Within-group Income Inequality among Asian American Families

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ABSTRACT

Asian Americans have long been portrayed as a "model minority" for their relatively high socioeconomic standings in contemporary America. However, this characterization oversimplifies the economic circumstances of Asian Americans, as they also show the highest within-group inequality among all racial and ethnic groups. Asian Americans' high within-group inequality highlights the convergence of class inequality, racial disparity, as well as the diversity of their immigration status. Focusing on the reasons that account for Asian American within-group inequality, this thesis utilizes both ordinary least square (OLS) regression and conditional quantile regression to uncover the difference in within-group inequalities between non-Hispanic white families and Asian American families. The results show that Asian American families indeed have a 24% higher income inequality (as measured by the gap between the ninetieth percentile and the tenth percentile) than whites. However, the higher income inequality is reduced to as low as 6.2% after controlling for demographic characteristics, human capital variables, immigration status, and family composition variables. As Asian American demographic characteristics and family composition have a counteracting effect on their income inequality, human capital combined with immigration status thus explains over 75% of their higher income inequality.

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INTRODUCTION

Asian Americans have been known for their relatively high socioeconomic standing in contemporary America. The observation holds true under key measurements of socioeconomic status--educational achievement, occupational attainment, and income. For example, in 2000, about 45% of Asians between 25 to 64 years old had completed a college education, compared with 29% non-Hispanic whites and 15% blacks (Sakamoto and Xie 2006). In addition, Asian Americans were overrepresented in professional occupations, with 33% Asians compared with 21% whites and 13% blacks (Sakamoto and Xie 2006). Even though Asian Americans' per capita income was slightly below whites (\$22,352 vs. \$23,415), their median household income was significantly higher (\$55,521 vs. \$45,904) (Zeng and Xie 2004). Regardless of the measurements and year of survey, this pattern that Asian Americans fared better than whites in the U.S. labor market is consistent (Sakamoto, Goyette, and Kim 2009). Asian Americans were thus portrayed as a "model minority" that could overcome racial and institutional barriers and achieve upward mobility through hard work and without relying on governmental assistance. That is, a successful minority who are quiet, industrious, and education-oriented.

However, the economic circumstances for Asian Americans are also far more complicated than the popularized characterization of a "model minority." Evidence shows that while Asian Americans on average outperformed whites in the U.S. labor market, they also suffered from higher poverty rates (12.2 for Asian Americans and 8.3 for whites) (Sakamoto et al. 2009). By measuring the 90/10 ratio of household equivalized income, a recent report released by Pew Research Center indicates that Asian Americans are the economically most divided group in America (Pew Research Center 2018a). In 2016, Asian families at the 90th percentile exceed the income of Asians at the 10th by 9.7 times, while it is 6.8 for whites and 7.7 for the overall population.

Thus, the socioeconomic status of Asian Americans can be best characterized as "a high average and a large dispersion" (Zeng and Xie 2004:1076). This characterization leads to important question of their economic stratification—why do Asian Americans, as the highest achieving racial group in the United States, have the highest income inequality? In other words, why do the majority of Asian Americans go far ahead while others fall far behind?

The factors accounting for Asian American income inequality are quite complex. Asian American economic stratification is first reflected in their educational structure: the standard deviation of years of schooling is 2.8 for whites in 2005/2006, while it is 4.0 for Asian Americans, despite their overall higher years of schooling (Sakamoto, Kim, and Takei 2013). Second, Asian Americans differ substantially by their immigration-associated characteristics, such as the routes through which they came to the United States: some immigrated as professionals and skilled workers; some entered as war refugees; and some came as tied immigrants with their families (Lee 1994). In addition, different ethnic groups find their distinctive ways of navigating new lives in America and achieve upward mobility (Min 2000a). Furthermore, race and ethnicity studies have done extensive research investigating the "net effect of race" by controlling for labor-productivity factors (e.g., the level of education, field of study, and working experiences) (Ogbu 1991; Hirschman and Wong 1984; Sakamoto, Wu, and Tzeng 2000; Xie and Goyette 2003; Xie, Fang and Shauman 2015). Thus, the higher income inequality within Asian Americans highlights the three-way interaction of ethnic diversity, racial disparity, and most importantly class inequality (Kim and Sakamoto 2014; Leicht 2008; Sakamoto et al. 2009). Since American society as a whole has been experiencing a dramatic increase in class inequality and Asian Americans as a group have been undergoing a slight decrease in racial inequality (Autor 2014; Morris and Western 1999; Sakamoto et al. 2000), a study on Asian American class inequality alongside the residue of racial inequality is warranted.

In general, this study tries (1) to provide a descriptive overview of Asian American economic stratification, and (2) to find out the sources of their higher within-group inequality.

This research utilizes ordinary least square regression and quantile regression to examine the income inequality within Asian Americans. The statistical analysis will draw from family-level data of the American Community Survey from 2012 to 2016 in order to gain enough sample size of different Asian ethnicities.

LITERATURE REVIEW

U.S. Labor Market and Asian American Education

Labor market research on income inequality has been dominated by the rising economic returns to skilled workers. Over the second half of the twentieth century, real wages for the least skilled, as measured by the tenth percentile of the wage distribution, fell by about 5 percent, and wages for the most skilled, as measured by the ninetieth percentile of the wage distribution, increased by about 40 percent (John, Murphy, and Pierce 1993). A classic explanation for the rise in the returns to skill is supply and demand; the demand for skilled workers rose in the period when skilled workers were in insufficient supply.

In particular, labor market research focuses on the role of educational attainments on income inequality, as education is an indicator of one's skill and productivity. Sakamoto and his colleagues found that college graduates in 1990 earned 88% more income than high school dropouts, and a person with a master's degree earned 114% more (Sakamoto et al. 2000). More recent research shows similar results. Autor (2014) finds that the earning gap between college-educated and high-school-educated full-time workers has nearly doubled from 1979 to 2012—the gap rose from \$17,411 to \$34,969 for males and from \$12,887 to \$23,280 for females. The effect of college premium, or the economic advantage of college graduates over their high school counterparts, is even more consequential for Asian Americans due to their distinctive distribution of educational attainments. Asian Americans, regardless of nativity, are overwhelmingly highly-

educated; and among the highly-educated, they are also overrepresented in lucrative majors (e.g., STEMs).

For Asian immigrants, their educational profiles manifest a polarized structure in which they are more likely to have never finished high school education, as well as to have completed post-secondary education in selective fields. This polarization and its direct consequence of income inequality is a result of selective immigration laws: on the one hand, the Immigration Act of 1965 favored immigrants who were highly educated; on the other hand, a large number of refugees from Southeast Asia who entered the United States were poorly educated. Thus, while some ethnic groups (e.g., Japanese, Chinese, Asian Indians, and Filipinos) obtained visas based on their education and professional qualifications and had a higher socioeconomic status than average white Americans, the refugees from Vietnam, Laos, and Cambodia since 1975 were in a harsh economic situation. More recently, the refugees from Burma, Bhutan, and Afghanistan have undergone similar struggles, such as lower family income and higher unemployment rates (Rumbaut 2000; Pew Research Center 2018b). The educational polarization of Asian immigrants is also observed within ethnic groups, and this observation might reflect the family reunification preferences of immigration laws. In 2000, it was estimated that eighteen percent of the foreignborn Chinese and ten percent of whites did not complete high school; while the proportion of foreign-born Chinese who had advanced degrees was slightly higher than whites (Wong 2006).

On the contrary, second-generation Asian Americans tend to show a lopsided educational structure where only a small proportion of them are poorly educated while others are well-educated. Empirical research shows that children of the recent refugees with poor class origins are remarkably disadvantaged and have an educational profile similar to African Americans (Sakamoto and Woo 2007). Work obligations that interfere with academic schedules are reported as a concern by the second-generation Cambodian, Hmong, and Laotian. Even though they believe that education is an effective ladder to upward mobility and wish to excel at schools, they nevertheless have lower standardized test scores and lower college enrollment rates (Mcnall,

Dunnigan, and Mortimer 1994; Ngo and Lee 2007). However, the majority of second-generation Asian Americans make great efforts to enhance their educational attainments. In the same research, evidence shows that second-generation Vietnamese Americans, regardless of their parents' economic hardships, exceed whites in obtaining higher educations (Sakamoto and Woo 2007). Segmented assimilation theory argues that the retention of ethnic values and traditions, such as education bringing high social status and parents taking an active role facilitating their children's academic performances, contributes to the success of second-generation Asian Americans (Lee 1991; Lee and Zhou 2015; Sakamoto et al. 2009).

