

**Long-Run Labor Market Effects of Japanese-American Internment
During World War II on Working-Age Male Internees**

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ABSTRACT

In 1942, all persons of Japanese descent were evacuated from the West Coast and incarcerated in internment camps. Internees spent an average of three years in the internment camps. Did the labor market withdrawal induced by the internment have lasting economic consequences? This question is difficult to analyze because the counterfactual, how the internees would have fared in the labor market in the absence of internment, is not observed. In this paper, I use the Hawaiian Japanese, who were not subject to mass internment like the West Coast Japanese, as a control group. Using a sample of U.S.-born men of Japanese descent from the 1970 Census, I find that the labor market withdrawal induced by the internment reduced earnings by 7% to 9%. Additionally, it increased the probability of self-employment, and reduced the probability of holding higher-status occupations, particularly professional and technical occupations. These findings are consistent with the predictions of an economic model that equates the labor market withdrawal induced by the internment with a loss of civilian labor market experience or a loss of advantageous job matches. (JEL J15, J31, N32)

I. INTRODUCTION

In 1942, the U.S. government evacuated all persons of Japanese descent from the West Coast and incarcerated them in War Relocation Authority (WRA) relocation centers. Approximately 110,000 people were interned, 65% of them American citizens and the remaining 35% Japan-born resident aliens.¹ The internees constituted 87% of the Japanese population in the continental U.S. and 97% of the Japanese population in West Coast states (California, Washington, Oregon, and Arizona). Internees were held for one to four years, with a mean duration of three years.

The internees lost both property and income. Property losses resulted from fire sales prior to internment, the inability to manage property or service mortgages while incarcerated, and damage and theft of stored property due to neglect or poor storage facilities. Internees lost income because their labor market wages and opportunities were reduced or eliminated in WRA camps. Social scientists have attempted to quantify the extent of these economic losses. In a widely cited study, Broom and Riemer (1949) used data from several small-scale surveys conducted in Los Angeles County immediately following the internment to estimate the magnitude of property and income losses. A significant part of the economic losses from internment, however, may be due to reduced income in the post-internment period. The extent of these post-internment losses is an open question.

How would internees have fared in the labor market in the absence of internment? In this paper, I use Japanese residents of Hawaii (then a U.S. territory) as a control group to answer this question. In contrast with the West Coast Japanese (and in spite of Pearl Harbor's Hawaii

¹ Following other researchers, this paper defines internment as the combined process of evacuation and incarceration. The technical definition of internment is the evacuation and incarceration of enemy aliens (i.e., citizens of nations with which the nation concerned is at war). However, the Japanese-American internment during World War II applied to all persons of Japanese descent, including American citizens.

location), there was no mass evacuation of Hawaiian Japanese. In fact, Hawaiian Japanese were largely left alone. To control for fixed differences in labor market outcomes between Hawaiian and West Coast Japanese, I incorporate birth cohorts whose labor market experience was unaffected by internment. Moreover, I test the key identifying assumption underlying my analysis – that in the absence of the internment, labor market outcomes in the West Coast would have followed the same trend as in Hawaii – by using data on Chinese and White residents of these areas.

This paper provides new empirical evidence on the long-run economic impacts of a regrettable but important and unique episode in American history. The official report of the WRA, the government agency that administered the Japanese-American internment, states:

Never before in the history of the United States has military decision dictated the exclusion of a largely citizen minority from a section of the country. No previous Government agency had faced the same problems as now faced by the War Relocation Authority and no precedent or guideposts were available for devising its policy and program. In the past 125 years, this government had not even in wartime seriously interfered with the freedom of enemy aliens except in so far as they were individually suspected.²

Originally justified as a military necessity, the Japanese-American internment has since been viewed as an act of injustice committed by the U.S. government against a group of people on the basis of race/ethnicity. A public apology has been issued, and reparations of \$1.6 billion have been paid out (\$20,000 for each surviving former internee) under the Civil Liberties Act of 1988.

One question my paper addresses is whether compensation paid under the 1988 Act is adequate. A second more general point is the consequences of labor market withdrawal and possible stigma suffered by any incarcerated group. The case of the Japanese-American internees may be a good “experiment” for this question since the internment policy was applied so broadly. Finally, in the wake of the September 11 terrorist attacks, some American citizens and foreign-born residents, mostly Moslems or persons of Arab descent, have again been

² War Relocation Authority of the U.S. Department of the Interior (1946), p. 3.

detained without being subject to criminal charges. A study of the Japanese-American internees provides evidence on the likely consequences of this for detainees. In particular, I find that the labor market withdrawal induced by the internment reduced the annual earnings of males by seven to nine percent twenty-five years afterwards. Additionally, internment increased the probability of self-employment, and reduced the probability of holding high-status professional and technical occupations. These findings are consistent with the predictions of an economic model that equates the labor market withdrawal induced by the internment with a loss of civilian labor market experience or a loss of advantageous job matches.

The paper is organized as follows. Section II provides brief historical background and Section III discusses the related literature. Section IV presents the empirical framework and describes the identification strategy. Section V describes the data. The empirical results are discussed in Section VI and Section VII concludes.

II. BACKGROUND

On February 19, 1942, President Franklin D. Roosevelt signed Executive Order No. 9066, which gave the Secretary of War and the military commanders to whom he delegated authority the power to designate military areas “from which any or all persons may be excluded.” Pursuant to this order, the military commander in charge of the western U.S. designated the western half of California, Oregon and Washington and the southern third of Arizona as a military area (in this paper, the West Coast) and stipulated that all persons of Japanese descent be removed from there. That is, Japan-born and U.S.-born persons of Japanese descent were no longer allowed to live, work or travel on the West Coast. Disobeying carried criminal penalties.

Initially, there was a policy of voluntary evacuation, in which individual West Coast Japanese families vacated their homes and moved farther inland to comply with the law. Shortly

thereafter, to expedite the evacuation of Japanese from the West Coast, the Army intervened. By August 7, 1942, the Army had evacuated 110,000 persons of Japanese descent from the West Coast. These evacuated persons were placed in internment camps (officially called War Relocation Authority relocation centers), where surrounded by barbed wire and armed guards, they would live for the next one to four years. The exclusion of Japanese from the West Coast was not lifted until December 17, 1944. That last WRA camp closed in March 1946.

Internees received food, shelter, medical care and education free of charge. The internees were expected and encouraged to work, but pay was meager. There was a fixed wage scale in the camps of \$12/month for unskilled labor, \$16/month for skilled labor and \$19/month for professional employees. These wages compared unfavorably to the pre-evacuation monthly wage; for example, in a Los Angeles County sample, the 1941 median monthly wage was \$108.³ They were similar to the wages paid to young domestic workers who worked 3-4 hours/day for room and board plus a nominal wage (in 1940, \$15-\$35/month for males and \$10-\$25/month for females).⁴

The war tightened labor markets and raised wages, so the camp wages were especially low. Broom and Riemer (1949) state that these wages “provided an inadequate incentive, so many skills were lost to the communities” (p. 34). The U.S. Commission on Wartime Relocation and Internment of Civilians (1997) comments: “Many evacuees saw no reason to devote their best efforts to a system which displayed so little trust in them and held out such demeaning rewards” (p. 167). Myer (1971), the director of the War Relocation Authority (WRA), observes that “[o]ver-staffing and the creation of boondoggling type jobs occurred at some centers, and the encouragement of slack work habits was found among many evacuees” (p. 43).

³ Broom and Riemer (1949), p. 22.

⁴ Unpublished manuscript by Richard Nishimoto as cited in Broom and Riemer (1949), p. 30.

In addition to low pay, the camps offered few good jobs. Most jobs were in camp operations, such as food preparation, health and sanitation and security. There was some agricultural and industrial production within the camps, but the scale of production was minimal. As a result, individuals who had the capacity to work were generally underutilized. There are no data on the employment rate and work intensity within the camps. However, there are employment rate data for the Wartime Civil Control Administration (WCCA) assembly centers, where the internees were temporarily placed after the evacuation but before the WRA camps were ready. These data are suggestive of manpower underutilization. In the assembly centers, the fixed wage scale was \$8/month for unskilled labor, \$12/month for skilled labor and \$16/month for professional employees. The WCCA estimates that approximately 27,000 internees worked. This number is roughly 30% of all internees in the WCCA assembly centers and 45% of adult (aged 18+) WCCA internees.⁵ These employment rates are lower than the pre-evacuation figures; according to 1940 Census microdata, 59% of Japanese adults in the continental U.S. worked in the last week.⁶ It is important to emphasize that even if the employment rates had not decreased, effective labor market experience could still have declined. On one hand, hours worked per month or work intensity per hour could have declined. On the other hand, the skills required in the assembly centers were probably very low and work experience in the centers may have been worth little.

Instead of restructuring the wage scale or developing more employment opportunities within the camps, the WRA focused on building outside opportunities. It came to allow seasonal leaves (in which internees were permitted to leave for several months to provide agricultural

⁵ The latter figure was calculated based on the age composition of the 110,000 individuals in the WRA relocation centers as of January 1, 1943 (War Relocation Authority of the U.S. Department of the Interior (1948), p. 100).

⁶ Some caution should be exercised since the IPUMS sample of Japanese may not be representative – there are only 592 observations.

labor to private farms) and even permanent leaves (in which internees were permitted to relocate to areas outside the West Coast provided that they could demonstrate their ability to support themselves). Young adult internees were more likely to take leaves. Other internees tended to stay until the camps closed in 1945 and 1946. Thus, whereas the young adult internees were generally incarcerated for one to two years, the other internees were generally incarcerated for three years. Figure 1 shows the distribution of duration in the internment camps. The mean duration was three years; the median duration was three and a half years.

It is obvious that while in camp, the internees lost income – the wages paid in camp were substantially below the market wage. It is less obvious, but widely claimed, that internment changed the internees' earnings trajectory thereafter (see, for example, U.S. Commission on Wartime Relocation and Internment of Civilians (1997)). Internees' earnings potential could have decreased through several mechanisms. One possibility is loss of civilian labor market experience. Work experience in the camps was a poor substitute for work experience in the civilian labor market. Workers were underpaid and underutilized. Some skills deteriorated through lack of incentive or opportunity to practice them. A second possibility is loss of advantageous job matches. On one hand, the labor market withdrawal induced by the internment could have separated workers from jobs for which they were especially well suited, such as jobs for which they had developed much firm-specific human capital or jobs that they had obtained after a costly search process. This might be especially applicable to older internees since many of them had worked in their own farms and small businesses prior to internment, and many of these enterprises were lost as a result of internment. On the other hand, the withdrawal could have prevented workers from conducting their usual job search process. This might be especially applicable to young adult internees since it is young workers who experience the most

job churning; job churning may be part of the search process en route to an advantageous job match.

