Canadian Studies in Population, Vol. 26(2), 1999, pp. 159-182

Do Foreign Birth and Asian Minority Status Lower Canadian Women's Earnings?

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Abstract

This paper examines the effects of foreign birth and Asian minority status on Canadian women's earnings. Four groups are compared: native- and foreign-born European- and Asian-origin women. The paper finds that while foreign birth and Asian ethnicity lower women's earnings, the negative effect of foreign birth is *twice* as large. Asian ethnicity is *not* consistently negative: returns to native-born Asians' human capital are comparable to European-origin women's, and negative effects associated with foreign birth are *not* consistently larger for Asian immigrants. The effects of nativity and Asian ethnicity on earnings are becoming more complex as immigration continues to alter Canadian society.

Résumé

Cet article examine les effets des naissances d'origine étrangère et du statut de la minorité asiatique sur le revenu des femmes canadiennes. Quatre groupes ont été comparés: les canadiennes d'origine asiatique ou européennes et les femmes étrangères, asiatiques et européennes. L'article démontre que le fait d'être d'origine étrangère ou d'appartenir à la minorité asiatique diminue le salaire, mais que cette conséquence négative est deux fois plus importante pour les femmes d'origine étrangère. Ainsi, la minorité asiatique ne rencontre pas toujours que des effets négatifs. Les femmes d'origine asiatique ont, par exemple, un accès à l'éducation comparable aux femmes d'origine européenne et les conséquences associées aux naissances étrangères ne sont pas toujours plus importantes pour les immigrants asiatiques. Ainsi, les effets de la naissance et de la minorité asiatique sur les salaires sont de plus en plus complexes puisque l'immigration continue d'altérer la société canadienne.

Key words: women, immigrants, earnings, Asians.

Introduction

One aspect of international migration today is the increased participation of women from diverse national origins, leading to dramatic changes in the ethnic demography of many societies (Lee, 1996; United Nations, 1995). Canada's population is mainly composed of immigrants and their descendants, the overwhelming majority of whom are of European origins. In recent years, however, Canada's "visible minority"[1] population has grown to about 11 percent of the total population. Over two-thirds of the visible minority population are Asian Canadians. Canadians of Asian origins have increased from less than one percent of Canada's population in 1961 to five percent in 1991 (Dominion Bureau of Statistics, 1963; Statistics Canada, 1994).

The growth of the Asian population in Canada is fueled by recent immigration. Among immigrants who arrived before 1961, only 2.4 percent originated from Asia. By the 1980s, half of all immigrants were from Asia. Recent Asian immigrants also include a growing percentage of women. Over 40 percent of women immigrants who arrived between 1981 and 1991 were born in Asia. At least half of immigrants from the main Asian source countries were women. For example, 67 percent of Filipino immigrants and 53 percent of immigrants from China were women (Statistics Canada, 1992).

In tandem with the growth in female migration, women have also increased their participation in the labor force. In industrialized nations, women make up two

of every five workers, and their rate of participation is growing faster than men's. Between 1980 and 1992, the number of working women in the countries that make up the Organization of Economic Cooperation and Development (OECD) grew by 24 percent, twice the rate for men (International Labour Organization, 1995).[2] In Canada, 58 percent of women and 74 percent of men aged 15 and older are in the labor force (Statistics Canada, 1998). The labor force participation rates of native and foreign-born women aged 15 to 64 are quite similar, at 72 percent for the native born and 69 percent for the foreign born (Lee, 1995).

The convergence of these two trends in Canada and other societies raises questions about the effects of foreign birth and ethnic minority status on women's labor market experience as foreign-born women who are racial/ethnic minorities become larger segments of the labor force. Boyd analyzed occupational status (1984) and earnings (1990) of immigrant women in Canada and found evidence of multiple disadvantages associated with foreign birth, gender, and non-European ethnicity. Immigrant women were concentrated in service and processing jobs, and had lower earnings than men. Beach and Worswick (1993) examined data from the 1973 Job Mobility Survey conducted by Statistics Canada and generally confirmed the existence of a "double-negative" effect on immigrant women's earnings. However, they cautioned that the negative effect was not consistent, and seemed to be particularly marked among highly-educated women. Other research that examined the role of foreign birth include Meng's (1987) and Miller's (1992) comparisons of native and foreign-born men's earnings in Canada. Both found that while foreign birth was associated with lower initial earnings, the earnings gap decreased over time, usually after 14 or 15 years, as immigrant men gained experience in the Canadian labor market (a similar pattern was reported by Tandon, 1978, using 1971 census data). Bloom, Grenier, and Gunderson (1995) examined 1971, 1981, and 1986 Canadian census data to compare native and immigrant earnings. They found that male and female immigrants experienced lower earnings relative to the native born. Of greater concern were findings indicating slower earnings assimilation for the most recent immigrant cohorts, and particularly slower earnings growth for Asian, African, and Latin American immigrants. The pattern for women immigrants was generally similar to that observed for male immigrants. The authors suggested that changing immigration policy (leading to reduced immigrant quality), increased discrimination of visible minorities, and economic recession may have contributed to the declining economic assimilation of immigrants. The role of racial or ethnic discrimination against non-Europeans was also discussed in a report by the Special Committee on Participation of Visible Minorities in Canadian Society (1984).

A review of previous research therefore shows that foreign birth and ethnic minority status continue to have negative effects on Canadians' socioeconomic outcomes. It is even possible that such negative effects may have worsened

(Bloom et al., 1995). At the same time, the increased participation of immigrants, particularly women, in the Canadian economy, could alter immigrants' labor force experience in different ways. Greater exposure to and familiarity with immigrant and minority women as workers may lessen the negative effects of foreign birth and minority status. As the foreign-born population grows, more economic opportunities in immigrant enclaves may emerge for immigrants, providing some protection from employer bias. Questions therefore remain on whether foreign birth and ethnic minority status continue to consistently disadvantage immigrant women (or men).

