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Self-selection and Earnings: A Cross Section Analysis of U.S. Immigrants

by

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Using data from the 1-in-100 sample of 1980 U.S. Census of Population for California and New York, this study analyzes the self-selection-corrected earnings of immigrants of three major ancestral groups– Europeans, Asians, and Hispanics–*vis-a-vis* their native-born counterparts in the U.S. The earnings of immigrants are overestimated if not properly corrected for their self-selectivity. All three major groups of immigrants have lower average earnings than those of their U.S.-born counterparts due to immigrants' lower returns to human capital than to lower levels of human capital. After correcting for selectivity bias, Asian immigrants have a slight advantage over European immigrants in both earnings characteristics and returns to these characteristics. Both the absolute and relative earnings of Hispanic immigrants are lower than those of Asian and European immigrants, and this differential is largely due to Hispanics' smaller amount of human capital.

I. INTRODUCTION

The purpose of this work is to study the self-selection-corrected earnings among working male immigrants of three major ancestral groups–European–, Asian–, and Hispanics–*vis-a-vis* their native-born counterparts in the U.S. Of particular interest is how the ancestral groups of male immigrants differ from each other and from those of their U.S.-born counterparts in their self-selection–corrected earnings. Low earnings can emerge either because identifiable groups of immigrants receive a lower rate of return on their human capital or because, even though all immigrants are subject to the same earnings function, immigrants have much smaller factor endowments, i.e., they possess smaller amounts of human and non-human assets. I estimate the size of these noted two sources of low earnings and compare the results for immigrants and natives. What makes this study different from previous ones is a careful correction for immigrants' self-selectivity bias in estimating ancestral effects on earnings. The data base consists of the 1-in-100 sample of 1980 U.S. Census of Population for two states where most immigrants have settled, namely, California and New York. In this data source, personal and family characteristics are given for the family, which forms the study unit in this work.

The earnings equation to be estimated in the present work is closely related to those used by Chiswick (1978, 1980, 1982), Mincer (1974), Verdugo and Verdugo (1984), and Heckman (1985), Fujii and Mak (1985).

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II. MODEL

An implicit earnings function may be written as: E = E(H, A) where, E is labour earnings, a sum of wage or salary income and farm- and non-farm self-employment income; H is human capital; and A is ability or the other inherited endowment. According to the traditional theoretical earnings model (e.g., Mincer 1958, 1974; Becker 1964; and Becker and Tomes 1979), ability is exogenous, while formal schooling or on-the-job-training and experience can be acquired. In this study of ancestral effects on earnings, I define ability more broadly. I consider ability to be associated with living in a specific country.

In previous earnings studies, inherited human capital (A) has usually been proxied by the parents' education (and the other similar parental variables). But even IQ measures, which at best reflect a particular type of inherited talent– namely, scholastic ability– are seldom available for those born in developing countries and who dominate recent immigrant groups. I must use a very broad measure of ability, namely, ancestry which is mainly country-specific. Hence it will pick up immigrants' experience as well as differences in their ability across countries.

The following general earnings function is estimated in this study. The logarithm of average hourly earnings over the year are regressed against a set of explanatory variables (personal, family, and market characteristics) so that the estimated coefficients may be interpreted as percentage changes.

$$\begin{aligned} LnY = a + bH + fX + gX^2 + iW_1 + jW_2 + IM \\ + nC + rLang + Dummies + v \end{aligned}$$

Quadratic terms are included to specify non-linearity in the earnings function which fits the real world observation (data). For example, experience-earnings profiles are better estimated by concave function (e.g., see references to Mincer 1974; and Heckman 1976).

The symbols stand for the following:

Y	=	Estimated average hourly earnings
H	=	Human capital, as measured by years of schooling completed
X	=	Experience (Age – School Years – 6)
X^2	=	Experience squared
W_1	=	Married, spouse present and working
W_2	=	Married, spouse not present
M	=	Family wealth, as proxied by property income
C	=	Number of children under ages 18 in the household
Lang	=	Index of English proficiency

Other dummy variables in the regression:

MIG60	=	1, if an immigrant during 1960-69
	=	0, otherwise
MIG50	=	1, if an immigrant during 1950-59
	=	0, otherwise

PRE50	=	1, if an immigrant before 1950
	=	0, otherwise
Rural	=	1, if a rural dweller
	=	0, otherwise (urban dweller)
California	=	1, if a resident in California
	=	0, otherwise (resident of New York state)
Self-employed	=	1, if a self-employed worker
	=	0, otherwise (who worked for others)
Informal-sector	=	1, if an employee in the low productivity sector
	=	0, otherwise (formal sector)
v	=	Error term

The index of English proficiency has been constructed from the information on whether a person speaks English at home, and, if not, how well he speaks English. The variable takes a value 1 for workers who speak English at home or who nonetheless are reported to speak English very well, zero for other workers. The physical capital or family wealth (M), as proxied by individuals' property income, is added to Mincer's schooling model (see references to Hausman and Wise 1976; Heckman 1974; Qureshi 1987; and Taubman 1975).

Dummies for a rural dwelling, the state of residence, and employment in low productivity occupational groups are used to control for the possible downward or upward bias of human capital coefficients (see Heckman 1985). Finally, to control for the possible independent impact of employment in low productivity jobs on workers' average earnings, as the return to additional schooling may be much lower there, I use a dummy variable for a broad category of low productivity occupations. Omitting this dummy may similarly bias the human capital coefficient.

The presence of a spouse has positive effect on men's earnings because married men with spouse present are able to specialize to a greater extent in the market production. Similarly, if the spouse has a job in the labour market, that may limit the extent of the subject's labour market specialization and earnings (see Hirshliefer 1984; and Kenny 1983).

The negative effects of the presence of children of different ages (the younger the children the larger the effect) on the probability of women's labour force participation as well as on women's market earnings are well documented (e.g., see references to Becker 1985; Dowdall 1974; Gramm 1975; Shaw 1983). What is not always recognized is the indirect negative effect of children on men's (fathers') earnings, for the reasons given in the preceding paragraph.[1]

[1]While more children reduce the mother's labour market time more than the father's, the expected effect of more children on the hourly earnings of both parents is negative (see the theory and empirical tests of household production by Sherwin Rosen 1985). According to Sherwin Rosen, the effect of children in the home is expected to reduce the earnings of women more than for men. Also, see Behrman *et al.* (1985) for the effect of children on men's labour force participation, Tunali (1986) for isolating the variations in men's earnings due to presence of children, which indirectly affects migrants, Mitchell *et al.* (1985) for the effect of family size on men's earnings, and finally, Taubman (1975), for the non-causal relation between earnings and children.

Self-employed workers presumably have more control over their work time and resources even though they might work with very little capital. In many cases, self-employed workers who have better access to commodity, credit, and the other facilities earned more income than wage-earners (see Blau 1985). So, different measures of earnings such as self-employment earnings are tested in comparison to other earnings (government and private wage or salary earnings).

I measure the immigration cohort effect by dummies for periods such as 1960s, 1950s, and pre-1950s when immigrants came to the U.S. These cohort dummies compare the earnings of earlier cohorts of immigrants with those of their omitted reference of most recent cohort of 1970s.

The analysis uses maximum likelihood method to correct for immigrants' self-selectivity (recently developed by Bloom and Killingsworth 1985).[2] This model corrects for the truncation bias caused by a latent truncation variable. For this analysis, I have selected three broad categories of immigrants, namely, Asians, Hispanics and Europeans of age 20-64 who worked at least one week in 1979 for themselves (self-employed) or for others (wage/salary workers).

The adult male workers included in this study are either householders or spouses (though mostly the former). I define Europeans as non-Hispanic Europeans throughout this paper. Immigrants' data are mainly from urban areas (95 percent on average) of New York and California where the immigrants of diverse ancestral characteristics are most likely to settle. Immigrants in this sample are both old and new, post-WWII and pre-WWII, though most immigrated to the U.S. between WWII and 1979. The immigrant sample sizes are 1,825 Hispanics, 1,100 Asians and 1,768 Europeans; and those of natives are 543 Asians, 1,883 Hispanics and 24,028 Europeans.

