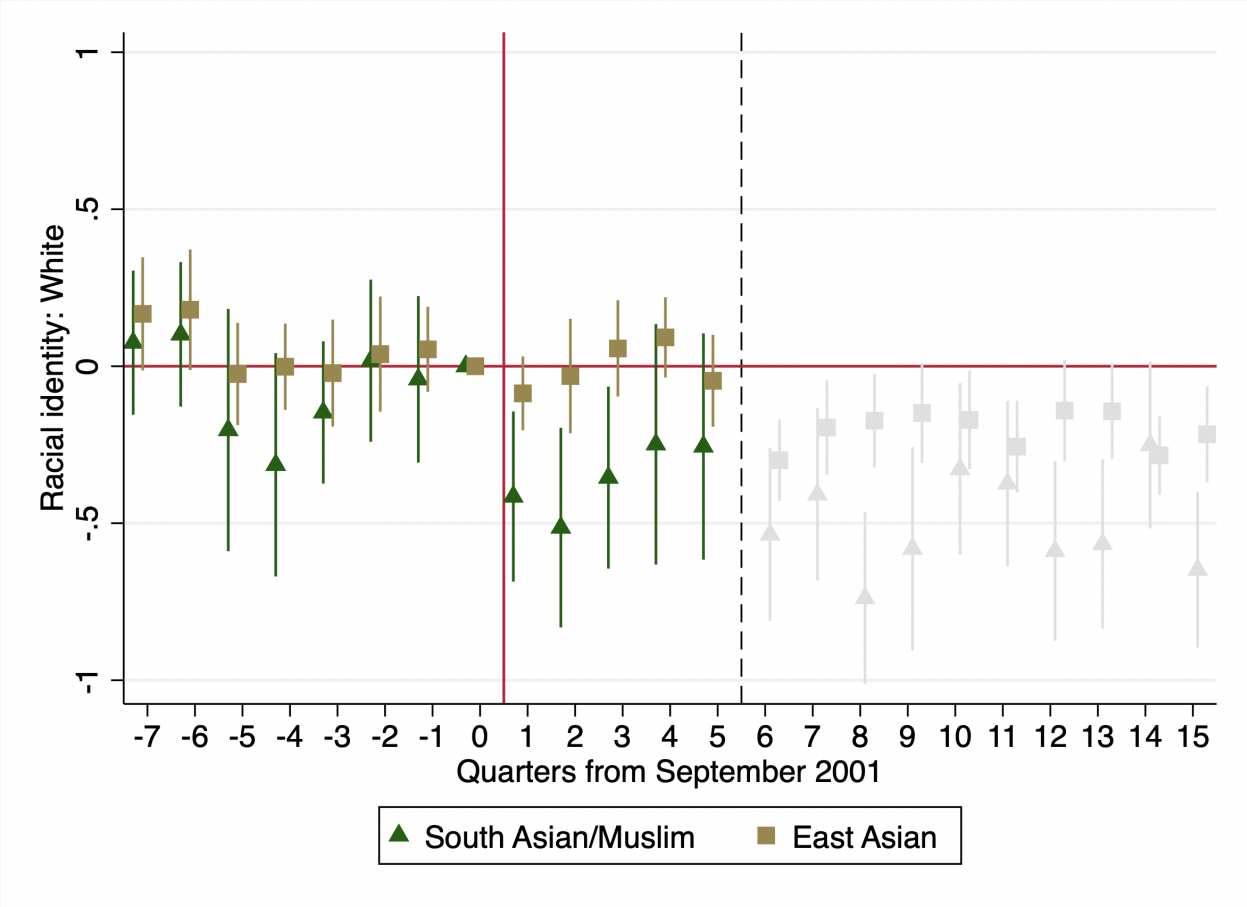


Figure displays event study estimates of trends in the propensity for mixed race kids with a non-White parent born in a South Asian or Muslim-majority country and mixed race kids with a non-White parent born in an East Asian country to identify as White. Observations are reported at the quarterly level, with time period 0 representing the quarter prior to September 2001. All estimates include time fixed effects and controls for observable individual characteristics (sex, age, whether individual was born in the U.S.). Standard errors are clustered at the individual level. Confidence intervals are reported at the 95% level. Observations taking place after time period 6 occur after the CPS changed racial identification options to allow individuals to choose more than one race.

are driven by younger children. Columns (4) and (5) look at differences in results for boys and girls, and estimates indicate the effects of the September 11 attacks on racial identification are similar by sex of child.