Using more recent data, this paper contributes to research on immigrant women in Canada by examining whether foreign birth and Asian minority status lower the earnings of Canadian women. As more immigrant women and Asian Canadian women participate in the labor force, it becomes particularly important for researchers to examine the labor market experiences of these groups. The general expectation is that women immigrants will have lower earnings than similar native-born women, and that Asian women, both native and foreign born, will have lower earnings compared with European-origin women. However, it is also possible that the effects of foreign birth and Asian ethnicity may be inconsistent across groups once appropriate controls are included, as reported by some researchers (Beach and Worswick, 1993; Meng, 1987). This paper also extends previous research by comparing the largest Asian groups -- Chinese, South Asian, Filipino, and Vietnamese -- to search for inter-group variations within the Asian Canadian population.

Data

Data for this research are based on the 1991 Census of Canada public use microdata file on individuals. This microdata file is a 3 percent sample of the Canadian population in 1991 (Statistics Canada, 1994). A data set that consists of all foreign-born women of Asian and European origins, all native-born Asian-origin women, and one-fourth of native-born women of European origin, aged 15 to 64, is extracted. The sample is further limited to women who reported having worked during the reference week and positive earnings in 1990.[3]

Restricting the sample in this way may bias the findings due to censoring women who are unemployed or who have no earnings. If Asian ethnicity and foreign birth are sources of labor market disadvantage, then Asian women immigrants are more likely to be affected.[4] When there is strong theory about the relationship between women's wages, women's probability of labor force participation, and human capital (Stolzenberg and Relles, 1990), it is necessary to correct for sample selectivity. If no correction is performed, findings may bias earnings upwards and seriously underestimate any differentials between Asian and European-origin women, and between the native and foreign born. In view of such concerns, a correction factor in the data analysis is included.

Four groups of women are examined (unweighted number of cases in parentheses): native-born Asian-origin (1,083); native-born European-origin (36,888); foreign-born Asians (8,804); and foreign-born Europeans (21,940). Applying appropriate weights yields 36,096 native-born Asian-origin and 4,918,277 native-born European-origin women, and 293,437 Asian and 731,260 European immigrants.

Variables and Expected Effects

The dependent variable is the natural logarithm of total wages and salaries earned in 1990. This includes all gross wages and salaries, including military pay, allowances, tips, commissions and cash bonuses, and all types of casual earnings (Statistics Canada, 1994:144).

Independent variables include several human capital-related characteristics, such as schooling, potential labor market experience, and weeks worked in 1990. Following Miller (1992), potential labor market experience is computed as age minus years of education minus 5 and measures exposure to the labor market. Quadratics for schooling and labor market experience are included to capture non-linear effects. The effects of occupational status are estimated by four categories of occupation defined by skill level (see Statistics Canada, 1994:130-131 for details). These are dummy variables and the omitted category is the lowest level, Skill Level 1, which includes manual and unskilled sales and service workers. Skill Level 2 includes semi-skilled manual workers, sales, service, and clerical workers; Skill Level 3 includes crafts and trades, administrative and senior clerical, etc.; and Skill Level 4 includes managers and professionals. Compared to the omitted category, all three higher skill levels are expected to have positive effects on earnings.

To estimate the effect of local wage levels on earnings, a new variable, LOCEARN, is constructed. LOCEARN is derived from three variables: women's annual earnings, census metropolitan area, and for non-metropolitan areas, province of residence. This variable measures the average earnings for a total of 30 different locations (19 metropolitan and 11 non-metropolitan areas). The effect of LOCEARN is expected to be positive.

Previous research suggest that married men are more likely to be employed and earn higher incomes, while delayed marriage shows a positive effect on women's earnings. However, this effect is eroded over time (Chandler et. al, 1994). On the other hand, Hughey (1990) reported that married women have higher individual and family incomes. A dummy variable to estimate the effect of being married is included in the earnings functions.

Proficiency in the dominant language of any society is essential for employment and earning higher wages because language proficiency represents human capital and can shape labor market experience (Boyd 1990; Chiswick and Miller, 1988; Miller, 1992). Being able to speak either English (or French in Quebec) well is particularly important for foreign-born women's labor market experiences in Canada. A variable that measures home language is used to capture this effect.[5] The effect of "foreign" home language is expected to be negative.

A dummy variable to estimate the effect of "French only" home language outside of Quebec is included in the earnings functions for the pooled analysis and for European-origin women. The effect of being French-speaking outside of Quebec is expected to be negative because it indicates the effect of French language minority status. This variable is not included in the earnings functions for Asian women because hardly any Asian women speak only French as their home language and also reside outside of Quebec.

Independent variables that relate to the migration process are included in the models for the foreign born. Previous research show that recency of immigration extracts a substantial cost. As duration of residence lengthens however, many immigrants catch up or even surpass the native-born on the usual measures of socioeconomic attainment (Chiswick, 1978; Meng, 1987; Miller, 1992; Tandon, 1978).[6] Dummy variables are used to estimate the effects of year of arrival (and therefore, years since migration): Before 1961, 1961 to 1970, 1971 to 1980, and 1981 to 1991. Compared to the omitted category of "1981 to 1991" (the most recent arrivals), immigrants who arrive earlier are expected to have higher earnings.