The dependent variable in the regression is the logarithm of hourly earnings in 1979, a measure used by Heckman and Polacheck (1974). Its interpretation is simple, as the estimated coefficients can be interpreted as percentage changes. The approach applied in this study is to estimate separate earnings functions for each group of immigrants. In the absence of any known method of earnings comparisons, I use the decomposition technique developed by Oaxaca (1973) and refined by Reimers (1983).[3]

III. SELF-SELECTIVITY

Immigrants are not a random sample of the overall population of their society of origin. Immigrants are relatively young, better educated, more likely to be risk-takers, and more adventurous and enterprising. They tend to have better contacts in certain destination areas than do those who remain in the country of origin. Through a locational change, immigrants have a comparative advantage of investing their readily transferable human capital. They self-select themselves into the sample.

[2]David E. Bloom and Mark R. Killingsworth, "Correcting for Truncation Bias Caused by a Latent Truncation Variable", *Journal of Econometrics*: 27 (1985) : 131–135.

[3]Ronald Oaxaca, "Male-Female Wage Differentials in Urban Labor Market", *International Economic Review*, 14 (October 1973): 693; and Cordelia W. Reimers, "Labor Market Discrimination Against Hispanic and Black Men", *The Review of Economics and Statistics*, Vol. 65, No. 4, (1983): 331-341.

The correction for work selectivity that may arise out of a series of choice variables such as whether or not to work, choosing a particular kind of work, working as an employee for wages or working as an employer of a self-employed business and so forth, is beyond the scope of this study. This study corrects for immigrants' self-selectivity only.

Two striking facts are investigated. First, relative to earnings of persons born in America, immigrants' observed earnings are generally lower. The self-selection-corrected earnings of immigrants become much lower than those of immigrants' U.S.-born counterparts. Second, among the immigrants groups, Asians are traditionally believed to have lower earnings relative to European immigrants. But after correcting for immigrants' self-selectivity, I show that this relationship may not hold. These facts have not been sufficiently investigated previously. The probable reason for this may have been the lack of an available technique to tackle the topic of international migration (which involves a work with only available immigrants' nonrandom sub-sample), and an ability to estimate immigrants' earnings more appropriately until the published work of Bloom and Killingsworth (1985); and Maddala (1984, Ch. 9).

OLS estimates are clearly biased if the immigration decision is related to earnings-related characteristics or the dependent variables are limited from a nonrandom sampling. For a suitable earnings-comparison between immigrant groups in relation to their U.S.-born counterparts, it is thus necessary to correct for immigrants' self-selectivity. Consider a two equation model as :

$$Y_1 = b_1 X + U_1 \quad \ldots \quad (1)$$

$$Y_2 = b_2 X + U_2 \quad \ldots \quad (2)$$

where Y_1 is earnings; the Xs in first equation are factors in earnings; $Y_2 = 1$, if an immigrant to the U.S.; $Y_2 = 0$, if not an immigrant (persons remaining in their home country); and the Xs in second equation are determinants of immigration; b_1 is a vector of parameters; and U_1 is a disturbance term with an expected value of zero and a variance s_1 for each respondent. Y_1 is assumed to be normally distributed with mean $b_1 X$ and variance s_1, $N(b_1X, s_1)$. However, the conditional expectation of U_1 is not zero, which is a violation of a standard assumption of the OLS procedure.

$E(Y_1 | X_1\ Y_2 > 0) = b_1X + E(U_1 | Y_2 > 0)$—implies that the immigrants' earnings are also a function of immigration decision variables. More precisely, immigrants must have

$$(1)\ U_2 > -b_2X,$$

and stayers must have

$$(2)\ U_2 < -b_2X$$

In OLS estimates, the conditional mean of U_1 is not included as a regressor. The immigrants and stayers will differ in some unknown characteristics as well as in the net gain from their act of moving or staying.

IV. MAXIMUM LIKELIHOOD METHOD

My problem of international migration, self-selectivity, and earnings cannot be handled with the usual truncation model, which depends on the threshold value of the dependent variable.[4] I do not have any observation corresponding to $Y_2 = 0$. However, I can use a variant of the maximum likelihood method to correct for self-selectivity bias caused by a latent truncation variable (see Maddala 1984, Ch. 9; and Bloom and Killingsworth 1985). Using the Bloom and Killingsworth methodology, I estimate the parameters of the immigration equation directly from the available observations of immigrants. Thus, I correct for selection bias to estimate the earnings functions consistently. Note that using only immigrants' sample for a probit run is the advantage of this method. The proposed earnings regression (in Bloom and Killingsworth's formulation) looks like the following:[5]

$$E(Y_1 | X_1 \; Y_2 > 0) = b_{y_1} X + [s_{y_1 y_2} / s^{1/2}_{y_2 y_2}] [f\{b_{y_2} X / s^{1/2}_{y_2 y_2}\} / F\{b_{y_2} X / s^{1/2}_{y_2 y_2}\}]$$

where f is the standard normal probability density function (pdf); F is the standard normal cumulative density function (cdf); and pdf/(1-cdf) is the inverse Mill's ratio. This ratio is assumed to be nonzero and large enough so as not to allow the OLS procedure to estimate the earnings model correctly. If $s_{y_1 y_2}$ is not equal to zero, the use of OLS results in inconsistent estimates of earnings parameters. The standard errors of OLS (in presence of selectivity) are under-estimated and thus t-values are over estimated. With maximum likelihood estimation, the expected value of the above regression can be assumed to be zero. Mean ($b_1 X$) and variance vary over observations. The model is identified so long as cov (U_1, U_2) is nonzero. Parameters of the regression model are indentified subject to the normalization $Y_2 \sim N(0,1)$. The truncation regression model is generally heterokedastic. Nonlinear least squares give incorrect standard errors. Under this maximum likelihood estimation (Incidental Truncation Model), standard errors are computed directly from the invested Hessian.[6] Under the present method, I estimate the immigration parameters

[4]In case of a censored sample, data are assumed to be available on Y_2 for all observations. In the usual truncated case, data on only a sub-sample are available. In both cases data on independent variables are available. In the present case, we have only those observations for which Y_2=1. For these Y_2=1 only, we observe Y_1 and X. Heckman's method (1974, 1976, 1979) and Olsen's (1980) computationally cheaper alternative two-stage method clearly do not allow one to obtain the probit estimates of immigration decision functions. In Heckman or Olsen's 1st-stage probit analysis both the immigration status 1 or 0 are observed. See James J. Heckman, "Sample Selection Bias as a Specification Error", *Econometrica*, 47, No. 1 (January 1979): 153-61; and Randall J. Olsen, "Notes and Comments, A Least Square Correction for Selectivity Bias", *Econometrica*, Vol. 48, No. 7 (November 1980).

[5]The discussion in this section is drawn on Heckman (1974, 1976, 1979); Olsen (1980); and Bloom and Killingsworth (1985).

[6]Under Heckman's traditional approach, parameters of the immigration equation are estimated in the 1st-stage probit analysis. The regression model is estimated in the 2nd stage for nonrandom set of the sub-sample subject to the limitations that coefficients of the immigration equation are equal to those obtained in the 1st-stage.

directly to correct the self-selectivity bias. I use Greene's (1982) econometric software LIMDEP package for the estimation, namely Incidental Truncation Model.

A common practice was followed to solve the identification problem. The earnings equation was identified because certain exogenous variables such as age, family size, GNP/capita in immigrants' country-of-origin and air distance were excluded from the earnings equation, i.e., the coefficients of the above exogenous variables in earnings equation were assumed to be zero. Similarly, I consider a model in which the earnings relationship is determined by experience, language proficiency, health disability and wealth (in addition to others) and the immigration equation is not, then the prior information about these excluded exogenous variables in the immigration equation has allowed the immigration equation to be identified.

V. EARNINGS DECOMPOSITION TECHNIQUE

The observed earnings differences between immigrants and their U.S.-born counterparts, and between different immigrant communities, are computed by a traditional statistical procedure (equation 1 below). To calculate expected earnings differences between them I follow Oaxaca (1973) and Reimers (1983) for a four-step procedure (equation 2 through equation 5 below).

1. $\sum i^{Ln}Yij/nj - \sum i^{Ln}Yik/nk$
2. $\sum b_N X_N - \sum b_N/X_M$
3. $\sum b_M X_N - \sum b_M X_M$
4. $\sum b_N X_N - \sum b_M X_N$
5. $\sum b_N X_M - \sum b_M X_M$

Where b_N and b_M are the coefficients of native and immigrant earnings functions, respectively; X_N and X_M are the earnings characteristics of natives and immigrants, respectively.