Finally, we look at how the effects of the September 11 attacks on the racial identification of mixed race South Asian and Muslim kids differs based on the characteristics of the responder. For the vast majority of kids in the sample who live with both parents, the

Table 3: Effect of 9/11 on Racial Identification of Mixed Race Children

	All (1)	Age<9 (2)	Age 9-17 (3)	Male (4)	Female (5)
Post×Mixed Race South Asian/Muslim	-0.279***	-0.269**	-0.177	-0.222**	-0.221*
	(0.103)	(0.108)	(0.121)	(0.111)	(0.119)
Mixed Race South Asian/Muslim	0.458***	0.393***	0.330***	0.341***	0.353***
	(0.059)	(0.074)	(0.065)	(0.072)	(0.070)
N	2,641	1,788	1,625	1,701	1,712
Mean Y (Treatment group pre-9/11)	0.828	0.789	0.860	0.779	0.889

*** p<0.01, ** p<0.05, * p<0.1. The outcome variable is an indicator that takes a value of one if an individual identifies as White and zero otherwise. The sample includes mixed-race kids under the age of 18 with one White parent and one non-White parent who was born in a South Asian or Muslim-majority country or who was born in an East Asian country. The treated group is mixed-race kids with a non-White parent born in a South Asian or Muslim-majority country, and the control group is mixed-race kids with a non-White parent born in an East Asian country. All estimates include time fixed effects and controls for observable individual characteristics (sex, age, whether individual was born in the U.S.). Standard errors are clustered at the individual level.

survey responder is a parent. Table 4 looks at how the effects of September 11 on racial reporting of children differs by parent race and sex. To do so, we restrict our observations to instances where the responder was the parent of a child. Column (1) looks at aggregate results for the sample of observations for whom one of the child's parents was the respondent. The sample size is very similar to that of Column (1) in Table 3 (2,576 compared to 2,641), indicating a large majority of individuals in the sample have parents as respondents as opposed to someone else in the household (e.g., self, grandparent). The estimated results are also very similar to that of the full sample, indicating the September 11 attacks resulted in a 29.6 percent decrease in the propensity for mixed race South Asian/Muslim kids to be identified as White. Next, we estimate results separately by parent sex and race–columns (2), (3), (4), and (5) estimate results by White fathers, non-White fathers, White mothers, and non-White mothers, respectively. Estimates indicate the drop in propensity for parents to identify their kids as White stems from White father and non-White mother respondents.

Table 4: Effect of 9/11 on Racial Identification of Mixed Race Children: Restricted to Parent Respondents

Responder:	All (1)	White Father (2)	Non-White Father (3)	White Mother (4)	Non-White Mother (5)
Post×Mixed Race SA/Muslim	-0.296***	-0.251**	-0.037	-0.037	-0.228*
	(0.102)	(0.106)	(0.133)	(0.133)	(0.122)
Mixed Race SA/Muslim	0.470***	0.401***	0.160**	0.160**	0.460***
	(0.059)	(0.064)	(0.078)	(0.078)	(0.067)
N	2,576	2,072	759	759	1,263
Mean Y (Treatment group pre-9/11)	0.828	0.566	0.910	0.888	0.160

*** p<0.01, ** p<0.05, * p<0.1. The outcome variable is an indicator that takes a value of one if an individual identifies as White and zero otherwise. The sample includes mixed-race kids under the age of 18 with one White parent and one non-White parent who was born in a South Asian or Muslim-majority country or who was born in an East Asian country. The treated group is mixed-race kids with a non-White parent born in a South Asian or Muslim-majority country, and the control group is mixed-race kids with a non-White parent born in an East Asian country. All estimates include time fixed effects and controls for observable individual characteristics (sex, age, whether individual was born in the U.S.). Standard errors are clustered at the individual level.

