

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

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Abstract: We use the newly released complete-count 1950 census to study the differential impacts of World War II service and access to the GI Bill on the educational and labor market outcomes of individuals of various ethnic and racial groups. Although the “veteran premium”—the difference between veterans’ and non-veterans’ outcomes—is the product of both WWII/GI Bill effects and selection into military service, we focus on comparisons of these premia across groups, in which selection into service will be partially differenced out. We find substantial disparities in veteran premia between the groups. Most notably, sons of immigrants from southern and eastern Europe and Black men appear to have benefitted less from World War II service and the GI Bill than did the sons of immigrants from northern and western Europe and white sons of native-born men—differences that may have been the product of both differences in childhood household characteristics and preparedness for college-level study in the form of completed education. But we also find evidence of channels through which these groups may have benefitted disproportionately, such as the GI Bill’s support for business loans in the case of second-generation southern and eastern European immigrant veterans, and government employment and below-college training for Black veterans. Our findings help to understand the course of immigrant assimilation and racial inequality over the second half of the twentieth century and remain important given the continued salience of the GI Bill and its potentially disparate outcomes in modern political discourse.

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1. Introduction

The Servicemen's Readjustment Act of 1944 established a multifaceted set of programs to reward veterans for their military service and, it was hoped, to ease the economy's absorption of millions of demobilized men and women at the war's conclusion. The Act established veterans' eligibility for unemployment benefits, tuition and stipend support for vocational training or higher education, and loan guaranties for the purchase of housing or inputs for farming or businesses. Approximately 75 percent of US-born men in the mid-1920s served in World War II, and most veterans used one or more elements of the "GI Bill" in their post-war years.¹ Veterans, popular commentators, and some academic researchers have lauded the GI Bill as a transformative piece of legislation with overwhelmingly positive effects for the veterans and for society more broadly. Yet it is also claimed that the bill's effects were uneven, subject to discrimination, benefitted some groups more than others, and perhaps exacerbated some dimensions of American inequality while reducing others.

In this paper, we exploit new data resources, especially the 1950 full count census records, to examine the heterogeneous effects of World War II service and the GI Bill on male veterans.² We are particularly interested in three dimensions of heterogeneity, and we offer preliminary evidence on two of them in this draft. First, we can provide new views of veterans who were the children of immigrants, yielding insights about the second generation's economic assimilation and avenues for upward mobility and the role of wartime service in such assimilation. Second, we can provide new views of non-white veterans' outcomes, including Black and Native American veterans, building on the insights of Turner and Bound's (2003) study of Black-white differences in college education (see also Yamashita 2008). Third, once we gain access to a restricted-access version of the 1950 full count census data with information on individuals' names, we will be able to link men to their childhood homes. The ability to compare the childhood characteristics of veterans and non-veterans will be helpful in determining the role of selection into military service in driving our results. It will also provide a nuanced micro-level view of how differences in pre-war socioeconomic status differentially positioned men to benefit (or not) from military service and the GI Bill. This will complement and extend Stanley's (2003) findings, based on the Occupational Changes in a Generation (OCG) dataset, regarding college attendance and fathers' occupation. In each case, we focus on education and various labor market outcomes because the digitized 1950 census of population microdata do not include information on home ownership, which has been the subject of prior research (Fetter 2013; Althoff and Szerman 2022).

Several measurement issues are prominent in the economics literature on the World War II GI Bill. First, the effects of military service cannot be easily separated from the effect of the GI Bill

¹ The veteran share is calculated with the complete 1950 census, limited to US-born men. Data on benefits utilization are from the President's Commission on Veterans' Pensions, Staff Report No. IX, Part A (1956, p. 48).

² Approximately 350,000 women served in the US military during World War II. Their subsequent outcomes and wartime experiences are beyond this paper's scope, but merit closer study and the size of the 1950 census might be helpful in that regard. See Mettler (2005, ch. 9) and Altschuler and Blumin (2009 ch. 5).

because the former was a pre-requisite for the latter, because there was no random assignment of benefits within the population of WWII veterans, and because standard datasets include little more than a WWII veteran-status dummy variable.³ Therefore, measures of treatment effects in this setting are usually “net” in nature, combining potentially differently signed effects from military service and post-service support programs. Second, selection into military service was not random, which complicates the interpretation of differences between veterans and observationally similar non-veterans. This concern has led scholars to emphasize identification strategies that hinge on differences in outcomes across birth cohorts with different shares of veterans (Angrist and Krueger 1994; Bound and Turner 2002; Fetter 2013). We provide both within- and between-cohort perspectives, following Bound and Turner (2002). Within-cohort comparisons may overstate effects in levels, yielding an upper bound given positive selection into military service. That said, because we are particularly interested in *differences* across population sub-groups, it is possible that *if* selection into service was similar for different groups, then within-cohort differences compared across groups may yield useful measures of differential effects (i.e., the selection bias may be differenced out). Third, the timing of the Korean War (1950-53) complicates the interpretation of the “World War II veteran effect” in census data from 1960 onward because men who did not serve in WWII were often drafted to serve in Korea and, thus, eligible for GI Bill benefits. Our emphasis on the 1950 census data avoids this issue.⁴ Of course, in 1950 we observe veterans when they are young and perhaps still in the process of using their GI Bill benefits. It is entirely possible that some gains materialized later in the lifecycle. We discuss each of these issues in more detail later in the paper, and we extend some results to 1960 for comparison and additional insight.⁵

We focus on two sets of outcomes. For educational outcomes—college completion, years of education, and school attendance—we find suggestive evidence that second-generation immigrants from southern and eastern Europe benefited less from World War II service and the GI Bill than either second-generation immigrants from northern and western Europe or white men with US-born fathers: the veteran premium in the educational outcomes for the former group is smaller than the premia for the latter. Differences between these ethnic groups in 1940 suggest that part of the apparent lesser effect for second-generation immigrants from southern and eastern Europe may have come from lower rates of school enrollment and less advantageous household characteristics in childhood, which would have been less likely to equip them to take advantage of the higher education benefits of the GI Bill. Interestingly, we find that the veterans’ educational premia for US-born Black men were similar to those of the second-generation southern and eastern European immigrants, conditional on high school completion. However, lower rates of service and of high

³ In principle, it might be possible to exploit variation within the population of veterans to learn more. For instance, detailed information on veterans’ wartime experiences, linked from military records or post-war surveys of veterans, could differentiate the “military service” component of treatment. Stanley (2003) uses a cutoff for benefit eligibility in 1955 to compare Korean War veterans to later veterans.

⁴ The census was taken on April 1, 1950. US involvement in the Korean War began in June 1950.

⁵ A fourth measurement issue is that military service and the GI Bill had general equilibrium effects that complicate interpretations based on comparisons within or between cohorts.

school completion by Black men as a result of discrimination and larger differences in childhood environment from white second-generation natives meant that the aggregate impact of GI Bill educational benefits would have been smaller. We also find that Black men had a greater veteran premium in the likelihood of school attendance (not conditioning on high school completion), suggesting potential benefits from other aspects of the GI Bill's training benefits.

When studying labor market outcomes, we find that second-generation southern and eastern European immigrants enjoyed smaller veterans' premia in employment and occupation than second-generation northern and western European immigrants or second-generation white natives. Yet they enjoyed a statistically indistinguishable veteran's premium in income, arising from a greater veteran's premium in business and farm income, suggesting that they may have benefited from the GI Bill's support for small business loans. Black veterans also enjoyed substantially smaller premia in labor market outcomes relative to white men with US-born fathers, except in the likelihood of government employment, suggesting that entrance into this sector, perhaps aided by veterans' preferences, may have been a way to avoid discrimination in other areas.

Our paper contributes to several different economics literatures. First, assessments of World War II service and the GI Bill speak directly to the potential role of largescale government programs in bolstering economic mobility, human capital, civic engagement, and middle-class wealth.⁶ Indeed, the GI Bill is often cited as evidence that such programs can be successful and broadly beneficial. Widespread beliefs about World War II and the GI Bill inform both policymakers' and voters' thinking about ways in which the federal government can intervene to promote a more equitable society. As we allude to above and explore in greater detail below, the policy's effects are likely to have been complicated and context dependent—different veterans may have benefited from different aspects of the program and at different times in their lives—and the measurement issues are challenging. New microdata sources can help scholars clarify some aspects of these effects. In this paper's case, the (very!) recent release of the completely transcribed 1950 census records enables us to examine potentially heterogenous effects from a variety of empirical perspectives shortly after veterans had returned to civilian life.

The paper also adds to the economics literature on immigrants' economic assimilation (e.g., Borjas 1985; Card 2005). This paper asks whether an ostensibly ethnicity-neutral policy designed to encourage education, employment, home ownership, and business formation among veterans contributed to convergence or divergence of economic outcomes across groups of second-generation immigrants. This paper also helps specifically to understand the economic assimilation of European immigrants in the Age of Mass Migration (1850-1920). A clearer picture of this phenomenon has emerged recently for immigrants (e.g., Abramitzky, Boustan, and Eriksson 2020; Collins and Zimran 2023) and their children (e.g., Collins and Zimran 2019; Abramitzky et al. 2021). Although the Age of Mass Migration had come to an end by World War II, the process of assimilating the immigrants of this period and their children was still underway, and it has been speculated that service in World

⁶ A related literature centers on whether military service—or different experience within the military—has implications for later life outcomes (see MacLean and Elder 2007).

War II may have been an important catalyst for the acceptance of communities of immigrants from southern and eastern Europe into broader American society, breaking from previous discrimination based in large part on religion (Gerstle 2001; Brusolino 2010). To our knowledge, however, no quantitative analysis exists of the role of military service and the GI Bill in such assimilation. The sheer size of the 1950 full count census records makes it possible to separately examine outcomes for men whose parents immigrated from northern or western Europe, southern or eastern Europe, Asia, or Latin America.

In a similar way, the paper contributes to literatures concerned with disparities in educational and economic outcomes across groups categorized by race. Segregation within the military and in many areas of American life ensured that Black men's experiences during World War II (both in military service and the civilian economy), with the GI Bill's administration of benefits, and in the post-war economy were materially different from those of white men (Bolté and Harris 1947; Onkst 1998; Collins 2000; Turner and Bound 2003; Katznelson 2005; Katznelson and Mettler 2008; Eden 2022). Although the Veterans' Administration (VA) instructed its staff not to discriminate, the VA did not challenge segregation in the South, and Black veterans often found that "VA administrators and local officials were indifferent or hostile to them" (Altschuler and Blumin 2009, p. 132). Recognition that the GI Bill, despite its "race-neutral" legislative language, effectively exacerbated racial inequality in college education is a major qualification to the idea that it enhanced economic mobility (Turner and Bound 2003; Katznelson 2005; Katznelson and Mettler 2008; Lawrence 2022). Much of the evidence to date is centered on college education. More and broader quantitative research in this area is clearly merited, including the extension to consider other racial and ethnic groups, as we attempt to do here.

2. Background

In this section, we aim to clarify the scope of the GI Bill's benefits and establish some basic facts about the rates of military service and differences across groups in pre-War observables that might have shaped their ability to draw on certain provisions of the GI Bill. (Some of this evidence will become sharper once we can link men by name across census dates.)

It is important to keep in mind that early twentieth-century immigration was dominated by inflows from southern and eastern Europe. Restrictive immigration policies adopted in the 1920s sharply reduced the European inflow, but immigration from western hemisphere nations was unfettered.⁷ The process of immigrants' labor market and social assimilation continued for decades and across generations (Abramitzky, Boustan, and Eriksson 2020; Abramitzky et al. 2021, Collins and Zimran 2019, 2023). Consequently, ethnic divides in the "second generation" were salient on the eve of World War II.