According to the Chow-test, the earnings functions by ancestry are structurally different, probably because of ancestral differences in quality and quantity of human capital and the other omitted variables.[7]

Since I do not know the real index of earnings, I take a weighted average of two earnings behaviour of two groups of workers for a suitable comparison of their earnings due to differences in skill characteristics (e.g., see reference to Reimers 1983).

[7]A pair by pair Chow-test of the Asian–, Hispanic-–and European Americans' earnings functions suggests that I compare earnings of each immigrant group with those of their U.S.-born counterparts (instead with those of a single native non-Hispanic white as traditionally done in Chiswick and Borjas). All the calculated values of $F=[(SSR-SSE_1-SSE_2)/k]/[(SSE_1+SSE_2)/(n+m+2k)]$ are significant at the 5 percent probability level. F-values of tests of functional equality between Asian– and European– Americans are 1.96, Asian— and Hispanic– Americans 2.62, and between Hispanic– and European–American 4.33. Tabulated F-value with k=12 and infinite degrees of freedom is 1.75. I do reject the hypothesis that the entire regression relationship is stable (or that slope coefficients are equal). Earnings functions by ancestry are, as noted above, structurally different.

Characteristics Measure

Equation 1 measures the observed earnings difference between group J and group K. Equation 2 measures the earnings difference between these two groups due to differences in skill characteristics if the immigrants are provided with the native's return. Equation 3 estimates the earnings difference between native and immigrant groups due to differences in characteristics if native groups are given the immigrant group's rates of return. The weighted average of equations 2 and 3 yields the overall earnings differences between native and immigrant groups due to differences in characteristics, 0.5 (2+3).

Parametric Measure

Equation 4 calculates the earnings difference between native and immigrant groups due to differences in returns if the immigrant groups are provided with the native group's earnings characteristics. If the native groups are given the immigrant group's characteristics, equation 5 estimates the earnings difference between native and immigrant groups due to differences in returns. The overall earnings difference between native and immigrant groups due to difference in returns is measured by taking a weighted average of these two groups' earnings characteristics. A similar procedure is followed for the decomposition analysis of the earnings between two groups of immigrants, 0.5 (4+5).

VI. IMMIGRATION BEHAVIOUR

The bottom frame of Table II presents the probit model of immigration. A standard earnings equation is modeled. It includes age, education, marital status, spouse's working status, and family size. I have included three more variables specific to my sample to the standard earnings model. The first is English language proficiency since it is expected to differ between native and immigrant ethnic groups. The second and third are related to costs of moving.

In their simple age-earnings model, Jasso and Resenzweig (1985)[8] show in an ordinary least squares estimate that immigrants' earnings differ across immigrants' countries of origin as a function of the direct and opportunity costs of immigration and quantity and quality of information about the country of destination available to them. The opportunity cost of immigration from countries with higher income per capita and the direct cost of immigrating from distant countries are expected to be higher. Immigrants from these countries expect to have higher earnings in the U.S.

I differ from earlier studies mostly in estimation procedures (self-selection correction), in estimating separate migration equations, in testing more earnings variables, and in the selection of our sample (which is not country-specific). In my migration equations, I use country characteristics variables such as real per capita GNP (a proxy for opportunity costs), air distances between the capital cities of immigrants' country of origin and the U.S. cities of destination such as New York City and Los Angeles since my samples of

[8]Guillermina Jasso and Mark R. Rosenzweig, *What's in a Name? Country-of-origin Influences on the Earnings of Immigrants in the United States*, Economic Development Center, Department of Economics, Minneapolis, Department of Agriculture and Applied Economics, St. Paul University of Minnesota, June 1985.

immigrants' are selected from New York and California. Note that air distance is at best a weak proxy for (i) psychic cost, (ii) transportation cost of moving and (iii) cost of acquiring information about the destination country.

TABLE I

MEANS OF VARIABLES OF MAXIMUM LIKELIHOOD ESTIMATES OF HOURLY EARNINGS, WORKING MALE IMMIGRANTS, AGES 20-64 BY ANCESTRAL GROUP

Variables	Asians	Hispanics	Europeans	All
A. Earnings Variables:				
Log of hourly earnings	2.004	1.719	2.162	1.946
Hourly earnings ($)	7.419	5.579	8.688	7.001
Education (years)	13.999	8.509	12.232	11.165
Experience (years)	19.037	22.228	26.242	23.049
Expersqrd (years:00)	4.957	6.388	8.508	6.860
Langproficiency (%)	.521	.251	.695	.496
Health disability (%)	.021	.032	.045	.035
Spouse working (%)	.204	.185	.250	.212
Spouse not present (%)	.174	.154	.154	.161
Number of children	1.133	1.371	.986	1.168
Wealth ($:000)	.625	.140	1.234	.640
Self-employment (%)	.166	.061	.173	.122
Informal sector (%)	.250	.599	.285	.403
Pre50'scohort(%)	.048	.051	.213	.109
50's cohorts(%)	.081	.124	.299	.179
60's cohorts(%)	.262	.333	.278	.295
Rural employment(%)	.020	.071	.068	.059
California (%)	.281	.311	.150	.216
B. Immigration Variables:				
Age (years)	39.036	36.750	44.481	40.205
Education (years)	13.999	8.509	12.232	11.165
Langproficiency(%)	.521	.251	.695	.496
Spouse working (%)	.204	.185	.250	.212
Spouse not present (%)	.174	.154	.154	.161
Family size (persons)	3.569	4.174	3.240	3.658
GNP/Capita ($)	242.220	371.280	1058.500	563.950
Air distances (miles:000)	5.750	1.943	2.282	2.551
Number of observations	1100	1825	1768	4693

VII. RESULTS

Note that Table I through Table IV present regression equations and their mean variables for the entire sample as well as for each group of immigrants and their U.S.-born counterparts separately. My focus is on decomposition analysis in order to determine more appropriately how ancestral groups of immigrants differ in relation to their U.S.-born counterparts due to differences in their overall characteristics while returns to these characteristics remaining the same, and due to returns on earnings characteristics, while the latter remaining the same. I extend my focus also on component variables analysis which shows how each characteristic differential is accountable for differences in

earnings between ancestral groups of immigrants in relation to their U.S.-born counterparts. I will not discuss the tables (Table I–IV) separately from my decomposition analysis. I refer back to these tables when it is necessary to simultaneously interpret my decomposition–and component variables analyses since these tables provide ingredients to the latter analyses.

TABLE II

MAXIMUM LIKELIHOOD ESTIMATES OF HOURLY EARNINGS, MALE IMMIGRANTS, AGES 20-64 BY ANCESTRAL GROUP

Variables	Asians b	Asians t-ratio	Hispanic b	Hispanic t-ratio	Europeans b	Europeans t-ratio	All b	All t-ratio
A. Earnings Functions:								
Education	.103**	15.850	.083**	8.700	.085**	4.176	.089**	13.333
Experience	.035**	4.780	.021**	4.280	.025**	3.664	.024**	6.194
Expersqrd	−.06**	−3.510	−.02**	−1.922	−.02**	−2.189	−.03**	−4.392
Langprof	.076	.799	.242*	1.630	.377	.983	.252**	2.187
Hlthdisb	−.035	−.299	−.072	−1.090	−.142**	−1.940	−.048	−1.055
Spouworking	−.036	−.308	.173	1.337	−.079	−.448	−.175	−1.304
Spousnotpr	.061	.552	.005	.037	−235	−.769	−.064	−0.763
Numchildrn	−.017	−.586	.049**	3.030	.022	1.049	.017	1.435
Wealth	.008	1.168	.0005	.474	.02**	6.115	.02**	8.187
Selfemploy	.155**	3.173	.087**	1.919	.004	.101	.038	1.561
Informalsctr	−.139**	−2.728	−099**	-3.156	−.218**	−5.602	−.134**	−5.878
Pre50'scohrt	.047	.410	.238**	3.240	.035	.642	.099**	2.609
50'scohrts	.191**	2.450	.258**	5.288	.122**	2.582	.165**	5.398
60'scohrts	.103**	2.120	.146**	4.390	.068	1.526	.107**	4.514
Ruralemploy	−.077	−.395	−.093*	−1.752	.017	.346	−029	−0.814
California	.041	.840	−.012	−.384	.048	1.078	−.002	−0.086
B. Immigration Behaviour:								
Constant	.836	.574	−7.409*	−1.628	−8.295**	−2.761	-6.848**	-3.801
Age	−.017	−.491	.045	1.134	.035	.704	−021	−.761
Education	.217**	2.533	.377*	1.566	.344**	2.030	.378*	3.341
Langprof	.121	.184	1.407	1.042	1.982	.667	1.234	1.432
Spouworking	−.133	−.175	1.531	1.102	−.389	−.273	−.747	−.809
Spousnotpr	.037	.045	−.315	−.278	1.062	−.459	.0008	.001
Familysize	−.044	−.423	−.021	.319	.030	.239	.075	1.405
GNP/Capita	−.002**	−2.570	−.002	−1.282	−.001**	−2.707	−.0009**	−3.675
Air distances	−.4*	−1.880	.2	.681	.2**	2.214	−.0005	−0.014
Observations	–	1100	–	1825	–	1768	-	4693

Notes:***In order to overcome identification problems of simultaneous estimation, we run immigrants' earnings without constant term.
**Significant at the .05 level, and
*significant at the .10 level.