Even though the foreign-born and native-born Asian Americans show distinctive characteristics for their educational profiles, Asian Americans as a whole are nonetheless a highachieving group dominated by college graduates and a racial group that is overrepresented in lucrative majors. STEM fields (i.e., science, technology, engineering, and mathematics) are often known as lucrative majors which require intensive academic efforts but also remunerate with desirable economic well-being (Xie et al. 2015). In the context of the growing college premium, the mean salaries of college graduates specializing in electrical engineering, computer science, chemistry, and mathematics were also found substantially higher than those majoring in humanities and social sciences (Card and DiNardo 2002). In the face of the sudden proliferation of private health insurance and the increasing demand for constructing military weapons, the majority of Asian Americans entered the United States to meet the labor shortage in health industries and science innovation (Ong and Liu 2000). Scientists, engineers, nurses, as well as doctors have dominated the list of qualified occupations when Asian Americans obtained their visas, so the overrepresentation in STEM fields has been an institutional product which has characterized Asian immigrants for a long time. As the Asian immigrants have gained some economic benefits from selective occupations, they encourage their U.S.-born children to focus on the same areas where financial rewards are guaranteed by more demonstrable skills (Xie and Goyette 2003; Lee 1991).

Hence, education contributes to the income inequality of Asian Americans through two ways: the polarization of educational attainments that gives rise to economic bifurcation between the high- and low-achievers; and the overrepresentation in lucrative majors which leads to even higher financial well-being among the better educated groups.

The Discrepancies of Immigration Status

Asian immigrants, on average, comprise nearly three quarters of Asian populations. The proportion of Asian immigrants in different ethnic groups ranges from as low as 42.2% among Japanese to as high as 87.1% among Malaysians (Sakamoto et al. 2009). In this scenario, the income inequality of Asian Americans not only stems from their higher college premium, but also lies in the inconsistency of labor market disadvantages associated with their immigration status. While native-born Asian Americans are often exempted from immigration-related disadvantages, Asian immigrants generally experience different extents of structural constraints in achieving labor market parity with whites. Having the foreign-earned educational credentials recognized, getting familiar with U.S. labor recruiting and interviewing, overcoming the lack of social networks in job searching, and improving English skills are the typical institutional barriers to the job market that Asian immigrants face. However, as assimilation theory assumes that the greater exposure in the United States could increase immigrants' knowledge and skills that are conducive for their integration with American mainstream (Kim and Sakamoto 2010), the disadvantages accompanied with Asian immigrants could be partially ameliorated.

Poverty rate, an indicator of the economic circumstances of the people living in the lower rung of social hierarchy, is generally higher among immigrant groups, especially the most recent immigrants (Lee 1994; Sakamoto and Xie 2006; Takei and Sakamoto 2011). Empirical research shows that the poverty rate among Asian immigrants with less than five years of stay in the United States is about twice as high as those with more than five years of stay (Takei and Sakamoto 2011). The lower poverty rate among Asian immigrants who have longer exposure to

the United States highlights the role of assimilation in alleviating the immigration-associated disadvantages. Recent studies have broken down the single grouping of Asian Americans into more homogenous groups of first-generation, 1.25-generation, 1.5- generation, and second-generation by distinguishing the age when Asian Americans integrated with the U.S. educational system, which enriches the understanding about the differentials of disadvantages associated with one's immigration status (Kim and Zhao 2014; Kim and Sakamoto 2010; Kim 2015). Net of relevant variables, the first-generation, who are educated entirely overseas, have the most substantial earning disadvantages; the 1.25-generation, who obtained high school education overseas but attained their highest educational degree in America, have an intermediate disadvantage; the 1.5-generation, who started studying in the United States from their high school, have reached labor market parity with whites; and the native-born Asian Americans are somewhat slightly disadvantaged. Therefore, the discrepancies in immigration status undoubtedly give rise to the income inequality of Asian Americans.

From another perspective, the relative disadvantages keep reducing as Asian immigrants obtain a professional degree or a PhD degree; or earn a degree in computer, math, and engineering domains (Zeng and Xie 2004; Kim and Sakamoto 2010). These strategies are meant to compensate for their immigration vulnerabilities. With realizing the potential racial discrimination and other institutional constraints they may face in employment and job promotion, Asian Americans choose to focus on occupations that have a high education requirement (Xie and Goyette 2003). In addition, since science disciplines use more objectively based criteria than other fields, Asian Americans suffer less subjective judgments—subjective judgments that are due to inadequate language fluency and insufficient cultural capital and downplay their labor performances (Xie et al. 2015; Kim and Sakamoto 2010). Therefore, high educational attainment in selective fields works as a compensation to ameliorate the immigration-related disadvantages of Asian Americans. On the contrary, these disadvantages appear to be amalgamated among Asian immigrants with less competitive educational backgrounds as they are

more likely to be engaged in the service industry where the labor returns are based on subjective judgments and individual standards.

The "Net Effect of Race": Model Minority Myth in Low-wage Market

Asian immigrants suffer from inadequate English language skills, discounted foreign education credentials, and unfamiliarity with American culture in the labor market, so the disadvantages they endure cannot easily be summarized as "the net effect of race" (Sakamoto et al. 2009; Zeng and Xie 2004; Kim and Sakamoto 2010). Native-born Asian Americans, however, are largely free from immigration-associated disadvantages and are thought to be "readily comparable" with non-Hispanic whites. Driven by the effect of "model minority myth" and pervasive racial discrimination in the low-wage labor market, the less-educated Asian Americans undergo harsh economic circumstances, enlarging the distance between high-achieving Asians and low-achieving Asians (Sakamoto et al. 2009; Kim and Sakamoto 2014; Pager, Western, and Bonikowski 2009).

While the favorable socioeconomic attainments gained by Asian Americans has led to the broad characterization of Asian Americans as a "model minority", the alternative perspective known as "model minority myth" has also argued that "model minority" inaccurately captures the labor market equity so that "model minority" is a "misleading and damaging" (Kao and Thompson 2003: 432) myth to those Asian Americans who are actually disadvantaged for various historical reasons (Rumbaut 2000; Ong and Liu 2000). One more important dimension of "model minority myth" is that the U.S. labor market tends to provide greater reward to those Asian Americans who are consistent with the stereotypical characterization of "high achievers" while penalize those less-educated Asian Americans who deviate from a "model minority image" (Kim and Sakamoto 2014). Kim and Sakamoto (2014) show that native-born Asian American men who do not complete high school earn 24 percent less than equally educated whites at the tenth

percentile of income distribution, which means those native-born Asian Americans who are at the lowest socioeconomic status are seriously disadvantaged by their minority status.

In addition, less-educated workers tend to concentrate in the low-wage service market (including personal services, business services, etc.) where income dispersion tends to be essentially higher (Chevan and Stokes 2000). In the low-wage market, previous research has found remarkable racial disparities among the less-educated African Americans and Hispanic Americans, with the former being severely disadvantaged and the latter enduring an intermediate level of racial penality (Pager et al. 2009). Similarly, less-educated Asian Americans working in the low-wage service industry might suffer a certain extent of racial discrimination since the performance is largely judged by more subjective criteria.

The Counteracting Effect of Asian American Family Configuration

Inequality in families arises through two interwoven processes: how the earnings are distributed among individuals and how individuals maintain their standard of living in the families. The effect of family configuration usually works through three mechanisms: the family type (e.g., single-parent household or two-parent household), the gender of the household head, and the size of a family.

The single-household variable increases the income inequality by adding to low-income status. In this sense, the changing ratio of family type and the gender of the household head often pairs together to exacerbate the overall family inequality. The rationale is that single-households are often headed by a woman who is less-educated and at the same time carries several dependent children. It has been documented that the changes of family structure account for 15% to 40% of the growth in family inequality from 1976 to 2000. Single-mothers are the most disadvantaged group (Martin 2006). Western et al. has also argued that family is a "small risk-pooling organization" (2008: 908) that moderate family member's income insecurity and help reduce the family inequality for children. However, as women are more educated and start to enter the labor

force, the working women have a leveling effect on the rising family inequality. For example, from 1967 to 1994, wives' earnings grew relatively quicker in low-income couples than in higher-income families. This change helped ameliorate the impoverished status of the families who were at the lower end of income distribution (Cancian and Reed 1999). In addition, family size serves as an implicit element that augment family income inequality. Generally, family provides a mechanism of pooling resources more efficiently as the new, shared living arrangement is less costly. However, when family size gets too large, the economic well-being for each family member also goes down, especially when the family only has insufficient income.

Unlike whites who have a lower representation of two-parent households, Asian American families tend to live in nuclear/traditional household with a male household head. For Asian Americans, even if the family is headed by a single-mother, they are less likely to live below poverty as they are generally better-educated than white women. In addition, as Confucian culture puts great emphasis on filial piety and the maintenance of family heritage, Asian Americans also tend to live in extended families with multiple breadwinners (Sakamoto et al. 2009). The effect of this shared living arrangement, while less prominent among the high-income families, could prevents poor Asian American families from extreme poverty.