Immigrants who have become citizens of their adopted countries usually do better on conventional measures of adaptation. The acquisition of citizenship signals commitment to their new home and also opens up new economic opportunities. Because most countries have residency requirements for naturalization, immigrants who have naturalized are also more likely to have lived in the host country longer. A dummy variable is used to estimate the expected positive effect of citizenship on earnings.

Finally, to estimate the effects of ethnic diversity of the Asian population, dummy variables are included for various Asian ethnic groups. Research on inequality in the Asian population in Canada is sparse. This paper provides a first look at ethnic differences within the female Asian Canadian population. Four dummy variables estimate the effects of being South Asian, Chinese, Filipino, and Vietnamese. The omitted category is "other Asians".

Correction for Sample Selection Bias

Stolzenberg and Relles (1990) discuss the relationship between human capital and women's labor force participation. The exclusion or censoring of women who are not in the labor force potentially biases estimates of the earnings functions upwards. The concerns surrounding sample selection bias have been extensively examined (Berk 1983; Heckman 1976, 1979; Stolzenberg and Relles, 1990) . To correct the sample selection bias of women into the labor force, I follow a procedure suggested by Heckman (1976, 1979) and Berk (1983).[7] Heckman's (1979) method is a two-stage estimation procedure. In the first stage, a probit model is used to estimate the propensity to work for all women, including women who are excluded from the sample because they do not report positive weeks worked or earnings. The probit model includes several factors that are known to affect women's labor force participation, such as age, schooling, marital status, etc. The probit estimates obtained for each woman are used to calculate a correction factor, λ_i, the inverse Mills ratio or the hazard rate (Heckman, 1979). In the second stage, the hazard rate, λ_i, is entered as an explanatory variable in the earnings functions in subsequent analysis.

In the correction procedure, the correction factor, λ_i, or hazard rate, is directly obtained from a logistic model used to predict the probability that women will NOT be in the labor force (Berk, 1983).[8] The dependent variable is a dichotomous variable where the outcome, not in the labor force, is coded 1.[9] The logistic selection equation includes the following predictor variables: marital status (married=0, not married=1); presence of children below six years old at home (none=0, yes=1); dummy variables measuring knowledge of official languages (neither English nor French; English only; French only; and Both English and French; the omitted category is neither English nor French); residence in urban areas (no=0, yes=1); and schooling (measured as a continuous variable). The predicted probability of not being in the labor force (that is, the likelihood of exclusion from the sample), or the hazard rate, is saved for each case. In the second stage, the correction factor, or hazard rate, is entered into the earnings functions as an explanatory variable. The statistical significance of the hazard rate in the earnings functions indicates whether selection into the labor force has a significant impact on earnings.

Findings

Descriptive Statistics

The percentage distributions shown in Table 1 are based on weighted cases. The main descriptive findings are briefly summarized.

Table 1. Percentage Distribution on Selected Characteristics (Weighted Cases)

Variable	Native Born		Foreign Born							
	Asian	European	Asian	European	South Asian	Chinese	Filipino	Vietnamese	Other Asian	Total
% in Labor Force	85.2	89.8	89.3	90.1	88.6	87.9	93.6	87.4	85.8	89.7
% Married	31.3	51.8	64.5	67.4	68.8	61.6	49.0	59.1	57.5	53.9
% Foreign Lang.	12.6	0.8	64.4	25.2	49.6	68.4	50.6	90.1	43.8	7.6
Occupation (%)										
Skill 1	15.2	13.1	18.2	14.2	22.4	15.7	15.0	23.3	16.1	13.7
Skill 2	39.6	40.5	45.3	39.4	45.1	41.6	53.1	49.0	39.1	40.7
Skill 3	22.1	25.4	19.0	24.9	16.9	22.5	15.6	15.4	21.9	24.9
Skill 4	23.1	21.0	17.5	21.5	15.6	20.2	16.3	12.3	22.9	20.8
% Citizen	100.0	100.0	61.5	71.8	63.0	70.6	54.8	68.0	72.2	94.1
Province of Residence (%)										
Quebec	4.9	26.9	7.2	11.9	5.5	5.6	6.0	26.9	8.7	23.8
Ontario	40.1	35.3	51.1	58.9	55.3	48.7	52.5	37.7	40.8	39.3
Prairies	14.6	17.4	16.1	12.4	12.1	14.9	22.1	24.7	15.8	16.7
BC	39.3	10.8	24.9	14.3	27.1	30.9	19.5	10.7	27.4	12.0
Other	1.2	9.6	0.7	2.5	a	a	a	a	7.3[a]	8.2
% Metropolitan Residence	88.8	58.4	93.8	81.7	91.1	96.1	94.8	93.7	84.6	63.7

[a] For the Atlantic provinces and territories (Yukon and Northwest), only a general category "Asian" is available.

Labor force participation rates are uniformly high. Filipino women are outstanding with a labor force participation rate of 94 percent. Marital status is clearly affected by age structure. Except for native-born Asian women (who have the youngest mean age -- see Appendix), half or more of the women are married.

Not surprisingly, the foreign born and Asian groups are less likely to speak either English or French at home. Even among native-born Asian-origin women, almost 13 percent speak another language at home, compared to just 1 percent of native-born European-origin women. This reflects the recency of substantial Asian immigration to Canada. Almost two thirds of immigrant Asian women speak a foreign home language; in contrast, only one quarter of foreign-born European women's home language is neither English nor French.

Most women are in Skill 2 occupations. While the differences are not large, there is a general pattern for more native-born and foreign-born European women to work in occupations that are in the two highest skill levels. In contrast, over one-fifth of South Asian and Vietnamese women are in Skill 1 jobs.

