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Abstract

This paper documents that the employment of Asian Americans with no college education has been especially hard hit by the economic crisis associated with the Covid-19 pandemic. This cannot be explained by differences in demographics or in job characteristics. Asian American employment is also harder hit unconditional on education. This suggests that different selection into education levels across ethnic groups alone cannot explain the main results. This pattern does not apply to the 2008 economic crisis. Our findings suggest that this period might be fundamentally different from the previous recession.

Key Word: Employment, Pandemic, Asian Americans, Racial Disparity
JEL Code: J21, J70, J71.

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1 Introduction

The recent COVID-19 pandemic has caused large disruptions in the US labor market. In this paper, we document how the probability of working differs by ethnicity and by educational attainment. The simplest facts are displayed in Tables 1 and 2 for men and women, respectively. Using micro data from the Current Population Survey (CPS), the tables display the fraction of each group that reports working in the period between January 2020 and March 2020 ("pre-Covid") compared to the fraction that is working in the period between April 2020 and June 2020 ("Covid"). Overall, the employment rate for men declined by 9 percentage points. The minority groups, Blacks, Hispanics, and Asians, suffered more with a decline ranging between 11 and 14 percentage points.

Table 1: Fraction of Men Working by Group in 2020

	Period	HS or less	Some Col.	College+	Overall
Whites	Jan-Mar	0.708	0.789	0.873	0.795
	Apr-Jun	0.621	0.699	0.819	0.723
Blacks	Jan-Mar	0.578	0.735	0.858	0.697
	Apr-Jun	0.482	0.636	0.731	0.589
Hispanics	Jan-Mar	0.800	0.828	0.893	0.823
	Apr-Jun	0.679	0.692	0.782	0.702
Asians	Jan-Mar	0.768	0.763	0.871	0.832
	Apr-Jun	0.459	0.559	0.799	0.692
Overall	Jan-Mar	0.715	0.786	0.873	0.790
	Apr-Jun	0.608	0.682	0.805	0.700

Statistics are calculated using population weights.
Data restricted to individuals aged 25 to 65.

The numbers for Asian men with a High School degree or less are most striking. In the pre-Covid months, 77% of Asian men in this group reported working. This is 3 percentage points below the level for Hispanics, and 6 and 19 percentage points higher than that for Whites and Blacks, respectively. During Covid, the rate for Asians in this group fell by 31 percentage points to 46%. By contrast, the changes for comparable Whites, Blacks and Hispanics were approximately 9, 10 and 12 percentage points, respectively.

The patterns in the changes for women are similar. In the pre-Covid period, Whites, Blacks, and Hispanics did not differ significantly in the fraction working. Hispanics were

Table 2: Fraction of Women Working by Group in 2020

	Period	HS or less	Some Col.	College+	Overall
Whites	Jan-Mar	0.558	0.673	0.779	0.690
	Apr-Jun	0.445	0.571	0.687	0.593
Blacks	Jan-Mar	0.558	0.679	0.783	0.669
	Apr-Jun	0.422	0.540	0.715	0.554
Hispanics	Jan-Mar	0.526	0.698	0.765	0.619
	Apr-Jun	0.387	0.563	0.626	0.488
Asians	Jan-Mar	0.556	0.647	0.671	0.641
	Apr-Jun	0.324	0.448	0.631	0.537
Overall	Jan-Mar	0.549	0.676	0.765	0.672
	Apr-Jun	0.419	0.559	0.678	0.566

Statistics are calculated using population weights.
Data restricted to individuals aged 25 to 65.

approximately 3 percentage points lower. During Covid, the fraction for Asians with a High School degree or less who reported working fell by 23 percentage points, while the decreases for the three other groups were between 11 and 13 percentage points.

By contrast, the effect of Covid is much smaller for individuals with a college degree or more, and it does not vary much by ethnicity for either gender. The changes in the Fraction Working from pre-Covid to Covid among individuals with some college education are somewhere between the two other education groups.

The patterns found in Tables 1 and 2 also appear if one changes the definition of working to also include those who reported "has a job, but not at work last week". The results are displayed in Tables 3 and 4. For the rest of this paper, we focus on the first definition of working. The reason is that the alternative definition seems to be subject to a great deal of mis-classification since the beginning of the pandemic (See US Bureau of Labor Statistics (2020)).

The empirical regularities reported above seem to have been largely overlooked. The report by Mar and Ong (2020) is a notable exception. They report aggregate statistics to compare the unemployment rate for Asian Americans and Whites before and after the onset of the crisis. The contribution of this paper is to use micro data to investigate the extent to which the different employment patterns across groups reported above can be

Table 3: Fraction of Men Working by Group in 2020 (Alternative Definition of Work)

	Period	HS or less	Some Col.	College+	Overall
Whites	Jan-Mar	0.729	0.812	0.892	0.816
	Apr-Jun	0.662	0.740	0.847	0.759
Blacks	Jan-Mar	0.596	0.749	0.879	0.715
	Apr-Jun	0.526	0.678	0.774	0.632
Hispanics	Jan-Mar	0.824	0.855	0.909	0.846
	Apr-Jun	0.720	0.737	0.816	0.743
Asian	Jan-Mar	0.784	0.788	0.895	0.854
	Apr-Jun	0.561	0.625	0.840	0.750
Overall	Jan-Mar	0.736	0.808	0.892	0.811
	Apr-Jun	0.652	0.725	0.837	0.739

Statistics are calculated using population weights.
Data restricted to individuals aged 25 to 65.