⁷ Asian immigration had been restricted decades earlier. We are keenly aware that within the Asian population there are important differences in the wartime experiences for those of Japanese descent relative to other groups. We hope to clarify this in a future draft.

It is equally important to keep in mind that American society was deeply segregated, and racist beliefs influenced virtually every aspect of World War II military service (Dalfiume 1969; Guglielmo 2021). After the war, discrimination on many fronts diminished Black veterans' scope for benefits from military service and the GI Bill (Turner and Bound 2003; Katznelson and Mettler 2008). Yet many Black and other non-white veterans did take advantage of the GI Bill's provisions, and Weaver (1945) argued that some Black servicemen received valuable training in the military. Better understanding the importance of military service and the GI Bill for non-white groups would provide a fuller picture of its overall legacy, including its implications for racial inequality.

2.1 Differences across Groups in Military Service and Pre-War Characteristics

We rely on the newly released full count records of the 1950 census of population to calculate the share of US-born men in each birth cohort that served in the military during World War II (Ruggles, Flood et al. 2024; Ruggles, Nelson, et al. 2024).⁸ We separate the men into several distinct groups, relying on the census variables for birthplace and race.⁹ We distinguish white men with US-born fathers from those with fathers born in northern or western Europe, southern or eastern Europe, Latin America, or Asia. We also calculate rates for Black men and Native American men, as categorized in the census.

Figure 1 shows that the peak rates for World War II military service for most groups are found in the mid-1920s birth cohorts—these men would have been in their mid-teens to early 20s in 1941. After the 1927 birth cohort, there is a sharp falloff in World War II veteran status for all groups. The figure also shows that there were large differences in military service across racial categories but quite small differences across groups of white men with European- or US-born fathers. White men with European- or US-born fathers had veteran shares reaching nearly 80 percent for the peak cohorts. In contrast, Black men had rates that were about 20 percentage points lower, and rates for Native American men were lower still. Those whose father was born in Latin America had service rates that were between those of Black men and white men with US-born fathers. For second-generation Asian men, the veteran share slightly exceeded the Black rate by the 1925 cohort. These patterns have important implications for the share of men in each group who experienced military service and, therefore, were eligible for GI Bill benefits. Adding state-of-birth fixed effects to account for groups' different geographic concentrations tends to reduce the differences between white men with US-born fathers and those with European-born fathers while leaving large differences relative to other groups (panels b and d vs. panels a and c of Figure 1).

⁸ These postwar rates of service pertain to those who survived the war and until 1950. More than 400,000 Americans did not survive. Their sacrifice is not registered in the kind of analyses we undertake below, but it is, of course, important to acknowledge in any consideration of World War II's effects on the population.

⁹ The 1920s immigration restrictions and 1930s Great Depression resulted in small numbers of immigrants of military service age circa 1940. But there were large numbers of immigrants' children, on whom we focus here. Also, the 1950 census did not inquire about year of arrival for immigrants, which makes it difficult to separate recent (postwar) immigrants from prewar immigrants. In principle, record linkage in the future may clarify that distinction.

Figure 2 characterizes differences across groups in school attendance circa 1940. We restrict the sample to the 1922-1927 birth cohorts and, therefore, observe school attendance patterns for (approximately) 13- to 18-year-olds. The idea is to measure differential “dropout” rates across groups, which would have strongly influenced the relevance of the GI Bill’s much-heralded college tuition and stipend program. All the coefficients in the Figure 2 are expressed relative to white sons of US-born fathers. For each group, we estimated specifications with varying sets of control variables to assess the importance of geographic concentration within the US and between rural and urban areas. The base specification controls only for year of birth. This reveals large gaps in teenagers’ school attendance rates, with Black, Native American, and second-generation Latin American groups about 10 percentage points behind the reference group. Second-generation European and Asian immigrants attended school at higher rates than white teens with US-born fathers, though these differences collapse with the addition of birthplace fixed effects. A comparable analysis of years of education (*higrade*), reveals that on average Black, Native American, and second-generation Latin American teens had completed two or more grades less than similarly aged white teens with US-born fathers.¹⁰ Again, these pre-war differences in schooling indicate that some groups were better positioned than others to benefit from the GI Bill’s support for college enrollment, but other aspects of the GI Bill might have been helpful. This interpretation is consistent with evidence from the 1979 Survey of Veterans as summarized in Turner and Bound (2003, p. 150): white and Black veterans reported similar shares of GI Bill use (for any purpose), but Black veterans were less likely to benefit in terms of college enrollment.¹¹

Figure 3 provides a different perspective on socioeconomic differences across groups. It focuses on differences in fathers’ characteristics before the war, again focusing on fathers of sons born in the mid 1920s. Interpreting differences in educational attainment is somewhat challenging in this case, since many of the immigrant fathers would have been educated in other countries, complicating the interpretation of grade levels. But this metric of formal schooling is still a useful starting point. One aspect that stands out relative to previous graphs is that fathers from southern and eastern Europe had significantly fewer years of education than white fathers born in the US—a nearly 3-year gap. This is only slightly smaller than the gap for Black and Native American fathers (greater than 3 years). Fathers from Latin America had the largest gap relative to white US-born fathers—nearly 5 years. These differences in educational attainment also register in differences in the share of fathers employed as common laborers, though other metrics of differences in labor market outcomes are mixed.

¹⁰ This reflects higher dropout rates and, presumably, slower progression through grades. It does not incorporate differences in school quality. See Collins and Margo (2006) for detailed discussion of the history of Black-white differences in educational attainment.

¹¹ The Survey of Veterans includes a relatively small number of Black WWII veterans, approximately 20 per birth cohort between 1921 and 1927 (Turner and Bound 2003, p. 150). The Presidents’ Commission on Veterans’ Benefits also reports that white and non-white veterans had similar overall participation rates in GI Bill programs, including higher rates of non-white use of training programs and readjustment benefits (p. 72). Unfortunately, the report did not tabulate and publish the data by race or ethnicity.

In sum, the GI Bill's economic relevance varied greatly across groups in American society because men in these groups had, in some cases, vastly different rates of military service. Moreover, it seems likely that some groups would have been better positioned than others to benefit from support for veterans' college attendance, assuming that pre-war high school attendance and family background increased one's propensity for college enrollment. Yet other provisions of the GI Bill, which we describe next, might still have been helpful to men who were not on the cusp of college enrollment, and this too needs to be weighed when considering the Bill's impact.

2.2 World War II and the GI Bill: Context and Program Design

The Selective Training and Service Act of 1940 laid the administrative groundwork for the largescale mobilization of young men for military service by requiring their registration with local draft boards. Although many volunteered for service in the wake of the Pearl Harbor attack on December 7, 1941, most WWII servicemen were conscripted. Many registrants were rejected for military service, most commonly for mental illness, low levels of education or literacy, "manifestly disqualifying defects," musculoskeletal issues, cardiovascular issues, or hernia (Goldstein 1951, pp. 595-596).¹² Others received occupational deferments, typically older men working in agriculture or war industries (US Selective Service System 1950, p. 328).

Long before the war ended, policymakers and lobbyists began proposing legislation to assist demobilized veterans' re-integration into the labor force, including the idea for limited support for higher education (Ross 1969; Mettler 2005; Frydl 2009).¹³ Approximately 16 million Americans served in the military during World War II. Re-absorbing them into civilian life without causing mass unemployment was a priority. The American Legion, an organization formed by veterans of World War I, combined and expanded on earlier proposals for supporting veterans. The Legion marshalled legislative and public relations resources to advance what became known as the "GI Bill of Rights" in early 1944. President Franklin Roosevelt signed the Bill into law on June 22, 1944, just two weeks after the D-Day invasion of Normandy.¹⁴ The bill was not designed with the goal of increasing social mobility; rather, the Legion spoke in terms of what the nation owed veterans for their service and how the bill would enable them to resume productive civilian lives after the war's disruption (Altschuler and Blumin 2009, p. 54). The legislation was crafted to avoid extending the influence of federal agencies over state and local governments, thereby protecting entrenched segregation and discrimination. It was also designed to avoid the extension of comparable benefits to non-veterans.

¹² This list refers to registrants (not volunteers) through August 1, 1945. "Manifestly disqualifying defects" would include blindness, deafness, missing arms or legs, and "chronic or severe physical or mental disorders" (Goldstein, p. 595).

¹³ For instance, in a "fireside chat" in July 1943, President Roosevelt suggested that Congress should enact laws providing veterans with "mustering out" pay, educational assistance, unemployment insurance, and medical care and pensions for the disabled (Altschuler and Blumin 2009, p. 46).

¹⁴ Congress made substantial revisions, mostly increasing generosity, in 1945 (Altschuler and Blumin 2009, p. 82).

The GI Bill delineated several different benefits for veterans. Title II focused on education and training. Active-duty veterans who served at least 90 days and had not been dishonorably discharged were eligible for one year of tuition, fees, and stipend support with additional funding according to their length of service, up to four years in total. This financial support could be used in any approved training program or educational institution, and it was generous enough to fully cover tuition at leading private universities. Title III focused on loan guaranties for veterans' purchase of homes, farms, and business property, covering up to 50 percent of the value of the loan.¹⁵ Title IV required the US Employment Service to assign "veterans' employment representatives" to each state to facilitate the placement of veterans into civilian jobs. Title V defined "readjustment allowances" that provided income support to unemployed veterans for up to 52 weeks, depending on length of service.¹⁶ Receipt of one type of benefit did not exclude a veteran from receiving other benefits, and in practice many availed themselves of more than one type of benefit.

The charts in Figure 4 are taken directly from an administrative report on veterans' use of GI Bill benefits (US Presidents' Commission on Veteran Pensions 1956). Panel (a) reports expenditures across various programs. In 1946, mustering-out pay and readjustment allowances dominated expenditures on veterans, but by 1947 and throughout the late 1940s and 1950, expenditures on education and training were the largest category. Panel (b) focuses on shares of veterans who used different components of the GI Bill and conveys a sense of timing. Consistent with panel (a), readjustment allowances were the earliest and most widely used benefit—58 percent of WWII vets received them. Schooling and training followed at a lower level and slightly later timing, peaking around 51 percent of veterans. Home loan guarantees took off more gradually, reaching 28 percent of veterans by 1955. Panel (c) shows more detailed information on education and training. Nearly 900,000 veterans were using college-level benefits in 1948, the peak year. But even more veterans pursued other kinds of training, a combination of "below college" educational training, job training, and farm training. The report also shows that younger veterans, under age 25 at the time of discharge, were the primary beneficiaries of education and training programs and readjustment (unemployment) benefits (p. 82). This is useful to keep in mind because identification strategies that emphasize local average treatment effects for the youngest cohorts of World War II veterans are likely to pick up the group that most intensively utilized these GI Bill benefits.¹⁷

We do not have access to the administrative microdata that underpinned the creation of these reports. Our main point is simply that, as intended and designed, the GI Bill had several different components, and these various components may have benefited veterans with different characteristics and preferences, and at different times in the post-war years. The widespread popular emphasis on

¹⁵ The maximum value for a loan was originally set at \$2,000 but this was revised upward to \$4,000 in 1945. See Fetter (2013) for detailed discussion and analysis of the VA's home loan guaranty program.

¹⁶ Each month of service implied four weeks of unemployment benefits, up to 52 weeks and paying \$20 per week.