Differences in naturalization rates among the foreign born reflect recency of immigration for many Asian immigrants. About 62 percent of foreign-born Asian women are citizens while 72 percent of foreign-born Europeans have naturalized. Ontario and British Columbia contain the largest share of Asian women, with substantial numbers also in the Prairie provinces (Manitoba, Saskatchewan, and Alberta). The only Asian group with significant numbers in Quebec is the Vietnamese. Finally, the concentration of Asian women, particularly the foreign born and Chinese, in Canada's metropolitan areas, is noteworthy.

Regression Results

Results from estimating five earnings functions, with and without the correction factor, are shown in Table 2. Five equations are estimated. Human capital-related variables, occupational skill levels, marital status, and local wage levels are common to all equations.

Pooled Analysis

Columns (a) and (b) present findings for the total sample. According to column (a), earnings increase with years of schooling at an increasing rate. The partial effect of education on earnings is given by {-.030 + (.004*SCHOOLING)}. Evaluated at the mean, SCHOOLING = 13, this indicates a 7.4 percent increase

Table 2. Regression Results of LN Wages, T-Statistics in Parentheses

Independent Variable	All Cases		Native Born				Foreign Born			
			Asian		European		Asian		European	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
SCHOOLING	-0.03	-0.007	.0003+	.043*	.017*	0.043	-0.063	-0.024*	-0.057	-0.037
	(-10.31)	(-4.43)	(0.01)	(0.56)	(1.17)	(3.77)	(-6.68)	(-1.73)	(-7.86)	(-3.61)
SCHOOLINGSQ	0.004	0.003	.003*	.002*	0.002	0.002	0.004	0.003	0.004	0.003
	(20.99)	(17.50)	(1.43)	(0.97)	(5.80)	(4.14)	(10.04)	(7.39)	(12.10)	(9.94)
EXPERIENCE	0.056	0.054	0.086	0.08	0.06	0.059	0.043	0.041	0.036	0.036
	(55.15)	(52.74)	(10.57)	(9.13)	(46.95)	(44.22)	(16.69)	(15.62)	(20.77)	(20.10)
EXPERIENCESQ	-0.0009	-0.0009	-0.0014	-0.0013	-0.0011	-0.0011	-0.0008	-0.0008	-0.0006	-0.0006
	(-43.20)	(-42.86)	(-7.67)	(-7.37)	(-36.76)	(-36.31)	(-13.95)	(-13.91)	(-17.65)	(-17.78)
WEEKSWORKED	0.039	0.039	0.034	0.034	0.039	0.039	0.036	0.036	0.039	0.039
	(175.42)	(175.28)	(18.84)	(18.98)	(127.22)	(127.15)	(57.60)	(57.64)	(90.47)	(90.43)
SKILL 2	0.174	0.173	0.218	0.226	0.171	0.17	0.186	0.185	0.112	0.11
	(16.70)	(16.64)	(2.58)	(2.66)	(11.55)	(11.44)	(7.30)	(7.26)	(5.84)	(5.78)
SKILL 3	0.368	0.366	0.425	0.445	0.361	0.358	0.342	0.341	0.302	0.3
	(32.24)	(32.25)	(4.29)	(4.45)	(22.25)	(22.01)	(11.17)	(11.15)	(14.42)	(14.35)
SKILL 4	0.556	0.556	0.589	0.614	0.545	0.543	0.549	0.547	0.504	0.505
	(44.29)	(44.35)	(5.55)	(5.74)	(29.73)	(29.59)	(16.40)	(16.30)	(21.53)	(21.57)
LOCEARN/1,000	0.039	0.04	0.031	0.035	0.037	0.039	0.039	0.041	0.045	0.045
	(32.01)	(32.44)	(2.46)	(2.75)	(21.85)	(22.33)	(9.15)	(9.43)	(19.25)	(19.37)
MARRIED	-.014*	-.008*	.021*	.030*	-0.029	-0.023	0.129	0.129	-0.039	-0.033
	(-0.21)	(0.45)	(0.29)	(0.43)	(-2.90)	(-2.20)	(6.04)	(6.04)	(-2.88)	(-2.39)
FOREIGN BIRTH	-0.067	-0.063	**	**	**	**	**	**	**	**
	(-9.64)	(-9.11)								
ASIAN	-0.031	-0.032	**	**	**	**	**	**	**	**
	(-3.01)	(-3.09)								
FRENCH MINORITY	.029*	.024*	**	**	.036*	.032*	**	**	.108*	.101*
	-1.19	-0.98			(1.30)	(1.13)			(1.46)	(1.37)
FOREIGN HOME LAN	**	**	-0.189	-0.179	-0.11	-0.108	-.007*	-.008*	-0.045	0.047
			(-2.29)	(-2.16)	(-2.22)	(-2.17)	(-0.04)	(-0.38)	(-2.29)	(-3.0)

Table 2. Regression Results of LN Wages, T-Statistics in Parentheses (Continued)