These same two mechanisms could have raised earnings potential as well. With regard to the loss of civilian labor market experience hypothesis, during internment the internees might have acquired skills that were rewarded in the civilian labor market. For example, there was vocational training and adult English-language classes in the camps. Also, since the internees participated in all aspects of camp operations, they might have gained experience in jobs that were previously inaccessible to them because of racial discrimination, principally white-collar jobs. Examples include secretarial jobs and jobs in schools and hospitals. With regard to the loss of advantageous job matches hypothesis, it can be argued that internment improved job matches. Through the permanent leave program, internees might have landed in cities that had better opportunities for Japanese. Thus, the long-run labor market impact of the internment on working-age internees is an open question.

Mass evacuation was not carried out in any other geographic area, or for individuals of other nationalities, although it was permitted by Executive Order No. 9066. For example, persons of Japanese descent living outside the West Coast (predominantly Hawaii, since West Coast Japanese accounted for 89% of continental U.S. Japanese), persons of German descent and persons of Italian descent were not evacuated wholesale. However, a selective evacuation process applied to these groups. Individuals who the government believed posed a threat to national security were detained and given a hearing. Following the hearing, they (and, on a voluntary basis, their families) might be sent to Department of Justice internment camps. According to Immigration and Naturalization Service records, 16,849 persons of Japanese

descent⁷, 10,905 persons of German descent and 3,248 persons of Italian descent were held in Department of Justice internment camps. In addition, approximately 1,200 Hawaiian Japanese were placed in the WRA internment camps, where the West Coast Japanese were held; this was “largely a token evacuation to satisfy certain interests which have strongly advocated movement of Japanese from the Hawaiian Islands.”⁸

Less than 1% of persons of Japanese descent were evacuated from Hawaii, whereas all persons of Japanese descent were evacuated from the West Coast. This is shown in Table 1, which gives the number of internees in 1942 and the Japanese population in 1940 by state of residence. Many have speculated on the reasons for such disparate policies toward the Japanese in the two regions (see, for example, U.S. Commission on Wartime Relocation and Internment of Civilians (1997) and Weglyn (1976)).⁹ They note that to the extent that evacuation was a military necessity as officially claimed, the Hawaiian Japanese should have been evacuated ahead of the West Coast Japanese; after all, not only was Hawaii the location of the Pearl Harbor attack, but also the Hawaiian Japanese were both more numerous and closer to Japan. In any case, the disparate policies may facilitate an evaluation of the Japanese-American internment during World War II, as will be elaborated in Section IV.

III. RELATED LITERATURE

Academic studies on the Japanese-American internment during World War II by historians and sociologists on the one hand, and autobiographies by internees and camp administrators on the other, enrich our understanding of the experience inside the camps and

⁷ This figure includes Japanese from both Hawaii and the continental U.S.

⁸ Memo, McFadden to Bendetsen, November 19, 1942, as cited in U.S. Commission on Wartime Relocation and Internment of Civilians (1997).

⁹ Reasons include the logistical difficulty of evacuating such a large number of people from Hawaii (there were about 158,000 Hawaiian Japanese), the potential crippling effects on the Hawaiian economy (the Japanese constituted 35% of the population in Hawaii but at most 2% of any continental states' population) and the possibility that General DeWitt (the military commander in charge of western U.S.) had different sentiments about the Japanese than General Emmons (the military commander in charge of the Hawaiian Islands).

suggest mechanisms by which the experience could be propagated to life after camp. However, there are few studies that use statistical methods to examine the economic effects of the internment. The chief obstacle appears to be the availability of data on income before and after the internment for a large, representative sample of individuals. The authoritative reference on the immediate economic effects is Broom and Riemer (1949).¹⁰ Their primary source of data is from a small-scale survey in Los Angeles County conducted in 1947 that asks retrospective questions for 1941 and 1946. Their focus is on estimating the property and income losses sustained by internees. They also describe shifts in the occupational and geographic distribution of Japanese following internment. The chief limitation of this study is that it is basically a before/after contrast. It is not possible to separate the effects of the internment from secular time effects. Yet, the secular time effects could have been substantial, as World War II ushered in major changes in the economy.

One of the only studies on the longer run economics effects of the internment is an unpublished undergraduate thesis by Hatamiya (1981). Hatamiya uses aggregate data from the 1940-1970 Censuses to estimate the income loss over time. He does not have income data, and all his statements about income effects are based on changes in occupational distribution over time. Specifically, he has data on the occupation distribution by race/ethnicity, and to translate these into income effects he makes the implausible assumption that the median wage for a particular occupation is the same for Japanese as for all Californians.

This paper contributes to the literature on the Japanese-American internment by using econometric techniques to estimate the causal impact of the labor market withdrawal induced by

¹⁰ The U.S. Commission on Wartime Relocation and Internment of Civilians (1997) writes: “In 1954 the JACL [Japanese American Citizens League] characterized this study as authoritative to the Congressional subcommittee considering amendments to the Act [Japanese-American Evacuation Claims Act of 1948] and it is certainly the most thorough analytical work that is even roughly contemporaneous with the evacuation” (p. 119).

the internment on long-run labor market outcomes. In contrast to Broom and Riemer (1949), I control for secular time effects and examine longer-run effects of the internment. In contrast to Hatamiya, I have individual-level data on income and compute standard errors, which are essential in assessing the statistical significance of changes over time and between groups.

IV. EMPIRICAL FRAMEWORK AND IDENTIFICATION

A naïve estimate of the labor market effect of internment on the internees would be to compare the internees' labor market outcomes before and after internment. This is given by β_1 in the following equation (estimated for a sample of Japanese before and after the internment):

$$(1) \quad y_{it} = \alpha + \beta_1 \text{AFTER}_{it} + \pi X_{it} + \varepsilon_{it}$$

for individual i observed at time t . y_{it} is a labor market outcome (e.g., log earnings), AFTER_{it} is a dummy variable indicating whether $t > 1946$ (when the last internment camp was closed), and X_{it} is a set of other control variables (e.g., age and education). In order to interpret simple difference estimator β_1 as the causal effect of internment, we would need to assume that all changes across time in earnings are due to the internment. However, there are generally secular time trends, and this is especially the case during this time period (with World War II intervening).

We would like a control group that tracks how the internees would have fared in the labor market in the absence of internment. One promising candidate is the Japanese in Hawaii. In contrast to the West Coast, there was no mass evacuation of the Japanese in Hawaii. The Hawaiian Japanese by and large were allowed to remain in their homes and conduct their lives as usual. It must be pointed out, however, that Hawaii was under martial law from the Pearl Harbor attack through October 24, 1944. This imposed curfew, rationed gasoline, required all residents to carry identification cards, censored media, suspended jury trials, etc. This does not necessarily make the Hawaiian Japanese a poor control group; in the counterfactual (of not

having been interned), West Coast Japanese would likely have faced increased scrutiny and restrictions during the war. The proposed estimator of the labor market effect of internment on the internees is given by β_2 in the following equation (estimated for a sample of Japanese before and after the internment):

$$(2) \quad y_{it} = \alpha + \beta_2 \text{AFTER}_{it} * \text{WC}_{it} + \delta \text{AFTER}_{it} + \kappa \text{WC}_{it} + \pi X_{it} + \varepsilon_{it}$$

where WC_{it} is a dummy variable indicating whether the individual was in the West Coast in 1942 (and therefore interned). δ is the change in earnings due to secular time effects. κ is the fixed difference in earnings between the West Coast and Hawaiian Japanese. The identifying assumption in Equation 2 is that in the absence of the internment, earnings for the West Coast Japanese would have followed the same trend as earnings for the Hawaiian Japanese.

Unfortunately, the data do not exist to estimate Equation 2. Microdata for residents of Hawaii from the 1940 and 1950 Censuses – the natural before and after years – are not available.¹¹ Subsequent censuses do have Hawaii observations, however of course they are all “after” years.

A modification of Equation 2 that uses cross-cohort instead of cross-time variation appears to be a feasible solution. In particular, I can take advantage of the fact that in the “after” years, there are West Coast cohorts whose labor market experience was affected by the internment as well as West Coast cohorts whose labor market experience was not affected. The internment interrupted the labor market experience of working-age individuals in the West Coast; the labor market experience of younger individuals in the West Coast was not interrupted. Younger individuals attended school in the camps, just as they would have in their old

¹¹ The census was conducted in Hawaii, and population tabulations have been published, for both years. However, microdata are not available. This has been verified by e-mail communication with the U.S. Bureau of the Census and the National Archives and Records Administration.

neighborhoods in the West Coast. The effect of labor market withdrawal induced by the internment on labor market outcomes is given by β_3 in the following equation (estimated for a sample of Japanese after the internment):

$$(3) \quad y_{ic} = \alpha + \beta_3 OLD_{ic} * WC_{ic} + \gamma OLD_{ic} + \kappa WC_{ic} + \pi X_{ic} + \varepsilon_{ic}$$

for individual i in cohort c . OLD_{ic} is a dummy variable indicating whether the individual is a member of the older cohort. γ is the change in earnings due to secular cohort effects. κ is still the fixed difference in earnings between the West Coast and Hawaiian Japanese. Besides capturing differences between the West Coast and Hawaii labor markets, κ may also capture the effects of hardship or trauma experienced by the internees (both the young and old cohorts from the West Coast had been interned). β_3 is a difference-in-differences estimator. The identifying assumption in Equation 3 is that in the absence of the internment, earnings for the West Coast Japanese would have followed the same trend (across cohorts instead of time) as earnings for the Hawaiian Japanese. In other words, all state-cohort variation in earnings is attributable to the labor market withdrawal induced by the internment.

