

The Effects of English Proficiency on Earnings of U.S. Foreign-Born Immigrants: Does Gender Matter?

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Abstract: This paper compares the effects of English proficiency on foreign-born male and female immigrants in the U.S. by using data from the 2001 American Community Survey. The analysis demonstrates the importance of English proficiency on earnings for foreign-born immigrants. The results indicate that male immigrants suffer increasing penalties with decreasing levels of English proficiency. However, female immigrants who speak intermediate English suffer the greatest earnings penalty. Moreover, male immigrants may benefit more from well-spoken English than female immigrants. The Quantile Regression approach is adopted to examine the effects of English proficiency's effects across the entire earnings distribution. The relative importance of English proficiency is greater at the upper tier of the earnings distribution for immigrants as a whole. A similar pattern remains for both gender groups, although slight differences exist for either group.

JEL Classifications: J15, J24

Keywords: English proficiency, earnings, foreign-born, immigrants, gender, United States

Abbreviations:

EP: English Proficiency

OLS: Ordinary Least Squares

QR: Quantile Regression

1. Introduction

The Immigration and Nationality Act Amendments of 1965 and the Immigration Act of 1990 have contributed to increased immigration from abroad, due to their abolishing of the national-origin quota system and raising the annual cap on immigration. The statistics from the U.S. Census Bureau tell that the foreign-born population of the United States has been increasing in size and proportion in the total population during the recent four decades: from 9.6 million or 4.7 percent in 1970, to 14.1 million or 6.2 percent in 1980, 19.8 million or 7.9 percent in 1990, and 31.1 million or 11.1 percent in 2000. At the same time¹, there have been significant changes in the constitution of the foreign-born population in the U.S. since 1970. From 1850 to 1960², European countries and Canada were the leading countries of birth among the foreign-born population. However, according

¹ Place of Birth of the Foreign-Born Population: 2009, American Community Survey Briefs, October 2010, By Elizabeth M. Grieco and Edward N. Truelyan

² See **Table 1**

to the report from 2000 U.S. Census Bureau³, between 1970 and 2000, the share of immigrants from European countries dropped sharply from 62 percent to 15 percent; while the share of immigrants from Latin America and Asia rose dramatically from 19 percent to 51 percent and 9 percent to 25 percent, respectively. In particular in the year of 2000, the foreign-born population was dominated by the young and middle-aged (25-44).

Table 1. Leading Countries of Birth of the Foreign-Born Population in Thousands: 1970-2000

1970	1980	1990	2000
Italy	Mexico	Mexico	Mexico
1,009	2,199	4,298	7,841
Germany	Germany	China	China
833	849	921	1,391
Canada	Canada	Philippines	Philippines
812	843	913	1,222
Mexico	Italy	Canada	India
760	832	745	1,007
United Kingdom	United Kingdom	Cuba	Vietnam
686	669	737	863
Poland	Cuba	Germany	Cuba
548	608	712	952
Soviet Union	Philippines	United Kingdom	El Salvador
463	501	640	765
Cuba	Poland	Italy	Korea
439	418	581	701
Ireland	Soviet Union	Korea	Dominican Republic
251	406	568	692
Austria	Korea	Vietnam	Canada
214	290	543	678

Source: U.S. Census Bureau, 2001, Table 3-1 and Figure 3-1.

Assimilation into U.S. society has been a goal for most immigrants. Becoming fluent in English is an important aspect of the assimilation experience. Proficiency in English is expected to not only help them become assimilated into American culture, but also bring them great economic returns. Examining how English proficiency affects immigrants' labor market outcomes has "implications about the income and poverty levels of immigrant families, and ultimately about the social and cultural integration of those families to the host country society and is thus important for understanding the immigrant's overall socioeconomic well-being" (Gonzalez, 2010, p.799).

This research adds new insights to the analysis of English proficiency's influences on earnings of immigrants by comparing its importance to foreign-born male and female immigrants in the United States, using data from the 2001 American Community Survey. The importance of English-language proficiency on earnings is explored by comparing male and female immigrants, which differs from most literature that focuses on male immigrants only. Moreover, the effects of English language across the entire earnings

³ *Chapter 17* Adding Diversity from Abroad: The Foreign-Born Population, 2000 U.S. Census Bureau Populatio Profile of the United States: 2000 (Internet release) 17-1

distribution are assessed, by adopting the Quantile Regression (QR) approach. The patterns between male and female immigrants are compared as well.