Independent Variable	All Cases		Native Born				Foreign Born			
			Asian		European		Asian		European	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
BEFORE 1961	**	**	**	**	**	**	0.15 (1.93)	0.154 (1.96)	0.129 (5.94)	0.132 (6.06)
1961-1970	**	**	**	**	**	**	0.157 (4.41)	0.169 (4.74)	0.136 (7.13)	0.138 (7.22)
1971-1980	**	**	**	**	**	**	0.088 (3.79)	0.095 (4.08)	0.054 (2.96)	0.058 (3.14)
CITIZEN	**	**	**	**	**	**	0.125 (5.53)	0.12 (5.30)	0.077 (5.47)	0.077 (5.45)
SOUTH ASIAN	**	**	.069* (0.81)	.070* (0.82)	**	**	0.204 (5.54)	0.2 (5.42)	**	**
CHINESE	**	**	0.216 (3.17)	0.197 (2.89)	**	**	0.14 (3.88)	0.137 (3.79)	**	**
FILIPINO	**	**	-0.364 (-2.41)	-0.375 (-2.45)	**	**	0.114 (2.91)	0.112 (2.85)	**	**
VIETNAMESE	**	**	**	**	**	**	.085* (1.68)	.076* (1.49)	**	**
HAZARD RATE	**	0.421 (5.75)	**	1.007* (1.07)	**	0.452 (4.89)	**	0.789 (3.82)	**	0.399 (2.65)
Constant	6.004 (165.16)	5.673 (88.62)	5.699 (11.84)	5.007 (6.23)	5.662 (80.56)	5.292 (50.51)	6.18 (57.17)	5.619 (31.05)	6.331 (92.97)	6.037 (45.98)
R2	0.482	0.483	0.603	0.604	0.494	0.495	0.455	0.455	0.399	0.4
N of Cases (unweighted)	73,466.	73,238.	1,092.	1,083.	37,009.	36,888.	8,826.	8,804.	21,999.	21,940.

Notes:

* All coefficients are statistically significant ($p < .05$) unless indicated by +. The coefficients are based on weighted cases; the t- statistics are based on unweighted cases.

** Variable was not entered into equation.

The omitted category for the three occupational levels -- Skill 2, Skill 3, and Skill 4 -- is Skill 1 occupations.

The omitted category for the three immigration periods -- Before 1961, 1961-1970, and 1971-1980 -- is 1981-1991.

The omitted category for the specific Asian ethnic groups -- South Asian, Chinese, Filipino, and Vietnamese -- is "Other Asians". In the equation for native born Asians, the omitted category of "Other Asians" includes 2 native born Vietnamese.

in earnings with each unit increase in schooling. The partial effect of education is slightly reduced to 7.1 percent after correcting for sampling selection, as shown in column (b). The effect of work experience is also statistically significant. Evaluated at EXPERIENCE = 17.65, this represents a 2.4 percent growth in earnings due to labor market experience. Earnings increase by 4 percent with each additional week worked. There is no change in the effects of experience or weeks worked after correction. Thus, all the human capital characteristics show expected effects on women's earnings.

The effects of occupational skill levels are as expected, with no difference in the coefficients after correction. Compared to the excluded category, earnings increase by 17 percent if women have Skill 2 jobs, 37 percent for Skill 3 jobs, and 57 percent for Skill 4 jobs. Increases in the contextual variable, local earnings, is also associated with increased earnings, yielding a premium of 4 percent. Marriage shows a negative effect but is not statistically significant. After correcting for sampling selection bias, the effect of marriage is further reduced.

The effects of foreign birth and Asian ethnicity are as expected and are statistically significant, indicating penalties to women's earnings of over 6 percent (foreign birth) and 3 percent (Asian). The effect of minority French language is surprisingly positive but not statistically significant. Finally, the coefficient for the correction factor is statistically significant, indicating that sample selection bias is a factor. However, except for the effect of marriage, none of the coefficients in column (a) changed substantially after correction.

The findings from the pooled analysis generally support the hypotheses. After controlling for human capital and related characteristics, foreign birth and Asian ethnicity remain important sources of earnings disadvantage for women. However, the disadvantage associated with foreign birth is *twice* as large as that associated with Asian ethnicity.

Nativity and Ethnicity Comparisons

Findings from estimating earnings equations for native-born Asian- and European-origin women, and for foreign-born Asian and European women, with and without correction, are presented in columns (c) to (j). The effects of different explanatory variables are discussed and compared across groups where appropriate.

(i) Human Capital. Returns to schooling are higher for native-born women, but the coefficients for native-born Asian-origin women are not statistically significant. A comparison of schooling's partial effects by Asian ethnicity reveals little evidence that Asian women's schooling are rewarded less. After correcting for sample selection bias, the partial effects of schooling increased for

all groups but foreign-born Europeans. The change is particularly striking for native-born European-origin women: comparing columns (e) and (f), the partial effects of schooling changed from 7 to almost 10 percent. Returns to schooling are therefore positive for all groups but foreign-born women's education is rewarded *less*, compared to native-born women, suggesting that foreign-born women's credentials are not similarly evaluated. This may reflect problems of transferability of foreign credentials to the Canadian labor market.

Greater potential labor market experience is associated with earnings increments for all four groups, and the coefficients are not changed after correction. However, substantial differences are also observed. The partial effects of experience are higher for native-born women, particularly for native-born Asian-origin women whose earnings increase by over 5 percent with each unit increase in experience. Native-born European-origin women's earnings increase by about 2 percent while for all foreign-born women, the partial effect of experience is about 1 percent. Because this variable is constructed using age as a component, the differential rate of return from experience for native and foreign-born women demonstrates the non-linear relationship between age and earnings.

The effect of weeks worked is relatively similar for all groups, yielding an earnings increment of about 3.5 to 4 percent for each additional week worked.

Comparisons of the effects of productive or human capital characteristics reveal important differences that highlight the disadvantages associated with foreign birth. Native-born women derive larger earnings increments from schooling and experience. Based on the pooled analysis, greater investments in human capital yield about 13 percent higher earnings. This is exceeded by the 18 percent earnings increment associated with human capital for native-born Asian-origin women and the 16 percent increment for native-born European-origin women. In contrast, returns to earnings for immigrant women from combined human capital effects hover around 10 percent and are below average. An examination of the effects of schooling, experience, and weeks worked shows that *nativity* is a major factor in differentiating earnings.

