The (Dis)Advantages of Foreign Education: The Differential Effects of Place of Education on Earnings by Ethnicity, Gender and Their Interaction

Background

The rise in immigration to the United States since the 1960s has fueled the study of immigrant economic assimilation into the labor market (e.g. Chiswick 1983, Wong 1982). It has been documented that immigrants suffer an initial wage penalty that decreases as they learn host-country skills. Through assimilation, immigrants are expected to at least attain parity if not surpass natives in earnings (e.g. Chiswick 1978). The materialization of the American Dream is often believed to be embodied by the Asian American population, which, by and large, has fared well in the American economy. This rosy perception of Asian American, however, eclipses the finding that Asian Americans need to overeducate to reach earnings parity with their white counterparts (Hirschman and Wong 1984) and neglects the economic heterogeneity within the Asian American population (Waters and Eschbach 1995).

A large body of literature has been devoted to solving this paradox of the overeducation of Asian Americans for income parity. Findings on whether the wage gap persists after controlling for background (e.g. nativity), human capital and social capital (e.g. Old Boy networks) have been mixed (e.g. Barringer et al 1990, Iceland 1999, Woo 2000) until a recent piece of scholarship solved this long standing puzzle by revisiting the human capital model (Zeng and Xie 2004). When place of education is disaggregated into foreign and domestic sources, such variables as race and nativity are no longer statistically significant, thus marking the importance of the location of one's education.

Theoretical Issues

The paradox has seemingly been solved, but there is too much variation within the Asian American population to assume homogeneity across major dimensions of stratification and that place of education matters the same way for all. The disparate immigration histories of immigrants of different origins require a careful study of the effects of place of education by ethnicity. To group Asian Americans into one high-achieving, financially successful group overlooks the distressed economic situation of certain ethnic groups. On one end of the spectrum are East and South Asian immigrants who, on the whole, conform to the "model minority" paradigm. But on the other are Southeast Asians – many of whom are refugees – who suffer from low educational attainment, lower labor force participation, and in turn, depressed earnings (Xie and Goyette 2004). If different ethnic groups are marked by different histories and different country-specific skills, it is reasonable to expect that the effects of place of education could vary for the ethnic groups.

Not only do Asian Americans differ by ethnicity, but there are also considerable gender differences. Barriers in the old country and opportunities in the new, coupled with the selection of workers into the American labor force also necessitate an examination of the effects of place of education by gender. Demographic trends demonstrate that Asian American women have made extraordinary progress in the labor market (Farley 1996). While studies have consistently shown that Asian women hold an advantaged position in the labor market, studies on the economic assimilation of Asian American women to their male counterparts have been lacking. Classical studies have focused on the economic standing of immigrant men vis-à-vis their white counterparts (e.g. Chiswick 1978, Borjas 1994), and in recent years, there has been a growing body of literature that explores the economic status of immigrant women vis-à-vis their white counterparts (e.g. Greenman and Xie 2008). While studies have examined the gender effect within for other races (e.g. Blau and Beller 1988), there has yet to be a systematic study on the gender differences within the Asian American population.

Since ethnicity and gender do not occur in isolation, this research also explores the intersectionality of ethnicity and gender (see Browne and Misra 2003). Meanings given to race vary by gender, and likewise, meanings of gender also vary by race. Moreover, the intersection of ethnicity and gender may have different implications for immigrants based on their place of education. To treat each dimension independently misrepresents the role of place of education on Asian American men and

women. Therefore, for this research, I specifically ask the question of how the effects of place of education on earnings vary by ethnicity, gender and the interaction of the two dimensions. I will achieve this by employing the conventional human capital approach and also the differences-in-differences strategy, which gives a more robust test of causality.

Data and Methods

I first examine the effects of place of education for Asian Americans from a conventional human capital approach using OLS regression. I use data from the 2000 Census Public Use Microsample 5% file. For this study, I restrict the sample to those who identified solely as Asian. The analytical sample consists of 39,022 foreign-born, not disabled, Asian American male and female workers between the ages of 25-64 who have up to 16 years of schooling, worked at least 35 hours per week and at least 45 weeks per year in 1999. Female workers in the sample are single, never-married women. These restrictions yield a sample of 34,746 males and 4,276 females.

The 2000 PUMS is an improvement over the 1990 PUMS because, unlike the 1990 dataset, immigrants' year of arrival to the United States is not in bracket form. While there is no direct measure of place of education, the variable year of arrival allows me to construct a variable to denote source of education with a few assumptions. If I assume that students graduate from high school at 18 and college at 22, using information on age, total years of schooling and year of entry to the US, I can predict the numbers of years of schooling the respondent obtained abroad and domestically. In line with previous research (e.g. Friedberg 2000, Zeng 2004), I differentiate between foreign and domestic sources of experience and set age at graduation to be 22. I also differentiate between the two sources of experience. With these specifications, the resulting regression equation in its simplest form is a modified Chiswick (1978) human capital function and is stated as follows:

$$y = \beta_o + \beta_1 ED_{Foreign} + \beta_2 ED_{US} + \beta_3 PreExp + \beta_4 PreExp^2 + \beta_4 PostExp + \beta_5 PostExp^2 + \varepsilon \quad (1).$$

To examine the differences between the different ethnicities and genders, I stratify my sample by ethnicity, by gender, and by both ethnicity and gender.

