Who Benefited from World War II Service and the GI Bill? New Evidence on Heterogeneous Effects for US Veterans

Proposal for the NBER Conference on the Economic Impacts of World War II

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February 8, 2023

Abstract

We propose to study the heterogeneous effects of World War II service and the GI Bill on the educational attainment and labor market outcomes of immigrants' children ("second-generation" immigrants) in comparison to those of veterans with US-born parents. Preliminary analysis using the public use samples of the 1960 and 1970 censuses and an instrumental variables-regression discontinuity strategy based on the sharp change in the probability of military service with the 1928 birth cohort suggests that men with fathers from southeastern Europe benefitted less from the GI Bill in terms of increased probability of graduating college or additional years of education than White men with US-born fathers. In contrast, men whose fathers immigrated from northwestern Europe appear to have benefitted more than other groups. This preliminary analysis builds on earlier research on World War II veterans, and we propose to expand the analysis in new directions using the upcoming release of the fully digitized complete-count 1950 census. This new data source should enable us to estimate the effects of the GI Bill more precisely, to sidestep some challenges associated with analyses of later censuses (e.g., the Korean War), to expand the analysis in terms of outcomes and heterogeneity, and to consider data that are linked from childhood households to adult outcomes.

Early twentieth-century immigration to the United States was dominated by migrants from southern and eastern Europe. Although this inflow was stemmed by restrictive immigration policy in the 1920s, the process of labor market and social assimilation continued for decades, making ethnic and cultural divides salient for decades after the end of the Age of Mass Migration. World War II has been cited as an important catalyst speeding the cultural assimilation of these first- and second-generation immigrants. For instance, it has been argued that the contact between White Americans of different ethnic and religious backgrounds during military service was responsible

for an improvement in the relationships between these groups after the War (e.g., Bruscino 2010; Gerstle 2001).

In this project, we propose to study one channel through which service in World War II may have influenced the economic assimilation of second-generation immigrants from southeastern Europe and elsewhere. In particular, we intend to study the effects of World War II service and the GI Bill on the educational attainment and other economic outcomes of second generation immigrants as compared to the sons of US natives. Prior research (e.g., Bound and Turner 2002; Fetter 2013; Stanley 2003) has documented a number of positive impacts of military service and the GI Bill on White Americans in general—generating increases in educational attainment and earlier attainment of home ownership. At the same time, it has been shown that the effects were not evenly spread across the population, with substantially smaller benefits for southern Black veterans (Turner and Bound 2003). Second-generation immigrants provide an interesting comparison in the context of contemplating the GI Bill's heterogenous effects. Although they were able to serve on the same basis as other White men (e.g., they were not segregated in the military as Black men were), a combination of a lack of access to college or to college preparation, economic disadvantage, and religious or ethnic discrimination might have limited the extent to which some were able to reap the benefits of the GI Bill. In general, we aim to more fully explore the heterogeneous effects of military service and the GI Bill, setting the experiences of immigrants' children alongside those of other groups.

Preliminary analysis, using data from the 5-percent sample of the 1960 census and from a 3-percent sample of the 1970 census (Ruggles et al. 2022),[1] suggests that there may have been some interesting variation in the effect of the GI Bill on college education across individuals of different nativities. Tables 1 and 2 present simple regressions of college graduation or years of education, respectively, on an indicator for being a World War II veteran and this indicator interacted with an indicator for being a second-generation immigrant, defined as having a foreign-born father.[2] This preliminary sample includes White and Asian men in the birth cohorts of 1923–1928—the cohorts

[1] That is, we use the three one-percent form 2 samples of the 1970 census.
[2] All regressions control for nativity-specific time trends.

with the peak rate of World War II service—with at least a high school degree.[3] For the sons of immigrants as a whole (columns 1 and 2) and for the sons of immigrants from southeastern Europe in particular (column 5), these regressions show clear evidence that the gains associated with World War II service were stronger for the sons of US-born men than for the sons of immigrants. In the 1960 census, for instance, World War II service was associated with a 6.7-percentage point increase in the probability that the sons of natives would have graduated from college, but only a 2.6-percentage point increase for the sons of immigrants from southeastern Europe (Table 1, panel A, column 5).