(ii) Occupational Status. The coefficients for occupational skill levels reveal consistent effects across groups and correcting for sample selection bias does not alter the coefficients. Earnings increase substantially with higher occupational status. For example, among women who have Skill 4 jobs, the earnings increment is 61 percent for native-born Asian-origin women (column d), 54 percent for native-born European-origin women (column f), 55 percent for foreign-born Asian women (column h), and 51 percent for foreign-born European women (column j).

(iii) Context. Location in areas with high wages attracts an earnings increment for all four groups. The size of the effect is similar, raising earnings by about 4

percent for each $1,000 increase in local average wages. No change is observed after correction.

(iv) Marriage. The effect of being married appears to be strongly affected by ethnicity. Being married is negative for European-origin women, regardless of nativity (depressing earnings by 2 to 3 percent), and positive for Asian women, regardless of nativity. However, the effect of marriage is not statistically significant for native-born Asian-origin women. Married foreign-born Asian women's earnings are substantially increased by 13 percent. As discussed earlier, previous research is unclear about the effect of marriage on women's earnings. Results from the pooled analysis show a statistically insignificant minor negative effect of marriage (-.8 percent, after correction). It is intriguing that marriage is associated with such a substantial earnings increment for foreign- born Asian women. Perhaps marriage for this group is a proxy for unmeasured characteristics unique to this population. Correcting for sample selectivity reduced the coefficients for European women slightly but did not change the general pattern of ethnic and nativity differentials.

(v) Language. Minority French language indicates statistically insignificant effects on European-origin women's earnings. The inclusion of the correction variable decreased the coefficients but it appears that speaking only French as one's home language and living outside of Quebec do not affect earnings.

Foreign home language is associated with earnings decrements for all four groups and correction produces different changes to the coefficients. The negative effect of foreign home language is reduced for native-born women, particularly for Asian-origin women. On the other hand, correction increased the coefficients for foreign-born women, although the changes are not large. The coefficient for foreign-born Asian women is also not statistically significant. In fact, foreign-born Asian women's earnings are reduced by less than 1 percent if they speak a foreign home language (column h). In contrast, native-born Asian-origin women's earnings are most affected by a foreign home language (-18 percent: column d), followed by native-born European-origin women (-11 percent: column f), and foreign-born European women (-5 percent).

The larger penalties suffered by native-born women suggest that while foreign women are "expected" to speak a language other than English or French and are therefore penalized less, native-born women are "expected" to be either native English or French speakers. Those who do not speak English or French as their native or home languages may find themselves seriously disadvantaged. The retention of a "foreign" home language among the native born may also indicate slower integration into Canadian society. Foreign-born women may also be able to take advantage of ethnic and immigrant-based opportunities that do not require fluency in English or French, thereby avoiding serious earnings penalties. As the foreign-born Asian population grows in Canada, alternative economic opportunities may also expand for Asian immigrant women. Thus,

the role of language in labor market experience may continue to bifurcate by nativity in future.

(vi) Migration: The earnings equations for foreign-born women (columns g to j) include variables to measure the effects of years since migration and citizenship. The findings are as expected. Compared to the omitted category of recent immigrants (those who arrived since 1981), Asian women immigrants who have been in Canada for 11 to 20 years earn 9 percent more; those who immigrated in the 1960s have earnings that are 16 or 17 percent higher, and the immigrants who have been here longest average 15 percent higher earnings. A similar pattern is observed for foreign-born Europeans. Correction does not alter the effects of years since migration much, only slightly increasing the coefficients in all instances. Citizenship's positive effect is larger for Asian women immigrants and is associated with a 12 percent increase in earnings compared with 8 percent for European immigrant women.

The migration process is considered disruptive and migrants are expected to experience labor market disadvantages. Such expectations are confirmed from the pooled analysis, indicating a 6 percent earnings penalty associated with foreign birth. Findings from the equations estimated for foreign-born women confirm the negative effects of recent migration and non-citizenship on women's earnings. Unexpectedly, positive effects of more years since migration and citizenship are *larger* for Asian women immigrants.

(vii) Asian Ethnicity: The final set of variables estimates how specific Asian ethnicity affect earnings and are entered into the earnings equations for native-born and foreign-born Asian women (columns c, d, g, and h). Compared to the omitted category of "other Asians", Canadian-born South Asians and Chinese enjoy higher earnings of 7 and 20 percent (column d) respectively. However, the coefficient for South Asians is not statistically significant. Native-born Filipinos appear to suffer a large earnings penalty but this finding should be interpreted with caution because of small sample size. Among the foreign born, all four ethnic groups show positive effects on earnings, compared to the excluded group (the coefficient for Vietnamese is not statistically significant). Compared to other Asian immigrant women, earnings are increased by 11 to 20 percent if an immigrant woman is South Asian, Chinese, or Filipino.

Given the relatively sparse research on Asian Canadians, further research is needed before any conclusions can be drawn about ethnic stratification within the Asian population. That South Asian, Filipino, and Chinese women immigrants are able to derive earnings increments from their ethnicity compared to the omitted category of "other" Asians warrants further analyses. It is possible that Canadian immigration policy operates in ways related to ethnic origin of immigrants, thereby affecting the subsequent socioeconomic integration of migrants. In addition, unmeasured variables, including family

Table 3. Partial Effects on Earnings for Selected Variables

Variable	All Cases	(a)	Native Born				Foreign Born			
			Asian-Origin	(a)	European-Origin	(a)	Asians	(a)	Europeans	(a)
SCHOOLING	0.074	0.071	0.085	0.099	0.069	0.095	0.042	0.055	0.045	0.04
EXPERIENCE	0.024	0.022	0.057	0.053	0.023	0.022	0.014	0.012	0.008	0.008
MARRIAGE	-0.014	-0.008	0.021	0.03	-0.029	-0.023	0.129	0.129	-0.039	-0.033
FOREIGN BIRTH	-0.067	-0.063	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.
ASIAN ETHNICITY	-0.031	-0.032	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.
FOREIGN HOME LANGUAGE	n.e.	n.e.	-0.189	-0.179	-0.11	-0.108	-0.0007	-0.007	-0.045	-0.047

Notes:

(a) With correction.

n.e. Variable was not entered.

economic status and cultural values related to schooling for women may play a part.