Problematic for the identification strategy encapsulated by Equation 3 would be the existence of trends in earnings that vary at the state-cohort level. For example, the young cohort in the West Coast might be experiencing faster growth in earnings relative to the older cohort than the young cohort in Hawaii, because the West Coast is becoming less discriminatory against Japanese whereas Hawaii was never that discriminatory in the first place. I will estimate Equation 3 using data on other racial/ethnic groups – these groups were not interned – to see if there is a difference in trend between the West Coast and Hawaii. I discuss this in greater detail in subsection VI.B.

V. DATA

The empirical analysis employs microdata from the 1970 U.S. Census of Population and Housing. The 1970 Integrated Public Use Microdata Series (IPUMS) files with state-of-residence identifiers contain data for 4% of the population.¹² I have made several sample restrictions. First, for my main analysis, I use individuals of Japanese descent. I take these to be the respondents who selected “Japanese” for the “color and race” question in the 1970 census questionnaire.¹³

Second, I focus on men. Since there is virtually full labor force participation among adult males, the labor force experience of almost every adult male internee would have been affected by the internment.

Third, I include only U.S.-born individuals. Approximately 65% of the internees were U.S.-born. It is a more straightforward matter to define WC_{ic} , the dummy variable indicating whether the individual was in the West Coast in 1942 (and therefore interned), for those born in the U.S. This variable is difficult to define for foreign-born individuals. For example, a Japanese immigrant observed in 1970 could have been in Japan, Hawaii, the West Coast or elsewhere in 1942. I set WC_{ic} equal to one for individuals who are born in a West Coast state (California, Washington, Oregon or Arizona), and zero otherwise. In this way, I have defined a group that has most likely been interned (the West Coast Japanese) and a group that is unlikely to have been interned (the non-West Coast Japanese, predominantly the Hawaiian Japanese).¹⁴

Finally, I restrict my sample to individuals born 1908 to 1941. They are divided into two

¹² I have combined the following 1% samples: Form 1 State Sample, Form 2 State Sample, Form 1 Metro Sample and Form 2 Metro Sample.

¹³ Respondents are asked to fill in one circle for color and race. The nine choices (in order) were: White; Black or Negro; Indian (Amer.); Japanese; Chinese; Filipino; Hawaiian; Korean; Other.

¹⁴ The implicit assumption is that West Coast-born would have been residing in the West Coast in 1942 and therefore interned whereas the non-West Coast-born would not have. Of course in reality people are mobile, such that there are a few West Coast-born people who were not interned, and a few non-West Coast-born people who were interned. Internee place of birth data tabulated by the War Relocation Authority of the U.S. Department of the Interior (1946) suggest that this is minimal.

groups: the older cohort born 1908 to 1924 (aged 46 to 62 in 1970, 18 to 34 in 1942 when evacuation occurred) and the younger cohort born 1925 to 1941 (aged 29 to 45 in 1970, 1 to 17 in 1942). Both cohorts in the West Coast were interned, but only the older cohort's labor market experience would have been affected; members of the younger cohort were children in camp, attending school as usual.¹⁵ The timing of the internment and the data necessitates these age restrictions. By the time of the 1970 Census – twenty-five years after the internment – many individuals whose labor market experience was affected had already retired.

The treatment group used in the empirical analysis is defined as individuals born between 1908 and 1924 in a West Coast state. As a point of reference, males born 1908 to 1924 constituted three-quarters of U.S.-born adult (aged 18+) male internees, one-third of all adult male internees, two-fifths of U.S.-born adult internees and one-fifth of all adult internees. Thus, this treatment group is a meaningful fraction of the working-age internees.

Table 2 shows some descriptive statistics. I examine three types of labor market outcomes: participation, earnings and job characteristics. The latter two are conditional on participation, which means it is potentially subject to selection bias in participation.¹⁶ In practice, selective participation is unlikely to be a concern given the extremely high rates of labor force participation across all groups.¹⁷ The labor market income measures I use are wages (wage and salary income) and earnings (the sum of wages, business income and farm income). Wages

¹⁵ The results reported below are not sensitive to the specific birth cohorts included, or the age cut-off for having labor market experience affected. With regard to the latter, in an earlier version of this paper, I used internees aged 23-34 in 1942 as the group whose labor market experience was affected by the internment and internees aged 3 to 14 as the unaffected group and found similar results. This version incorporates the intermediate ages to increase efficiency. Admittedly, it is less clear-cut whether the intermediate ages belong to the treatment or control group, but it is likely that among 15 to 22 year-olds, probability of working is increasing in age.

¹⁶ For the estimation strategy described in Section 4, selective participation causes bias only if there is *differential* selection between the West Coast and non-West Coast. For example, that successful individuals tend to retire earlier would not cause bias. However, that successful individuals tend to retire earlier *especially in Hawaii* would cause bias.

¹⁷ I show this more formally in Table 4 – the difference-in-differences estimate for both participation and full-time participation (defined as working 50 weeks or more last year) are not significantly different from zero.

and earnings are on average higher for West Coast individuals than non-West Coast individuals. Interestingly, they are on average higher for the younger cohort than the older cohort in the West Coast. The job characteristics measures attempt to capture some non-monetary aspects of an individual's labor market experience, including the degree of autonomy and prestige.

Ideally, the Japanese in the West Coast and non-West Coast would be similar to each other in dynamics prior to the internment. This would raise the plausibility that the labor market outcomes for the West Coast Japanese would have followed the same trend as those for the non-West Coast Japanese. It should be noted, however, that the non-West Coast Japanese have lower educational attainment. Additionally, they have a different occupational distribution – less likely to hold agricultural and white-collar occupations, more likely to hold blue-collar occupations. Moreover, they are less likely to be self-employed workers. These differences will be brought to bear when I discuss the empirical results.

VI. RESULTS

A. Main Results

The results from estimating Equation 3 using ordinary least squares with the Japanese sample are presented in Table 3. Each column is from a separate regression. The difference-in-differences estimate, β_3 , is reported in the first row. The left panel (Columns 1 to 4) has log wages as the dependent variable. Column 1 has an estimated β_3 of -0.0138 , which is not statistically different from zero. The main effect of being in the older cohort is negative – older cohorts earn less, after controlling for age effects – but not significant. The main effect of being born in a West Coast state is positive – wages are on average higher for West Coast individuals (who for the most part work in the West Coast labor markets) – and significant. Wages increase with age, but at a decreasing rate. Column 2 adds a full set of state of residence dummies to

account for the possibility that different states have different labor markets (and thus, different average wages). Columns 3 and 4 parallel Columns 1 and 2, but with years of schooling added as an explanatory variable. Adding years of schooling makes the difference-in-difference estimate more negative. This is because the difference-in-differences in years of schooling is 0.5 years, and schooling has a positive effect on wages.

The right panel has log earnings (the sum of wages, business income and farm income) as the dependent variable. Earnings differ from wages, and there are fewer missing observations for earnings, because there are a meaningful number of self-employed workers. The difference-in-difference estimates are all negative and significant. Column 6 has an estimated β_3 of -0.0751 , Column 8 -0.0942 . The labor market withdrawal induced by the internment reduced the annual earnings of males by seven to nine percent twenty-five years afterwards. In dollar terms, the earnings losses were \$800 to \$1000 in 1969 (average earnings among West Coast individuals were approximately \$11,000 in 1969).

Table 4 presents the estimation results for a larger set of labor market outcomes. Each cell in Columns 1 and 2 displays the difference-in-difference estimate and its standard error, and is from a separate regression. Column 1 uses the specification of Table 2, Column 2 and Column 3 uses the specification of Table 2, Column 4. As shown in Panel A, there is not a significant effect on the probability of working last year, or of working at least 50 weeks last year conditional on working last year.¹⁸ Thus, it does not appear that the labor market withdrawal induced by the internment rendered working-age internees so unfit for the civilian labor market that they subsequently are unable to find work or to work on a full-time basis.

Panel B shows the earnings effects, some of which we already saw in Table 3. Results

¹⁸ The probability of working 40 hours or more last year is not impacted. This result is not reported in Table 4, and is available from the author upon request.

for two additional earnings measures – wages and earnings conditional on full-time employment last year – are also displayed. In the specification that controls for schooling, the coefficient is negative for both wages and earnings. It is always negative for earnings, and in three out of four cases statistically different from zero.

Panel C shows the impact on job characteristics. All occupations have been placed into one of three categories: white collar, blue collar or agricultural.¹⁹ (Thus, the coefficients for these three broad occupation categories sum to zero.) The labor market withdrawal induced by the internment reduced the probability of holding a white-collar occupation, and increased the probability of holding a blue-collar or agricultural occupation. There are composition changes within these broad occupation categories as well. First, the negative coefficient for white-collar occupation reflects a large, significant decline in the probability of holding a professional/technical occupation and a partially offsetting, significant rise in the probability of being clerical and sales workers. Second, the weakly positive coefficient for blue-collar occupation reflects fewer service workers but many more laborers. Finally, there is generally a positive sign for the agricultural occupations, farmer and farm laborer.

The occupational score summarizes the aforementioned movements in occupation, both between and within the three broad categories. It is an index of occupations according to the 1950 median income of all individuals in that occupation, in units of hundreds of 1969 dollars. There is a negative and significant effect on occupational score, suggesting that overall, the former internees are taking lower-paying jobs. Former internees hold occupations that pay \$610 to \$670 less per year according to Column 1.²⁰

¹⁹ White-collar occupations are comprised of professional and technical, managers, officials and proprietors, clerical and sales occupations. Blue-collar occupations are comprised of craftsmen, operatives, service workers and other laborers. Agricultural occupations are comprised of farmers (owners, tenants and managers) and farm laborers.

²⁰ The earnings losses implied by the regressions using occupational score are less than those implied by the

The coefficient for being a self-employed worker is large, positive and significant: 0.1033 in Column 1, 0.1061 in Column 2. Former internees who are self-employed according to the 1970 Census tend to earn less and have a greater probability of working at least 40 hours per week. Moreover, they are less likely to be in a white-collar, particularly professional/technical, occupation and more likely to be in a blue-collar occupation. It does not appear that the former internees who are self-employed workers are in the three most common types of self-employment – farmer (i.e., owner, tenant or manager of a farm), professional/technical (e.g., a law or doctor’s office) or managers, officials and proprietors (e.g., shopkeepers). Instead, a disproportionate number are self-employed non-farm laborers. More specifically, they are in the “gardeners, except farm, and groundskeepers” detailed category. These tend to be lower-paying posts, which perhaps accounts for the estimated reduction in earnings but not wages, as well as the estimated reduction in occupational score.