It is well established that selection into service in World War II was not random: within birth cohorts, positive selection into military service seems to have been the norm (e.g., Angrist and Krueger 1994). Therefore, simple comparisons of veterans and non-veterans tend to yield upper-bound estimates of service effects. Since the first part of our study will tend to emphasize differences in estimated effects across groups of White men (all US-born), one could argue that if the selection bias is similar in magnitude for each group, then the differences across groups would identify true differences in service effects (i.e., the selection bias would be differenced out). Presently, we believe there is insufficient evidence to support or reject this interpretation, but it is an avenue we intend to explore.

To address concerns about selection directly, we adapt the regression discontinuity instrumental variables strategy developed by Fetter (2013), which identifies the effects of World War II service based on a fuzzy discontinuity at the end of 1927. The "first-stage" of this strategy is exhibited in Figure 1 for 1960, showing a clear discontinuity in the probability of World War II service for the sons of natives and for the sons of immigrants at the cutoff. This discontinuity enables the instrumental-variables estimates presented in Table 3 for college graduation and Table 4 for years of education. The regressions are analogous to those presented in Tables 1 and 2, but incorporate the birth cohorts of 1929 and 1930 and are identified solely by scaling the discontinuity in the outcome, as presented for 1960 in Figures 2 and 3 by the discontinuity in the probability of World War II service, as presented for 1960 in Figure 1.

[3]Results are similar without restricting to high school graduates.

Although these regressions are highly powered in the sense of a strong first stage, the standard errors for the interaction of World War II service and having a foreign-born father are large, perhaps due to the small number of second-generation immigrants in many of them. Nonetheless, the patterns that they suggest are striking. The negative coefficient for the sons of southeastern European immigrants supports the results above of a smaller effect of World War II service and the GI Bill on educational outcomes for these men. For the sons of northwestern European immigrants, the patterns suggested by these results are also striking, with substantially *larger* impacts for these men than for the sons of US-born men.

The results discussed above are highly preliminary. Going forward with this project, we propose to test more rigorously the suggestive patterns documented by the instrumental variables estimates in Tables 3 and 4. To do so, we intend to exploit the recent public release of the 1950 census and the impending release of the digitized complete-count version of these data by the Minnesota Population Center. Most simply, increasing the size of the available dataset from 5 percent of the population (in 1960's 5-percent census sample, in which questions on education and veteran status were asked of all men) to 20 percent of the population (in 1950's census, in which these questions were asked of only the sample-line individuals) promises to increase the precision of the estimates. The greater density of data in any particular geographic unit also enables us to more finely address issues of access to college education, which Turner and Bound (2003) have shown to be important an determinant of take-up.

Data available in the 1950 census will also enable us to examine outcomes that have, to our knowledge, not been examined in prior studies of the effects of the GI Bill. For instance, the sample-line questions in the 1950 census include data on earnings from self-employment. In addition to its support for education and housing, the GI Bill provided business loans. Our analysis will be able to determine the extent to which these were effective in general, and to examine heterogeneity in these effects by ethnicity or race.

The timing of the 1950 census also provides an important benefit to our proposed analysis. A challenge to prior studies of the effects of the GI Bill using data from 1960 and later is that individuals who did not serve in World War II were at higher risk for service in the Korean War, for

which there was a separate GI Bill. Indeed, Bound and Turner (2002, pp. 791–792) raise precisely this issue in their seminal study: "the analysis is framed in terms of measuring the effects of World War II service relative to a control group, which is assumed to have had no military service and no GI benefits. If researchers could rewind the clock or measure educational attainment at the start of 1950, this would certainly be true. However, the hostilities in Korea may have had a marked effect on the presumed control group." Our analysis proposes to "rewind the clock" precisely as Bound and Turner (2002) suggest, though because of the temporal proximity to World War II, it may be be necessary to focus on outcomes such as years of college rather than college completion. In any case, the 1950 census will provide us a clearer view of the transition of veterans back into civilian life, which the GI Bill was intended to facilitate.