Table 4: Fraction of Women Working by Group in 2020 (Alternative Definition of Work)

	Period	HS or less	Some Col.	College+	Overall
Whites	Jan-Mar	0.576	0.695	0.808	0.715
	Apr-Jun	0.487	0.619	0.735	0.640
Blacks	Jan-Mar	0.582	0.707	0.806	0.693
	Apr-Jun	0.463	0.599	0.762	0.602
Hispanics	Jan-Mar	0.543	0.720	0.792	0.639
	Apr-Jun	0.424	0.616	0.687	0.534
Asian	Jan-Mar	0.575	0.676	0.704	0.670
	Apr-Jun	0.405	0.526	0.667	0.589
Overall	Jan-Mar	0.568	0.700	0.794	0.696
	Apr-Jun	0.461	0.611	0.726	0.613

Statistics are calculated using population weights.
Data restricted to individuals aged 25 to 65.

explained by differences in demographic and job characteristics at the individual level. We also disaggregate the group of Asian Americans into those of East Asian descent, those of South-East Asian descent, and the remaining group of Asians, and compare those groups to Whites, Blacks, and Hispanics. We argue that the differences cannot be easily explained by differences in demographic and job characteristics. We document these findings in Section 2 below. There, we also compare the effects of the pandemic on different ethnic groups to the effects of the Great Recession. We find that there was no notable difference in the

effects of the 2008 economic downturn on Asians-Americans and Whites. This suggests that this period might be fundamentally different from the previous recession. Section 2 also presents a number of robustness checks. Two important findings emerge. First, the extremely different patterns for the population with a high school degree or less do not seem to be driven by individuals who stop working due to health concerns about elderly household members. Second, those differentials mostly disappear when we restrict the sample to US-born women. On the other hand, US-born Asian American men with a high school degree or less were much harder hit in terms of employment than their White, Black, and Hispanic counterparts. Section 3 presents evidence that suggests that the large changes in the probability that a person is working can be attributed to changes in the probability of transitioning out of working as well as to the probability of transitioning into working. In Section 4, we demonstrate that the overall patterns are not driven by differential selection into educational attainment across ethnic groups. Section 5 concludes the paper.

2 The Probability of Working

In this section, we present the results from estimating linear probability models for the probability of working. The main explanatory variable of interest is the interaction of a dummy variable for the pandemic and ethnicity.

There can be many explanations for the statistics reported in Tables 1 and 2. One is that Asian Americans without college education tend to work in industries and occupations that are particularly hard hit by the pandemic. For example, in the sample used below, East Asians are overrepresented in the occupation "hosts and hostesses, restaurant, lounge, and coffee shop" by a factor of 3 relative to the rest of the population. In the group with a high school degree or less, the difference becomes a factor of almost 5. Asian and Black Americans have also reported experiencing increased discrimination during the pandemic that has affected their employment prospects. See for example PEW Research Center (2020) and Mar and Ong (2020). Since the latter is likely to be a national phenomenon, we define the crisis variable in terms of calendar time when it comes to interactions with ethnicity. On the other hand, job markets are more local, and we therefore define the crisis variable

in terms of the cumulative number of cases in a state when it comes to interactions with industries and occupations.

Our main interest is to document how working depends on ethnicity before and during the pandemic. Since Asian Americans are a very heterogeneous group, we disaggregate the group into three categories: East Asians, South-East Asians, and other Asians.[1] The variables of interest will be ethnicity dummies and - especially - their interactions with the COVID period, April-June 2020.

As noted above, it is natural to think that working depends on the type of job that an individual currently holds or previously held, and that the effects of the COVID-19 pandemic vary by job characteristics. For example, the impact is likely to be smaller in occupations where it is relatively easy to work from home. Similarly, the impact on employment is likely to be less severe in industries that are considered essential. We therefore also control for all industry-occupation combinations interacted with a variable for how heavily a state was impacted by COVID. More precisely, for each state and each month, we define a dummy variable which indicates whether the number of cases per 100,000 inhabitants in that state has reached 2,500 by the 12th of that month. In the estimation discussed below, the interaction between this variable and the interactions between industry and occupation are treated as fixed effects.

Whether someone is working is also likely to be influenced by the demographic characteristics of the individual. Therefore, for each combination of sex and educational group, we estimate a linear probability model for working that, in addition to the industry-occupation-crisis fixed effects, controls for age, age squared, marital status, number of children, number of children under the age of 5, indicator variables for calendar year and month, and an indicator variable for state of residence.