B. Robustness Checks

We have been interpreting the difference-in-differences estimates as the causal effects of the labor market withdrawal induced by the internment. This requires the assumption that in the absence of the internment, labor market outcomes for the West Coast Japanese would have followed the same trend as labor market outcomes for the non-West Coast Japanese. In other words, all regional-cohort variation in wages is attributable to the labor market withdrawal induced by the internment. However, it is possible that the change in labor market outcomes between the older and younger cohorts would have differed between the West Coast (predominantly California) and the non-West Coast (predominantly Hawaii). This is possible because on one hand the economic structures of California and Hawaii do differ. As such, the

regressions using individual earnings, which suggests that Japanese workers received lower than median pay within an occupation category.

same industries and occupations could have changed at differential rates between the two regions. And on the other hand, the position of the Japanese differs between California and Hawaii. The Japanese constituted 35% of Hawaii's population according to the 1940 Census, but less than 2% of California's. The anti-Oriental discrimination of the West Coast manifested in such forms as high barriers to entry to white-collar occupations and a prohibition of land ownership among non-citizens, and impaired the economic progress of the West Coast Japanese. In contrast, "Hawaii was more ethnically mixed and racially tolerant than the West Coast" (the U.S. Commission on Wartime Relocation and Internment of Civilians (1997), p. 261). The Hawaiian Japanese even before the war had a good presence in white-collar occupations, whereas the West Coast Japanese were predominantly in agricultural occupations.

Given the different initial points for the West Coast and non-West Coast Japanese, there may be differences in changes in labor market outcomes. One plausible story is as follows. The younger cohort in the West Coast might be experiencing faster growth in wages relative to the older cohort than the young cohort in Hawaii, because the West Coast is becoming less discriminatory against Japanese whereas Hawaii was never that discriminatory in the first place. I will estimate Equation 3 using data on other racial/ethnic groups – these groups were not interned – to see if there is a difference in trend between the West Coast and non-West Coast.

I use in turn the Chinese and Whites to test whether there is a differential trend by region. Their descriptive statistics are presented in Appendix Tables 1 (Chinese) and 2 (Whites). The Chinese faced much of the same anti-Oriental discrimination as the Japanese, but they were not subject to internment during World War II. Thus, to the extent that there is a mean reversion story for the West Coast Asians as discrimination lifts, the Chinese can control for it. The estimated β_3 for the Chinese (obtained by estimating Equation 3 using a sample of individuals

who are of Chinese descent) would give the difference in wages for the older cohort in the West Coast that has nothing to do with the internment. We can subtract out the estimated β_3 for the Chinese from the estimated β_3 for the Japanese to obtain the difference-in-differences-in-differences estimate of the effect of the labor market withdrawal induced by the internment; this is a “detrended” estimate of the effect.

Table 5 presents the empirical results using the Chinese. I do not find evidence of differential trends – none of coefficients in Columns 1 and 2 are significantly different from zero at the 90% level of confidence. Had there been mean reversion for West Coast Asians, the coefficients for earnings (and other outcomes for which a higher number demarks a better outcome) should have been negative. These results lend support to the key identifying assumption underlying my analysis. The lack of significant results does not seem to be merely an artifact of the smaller sample size for the Chinese compared to the Japanese. First, the point estimates in Table 5 are smaller in magnitude than those in Table 4. Moreover, the point estimates for Chinese wages and earnings are actually positive, i.e., the older cohorts from the West Coast are actually experiencing secular increases in earnings. This means that the difference-in-differences estimates in Table 4 are, if anything, *understating* the earnings losses resulting from the labor market withdrawal induced by the internment.

We can explicitly subtract out the differential trends – as estimated using the Chinese sample – from the Japanese difference-in-difference estimates of Table 4. The results of this exercise are displayed in Table 5, Columns 4 and 5. The triple differences estimates show the same qualitative results as Table 4, which is not surprising given that the Chinese difference-in-differences estimates were not statistically different from zero. The negative effect on earnings, occupational score and proportion professional/technical, and the positive effect on proportion

self-employed and proportion agricultural, remain statistically significant. Note the estimate of the earnings losses is larger in magnitude but less precise.

As an alternative group for estimating the differential trends, I use the Whites. Although the Whites did not face the anti-Oriental discrimination that so affected the economic lives of West Coast Asians, nonetheless they may be a useful control group because they had a greater presence in agricultural occupations whereas the Chinese hardly had any in the pre-internment period. The Table 4 results may be conflating the effects of the labor market withdrawal induced by the internment with the effects of shifting out of agriculture that vary at the state-cohort level; in such a case, the trends for Whites would be instructive. The estimation results are presented in Table 6. Additional data restrictions have been made for this analysis.²¹ The West Coast Whites are defined as whites born in the West Coast and currently residing in the West Coast. The non-West Coast Whites are defined as whites born in Hawaii and currently residing in Hawaii. For the earnings and job characteristics outcomes, the difference-in-differences estimates for the Whites have the same signs as for the Japanese. This suggests that the internment effects for these outcomes suggested by Table 4 are overstated in magnitude.

Once I subtract the differential trends as estimated using the White sample, the estimated effects of the labor market withdrawal induced by the internment are of the same sign but lower in magnitude. The earnings effect is no longer significant. It should be noted, however, that the difference-in-differences for labor force participation for the Whites is positive. This mostly reflects a dramatically lower labor force participation rate for older cohort Hawaiian Whites. There may be selection bias when conditioning on participation. For example, to the extent that higher ability older cohort Hawaiian workers retire sooner, older cohort West Coast workers could be drawn from a wider ability distribution, which could generate the difference-in-

²¹ The additional restrictions were done to minimize measurement error of the West Coast in 1942 dummy.

differences estimates of Table 6 even if there were no true underlying differential trend.

Some components of the difference-in-differences estimates for the Japanese reported in Table 4 may be the result of Japanese-specific differential trends that cannot be controlled for using either the Chinese or Whites. One possible story is that the life cycle of West Coast Japanese differs from that of a non-West Coast Japanese. For example, West Coast Japanese may have different norms about age of retirement, when to become self-employed, what jobs to hold when older, living with children, etc. The preceding analysis has been done using a single census, such that the older cohort is also older in age. Thus, the difference-in-difference estimate is capturing not only the effect of being in the older cohort in the West Coast, but also of being in the older age group in the West Coast.

To the extent that the life cycle of the Chinese or Whites mirrors the Japanese, then the difference-in-differences-in-differences estimates would already net out the older age in West Coast effect. However, to the extent that it does not, the following empirical exercise can be done to net out this effect. I continue to compare one cohort whose labor market experience was affected by the internment to one whose labor force experience was unaffected, but I use data on them when they are the same age. Specifically, I use data from the 1970 Census for the older cohort (born 1908 to 1921) and the 1990 Census for the younger cohort (born 1928 to 1941), so that everyone is observed at age 49-62.²² (See Appendix Table 3 for descriptive statistics.) The estimation results are displayed in Table 7. The qualitative results of Table 4 remain, although the earnings result is no longer significant. Thus, it does not appear that West Coast Japanese-specific age effects are driving the findings.

²² The identifying assumption is that in the absence of internment, the change in labor market outcomes between the older cohort (with 1970 data) and the younger cohort (with 1990 data) in the West Coast would be the same as the change in the non-West Coast. Since the labor market outcomes are measured at different times – twenty-five years and forty-five years after the internment – the assumption is more stringent than in Table 4.

C. Results in the Context of Human Capital Models

In summary, I find evidence that the labor market withdrawal induced by the Japanese-American internment during World War II generated earnings losses twenty-five years afterwards. Also, former internees are more likely to be in a lower-paying job – occupational score is lower, and the proportion in professional/technical occupations is lower. Finally, former internees are much more likely to be self-employed workers. These findings are robust to controlling for differential trends in labor market outcomes between the West Coast and non-West Coast (to the extent that they are adequately approximated by the Chinese or Whites) and for West Coast Japanese-specific age effects. These findings should not be interpreted as the overall impact of the internment, but as the impact of the labor market withdrawal induced by the internment.²³ Additionally, these findings are for a single point in time, 1970, twenty-five years after the internment. It is possible that the long-run effects differ from shorter-run effects, and even that the effects estimated here are idiosyncratic effects for 1970. The paucity of individual-level observations for the Japanese in the 1960 Census IPUMS and the omission of Hawaiian residents from the 1950 Census IPUMS preclude me from performing a similar empirical analysis for intermittent years.²⁴

The Civil Liberties Act of 1988 paid each surviving former internee \$20,000 (\$6200 in 1969 dollars) in reparations. My estimates imply that these reparations fall considerably short of compensating working-age male internees for lifetime earnings losses resulting from the labor market withdrawal induced by the internment. Members of the treatment group in my analysis had several decades of work life ahead of them. My empirical analysis suggests a single-year earnings loss of \$800 to \$1000 in 1969 dollars, which already amounts to 15% of the

²³ This is because both the younger and older cohorts of Japanese in the West Coast were interned, although only the older cohorts' labor market experience was interrupted (the younger cohort was still school-aged in camp).

²⁴ The 1960 IPUMS is only a 1% sample.

reparations.²⁵ As a back-of-the-envelope calculation, if I assume \$900 is the constant permanent effect of the labor market withdrawal induced by the internment, then the implied lifetime earnings losses are \$25,000 in 1969 dollars for the oldest member of the treatment group (born 1908) and \$40,000 in 1969 dollars for the youngest (born 1924).

These findings are consistent with both the loss-of-labor-market-experience model and the loss-of-advantageous-job-matches model (which were described in Section II). To empirically disentangle the contribution each model, we require additional information. Data on actual years of labor market experience would help – if there is a significant treatment effect even after explicitly controlling for years of labor market experience, then the loss-of-labor-market-experience model cannot account for it. Unfortunately, I do not have such data. However, examining the occupational distribution of the internees prior to the internment may be instructive. If much of the mass is in occupations that are known to offer negligible returns to experience, then we might surmise that the loss-of-advantageous-job-matches model is more important.

Table 8 tabulates the occupational background of male internees. The data is from a form filled out for all internees in 1942, when they entered the camps. Occupational data by cohort are not available. This is not a serious impediment because the U.S.-born individuals roughly correspond to the older cohort born 1908-1924 that is the treated group in this paper, whereas the foreign-born individuals roughly correspond to an even older cohort that is too old in age to study using the 1970 Census.