¹⁷ Sixty percent of those under 25 used education or training benefits by 1955, compared to 34 percent of those 30-34 and 25 percent of those 35 plus (US Presidents' Commission on Veteran Pensions 1956, p. 82). Differences in the use of loan guaranties were less pronounced. The median age for World War II veterans at time of discharge was 27.6 years (p. 104).

the GI Bill's legacy in terms of higher education is understandable, but it also misses a large swath of what the bill offered and what veterans used it for.

2.3 Earlier Literature in Economics

The literature on World War II service and the GI Bill is multidisciplinary, and our view is shaped by a variety of sources and methodologies.¹⁸ In this section, we briefly describe some of the key research papers in economics and then highlight the ways in which our paper adds new perspectives. The most relevant and recent economics literature tends to partition into a few different areas of study: veterans' educational outcomes (e.g., Bound and Turner 2002; Turner and Bound 2003; Stanley 2003; Thomas 2017), their labor market outcomes (e.g., Angrist and Krueger 1994; Thomas 2017), and housing market outcomes, especially home ownership (Fetter 2013).

Given the popular emphasis on the GI Bill's support for college education and longstanding policy interest how public subsidies affect college enrollment, it is not surprising that this aspect of the GI Bill has received a great deal of attention from economists and other scholars.¹⁹ After comparing within-cohort differences between veterans and non-veterans, arguably an upper bound on treatment effects, Bound and Turner (2002) and Turner and Bound (2003) shift their emphasis to differences in outcomes across cohorts with different rates of military service. They conclude that the effect of World War II service and GI Bill eligibility on college attendance and completion was positive and sizable for white men (5 to 6 percentage points in college completion observed in 1970's census). This result is similar in magnitude to within-cohort estimates when the sample is limited to those with at least 12 years of education (p. 798). Turner and Bound (2003) conclude that positive effects accrued to white men throughout the US and to Black men outside the South but not to those in the South. To date, this is the key economics paper on the differential effects of World War II service and the GI Bill across racial categories.

Stanley (2003) focuses primarily on an identification strategy for the effects on Korean War veterans relative to later veterans, but he does directly address World War II veterans' outcomes with a combination of insights from within-cohort comparisons (again, likely to be an upper bound) and across-cohort comparisons, which assume that the GI Bill had small (if any) effects on college education for older veterans from the early 1920s birth cohorts. He finds a positive effect for World War II veterans born between 1921 and 1926, increasing years of college attainment by 20 to 25 percent. These gains appear to have accrued to those from above-median socioeconomic backgrounds, based on information from the Occupational Changes in a Generation dataset.

Angrist and Krueger (1994) focus on WWII veterans' earnings premium. By 1980, it was clear that WWII veterans earned more than non-veterans, but it was unclear whether the gap was

¹⁸ For broad historical perspectives on the GI Bill see, *inter alia*, Olson (1974), Mettler (2005), Frydl (2009), and Altschuler and Blumin (2009). For discussion specifically of Black gains see Katznelson and Mettler (2008). Sociological perspectives include Nam (1964) and Sampson and Laub (1996), and Teachman and Tedrow (2004).

¹⁹ See Olson (1974) for an early history of effects on education. One major theme in the historical literature that we do not attempt to address here is that institutions of higher education were transformed by the wave of post-War veterans who enrolled.

causally related to military service and the GI Bill. They rely on within-birthyear variation in veteran status by birth quarters, a reflection of how the military draft was implemented. They instrument for veteran status with quarter of birth and assume that labor market outcomes were uncorrelated with quarter of birth otherwise. On this basis, they conclude that the positive veteran earnings premium was entirely attributable to selection; in fact, their baseline 2SLS estimates for 1980 are negative (p. 83).²⁰ Thomas (2017), on the other hand, employs a different identification strategy (closer to Bound and Turner’s approach) and finds positive effects on employment and being above the poverty line in 1970’s census data.

Fetter (2013) uses census data from 1960, 1970, and 1980 to study the effects of home loan guaranties provided by the World War II and Korean War GI Bills on homeownership. He addresses selection into military service by developing a fuzzy regression discontinuity design based on the sharp decline in the probability of military service for individuals who had just turned 18 or were about to turn 18 at the war’s end (i.e., making cross-cohort comparisons). He finds that access to home loan benefits under these GI Bills had an impact on homeownership in 1960 but not later, indicating that the benefits accelerated home purchases for veterans, but did not induce individuals who would not otherwise have purchased a home to do so.

Our analyses are similar in spirit to those described above—we too study how the experience of World War II and access to the GI Bill’s benefits affected veterans. However, we are particularly interested in understanding how those effects may have varied across groups and depended upon their pre-War positioning in the economy and their likelihood of military service. Investigating this heterogeneity requires large datasets. Fortunately, the full count censuses from 1930, 1940, and 1950 have become available since the literature described above was written, as has a 5 percent sample of the 1960 census manuscripts. The 1950 census may prove particularly valuable because it enables scholars to observe World War II veterans and non-veterans before the start of the Korean War and because (eventually) it will be possible to link large numbers of individuals over time to see their pre-war and post-war education, income, employment, occupation, marital status, migration decisions, and so on.

3. Empirical Strategies and Data

3.1 Data Sources and Outcomes of Interest

Our main analysis is based on the complete records of the 1950 US census, which IPUMS-USA released to researchers very recently (Ruggles, Flood et al. 2024; Ruggles, Nelson, et al. 2024). Our focus is on US-born men who were part of the 20-percent sample-line group, for whom we have information on veteran status, education, parents’ places of birth, and income, all of which are crucial to our analysis. In our main analysis, we limit attention to US-born men from the 1922 and 1927

²⁰ Lemieux and Card (2001) study Canadian veterans, who were eligible for various post-war benefits but not subject to Korean War service. Their estimates of the effect on college attainment (p. 335) are qualitatively similar to those of Bound and Turner (2002)

birth cohorts, which had the greatest exposure to World War II service. In total, our main sample for the 1922-1927 birth cohorts consists of 1.31 million individuals.

We use the 1950 census data to classify individuals into eight main ethnic or racial groups across which we compare the impacts of World War II service and the GI Bill. The goal is to provide a wide perspective on veterans from different backgrounds while maintaining sufficient sample size for analysis and avoiding an overwhelming number of groups for the sake of exposition and discussion. We readily acknowledge that finer gradations and intersections would be valuable and encourage scholars to dig deeper in this regard. Our base reference group is comprised of white men with fathers born in the US (which we will sometimes abbreviate as *US-W*). We separately distinguish men with fathers born in Puerto Rico since their experiences may have been distinct (abbreviated *PR*), though in most cases these estimates are very imprecise. We define four additional groups of US-born men according to their fathers' birthplace—Latin America (*LA*), northern and western Europe (*NW*), southern and eastern Europe (*SE*), and Asia (*A*)—referring to these individuals collectively as second-generation immigrants. Finally, we define two groups based on the census's race variable—Black men with US-born fathers (*B*) and Native American men with US-born fathers (*NA*).²¹ Table 1 summarizes these group abbreviations and presents the number of observations that we have in our main sample for each.

The largest of these groups is comprised of white men with US-born fathers, of which there are approximately 956 thousand. The next largest groups are Black men and the sons of southern and eastern European immigrants, with about 130 and 160 thousand members, respectively. There are only about 37 thousand sons of northern and western European immigrants, reflecting the declining importance of immigration from those areas in the early twentieth century. The other groups—of Latin American, Asian, and Puerto Rican background—are considerably smaller.

Our emphasis on the 1950 complete census records is one novel aspect of this paper. Until now, the 1950 census was difficult to use to study World War II and the GI Bill because the original microdata sample was small (1 percent), leaving only a 0.2 percent sample for the sample-line questions of key interest. Research to date has addressed this issue by moving to later censuses, especially the 1-percent public use sample of the 1960 census or the (combined) 3-percent sample of the 1970 census. But doing so entailed a tradeoff: the later census samples are larger than the original 1950 sample, but a potential control group is contaminated. Specifically, by the time of the 1960 or later censuses, many men in the birth cohorts of the late 1920s and early 1930s had served in the Korean War and, therefore, were eligible for the Korean War GI Bill benefits.²² Bound and Turner (2002, pp. 791–792) raise this issue explicitly: “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

²¹ We define these groups to be mutually exclusive. So, for instance, Black men whose fathers were immigrants from Cuba are excluded from the sample rather than being included in the B or LA groups.

²² See Stanley (2003) for a detailed description of the Korean War GI Bill. In the 5-percent sample of the 1960 census, about 13 percent of men in the 1922-1927 birth cohorts who did not serve in World War II served in Korea.

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, by featuring the new 1950 census dataset, proposes to “rewind the clock” precisely as Bound and Turner suggest.

The main outcomes on which we focus are college completion, years of education, school attendance, earned income, business and farm income, occupational status (occscore, unskilled occupation, and white-collar occupation), employment status, and government employment. Much prior research has focused on college education. We supplement this measure with school attendance for two reasons. First, 1950’s temporal proximity to World War II might mean that individuals attending college have not yet graduated (e.g., a veteran starting college for the first time in the fall of 1946 and taking four years would be on the verge of graduation at the time of the 1950 census). Second, many men used educational benefits for purposes other than college (as shown in Figure 4c). Having a net wider than college will help capture an underexplored aspect of the GI Bill.

Some of the other outcomes we study have not, to our knowledge, not been examined in prior work. We examine earnings from self-employment because the GI Bill provided business and farm loans and some training programs might have led to self-employment (e.g., apprenticeships in trades). On the other hand, similarly aged men who did not serve in the War might have acquired more wealth and had a head-start in self-employment. Our analysis of government employment is motivated by the potential for veterans’ preferences in hiring to draw veterans disproportionately into such employment. Finally, measures of employment, occupational status, and total earned income provide summary statistics for the effects of World War II service and access to the GI Bill on post-war labor market outcomes. Although it is early in the lifecycle for the core cohorts of veterans and we believe there is positive selection into the military, it is still of interest to learn whether and when veterans gained an advantage relative to non-veterans in the labor market. The 1950s outcomes speak directly to the speed and nature of the economy’s reconversion, its re-absorption of veterans, and their ability to make headway in the labor market.

We also use data from the 1960 census to validate our findings from 1950, collecting data on similar outcomes and dividing the sample into the same eight groups. These data do not permit robustness checks per se, as there may have been true changes in the effects of World War II service and the GI Bill over time, but they can help us to better understand and contextualize our results from 1950.

Our ultimate plan in this project is to link individuals from the 1950 census (containing their veteran status and educational and labor market outcomes) to the 1930 and 1940 censuses to better understand selection into World War II service, both for its own sake and as a potential factor confounding our ability to identify (differences in) the effects of World War II service and the GI Bill. Because of the very recent release of the complete-count 1950 census, we do not yet have access to individuals’ identifying information in the 1950 census, but we hope to have such access soon.

3.2 Empirical Goals

Much of the literature described above is geared toward measuring the causal effect of the GI Bill on male veterans' later life outcomes. It is important to be clear about what "treatment" entailed in this setting and to acknowledge that an event as massive as World War II left no one unaffected. For young men who served in the military, "treatment" entailed many things—lost civilian work experience, added military experience (which may have included occupational training), potential mental and physical injury from combat experience, GI Bill benefits upon discharge from the military, and any favorable post-military treatment apart from GI Bill (e.g., in hiring or promotion). For similarly aged men who did not serve in the military, the wartime economy presented extraordinary labor market opportunities. This may have enhanced their relative experience and wealth but also may have curtailed their investment in formal education since the opportunity costs of schooling would have been high. For cohorts born too late for service in World War II, who are often used as a control group for slightly older cohorts, some might have entered the labor force during the wartime boom, but others might have entered in midst of the economy's reconversion and re-absorption of millions of veterans.