A difficulty posed by the use of the 1950 census is that it did not solicit information on quarter of birth, which is central to the identification strategies used by various studies of the effects of the GI Bill (Angrist and Krueger 1994; Bound and Turner 2002; Fetter 2013; Turner and Bound 2003). The availability of individuals' names, however, enables their potential linkage to other sources, such as military records, that might reveal this information. Indeed, the ability to make links between the 1950 census and other sources enables us to explore a variety of other dimensions of the effects of the GI Bill. For instance, linkage to the 1940 or 1930 censuses will enable us to explore heterogeneity of the effects of the GI Bill on the dimension of socioeconomic status. This could complement more studies of heterogeneity in terms of specific ethnicity within the broad categories that we have studied so far (e.g., separating Italians from other southeastern European immigrants) and potentially enable us to revisit the effects of the GI Bill on Black Americans residing in different parts of the country. Linkage can also enable us to determine whether, as we speculate above, selection into military service was similar between native-born White men of different ethnicities.

The proposed project promises to contribute most directly to the literature on the effects of the World War II GI Bill. This act has attained an almost legendary status in the popular perception, and its importance has again come to the forefront as it is increasingly cited as a channel through which the US government provided more resources to White than Black Americans (e.g., Lawrence 2022). The release of the 1950 census provides a unique opportunity to revisit the effects of the GI

Bill with the aid of all of the features discussed above. It will also enable us to examine the potentially unequal effects of the GI Bill from a variety of perspectives, along the dimension of ethnicity, as discussed above, as well as on other important dimensions such as religion, socioeconomic status, race, and geography.

The proposed project also promises to add to the economics literature on immigrant assimilation in general (e.g., Borjas 1985; Card 2005), and in particular to enrich the literature on the assimilation of the immigrants of the Age of Mass Migration. A substantially clearer picture has emerged in recent years of the economic and cultural assimilation of the immigrants of the Age of Mass Migration (e.g., Abramitzky, Boustan, and Eriksson 2014, 2020; Collins and Zimran 2023), as well as of second-generation immigrants of this period (e.g., Abramitzky et al. 2021). The proposed project will test whether an ostensibly ethnicity-neutral policy to encourage education, home ownership, and business formation among veterans contributed to convergence or divergence of economic outcomes across groups by having heterogeneous effects.

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Table 1: Simple regressions for college graduation

Variables	(1) All	(2) All	(3) LA	(4) NW	(5) SE	(6) A
Panel A: 1960						
WWII Vet	0.072[a]	0.067[a]	0.067[a]	0.067[a]	0.067[a]	0.067[a]
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
WWII Vet x 2nd Gen	−0.034[a]	−0.030[a]	0.024	−0.004	−0.041[a]	0.000
	(0.006)	(0.006)	(0.031)	(0.014)	(0.008)	(0.024)
Observations	168,721	168,721	138,677	143,840	160,506	139,411
R-squared	0.005	0.011	0.013	0.012	0.012	0.012
2nd Gen Share	0.183	0.183	0.0050	0.041	0.141	0.011
Panel B: 1970						
WWII Vet	0.055[a]	0.054[a]	0.053[a]	0.054[a]	0.053[a]	0.053[a]
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
WWII Vet x 2nd Gen	−0.019[b]	−0.020[b]	−0.009	−0.007	−0.027[a]	0.026
	(0.009)	(0.009)	(0.039)	(0.019)	(0.010)	(0.030)
Observations	103,570	103,570	85,142	88,282	98,370	85,569
R-squared	0.003	0.009	0.011	0.010	0.010	0.010
2nd Gen Share	0.183	0.183	0.0060	0.042	0.140	0.011
Birth State FE	No	Yes	Yes	Yes	Yes	Yes

Significance levels: [a] p<0.01, [b] p<0.05, [c] p<0.1

Notes: Robust standard errors in parentheses. Sample includes White or Asian men in the 1923–1928 birth cohorts who completed 12th grade. Dependent variable is an indicator taking a value of one if the individual completed at least four years of college. Some columns limit to only those with native-born fathers or fathers born in a particular foreign region. LA denotes Latin America. NW denotes Northwestern Europe. SE denotes Southeastern Europe. A denotes Asia. Second-generation immigrants are defined as those with a foreign-born father. All regressions control for a linear trend in birth quarter that can vary by nativity and nativity fixed effects.