Success and Struggles in Ethnic Economies

As already pointed out earlier, Asian immigrants' community is more economically divided than any other racial group; this has been linked to the success and struggles in ethnic economies. Due to a lack of English ability, many college-educated Asian immigrants were employed as wage laborers only in low-status, low-paying occupations such as taxi drivers, gas station attendants, or cleaners. By contrast, Asian immigrants find alternative ways, such as self-employment, to achieve economic mobility (Min 2006a; Lee 2000). Small-business shops, family-operated restaurants, mom-and-pop grocery stores or small garment workshops also

provide lucrative occupations where not only language barriers are less consequential but racial discrimination is less severe than in other occupations.

Korean immigrants, for example, have the highest rate of self-employment in the United States. By initially filling niches in lower-income black neighborhood where the high crime rate discouraged white people from investing, Korean-owned greengrocery stores, nail salons, and fish stores are now ubiquitous in today's cities (Lee 2000). South Asians, specifically Indians, are a presence in the motel industry; South Asian niches have also emerged in the business of subway newsstands, retail discount stores, and auto shops (Kibria 2006). Chinese Americans are normally representative in food services; in 2000, only 3% of the white population was involved in food services, about 10% of Chinese immigrants were involved in food industries (Wong 2006). Filipino Americans are least likely to be self-employed because the Americanized education system in the Philippines and the familiarity with American culture enable Filipino immigrants to enter directly into formal employment (III 2006). By contrast, for the newest immigrant groups (i.e., the Hmong, Cambodian, Lao, and Vietnamese), the lack of economic capital as well as their larger number of dependent children constrain the prospect of individual entrepreneurship (Rumbaut 2000; Rumbaut and Weeks 1986). Self-employment rates, however, tend to decline substantially among native-born generations despite the huge success gained by the older generation. For example, self-employment is 27% among foreign-born Korean men but only 8% for American-born Korean men; similarly, among foreign-born Asian Indians, self-employment is 12%, but it is only 6% among American-born Asian Indians (Sakamoto and Xie 2006). This indicates that Asian Americans, at least in general, do not regard self-employment as a long-term strategy for intergenerational mobility.

These thriving ethnic entrepreneurships are complicated by inner class division and labor exploitation (Light and Wong 1975; Ong 1984; Zhou and Nordquist 2000; Zhou 2004).

Chinatown, for example, was viewed as a place where business owners achieved economic mobility by exploiting their co-ethnic employees. This practice of exploitation has multiple

examples. For instance, under family reunification preference, many Chinese females who were less-educated and could not speak English were able to immigrate to America, which provided a large pool of low-wage and industrious female laborers to the remaining garment industry (Zhou and Nordquist 2000). Long working hours, meager compensation, a lack of legal protection, as well as insufficient recreational activities characterize the working conditions of the Chinese immigrants in the garment industry (Light and Wong 1975). In addition, Ong (1984) points out that Chinese laborers, especially for those who are involved in the restaurant, garment, or construction industries, have a much higher chance of being laid off due to cyclical and seasonal fluctuations. Thus, while there is a variability along ethnic lines in achieving economic mobility through all kinds of ethnic entrepreneurships, the class division within ethnic groups is also evident, contributing to the higher within-group income inequality of Asian American families.

HYPOTHESES

According to the literature review, I have summarized the following hypotheses to imply the theoretical assumptions. In order to fully examine the hypotheses, I apply a method of conditional quantile regression in addition to the ordinary least squares (OLS) regression:

Hypothesis 1: Asian Americans have a higher within-group inequality than whites in family equivalized income.

Hypothesis 2: The compositional differences in human capital (including degree attainments, filed of study, and English) between whites and Asian American families can at least partially account for the difference in their within-group inequality. This is because Asian Americans are on average more educated than whites, and the within-group inequality among the better-educated is higher than that among the less-educated.

Hypothesis 3: The diversity of Asian American immigration status will be associated with their higher within-group inequality. This paper expects that the within-group inequality will be higher among immigrants than among the native-born; the within-group inequality will be the

highest among the most recent Asian immigrants. Nativity and immigration status will explain a substantial portion of the high within-group inequality among Asian American families.

Hypothesis 4: Asian American family structure may have a counteracting effect on the within-group inequality among Asian American families as they are more likely to live in traditional (nuclear or multigenerational) families. Because the traditional Asian American family structure benefits the low-income families more than the high-income families, the fact that Asian Americans live in nuclear/multigenerational families will protect them from extreme poverty. Thus, net of the family structure, the within-group inequality among Asian American families will be even higher than that measured without controlling for family structure.

ANALYTICAL STRATEGY

Data

To test the hypotheses, I use the IPUMS-American Community Survey (ACS) 2012-2017 six-year combined data (Flood et al. 2017), which includes information on geographic locations, demographics, household income, education, race and ethnicity, and family size. ACS defines a family as a household of one or more persons who are related to the household head by birth, marriage, or adoption. ACS provides information on field of study if the person holds a bachelor's degree, which is thought to be an essential pre-market characteristic for Asian American superiority in their earnings. I restrict the sample to the household heads who are Asian Americans and native-born non-Hispanic whites between the age of 25 to 64 who have positive earnings, are currently in the labor force, and are not enrolled in schools. However, since the sample size of whites was too large for quantile regression, I resampled 10 percent of the non-Hispanic white sample while keeping the full Asian American sample.

Dependent Variable

The dependent variable of this study is the *log of family equivalized income*, which is measured by total family income divided by the square root of family size. Family equivalized income is thereby considered as a family's standard of living and has been applied by many studies focusing on children's economic well-being (Western, Bloome, and Percheski 2008); assortative mating and family inequality (Breen and Salazar 2011), and the changing economic return to women from the marriage market and labor market (Kim and Sakamoto 2017). I chose family equivalized income for two reasons: the measurement accurately estimates the quality of living standard pooled down to every family member; and this measurement is also consistent with Pew Research Center. I use log transformation because the distribution of earning often shows rightward skewness.

Main Independent Variables

Race and Ethnicity. ACS includes 20 different ethnic group under the umbrella category of Asian Americans: Chinese, Taiwanese, Japanese, Filipino, Asian Indian, Korean, Vietnamese, Bhutanese, Mongolian, Nepalese, Cambodian, Hmong, Laotian, Thai, Bangladeshi, Burmese, Indonesian, Malaysian, Pakistani, and Sri Lankan. Mix-race Asian Americans are categorized as "other Asians" in this research. In addition, native-born non-Hispanic whites are the reference group to Asian Americans.

Explanatory Variables

In this study, *education* is measured by the educational attainments of the householder. This variable is divided into five categories according to the answers of the respondents including: less than high school (LTHS), high school graduates (HSG), some college (SC), bachelor's degree (BA), and graduate degree (GR). In addition, ACS identifies 38 major fields in

which the person received a bachelor's degree, we thus include a series of dummy variables to indicate the *fields of study* of the household heads who have a bachelor's degree. The people who did not obtain a bachelor's degree and without an identified major are the reference group.

English could be a human capital variable or a proxy of one's immigration status. In this research, English is coded as variable from 1 (do not speak English) to 5 (speak only English) and it is controlled for both native-born and foreign-born Asian Americans.

Four dummy variables are included to indicate their *immigration status*: first generation immigrants who immigrated after they were 18 years old; 1.25-generation who immigrated between the year of 12 and 18; 1.5 generation-who immigrated before they turned into 12 years old; and second-generation who were born in the United States. In some models, Asian immigrants are regarded as one group in order to compared how they are different from the second-generation Asian Americans.

Eight dummy variables are included to indicate the nine *regions* in the Census Bureau (i.e., New England, Middle Atlantic, Northeast, Northwest, South Atlantic, Southeast, Southwest, Mountain, and Pacific), setting the Pacific region as the reference group. 1 dummy variable is included to suggest residence in *metropolitan* areas, with other locations being the reference. Age as well as age squared are included to fix the non-linear pattern of earnings distribution over the life course. *Gender* of the head of a household is a dummy variable with male being the reference. As the growth of single-parent families contributes to the increasing family inequality, family type should be controlled accordingly (Breen and Salazar 2013). *Family type* is indicated by the marital status of the household head and is measured by two dummy variables: one is currently separated, divorced, or widowed, the other is never married, and with the currently married household being the reference group. *Family size*, the number of *multi-generations* in a household, and *the number of children* are three separate continuous variables to account for the impact of family structure. *Class of works* is measured with the following dummy variables: self-employed but unincorporated works, self-employed but incorporated workers, wage workers in

the private sector, wage workers in the non-profit sector, workers in the federal government, workers in the state government, and workers in the local government. In addition, I include 24 dummy variables for *occupations* and 18 dummy variables for *industries*.