TABLE III

OLS REGRESSION OF HOURLY EARNINGS, NATIVE BORN MALES WORKERS, AGES 20-64 BY ANCESTRAL GROUP

Variables	Asians	Hispanics	Europeans	All
Education (years)	.093**	.097**	.104**	.103**
	(17.957)	(33.360)	(124.963)	(130.990)
Experience (years)	.059**	.052**	.054**	.054**
	(6.906)	(12.065)	(41.550)	(44.024)
Expersqrd (years:00)	−.09**	−.07**	−.08**	−.08**
	(−4.717)	(-6.680)	(-25.850)	(-27.243)
Health disability	−.219	−.219**	−.104**	−.114**
	(−1.377)	(-3.898)	(−5.990)	(−6.900)
Spouse working	.048	.109**	.041**	.045**
	(.614)	(2.670)	(3.755)	(4.371)
Spouse not present	.156**	.053	.026**	.033**
	(1.918)	(1.256)	(2.117)	(2.876)
Number of children	.092**	.094**	.064**	.068**
	(2.526)	(6.117)	(12.814)	(14.476)
Wealth (S:000)	.03**	.009	.01**	.01**
	(3.799)	(1.068)	(10.605)	(11.111)
Self-employment	−.061	−.017	−.047**	−.048**
	(−.833)	(−.311)	(-3.990)	(−4.205)
Informal sector	−.121**	.085**	−.019**	−.009
	(−1.818)	(3.094)	(-2.129)	(−1.092)
Rural employment	−.040	−.005	−.051**	−.050**
	(−.328)	(−.087)	(−4.517)	(−4.594)
California	.084	−.032	.053**	.047**
	(1.517)	(−1.100)	(5.671)	(5.328)
R^2	.927	.918	.935	.934
Observations, n	543	188	216	240

Notes:***In order to overcome identification problems of simultaneous estimation, we run immigrants' earnings and for suitable comparison, also their U.S.-born counterparts' earnings without constant term. **Significant at the .05 level. t-values are in parenthesis.

Table V presents the differences in earnings between immigrants and U.S. nationals as a percentage of U.S. nationals' earnings by ancestry. Without correcting for immigrants' self-selectivity, immigrants' earnings are overestimated due to their self-selection characteristics. Immigrants are generally observed to have less earnings than their U.S. -born counterparts. For example, Asian immigrants earn 17 percent less than Asian—Americans. Hispanic- and European immigrants earn 29 percent and 4 percent, respectively, less than Hispanic- and European- Americans. But immigrants' self-selection-corrected earnings are much lower than those of their U.S.-born counterparts (see line 3).[9]

[9]In other words, the self-selection-corrected earnings difference between the native-born workers in the U.S. and their immigrant counterparts are estimated to be several times as large as the observed earnings differences between them (see Table V). For example, the self-selection-corrected earnings of European

(Contd.)

TABLE IV

MEANS OF REGRESSION VARIABLES, NATIVE AND IMMIGRANT MALE WORKERS, AGES 20-64 BY ANCESTRAL GROUP

Variables	Asian Americans	Asian Immigrants	Hispanc Americans	Hispanc Immigrants	European Americans	European Immigrants	All Americans	All Immigrants
	1	2	3	4	5	6	7	8
Log earn	2.178	2.004	2.015	1.719	2.200	2.162	2.185	1.946
Earnings (S)	8.829	7.419	7.501	5.579	9.025	8.688	8.891	7.001
Education	14.081	13.999	11.633	8.509	13.683	12.232	13.532	11.165
Exprience	21.858	19.037	20.463	22.228	21.309	26.242	21.255	23.049
Exprsqd(00)	6.669	4.957	5.794	6.388	6.167	8.508	6.149	6.860
Langprf	.000	.521	.000	.251	.000	.695	.000	.496
Illthdsb	.029	.021	.066	.031	.056	.045	.056	.035
Spouwrk	.289	.204	.185	.184	.270	.250	.264	.212
Spounpr	.241	.174	.176	.154	.189	.154	.189	.161
Numchil	.812	1.133	1.182	1.371	.891	.986	.912	1.168
Wealth	1.225	.625	.301	.140	.935	1.234	.891	.640
Selfemp	.184	.166	.076	.061	.132	.173	.129	.122
Infrmsc	.228	.250	.452	.599	.239	.285	.256	.403
Pre50ch	.000	.048	.000	.051	.000	.213	.000	.109
50schrt	.000	.081	.000	.124	.000	.299	.000	.179
60schrt	.000	.262	.000	.333	.000	.278	.000	.295
Ruralcm	.052	.020	.063	.071	.150	.068	.141	.059
Calfma	.378	.281	.363	.311	.236	.150	.249	.216
Obsrvtn, n	543	1100	1883	1825	21602	1768	24028	4693

Note: *Even though some U.S.-born workers can speak a language other than English, they presumably do not have difficulties in spoken English.

VIII. EARNINGS ANALYSIS : IMMIGRANTS IN RELATION TO AMERICANS

Decomposition Analysis

It is generally hard to explain the earnings difference between immigrants and their U.S.-born counterparts of the same ancestry because much of the difference arises from non-measureable sources such as immigrants' quality of education, training and experience in their countries of origin. Table V also breaks down the differences in earnings due to differences in characteristics and in the return to these characteristics between immigrants and U.S. nationals as a percentage of U.S. nationals' earnings by ancestry.

immigrants are 42 percent (instead of 4 percent) lower than those of European –Americans, which is about 11 times the difference as found between them in observed earnings. Asian immigrants' expected earnings are 26 percent (instead of 17 percent) lower than Asian–Americans, which is 1.5 times the difference in observed earnings. Hispanic immigrants differ from Hispanic–Americans by 72 percent (instead of 29 percent) less expected earnings, which is 2.5 times the earnings difference found in observed case.

TABLE V

DIFFERENCES BETWEEN IMMIGRANTS' AND NATIVES' EARNINGS AS A PERCENTAGE OF NATIVES' EARNINGS

Decomposition Criteria	Asians	Hispanics	Europeans
1. Observed earnings differences (%)	–0.173	–0.295	–0.037
2. Expected earnings difference before selectivity-correction(%)	–0.064	–0.174	0.032
3. Selectivity corrected earnings differences (%)	–0.265	–0.724	–0.416
4. Earnings differences due to immigrants' selectivity (2) less (3)	0.201	0.549	0.447
5. Earnings differences due to characteristics differentials (1/2)(5a+5b)%	0.027	–0.155	0.110
a. $-\Sigma b_N X_N - \Sigma b_N X_M$	–0.014	–0.215	–0.049
b. $-\Sigma b_M X_N - \Sigma b_M X_M$	0.069	–0.093	0.281
6. Earnings differences due to parametric differentials (1/2)(6a+6b)%	–0.292	–0.569	–0.526
a. $-\Sigma b_N X_N - \Sigma b_M X_N$	–0.335	–0.631	–0.691
b. $-\Sigma b_N X_M - \Sigma b_M X_M$	–0.252	–0.508	–0.360
7. Earnings differences due to characteristics & parametric differentials [5 + 6]	–0.265	–0.724	–0.416

Note : *Expected or potential earnings in line 2 are estimated from OLS regressions without correcting for immigrants' self-selectivity (which are not presented here), and observed or actual earnings in line 1 are arithmetic mean of actual earnings data. b_N and b_M are coefficients of native and immigrant earnings functions. X_N and X_M are characteristics of native and immigrants. Native counterparts' earnings are used as denominators on which percentage differences are computed as $[-(\$_N - \$_M)/\$_N]$. Thus, positive signs imply higher immigrants' earnings, and negative signs lower immigrants' earnings than those of natives.