Table 2: Simple regressions for years of education

Variables	(1) All	(2) All	(3) LA	(4) NW	(5) SE	(6) A
Panel A: 1960						
WWII Vet	0.368^a	0.347^a	0.345^a	0.346^a	0.347^a	0.345^a
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
WWII Vet x 2nd Gen	−0.187^a	−0.165^a	0.155	−0.054	−0.209^a	−0.112
	(0.031)	(0.031)	(0.149)	(0.066)	(0.036)	(0.118)
Observations	168,721	168,721	138,677	143,840	160,506	139,411
R-squared	0.006	0.014	0.016	0.015	0.015	0.016
2nd Gen Share	0.183	0.183	0.0050	0.041	0.141	0.011
Panel B: 1970						
WWII Vet	0.291^a	0.285^a	0.286^a	0.286^a	0.286^a	0.285^a
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
WWII Vet x 2nd Gen	−0.126^a	−0.126^a	0.022	−0.076	−0.160^a	0.092
	(0.043)	(0.042)	(0.184)	(0.090)	(0.050)	(0.151)
Observations	103,570	103,570	85,142	88,282	98,370	85,569
R-squared	0.003	0.012	0.013	0.013	0.013	0.014
2nd Gen Share	0.183	0.183	0.0060	0.042	0.140	0.011
Birth State FE	No	Yes	Yes	Yes	Yes	Yes

Significance levels: ^{a} p<0.01, ^{b} p<0.05, ^{c} p<0.1

Notes: Robust standard errors in parentheses. Sample includes White or Asian men in the 1923–1928 birth cohorts who completed 12th grade. Dependent variable is years of education completed. Some columns limit to only those with native-born fathers or fathers born in a particular foreign region. LA denotes Latin America. NW denotes Northwestern Europe. SE denotes Southeastern Europe. A denotes Asia. Second-generation immigrants are defined as those with a foreign-born father. All regressions control for nativity-specific linear trends in birth quarter that can vary by nativity and nativity fixed effects.

Table 3: IV regressions for college graduation

Variables	(1) All	(2) All	(3) LA	(4) NW	(5) SE	(6) A
Panel A: 1960						
WWII Vet	0.070^a	0.071^a	0.071^a	0.071^a	0.071^a	0.071^a
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
WWII Vet x 2nd Gen	−0.026	−0.028	0.047	0.023	−0.044	−0.047
	(0.028)	(0.028)	(0.133)	(0.064)	(0.031)	(0.125)
Observations	227,138	227,138	188,444	195,024	216,275	189,246
F-statistic	3654	3672	20.09	132.7	3669	37.10
2nd Gen Share	0.175	0.175	0.0060	0.040	0.134	0.010
Panel B: 1970						
WWII Vet	0.081^a	0.081^a	0.081^a	0.081^a	0.081^a	0.081^a
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
WWII Vet x 2nd Gen	0.005	0.004	−0.151	0.070	−0.012	0.037
	(0.034)	(0.034)	(0.123)	(0.078)	(0.038)	(0.134)
Observations	140,031	140,031	116,304	120,333	133,153	116,742
F-statistic	2313	2344	2344	2345	2344	2371
2nd Gen Share	0.175	0.175	0.0070	0.040	0.132	0.010
Birth State FE	No	Yes	Yes	Yes	Yes	Yes

Significance levels: ^{a} p<0.01, ^{b} p<0.05, ^{c} p<0.1

Notes: Robust standard errors in parentheses. Sample includes White or Asian men in the 1923–1930 birth cohorts who completed 12th grade. Dependent variable is an indicator taking a value of one if the individual completed at least four years of college. All regressions control for time trends that vary by nativity and permit level changes at 1928. Some columns limit to only those with native-born fathers or fathers born in a particular foreign region. LA denotes Latin America. NW denotes Northwestern Europe. SE denotes Southeastern Europe. A denotes Asia. Second-generation immigrants are defined as those with a foreign-born father.