STATISTICAL MODLES

OLS Regression

Residual variance provides a preliminary estimation of income inequality since it measures the dispersion of the dependent variable net of the independent variables. Using OLS, this paper will examine how much variance of log income can be accounted for by a set of covariates and whether the residual variance could converge between Asian Americans and whites. I thus apply the following OLS models (Equation 1 and Equation 2) to compute the change of the residual variance (σ_e^2) (Equation 3) by controlling for different independent variables:

$$y_i = \alpha_i + e_i \tag{1}$$

$$y_j = \alpha'_j + \sum \beta'_j Z_j + e'_j \tag{2}$$

$$\sigma_e^2 = s_e^2 = \frac{\sum e^2}{n - k}$$
 (3)

In Equation 1, y_j refers to the log-transformed family equivalized income of group j (i.e., non-Hispanic whites, native-born Asian Americans, and foreign-born Asian Americans); α_j refers to the constant (in Equation 1, it is the average family equivalized income of group j); e_j is the residual of y_j before introducing any independent variable. Z_j in Equation 2 refers to a series of independent variables (such as education, major, English, etc.) with the corresponding coefficients included in β'_j . By comparing e_j and e'_j , we can compute the proportional change of the residual by the introduction of new independent variables. In Equation 3, population variance (σ_e^2) is estimated by measuring the sample variance (s_e^2) ; k is the number of parameters and n is the sample size. The set of independent variables are expected to account for a certain amount of

income variance and the remaining variance indicates the unaccountable part which is attributable to some unobservable mechanisms. However, the differences in demographic compositions as well as in the distribution of human capital in the two racial groups may have contributed to their income disparity in distinctive patterns. Therefore, the initial goal of doing this OLS regression is to investigate the discrepancies of the same independent variables in explaining the income variance in separate groups.

Quantile Regression

To test the hypotheses and to understand the effects associated with being Asian Americans across the entire income distribution, the following quantile regression models are applied:

$$Q_{y}^{\tau}(\tau|A,Z) = \alpha^{\tau}A + \sum \beta^{\tau}Z$$

where $Q_y^{\tau}(\tau|A,Z)$ refers to the log equivalized income (y) at the quantile point of τ (.1, .3, .5, .7, .9) given A (Asian Americans) and Z (a vector of other independent variables); α^{τ} is the effect of being Asian American at different quantile points compared to whites at the same quantile locations after controlling for covariates.

Unlike standard linear regression techniques (such as OLS) which summarize an average relationship between the variables based on the conditional mean of the outcome variable *Y*, quantile regression is designated to display various distribution lines based on the conditional quantiles of *Y*. In other words, while the conventional regression model captures the central trend of independent variables in explaining the average outcomes, quantile regression estimates the expected outcomes at particular quantile points based on the given value of predictors. Thus, quantile regression is desired for its capacity to provide various regression lines that represent the majority cases, as well as the outliers, a task that could not be accomplished when focusing exclusively on the conditional mean in OLS. The investigations of both central tendency as well

as statistical dispersion are important aspects of our sociological inquiry of social inequality as the distinctive distributional patterns in the poor (lower tail) and the rich (upper tail) help us obtain a more comprehensive analysis of the complexities of income inequality.

Conventional regression model aims at minimizing the sum of total error based on the distance between the predicted values and the observed values. While OLS estimation achieves this goal by minimizing the squared distance based on the conditional mean of the outcome variable (i.e., $\sum_{i=1}^{n} e_i^2$), quantile regression minimizes the absolute distance based on the conditional quantiles in the distribution of Y (i.e., $\sum_{i=1}^{n} |e_i|$) (Hao and Naiman 2007). In addition, depending on whether Y_i is to the left or to the right of Y_q ($q \in [0,1]$), Hao and Naiman (2007) proposed a weighted distance measurement as $(1-q)\sum_{y_i < y_q} |e_i| + q\sum_{y_i > y_q} |e_i|$ to avoid overprediction and underprediction problems.

However, to fully answer the research question regarding the higher within-group inequality of Asian American, a further investigation is needed on the differences of within-group inequality between Asian Americans and whites. This research accomplishes this goal by comparing the net effect of being Asian American at the higher quantiles and the lower quantiles of income distribution:

$$\theta = \alpha^{\tau_h} - \alpha^{\tau_l}$$

where α^{τ_h} indicates the net effect of being Asian American at the higher quantile points and α^{τ_l} refers to same effect at the lower quantile points. θ , therefore, denotes the within-group inequality of Asian American relative to whites by comparing the net racial gap at the two ends of income distribution. Figure 1 shows the three predicted patterns of Asian American within-group inequality after controlling for the independent variables where the x-axis indicates the quantiles of family equivalized income and y-axis represents the net racial gap at various quantiles between Asian Americans and whites.

[Figure 1 here]

Figure 1(a) signifies the case that the net effect of being Asian American is homogeneous across income quantiles. The line is parallel with the x-axis and θ is expected to be zero as there is no such difference across quantiles. In addition, two alternative situations might arise as the net effect of being Asian American differs at various quantiles. When $\alpha^{\tau_h} < \alpha^{\tau_l}$ and $\theta < 0$, the expected pattern of Asian Americans with less inequality is illustrated in Figure 1(b). On the contrary, when the net effect of being Asian Americans is larger at the higher quantiles than those who are at the lower quantiles, θ is expected to be positive, which is illustrated in Figure 1(c) where Asian Americans demonstrate higher within-group heterogeneity compared to whites.

DESCRIPTIVE STATISTICS

[Table 1 here]

Table 1 shows the descriptive statistics. Asian Americans, on average, have a higher family standard of living than whites regardless of nativity; family equivalized income is \$63,425 for non-Hispanic whites, \$84,524 for native-born Asian Americans, and \$68,568 for Asian immigrants. However, Asian Americans also show higher dispersion in their family standard of living: the variance of log transformed family equivalized income is 0.710 for non-Hispanic whites, while it is 0.767 for native-born Asian Americans and 0.783 for Asian immigrants respectively. In addition, the income inequality is generally higher among the families whose heads of household are less educated (i.e., those whose level of education does not exceed high school level), which indicates that income has more dispersion among low-skilled workers. In particular, families headed by a high school dropout demonstrate the highest level of income inequality (i.e., variance of log family equivalized income is 1.183), this is consistent with prior research in which less educated Asian Americans are severely disadvantaged at the lower end of income distribution (Kim and Sakamoto 2014).

Native-born Asian families overall show an intermediate level of income inequality that is remarkably higher than whites but slightly lower than Asian immigrants. They have a rather

lopsided educational structure where the native-born Asian Americans are overrepresented in higher education: 40% of them have a bachelor's degree and 31.6% have a graduate degree, while less than 10% of them are less educated. Among the college graduates, compared to whites, a relatively higher percentage of Asian college graduates studied in science related areas such as computer science and the natural sciences; a decent proportion of them chose to study health and business, while a smaller piece of Asian Americans majored in Art, the Humanities, and Linguistics. In terms of English proficiency, over 95% of native-born Asian Americans speak only English or are highly proficient in English compared to a small group whose English fluency is less established. Table 1 also shows that they have an exceptionally high concentration in Pacific regions and metropolitan areas than whites (53.8% and 95.6 versus 11.3% and 46.7%). In addition, second-generation Asian American families tend to be younger, in a smaller size and less likely to have a female head of household. Moreover, since second-generation Asian Americans tend to be younger, they are more likely to be single and never married. A smaller percentage of married-couple families and even a smaller proportion of being divorced, separated, or widowed is also present.

For Asian immigrants, their economic bifurcation is first inferred from their polarized educational structure: 8.7 percent of Asian immigrants and 3.6 percent of non-Hispanic whites did not finish high school, while 63.4% Asian immigrants and 41.7% white Americans obtain graduate degrees. Among the college graduates, 48.3% of the Asian immigrants chose to study STEMs fields, contrary to 15.9% of the white college graduates majored at these areas. While a similar proportion of Asian immigrants chose to study health, business, law, and the natural sciences compared to whites, a remarkably smaller percentage of them were specialized in art, humanity, and linguistics. The English proficiency of Asian immigrants is as stratified as their educational structure: 1.8% of them could not speak English; 11.3% of them speak English not well; 23.9% speak good English; 50.6% measure themselves speak English very well; and 12.6% only speak English. English language ability is thought to be associated with their immigration

status as well as their human capital. In this research, English proficiency is operationalized as one of the indicators of Asian American human capital as it is closely related to their educational background. In addition, Asian immigrants tend to concentrate in Pacific regions and metropolitan areas where ethnic enclaves are striving, as well as increased sites for labor exploitation of the newest immigrant groups. However, there are also some observed factors that might equalize the variability of family standard of living among Asian immigrants' families.