We use the Current Population Survey (CPS) Basic Monthly data from the first 6 months of 2019 and 2020 and restrict the data to individuals aged 25-65. The reason why we use data from 2019 as well as 2020 is to control for seasonality in working that varies by ethnicity. Specifically, we also include an indicator for the second quarter and interactions between this

[1]See Appendix Section 5 for precise definitions.

variable and all ethnicity indicators. We also include dummy variables for ethnicity and the pandemic.

The estimated coefficients for the key variables of interest are reported in Table 5.[2] The corresponding logit estimation results are presented in the Appendix.

Table 5: Main Results

	Men HS or less	Men Some College	Men College+	Women HS or less	Women Some College	Women College+
Black	-0.038	-0.009	-0.001	-0.025	-0.026	0.001
	(0.006)	(0.007)	(0.005)	(0.005)	(0.006)	(0.004)
Hispanic	0.011	-0.005	0.010	0.004	0.002	0.009
	(0.004)	(0.006)	(0.005)	(0.004)	(0.005)	(0.005)
AsianE	0.018	0.019	-0.008	0.032	-0.002	-0.001
	(0.015)	(0.018)	(0.007)	(0.011)	(0.016)	(0.006)
AsianSE	0.024	0.025	-0.012	0.030	-0.002	0.011
	(0.010)	(0.012)	(0.011)	(0.011)	(0.015)	(0.009)
AsianOther	0.016	0.001	-0.009	0.015	0.019	-0.037
	(0.013)	(0.013)	(0.006)	(0.010)	(0.012)	(0.008)
Black*Crisis	-0.061	-0.031	-0.053	-0.019	-0.062	-0.012
	(0.017)	(0.017)	(0.015)	(0.017)	(0.017)	(0.012)
Hispanic*Crisis	-0.021	-0.039	-0.035	-0.012	-0.015	-0.039
	(0.011)	(0.016)	(0.014)	(0.015)	(0.016)	(0.015)
AsianE*Crisis	-0.314	-0.046	-0.017	-0.262	-0.227	-0.044
	(0.053)	(0.054)	(0.017)	(0.048)	(0.059)	(0.021)
AsianSE*Crisis	-0.198	-0.078	-0.028	-0.177	-0.058	-0.030
	(0.043)	(0.042)	(0.023)	(0.039)	(0.038)	(0.020)
AsianOther*Crisis	-0.098	-0.042	-0.021	0.010	-0.103	0.001
	(0.037)	(0.041)	(0.013)	(0.038)	(0.046)	(0.014)
Observations	111,056	75,921	110,293	92,131	84,786	129,012

Robust standard errors are clustered at the household level
Coefficients for Age, Age-squared, Marital Status, Number of Children,
Number of Children under 5, Month and State Dummies not reported
Industry-Occupation-Crisis Fixed Effects are also Included

[2]We use the population weights from the CPS. The standard errors for all the regressions are clustered at the household level. This accounts for interhousehold correlation in unobservables. It also accounts for the fact that the CPS has a panel structure, with individuals being interviewed for four consecutive months, not interviewed for eight, and then again interviewed for another four months.

The results in the first and fourth columns of Table 5 show that the drop in the probability of working was larger for minority groups than for Whites. The differences compared to Whites are between 2 and 6 percentage points for Blacks and Hispanics. The effects on Asians are much larger and quite different across East Asians, South-East Asian, and other Asians. The effects on East Asians with a High School degree or less are especially dramatic. East Asian men and women have an estimated additional 31 and 26 percentage point drop in the probability of working during the pandemic relative to their white counterparts. This is true even after controlling for demographic variables and for industry and occupation characteristics.

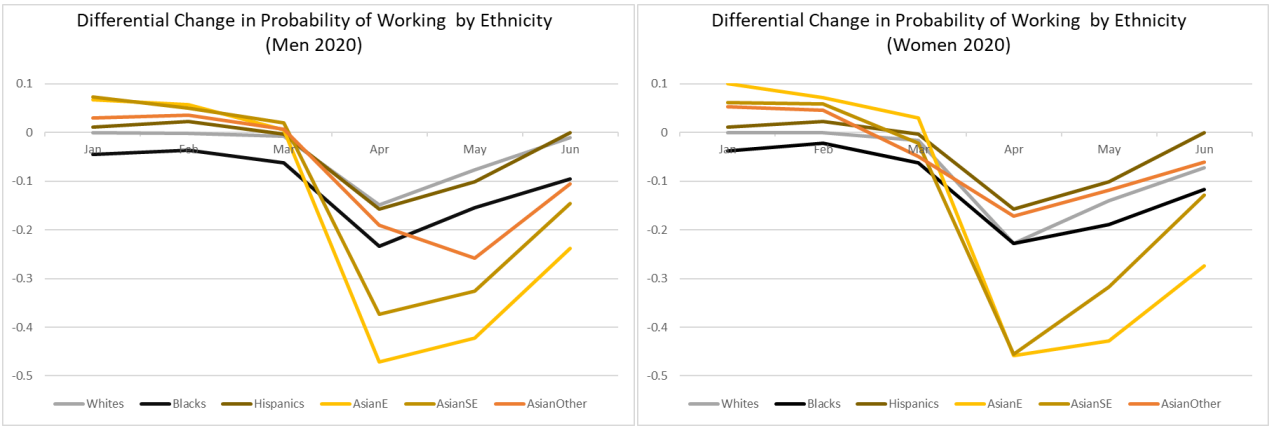
The results for the top end of the educational attainment distribution (columns 3 and 6) are very different. For individuals with a college degree or more, there is still a difference in the decline in employment between Whites and minorities, but there is no striking difference between Blacks, Hispanics and Asians. Not surprisingly, the estimated effects for the intermediate educational group (i.e., the group with some college education (columns 2 and 5)), are generally between the estimates for the lower and higher educational groups.