4.2 Robustness

One potential challenge to our empirical approach is that sample selection may be changing before and after the September 11 attacks. This could happen if the event leads to selection into survey response or changes in parent racial identification. Our first set of robustness checks aims to assess whether sample selection is a concern in this setting. First, Figure A1 assesses whether the share of children in the CPS who have one White parent and one non-White parent born in a South Asian or Muslim-majority country changes before and after the September 11 attacks. If the share of individuals in the treatment group changes, this signifies that there might be a change in survey participation for those in the treatment group after the event or that there may be a change in the way parents are identifying racially, which would also lead to subsequent changes in which kids are included in the treatment group. Reassuringly, results in Figure A1 indicate that there are no overall trends or changes in the share of children in the CPS who are part of the sample in the quarters preceding and following September 2001.

Additionally, we also perform direct tests for whether parents are changing their racial identification during this time period. Since the treatment group consists of children with at least one parent born in a South Asian or Muslim-majority country, we start by looking at whether parents who are born in one of these countries are changing their racial

identification over time. If they are, this would lead to a change in the composition of children in our analytic sample, which would create challenges in assessing our research question. Figure A2 looks at whether the propensity for parents in the CPS with at least one child under the age of 18 who are born in South Asian or Muslim-majority country to identify as White, Asian, or Black changes before and after September 2001. Results do not indicate there are differences in racial identification over this time period for this group.

5 Conclusion

In progress

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A Appendix

Table A1: Extended Descriptive Characteristics

	Mixed Race South Asian/Muslim			Mixed Race East Asian		
	Pre-9/11	Post-9/11		Pre-9/11	Post-9/11	
		Pre-2003	Post-2003		Pre-2003	Post-2003
	(1)	(2)	(3)	(4)	(5)	(6)
White	0.84	0.45	0.36	0.40	0.36	0.17
Black	0.00	0.00	0.00	0.02	0.03	0.00
Asian or Pacific Islander	0.16	0.55	0.25	0.58	0.61	0.18
American Indian/Aleut/Eskimo	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Races			0.39			0.64
Female	0.48	0.37	0.44	0.53	0.47	0.51
Age	9.09	6.45	7.95	8.23	8.22	8.10
	(5.37)	(4.71)	(5.01)	(5.12)	(5.44)	(5.13)
US-born	0.77	0.89	0.79	0.84	0.88	0.89
N	239	136	511	1,100	700	1,821

Table includes monthly observations of individuals who are less than 18 years of age from September 1999 to June 2002, excluding September 2001. Columns (1), (2) include individuals in the treatment group—those with one parent who identifies as White and one parent who identifies as non-White and was born in a South Asian or Muslim-majority country. Columns (3) and (4) include individuals in the control group—those with one parent who identifies as White and one parent who identifies as non-White and was born in an East Asian country. Columns (1)and (3) provide statistics on survey observations collected prior to September 2001, while columns (2) and (4) provide statistics on survey observations collected after that date. Individuals who do not report racial information for both a mother and father are dropped from the sample. Individuals are classified as "Multiple Races" if they have multiple reported races in their racial identity (e.g., "White-Asian," "White-Black-American Indian").