Summary of Regression Findings

The partial effects of selected variables from several earnings functions are shown in Table 3. Findings before and after correction for sample selection bias are shown. Partial effects for SCHOOLING and EXPERIENCE are evaluated at the mean for each group (see Appendix).

The main findings can be summarized as follows. First, the effects of foreign birth and Asian ethnicity are negative. Immigrant women's earnings are lowered by 6 percent, and being Asian means a 3 percent earnings deficit. The negative effect of foreign birth is *twice* that of Asian ethnicity. Foreign-born women obtain substantially *lower* returns to schooling and potential labor market experience. Second, the negative effect of Asian ethnicity is *inconsistent.* Returns to human capital for native-born Asian women are comparable to those for European-origin native women, and penalties related to foreign birth are generally *less* for Asian immigrants. Third, marriage yields a large and statistically significant return for Asian immigrants but is associated with significant negative effects for European women, both native and foreign born. Fourth, speaking a foreign home language is *more* disadvantageous for native-born women, particularly for Asian-origin women. In marked contrast, foreign-born Asians are barely penalized. Fifth, all the migration-related variables show expected results. Finally, while most coefficients are not substantially changed after correction for selectivity, the correction factor, the hazard rate, is highly significant for all groups except native-born Asian women. This affirms the need to correct for selectivity.

Conclusion

The increased participation of women as international migrants and workers has contributed to growing numbers of minority women immigrants in the labor force of many countries. These developments raise important implications for the labor market experiences of foreign-born minority women. This paper finds that foreign birth and Asian minority status *continue* to exert negative effects on women's earnings in Canada. However, comparisons across groups differentiated by nativity and European and Asian ethnicity reveal a more complex picture. First, foreign birth is a larger source of disadvantage, and its negative effect is reinforced by lower returns of human capital for immigrant women. While being Asian also lowers earnings, Asian ethnicity is *not* always associated with earnings penalties. For example, compared with native-born European-origin women, native-born Asian women receive *higher* returns to human capital (particularly work experience) and occupational status.

However, these findings do *not* imply the absence of ethnic discrimination. A useful analogy for interpreting this finding is provided by Blacks in the United States who may receive higher returns for extremely high levels of schooling, compared with Whites. Yet, overall, Black Americans continue to be disadvantaged in the labor market. Therefore, while the findings show that in evaluating the relative weight of Asian ethnicity and nativity on earnings, nativity appears to be more critical, it is not possible to conclude that minority ethnicity is inconsequential.

Second, several variables related to foreign birth and the migration process show large and expected negative effects. With increased years of residence in Canada and the acquisition of citizenship, however, women immigrants' earnings improved. This change is larger for Asian immigrants, a finding consistent with previous research suggesting a steeper premium to Canadian labor market experience for Asian (compared with non-Asian) immigrants (Meng, 1987; Miller, 1992).

Third, the complex and changing effects of nativity and Asian ethnicity are also indicated by the effects of language and marriage. If dominant language proficiency is a form of human capital, then native-born Asian-origin women are most adversely affected. In contrast, Asian immigrants are not significantly penalized. In his analysis of data from the 1980s, Miller (1992:1238) had noted the "spectacular change" in the earnings penalty associated with dominant language deficiency. This paper provides new support for what may be an important shift in the role of dominant language proficiency among immigrants in Canada. The emergence and expansion of immigrant-based ethnic economies may insulate growing numbers of immigrants from earnings deficits related to lack of dominant language proficiency.

Ethnicity is the main factor in how marriage affects women's earnings. Marriage is positive for Asian women, native and foreign born, and negative for all European-origin women. The large positive effect of marriage on Asian immigrants' earnings is striking. Additional research on marriage and family characteristics are needed to explain these findings. Perhaps marriage is a proxy for unmeasured variables such as household structure and composition and cultural values that are associated with different effects on women's earnings.

Finally, as Canada's Asian population grows, the increased diversity of ethnic and cultural groups that are included in this population calls for more research. While most Asian Canadians are first or second generation Canadians, conditions for immigration and settlement vary, affecting socioeconomic assimilation. This paper finds important differences among Asian ethnic groups but data limitations prevent further study of what these differences represent.

The findings reported in this research hold implications for societies that are experiencing similar shifts in their labor force. As more women immigrants

who are also racial or ethnic minorities enter the labor force, questions about the effects of these ascriptive statuses on labor market outcomes (such as labor force participation or earnings) are timely and important. Will foreign-born minority women continue to experience multiple disadvantages, as documented by previous research, or will we see a more complex picture emerge as host societies are changed in response to demographic and social shifts? This paper finds continued evidence of earnings disadvantage for immigrant and Asian women, but there is also evidence suggesting that the negative effects of Asian minority status are changing and may be decreasing. It is premature, of course, to hail a decline in the significance of minority ethnicity in the Canadian labor market, but a revisiting of conventional understanding of foreign birth and minority status as consistently large labor market disadvantages may be appropriate. This paper's findings suggest that the combined effects of foreign birth and Asian ethnicity on women's earnings are changing in complex ways. Further research using different data with additional variables is needed to confirm and extend these findings.