Comparisons of veterans to non-veterans, however they are implemented, are therefore unlikely to deliver unbiased estimates of causal effects that are akin to those from a small-scale experiment in a stable environment with random assignment of individual-level treatment and no spillovers. That is, World War II and the GI Bill are not a simple program awaiting experimental evaluation. And yet, with sufficient care, such comparisons may reveal important insights about the trajectory of men's careers in the mid twentieth century and the role of the war in shaping them.

We interpret our findings as speaking to the differential effect that the War had on those who did not serve (but experienced the War in many other ways) and those who served, survived, and had access to GI Bill benefits thereafter. We keep in mind that the GI Bill was meant to compensate veterans for their foregone opportunities, not to lavish them with advantageous perquisites. We make no claim (at this point) to have determined, for instance, whether the effects we estimate were the product of military service, access to GI Bill benefits, or some combination. This renders our results less informative about the potential effects of later or future programs that subsidize education, training, or extended unemployment benefits. Nonetheless, there is value to understanding the process of labor market adjustment and veterans' transition back into civilian lives, as their experiences shaped the US economy and have underpinned political debate to the present.

3.3 Empirical Strategy

The key empirical challenge in identifying the effects of World War II service and the GI Bill is that selection into military service during the War was non-random. Indeed, Angrist and Krueger (1994) find evidence of positive selection into military service for native-born men as a whole and argue that positive selection explains the observed wage premium for veterans in the 1960, 1970, and 1980 censuses. The main empirical approach taken by prior work to address this issue exploits the substantial decline in the probability of serving in World War II between cohorts that were just old enough to serve and those that were just too young, using data on quarter of birth (e.g., Bound and

Turner 2002; Turner and Bound 2003; Fetter 2013). Unfortunately, the 1950 census did not solicit information on quarter of birth. In future work, we will be able to link individuals to records that do contain quarter of birth (such as social security death records), but the lack of identifying information in the currently available 1950 census records prevent us from doing so here. As we show below, we have experimented with approaches based on the use of year of birth and similar cross-cohort identification strategies. These results have been imprecise, and we therefore do not emphasize them.

Instead, our baseline analyses are based on comparing the veteran premium in our various outcomes across the different race and ethnic groups defined above. Although selection into service is problematic in interpreting a veteran premium as the causal effect of service, interpreting the *difference* in the veteran premium across two groups is problematic only insofar as selection into service differs across groups. Put another way, if selection into military service was similar across two groups, then comparison of the groups' veteran premium is informative of differences in the effect of military service for each group, which is our focus here.²³

We estimate the regression equation

$$y_{ijbt} = \beta_j v_{ijbt} + \gamma_{jt} + \gamma_b + \varepsilon_{ijbt}, \quad (1)$$

where y_{ijbt} is the outcome of interest (such as college completion) for individual i of ethnic or racial group j born in year t in birth state b . The coefficients β_j represent the within-birth cohort difference in the outcome between veterans and non-veterans of group j , conditional on birth state and group-birthyear fixed effects. The indicator for birth state is intended to control, to the extent possible without linkage to earlier censuses, for the possibility that different groups had different childhood environments, which in turn might have led to different selection into military service. The difference in the veteran premia can then be computed as $\beta_j - \beta_{US-W}$, where β_{US-W} is the veteran premium for white men with US-born fathers, the largest group of veterans.

The utility of $\beta_j - \beta_{US-W}$ as indicating a differential effect of military service for different racial and ethnic groups depends on whether selection into military service was similar between groups. As shown in Figure 1 above, service rates for the *US-W* group were nearly indistinguishable from those of second-generation European immigrants, whether in the *NW* or *SE* group. Lower service rates in other groups suggest that the assumption of equal selectivity across groups, relative to the *US-W* group, might be less plausible. Yet it is notable that Turner and Bound (2003, Table 3) show that the difference in high school completion rates between veterans and non-veterans were almost exactly the same for Black men (20 percentage points) and white men (19 percentage points), consistent with an equal-selection argument. Ultimately, this is an issue that we will have to tackle with data linked from 1950 to 1930 and 1940.

²³ More formally, using notation from equation (1), bias in a within-cohort estimate of the effect for a particular racial or ethnic group is $E(\varepsilon_{ijbt} | v_{ijbt} = 1; b, t) - E(\varepsilon_{ijbt} | v_{ijbt} = 0; b, t)$. Our assumption is that this is positive for all groups. But if it is similar in magnitude across groups, then it differences out in cross-group comparisons. Linking census data will be helpful in providing evidence on this assumption and, if it does not hold, might help us bound estimates.

4. Results

4.1 Differences in Veteran Premia in Education

Figure 5 presents results of estimating equation (1) for educational outcomes in 1950—school attendance, years of education, and college completion. We present results for the complete sample (all men in the 1922-27 birth cohorts), as well as for samples in which we restrict attention to individuals who had completed at least high school (12th grade), or alternatively to individuals who had completed at least 8th grade. We impose these restrictions because individuals were unlikely to benefit from the GI Bill’s subsidies for college attendance if they had not completed high school, or at least some years of high school (i.e., beyond grade 8).²⁴

In our setting it is important to note that these restrictions bear differently on different groups. Figure 6 shows that high school and 8th-grade completion rates among veterans (a group that already represented different shares of each group’s population) differed broadly across the ethnic and racial groups that we study, with the *US-W* and *NW* groups roughly comparable, the *SE* group trailing slightly for high school completion but not 8th grade completion, the *A* group pulling ahead for younger birth cohorts, and larger differences between the *US-W* group and other groups. It is also notable that for all groups, high school graduates were a relatively elite educational group. Even among white veterans with US-born fathers, only 45 percent of the men had completed 12 years of schooling by 1950. Thus, restricting the sample to high school graduates comes at the cost of omitting the majority of men.

We focus first on the comparisons of the *US-W*, *NW*, and *SE* groups, as these are comparisons where the equal selection assumption seems most plausible. Moreover, these groups were most likely to have had similar experiences within the military since they were not subject to *de jure* or *de facto* segregation. For college completion, we find that the veteran premia of the *NW* and *SE* groups were smaller than that of the *US-W* group. For instance, among high school graduates, we find that veterans in the *US-W* group were 2.3 percentage points more likely to have completed college than non-veterans, over a base probability of 15.9 percent. On the other hand, there is no statistically significant veteran premium for the *NW* group, and veterans in the *SE* group were 1.7 percentage points *less* likely to have completed college than non-veterans. We also report the veteran-nonveteran gaps in year of education (highest grade of completion). These estimates are, not surprisingly, sensitive to sample restrictions on years of education, but the basic pattern across groups is consistent. For high school graduates, the veteran premium for the *US-W* group was 0.25 years, as compared to 0.15 years for the *NW* group and 0.04 years for the *SE* group. Since the GI Bill provided support for other forms of schooling, it is useful to see results for the full sample and those who had completed at least 8th grade. In general, the *SE* and *NW* groups of second-generation immigrants fell short of the gains that accrued to the *US-W* group.

²⁴ Bound and Turner (2002, p. 796-798) find that within-cohort estimates of effects on college attainment for white men, which they generally regard as an upper bound, move much closer to cross-cohort estimates once the sample is restricted to high school graduates.

Since men might still have been pursuing schooling in 1950, we also examine school attendance. For those who had completed high school, the *US-W* group was 6.8 percentage points more likely to be in school if they were veterans; the equivalent figures are 6.4 percent for the *NW* group, and 5.2 percentage points for the *SE* group. In general, for each of the sample restriction settings, the *US-W* and *NW* group were similar, and the *SE* group lagged somewhat behind.

For other ethnic and racial groups, the results are more sensitive to the choice of measure and sample restrictions, and in some cases the results are imprecise. This makes it difficult to summarize the results succinctly, and so we emphasize some patterns that stand out. For Black men (*B*), the veteran premium in terms of college completion is lower than that for the *US-W* group (and negative for high school graduate sample), consistent with fewer opportunities for Black college enrollment in the segregated South (Turner and Bound 2003). Perhaps surprisingly, their relative outcomes in terms of college completion are quite similar to those for the *SE* group. It is also notable that Black veterans had higher relative rates of school attendance than the *US-W* group, which might reflect more common use of below-college training and schooling programs. For second-generation Latin American immigrants, patterns in veterans' relative college completion rates and years of education are similar to those of Black men (usually below *US-W* but comparable to *SE* depending on the sample). For second-general Asian immigrants, veterans had relatively high rates of schooling by each metric (though imprecisely estimated). For Native American men with at least 8 years of schooling, the veteran premium is near zero for college completion and positive but relatively low for years of schooling; the point estimate for school attendance is roughly in line with the *SE* and *LA* groups and below that for Black men. Unfortunately, the measures for the *PR* group are very noisy.

4.2 Differences in Veteran Premia in Labor Markets

We focus next on labor market outcomes, with results shown in Figure 7. The regressions measure differences between veterans and nonveterans across groups in terms of employment, government employment, white-collar and unskilled occupations, occupational score, and earned income and (separately) business and farm income. The only sample restriction that we impose is to exclude individuals who reported being in school.

For the likelihood of employment, we find positive veteran premia for the *US-W*, *SE*, and *NW* groups that are statistically indistinguishable from one another. Similarly, we find positive premia for the probability of government employment for all three groups that are large, but the coefficient for the *SE* group is statistically significantly smaller than for the other two groups (2.6 versus 4.1-4.5 percentage points over a base rate of 5.6 percent). Among these three groups, we also find positive veteran premium for the probability of holding a white-collar occupation (above 5 percentage points for *US-W* and *NW*), a negative premium in the probability of holding an unskilled occupation (i.e., veterans were less likely to hold unskilled occupations), and a positive premium in the occupational income score. Both the *SE* and *NW* groups have a smaller veteran premium in the probability of an unskilled or white-collar occupation than the *US-W* group, and that for the *SE* group is the smallest.

The only exception to this pattern is a somewhat higher occupational income score premium for veterans among the *NW* than the *US-W* group.

Finally, we study the logarithm of total earned income (wage and salary income combined with business and farm income) and the logarithm of business or farm income. (In both cases, we add 1 to include individuals with no income in the sample.) For total earned income the *US-W* group had a positive veterans' income premium of about 34 log points, and the premia for the *SE* and *NW* groups are statistically indistinguishable. For business and farm income, the veteran premia for all three of these groups are negative, with that for the *NW* group more negative than that for the *US-W* group and that for the *SE* group less negative. Overall, if we were to assume similar selection biases into veteran status for each of these groups, it would appear that *US-W* and *NW* groups fared similarly and that the *SE* group lagged somewhat behind.

Among groups other than second-generation European immigrants, there is a distinction between the *LA* group and the other groups. The *LA* group had a veteran premium for employment and government employment that was statistically indistinguishable from that for the *US-W* group; the *LA* group also has a large negative coefficient for unskilled work, meaning *LA* veterans were far less likely than *LA* non-veterans to hold such occupations. The result for the occupational income score is similar. The premium for income is smaller than that for the *US-W* group, while it is statistically significantly larger for business and farm income.

For the remaining groups, the employment premia for veterans were negative and statistically significantly less than for the *US-W* group. Black, Native American, and second-generation Asian veterans fared worse in terms of employment status than observationally similar non-veterans (negative coefficients) and worse relative to the *US-W* base category. The *government* employment veteran premium for Black men and second-generation Asian immigrants, however, was somewhat larger than for the *US-W* group. Occupational score veteran premia were universally less than for the *US-W* group, as were those for income for the Asian and Black groups despite the common presumption that positive selection into the military was particularly strong for Black men (e.g., Turner and Bound 2003, p. 158). Interestingly the veteran premium for business and farm income is larger for the Asian and Black groups than for the *US-W* group, but negative in each case.