The earnings differences (between immigrants and natives) are mostly parametric–i.e., mainly reflect differences in returns. For example, the earnings gap between Hispanic immigrants and Hispanic–Americans would fall from 72 percent to 16 percent if they were given the same return as the Hispanic–Americans. The remaining 16 percent of the gap can be attributed to differences in earnings characteristics. The parametric earnings differences may be explained by quality of schooling or the other omitted variables. Note that all our equations of OLS regression and maximum likelihood method passed the F– and Chi-square tests, respectively. Relative to persons born in America, the immigrants of each ancestry group considered here received lower returns on its personal, family, demographic, and market characteristics. This may in long past be due to the fact they are partly or wholly acquired or inherited in the immigrants' country of origin.

While both Asian and European immigrants tend to be a little better endowed with earnings-related characteristics than their native-born counterparts, this does not seem to explain nearly as much of the earnings differentials of these two ancestries as differences

in return. In relation to Americans of Asian descent, Asian immigrants have slightly greater measured earnings characteristics. Hence if immigrants earned the same returns on their characteristics and Asian–Americans, they would earn 3 percent more than Asian-Americans rather than 26 percent less found after correction for self-selectivity.

Between European immigrants and European–Americans, a similar earnings comparison can be made. For example, as in the Asian case, the European immigrants have more favourable earnings characteristics than their U.S.-born counterparts but receive a substantially lower return. European immigrants would earn even lower than European-Americans, namely, 53 percent less instead of the present total gap of 42 percent less, if they did not have such an advantage of endowments over European–Americans. Thus, had the European immigrants received the same return as the European–Americans, the immigrants would have earned 11 percent more than their U.S.-born counterparts.

The comparison of Hispanic immigrants' earnings to the earnings of Hispanic–Americans is quite different from both the Asian and European cases. In comparison to Hispanic–Americans, Hispanic immigrants in the U.S. have relatively less favourable earnings characteristics. Relative to both Asian and European immigrants, Hispanics immigrants have lower potential earnings. The actual earnings gap is also the largest for Hispanics. The reasons for a relatively greater Hispanic poverty in the U.S. is that Hispanic immigrants are lower in every endowment relative to Hispanic–Americans. Hispanic–immigrants are poorly provided with human capital and the other characteristics related to the labour earnings in the U.S. Additionally, they receive much lower returns on their less favourable skill characteristics.

IX. COMPONENT VARIABLES ANALYSIS

Asian Immigrants Versus Asian–Americans

Table VI breaks down the differences in earnings between Asian immigrants and Asian–Americans as a percentage of Asian Americans' earnings by component variables. The earnings difference between immigrants and Americans of Asian descent arises, in short, mostly from the latter's higher returns to on-the-job-training and experience (probably because of the environmental advantage of being brought-up and educated in the U.S.), and to the family characteristics variable. For example, in the return on work experience (net effect of experience and experience square taken together), the Asian immigrants are, as expected, substantially disadvantaged by about 35 percent compared to the Asian–Americans (see column 6). Asian immigrants' earnings (relative to those of their U.S.-born counterparts) are not affected at all by the small difference in their amount of experience. Most Asian immigrants are relatively more recent cohorts, except for some relatively upper middle-aged Chinese and Japanese.

Next most important is the return to schooling to account for differences in earnings between Asian–Americans and Asian immigrants. The coefficient of education for Asian immigrants is 0.103 compared to 0.093 for Asian Americans (Tables II and III). Note that the education coefficient for Asian immigrants is greater than those of the two other

groups of immigrants (such as 0.083 for Hispanic –and 0.085 for European immigrants in Table II), and is the same as that of European–Americans (Table III). Thus, Asian immigrants are among those who receive the highest return to human capital. Due to this highest return to human capital, Asian immigrants have earnings advantage over their U.S.-born counterparts by at least 13 percent (Table VI, col. 6).

In the return on family background variables such as spouses' working status, spouse not present, and the average number of children per family, the culturally assimilated Asian–Americans have an earnings advantage over their immigrant counterparts in the U.S. Had the Asian immigrants received the same return of the family characteristic variables as the Asian–Americans, the former would have been able to close the earnings gap with the Asian–Americans by 0.15 percentage points (see column 6 of Table VI). A relatively larger number of children per Asian immigrant family reduced the labour market time of both parents. Average number of children for the Asian immigrant family is 1.13 compared to 0.81 for the Asian–American family (see Table IV). For Asian–American families, the husband-wife time inputs tend to be complementary but of doubtful statistical significance (as indicated by a positive but statistically insignificant

TABLE VI

DIFFERENCES BETWEEN ASIAN IMMIGRANTS' AND ASIAN–AMERICANS' EARNINGS AS A PERCENTAGE OF ASIAN–AMERICANS' EARNINGS BY COMPONENT VARIABLES

Variables	Characteristics Differentials			Parametric Differentials		
	$b_N X_N - b_N X_M$	$b_M X_N - b_M X_M$	$.5(CL_1 + CL_2)$	$b_N X_N - b_M X_N$	$b_N X_M - b_M X_M$	$.5(CL_4 + CL_5)$
	1	2	3	4	5	6
Education	–.008	–.008	–.008	.131	.130	.131
Experience	–.168	–.199	–.133	–.533	–.464	–.498
Expersqrd	.155	.110	.132	.173	.128	.151
Net Exper	–.013	.011	.001	–.36	–.336	–.347
Langprofic	.000	.039	.020	.000	.039	.020
Illthdisab	.002	.000	.001	.005	.004	.005
Spouwrking	–.004	.003	–.000	–.024	–.017	–.021
Spousntpr	–.011	–.004	–.008	–.023	–.017	–.020
Numchildm	.030	–.005	.012	–.088	–.123	–.106
Wealth	–.002	–.005	–.003	.007	.003	.005
Selfemploy	.001	–.003	–.001	.040	.036	.038
Informsctr	–.003	–.003	–.003	–.004	–.004	–.004
Pre50cohrt	.000	.002	.001	.000	.002	.001
50'scohort	.000	.016	.008	.000	.016	.008
60'scohort	.000	.027	.014	.000	.027	.014
Ruralemploy	.001	.003	.002	–.002	–.001	–.001
California	–.008	–.004	–.006	–.016	–.012	–.013
Total	**–.014**	**.069**	**.027**	**–.335**	**–.252**	**–.292**

sign of spouse present and working in Table III). The coefficient of number of children in the equation for the entire sample is statistically insignificant. The inclusion of number of children in this equation is problematic since it is not likely to be exogenous.[10]

X. HISPANIC IMMIGRANTS VERSUS HISPANIC–AMERICANS

Table VII presents the differences of earnings between Hispanic immigrants and Hispanic Americans as a percentage of Hispanic Americans' earnings by component variables. Hispanic immigrants' lower level of schooling is the single major characteristic differential accounting for Hispanic immigrants' lower earnings in the U.S. For example, Hispanic immigrants earn about 28 percent less than their U.S.-born counterparts due to Hispanic immigrants' lower educational attainment, other things such as returns remaining the same (see column 3). The mean values in Table IV show that the average amount of schooling of Hispanic immigrants is only 8.5 years compared to 11.6. for natives.

The parametric earnings differences which, as noted earlier, favour Hispanic–Americans, may be due to the marginal productivity differences between Hispanic immigrants and Hispanic–Americans and the other omitted factors. Hispanic immigrants have lower levels of human capital, poorer English, and relatively less cultural assimilation than do Hispanic–Americans. But they also have much lower returns on the education and their relatively less readily transferable experience. Specifically, higher returns to experience and schooling create 38 and 14 percent earnings gaps, respectively, in Hispanic–Americans' favour (see column 6 of Table VII). Thanks, at least in part, to a higher average level of schooling, the Hispanic–Americans' return on education is 9.7 percent (see Table III), while that of Hispanic immigrants is 8.3 (see Table II).