The remainder of this research is structured as follows. Section 2 reviews past studies on how English proficiency affects the earnings inequality of foreign-born immigrants in the United States. Section 3 presents the conceptual framework concerning acquisition of English proficiency and its effect on earnings. The data to be analyzed, drawn from the 2001 American Community Survey (ACS), are discussed in Section 4. Section 5 presents the empirical methods and results. Section 6 concludes the article.

2. Literature Review

Research on the economic impact of language for immigrants has started growing until the late 1970s. Some research about the penalty for being unable to speaking English well in the U.S. labor market focuses mainly on the Spanish-speaking immigrants. Grenier (1984) finds that Hispanic male workers earn one-third less than their non-Hispanic white counterparts due to English deficiency. Similarly, Bloom and Grenier (1993) report that Spanish speakers earn less than English speakers, with cross-group differences in human capital other than language characteristics controlled. Other studies report similar results for other receiving countries using their national samples. Among them, there is a great volume of Canadian research. For example, Boyd and Cao (2009) show a positive effect of proficiency in Canada's official languages (English and French) on immigrant earnings that immigrants with lower levels of efficiency in English and French earn less than permanent residents weekly.

The research of economics of language has been expanded to other developed and developing countries as well. Chiswick and Miler (1995) find that language skills are important for the foreign-born employed males by conducting an international comparative research, using data from the U.S., Canada, Australia and Israel. Dustmann (1994) analyzes data for West Germany and finds that language abilities, especially writing proficiency in German can significantly increase the earnings of migrants. Chiswick (1998) explores the effects of Hebrew speaking fluency on the earnings of adult male immigrants in Israel. Proficiency in Hebrew is found to be associated with higher earnings. In a context of developing countries, Azam et al. (2010) use data from the 2005 India Human Development Survey to study oral English skills' economic effects among the Indian population. Casale and Posel (2010) test the relationship between English language fluency and earnings for African men in South Africa, using a newly available data set from the National Income Dynamics Panel Survey of 2008. Both findings suggest considerable and heterogeneous returns to English skills.

In sum, previous studies have established the key result that language proficiency contributes to earnings for immigrants. However, most studies have been limited to male immigrants only. A comparable analysis for female immigrants is needed to enrich the literature by displaying a complete picture. At the same time, very limited studies in the context of the United States are based on data collected after 2000. My research aims to fill such gaps.

3. Conceptual Framework

The human capital model has been the prevailing conceptual framework for studies of immigrants' labor market performance. According to Berndt and Showalter (2009), human capital is the wealth or net worth of capital investments embodied in an individual. The possession of human capital determines whether an immigrant worker can have good economic performance in the labor market. The human capital model involves elements of labor supply and labor demand, as the earnings equilibrium of individuals is determined by the interaction of labor supply and labor demand.

On the labor supply side, Becker(1964) develops a model of individual investment in human capital, where human capital is considered similar to physical means of production. The key element in the model is education, which is an investment of time and foregone earnings for higher rates of return in later periods. As with investments in physical capital, the human capital investment model assumes that people are utility maximizers and an investment in human capital is only undertaken when the expected return from the investment is greater than the costs: $\frac{B_1}{1+r} + \frac{B_2}{(1+r)^2} + \dots + \frac{B_T}{(1+r)^T} > C$ (Ehrenberg and Smith, p. 283).

Although early formulations of human capital models focused on education and work experience, language capital was later recognized as an important form of human capital as it satisfied human capital's three basic requirements very well—embodied in people, productive in the labor market, and costly to acquire (Chiswick and Miller 1995,2001,2008; Shields and Price 2002). Language capital is very specific to the host country, considering the difficulty of being transferred to the immigrants' home countries (Dustmann and Fabbri 2003). Language as human capital is mainly analyzed in the context of a labor supply model where inputs of language and other human capital determine the wage rate (Grenier, 1982). Studies of immigrant language skills in the labor market have tended to treat language skills in the same way as education and experience that have both an element of productivity and investment.

The acquisition of English language has been shown to be important to their labor market success for foreign-born immigrants in the United States. Specifically, proficiency in English represents a skill indicating enhanced productivity that increases the probability of finding employment and the earnings of workers. Chiswick (1978) points out that the earnings gap between immigrants and native workers is because human capital acquired in one country is not transferable to a different country. Good English language ability is a transferability skill that enables immigrants to convert their previous education and work experiences into full market values in the host society (Hwang et al. 2010).