A few takeaways from Figure 7 emerge that shed light on veterans' outcomes in the early post-war period, during which the GI Bill was meant to help them get back on track with their careers. Without adopting a strongly causal interpretation, it is clear that in many ways veterans differed from their non-veteran peers and that the magnitude of the differences varied across groups. White veterans (whether *US-W*, *LA*, *NW*, or *SE*) fared better than non-veterans in the same group on almost every labor market metric, with the exception of business and farm income.²⁵ Some of this is surely due to positive selection into veteran status, but it is still notable that within a few years of their discharge from the military, these veterans had already caught up to and exceeded the outcomes for non-veterans despite lost civilian market experience and potential wartime trauma. For non-white

²⁵ The *PR* estimates are so imprecise that we do not attempt to interpret them here.

groups (whether Black, Asian, or Native American) the results are more mixed. Veterans' employment rates were lower than non-veterans, even though those attending school are omitted from the sample in this analysis. On other measures, their veteran premium is positive (or at least not statistically distinguishable from zero), but often smaller than for the *US-W* group, particularly for white-collar jobs, occupation scores, and log earnings.

4.3 Results for Within- and Cross-cohort Comparisons in 1960

Figures 8 and 9 repeat the results of Figures 5 and 7, respectively, using data from 1960 instead of 1950. As discussed above, the 1960 data introduce unique complications that our use of the 1950 data is intended to address. Nonetheless, finding patterns that are persistent over time can strengthen our findings from 1950, though it is important to keep in mind that any effects of service and the GI Bill may have evolved between 1950 and 1960 as veterans aged, married, had children, and accumulated more education.

For educational outcomes, Figure 8 tells a story that is consistent with our 1950 findings (Figure 5), but with individuals largely having completed any additional education by 1960. While the broad patterns of the results for college completion and years of education are similar to those that we find in 1950—for instance, the veteran premia for the *NW* and *SE* groups remain smaller than for the *US-W* group—veteran premia in school attendance for all groups had largely converged to near zero by 1960. Black veterans had the smallest college completion premium relative to non-veterans, which is echoed in the years of education coefficient for high school graduates. Widening the sample leads to larger coefficients for Black men, and more research is required to understand whether this is primarily driven by widening selection bias or true gains in education for veterans below the college level.

For labor market outcomes (comparing Figures 7 and 9), we again see similar patterns in 1950 for 1960 (the patterns for our larger groups—*NW*, *SE*, and *B*—relative to the *US-W* group are more stable than those for the smaller groups). For instance, the *NW* and *US-W* groups have a similar veteran premium for income, as in 1950, while the Black group continues to have a smaller premium than the *US-W* group. The change that we do see among these groups is that it seems that the *SE* group's veteran premium had fallen behind that of the *US-W* group by 1960 in white-collar work, occupational scores, and earned income.

In sum, many of the patterns regarding relative veteran premia that we identify in 1950 persisted into 1960, though these differences were not static, consistent with the evolution of effects over time as individuals completed education and entered the labor market.

The 1960 data also enable us to compare results from within-cohort comparisons of the type that we estimate in 1950 to cross-cohort comparisons resembling strategies employed by prior research on World War II service and the GI Bill. Prior work has exploited the sharp decline in the probability of military service after the 1927 birth cohort, relying on information on individuals' quarter of birth as the running variable for a fuzzy regression discontinuity design. Given the lack of information on birth quarter in the 1950 census we have not yet implemented this approach for

1950.²⁶ We have, however, implemented it for 1960. The results suffer from a lack of power given that we are attempting to estimate separate effects for small groups, but the fact that the results for cross-cohort comparison broadly tell the same story as those for our within-cohort comparisons strengthens the case that our within-cohort comparisons in 1950 are informative.

For brevity, we show fuzzy regression discontinuity results, with the discontinuity between Q4 1927 and Q1 1928 (following Fetter 2013), for only one outcome, noting that for the other outcomes the broad strokes of the results match those for the within-cohort comparisons. Table 2 provides estimates for the effect of World War II service and the GI Bill for the *US-W* group and estimates of the difference in this effect for other ethnic and racial groups. The outcome that we focus on is college completion for high school graduates. Whereas the within-cohort comparison is of a 7.8-percentage point veteran premium, the cross-cohort comparison (column 2) yields an estimated increase of 6.9 percentage points as a result of World War II service and access to the GI Bill for the US group—evidence of slightly positive selection into veteran status. We focus here on the groups for which similar selection is plausible to compare to this. In particular, the cross-cohort comparisons in Table 2 suggest a somewhat greater veteran premium for the *NW* group and a smaller premium for the *SE* group, supporting our finding in within-cohort comparisons of a somewhat larger impact of World War II service and the GI Bill for the *NW* than the *SE* group.

4.4 Discussion

Given the greater plausibility of the difference-in-veteran-premia method of differencing out selection into World War II service for the *SE* and *NW* groups relative to the *US-W* group than for other ethnic and racial groups, we interpret our results for each set of groups separately.

In comparing educational outcomes, the emerging picture is that the *US-W* group had a greater veteran premium than second-generation European immigrants, with suggestive evidence that the gap was larger for those whose fathers were from southern or eastern Europe than for northern or western Europe. The comparison of individuals' household characteristics in 1940 suggests that this difference may have arisen in part from differences in their childhood contexts. As discussed above, members of the *SE* group were less likely to be in school as teens and had completed fewer years of education than members of the *NW* and *US-W* groups. Differences in the groups were more pronounced for fathers' characteristics, with substantially larger gaps for the *SE* group than the *NW* group relative to *US-W* on all metrics. These results suggest that, even if GI Bill benefits was available to all of these men on an equal basis, the lesser effect for southern and eastern European immigrants may have come from a childhood environment that caused them to be less likely to be prepared to enter college after their military service.

A similar impact of household environment may have been in part responsible for the differences in veterans' occupational premia, for which we also find rough similarity for the *US-W* and *NW* groups and a smaller premium for the *SE* group. It is striking that these differences do not

²⁶ When we can link individuals to the 1940 census, which in turn has been linked to death records that include quarter-of-birth information, we will be able to implement this approach.

translate into differences in income premia, which seem to arise from the greater veteran premium for the *SE* group for business and farm income—which had become positive by 1960. This would be consistent with the latter group benefitting from the GI Bill’s support for business loans or training in occupations that were conducive to self-employment.

For Black men, the potential impact of childhood context is substantially stronger, reflecting large gaps in school access and quality. Moreover, the potential benefits of military service were compromised in many ways by segregation and racism in the military, in educational institutions, and in the administration of GI Bill benefits (Turner and Bound 2003; Katznelson and Mettler 2008). Yet the Black veteran premia in educational outcomes for high school graduates were fairly similar to those for second-generation southern and eastern European immigrants. In making this comparison of veteran premia, however, it is important to bear in mind that Black men’s lower rate of military service and high school completion would render any practical effect on aggregate outcomes smaller (i.e., even if individual treatment effects were similar, one group had much lower treatment rates than the other). Black men did have a greater veteran premium in the probability of school attendance in 1950, perhaps capturing below-college-level schooling or training. By most metrics, the Black veteran premia for labor market outcomes were substantially smaller than for the *US-W* group, a pattern that merits more intensive scrutiny. One important exception concerns government employment. A likely possibility is that private sector discrimination in hiring and promotion compressed Black veterans’ opportunities for upward advancement relative to the *US-W* and *NW* groups.

Native American and second-generation Latin American and Asian immigrants also had substantially lower rates of military service than the *US-W*, *SE*, and *NW* groups, implying more limited scope for aggregate benefits from military service for any given level of positive effects. By most metrics, Native American men had relatively small veteran premia compared to the reference *US-W* group in both educational and labor market outcomes in 1950. Latin American immigrants’ sons, on the other hand, had veteran premia that were similar to the *US-W* group in terms of labor market outcomes. Second-generation Asian immigrants had sizable veteran premia in the educational outcomes (e.g., as large as the *US-W* group in college completion) but generally smaller premia than the *US-W* group in the labor market. If we were to suppose that lower rates of service within these groups implied larger selection bias into military service (or at least not smaller bias), then relatively low veteran premia compared to the *US-W* group would understate the degree of differential effects from military service.

5. Conclusion

World War II was a catalyst in driving (often incomplete) convergence in economic and social status between the native-born white population on the one hand and the communities of racial minorities and second-generation immigrants on the other. While the transformative effect of the War and the surrounding economic and social upheaval came from many different sources, one aspect of the economic response to the War—the GI Bill—has been broadly cited as a crucial factor

in veterans' post-War economic success. Yet the degree to which individuals of different ethnic and racial groups were able to benefit from service in World War II and the GI Bill—due to differences in service rates, discrimination in access to benefits, and differences in the ability to take up benefits—remains a subject of debate to the present.

In this paper, we take advantage of newly available data from the US census of 1950 to study the differential effects of military service and the GI Bill on veterans of different racial and ethnic backgrounds. Comparing veteran premia in labor market and educational outcomes between these groups provides suggestive evidence that groups such as second-generation southern and eastern European immigrants and Black men benefited less from their service and access to the GI Bill than did the white sons of US natives, and that part of this difference was likely due to differences in childhood household characteristics and in pre-War educational attainment. Nonetheless, we do find suggestive evidence that these groups were able to benefit from other types of benefits provided by the GI Bill.

Ultimately, our ability to interpret our results as true differences in the effects of World War II service and access to the GI Bill is limited by the potential for differences in selection into military service across our groups of interest. In future work, we aim to link individuals from the 1950 census to the pre-War censuses of 1930 and 1940 to determine the extent to which our equal-selection assumption is consistent with the data, as well as to unlock the potential to investigate heterogeneous effects of service by childhood background.