Table 4: IV regressions for years of education

Variables	(1) All	(2) All	(3) LA	(4) NW	(5) SE	(6) A
Panel A: 1960						
WWII Vet	0.336[a]	0.338[a]	0.339[a]	0.339[a]	0.338[a]	0.338[a]
	(0.055)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
WWII Vet x 2nd Gen	−0.088	−0.100	0.904	0.175	−0.192	−0.416
	(0.131)	(0.130)	(0.646)	(0.295)	(0.147)	(0.571)
Observations	227,138	227,138	188,444	195,024	216,275	189,246
F-statistic	3654	3672	20.09	132.7	3669	37.10
2nd Gen Share	0.175	0.175	0.0060	0.040	0.134	0.010
Panel B: 1970						
WWII Vet	0.350[a]	0.350[a]	0.351[a]	0.351[a]	0.350[a]	0.350[a]
	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)
WWII Vet x 2nd Gen	0.015	0.015	−0.590	0.233	−0.021	−0.210
	(0.161)	(0.160)	(0.599)	(0.361)	(0.183)	(0.643)
Observations	140,031	140,031	116,304	120,333	133,153	116,742
F-statistic	2313	2344	2344	2345	2344	2371
2nd Gen Share	0.175	0.175	0.0070	0.040	0.132	0.010
Birth State FE	No	Yes	Yes	Yes	Yes	Yes

Significance levels: [a] p<0.01, [b] p<0.05, [c] p<0.1

Notes: Robust standard errors in parentheses. Sample includes White or Asian men in the 1923–1930 birth cohorts who completed 12th grade. Dependent variable is years of education completed. All regressions control for time trends that vary by nativity and permit level changes at 1928. Some columns limit to only those with native-born fathers or fathers born in a particular foreign region. LA denotes Latin America. NW denotes Northwestern Europe. SE denotes Southeastern Europe. A denotes Asia. Second-generation immigrants are defined as those with a foreign-born father.