The aggregate unemployment rate peaked in April of 2020 and declined thereafter. It is therefore natural to investigate the extent to which the ethnicity effect lessened over time for the individuals with a high school degree or less. We therefore estimated the same model that gave the results in Table 5, except that we now include a full set of interactions between monthly dummies and ethnicity groups. The January coefficient for Whites has been normalized to 0, and all coefficients should be interpreted as comparisons to that group. The coefficients on this set of interactions are plotted in Figure 1. For this exercise, we only use data from 2020. This makes the figures comparable to Tables 1 and 2.

For men, the left panel of Figure 1 shows no strong trend in employment prior to April for any of the groups. The p-value for the joint test that the differences between the six lines are constant between January and March is 0.52. After that, we see differential downward trends, with some recovery between May and June. East Asians (the yellow line) and South-East Asians (the light brown line) experienced the sharpest drops between March and May and still had the largest shortfall in June.

For women, there does seem to be some downward trend for Asians, especially between

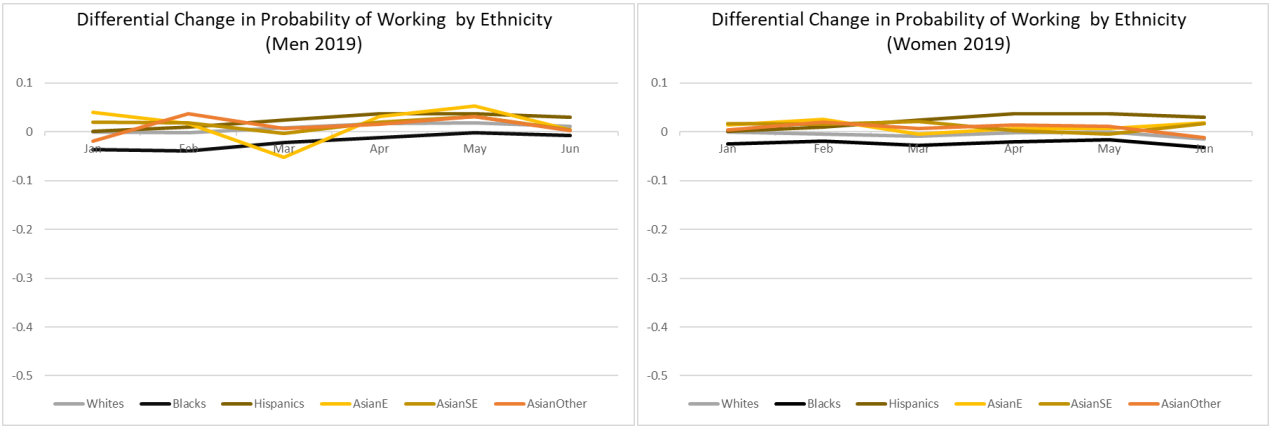
Figure 1: Timing of The Effect of Ethnicity (HS or Less)



February and March. However, this pre-trend is much less dramatic than the steep decline after March, and the p-value for the joint test that the differences between the six lines are constant between January and March is 0.14. As was the case for the men, the right panel of Figure 1 shows some recovery for women by June. However, by that time the East and South-East Asian groups still had the largest shortfall relative to their pre-pandemic levels.

Figure 2 displays the same information as Figure 1 for the year 2019. It is clear that the patterns in 2020 are very different from 2019, and that the sharp declines and the differences in those declines by ethnicity are not due to seasonality.

Figure 2: Timing of The Effect of Ethnicity2019 (HS or Less)



It is difficult to know the mechanisms behind the extreme impact on Asians, especially East Asians, with lower educational attainment. One possibility is that this is a typical

feature of economic downturns.[3] In order to investigate the first potential mechanism, we estimate the same model that gave the results in Table 5 using data from 2006 through 2011, with the crisis variable defined as a dummy variable for the years 2008, 2009, 2011 and 2011. The results are presented in Table 6.