Particularly, Asian immigrants show less diversity in their family configuration: even though they have a larger family size, their heads of households tend to be male, older, and married, all criteria that allow family members to live in a more secure family arrangement. In addition, Asian immigrants show a similar self-employment rate compared with whites. As noted earlier, while some people become successful by operating their own businesses, the most recent immigrants who are less-educated and do not speak English also endure long working hours, meager compensation, and a lack of legal protection in ethnic economies. In this scenario, the class conflict in the ethnic economies serves as an inner force to reinforce the income inequality in Asian American communities.

OLS REGRESSION

OLS Regression by Race/Ethnicity

[Table 2 here]

Table 2 shows the changes of residual variance in different OLS models. Model 0 indicates the initial residual variance between native-born non-Hispanic whites and Asian Americans without accounting for any factors. The results show that the income distribution in Asian American families is more stratified than whites, as the residual variance is .787 for Asian Americans and .709 for whites.

Model 1 controls for demographic characteristics including geographic locations and age.

These variables explain 6.2% residual variance of whites but do not have any explanatory power

on Asian Americans income inequality. By further controlling for human capital variables, the residual variance in Model 2 is reduced substantially by 20.5% for whites and 26.9% for Asian Americans. Since demographic compositions do not explain Asian American income disparity (as it is indicated in Model 1), the proportion change of residual variance in Model 2 for Asian Americans is fully attributable to the effect of human capital. This result is consistent with prior research that education and other standard human capital measurements explain over a third of the variance of individual wages (Lemieux 2006). As a consequence, Asian Americans only have a .011 higher residual variance than whites, which is a remarkable decrease from .078 in Model 0.

Model 3 adds immigration status to Model 1. Controlling for immigration status does not lessen the residual variance of whites as this study has restricted the whites' sample to the nativeborn beforehand. However, it reduces Asian American residual variance by .8%. In Model 4, the residual variance is decreased by 18.3% for whites and 7.9% for Asian Americans after controlling for demographic as well as family compositional characteristics. This indicates that family structure in accounting for income inequality is more prominent among whites than among Asian Americans. Model 5 controls for all covariates and they explain 30.0% income disparity of whites and 30.7% income disparity of Asian Americans. Even though the remaining income variance for Asian Americans (.545) is still slightly higher than whites (.496), the high withingroup inequality of Asian Americans has been alleviated sufficiently as their residual variance is only .049 higher than whites in Model 5.

Based on Model 5, Model 6 controls for the class of workers, occupational attainments, and industrial sectors, and the residual variance is further reduced by a 050 for whites and 059 for Asian Americans. This means, the occupational structure as a source of income inequality is more influential among Asian Americans. However, since the process of searching for an employment also contains certain institutional barriers for racial minorities, Model 6 has a potential of underestimating the actual income variations of Asian Americans. As controlling for occupations and industrial sectors might generate a biased result for the net effect of being Asian

Americans, this paper will not focus on occupation-related variables in the following quantile regressions.

OLS Regression by Race/Ethnicity, Nativity, and Generational Status

[Table 3 here]

Table 3 shows the residual variance for family equivalized income by nativity and immigration status. The regression results for whites in Table 3 are identical with Table 2 because the white sample is restricted to the native-born beforehand. However, the residual variance for Asian Americans varies by their native status and further by their immigration status. Overall, Asian immigrants are economically most divided, native-born Asian Americans have a substantial income variability, and whites are relatively less scattered in terms of the family equivalized income. As human capital variables have a profound effect accounting for income disparity, the influence is the most consequential among Asian immigrants. After controlling for human capital variables in Model 2, the residual variance of Asian immigrants is reduced to a similar extent with whites (.567 versus .564), with native-born Asian Americans having the highest income variation (.609). On the contrary, while family configuration has a noticeable contribution to the income inequality of whites and native-born Asian Americans, its effect on Asian immigrants is limited. According to the descriptive statistics, native-Asian Americans and whites tend to have a higher proportion of split households or single households. Additionally, there is a higher representation of female household heads; these types of family compositions contribute to their family income inequality.

Among the Asian immigrants, the initial residual variance is the lowest among the 1.25-generation (.729) and the highest among the first generation (.790), with 1.5-generation Asian Americans displaying a median income variation (.768). Regardless of immigration status, the income disparity of Asian Americans is tightly associated with their human capital and loosely tied to their family compositions. For the first-generation Asian Americans, 28.4% and 6.2% of

their income variance are traceable to their human capital and family structure respectively. As for 1.5-generation Asian Americans, however, family structure explains approximately 10% of their overall income inequality and human capital accounts for nearly 20%. In the last, both human capital and family composition have an intermediate effect in reducing the income inequality of the 1.25-generation Asian Americans that is between the other two generations.

OUANTILE REGRESSION

Quantile Regression by Race/Ethnicity

[Table 4 here]

[Figure 2 here]

Table 4 shows the quantile regression results for the log family equivalized income gap comparing Asian Americans to whites at various quantile points when controlling for different covariates. The column on the right shows the results of .9 to .1 interquantile regression, which is a technique to estimate if the within-group inequality (measured by the gap between the ninetieth percentile and the tenth percentile) is significantly different between the two racial groups. Figure 2 visualizes the results presented in Table 4.

According to the interquantile regression results, the p90/p10 gap of Asian Americans is significantly wider than whites in any statistical models, which resembles Figure 1(c) where Asian Americans have a higher within-group inequality. However, Asian Americans' higher within-group inequality could be accounted for by different set of covariates. In Model 0, without controlling for any covariates, Asian American families experience a 24.4% (=e^{.218}-1) higher income inequality than white families. Asian Americans who are at the first decile have .073 fewer log dollars than whites, and this disadvantage is lessened gradually to the extent that Asian Americans have .148 more log dollars than whites at the ninth decile. Model 1 controls for demographic variables, and the regression line, as illustrated in Figure 2, goes down across quantiles, particularly at the lower quantiles. This indicates that when Asian American families in

general benefit from their demographic characteristics of living in metropolitan and pacific areas, the low-income families benefit relatively more than their high-income counterparts. One possible explanation is that the concentrations in metropolitan areas and pacific regions ease the difficulties to find employment for the low-skilled Asian Americans since these places have a higher density of ethnic enclaves. Net of demographic covariates, Asian Americans have a 31.4% greater income dispersion between the tenth percentile and the ninth percentile. This suggests that the demographic compositions of Asian American families are favorable in equalizing their income variability.

Based on Model 1, Model 2 further controls for human capital variables. The difference in the p90/p10 income gap between two races is contracted to 5.1%. Figure 2 illustrates that, net of demographic and human capital covariates, no clear difference in the within-group inequality between Asian Americans and whites is evident. The regression lines of Model 1 and Model 2 intersect at around the sixth decile point and the Asian American coefficients increase before the sixth decile but decrease at higher deciles. This means that Asian Americans whose income is lower than the sixtieth percentile threshold are disadvantaged by their human capitals and the Asian Americans on the opposite side are advantaged. As human capital variables include one's educational degree, undergraduate major, as well as English fluency, the joint effect appears to harm the low-income Asian Americans but benefit the high-income Asian Americans. The reasons for the discrepancy are two-fold: on the one hand, highly-skilled Asian Americans obtain prestigious occupations based on their educational credentials, and/or based on the areas they specialize in, while Asian Americans equipped with less skills are mired in the low-wage market and gain only a meager income. On the other hand, English language ability as a key human capital for immigrants is unevenly distributed among Asian Americans. As an adequate English language ability is more or less established for the highly-skilled workers, a deficiency further impedes the labor market performances of low-skilled workers (Kossoudji 1988).

Model 3 controls for demographic characteristics and immigration status. Net of these covariates, Asian American families have a 7.0% higher income disparity than whites. The diversity of their immigration status as well as their demographic dispersions thus account for over two thirds of the higher within-group inequality. Compared with Model 1, the regression line of Model 3 rises up remarkably across the entire income distribution, and particularly at the lower quantiles. This indicates that while Asian Americans as an immigrant-dominated racial group experience considerable disadvantages associated with their immigration status; this disadvantage is more pronounced among the low-income Asian American families. In this scenario, the higher within-group inequality among Asian American families ties to the inconsistency of the immigration-associated disadvantages.

In Model 4, the difference in the within-group inequality is 44.5% significantly larger for Asian Americans after controlling for demographic characteristics and family composition variables. This result shows that the compositional differences between the two racial groups play a vital role in reducing the overall income inequality of Asian American families. Compared to whites, the higher income inequality among Asian American families is less likely to be associated with their family configuration, as they have a higher proportion of two-parent households, as well as a more privileged educational profile among the female household heads. Compared with Model 1, the coefficients decrease remarkably at the lower quantiles but increase negligibly at the higher quantiles. This suggests that Asian American family structure functions as an important social institution which prevents the low-income families from extreme poverty, thus mitigating the overall income inequality.