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Figures

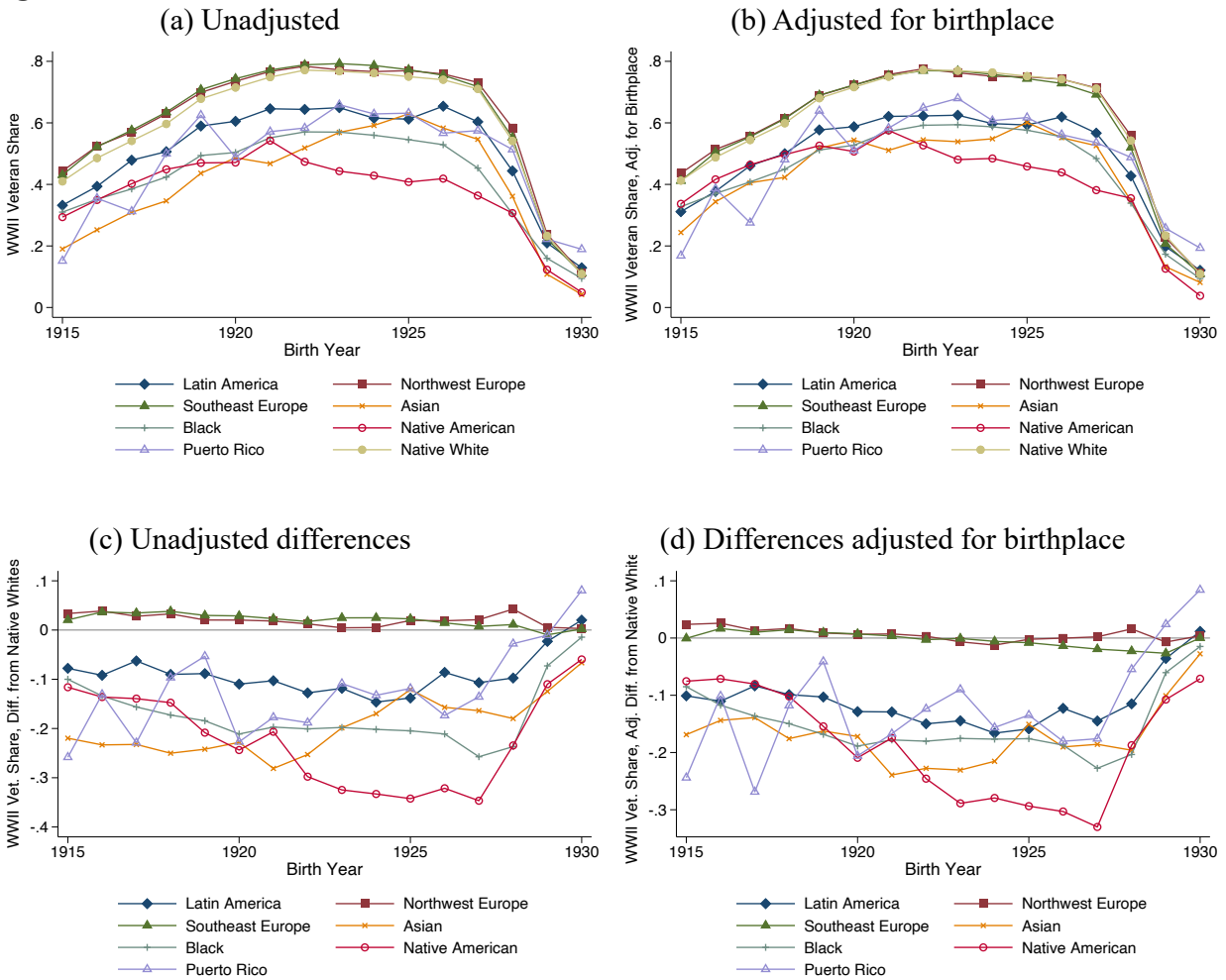


Figure 1: World War II service rates by ethnic or racial group

Notes: Panel (a) presents the probability of being a World War II veteran in the 1950 census for men in each birth cohort 1915-1930. Panel (b) adjusts these rates for birthplace by regressing service rates on birthplace indicators and group indicators. Panels (c) and (d) show differences between second-generation natives and the other groups from panels (a) and (b), respectively.

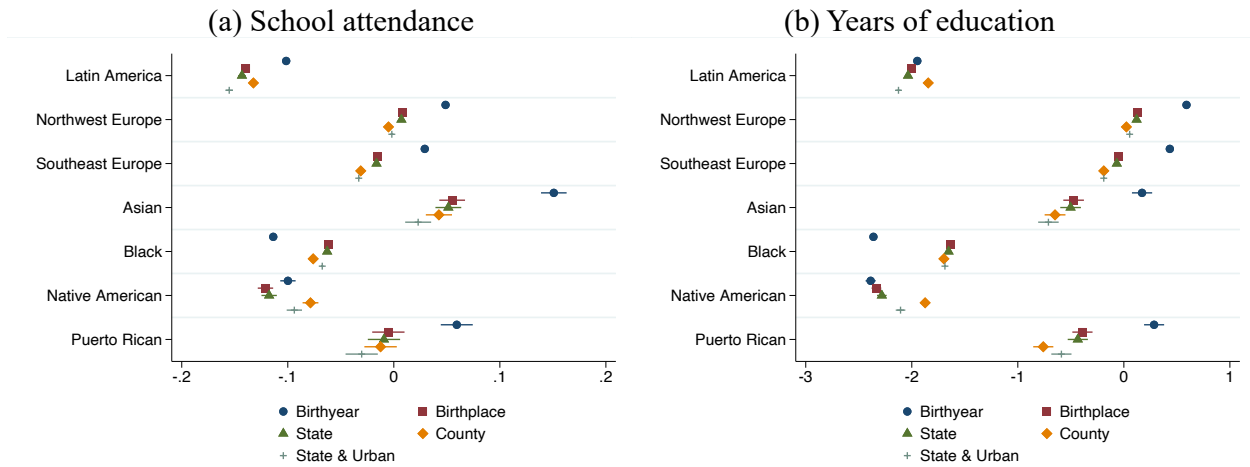


Figure 2: Differences in school attendance of prospective future veterans in 1940
Notes: Each figure presents estimated differences between the *US-W* group and our other groups of interest in school attendance rates (panel a) and years of education (panel b) for individuals in the birth cohorts of 1922-1927 in the 1940 census. The first set of differences control only for birthyear. Subsequent differences add controls for birthplace, state of residence, and either county of residence or urban-rural status.

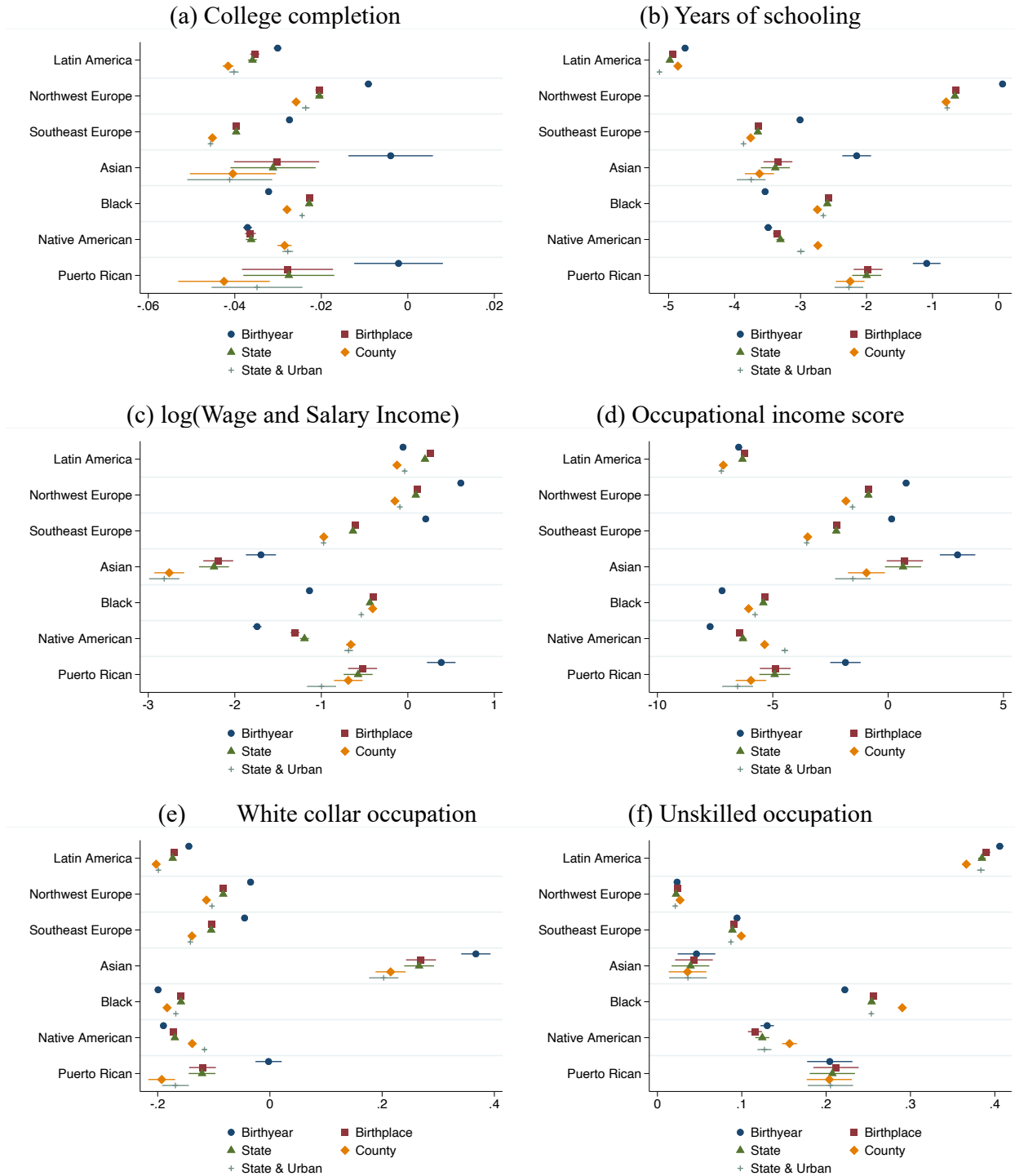
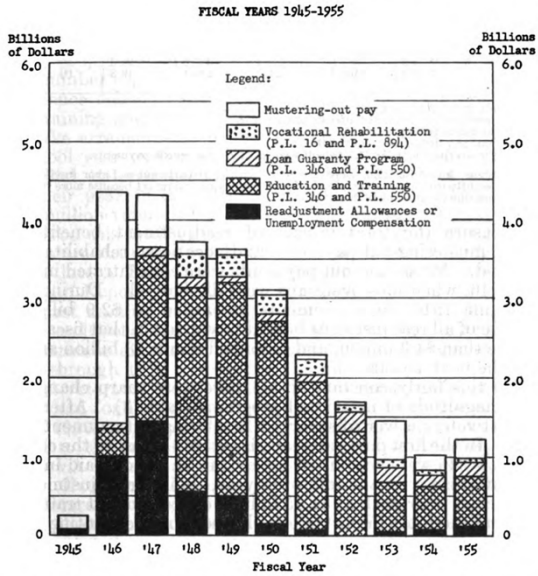


Figure 3: Differences in father's socioeconomic status for prospective future veterans in 1940
Notes: Each figure presents estimated differences between the fathers of the *US-W* group and the fathers of our other groups of interest for individuals in the birth cohorts of 1922-1927 in the 1940 census. The first set of differences control only for birthyear. Subsequent differences add controls for birthplace, state of residence, and either county of residence or urban-rural status.

(a) Subsets of expenditures, by year

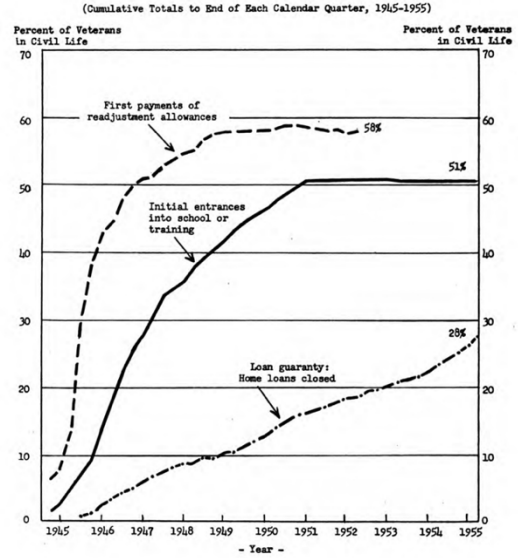
(b) Rates of benefit utilization

CHART I
EXPENDITURES FOR MAJOR READJUSTMENT BENEFITS --VETERANS
OF WORLD WAR II AND KOREAN CONFLICT



Source: Veterans Administration, Department of Labor, and Department of Defense

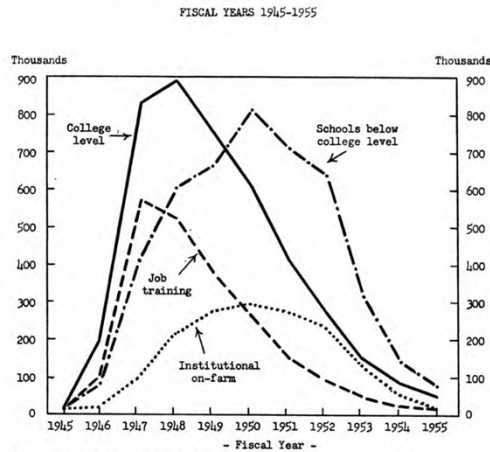
CHART II
PERCENT OF WORLD WAR II VETERANS IN CIVILIAN LIFE WHO HAD
RECEIVED BENEFITS UNDER PUBLIC LAW 346



Source: Veterans Administration

(c) Numbers of veterans in schooling or training

CHART VII
AVERAGE NUMBER OF VETERANS IN TRAINING
UNDER PUBLIC LAW 346, BY TYPE OF TRAINING



Source: Veterans Administration

Figure 4: Administrative data on GI Bill implementation

Notes: Public Law 346 is the Servicemen's Readjustment Act of 1944 (the WWII GI Bill). Public Law 550 is the Veterans' Readjustment Assistance Act of 1952, which established similar benefits for Korean War veterans. Panel (a) includes Korean War veterans (after 1950).