The results in Table 6 suggest that the there is generally no differential in the impact of the recession between Asians and Whites. This is in sharp contrast to the COVID-19 crisis. The maximum T-statistic of the 12 coefficients that measure the differential Asian-versus-White impact of the crisis is just above 2, and a joint test of significance across all 6 combinations of education and gender yields a chi-square test statistic of 30.54, corresponding to a p-value of 0.0325. With sample sizes over 600,000, we consider this weak evidence.

Table 6 does illustrate that Blacks and Hispanics were harder hit by the 2008 recession across the sex and educational groups. This pattern is not too different from the COVID-19 episode.

One potential explanation for the differential downturn in employment across ethnicities is that some groups are more likely to live in multi-generational households. If people are concerned about the health of the older members and stop working as a result, then that might induce different patterns in employment in response to the crisis across ethnicities. The results in Table 7 suggest that this is not the explanation for our findings. When we restrict the sample to individuals in households with no member older than 70 years, we obtain estimates that are very close to those found in Table 5.

We next demonstrate that the main results are not sensitive to our choice of timing of the crisis. In Table 8, we present the results from re-estimating the model with alternative definitions of the timing of the crisis. We only consider the specifications that use individuals with a high school degree or less. The first column reports the original specification in Table 5. Here, "Crisis" is defined as the calendar months starting in April 2020, and the industry-occupation-crisis interactions are defined by whether or not the number of COVID cases exceeded 2,500 per 100,000 people in that state by the 12^{th} of that month. In the second and

[3]It is also possible that the experience of Asian American workers during the pandemic reflects the impact of discrimination due to their perceived association with China. This is outside the scope of our work in this paper. Such an explanation would be consistent with Rasul and McConnell (2020) and Sakong (2018).

Table 6: 2008 Recession

	Men HS or less	Men Some College	Men College+	Women HS or less	Women Some College	Women College+
Black	-0.026	-0.017	-0.005	-0.011	-0.010	0.005
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
Hispanic	0.027	0.001	0.003	0.016	0.008	0.008
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
AsianE	0.007	0.006	0.009	0.026	0.006	0.008
	(0.007)	(0.008)	(0.003)	(0.004)	(0.007)	(0.004)
AsianSE	0.018	-0.006	-0.011	0.023	0.013	0.012
	(0.005)	(0.008)	(0.005)	(0.004)	(0.007)	(0.004)
AsianOther	0.001	0.011	0.004	0.005	0.006	-0.002
	(0.007)	(0.007)	(0.003)	(0.006)	(0.007)	(0.004)
Black*Crisis	-0.023	-0.025	-0.023	-0.010	-0.009	-0.020
	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)	(0.004)
Hispanic*Crisis	-0.006	0.000	-0.007	-0.009	-0.010	-0.008
	(0.003)	(0.004)	(0.004)	(0.002)	(0.004)	(0.004)
AsianE*Crisis	0.013	-0.021	-0.008	-0.002	0.006	-0.010
	(0.009)	(0.012)	(0.005)	(0.006)	(0.008)	(0.005)
AsianSE*Crisis	-0.016	-0.009	-0.005	-0.005	-0.000	-0.012
	(0.008)	(0.010)	(0.007)	(0.006)	(0.009)	(0.006)
AsianOther*Crisis	-0.012	-0.006	-0.007	-0.001	-0.008	-0.010
	(0.010)	(0.010)	(0.005)	(0.007)	(0.009)	(0.005)
Observations	1,043,111	642,051	781,724	1,013,777	773,369	862,553

Same specification as in Table 5.

the fifth columns, we defined the crisis in term of calendar time in the industry-occupation-crisis interactions as well as in the ethnicity-crisis interactions. In the third and the sixth columns, crisis is defined in terms of the state-specific number of COVID cases in both sets of interactions.

We also estimate a model that allows for full interactions between year, month and state. These results are presented in Table 9. Again, we find that this does not alter our results.

The labor market differences between Asian Americans and Whites could be due to language obstacles. In order to test this, we re-estimate the main model restricting the

Table 7: Estimation Excluding Individuals With Household Members Older Than 70

	Men HS or less	Men Some College	Men College+	Women HS or less	Women Some College	Women College+
Black*Crisis	-0.061	-0.033	-0.057	-0.023	-0.061	-0.015
	(0.017)	(0.018)	(0.015)	(0.018)	(0.017)	(0.012)
Hispanic*Crisis	-0.020	-0.041	-0.030	-0.018	-0.016	-0.041
	(0.012)	(0.017)	(0.015)	(0.015)	(0.016)	(0.015)
AsianE*Crisis	-0.329	-0.031	-0.014	-0.294	-0.215	-0.051
	(0.056)	(0.058)	(0.017)	(0.049)	(0.061)	(0.022)
AsianSE*Crisis	-0.204	-0.097	-0.025	-0.171	-0.044	-0.028
	(0.046)	(0.044)	(0.024)	(0.041)	(0.043)	(0.021)
AsianOther*Crisis	-0.079	-0.050	-0.020	0.020	-0.083	0.001
	(0.040)	(0.042)	(0.013)	(0.041)	(0.048)	(0.015)
Observations	103,207	71,883	106,051	85,054	79,202	122,311

Same specification as in Table 5.