Acknowledgements:

Revised version of a paper presented at the annual meeting of the Population Association of America, New Orleans, May 9-11, 1996. This research was partially supported by a grant from the Research Grants Program of the Canadian Embassy, Washington, D.C., to the author while she was a Visiting Scholar at the Department of Sociology, University of Victoria, 1995-96. Comments and suggestions by Monica Boyd, Barry Edmonston, and Zheng Wu on an earlier draft greatly improved the paper. The author is responsible for any remaining errors.

Endnotes:

1 The Canadian Employment Equity Act defines the "visible minority" population as persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in color.

2 While more women are working, women continue to be paid less for comparable work than men. However, the gender gap in earnings is not the focus of this paper.

3 The two variables used to select the sample are "labor force activity" and "wages and salaries" (see Statistics Canada, 1994: 121-122, 144 for details). Individuals are considered to be in the labor force, whether they are employed or unemployed, if they are working or available for work during the reference week (the week before enumeration). Women who are in the

labor force and who reported wages and salaries of at least $1 or more for 1990 are included in the sample.

4 The inclusion of all women, for example, may produce incorrect estimates by biasing findings downwards, thereby exaggerating group differentials. The cross-sectional nature of the data used in this analysis is also a limiting factor. Ideally, panel data should be used to examine the labor market experiences of specific individuals over time.

5 Home language is used because it is closely associated with official language proficiency, but is less likely to be distorted by subjective judgements of proficiency. Second, very few women report that they do not know either English or French (as measured by the census question on knowledge of official languages). The lack of variation on this question makes it difficult to examine language effects. Third, since knowledge of official languages is used as a variable in correcting for sample selection bias, another language variable in the substantive analysis is preferable.

6 The effect of years since migration may differ for women. Long's (1980) analysis of 1970 U.S. Census data indicates that immigrant women's earnings are *negatively* affected by years since migration.

7 Heckman's approach is the most widely used method but it has limitations (Little and Rubin 1987; Stolzenberg and Relles 1990). However, my sample is relatively large; there are well-founded reasons to suspect severe censoring; and there is strong theory suggesting that errors in selection into the labor force and errors in determining earnings are the result of similar underlying factors. Thus, Heckman's method seems an appropriate approach for correcting sample selection bias in this research.

8 Probit estimates are most commonly used in correcting for sample selection bias using Heckman's method. Berk (1983) examines linear and logistic estimates as alternatives to probit estimates if there are concerns that the assumption of bivariate normality is violated. I use a logistic equation to obtain the correction factor, λ_i, because it is reasonable to assume that the disturbances in women's labor force participation is bivariate logistic. From the logit model, the hazard rate or λ_i is simply the predicted probability of non-response (in this case, non- participation in the labor force).

9 The dependent variable in the logistic equation is a dummy variable to measure women's labor force participation. The census question on labor force activity refers to labor force activity during the reference week (that is, the week prior to enumeration). If I had used this variable in my logistic equation, I risk excluding an unknown and potentially substantial number of women who may in fact have worked during 1990, but not during the reference week. Thus, the dependent variable in the logistic equation is

Appendix

Weighted Means and Standard Deviations (in parentheses) of Variables*

Variable	All Cases	Native Born		Foreign Born	
		Asian	European	Asian	European
WAGES	17,945.9 (14,279.8)	1.8 17,791.0 17 (15,149.7)	20,087.8 (14,204.6)	17,558.8 (13,309.2)	20,087.8 (15,200.0)
LN(WAGES)	9.33 (1.20)	9.09 (1.37)	9.32 (1.21)	9.34 (1.12)	9.50 (1.12)
SCHOOLING	13.00 (3.04)	14.04 (2.74)	13.04 (2.83)	13.10 (4.0)	12.77 (3.78)
AGE	35.65 (11.80)	29.52 (12.49)	34.93 (11.71)	36.42 (10.83)	41.28 (11.54)
EXPERIENCEa	17.65 (12.66)	10.48 (12.89)	16.89 (12.47)	17.99 (12.05)	23.09 (12.93)
WEEKSWORKED	40.91 (15.37)	37.13 (17.01)	40.83 (15.46)	40.54 (15.26)	42.56 (14.14)
LOCEARNb	17,698.4 (2,781.1)	19,274.4 (2,134.8)	17,285.8 (2,690.1)	19,899.3 (2,087.1)	19,116.6 (2,575.3)
HAZARD RATEc	0.251 (0.114)	0.191 (0.084)	0.250 (0.107)	0.243 (0.144)	0.261 (0.134)
Sample Size	73238	1083	36,888	8,804	21,940

Notes:

* Statistics are presented for continuous variables.

a EXPERIENCE = AGE - SCHOOLING - 5.

b LOCEARN is derived from three variables: annual earnings, census metropolitan area, and province of residence for non-metropolitan areas. This provides a measure of the average earnings for a total of 30 different locations (19 metropolitan areas in different provinces and 11 non-metropolitan areas for the 10 provinces and Yukon and the Northwest Territories).

c HAZARD RATE is the correction factor obtained from a logistic model that can be written as Probability (Y=1) = f(B'x) where Y is the propensity NOT to be in the labor force and B is the vector of parameter estimates reflecting the impact of a set of explanatory variables, gathered in the vector, x.

"weeks worked during 1990". Women who report zero weeks worked are coded 1 on the dependent variable in the logistic equation.

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Received, November 1998; Revised, May 1999