Source: Charts are taken directly from US President's Commission on Veterans Benefits (1956).

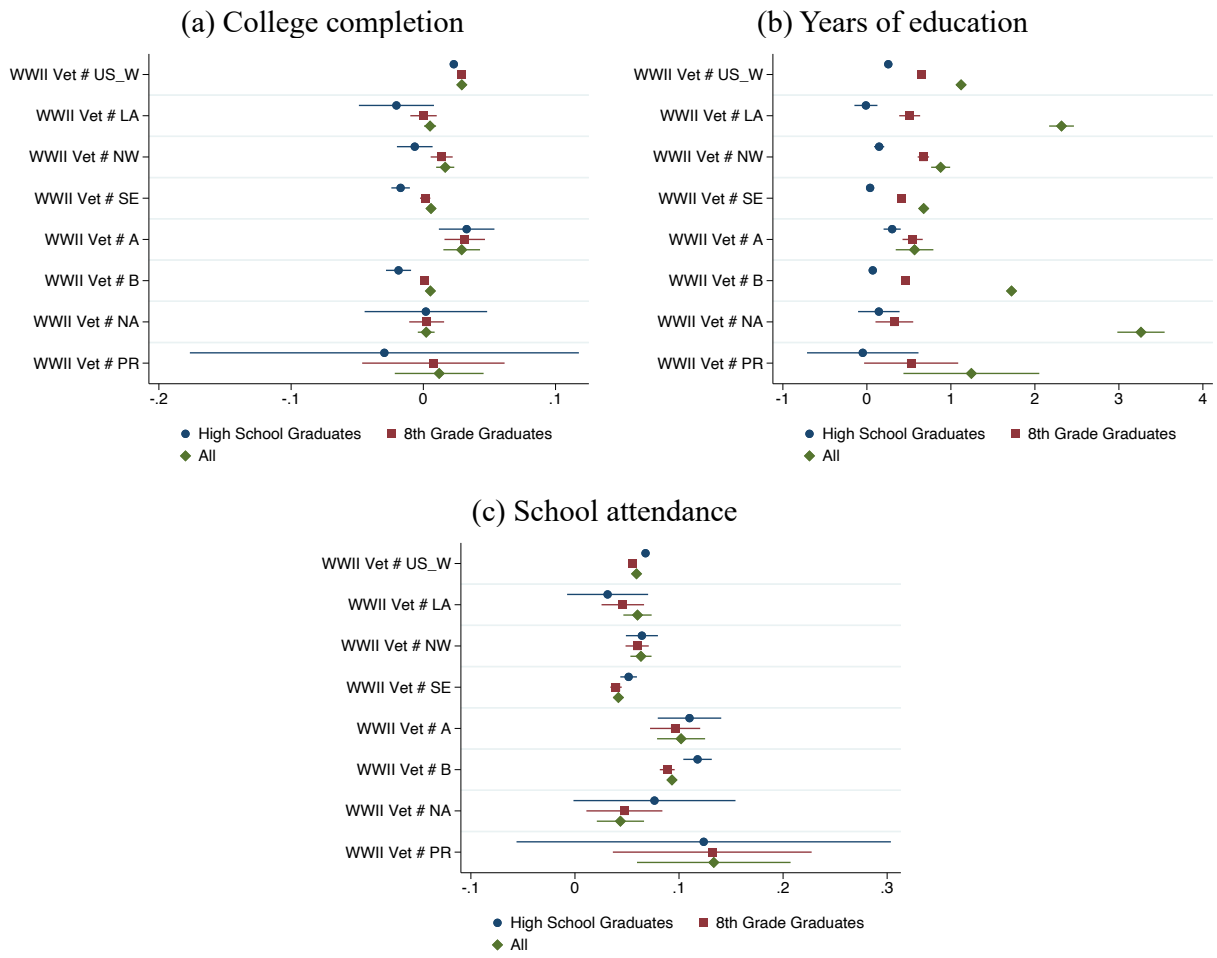


Figure 5: Veteran premia in educational outcomes, 1950

Notes: These are results from estimation of equation (1) for various sample restrictions. Each coefficient represents the veteran premium in the outcome for each ethnic or racial group. All regressions control for birthplace and birth cohort-by-ethnicity fixed effects.

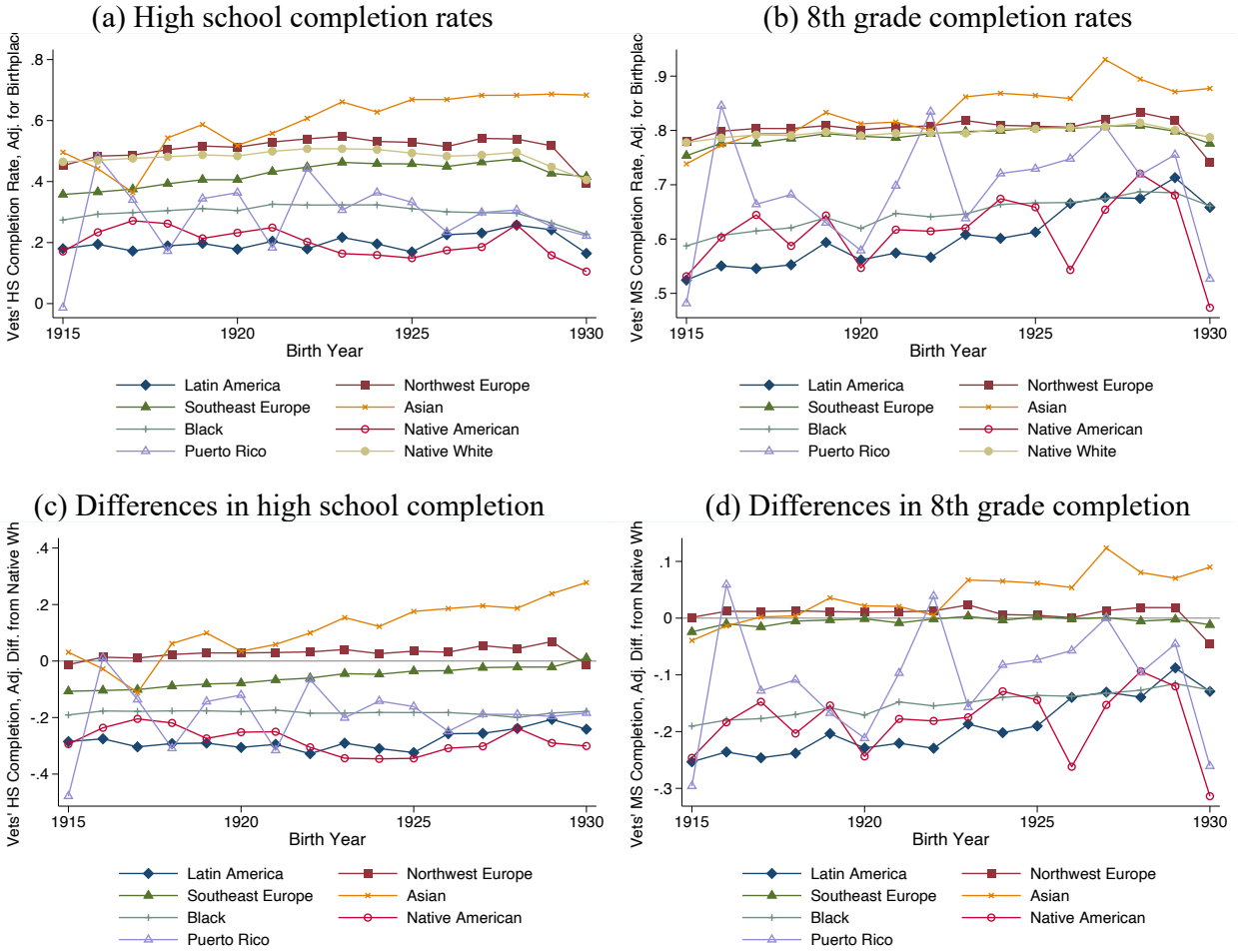


Figure 6: High school completion rates

Notes: All rates and differences control for birthplace. Panels (c) and (d) show differences from second-generation natives.

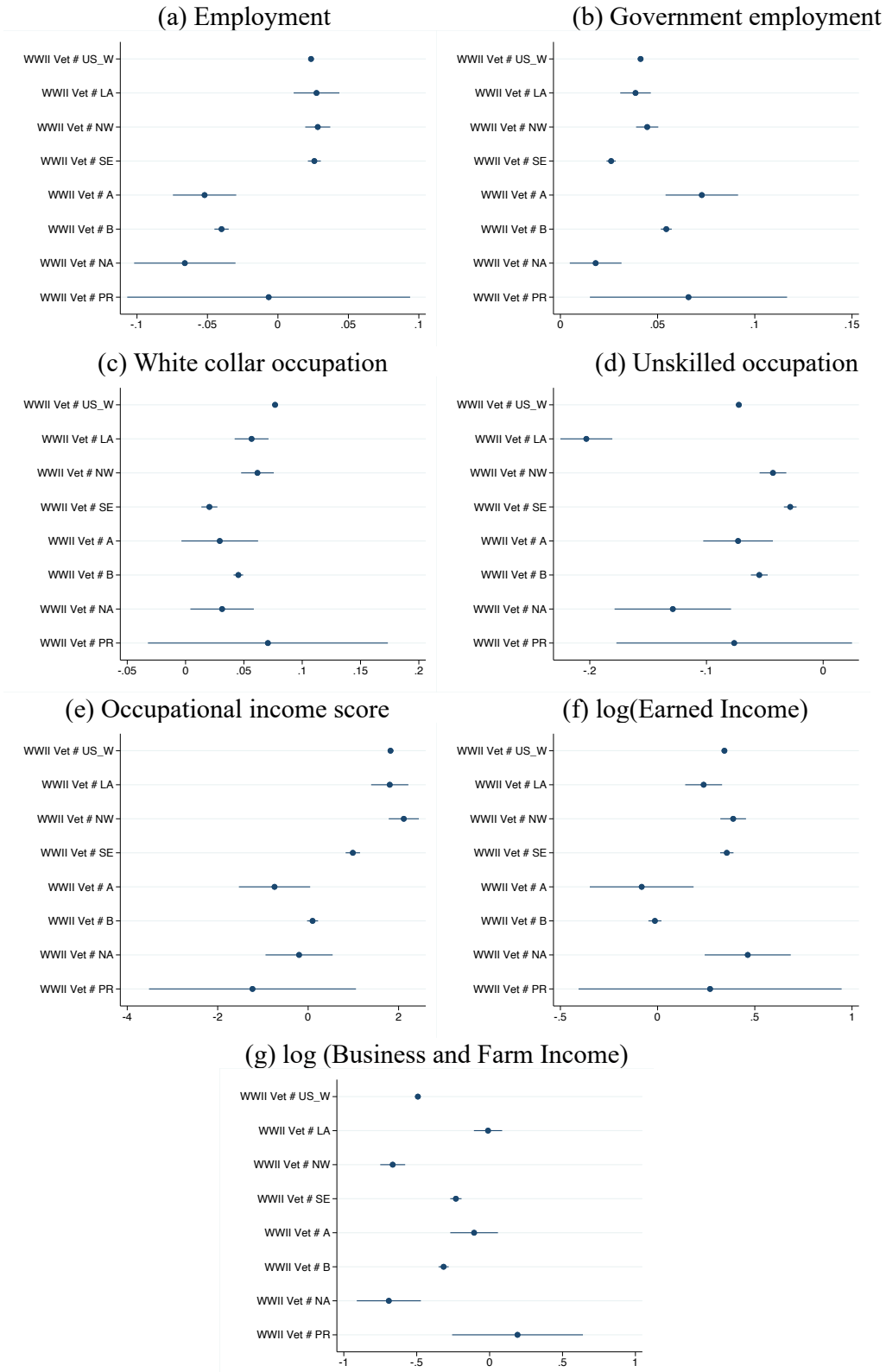


Figure 7: Veteran premia in labor market outcomes, 1950

Notes: These figures are analogous to those in Figure 5 with different outcomes. Individuals of all levels of education are included in the sample.