Next most important differential is distribution of workers' employment between different levels of wage sectors which, as expected, favours Hispanic–Americans as opposed to Hispanic immigrants. As mentioned earlier, some groups of immigrants cannot speak English very well, brought non-transferable LDC experience to the U.S., had lower levels of education, and never had a chance to go to U.S. schools. Faced with above noted unfavourable market conditions, immigrants generally concentrate in lower status occupations, and tend to receive lower wage even within major occupational category. For example, while higher than average percentage of Hispanic groups of workers (both immigrants and U.S. native of Hispanic ancestry) work generally in the low wage sector, 45 percent Hispanic–Americans compared to 60 percent Hispanic immigrants work in the low wage sector (Table IV). Hispanic immigrants' employment and payment in the low productivity sector make a 10 percent earnings difference in favour of Hispanic–Americans.

[10]If the causation possibly runs in both direction between earnings and number of children, we may have simultaneous-equation bias—the presence of two-way causation results in a non-zero covariance between the disturbance term and some of the independent variables, and thus is biased estimates of parameters. Equally, we may have a problem of omitted-variable bias—which results in biased and inconsistent estimates of some parameters if we delete this variable from ancestral earnings equations.

TABLE VII

DIFFERENCES BETWEEN HISPANIC IMMIGRANTS' AND HISPANIC–AMERICANS' EARNINGS AS A PERCENTAGE OF HISPANIC–AMERICANS' EARNINGS BY COMPONENT VARIABLES

Variables	Characteristics Differentials			Parametric Differentials		
	$b_N X_N - b_N X_M$	$b_M X_N - b_M X_M$	$.5(CL_1 + CL_2)$	$b_N X_N - b_M X_N$	$b_N X_M - b_M X_M$	$.5(CL_4 + CL_5)$
	1	2	3	4	5	6
Education	−.305	−.261	−.283	−.164	−.120	−.142
Experience	.093	.037	.065	−.646	−.701	−.674
Expersqrd	−.041	−.010	−.026	.280	.310	.295
Net Exper	.052	.027	.039	−.366	−.391	−.379
Langprofic	.000	.061	.030	.000	.061	.030
Illthdisabi	.008	.002	.005	.010	.005	.007
Spouworking	−.000	−.000	−.000	.012	.012	.012
Spousntpr	−.001	−.000	−.001	−.008	−.007	−.008
Numchildm	.018	.009	.014	−.054	−.062	−.058
Wealth	−.001	−.009	−.005	.014	.006	.010
Selfemployd	.000	−.001	−.001	.008	.006	.007
Informlsctr	.013	−.0146	−.001	−.083	−.111	−.097
Pre50cohrt	.000	.012	.006	.000	.012	.006
50'scohort	.000	.032	.016	.000	.032	.016
60'scohort	.000	.049	.024	.000	.049	.024
Ruralemploy	−.000	−.001	−.000	−.006	−.006	−.006
California	.002	.001	.001	.007	.006	.006
Total	−.215	−.093	−.155	−.631	−.508	−.570

XI. EUROPEAN IMMIGRANTS VERSUS EUROPEAN–AMERICANS

As in the Asian case, the European immigrants' earnings-related characteristics are not inferior to those of their U.S.-born counterparts in the U.S. In fact, these immigrants have somewhat better characteristics. Relative to natives, they simply receive a lower return on these characteristics. Table VIII presents the difference between earnings of European immigrants and European Americans as a percentage of European Americans' earnings by component variables.

On factor tending to increase the relative earnings of European immigrants is their greater experience. Eleven percent advantage in earnings that immigrants would have earned had their rate of return been the same (see total of column 3). Among the selected male workers ages 20-64, the European immigrants are relatively older than both European–Americans and, in fact, the two other immigrants groups studied here. The average years of total post-school experience for European immigrants is estimated to be 26.2 compared to 21.3 for European–Americans (see Table IV). As the effect of greater experience, European immigrants increase their relative earnings by at least 8 percent compared to European–Americans, other things remaining the same (column 3 of Table VIII).

TABLE VIII

DIFFERENCES BETWEEN EUROPEAN IMMIGRANTS' AND EUROPEAN AMERICANS' EARNINGS AS A PERCENTAGE OF EUROPEAN AMERICANS' EARNINGS BY COMPONENT VARIABLES

Variables	Characteristics Differentials			Parametric Differentials		
	$b_N X_N - b_N X_M$	$b_M X_N - b_M X_M$	$.5(CL_1 + CL_2)$	$b_N X_N - b_M X_N$	$b_N X_M - b_M X_M$	$.5(CL_4 + CL_5)$
	1	2	3	4	5	6
Education	−.151	−.123	−.137	−.261	−.234	−.247
Experience	.267	.125	.196	−.612	−.753	−.683
Expersqrd	−.176	−.051	−.113	.327	.452	.390
Net Exper	.091	.074	.083	−.285	−.301	−.293
Langprofic	.000	.263	.131	.000	.263	.131
Hlthdisabi	.005	.002	.004	−.003	−.006	−.005
Spouwrking	−.001	.002	.000	−.033	−.030	−.031
Spousntpr	−.001	.008	.004	−.049	−.040	−.045
Numchildm	.006	.002	.004	−.037	−.041	−.039
Wealth	.003	.006	.005	.008	.011	.010
Selfemploy	−.002	.000	−.001	.007	.009	.008
Informsctr	−.001	−.010	−.006	−.048	−.057	−.052
Pre50cohrt	.000	.008	.004	.000	.008	.004
50'scohort	.000	.037	.018	.000	.037	.018
60'scohort	.000	.019	.010	.000	.019	.010
Ruralemploy	.004	−.001	.001	.010	.005	.007
California	−.005	−.004	−.004	−.001	−.001	−.001
Total	**−.050**	**.281**	**.110**	**−.691**	**−.361**	**−.526**

The greater experience of immigrants does not necessarily mean that the marginal productivity of their skill characteristics is also higher. Part of their experience, particularly for upper middle-aged immigrants, was, of course, gained in their country of origin. As a result, estimated return to an additional year of experience is lower for European immigrants relative to their U.S.-born counterparts. In particular, the lower return to experience reduces European immigrants' earnings by 29 percent in relation to earnings of European–Americans (column 6).

Next most important earnings characteristics differential between European immigrants and their U.S.-born counterparts is their educational attainment, and returns to education. In educational attainment, European immigrants lie below their U.S.-born counterparts by 1.5 years. European immigrants' lower levels of schooling result in an earnings difference of 14 percent in favour of the Americans of European descent (column 3). The lower return on schooling for European immigrants alone results in an earnings advantage of 25 percent in favour of European–Americans (column 6). The latter, as expected and indicated by education coefficient, better utilize their human capital (they receive about a 10 percent return on an additional year of education as opposed to the immigrants' return of 8.5 percent). Probably because of lower transferability of immigrants' skill, the work in the low wage sector reduces the relative earnings of immigrants by 5 percent (column 6).

XII. EARNINGS ANALYSIS : ASIAN–AND HISPANIC IMMIGRANTS IN RELATION TO EUROPEAN IMMIGRANTS

Decomposition Analysis

Having seen the earnings differences between immigrants and their U.S.-born counterparts, in this section we intend to see the earnings differences as well as determinants of such differences across immigrant groups (such as Asian–and Hispanic immigrants in relation to European immigrants). Table IX presents the differences in earnings between Asian Hispanic–, and European immigrants as a percentage of European immigrants' earnings.

TABLE IX

DIFFERENCES BETWEEN ASIAN–, HISPANIC–, AND EUROPEAN IMMIGRANTS' EARNINGS AS A PERCENTAGE OF EUROPEAN IMMIGRANTS' EARNINGS

Components of Differentials	Asians	Hispanics
1. Observed earnings differences (%)	–0.158	–0.442
2. Selectivity corrected earnings differences (%)	0.089	–0.509
3. Earnings differences due to characteristics differentials (1/2)(3a+3b) %	0.030	–0.602
a. $-\Sigma b_E X_E - \Sigma b_E X_T$	–0.048	–0.628
b. $-\Sigma b_T X_E - \Sigma b_T X_T$	0.108	–0.576
4. Earnings differences due to parameters (1/2)(4a+4b)%	0.060	0.093
a. $-\Sigma b_E X_E - \Sigma b_T X_E$	–0.018	0.067
b. $-\Sigma b_E X_T - \Sigma b_T X_T$	0.136	0.119
5. Earnings differences due to characteristics & parametric differentials [3 + 4]	0.089	–0.509

Note : *E stands for European immigrants and T for other immigrants. b_E and b_T are coefficients of European and other immigrants' earnings functions. X_E and X_T are characteristics of European and other immigrants. Earnings differences are calculated as $(\$_E-\$_T)/\$_N$.