Focusing on the U.S.-born, the occupational background of internees was as follows: 46% in agriculture, 30% in white-collar and 25% in blue-collar. In 1950, for West Coast Japanese males born 1908-1924, 33% are in agricultural, 31% in white-collar and 36% in blue-

²⁵ Based on the difference-in-differences estimates for log earnings of 7% to 9%, and average earnings of \$11,000.

collar occupations (from 1950 Census IPUMS data). In 1970, for the West Coast Japanese males born 1908-1924, 13% are in agricultural, 42% in white-collar and 45% in blue-collar occupations (from Table 2). Thus, there is a dramatic shift out of agriculture in the postwar period, and in fact this shift is economy-wide, not limited to the former internees. In this context, loss of advantageous job matches probably plays a larger role than loss of labor market experience. A few years of lost labor market experience for an individual who used to hold a white-collar job before internment and manages to obtain a similar job afterwards may well reduce earnings. However, it should not reduce earnings for an individual who used to hold an agricultural job but afterwards switches to a non-agricultural job. In other words, this former agricultural worker may experience an earnings decline, but it would not be due to loss of labor market experience, since the skills for his old job are not particularly relevant for his new job. Thus, considering much of the movement is out of agriculture into other occupations, the loss of advantageous job matches may be more relevant. The internment has made the internees separate from their own enterprises, or from other advantageous job matches at a higher rate than they otherwise would have.

D. Implications for the Effects of Incarceration

The case of the Japanese-American internees may be a good “experiment” for understanding the consequences of labor market withdrawal and possible stigma suffered by any incarcerated group since the internment policy was applied so broadly. The long-run labor market effects estimated here should apply to other general detention policies. Additionally, they can provide elucidation on the general question of the effects of incarceration, i.e., the effects of serving a prison sentence on a convicted criminal’s subsequent labor market outcomes. This is of public policy interest, especially at a time when the incarcerated population has been

multiplying rapidly and governments are increasingly faced with the challenge of mainstreaming released prisoners into civilian life.²⁶

It is difficult to measure the causal effects of incarceration because an individual's probability and length of incarceration are choice variables. As such, they tend to vary systemically with his characteristics. For example, a dangerous convict is more likely to be put in prison. Also, a well-behaved prisoner is more likely to get paroled. Thus, conventional estimates of the effects of incarceration tend to conflate pure labor market withdrawal effects (e.g., loss of civilian labor market experience, loss of advantageous job matches) with selection effects. What is the relative importance of these two types of effects?

The Japanese-American internment was an exogenous event that removed all West Coast Japanese from the civilian labor market for an average of three years. Thus, there is no signal value about individual characteristics from having been interned. The labor market effects found for the working-age internees might plausibly be interpreted as pure labor market withdrawal effects, free of selection effects.²⁷ The estimated earnings losses of 7% to 9% represent a lower bound on the negative impact of a three-year prison sentence.²⁸ Assuming the long-term effect of incarceration was -25%, then the earnings losses from the negative signal value of incarceration would be 16% to 18%.²⁹ The negative signal effect is more than twice the pure labor market withdrawal effect. One policy implication might be that the criminal justice system

²⁶ A May 2001 *Economist* article reports: "America's prison population has boomed, to roughly 2m. One person in 142 is behind bars, up from one in 218 a decade ago. ... Recidivism rates have not changed for decades, but there are far more ex-convicts: roughly two-thirds of the ex-cons are likely to be rearrested within three years, and 40% will probably go back behind bars."

²⁷ They may include the effects of possible stigma suffered by any incarcerated group. This stigma is not from an individual selection effect of having been interned, and so I have not considered this to be selection effect.

²⁸ However, internees seem to have experienced more property loss and geographic dislocation than prisoners – this would tend to make the internment experience worse than the incarceration experience on the margin. On the other hand, families stay together under internment but not under incarceration.

²⁹ Previous research has found large negative effects of incarceration, and -25% is consistent with results in Waldfogel (1994) and Kling (2002).

should on the margin shift away from prison sentences and toward probation and fines. This might ease an ex-convict's re-entry into the civilian labor market and thereby reduce recidivism.

VII. CONCLUSIONS

This paper provides new empirical evidence on the long-run economic consequences of an important episode in American history. I find that because of the civilian labor market withdrawal induced by the Japanese-American internment during World War II, male internees incurred earnings losses, shifted to lower-paying, lower-status jobs, and moved to self-employment opportunities. These findings are contrary to the view that the Japanese recovered from the wartime experience with remarkable resilience to emerge as a model minority. While the Japanese appear successful overall, their success must be compared to an appropriate counterfactual; perhaps they would have succeeded even more in the absence of the internment. Additionally, not all Japanese were interned – the Japanese observed in the 1980s and 1990s when the “model minority” label arose were generally not interned, nor were the Hawaiian Japanese – so it is not appropriate to use the performance of Japanese overall to draw conclusions about the long-run impact of the internment.

The treatment group used in the analysis of this paper was born between 1908 and 1924. These are the youngest birth cohorts for whom labor market experience was affected by the internment. Older cohorts were probably even more adversely impacted, since they were more likely to be foreign-born, to have held an agricultural occupation prior to internment, and to have owned a farm or small business prior to internment (and therefore possessing more firm-specific human capital). Thus, the earnings losses for working-age male internees as a whole likely exceed 7% to 9%.

A promising avenue for further investigation is to examine the effects of internment on

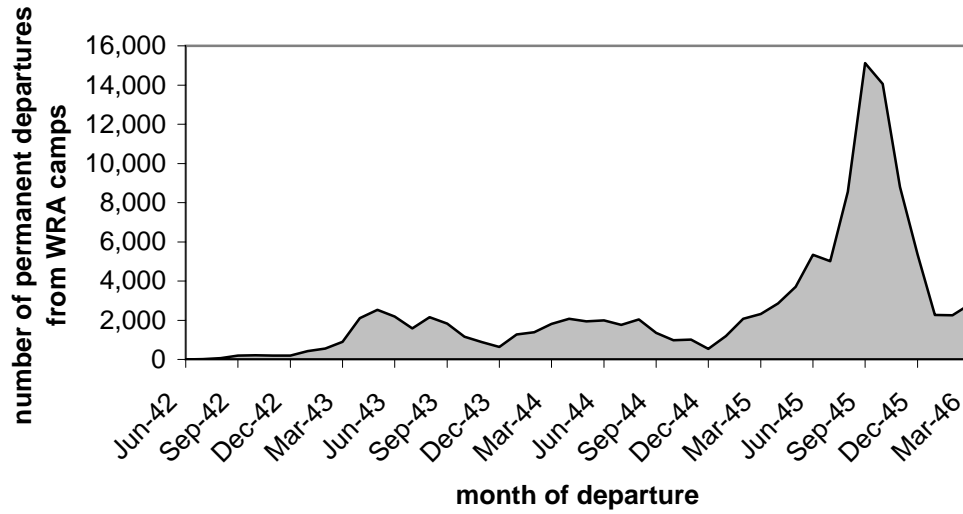
females. Considering women's labor force participation rate was less than half of men's prior to the internment, we might expect the experience of working-age female internees to be somewhat different. Indeed, preliminary analysis shows that females who were aged 18 to 34 during internment are significantly more likely to work, especially in wage employment and in clerical occupations, twenty-five years afterwards. What economic mechanisms account for these effects, and what are the implications for economic models of the family?³⁰ Another avenue for further investigation is to use the internment to address the general question of how own hardship during childhood affects outcomes in adulthood, as well as how parental hardship affects children's outcomes.

³⁰ There are a variety of potential explanations for this, including: husband's negative earnings shock induced wife to work (this is not the sole explanation, because if it were the implied cross-wage elasticity would be -1.7, which seems extremely high); husband's enterprise employs wife's labor; bargaining power of women increased during internment; and women acquired useful labor market skills during internment.

REFERENCES

- Angrist, Joshua D. and Alan B. Krueger, "Empirical Strategies in Labor Economics," in O. Ashenfelter and D. Card (eds.) *Handbook of Labor Economics Volume 3A*, Amsterdam: Elsevier, 1999.
- Broom, Leonard and Ruth Riemer, *Removal and Return: The Socio-Economic Effects of the War on Japanese Americans*, Berkeley and Los Angeles: University of California Press, 1949.
- "Coming to a Neighborhood Near You," *The Economist* 5-11 May 2001: 23-24.
- Hatamiya, Lon, "The Economic Effects of the Second World War Upon the Japanese in California," Harvard Undergraduate Thesis, 1981.
- Imbens, Guido W. and Joshua D. Angrist, "Identification and Estimation of Local Average Treatment Effects," *Econometrica* 62 (1994): 467-475.
- Kling, Jeffrey R., "The Effect of Prison Sentence Length on the Subsequent Employment and Earnings of Criminal Defendants," Princeton Mimeo, 2002.
- Myer, Dillon S., *Uprooted Americans: The Japanese Americans and the War Relocation Authority during World War II*, Tucson, Arizona: University of Arizona Press, 1971.
- Ruggles, Steven, Matthew Sobek et al., *Public Use Microdata Series: Version 2.0*, Minneapolis: Historical Census Projects, University of Minnesota, 1997 (<http://www.ipums.umn.edu>).
- U.S. Commission on Wartime Relocation and Internment of Civilians, *Personal Justice Denied: Report of the Commission on Wartime Relocation and Internment of Civilians*, Washington, D.C.: The Civil Liberties Public Education Fund, 1997. (First edition published in two volumes in 1982 and 1983.)
- Waldfogel, Joel, "The Effect of Criminal Conviction on Income and the Trust "Reposed in the Workmen," *Journal of Human Resources* 29 (1994): 62-81.
- War Relocation Authority of the U.S. Department of the Interior, *The Relocation Program*, New York: AMS Press, 1975. (First edition published in 1946.)
- War Relocation Authority of the U.S. Department of the Interior, *The Evacuated People: A Quantitative Description*, New York: AMS Press, 1975. (First edition published in 1948.)
- Weglyn, Michi, *Years of Infamy: The Untold Story of America's Concentration Camps*, New York: Morrow Quill Paperbacks, 1976.