Figure A1: Share of Children in Sample

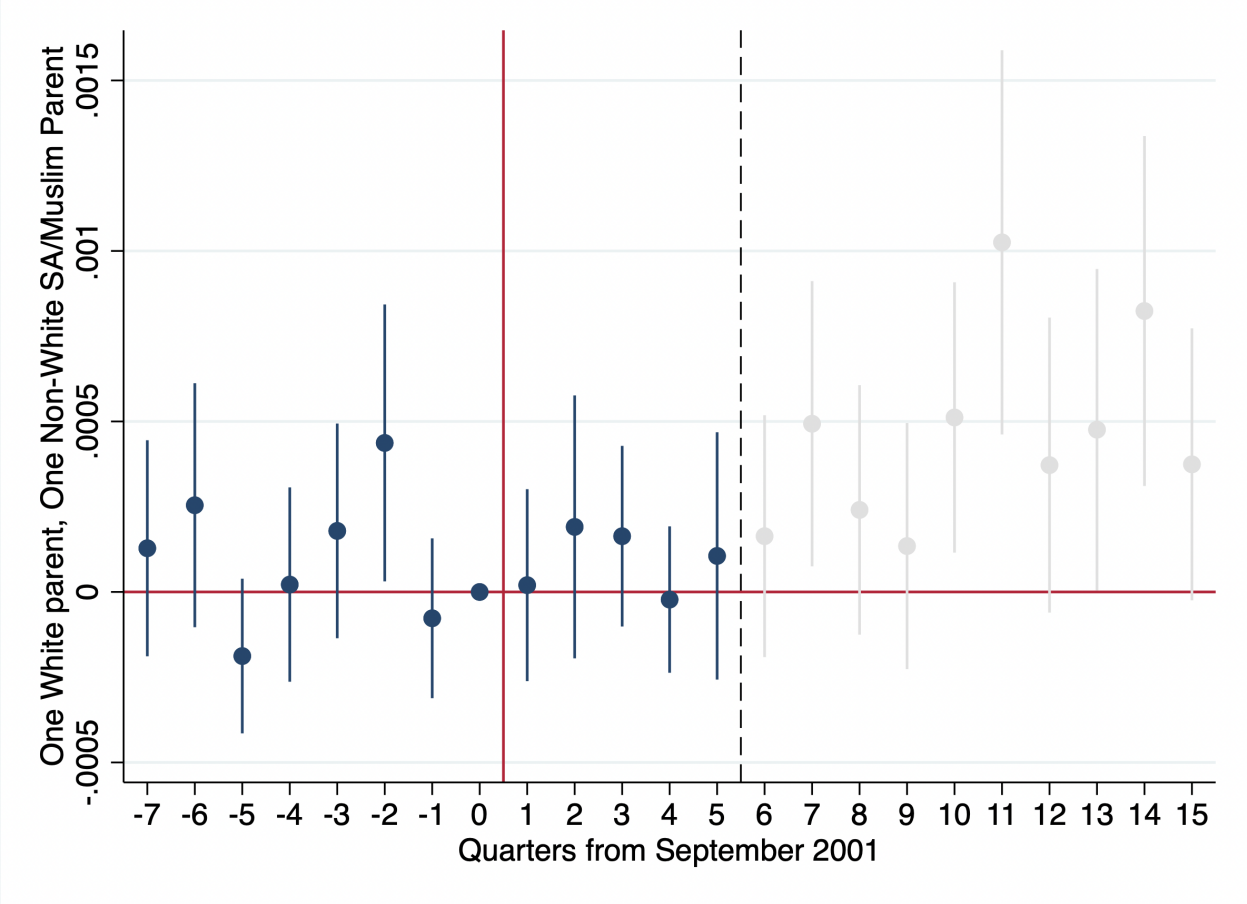
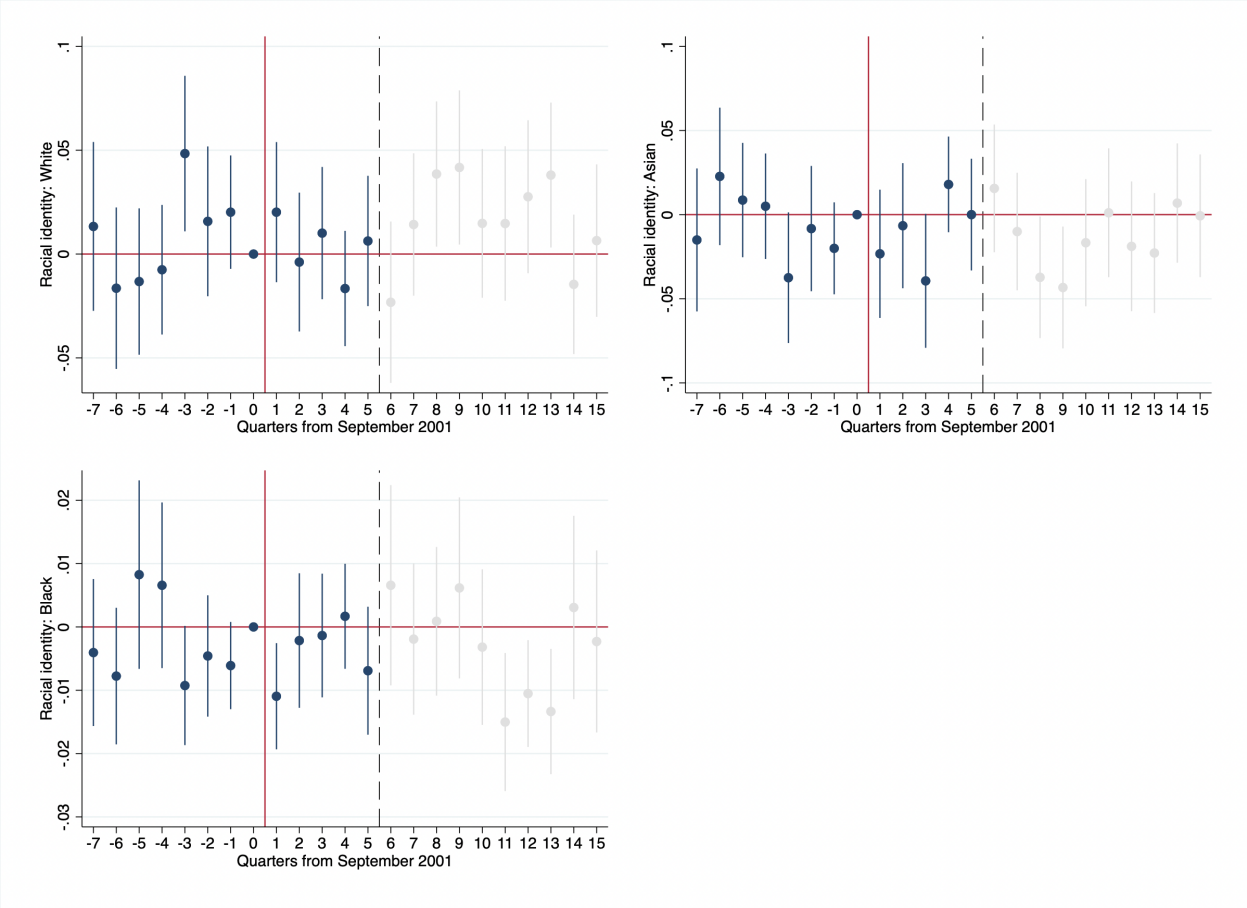