I then turn to the causal inference approach. The data I use are also from the 2000 PUMS, and the sample also consists of 25-64 year-old, able-bodied, full-time, foreign-born male and female Asian American workers. Again, female workers are restricted to those who are single and never-married. For this sample, I limit the data to those with high school (=12 years of schooling) or college (=16 years of schooling) degrees, yielding an analytical sample of 25,916 cases with 22,789 males and 3,127 females. Again, as in the classical framework, I stratify my sample by ethnicity, by gender, and by both ethnicity and gender to examine the differential effects of foreign education on earnings.

In the counterfactual approach, I seek to determine what the effect a given treatment has on the individual, or in this specific case, what the effect of foreign education has on the earnings of individuals. To do so, I need to imagine a world where the individual who receives treatment also does not receive treatment. In this imagined realm, I estimate the difference between an individual's potential outcome to treatment and the same individual's potential outcome in the absence of treatment (Rubin 1974). But an apparent problem arises in this causal model: an individual cannot concurrently experience both, hence the "what if" can never be observed (Holland 1986). To solve this problem, I employ the differences-in-differences model as a strategy to create the counterfactual so that both statuses can simultaneously exist for a given individual.

The differences-in-differences (DD) strategy is a simple double differencing strategy that compares group means between those who receive treatment and those who do not both before and after the treatment. In this study of the effects of foreign education on immigrants, the outcome is log of earnings, the treatment is receiving foreign college education, and the lack of treatment (or the control) is receiving US college education. The control group is used to answer the counterfactual question by

estimating what the earnings of Asian immigrants would have been in the absence of the treatment of foreign college education attainment. Following the differences-in-differences strategy, the discount rate is defined as the difference in log earnings between a) those who received a foreign college degree and those who did not and b) those who received a domestic college degree and those who did not] (see Figure 1).

Figure 1. Differences-in-differences

	Control	Treatment
Before	C_b = US High School Education	T_b = Foreign High School Education
After	C_a = US College Education	T_a = Foreign College Education
Difference	$C_a - C_b$	$T_a - T_b$

Discount Rate = Differences-in-Differences = $(T_a - T_b) - (C_a - C_b)$

In the regression framework, the earnings of those in the United States and those abroad before and after the attainment of college education can be written as

$$y = b_o + b_1POE + b_2EDUC + b_3POE*EDUC + e \quad (2),$$

where y is log of earnings, POE is place of education with 1 equaling abroad and 1 the US, EDUC is the level of education with 0 equaling high school education, and 1 equaling college education, and b_3 is the differences-in-differences estimator. The differencing of earnings across the two locations *c* (US and abroad) and two time periods *t* (before and after the treatment) is equivalent to the interaction of treatment status (location) and time (education level). This parameter indicates the change in log of earnings due to college education. To draw this causal conclusion, a few assumptions are necessary.

In the differences-in-differences strategy, I assume that the rate of change for individuals' earnings differs only as a response to treatment, and that in the absence of treatment, the interaction term would be zero. Since the differences-in-differences estimator is a special case of the fixed effects method, a key identifying assumption is that all characteristics – such as race and nativity – are time invariant and that their effects are "fixed." We also assume that at baseline, the treatment and control groups should yield similar outcomes. In particular, in this study, place of education at the high school level is assumed to have no causal effects on individuals' earnings, and that the returns to high school education are irrespective of location.

Expected Findings

Consistent with previous research, I expect place of education to have significant bearings on the earnings of immigrants. However, as the Asian American population is marked by heterogeneity, I hypothesize that the effects of foreign education will also vary by ethnicity. As indicated in past scholarship, East Asians and Asian Indians have an advantage in the US labor force (Xie and Goyette 2004). Perhaps because of the "quality" of education in these nations, the recognition of credentials of immigrants from these regions, the demand of workers to fill occupational vacancies in the US, or the selection of immigrants from these areas, place of education may not have as great of a negative effect (if at all) on the earnings of these immigrants. As for gender differences, given the advantaged position of Asian American women in the labor market and the selection of Asian women into the US labor force, place of education may not affect men and women uniformly, and women may not be as disadvantaged by foreign education. The argument that place of education matters, while accurate, may possibly be too strong to encompass the entirety of the Asian American population.

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