Figure 1. Duration in the Internment Camps



Mean duration of internment: 3 years
Median duration of internment: 3.5 years (August 1945 = 42nd month)

Notes: The area under the graph sums to 117,694, which includes the 110,000 evacuated from the West Coast in 1942 as well as births during internment.
Source is U.S. War Relocation Authority (1946), Table 10, Column 3.
"Permanent Departures" are departures for relocation purposes, armed forces, institutions, internment camps (the Department of Justice camps rather than the WRA relocation centers) and repatriation to Japan.
Prior to location in WRA camps, the internees spent up to three months in WCCA assembly centers; Army-enforced evacuation began in March 1942.

Table 1. Japanese Affected by the Internment

	population in 1940 <hr/> (1)	number interned in WRA camps in 1942 <hr/> (2)	interned/ population <hr/> (3)
The Evacuated Area: West Coast			
Arizona	632	245	39%
California	93,717	92,757	99%
Oregon	4,071	3,531	87%
Washington	14,565	12,848	88%
<i>West Coast total</i>	<i>112,985</i>	<i>109,381</i>	<i>97%</i>
Unevacuated Areas			
All other continental U.S. states	13,962	105	1%
Hawaii	157,000	1,037	1%

Notes: Column 1 from 1940 Census as tabulated in U.S. War Department (1942), Table 61. Column 2 from U.S. War Relocation Authority (1946), Table 19. The latter excludes 145 internees from Alaska (Aleuts) and 502 internees with no last permanent address data. The internees from non-West Coast continental U.S. states include persons whose permanent address is outside the West Coast but were in the West Coast at the time of evacuation, or persons who voluntarily joined family members in relocation centers. The internees from Hawaii are predominantly persons who were individually evacuated and their families.

Table 2. Means for Japanese, 1970 Census

	West Coast			non-West Coast		
	overall (1)	born 1908-24 (2)	born 1925-41 (3)	overall (4)	born 1908-24 (5)	born 1925-41 (6)
Panel A. Labor Force Participation Measures						
worked last year	0.9816	0.9744	0.9887	0.9699	0.9584	0.9802
worked >= 50 weeks last yr	0.8309	0.8219	0.8398	0.8795	0.8687	0.8889
Panel B. Earnings Measures (of individuals with positive earnings last year)						
wages last year (\$1969)	10,817	10,710	10,903	9,863	9,716	9,984
log wages	9.1430	9.1155	9.1651	9.0738	9.0528	9.0910
earnings last year (\$1969)	11,339	10,885	11,783	10,286	10,360	10,221
log earnings	9.1663	9.1148	9.2167	9.0965	9.0886	9.1034
Panel C. Job Characteristics (of individuals with who worked last year or last week)						
self-employed worker	0.3035	0.4003	0.2086	0.1184	0.1630	0.0797
occupational score (see notes)	44.66	40.61	48.62	45.25	44.17	46.19
white collar occupation	0.5105	0.4192	0.6000	0.4493	0.3767	0.5126
blue collar occupation	0.3850	0.4469	0.3243	0.5206	0.5809	0.4681
agricultural occupation	0.1045	0.1339	0.0757	0.0296	0.0414	0.0193
professional, technical	0.2790	0.1499	0.4057	0.1901	0.1108	0.2592
farmer (owners, tenants, mgr)	0.0743	0.0975	0.0514	0.0184	0.0260	0.0117
managers, officials, proprietors	0.1103	0.1208	0.1000	0.1175	0.1378	0.0998
clerical	0.0627	0.0757	0.0500	0.0897	0.0780	0.0998
sales workers	0.0584	0.0728	0.0443	0.0520	0.0501	0.0537
craftsmen	0.1319	0.1237	0.1400	0.3117	0.3170	0.3070
operatives	0.0887	0.1048	0.0729	0.1000	0.1195	0.0831
service workers	0.0368	0.0408	0.0329	0.0561	0.0800	0.0352
farm laborers	0.0303	0.0364	0.0243	0.0112	0.0154	0.0076
other laborers	0.1276	0.1776	0.0786	0.0529	0.0645	0.0428
Panel D. Control Variables						
age	44.96	51.57	38.38	44.71	52.52	37.74
years of schooling	13.15	12.39	13.92	11.98	10.90	12.95
high school diploma	0.8565	0.8029	0.9107	0.7237	0.5468	0.8827
college diploma	0.2593	0.1609	0.3587	0.1621	0.0899	0.2270
number of obs with wages	1,066	474	592	2,037	921	1,116
number of obs with other vars	1,387	687	700	2,230	1,038	1,192

Notes: Sample is as follows: 1970 IPUMS, U.S.-born men born 1908-1924 (aged 46-62) and 1925-1941 (aged 29-45).

"West Coast" is a dummy equal to one for individuals born in California, Washington, Oregon or Arizona. Occupational score is an index of occupations according to the 1950 median income of all individuals in that occupation, in units of hundreds of 1969 dollars.

**Table 3. Difference-in-Differences in Earnings Measures
1970 Census for Japanese**

	dependent variable = log 1969 wages mean for Japanese old non-West Coast = 9.0528				dep var = log 1969 earnings (wages + business inc.) mean for Japanese old non-West Coast = 9.0886			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
older cohort	-0.0138	0.0145	-0.0510	-0.0155	-0.0962 **	-0.0751 *	-0.1238 ***	-0.0942 **
* West Coast in 1942	(0.0452)	(0.0462)	(0.0442)	(0.0451)	(0.0418)	(0.0423)	(0.0407)	(0.0411)
older cohort (born 1908-1924)	-0.0010 (0.0500)	-0.0136 (0.0494)	-0.0082 (0.0487)	-0.0209 * (0.0478)	0.0683 (0.0487)	0.0568 (0.0484)	0.0658 (0.0473)	0.0542 (0.0467)
West Coast in 1942	0.0707 ** (0.0306)	0.0951 ** (0.0383)	0.0117 (0.0299)	0.0664 * (0.0373)	0.1104 *** (0.0292)	0.1554 *** (0.0364)	0.0462 (0.0281)	0.1212 *** (0.0351)
age	0.2649 ** (0.1236)	0.2543 ** (0.1246)	0.1274 (0.1241)	0.1536 (0.1239)	0.1821 (0.1236)	0.1865 (0.1244)	0.0599 (0.1223)	0.0968 (0.1222)
age squared (coeff & se both *10 ²)	-0.5552 * (0.2841)	-0.5307 * (0.2864)	-0.2296 (0.2849)	-0.2868 (0.2845)	-0.3643 (0.2853)	-0.3735 (0.2872)	-0.0713 (0.2823)	-0.1532 (0.2819)
age cubed (coeff & se both *10 ²)	0.0037 (0.0021)	0.0036 * (0.0021)	0.0014 (0.0021)	0.0018 (0.0021)	0.0023 (0.0021)	0.0023 (0.0021)	0.0001 (0.0021)	0.0007 (0.0021)
years of schooling			0.0598 *** (0.0041)	0.0609 *** (0.0038)			0.0634 *** (0.0039)	0.0647 *** (0.0038)
state of residence fixed effects	NO	YES	NO	YES	NO	YES	NO	YES
Adjusted R-squared	0.0102	0.0419	0.0818	0.1194	0.0120	0.0366	0.0884	0.1162
Number of observations	3,103	3,103	3,023	3,023	3,589	3,589	3,498	3,498

Notes: Standard errors in parentheses. Single asterisk denotes statistical significance at the 90% level of confidence, double 95%, triple 99%. Sample is as follows: 1970 IPUMS, U.S.-born men born 1908-1924 (aged 46-62) and 1925-1941 (aged 29-45).

Table 4. Difference-in-Differences in Labor Market Outcomes, 1970 Census for Japanese

dependent variable	dep var mean (se) of Jap. old non-WC	Diff-in-Diffs Estimate		
		basic (1)	educ ctrl (2)	N in (2) (3)
Panel A. Labor Force Participation Measures				
Worked last year	0.9584 (0.0061)	0.0017 (0.0102)	-0.0006 (0.0099)	3,606
Worked >= 50 weeks last yr, conditional on working	0.8687 (0.0105)	0.0050 (0.0246)	0.0011 (0.0247)	3,517
Panel B. Earnings Measures (of individuals with positive earnings last year)				
Log annual wages last year	9.0528 (0.0184)	0.0145 (0.0462)	-0.0155 (0.0451)	3,023
Log annual wages last year -- worked >= 50 weeks last year	9.0818 (0.0188)	0.0337 (0.0440)	-0.0053 (0.0427)	2,630
Log annual earnings last year (wages + business income)	9.0886 (0.0184)	-0.0751 * (0.0423)	-0.0942 ** (0.0411)	3,498
Log annual earnings last year -- worked >= 50 weeks last year	9.1273 (0.0189)	-0.0485 (0.0421)	-0.0789 * (0.0408)	3,024
Panel C. Job Characteristics (of individuals who worked last year or last week)				
Self-employed worker	0.1630 (0.0115)	0.1033 *** (0.0277)	0.1061 *** (0.0280)	3,525
Occupational score	44.1724 (0.4537)	-6.1029 *** (1.1549)	-6.6592 *** (1.0700)	3,525
Professional / technical occupation	0.1108 (0.0097)	-0.1244 *** (0.0278)	-0.1328 *** (0.0247)	3,526
White collar occupation	0.3767 (0.0191)	-0.0535 (0.0338)	-0.0747 ** (0.0310)	3,526
Blue collar occupation	0.5809 (0.0153)	0.0208 (0.0336)	0.0405 (0.0315)	3,526
Agricultural occupation	0.0414 (0.0062)	0.0334 * (0.0176)	0.0348 ** (0.0178)	3,526

Notes: Robust standard errors in parentheses. Single asterisk denotes statistical significance at the 90% level of confidence, double 95%, triple 99%. Sample is as follows: 1970 IPUMS, U.S.-born men born 1908-1924 (aged 46-62) and 1925-1941 (aged 29-45). The diff-in-diff estimate is the coefficient for the interaction term, older cohort*West Coast. "Basic" specification includes main effects (older cohort dummy and West Coast dummy), age controls (up to cubic) and state fixed effects. "Educational controls" specification adds years of schooling.