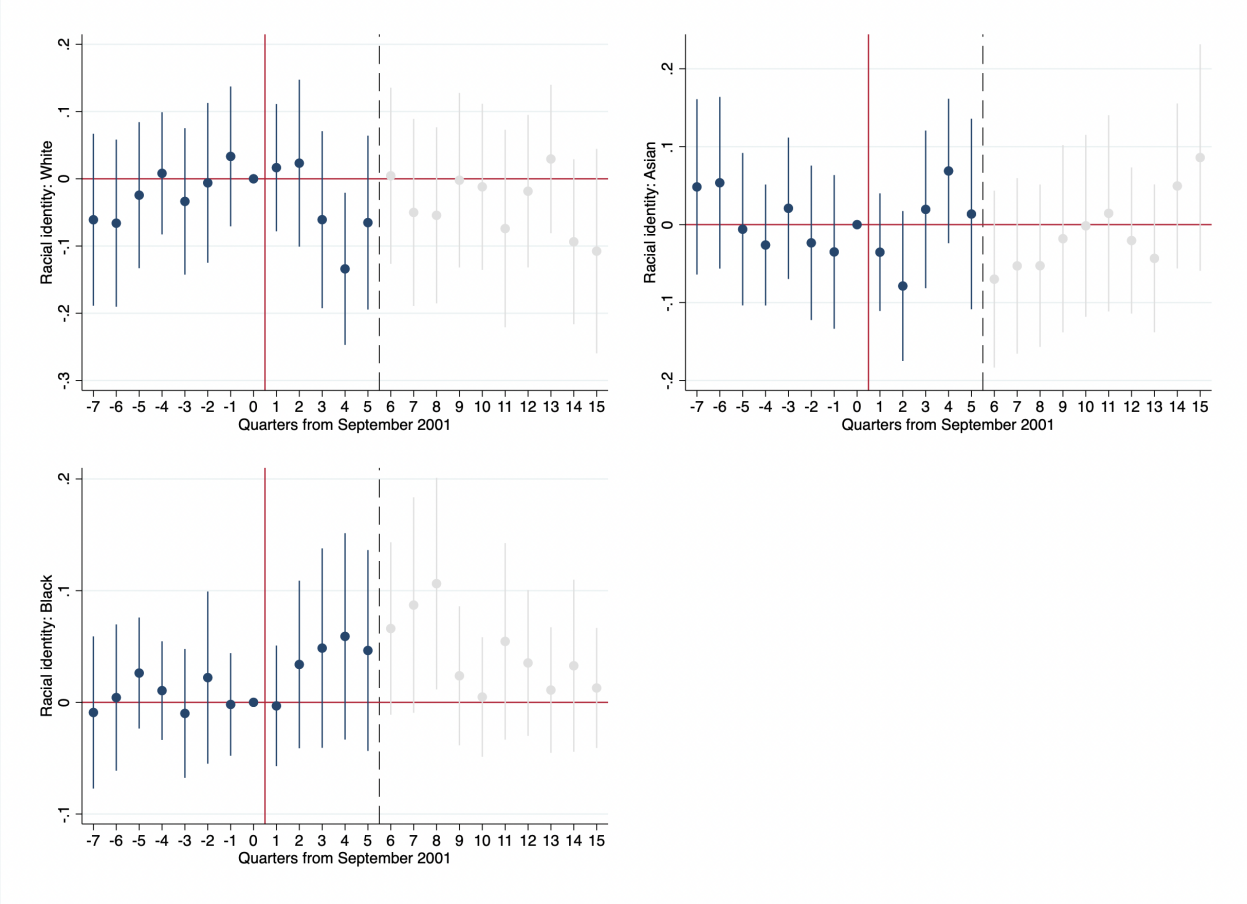
Figure displays event study estimates of the propensity for a child in the CPS sample to have one White parent and one non-White parent born in a South Asian or Muslim-majority country. Observations are reported at the quarterly level, with time period 0 representing the quarter prior to September 2001. All estimates include time fixed effects and controls for observable individual characteristics (sex, age, whether individual was born in the U.S.). Standard errors are clustered at the individual level. Confidence intervals are reported at the 95% level. Observations taking place after time period 6 occur after the CPS changed racial identification options to allow parents and children to have more than one reported race.