Model 5 is the final model that controls for all covariates. The distance between the ninetieth percentile to the tenth percentile is 6.2% wider among Asian Americans than among whites—a difference that is no longer evident between the two racial groups. Compared with Model 0, the higher income inequality is reduced substantially by three quarters. As demographic and family composition have a counteracting effect on Asian American income variability, the

explanatory power of human capital and immigration status actually exceeds 75%. When only controlling for human capital and immigration status (results not presented in the paper), the income distribution between the two races becomes congruent, which signifies the fact that Asian American families' higher income inequality is fully attributable to the characteristics of their human capital and their diversity of immigration status.

Quantile Regression by Race/Ethnicity and Nativity

[Table 5 here]

[Figure 3 here]

Table 5 shows the quantile regression results for native-born and foreign-born Asian American families. The graphs in Figure 3 illustrate the gap of family equivalized income at five decile points (i.e., .1, .3, .5, .7, .9) when adding different control variables. Indicated by the .9 to .1 interquantile regression results, native-born and foreign-born Asian American families both demonstrate a higher within-group inequality than whites, as the difference in the p90/p10 gaps is statically significant for Asian Americans. In addition, the role of human capital in accounting for Asian American higher income inequality and the counteracting effect of family composition are still evident when disaggregating Asian Americans by their nativity. These two groups, however, differ fundamentally in their magnitude of their within-group inequalities, as well as the net effect of Asian American status at various decile points.

According to Table 5, the net effect of native-born Asian American status is positive across the earning quantiles with moderate variations. On the contrary, Asian immigrants exemplify a noticeably higher income inequality where they are severely disadvantaged below the median but are somewhat advantaged above the median. In the initial model, foreign-born Asian Americans are disadvantaged by 12% at the tenth percentile and are advantaged by 11% at the ninetieth percentile. Net of demographic characteristics, human capital, and family composition, foreign-born Asian Americans have 10% less income at the first decile and 3% more at the ninth

decile in the final model. Correspondingly, their within-group inequality decreases from 30% higher to 13.8% higher than whites. This change indicates that the aforementioned variables could explain over half of the income variability of Asian immigrants' families. However, net of all covariates, the within-group inequality of native-born Asian families increases from initially 5.5% higher to 6.7% higher than whites. This slight increase shows that the counteracting effects of family composition as well demographic dispersion outweigh the bifurcating effect of human capital in contributing to the within-group inequality of the second-generation Asian American families.

Human capital is still the most influential factor that shapes the income inequality. However, the mechanisms through which human capital affects the within-group inequality and the magnitudes of its effect vary. Human capital gives rise to the higher within-group inequality of native-born Asian Americans as it benefits the highly-skilled Asians more than those with inadequate skills. However, for Asian immigrants, human capital as a combination of education attainments and English fluency acts as a disadvantage for the less-skilled Asian immigrants but an asset for the highly-skilled. Model 2 adds human capital variables to Model 1. The difference regarding the within-group inequality changes from 7.6% to 3.5% for native-born Asian Americans, and from 33.6% to 6.2% for foreign-born Asian Americans—differences that are negligible.

Based on Model 1, Model 3 further controls for the variables that indicate individual's family structure. As a result, the within-group inequality increases from 7.6% to 11.6% for native-born Asian Americans and increases from 33.6% to 48.5% for Asian immigrants. Family composition influences low-income families' well-being more acutely than the high-income families. Compared with Model 1, the relative advantage for native-born Asian Americans at the tenth percentile decreases from .189 to .162, and the relative disadvantage for foreign-born Asian Americans increases from -.228 to -.322. This indicates that as Asian American family

configuration levels their income inequality in providing some buffering mechanisms for the poor families, its effect is more prominent among the foreign-born.

Quantile Regression among Asian Immigrants

[Table 6 here]

[Figure 4 here]

Table 6 shows the quantile regression results for Asian immigrants disaggregated by their generational status. Among the three immigration troops, the first-generation Asian Americans have the highest within-group inequality (measure by the distance between the ninetieth percentile and the tenth percentile) that is 29.3% higher than whites, and they are also the most disadvantaged group in most statistical models. The 1.5-generation Asian Americans have an intermediate income dispersion that is 18.1% wider than that of whites, and they generally have some advantages over whites. 1.25-generation Asian Americans, however, have the lowest income inequality that is 15.3% higher than whites.

Figure 4 shows that after controlling for demographic and human capital variables (Model 2), no clear difference in within-group inequality is evident for all generations. In particular, for 1.25-generation Asian Americans, the gap between the ninetieth percentile and the tenth percentile is no longer significantly different from whites; this is in congruence with Figure 1(a) where the income inequality among Asian American families is the same with whites. However, the net effect of Asian American immigration status varies. First-generation Asian American families have 10% to 7% less equivalized income than whites from the lower income quantiles to the higher quantiles. On the contrary, 1.25-generation and 1.5-generation Asian American families are somewhat advantaged across the income distribution. The former group have 5% to 3% more earnings over whites while the latter are advantaged by 5% to 9% from lower-income families to higher-income families.

In addition, family configuration in attenuating the overall income inequality by moderating the impoverished situation of the low-income Asian families is the most consequential for the first-generation (from -.278 to -.388), less influential for the 1.25-generations (from -.147 to -.214), and the least illustrated among the 1.5-generation Asian Americans (from .031 to -.001). On the contrary, family structure act as a disadvantage for high-income Asian American families influences the 1.5-generation the most, with the first-generation being nearly unaffected.

DISCUSSION

Main Empirical Findings

Prior research focused on whether Asian Americans have achieved labor market parity with whites by examining the net effect of being Asian Americans in traditional OLS regression models (Kim and Sakamoto 2010; Kim and Sakamoto 2010; Zeng and Xie 2004). The debates around the net racial effect have generated the main critique on "model minority", which argues that Asian Americans' high socioeconomic standing is heavily supported by their educational overachieving rather than being free of institutional barriers (Hirschman and Wong 1984). However, as Asian Americans become the economically most divided racial group, their substantial within-group inequality has not been well assessed. In addition, While OLS regression as a conditional mean function is less capable of estimating the racial differentials in the entire income distribution, quantile regression enhances our understanding on within-group inequality by providing a more comprehensive view at various percentile points. Income outliers at the two ends of income distribution reveal important information about the within-group inequality, quantile regression is thus desirable for its capacity of comparing the differences of the rich and the poor between two races.

Instead of using OLS regression to investigate the net effect for Asian American racial status, this paper examines how much variance of log income can be accounted for by a set of covariates. The OLS regression results in Table 3 shows the change of residual variance after controlling for different independent variables. Except for industry and occupation, the role of human capital is the most influential factor in explaining within-group inequality. However, the proportional change initiated by the introduction of human capital variables is most evident among Asian immigrants, especially the most recent immigrants, and least influential among non-Hispanic whites. In addition, as a greater proportion of white families' income disparities is attributable to the demographic and family configuration, the higher within-group inequality among Asian Americans are relatively less likely to be associated with these covariates.

Table 4 shows the main quantile regression results when investigating the racial differentials at five decile points (i.e., .10, .30, .50, .70, .90) with different control variables. Human capital, a combination of educational degree, undergraduate major, and English fluency, is a source of disadvantages for the low-income Asian Americans, but also the main source of advantages for the high-income Asian Americans. The higher within-group inequality lies in the higher variations of human capital Asian Americans own. Initially Asian American families experience 24% higher income inequality (measured by the p90/p10 gap) than whites. However, after controlling for demographic and human capital covariates, the difference between two racial groups is diminished to only 5%. In addition, the variations in Asian American immigration status explain an equivalent part of the higher income inequality. Net of demographic characteristics and immigration status, Asian American families have a 7.0% higher income disparity than whites. The distributional differences in human capital between whites and Asian Americans, as well as the diversity of Asian American immigration status therefore functions as the main sources of within-group inequality for Asian American families.

On the contrary, Asian American family configuration helps smooth their economic unevenness. The more traditional family structure, as well as a higher proportion of well-educated

female household heads, serves as two important aspects that mitigate the impoverished situation for the low-income Asian American families. In the last, Asian American families tend to concentrate in metropolitan areas and the Pacific regions, which not only gives rise to their overall higher socioeconomic status, but also palliates the employment difficulties for the low-skilled Asian Americans as these places have a higher density of ethnic economies.

In addition, Table 5 shows the changes of income gap comparing Asian Americans with whites by dividing Asian Americans into the native-born and the foreign-born. The mechanisms that accentuate or attenuate their higher within-group inequality are consistent with these presented in Table 2, but the influence is more acutely felt among the Asian immigrants. In addition, for the second-generation Asian Americans, the magnitude of within-group inequality measured by the residual variance is higher than it is estimated by the interquantile regression results. Thus, their higher income inequality might stem from some mechanisms that this paper has not sufficiently taken into consideration (Kim and Sakamoto 2014).