On the labor demand side, the famous wage regression developed by Mincer (1974) examines the relationship between earnings, education and experience, with its standard form $\ln W_t = w_t = \beta_0 + \beta_1 * \text{Schooling}_t + \beta_2 * \text{exp}_t + \beta_3 * \text{exp}_t^2 + \varepsilon_t$, where exp denotes the accumulated labor market experience. Schooling can be considered as investment because it leads to costs now (both direct costs such as tuition and indirect costs such as foregone earnings) and benefits in the future. Therefore, schooling or years of education is expected to affect earnings positively. At the same time, human capital can also be accumulated by gaining work experience, since the more proficient one is in a certain position, the more productive he or she would be, which means higher earnings. However, the earning would increase at a decreasing rate with more years of labor market experiences, considering the fact that workers will become less efficient as they age. Therefore, the labor market experience squared is expected to have a negative coefficient.

This function can be expanded to incorporate English skills that apply to foreign-born immigrant workers whose mother tongues are not English. Their deficiency in English usually lowers their productivity, as most jobs in the U.S. generally require workers to be proficient in English. Thus, foreign-born immigrant workers are encouraged to improve their English skills in order to expand their occupation options and earnings capacity. The premium for English proficiency acquisition is equal to the earnings differentials between fluent speakers and those with lower levels of English proficiency, all else being equal. The English language premium is determined by the interactions of supply and demand among both native and non-native speakers of English, along with the distribution of English proficiency among the non-native English speakers (McManus 1990).

As the focus of this research is whether English proficiency's impacts on earnings are different between male and female foreign-born immigrants. Specifically, the augmented earnings equation is as $w_t = \beta_0 + \beta_1 * EP_t + \beta_2 * Female_t + \beta_3 * X_t + \varepsilon_t$, where EP_t stands for English proficiency (see details

in the data section), and X_t denotes an immigrant's characteristics, including personal characteristics (i.e. educational attainment, labor market experiences, marital status, race) and immigration-related characteristics (i.e. countries of origin, time spent in the U.S. and a U.S. citizenship).

4. Data

The data for this study come from the 2001 American Community Survey (ACS) sample in the Integrated Public Use Microsample Series USA (IPUMS USA) database⁴. The population of interest is the foreign-born immigrants of prime labor force age (aged 25 to 60).

4.1 Measurement of EP

The key dependent variable "earnings" is defined as the total wage and salary income of the immigrant in 2000. The variable is log transformed in order to reduce skewness. English-language proficiency is the variable of primary interest, in which the degree of proficiency is defined as the self-reported ability to speak English. In the 2001 ACS survey, respondents were first asked whether they spoke only English at home. Those who spoke a language other than English at home were required to report how well they spoke English. The answers could be speaking only English, speaking very well, speaking well, not speaking well and not at all. For different purposes, English-language proficiency has been transformed into three dummy variables (proficient, intermediate and poor), which divides the whole sample into four categories, with "fluent" being the benchmark group. Alternatively, the five-category answers were combined into two categories: being fluent in English (speaking only English, speaking very well or speaking well) and being non-fluent in English (not speaking well or not at all).

4.2 Dependent Variable

Earnings (LNWAGE): The natural logarithm of the sum of pre-tax wage and salary income received as an employee in 2000.

4.3 Independent Variable⁵

Education(ED): Respondent's educational attainment, as measured by the highest year of school or degree completed. It is reported in categories rather than specific years from the survey and some categories just provide the intervals of education levels. For such categories being unable to convey the accurate years of education, midpoints are assigned and reasonable guesses are applied for each range as the value of years of education. For other categories with more accurate information, the corresponding values are assigned.

Experience (EX): This refers to the total potential labor market experience (as the survey provides no direct measure), and the number of years that an individual is assumed to be working after his/her school completion. t is computed as age minus years of education minus 6 (i.e. = AGE-ED-6 or zero, whichever is bigger). Its quadratic specification (EXSQ) is also used.

Years since Migration (YSM): Length of stay in the United States since migration. It is calculated by the year of survey (2001) minus the year of migration.

⁴ Steven Ruggles, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia Kelly Hall, Miriam King, and Chad Ronnander. Integrated Public Use Microdata Series: Version 4.0 [Machine-readable database]. Minneapolis, MN: Minnesota Population Center [producer and distributor], 2008

⁵ Descriptions are from, in whole or in part, the 2001 ACS of IPUMS USA

Marital Status (MARRIED): This is a binary variable that separates individuals who are never married/single (equal to 0) from all other marital statuses (married, spouse present; married absent; separated; divorced; widowed).