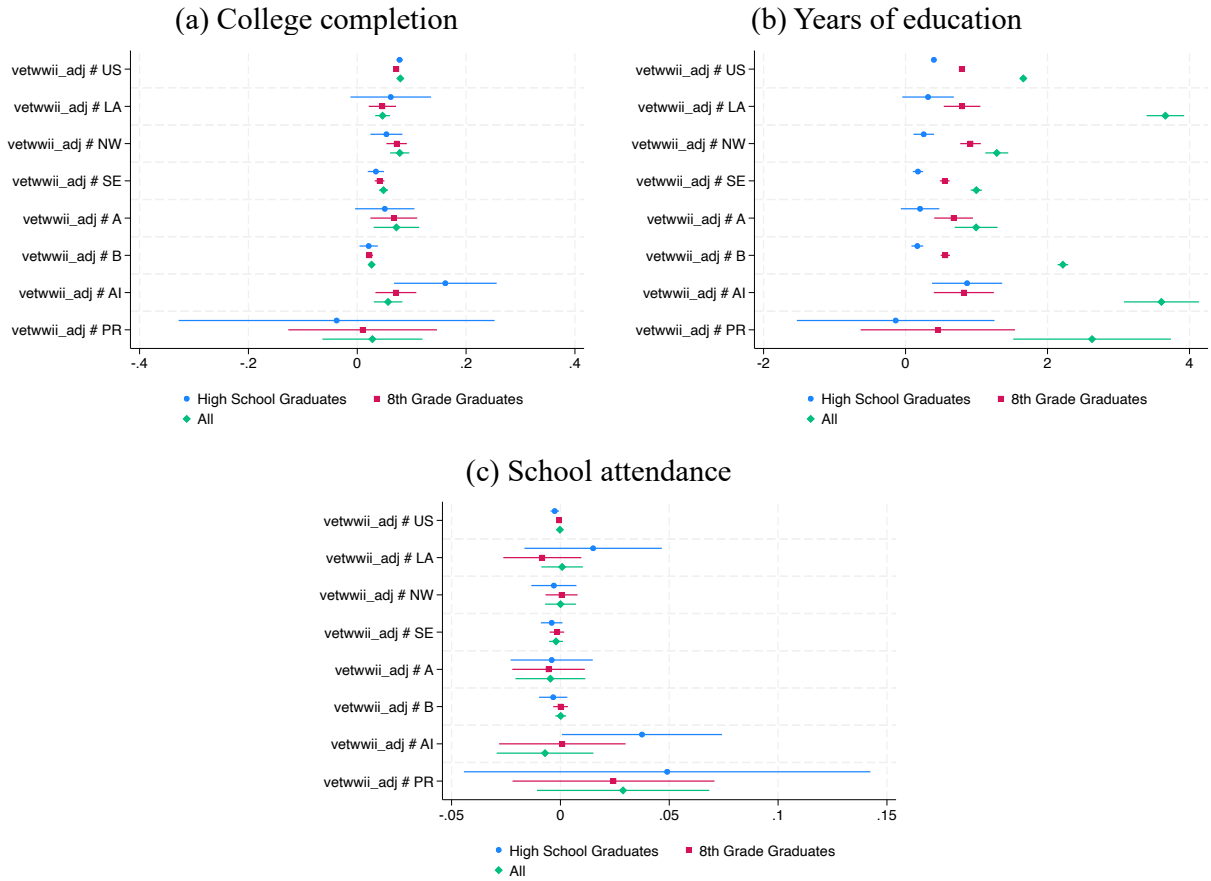


Figure 8: Veteran premia in educational outcomes, 1960

Notes: These are results from estimation of equation (1) for various sample restrictions. Each coefficient represents the veteran premium in the outcome for each ethnic or racial group. All regressions control for birthplace and birth cohort-by-ethnicity fixed effects.

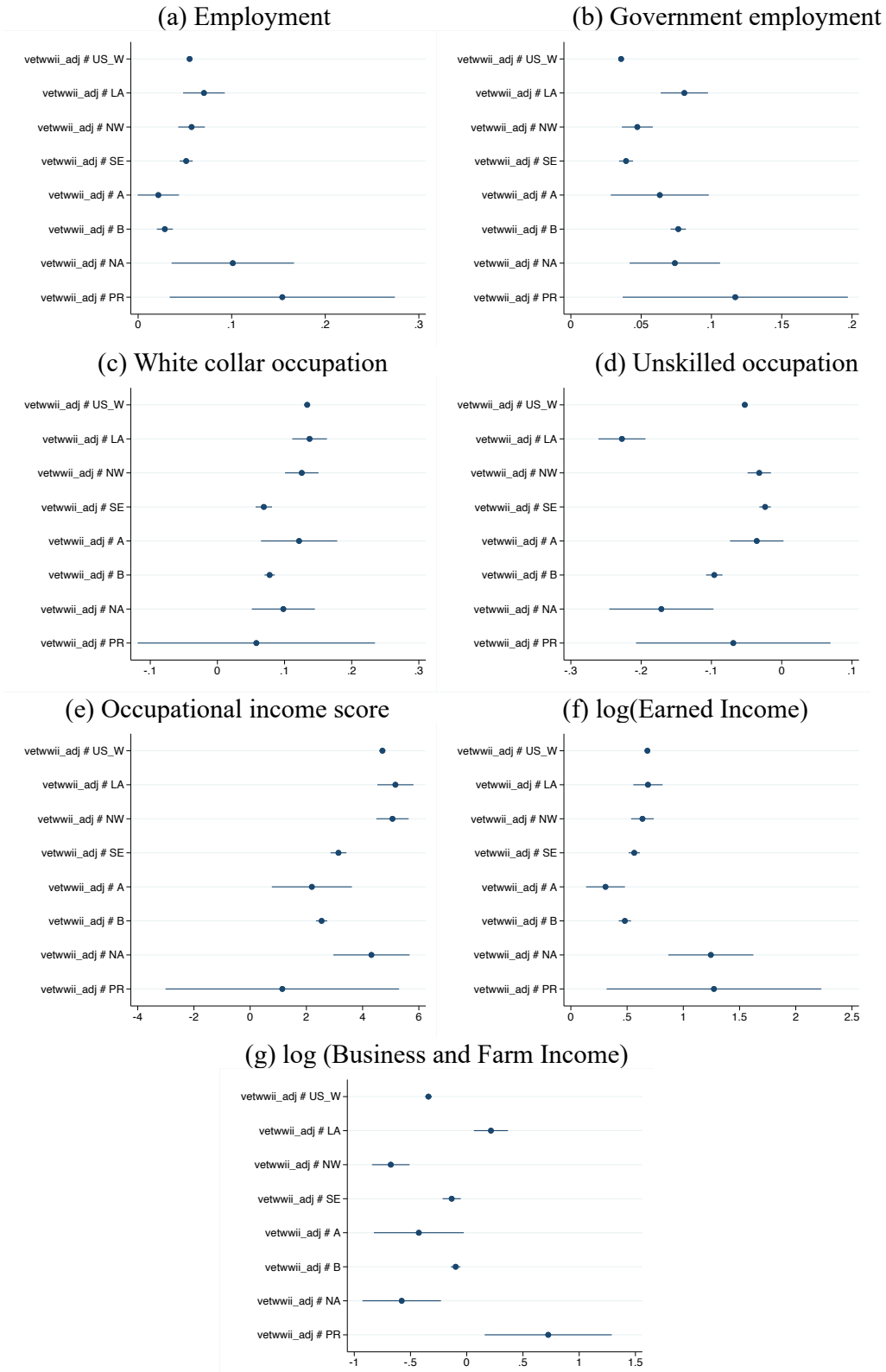


Figure 9: Veteran premia in labor market outcomes, 1960

Notes: These figures are analogous to those in Figure 8 with different outcomes. Individuals of all levels of education are included in the sample.

Tables

Table 1: Group abbreviations and sizes

Abbreviation	Group description	Group sample size
<i>US-W</i>	White sons of men born in the United States	955,594
<i>LA</i>	White sons of men born in Latin America	13,232
<i>NW</i>	White sons of men born in northern and western Europe	37,294
<i>SE</i>	White sons of men born in southern and eastern Europe	163,266
<i>A</i>	Asian sons of men born in Asia	4,450
<i>B</i>	Black sons of men born in the United States	132,310
<i>NA</i>	Native American sons of men born in the United States	3,695
<i>PR</i>	White sons of men born in Puerto Rico	495
Total		1,310,336

Notes: This table summarizes the abbreviations that we use to refer to each ethnic or racial group in the sample. All individuals in our dataset are men born in the United States; divisions are based on race and the birthplace of an individual's father.

Table 2: Fuzzy regression discontinuity results from 1960

<i>Variables</i>	(1) All	(2) All	(3) LA	(4) NW	(5) SE	(6) A	(7) B
WWII Vet	0.068 ^a (0.012)	0.069 ^a (0.012)	0.069 ^a (0.012)	0.069 ^a (0.012)	0.068 ^a (0.012)	0.069 ^a (0.012)	0.069 ^a (0.012)
WWII Vet x 2nd Gen	-0.022 (0.028)	-0.025 (0.028)	0.069 (0.131)	0.019 (0.066)	-0.039 (0.031)	-0.040 (0.123)	
WWII Vet x Non-White							-0.010 (0.084)
Observations	218,884	218,884	180,617	187,037	208,029	181,726	190,519
Birth State FE	No	Yes	Yes	Yes	Yes	Yes	Yes
F-statistic	3688	3708	3699	129.6	3694	38.61	42.96
2nd Gen Share	0.178	0.178	0.0060	0.040	0.137	0.011	
Non-White Share							0.058

Significance levels: ^a $p < 0.01$, ^b $p < 0.05$, ^c $p < 0.10$

Notes: Robust standard errors in parentheses. Sample includes high school graduates in the 1923–1930 birth cohorts from the 1960 census. 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.