Table 5. Diff-in-Diffs-in-Diffs in Labor Market Outcomes, Japanese and Chinese from 1970 Census

dependent variable	dep var mean (se) of Chin. old non-WC	Chinese Diff-in-Diffs Estimate Chinese old/young, WC/non-WC			Diff-in-Diffs-in-Diffs Japanese - Chinese	
		basic (1)	educ ctrl (2)	N in (2) (3)	basic (4)	educ ctrl (5)
Panel A. Labor Force Participation Measures						
Worked last year	0.9793 (0.0092)	-0.0102 (0.0231)	-0.0154 (0.0230)	971	0.0119 (0.0250)	0.0149 (0.0248)
Worked >= 50 weeks	0.8608 (0.0225)	-0.0460 (0.0519)	-0.0441 (0.0515)	944	0.0510 (0.0570)	0.0452 (0.0566)
Panel B. Earnings Measures (of individuals with positive earnings last year)						
Log annual wages	9.0977 (0.0461)	0.1085 (0.0926)	0.0175 (0.0783)	818	-0.0940 (0.1026)	-0.0330 (0.0895)
Log annual wages -- worked >= 50 weeks	9.1942 (0.0407)	0.0885 (0.0785)	0.0418 (0.0669)	699	-0.0548 (0.0891)	-0.0471 (0.0786)
Log annual earnings	9.1404 (0.0448)	0.1256 (0.0895)	0.0631 (0.0772)	942	-0.2007 ** (0.0982)	-0.1573 * (0.0867)
Log annual earnings -- worked >= 50 weeks	9.2304 (0.0408)	0.0425 (0.0792)	0.0301 (0.0691)	799	-0.0910 (0.0889)	-0.1091 (0.0795)
Panel C. Job Characteristics (of individuals who worked last year or last week)						
Self-employed worker	0.1471 (0.0230)	-0.0253 (0.0555)	-0.0333 (0.0566)	950	0.1286 ** (0.0615)	0.1394 ** (0.0626)
Occupational score	47.6660 (1.1567)	-0.0887 (2.5892)	-1.4205 (2.2716)	950	-6.0142 ** (2.8097)	-5.6737 ** (2.4435)
Professional / technical occupation	0.1933 (0.0256)	0.0148 (0.0628)	-0.0043 (0.0553)	950	-0.1393 ** (0.0681)	-0.1286 ** (0.0600)
White collar occupation	0.5336 (0.0324)	-0.0121 (0.0667)	-0.0268 (0.0602)	950	-0.0414 (0.0742)	-0.0479 (0.0671)
Blue collar occupation	0.4538 (0.0323)	0.0256 (0.0666)	0.0409 (0.0600)	950	-0.0048 (0.0739)	-0.0004 (0.0672)
Agricultural occupation	0.0126 (0.0072)	-0.0136 (0.0103)	-0.0146 (0.0097)	950	0.0469 ** (0.0204)	0.0490 ** (0.0207)

Notes: Robust standard errors in parentheses. Single asterisk denotes statistical significance at the 90% level of confidence, double 95%, triple 99%. Sample is as follows: 1970 IPUMS, U.S.-born men born 1908-1924 (aged 46-62) and 1925-1941 (aged 29-45). The diff-in-diffs estimate is as described in Table 4. The diff-in-diffs-in-diffs estimate is the coefficient for the interaction term, older cohort*West Coast*Japanese. "Basic" specification includes main effects effects (older cohort, West Coast and Japanese dummies and all interactions thereof), age controls (up to cubic) and state fixed effects. "Educational controls" specification adds years of schooling. Age and schooling effects are allowed to vary by whether Japanese.

**Table 6. Diff-in-Diffs-in-Diffs in Labor Market Outcomes,
Japanese and Whites from 1970 Census**

dependent variable	dep var mean (se) of Wh. old non-WC	White Diff-in-Diffs Estimate White old/young, WC/non-WC			Diff-in-Diffs-in-Diffs Japanese - White	
		basic (1)	educ ctrl (2)	N in (2) (3)	basic (4)	educ ctrl (5)
Panel A. Labor Force Participation Measures						
Worked last year	0.8403 (0.0306)	0.0702 ** (0.0339)	0.0591 * (0.0328)	23,310	-0.0772 ** (0.0356)	-0.0674 ** (0.0344)
Worked >= 50 weeks last year, if worked	0.8017 (0.0364)	0.0641 (0.0439)	0.0406 (0.0432)	22,190	-0.0470 (0.0511)	-0.0238 (0.0506)
Panel B. Earnings Measures (of individuals with positive earnings last year)						
Log annual wages	8.8564 (0.0558)	0.0943 (0.0739)	0.0214 (0.0689)	19,738	-0.1046 (0.0887)	-0.0602 (0.0839)
Log annual wages -- worked >= 50 weeks	8.9445 (0.0550)	0.1157 * (0.0642)	0.0474 (0.0577)	15,402	-0.0974 (0.0795)	-0.0637 (0.0736)
Log annual earnings	8.9188 (0.0587)	0.0325 (0.0769)	-0.0442 (0.0713)	22,051	-0.1159 (0.0890)	-0.0563 (0.0835)
Log annual earnings -- worked >= 50 weeks	9.0161 (0.0590)	0.0424 (0.0691)	-0.0282 (0.0619)	17,230	-0.0962 (0.0824)	-0.0521 (0.0757)
Panel C. Job Characteristics (of individuals who worked last year or last week)						
Self-employed worker	0.0496 (0.0198)	0.0584 ** (0.0262)	0.0481 * (0.0266)	22,252	0.0782 ** (0.0402)	0.0924 ** (0.0407)
Occupational score	43.3228 (1.4986)	-0.1001 (1.8986)	-1.9868 (1.6827)	22,252	-5.9256 *** (2.2628)	-4.6237 ** (2.0341)
Professional / technical occupation	0.0992 (0.0273)	-0.0365 (0.0373)	-0.0930 *** (0.0361)	22,257	-0.1096 ** (0.0475)	-0.0630 (0.0446)
White collar occupation	0.2314 (0.0385)	0.0202 (0.0520)	-0.0626 (0.0462)	22,257	-0.0696 (0.0636)	-0.0090 (0.0572)
Blue collar occupation	0.7107 (0.0414)	-0.0173 (0.0549)	0.0525 (0.0516)	22,257	0.0183 (0.0660)	-0.0295 (0.0619)
Agricultural occupation	0.0579 (0.0213)	-0.0029 (0.0258)	0.0101 (0.0251)	22,257	0.0520 (0.0324)	0.0394 (0.0319)

Notes: See notes for Table 5. Further sample restrictions as follows. Current state of residence is Hawaii or the West Coast (CA, WA, OR, AZ). For whites, state of birth is Hawaii or the West Coast.

**Table 7. Difference-in-Differences in Labor Market Outcomes,
1970 and 1990 Census for Japanese**

dependent variable	dep var mean (se) of Jap. 1970 non-WC	Diff-in-Diffs Estimate		
		Japanese basic (1)	1970/1990, West Coast/ educ ctrl (2)	non-WC N in (2) (3)
Panel A. Labor Force Participation Measures				
Worked last year	0.9539 (0.0074)	-0.0441 ** (0.0178)	-0.0489 * (0.0178)	3,199
Worked >= 50 weeks last yr, conditional on working	0.8614 (0.0125)	0.0068 (0.0295)	0.0033 (0.0298)	2,944
Panel B. Earnings Measures (of individuals with non-zero earnings last year, in 1969 dollars)				
Log annual wages last year	9.0189 (0.0214)	0.0255 (0.0579)	-0.0251 (0.0554)	2,564
Log annual wages last year -- worked >= 50 weeks last year	9.0436 (0.0220)	0.0427 (0.0539)	-0.0083 (0.0523)	2,153
Log annual earnings last year (wages + business income)	9.0573 (0.0216)	-0.0133 (0.0541)	-0.0585 (0.0519)	2,930
Log annual earnings last year -- worked >= 50 weeks last year	9.0942 (0.0224)	-0.0110 (0.0514)	-0.0586 (0.0497)	2,452
Panel C. Job Characteristics (of individuals who worked last year or last week)				
Self-employed worker	0.1749 (0.0137)	0.1414 *** (0.0329)	0.1400 *** (0.0332)	2,965
Occupational score (index of occs according to 1950 median income, in units of hundreds of 1969 dollars)	43.3829 (0.5166)	-4.2670 *** (1.2479)	-5.8314 *** (1.1659)	2,965
Professional / technical occupation	0.0991 (0.0108)	-0.0812 *** (0.0303)	-0.1150 *** (0.0278)	2,966
White collar occupation	0.3494 (0.0172)	-0.0154 (0.0373)	-0.0646 * (0.0348)	2,966
Blue collar occupation	0.6050 (0.0177)	-0.0415 (0.0372)	0.0060 (0.0353)	2,966
Agricultural occupation	0.0443 (0.0074)	0.0581 *** (0.0188)	0.0598 *** (0.0189)	2,966

Notes: Robust standard errors in parentheses. Single asterisk denotes statistical significance at the 90% level of confidence, double 95%, triple 99%. Sample is as follows: U.S.-born men aged 49-62 born 1908-1921 from 1970 PUMS and 1928-1941 from 1990 PUMS. The diff-in-diff estimate is the coefficient for the interaction term, older cohort*West Coast. Basic specification includes main effects (older cohort dummy and West Coast dummy) and age controls (up to cubic). Educational controls specification also includes years of schooling.

Table 8. Occupational Distribution of Male Internees, 1942

	Total		U.S.-born		Foreign-born	
	<u>Number</u> (1)	<u>%</u> (2)	<u>Number</u> (3)	<u>%</u> (4)	<u>Number</u> (5)	<u>%</u> (6)
Panel A. Original Occupational Categories						
professional, technical and managerial	7,010	17%	2,677	14%	4,333	19%
clerical and sales	3,943	9%	2,959	16%	984	4%
service	3,812	9%	1,051	6%	2,761	12%
craft/operative -- skilled	2,188	5%	1,029	5%	1,159	5%
craft/operative -- semi-skilled	3,005	7%	2,185	11%	820	4%
craft/operative -- unskilled	777	2%	422	2%	355	2%
agricultural, fishery and forestry	<u>21,027</u>	<u>50%</u>	<u>8,720</u>	<u>46%</u>	<u>12,307</u>	<u>54%</u>
Total	41,762	100%	19,043	100%	22,719	100%
Panel B. Comparable Categories						
white-collar	10,953	26%	5,636	30%	5,317	23%
blue-collar	9,782	23%	4,687	25%	5,095	22%
agricultural	<u>21,027</u>	<u>50%</u>	<u>8,720</u>	<u>46%</u>	<u>12,307</u>	<u>54%</u>
Total	41,762	100%	19,043	100%	22,719	100%

Notes: Source of Panel A is U.S. War Relocation Authority (1946), Table 22, "Primary Occupational Classification as of 1942 by Sex and Nativity: Evacuees 14 Years Old and Over to WRA in 1942." This table reports the number of males in each occupational category, among males reporting some occupational experience. The WRA occupational categories are mapped into the three broad categories as follows: professional, clerical and sales are white collar; agricultural, fishery and forestry are agricultural, and the rest are blue-collar.