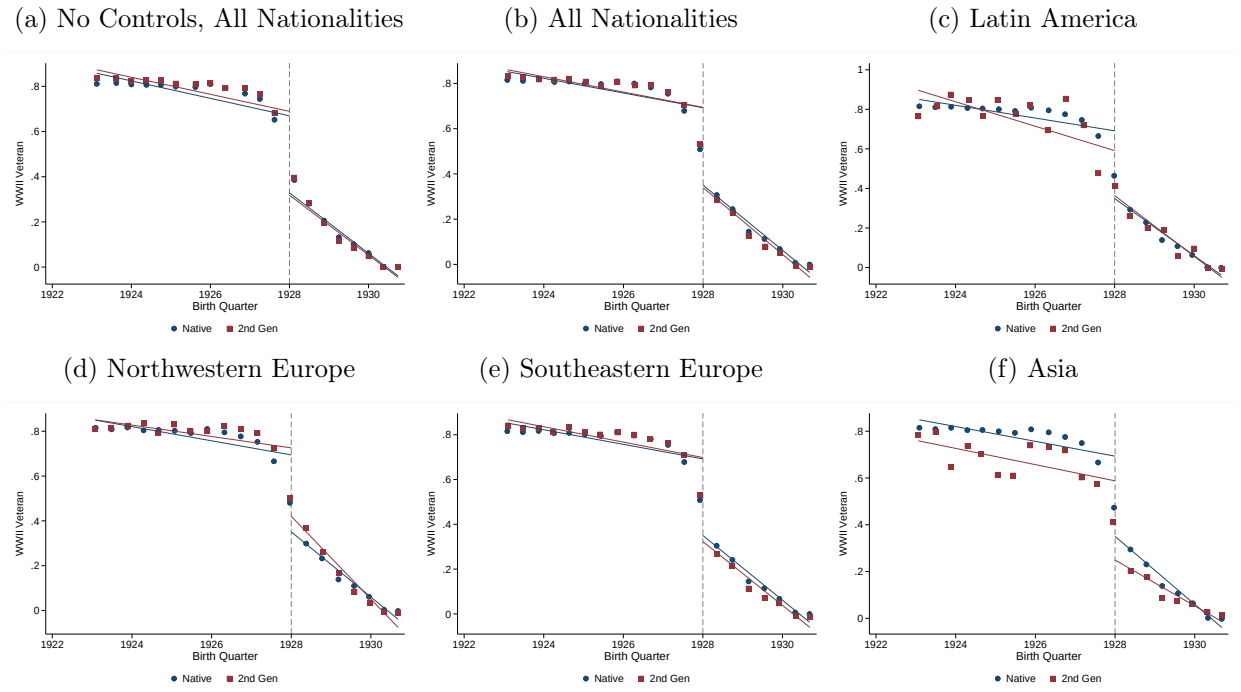


Figure 1: First-Stage RD Plots, High School Graduates 1960

Note: Sample limited to native-born White and Asian men who had completed high school by 1960. Each point represents a birth quarter. All graphs except for panel (a) control for state-of-birth fixed effects. In all graphs, "Native" denotes native-born men with native-born fathers. The other group is "2nd Gen," denoting native-born men with foreign-born fathers from the nationalities listed in the caption. For instance, in panel (e), "2nd Gen" denotes native-born men with fathers born in southeastern Europe.