First, Asian immigrants' observed earnings in the U.S. are greater than those of Hispanic immigrants, and only a little lower than those of European immigrants. Second, after necessary correction for nonrandomness of the immigrants' sample, European – and Hispanic immigrants were found to earn much less than their U.S.-born counterparts. Note that self-selection-corrected earnings differences between U.S. nationals and immigrants are considerably smaller for Asians than for the two other ancestral groups (see line 4 of Table V). It would therefore appear that the self-selectivity-corrected earnings of Asian immigrants could be either equal to or a slightly higher than those of

European immigrants in the U.S. In fact, according to maximum likelihood estimates, the self-selection-corrected earnings of Asian immigrants are 9 percent greater than those of European immigrants. In sharp contrast, the adjusted earnings of Hispanic immigrants remain below those of Europeans by 51 percent. In both earnings characteristics and returns to these characteristics, Asian immigrants have a slight advantage over European– and Hispanic immigrants.

XIII. COMPONENT VARIABLES ANALYSIS

Asian Immigrants Versus European Immigrants

Table X presents the differences between Asian – and European immigrants' earnings as a percentage of European immigrants' earnings by component variables. The effects of different characteristics (both levels and returns) are mainly offsetting, inasmuch as the total net effect in columns 3 and 6 is quite small (+ .030 and +.059). Of all factors, schooling, English, and experience seem to be nevertheless the important in explaining these shall differences in earnings between Asian and European immigrants.

The higher level of schooling causes an earnings difference of 17 percent in favour of the immigrants of Asian descent, other things such as returns remaining the same (see column 3, Table X). While the quality and quantity of education do not necessarily go hand in hand, persons with relatively more schooling often reap higher returns from additional schooling. That is the case here: Asian immigrants earn 24 percent more than

TABLE X

DIFFERENCES BETWEEN ASIAN IMMIGRANTS' AND EUROPEAN IMMIGRANTS' EARNINGS AS A PERCENTAGE OF EUROPEAN IMMIGRANTS' EARNINGS BY COMPONENT VARIABLES

	Characteristics Differentials			Parametric Differentials		
Variables	b_EX_E $-b_EX_A$	b_AX_E $-b_AX_A$	.5(CL_1 $+CI_2$)	b_EX_E $-b_AX_E$	b_EX_A $-b_AX_A$	.5(CL_4 $+CL_5$)
	1	2	3	4	5	6
Education	.150	.182	.166	.221	.253	.237
Experience	–.183	–.252	–.218	.252	.183	.218
Expersqrd	.078	.229	.153	–.362	–.211	–.286
Net Exper	–.105	–.023	–.065	–.110	–.028	–.068
Langprofic	–.066	–.013	–.040	–.210	–.157	–.184
Hlthdisabi	.003	.001	.002	.005	.002	.004
Spouwrking	.004	.002	.003	.011	.009	.010
Spousntpr	–.005	.001	–.002	.046	.052	.049
Numchildm	.003	–.003	.000	–.039	–.044	–.041
Wealth	–.012	–.005	–.008	–.012	–.007	–.009
Selfemploy	–.000	–.001	–.001	.026	.025	.026
Infrmlsctr	.008	.005	.006	.023	.020	.021
Pre50cohrt	–.006	–.008	–.007	.002	.001	.003
50'scohort	–.027	–.037	–.032	.016	.006	.011
60'scohort	–.001	–.002	–.001	.010	.009	.010
Ruralemploy	–.001	.004	.001	–.006	–.002	–.004
California	.006	.005	.006	–.001	–.002	–.002
Total	**–.048**	**.108**	**.030**	**–.018**	**.136**	**.059**

European immigrants per year of schooling (column 6). As noted before, an additional year of schooling increases Asian immigrants' earnings by 8.5 percent (see Table II).

In English proficiency, European immigrants have, of course, a substantial advantage over Asian immigrants. Also, had Asian immigrants received as high a return to English proficiency as European immigrants, the former would close the gap by another 18 percent. The European immigrants who speak English very well tend to earn 38 percent more than those who do not speak English very well (see Table II). This dummy coefficient for language proficiency is only + 0.08 for the Asian immigrants. However, English dummy coefficients are not statistically significant for either Asian or European immigrants. These two groups of immigrants have higher than average proficiency in English. Individuals most proficient in English have higher than average economic status level (e.g., see references to Lopez 1976, 1978; Grarcia 1979; Greniers 1981; and Tienda 1982).

Experience is one of the three most important factors in explaining earnings differences between Asian – and European immigrants. European immigrants do better than Asian immigrants in both the total experience and the U.S. specific experience (and its contribution to the earnings). Except for some early Chinese and Japanese, the Asian immigrants did not start coming to the U.S. in large number until 1960. As many as 50 percent of the recent Europeans in our sample came to the U.S. even before 1960. The European immigrants are therefore relatively old, and have an average post-school experience of 26 years. The Asian immigrants, who are relatively new, have only 19 years' experience (see Table IV). Based on the sum of the effects for experience and experience square, the lower experience of Asian immigrants (relative to Europeans) reduces their relative earnings by 6.5 percent (column 3), while Asian immigrants' lower returns to experience reduces their relative earnings by 6.8 percent (column 6).

Asians incur higher costs of immigrating to the U.S. Note that a proxy of air distance for direct costs of immigration is unlikely to capture all costs of immigration. Due to the distance, low-productivity Asians are relatively less likely to immigrate to the U.S., even though they are probably at the lower tail of a relatively greater income inequality (except for the case of Chinese) in their home countries in comparison to the income distribution of Europeans.

Immigrants from communist countries are, nevertheless, willing to better utilize their human capital because of their higher costs of return migration. As they acquire U.S. specific job culture, they assimilate over time at a greater rate than other groups of immigrants from free country.[11] A large group of recent Asian immigrants are from communist takeover countries such as Vietnam and the People's Republic of China. These Vietnamese– and Mao– regime Chinese immigrants to the U.S. are not necessarily from the

[11]It is understandable that these immigrants have more potential complementary resources such as education (than is reflected in their initial earnings during their early period of entrance to the U.S.). They have better economic progress over time but at a relatively lower earnings level. In fact, I have tested that immigrants from communist takeover countries have statistically higher slopes of cohort earnings profiles than immigrants from all other free countries together. It is important to note that higher assimilation rate does not necessarily mean a higher level of earnings but nevertheless shows the greater rate of economic progress (see Borjas 1987).

lower tail of their income distribution in Vietnam and in China (even though most pre-WWII Chinese immigrants to the U.S. did have low productivity), respectively. Further, they faced more serious threats of both economic– and non-economic nature including confiscation of their private property, and sometimes even imprisonment. The cost of return migration for these political immigrants are thus naturally higher, often prohibitively high. Therefore, such refugees try their best to adapt to the U.S. which is also a probable reason for Cuban immigrants' success (e.g., see reference to Borjas 1987).

Probably due to all these reasons, the highly educated Asian immigrants view schooling for their accompanying children as a ticket to success. Finally, according to some other studies such as Bartel (1986); and Chiswick(1986), recent Asian immigrants are found to be more informed and more responsive about relative economic opportunities than earlier immigrants of Asian ancestry.

XIV. HISPANIC IMMIGRANTS VERSUS EUROPEAN IMMIGRANTS

While Asian– and European immigrants are highly educated and thus bring with them a huge amount of investment in human capital, both the absolute and relative earnings of Hispanic immigrants are lower than those of Asian– and European immigrants. This tends to support the hypothesis that the Hispanic immigrants are self-selected often from the lower tail of their income class than Asian– and European immigrants. Table XI presents the differences between earnings of Hispanic immigrants and European immigrants as a percentage of European immigrants' earnings by component variables.