Table 8: Sensitivity of the Result to the Timing of Crisis

	Men (HS or Less)			Women (HS or Less)		
	Original	Calendar	State Specific	Original	Calendar	State Specific
Black*Crisis	-0.061	-0.050	-0.049	-0.019	-0.022	-0.013
	(0.017)	(0.017)	(0.022)	(0.017)	(0.017)	(0.021)
Hispanic*Crisis	-0.021	-0.018	-0.019	-0.012	0.000	0.003
	(0.011)	(0.012)	(0.015)	(0.015)	(0.015)	(0.021)
AsianE*Crisis	-0.314	-0.271	-0.304	-0.262	-0.221	-0.199
	(0.053)	(0.051)	(0.074)	(0.048)	(0.045)	(0.057)
AsianSE*Crisis	-0.198	-0.167	-0.121	-0.177	-0.097	-0.035
	(0.043)	(0.041)	(0.058)	(0.039)	(0.040)	(0.049)
AsianOther*Crisis	-0.098	-0.093	-0.112	0.010	-0.006	0.055
	(0.037)	(0.037)	(0.058)	(0.038)	(0.038)	(0.055)
Observations	111,056	111,056	111,056	92,131	92,131	92,131

Same specification as in Table 5.

sample to those who are born in the United States. We again only consider the specifications with high school or less. Table 10 shows the results. Here, we have combined East and South-East Asians into one group in order to have reasonable sample sizes in each ethnic group.

Table 9: Model with Full Year, Month and State Interactions

	Men (HS or Less)		Women (HS or Less)	
	Original	Flexible	Original	Flexible
Black*Crisis	-0.061	-0.063	-0.019	-0.012
	(0.017)	(0.017)	(0.017)	(0.018)
Hispanic*Crisis	-0.021	-0.021	-0.012	-0.019
	(0.011)	(0.012)	(0.015)	(0.017)
AsianE*Crisis	-0.314	-0.295	-0.262	-0.260
	(0.053)	(0.051)	(0.048)	(0.048)
AsianSE*Crisis	-0.198	-0.208	-0.177	-0.179
	(0.043)	(0.043)	(0.039)	(0.040)
AsianOther*Crisis	-0.098	-0.101	0.010	0.032
	(0.037)	(0.040)	(0.038)	(0.042)
Observations	111,056	111,056	92,131	92,131

Same specification as in Table 5 except for the interactions

Table 10 shows that the effect of the crisis on US-born Asians (relative to Whites) is less severe than the effect for the full sample of Asian Americans. Indeed, for US-born women we cannot reject the null hypothesis that both the coefficient for East and South-East Asians and the coefficient for the remaining Asians is 0. The p-value for this test is 0.55. On the other hand, the point estimates for the effect on Asians are still larger than those on the other ethnicities. For men, the coefficient for East and South-East Asians is statistically significant at the 5% level of significance, and the p-values for the test that that both the coefficient for the East and South-East Asians and the coefficient for the remaining Asians is 0 is 0.018. For men, the point estimates for the effect on Asians are much larger than on the other ethnicities.

3 Transition In and Out of Employment

In this section, we investigate whether the large impact of COVID-19 on the employment of Asian Americans with a high school degree or less is primarily driven by the probability that the employed stopped working or by the probability that those not employed started working.

Table 10: Restricting Estimation to US Born

	Men (HS or Less)		Women (HS or Less)	
	Original	US Born	Original	US Born
Black*Crisis	-0.060	-0.046	-0.019	-0.044
	(0.017)	(0.018)	(0.017)	(0.019)
Hispanic*Crisis	-0.020	-0.007	-0.012	0.021
	(0.011)	(0.018)	(0.015)	(0.021)
AsianESE*Crisis	-0.242	-0.183	-0.212	-0.064
	(0.034)	(0.073)	(0.033)	(0.089)
AsianOther*Crisis	-0.098	-0.083	0.010	-0.054
	(0.037)	(0.064)	(0.038)	(0.066)
Observations	111,056	86,612	92,131	70,249

Same specification as in Table 5.

To do this, we estimate the econometric model for working from Section 2 separately for the samples of individuals who were or were not working the previous month. The results are presented in Table 11.