Figure A2: Racial identification of parents born in a South Asian or Muslim-majority country



Figures display event study estimates of the propensity for parents born in a South Asian or Muslim-majority country with at least one child under the age of 18 in the CPS to identify as White, Asian, or Black. Observations are reported at the quarterly level, with time period 0 representing the quarter prior to September 2001. All estimates include time fixed effects and controls for observable individual characteristics (sex, age, whether individual was born in the U.S.). Standard errors are clustered at the individual level. Confidence intervals are reported at the 95% level. Observations taking place after time period 6 occur after the CPS changed racial identification options to allow individuals to have more than one reported race.

Figure A3: Racial identification of parents not born in a South Asian or Muslim-majority country with a spouse born in a South Asian or Muslim-majority country



Figures display event study estimates of the propensity for parents who were not born in a South Asian or Muslim-majority country and who have a spouse who was born in a South Asian or Muslim-majority country and have at least one child under the age of 18 in the CPS to identify as White, Asian, or Black. Observations are reported at the quarterly level, with time period 0 representing the quarter prior to September 2001. All estimates include time fixed effects and controls for observable individual characteristics (sex, age, whether individual was born in the U.S.). Standard errors are clustered at the individual level. Confidence intervals are reported at the 95% level. Observations taking place after time period 6 occur after the CPS changed racial identification options to allow individuals to have more than one reported race.