Variations in Immigration Status

This paper further disaggregates Asian immigrants into 1.5-genertion who immigrated before 12-year-old, 1.25-genertion who immigrated between 12- and 18-year old, and the first-generation who immigrated after 18-year old. Among the three generational groups, the first-generation Asian Americans have the highest family inequality; the 1.5-generation have an intermediate income dispersion; and the 1.25-generation are relatively less unequal. In addition, first-generation Asian Americans suffer consistent disadvantages while the other two groups are somewhat advantaged. Net of all covariates, the first-generation Asian American families have 18% less income than white families at the first decile, 9% less income at the fifth decile, and 5% less income at the ninth decile. As the results in the traditional OLS regression are closer to the median regression, utilizing OLS regression to estimate the net racial effects for Asian Americans

thus underestimates the labor market difficulties faced by the low-income first-generation families.

CONCLUSION

Asian Americans have long been portrayed as a "model minority" for their relatively high socioeconomic standings in contemporary America. However, this characterization oversimplifies the economic circumstances of Asian Americans as they also show the highest within-group inequality among all racial and ethnic groups. As Asian Americans become the economically most divided racial group, their substantial within-group inequality has not yet been well studied. Focusing on this issue, this thesis utilizes both ordinary least square (OLS) regression and conditional quantile regression to uncover the difference in within-group inequalities between non-Hispanic white families and Asian American families. OLS regression results show that the residual variance of Asian American family equivalized income is indeed higher than whites, but the larger dispersion could be accounted for by human capital variables (educational attainments, undergraduate major, and English fluency). When it comes to quantile regression, Asian American families experience a 24% higher income inequality (as measured by the p90/p10 gap) than whites. However, it is reduced to as low as 6.2% after controlling for demographic characteristics, human capital variables, immigration status, and family composition. Thus, the covariates explain nearly 75% of Asian American higher income inequality. On the one hand, the distributional differences in human capital between whites and Asian Americans, as well as the diversity of Asian American immigration status are the main sources of the higher within-group inequality. On the other hand, Asian American demographic characteristics and family structure help reduce their overall income inequality by alleviating the economic struggles of the lowincome families. In the end, this thesis compares how the within-group inequality differs by Asian American immigration status. Asian immigrants, especially the most recent immigrants, are more likely to have a higher within-group inequality and are more acutely influenced by the factors that account for within-group inequality.

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Table 1: Descriptive Statistics

	Whites	Native-born Asians	Foreign-born Asians
Number of Households	257,410	31,720	164,513
Family Equivalized Income (Dollars)	63,425	84,524	68,568
Variance of Log Family Equivalized Income	.710	.767	.783
Highest Level of Education Completed (%)			
LTHS	3.6	1.6	8.7
HSG	22.4	6.8	11.9
SC	32.3	20.0	15.9
BA	25.1	40.0	31.4
GRAD	16.6	31.6	32.0
Variance of Log Family Equivalized Income at Different	Educational	Level	
LTHS	.891	1.183	.680
HSG	.654	.704	.616
SC	.610	.627	.594
BA	.566	.603	.596
GRAD	.556	.676	.600
Undergraduate Majors among College Graduates (%)			
Computer, Math, Engineering, Tech	15.9	24.2	48.3
Health	7.5	6.6	8.5
Business, Law	24.8	21.5	17.8
Natural Sciences	7.5	12.7	6.9
Art, Humanity, Linguistics	44.5	35.1	18.5
English Proficiency (%)			
Do Not Speak English	.0	.1	1.8
Speak Not Well	.0	1.0	11.3
Speak Well	.2	3.1	23.9
Speak Very Well	2.1	26.2	50.6
Only Speak English	97.7	69.6	12.6
Pacific Regions	11.3	53.8	38.2
Metropolitan Residence	69.1	95.6	96.4
Mean Age	46.7	40.6	49.2
Marriage (%)			
Married	56.0	48.5	69.2
Divorced, Separated, Widowed	24.3	12.1	16.4
Never-married Single	19.7	39.3	13.4
Female-headed (%)	44.5	42.5	14.4
Female Head with College Education (%)	43.3	73.3	59.5
Family Size	2.6	2.5	3.2
Multigeneration Households	1.5	1.5	1.8
Number of Children in a household	.8	.7	1.2
Self-employment (%)	11.7	8.5	11.4

Table 2: OLS Regression and the Residual Variance for Family Equivalzied Income

By Race/Ethnicity

	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Demographic Variables ^a		0	0	0	0	0	0
Human Capital Variables ^b			0			0	0
Immigration Status				0		0	0
Family Compositional Variables ^c					0	0	0
Class of Workers, Occupation, and Industry							0
Native-born non-Hispanic Whites							
Residual Variance	.709	.665	.564	.665	.579	.496	.446
Proportion Change of Residual Variance		6.2%	20.5%	6.2%	18.3%	30.0%	37.1%
Asian Americans							
Residual Variance	.787	.787	.575	.781	.725	.545	.486
Proportion Change of Residual Variance		0.0%	26.9%	0.8%	7.9%	30.7%	38.2%
R^2	.000	.032	.237	.036	.134	.304	.355

Note: ^a. Demographic Variables include region of residence, metropolitan residence, age, and age squared. ^b. Human Capital Variables include education, undergraduate major, and English fluency. English fluency is also an indicator of their immigration status, but this research categorizes it as a human capital variable. ^c. Family Composition Variables include the gender of the household head, the family type, the size of a family, the multigenerational status, and the number of children in a family.

Table 3: OLS Regression and the Residual Variance for Family Equivalzied Income

By Race/Ethnicity, Nativity, and Immigration Status

	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5
Demographic Variables ^a		0	0	0	0	0
Human Capital Variables ^b			0		0	0
Family Compositional Variables ^c				0	0	0
Class of Workers, Occupation, and Industry						0
Native-born Non-Hispanic Whites						
Residual Variance	.709	.665	.564	.579	.497	.447
Proportion Change of Residual Variance		6.2%	20.5%	18.3%	29.9%	37.0%
Native-born Asian Americans						
Residual Variance	.767	.740	.609	.660	.561	.509
Proportion Change of Residual Variance		3.5%	20.6%	14.0%	26.9%	33.6%
Foreign-Born Asian Americans						
Residual Variance	.782	.782	.567	.725	.546	.485
Proportion Change of Residual Variance		0.0%	27.5%	7.3%	30.2%	38.0%
1.5-generation Asian Americans						
Residual Variance	.768	.745	.575	.659	.527	.467
Proportion Change of Residual Variance		3.0%	25.1%	14.2%	31.4%	39.2%
1.25-generation Asian Americans						
Residual Variance	.729	.717	.538	.659	.508	.457
Proportion Change of Residual Variance		1.6%	26.2%	9.6%	30.3%	37.3%
1st-generation Asian Americans						
Residual Variance	.790	.790	.566	.741	.550	.489
Proportion Change of Residual Variance		0.0%	28.4%	6.2%	30.4%	38.1%
\mathbb{R}^2		.032	.237	.134	.301	.353

Note: ^a. Demographic Variables include region of residence, metropolitan residence, age, and age squared. ^b. Human Capital Variables include education, undergraduate major, and English fluency. English fluency is also an indicator of their immigration status, but this research categorizes it as a human capital variable. ^c. Family Compositional Variables include the gender of the household head, the family type, the size of a family, the multigenerational status, and the number of children in a family.

Table 4: Quantile Regression Results for Log Family Equivalized Income Gap Comparing Asian Americans to Whites (Reference Group: Non-Hispanic White)

	Quantiles					
	0.1	0.3	0.5	0.7	0.9	Interquantile Difference
Model 0	073***	.028***	.102***	.140***	.148***	.218***
Model 1	176***	064***	.024***	.076***	.103***	.273***
Model 2	.003	.028***	.040***	.057***	.060***	.050***
Model 3	.199***	.223***	.236***	.246***	.297***	.068***
Model 4	256***	083***	.015***	.090***	.117***	.368***
Model 5	.070***	.099***	.107***	.127***	.141***	.060***

Note: Model specifications are consistent with Table 2. *p<.05 **p<.01 ***<.001

Table 5: Quantile Regression Results for Log Family Equivalized Income Gap Comparing
Asian Americans to Whites by Nativity (Reference Group: Non-Hispanic White)

Native-born Asian Americans					.90 vs .10 Interquantile	
	.1	.3	.5	.7	.9	Difference
Model 0	.210***	.276***	.269***	.283***	.312***	.054***
Model 1	.189***	.216***	.233***	.244***	.294***	.074***
Model 2	.077***	.094***	.106***	.118***	.127***	.034**
Model 3	.162***	.203***	.223***	.248***	.303***	.110***
Model 4	.073***	.102***	.111***	.133***	.148***	.064***
Foreign-born Asian Americans						.90 vs .10 Interquantile
	.1	.3	.5	.7	.9	Difference
Model 0	115***	005***	.063***	.113***	.117***	.236***
Model 1	228***	114***	013***	.046***	.070***	.290***
Model 2	053***	025***	014*	.002	.005	.060***
Model 3	322***	133***	028***	.058***	.081***	.396***
Model 4	094***	046***	012*	.013*	.025**	.129***

Note: Model specifications are consistent with Table 3.