Table 11: Transition In and Out of Employment (High School Degree or Less)

	Men Remaining	Men Entering	Women Remaining	Women Entering
Black*Crisis	-0.066	-0.091	-0.041	-0.068
	(0.019)	(0.042)	(0.018)	(0.043)
Hispanic*Crisis	0.000	0.003	0.015	-0.014
	(0.011)	(0.035)	(0.015)	(0.036)
AsianE*Crisis	-0.317	-0.111	-0.129	-0.185
	(0.080)	(0.089)	(0.072)	(0.061)
AsianSE*Crisis	-0.186	-0.164	-0.191	-0.069
	(0.053)	(0.070)	(0.059)	(0.077)
AsianOther*Crisis	-0.073	-0.278	-0.015	0.034
	(0.047)	(0.072)	(0.042)	(0.119)
Observations	59,844	17,252	40,892	22,900

Same specification as in Table 5.

Table 11 shows that for the probability of remaining employed as well as the probability of entering employment, Asians are more negatively impacted by the COVID than are other

ethnicities. This result applies to both men and women, and it suggests that Asian Americans with no college education were harder hit by the pandemic when it comes to firing as well as hiring decisions.

4 The Role of Education

One could argue that education is a choice made by an individual, and that this would make it endogenous. Tables 12 and 13 show the distribution of education by ethnicity for both genders in our sample. It is very clear from those tables that Asian Americans have higher education on average than other groups. In other words, the selection into education level is very different across the ethnicities. This suggests that the group of Asians with a high school degree or less might be very different in terms of unobservables from Whites, Blacks, and Hispanics with the same level of education.

The last columns of Tables 1 and 2 in the introduction show that for men, the overall effect of the crisis is largely comparable for Blacks, Hispanics, and Asians, with Asians having the largest drop in employment. The drop for white men was much smaller. For women, the decline was similar across all the ethnic groups.

Table 12: Distribution of Education (Men Aged 25-65)

	HS or less	Some Col.	College+	Frac. Pop.
Whites	0.329	0.265	0.406	0.709
Blacks	0.457	0.279	0.264	0.095
Hispanic	0.593	0.219	0.188	0.127
Asians	0.210	0.160	0.630	0.069
Overall	0.381	0.251	0.368	1.000

Table 13: Distribution of Education (Women Aged 25-65)

	HS or less	Some Col.	College+	Frac. Pop.
Whites	0.260	0.279	0.461	0.688
Blacks	0.366	0.310	0.324	0.113
Hispanic	0.529	0.241	0.230	0.127
Asians	0.224	0.146	0.629	0.073
Overall	0.315	0.267	0.418	1.000

To ensure that the results for ethnicity are not biased by selection into different education groups, we estimate a model for the probability of working with the same explanatory variables as in Section 2, but now using the whole sample without conditioning on education groups. Table 14 presents the results for men and women. These results show that Blacks, Hispanics and Asians all experienced a bigger impact of the crisis on their employment than Whites. The effects are especially strong for East and South-East Asians who had the two largest drops for both men and women.

Table 14: Results For the Whole Sample (Not Conditional on Education)

	Men	Women
Black*Crisis	-0.050	-0.036
	(0.009)	(0.009)
Hispanic*crisis	-0.036	-0.036
	(0.007)	(0.008)
AsianE*Crisis	-0.053	-0.092
	(0.017)	(0.020)
AsianSE*Crisis	-0.089	-0.071
	(0.019)	(0.017)
AsianOther*Crisis	-0.031	-0.005
	(0.012)	(0.013)
Observations	297,270	305,929

Same specification as in Table 5.

5 Conclusion

This paper has documented that Asian Americans with no college education have been especially hard hit by the pandemic. This pattern does not apply to the 2008 economic crisis. We have not been able to explain this by differences in demographics or in job characteristics. Asian Americans are also harder hit unconditional on education. This suggests that one cannot explain the main results by only pointing to different selection into education levels across ethnic groups.

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Appendix

Data Construction

We define AsianAll based on the IPUMS CPS variable "race". Specifically, AsianAll equals 1 if race is either recorded as "asian only", "hawaiian/pacific islander only", "white-asian", or "black-asian".

AsianAll is divided into three groups AsianE, AsianSE and AsianOther. The first is the subset that are either born, or has a parent born, in Japan, North Korea, Taiwan, Hong Kong, South Korea, Mongolia, China or Macau. The second is the subset that are not in AsianE and are either born, or has a parent born, in Brunei, Cambodia, Indonesia, Laos, Malaysia, Burma, Myanmar, Philippines, Singapore, Thailand, Timor Leste, or Vietnam.The third group, AsianOther, is the remaining set.

Logit or Linear Probability Model

Table 15 displays the result from a fixed effects logit version of the model estimated in Section 2. The conclusions to be drawn from the logit estimates are not substantially different from those reported in Section 2. Consider, for example, a heterogeneous population of East Asians in which the probability of working prior to the pandemic is 50% for half of the population, and 90% for the other half. The estimated average effects of the pandemic on the probability of working (relative to the effect for whites with the same education and gender) for this population would be a decline in the probability of working of 29.53, 3.77, 5.46, 32.52, 26.76, and 11.26 percentage points across the six combinations of education and gender in Table 15. These are quite similar to the results for the linear probability model.