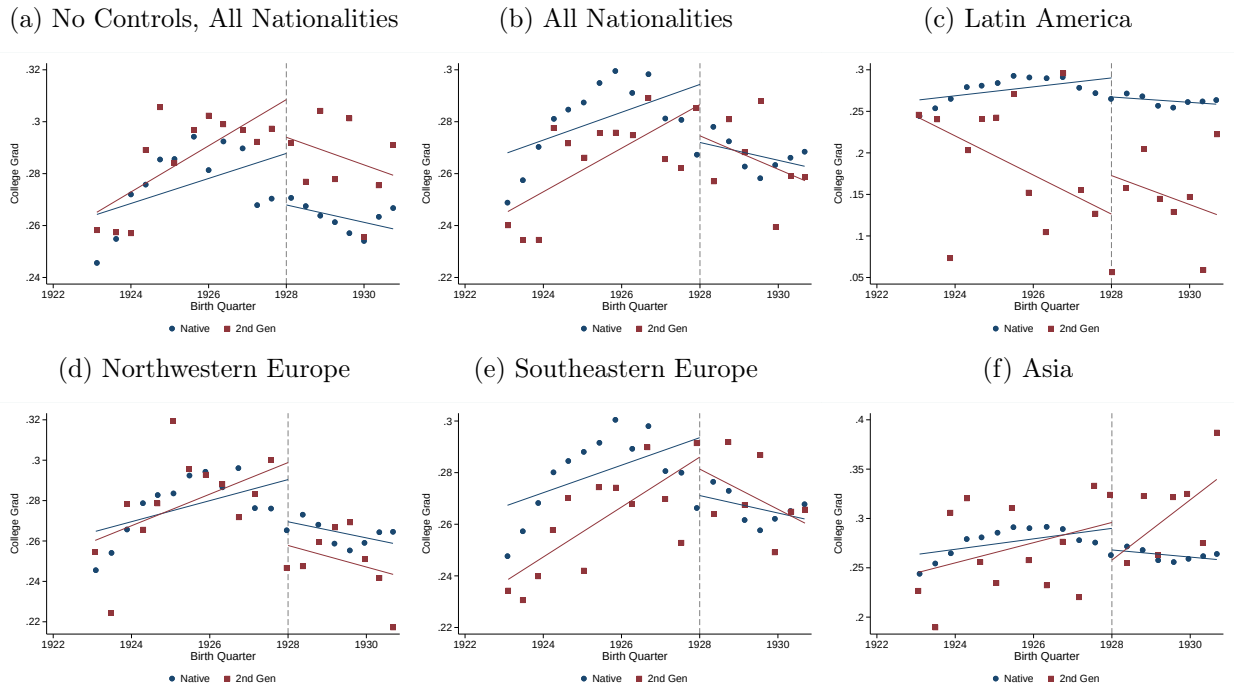


Figure 2: Reduced Form RD Plots, High School Graduates 1960, College Graduation

Note: Sample limited to native-born White and Asian men who had completed high school by 1960. Each point represents a birth quarter. All graphs except for panel (a) control for state-of-birth fixed effects. In all graphs, "Native" denotes native-born men with native-born fathers. The other group is "2nd Gen," denoting native-born men with foreign-born fathers from the nationalities listed in the caption. For instance, in panel (e), "2nd Gen" denotes native-born men with fathers born in southeastern Europe.

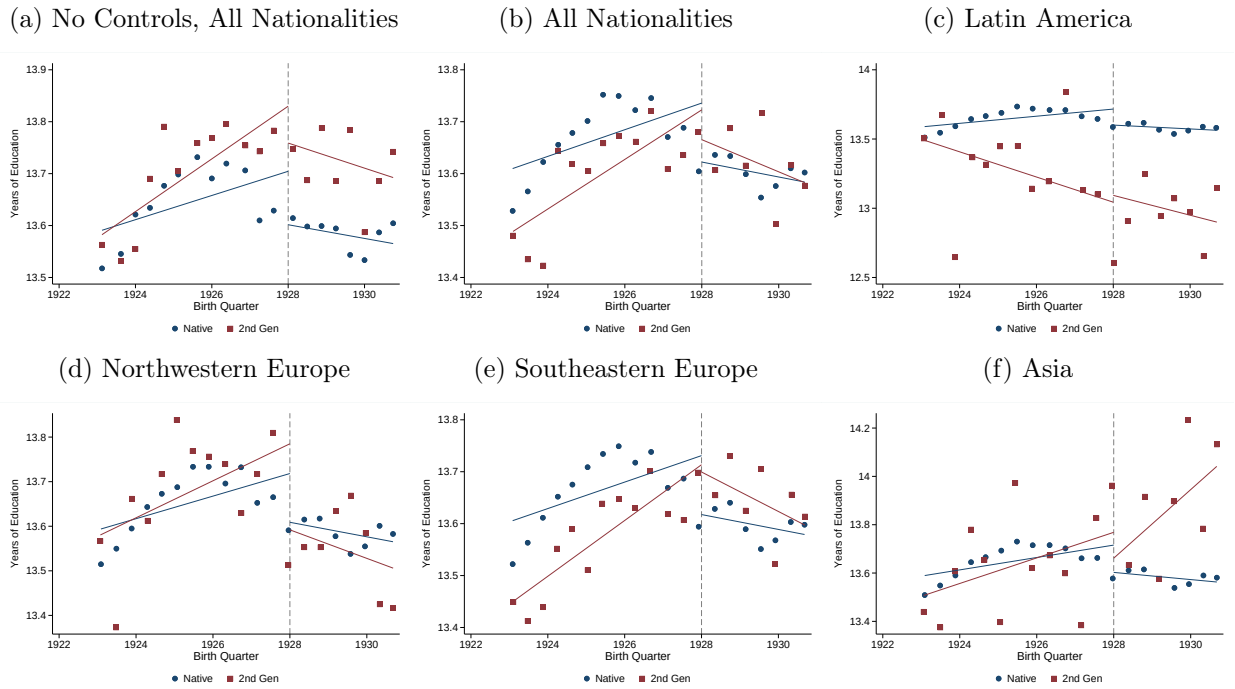


Figure 3: Reduced Form RD Plots, High School Graduates 1960, Years of Education

Note: Sample limited to native-born White and Asian men who had completed high school by 1960. Each point represents a birth quarter. All graphs except for panel (a) control for state-of-birth fixed effects. In all graphs, "Native" denotes native-born men with native-born fathers. The other group is "2nd Gen," denoting native-born men with foreign-born fathers from the nationalities listed in the caption. For instance, in panel (e), "2nd Gen" denotes native-born men with fathers born in southeastern Europe.