Appendix Table 1. Means for Chinese, 1970 Census

	West Coast			non-West Coast		
	overall (1)	born 1908-24 (2)	born 1925-41 (3)	overall (4)	born 1908-24 (5)	born 1925-41 (6)
Panel A. Labor Force Participation Measures						
worked last year	0.9678	0.9597	0.9725	0.9752	0.9793	0.9725
worked >= 50 weeks last yr	0.8235	0.8042	0.8347	0.8511	0.8608	0.8446
Panel B. Earnings Measures (of individuals with positive earnings last year)						
wages last year (\$1969)	10,702	10,847	10,618	10,630	10,838	10,493
log wages	9.1189	9.1245	9.1156	9.1152	9.0977	9.1267
earnings last year (\$1969)	11,884	12,064	11,780	11,488	11,627	11,396
log earnings	9.1897	9.2043	9.1813	9.1616	9.1404	9.1758
Panel C. Job Characteristics (of individuals with who worked last year or last week)						
self-employed worker	0.2697	0.2778	0.2651	0.1345	0.1471	0.1261
occupational score (see notes)	51.63	50.73	52.15	48.47	47.67	49.00
white collar occupation	0.6972	0.6389	0.7309	0.5866	0.5336	0.6218
blue collar occupation	0.3003	0.3611	0.2651	0.4067	0.4538	0.3754
agricultural occupation	0.0025	0.0000	0.0040	0.0067	0.0126	0.0028
professional, technical	0.3690	0.2986	0.4096	0.2773	0.1933	0.3333
farmer (owners, tenants, mgr)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
managers, officials, proprietors	0.1654	0.2222	0.1325	0.1613	0.1807	0.1485
clerical	0.0941	0.0625	0.1124	0.0891	0.0966	0.0840
sales workers	0.0687	0.0556	0.0763	0.0588	0.0630	0.0560
craftsmen	0.1120	0.1181	0.1084	0.1849	0.1975	0.1765
operatives	0.0763	0.1042	0.0602	0.0891	0.0966	0.0840
service workers	0.0891	0.1181	0.0723	0.1025	0.1218	0.0896
farm laborers	0.0025	0.0000	0.0040	0.0067	0.0126	0.0028
other laborers	0.0229	0.0208	0.0241	0.0303	0.0378	0.0252
Panel D. Control Variables						
age	43.31	52.15	38.15	43.31	52.41	37.25
years of schooling	13.45	12.38	14.07	12.57	11.63	13.20
high school diploma	0.8653	0.7552	0.9300	0.7709	0.6752	0.8348
college diploma	0.3264	0.2168	0.3909	0.2769	0.2009	0.3276
number of obs with wages	318	117	201	533	212	321
number of obs with other vars	393	144	249	595	238	357

Notes: Sample is as follows: 1970 IPUMS, U.S.-born men born 1908-1924 (aged 46-62) and 1925-1941 (aged 29-45).

"West Coast" is a dummy equal to one for individuals born in California, Washington, Oregon or Arizona. Occupational score is an index of occupations according to the 1950 median income of all individuals in that occupation, in units of hundreds of 1969 dollars.

Appendix Table 2. Means for Whites, 1970 Census

	West Coast			non-West Coast		
	overall (1)	born 1908-24 (2)	born 1925-41 (3)	overall (4)	born 1908-24 (5)	born 1925-41 (6)
Panel A. Labor Force Participation Measures						
worked last year	0.9511	0.9256	0.9680	0.9054	0.8403	0.9595
worked >= 50 weeks last yr	0.7768	0.7635	0.7852	0.8537	0.8017	0.8916
Panel B. Earnings Measures (of individuals with positive earnings last year)						
wages last year (\$1969)	10,318	10,393	10,273	8,668	8,215	8,995
log wages	9.0602	9.0412	9.0715	8.9356	8.8564	8.9926
earnings last year (\$1969)	10,967	11,087	10,892	9,110	9,052	9,153
log earnings	9.1007	9.0803	9.1135	8.9637	8.9188	8.9963
Panel C. Job Characteristics (of individuals with who worked last year or last week)						
self-employed worker	0.1554	0.1928	0.1318	0.0486	0.0496	0.0479
occupational score (see notes)	46.13	45.79	46.34	43.59	43.32	43.78
white collar occupation	0.4682	0.4573	0.4751	0.2535	0.2314	0.2695
blue collar occupation	0.4921	0.4911	0.4927	0.7014	0.7107	0.6946
agricultural occupation	0.0394	0.0513	0.0319	0.0451	0.0579	0.0359
professional, technical	0.1777	0.1431	0.1996	0.1111	0.0992	0.1198
farmer (owners, tenants, mgr)	0.0240	0.0333	0.0180	0.0069	0.0083	0.0060
managers, officials, proprietors	0.1478	0.1683	0.1348	0.0799	0.0744	0.0838
clerical	0.0627	0.0645	0.0615	0.0313	0.0331	0.0299
sales workers	0.0801	0.0814	0.0792	0.0313	0.0248	0.0359
craftsmen	0.2186	0.2190	0.2183	0.3229	0.3223	0.3234
operatives	0.1543	0.1513	0.1562	0.1875	0.1736	0.1976
service workers	0.0625	0.0622	0.0627	0.1111	0.1074	0.1138
farm laborers	0.0154	0.0179	0.0139	0.0382	0.0496	0.0299
other laborers	0.0567	0.0586	0.0556	0.0799	0.1074	0.0599
Panel D. Control Variables						
age	43.13	53.05	36.58	44.55	53.85	36.80
years of schooling	12.32	11.84	12.64	9.98	8.78	10.95
high school diploma	0.7278	0.6685	0.7668	0.4740	0.3333	0.5882
college diploma	0.1834	0.1430	0.2099	0.0649	0.0435	0.0824
number of obs with wages	20,035	7,460	12,575	277	116	161
number of obs with other vars	22,608	8,757	13,851	288	121	167

Notes: Sample is as follows: 1970 IPUMS, U.S.-born men born 1908-1924 (aged 46-62) and 1925-1941 (aged 29-45), and born and currently residing in one of Hawaii, California, Washington, Oregon or Arizona.

"West Coast" is a dummy equal to one for individuals born in California, Washington, Oregon or Arizona. Occupational score is an index of occupations according to the 1950 median income of all individuals in that occupation, in units of hundreds of 1969 dollars.

Appendix Table 3. Means for Japanese, 1970 and 1990 Census

	West Coast			non-West Coast		
	overall	1970 Census born 1908-21	1990 Census born 1928-41	overall	1970 Census born 1908-21	1990 Census born 1928-41
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Labor Force Participation Measures						
worked last year	0.9385	0.9665	0.9160	0.9085	0.9539	0.8813
worked >= 50 weeks last yr	0.8064	0.8248	0.7907	0.8519	0.8614	0.8458
Panel B. Earnings Measures (of individuals with positive earnings last year)						
wages last year (\$1969)	11,864	10,835	12,528	10,751	9,416	11,557
log wages	9.1697	9.1138	9.2059	9.1019	9.0189	9.1519
earnings last year (\$1969)	11,859	10,859	12,701	11,129	10,160	11,757
log earnings	9.1508	9.1017	9.1922	9.1159	9.0573	9.1539
Panel C. Job Characteristics (of individuals with who worked last year or last week)						
self-employed worker	0.3123	0.4207	0.2209	0.1433	0.1749	0.1230
occupational score (see notes)	45.21	40.12	49.50	46.60	43.38	48.67
white collar occupation	0.5576	0.4187	0.6747	0.5051	0.3494	0.6050
blue collar occupation	0.3652	0.4553	0.2894	0.4653	0.6050	0.3757
agricultural occupation	0.0771	0.1260	0.0360	0.0291	0.0443	0.0192
professional, technical	0.2602	0.1362	0.3647	0.1978	0.0991	0.2611
farmer (owners, tenants, mgr)	0.0558	0.0894	0.0274	0.0199	0.0287	0.0142
managers, officials, proprietors	0.1515	0.1138	0.1832	0.1687	0.1408	0.1866
clerical	0.0809	0.0854	0.0771	0.0790	0.0639	0.0887
sales workers	0.0651	0.0833	0.0497	0.0596	0.0456	0.0686
craftsmen	0.1106	0.1159	0.1062	0.2533	0.3233	0.2084
operatives	0.0790	0.1098	0.0531	0.0968	0.1278	0.0770
service workers	0.0325	0.0366	0.0291	0.0688	0.0834	0.0594
farm laborers	0.0214	0.0366	0.0086	0.0092	0.0156	0.0050
other laborers	0.1431	0.1931	0.1010	0.0464	0.0704	0.0310
Panel D. Control Variables						
age	54.90	53.28	56.20	55.32	54.44	55.84
years of schooling	13.37	12.20	14.32	12.44	10.64	13.52
high school diploma	0.8709	0.7791	0.9449	0.7654	0.4949	0.9278
college diploma	0.2897	0.1446	0.4068	0.2102	0.0857	0.2849
number of obs with wages	841	330	511	1,781	670	1,111
number of obs with other vars	1,076	492	584	1,962	767	1,195

Notes: Sample is as follows: U.S.-born men aged 49-62 born 1908-1921 from 1970 PUMS and 1928-1941 from 1990 PUMS.

"West Coast" is a dummy equal to one for individuals born in California, Washington, Oregon or Arizona. Occupational score is an index of occupations according to the 1950 median income of all individuals in that occupation, in units of hundreds of 1969 dollars.