The standard errors in Table 15 are based on the interquartile range of estimates from 200 bootstrap replications (with i.i.d. draws of clusters of households).

The logit fixed effects estimation does not use sampling weights. In Table 16, we therefore present the results from estimating the model in Section 2 without sampling weights. The results are very close to the ones reported in 5. The standard errors in Table 16 are calculated using the same bootstrap scheme as for the fixed effects logit model.

Table 15: Fixed Effects Logit Estimation

	Men HS or less	Men Some College	Men College+	Women HS or less	Women Some College	Women College+
Black	-0.557	-0.127	-0.113	-0.398	-0.352	0.083
	(0.071)	(0.096)	(0.099)	(0.072)	(0.071)	(0.076)
Hispanic	0.149	-0.032	0.129	0.038	0.010	0.086
	(0.056)	(0.096)	(0.114)	(0.072)	(0.093)	(0.089)
AsianE	0.063	0.194	-0.210	0.673	-0.086	0.072
	(0.237)	(0.270)	(0.188)	(0.296)	(0.256)	(0.141)
AsianSE	0.249	0.485	-0.267	0.523	0.047	0.118
	(0.156)	(0.238)	(0.172)	(0.198)	(0.200)	(0.162)
AsianOther	0.149	-0.046	-0.186	0.279	0.256	-0.497
	(0.162)	(0.205)	(0.110)	(0.186)	(0.248)	(0.115)
Crisis	-1.215	-1.223	-0.808	-1.343	-1.234	-0.777
	(0.084)	(0.084)	(0.079)	(0.082)	(0.082)	(0.068)
Black*Crisis	-0.089	-0.234	-0.639	0.168	-0.392	-0.201
	(0.144)	(0.172)	(0.196)	(0.130)	(0.137)	(0.126)
Hispanic*Crisis	-0.473	-0.181	-0.404	-0.265	-0.163	-0.436
	(0.107)	(0.185)	(0.199)	(0.113)	(0.153)	(0.120)
AsianE*Crisis	-1.610	-0.217	-0.312	-1.773	-1.460	-0.630
	(0.484)	(0.500)	(0.281)	(0.551)	(0.453)	(0.289)
AsianSE*Crisis	-0.907	-0.612	-0.255	-0.908	-0.280	-0.246
	(0.347)	(0.477)	(0.346)	(0.324)	(0.314)	(0.250)
AsianOther*Crisis	-0.403	0.176	-0.301	0.201	-0.535	-0.140
	(0.259)	(0.377)	(0.240)	(0.344)	(0.394)	(0.181)
Observations	111,056	75,921	110,293	92,131	84,786	129,012

Logit version of specification as in Table 5.

Table 16: Linear Regression Without Weights

	Men HS or less	Men Some College	Men College+	Women HS or less	Women Some College	Women College+
Black	-0.037	-0.005	-0.005	-0.022	-0.021	0.002
	(0.006)	(0.006)	(0.005)	(0.004)	(0.005)	(0.003)
Hispanic	0.013	-0.001	0.008	0.007	0.002	0.006
	(0.004)	(0.006)	(0.006)	(0.004)	(0.005)	(0.004)
AsianE	0.011	0.016	-0.005	0.037	0.006	0.001
	(0.015)	(0.014)	(0.008)	(0.011)	(0.014)	(0.006)
AsianSE	0.017	0.028	-0.010	0.039	0.007	0.009
	(0.010)	(0.011)	(0.009)	(0.009)	(0.011)	(0.008)
AsianOther	0.011	-0.002	-0.008	0.020	0.019	-0.026
	(0.010)	(0.012)	(0.004)	(0.008)	(0.011)	(0.007)
Crisis	-0.109	-0.099	-0.046	-0.164	-0.123	-0.063
	(0.005)	(0.006)	(0.004)	(0.008)	(0.006)	(0.005)
Black*Crisis	-0.060	-0.037	-0.052	-0.023	-0.062	-0.016
	(0.016)	(0.015)	(0.013)	(0.017)	(0.013)	(0.011)
Hispanic*Crisis	-0.038	-0.031	-0.032	-0.021	-0.020	-0.045
	(0.011)	(0.015)	(0.013)	(0.014)	(0.016)	(0.012)
AsianE*Crisis	-0.296	-0.071	-0.037	-0.260	-0.194	-0.046
	(0.052)	(0.052)	(0.018)	(0.053)	(0.052)	(0.022)
AsianSE*Crisis	-0.160	-0.116	-0.030	-0.201	-0.064	-0.039
	(0.036)	(0.045)	(0.021)	(0.036)	(0.037)	(0.019)
AsianOther*Crisis	-0.092	-0.049	-0.013	-0.007	-0.100	-0.010
	(0.036)	(0.039)	(0.012)	(0.039)	(0.037)	(0.011)
Observations	111,056	75,921	110,293	92,131	84,786	129,012

Same specification as in Table 5.