^{*}p<.05 **p<.01 ***<.001

Table 6: Quantile Regression Results for Log Family Equivalized Income Gap Comparing

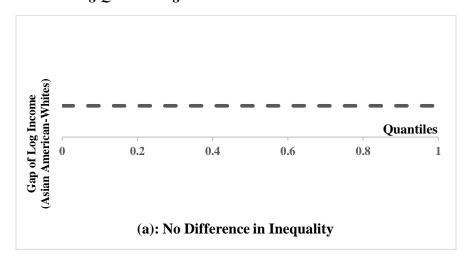
Asian Americans to Whites by Immigration Status (Reference Group: Non-Hispanic White)

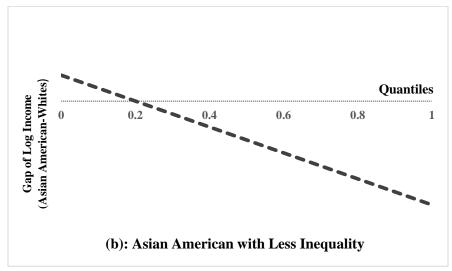
1.5-generation Asian Americans						.90 vs .10 Interquantile
	.1	.3	.5	.7	.9	Difference
Model 0	.060***	.118***	.155***	.195***	.234***	.166***
Model 1	.031	.069***	.110***	.145***	.201***	.162***
Model 2	.046**	.052***	.061***	.080***	.091***	.054***
Model 3	001	.080***	.132***	.176***	.273***	.240***
Model 4	.029	.068***	.079***	.094***	.115***	.097***
		1.25-generation	Asian Immigra	nts		.90 vs .10 Interquantile
	.1	.3	.5	.7	.9	Difference
Model 0	071***	018	.033***	.075***	.089***	.142***
Model 1	147***	105***	034***	.006	.035**	.160***
Model 2	.044*	.024*	.043***	.044***	.037**	016
Model 3	214***	103***	017	.054***	.084***	.292***
Model 4	008	.017	.040***	.056***	.062***	.070***
		1 st -generation	Asian American	18		.90 vs .10 Interquantile
	0.1	0.3	0.5	0.7	0.9	Difference
Model 0	154***	039***	.045***	.102***	.106***	.257***
Model 1	278***	153***	033***	.030***	.050***	.323***
Model 2	114***	099***	074***	062***	070***	.048***
Model 3	388***	186***	064***	.031***	.051***	.427***
Model 4	181***	135***	090***	059***	057***	.127***

Note: Model specifications are consistent with Table 3.

^{*}p<.05 **p<.01 ***<.001

Figure 1: Predicted Patterns of Asian American Within-Group Inequality Compared to
Whites Using Quantile Regression





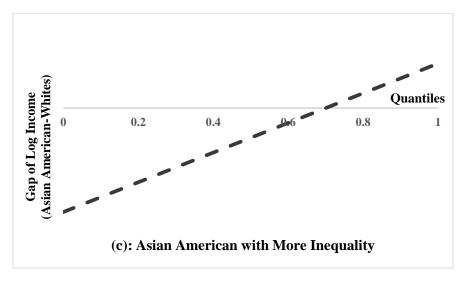
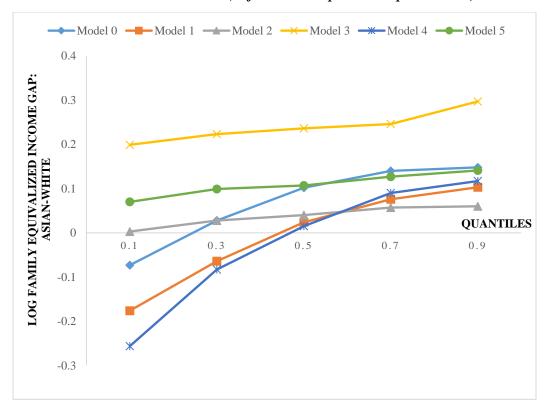
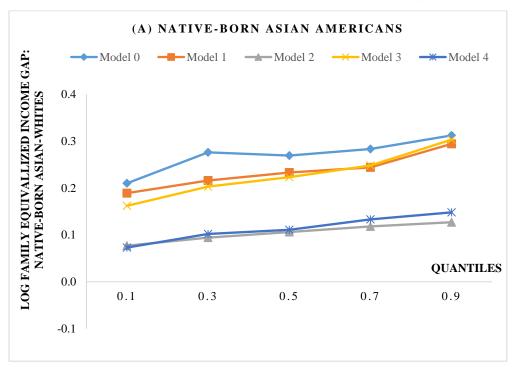


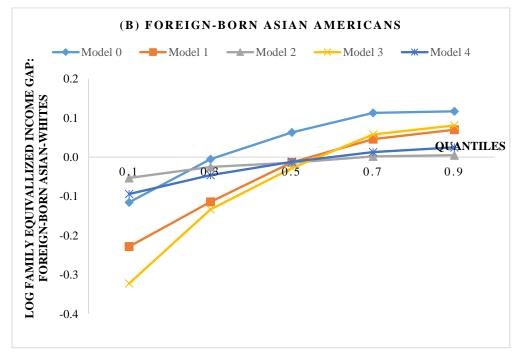
Figure 2: Quantile Regression Results for Log Family Equivalized Income Gap Comparing
Asian Americans to Whites (Reference Group: Non-Hispanic White)



Source: Author's own calculations using the 2012-2016 American Community Survey. *Note*: Model specifications are consistent with Table 3.

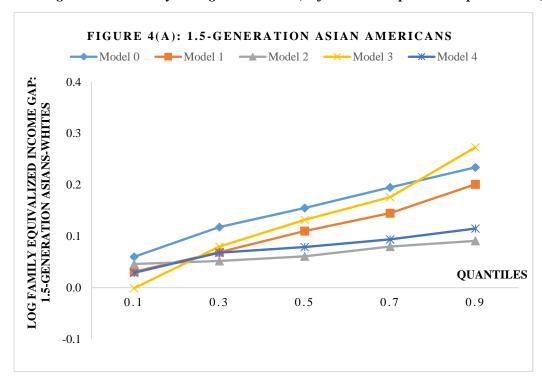
Figure 3: Quantile Regression Results for Log Family Equivalized Income Gap Comparing
Asian Americans to Whites by Nativity (Reference Group: Non-Hispanic White)

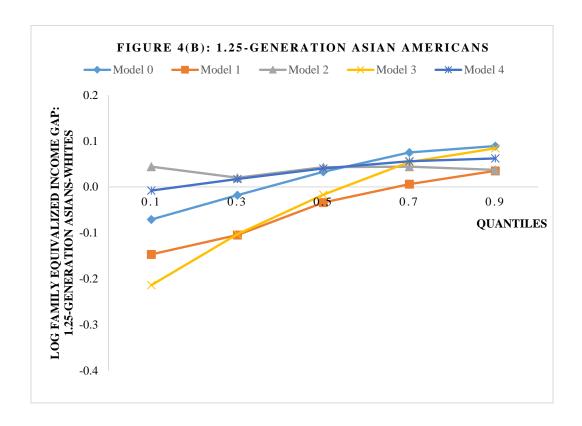


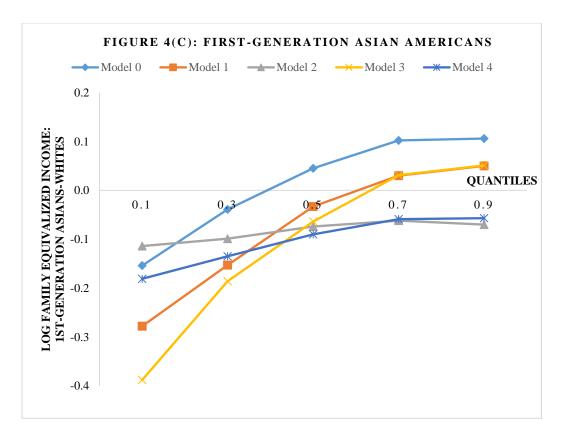


Source: Author's own calculations using the 2012-2016 American Community Survey. *Note*: Model specifications are consistent with Table 4.

Figure 4: Quantile Regression Results for Log Family Equivalized Income Gap Comparing Asian Immigrants to Whites by Immigration Status (Reference Group: Non-Hispanic White)







Source: Author's own calculations using the 2012-2016 American Community Survey. *Note*: Model specifications are consistent with Table 4.