Considered alone, the less favourable characteristics of Hispanic immigrants would cause them to earn 60 percent less than European immigrants, other things such as returns to characteristics remaining the same (see column 3 total). The public policy maker should be aware that Hispanic immigrants are less able to compete with their Asian– and European immigrant counterparts because of the former group's lower levels of human capital.

Between Hispanic – and European immigrants, over half of the total earnings gap is explained by Hispanics' fewer years of schooling. As noted above, Hispanic immigrants have, on average, 8.5 years' schooling compared to 14 years for Asian – and 12 years for European immigrants. Merely raising Hispanic immigrants' level of schooling from 8. 5 to 12 years would close their earnings gap with the European immigrants by 31 percent (see column 3).

A weaker command of English also reduces the relative earnings of Hispanic immigrants compared to European immigrants. Among Hispanics, only 25 percent were reported to speak English very well while 52 percent of Asians–and 70 percent European immigrants speak English very well. Raising Hispanic immigrants' English proficiency to the average level of European immigrants would close this earnings gap by at least 14 percent.

Further, as a result of their lower levels of schooling, Hispanic immigrants are probably less capable of acquiring knowledge and skills through their work experience, and are probably paid less even in occupations similar to those of European immigrants.

TABLE XI

DIFFERENCES BETWEEN HISPANIC IMMIGRANTS' AND EUROPEAN IMMIGRANTS' EARNINGS AS A PERCENTAGE OF EUROPEAN IMMIGRANTS' EARNINGS BY COMPONENT VARIABLES

Variables	Characteristics Differentials			Parametric Differentials		
	$b_EX_E - b_EX_H$	$b_HX_E - b_HX_H$	$.5(CL_1 + CL_2)$	$b_EX_E - b_HX_E$	$b_EX_H - b_HX_H$	$.5(CL_4 + CL_5)$
	1	2	3	4	5	6
Education	−.315	−.311	−.313	−.015	−.010	−.012
Experience	−.102	−.084	−.093	−.119	−.101	−.110
Expersqrd	.046	.035	.041	.044	.033	.039
Net Exper	−.056	−.049	−.052	−.075	−.068	−.071
Langprofic	−.168	−.107	−.138	−.094	−.034	−.064
Hlthdisabi	.002	.001	.001	.003	.002	.003
Spouwrking	.005	−.011	−.003	.063	.047	.055
Spousnotpr	−.000	.000	−.000	.037	.037	.037
Numchildrn	.009	.019	.014	.027	.037	.032
Wealth	−.021	.001	−.010	−.017	.005	−.006
Selfemply	−.000	−.010	−.005	.014	.005	.010
Infrmlsctr	−.069	−.031	−.050	.034	.072	.053
Pre50cohrt	−.006	−.039	−.022	.043	.011	.027
50'scohort	−.021	−.045	−.033	.041	.017	.029
60'scohort	.004	.008	.006	.022	.026	.024
Ruralemply	.000	−.000	−.000	−.008	−.008	−.008
California	.008	−.002	.003	−.009	−.019	−.014
Total	**−.628**	**−.576**	**−.602**	**.067**	**.119**	**.093**

However, differences in earnings between Hispanic–and European immigrants due to differences in their levels and returns to experience is not a huge.[12] Hispanic immigrants' work in the relatively low wage sectors such as labourers, operatives, farming, and services create an earning gap of 5 percent in European immigrants' favour. The record shows that as many as 60 percent of Hispanic immigrants are employed in the United States' low-productivity, i.e., low-earnings or low-wage job sectors. The comparable figures are 29 percent for Europeans and 25 percent for Asian immigrants.

Note that 9 percent higher earnings of Hispanic immigrants due to their overall higher returns (relative to European immigrants) in our averaging procedure by decomposition technique might surprise the reader.[13] As noted earlier, differences in earnings due to differences in returns are substantial between immigrants and their U.S.-born counterparts

[12]For example, the lower experience of Hispanic immigrants reduces their relative earnings (relative to European immigrants) by only 5.2 percent as net effect of experience and experience square taken together (column 3). Note that mean difference of work experience between European–and Hispanic immigrants is also not very high, 26.2 years for the former compared to 22.2 years for the latter.

[13]In fact, none of the figures in columns 3 and 6 of our component variables analysis is actual regression coefficient nor are all these calculated from marginal return coefficients. Only four of our regression variables such as education, experience, number of children, and wealth have marginal return coefficients. The rest others are dummy variables which compares the omitted group from the one being included in the equation by the effect of some distinguishable characteristics (such as rural workers versus urban workers).

(Contd.)

but small between immigrants groups. For example, coefficients of education for Hispanic– and European immigrants are .083 and .085, respectively, and cannot create an important difference in their earnings (see column 6). European immigrants, however, increase their relative earnings by 7 percent because of their greater return to total experience, and by 6 percent due to a greater reward to their English proficiency (relative to Hispanic immigrants). Hispanic immigrants have advantage over European immigrants in return to characteristics other than human capital only, namely, spouse present and working, and their working the low wage sector due to our methodology of decomposition technique. Returns to both these latter two characteristics increase Hispanics' relative earnings by only 5 percent, respectively. Returns to other component variables are small, and are of doubtful statistical significance.

XV. SUMMARY AND CONCLUSIONS

The earnings of immigrants are overestimated if one would not properly correct for immigrants' self-selectivity. It is generally hard to explain the earnings differences between immigrants and persons born in American of the same ancestry because much of these arise from non-measurable sources such as differences in the quality of education, work experiences, and skills. Relative to their U.S.- born counterparts, all these groups of immigrants generally receive much lower returns on their overall earnings generating characteristics. Immigrants would close most of the earnings gap with their U.S.-born counterparts if the former received the same return on their earnings characteristics as the latter.

Asian immigrants on average generally possess as favourable as set of earnings-related characteristics as Asian–Americans, while European immigrants are actually a little better off than European– Ameriacns in this respect. The reasons for relatively greater Hispanic poverty in the U.S. are that Hispanic immigrants are less well endowed with human capital and other characteristics than Hispanic– Americans.

The parametric earnings differences which generally favour the U.S.-born workers as opposed to their immigrant counterparts may be due to the latter group's relatively low marginal productivity. Immigrants' lower marginal productivity can be attributed to their inability of speaking English, their relatively less cultural assimilation, their relatively non-transferable traditional work experience. Faced with the above noted unfavourable characteristics, immigrants generally concentrate in lower status occupations, and receive lower wages within major occupational category.

As to selectivity-corrected earnings across immigrant groups, Asian immigrants'

small parametric differences between two earning groups in our averaging procedure by decomposition technique may not reflect the difference in marginal return coefficients between them but may well be dominated by differences in dummy coefficients (which are not marginal return). Consider the above noted four variables separately from other variables for an exposition purpose. I see that Hispanic immigrants' relative earnings decreases by 0.057 percentage points (relative to European immigrants). Parametric differentials in my methodology are thus the sum of two: (1) differentials in marginal return coefficients of two earning groups, and (2) differentials in the effect of distinguishable characteristics between omitted and included group in the equation, as traditionally represented by dummy coefficients, of two earning groups.

earnings are slightly greater than those of European immigrants because Asian immigrants possess an amount of overall human capital which is also slightly greater than those of European immigrants, and are far greater than those of Hispanic immigrants. The effects of different characteristics (both levels and returns) are mainly offsetting between Asian– and European immigrants. Of all factors, schooling, English, and experience seem to be nevertheless important in explaining these small earnings differences between Asian – and European immigrants. European immigrants have more experience than Asian immigrants. Asian immigrants have the advantage of relatively higher levels of education and also receive higher returns to education relative to the two other immigrant communities in the U.S. Asians' costs of immigration are higher. Low productivity Asians are relatively less likely to take the risk of uprootedness by immigrating to the U.S. A large group of Asian immigrants (34 percent) are from a Communist takeover countries such as Vietnam and the People's Republic of China. The cost of return migration for those who came from a politically repressive country are naturally high, often prohibitively high. Therefore, such immigrants try their best to adapt to the U.S. which is also a probable reasons for Cuban immigrants' success (e.g., Borjas 1987).

Both the absolute and relative earnings of Hispanic immigrants are much lower than those of Asian– and European immigrants due to the former groups' lower levels of schooling, their less proficiency in English, and their employment in lower wage occupational groups. A public effort should be made toward increasing the Hispanic immigrants' average level of schooling as well as their English proficiency.

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