Race (BLACK): This is a binary variable, which is set to one if the individual is Black and set to zero for all other ethnic groups (White; Hispanics; Asian).

Citizenship (CITIZEN): This is a dichotomous variable, which is equal to one if the individual is awarded U.S. citizenship, and is equal to zero for those who have not yet become U.S. citizens.

Birthplace: A number of non-English speaking (where English is neither the official nor the dominant languages) countries or regions of birth: East Asia; Southeast Asia; South Asia; Other Asia; Eastern and Southern Europe; Western Europe; Northern Europe; Africa; Central and South America; Middle East; Oceania. In particular, Asia and Europe are further divided, considering a great diversity exists among different parts of them.

Table 2. Education Attainment for Foreign-Born U.S. Immigrants

Educational Attainment Categories	Years of Education
No Schooling Completed	0
Nursery School to Grade 4	2
Grade 5 or 6	5.5
Grade 7 or 8	7.5
Grade 9	9
Grade 10	10
Grade 11	11
12th Grade, No Diploma	11
High School Graduate or GED	12
1 or More Years of College Credit, No Degree	13.5
Associate's Degree, Occupational Program	14
Associate's Degree, Academic Program	14
Bachelor's Degree	16
Master's Degree	18
Professional Degree Beyond a Bachelor's Degree	19
Doctoral Degree	21

5. Empirical Methods and Results

The empirical analysis begins with estimations that relate the natural logarithm of hourly earnings in 2000 for foreign-born U.S. immigrants (ages 25 to 60) to a set of explanatory variables, with particular interest in English-language proficiency. The data are then disaggregated by gender, and earnings equations are estimated for each subsample for comparison.

Table 3. Regression Estimates of Earnings Equations, Adult Foreign Born U.S. Immigrants, 2001**Dependent Variable: log earnings**

Variable	All	All	All	Male	Female
CONSTANT	1.890* (80.92)	1.810* (76.69)	2.027* (84.88)	2.034* (64.02)	1.600* (42.28)
ED	0.061* (66.75)	0.056* (58.72)	0.054* (55.86)	0.052* (41.03)	0.055* (37.05)
EX	-0.0026* (-2.14)	-0.001 (-0.81)	0.0009 (0.79)	0.0059* (3.59)	-0.005* (-2.79)
EXSQ	0.00008* (3.31)	0.00007* (2.85)	0.00005 (1.93)	-0.00002 (-0.58)	0.0001* (3.39)
YSM	0.0164* (17.98)	0.0137* (14.95)	0.0126* (13.71)	0.0114* (9.26)	0.0144* (10.52)
YSMSQ	-0.0002* (-11.34)	-0.0002* (-9.81)	-0.0002* (-10.01)	-0.00018* (-6.70)	-0.0002* (-7.57)
FEMALE	-0.252* (-41.11)	-0.251* (-44.15)	-0.255* (-41.86)		
MARRIED	0.0642* (7.41)	0.064* (7.39)	0.066* (7.67)	0.119* (10.33)	-0.0136 (-1.04)
CITIZEN	0.0684* (9.14)	0.0523* (6.97)	0.0517* (6.91)	0.0417* (4.09)	0.0623* (5.69)
BLACK	0.0455* (3.59)	0.013 (1.02)	-0.0192 (-1.50)	-0.097* (-5.29)	0.053* (2.98)
E. ASIA	-0.0971* (-6.27)	-0.0614* (-3.95)	-0.0053 (-0.34)	-0.063* (-2.84)	0.057* (2.57)
S-E. ASIA	-0.169* (-11.16)	-0.15* (-9.89)	-0.103* (-6.77)	-0.219* (-10.13)	0.014 (0.65)
S. ASIA	-0.005 (-0.31)	0.0055 (0.32)	0.0317 (1.84)	-0.0056 (-0.25)	0.0573* (2.13)
OTHER ASIA	-0.346* (-6.39)	-0.315* (-5.83)	-0.256* (-4.75)	-0.389* (-4.84)	-0.127 (-1.76)
E.&S. EUROPE	-0.141* (-8.97)	-0.124* (-7.94)	-0.079* (-4.99)	-0.141* (-6.49)	-0.0127 (-0.55)
W. EUROPE	-0.058* (-2.94)	-0.056* (-2.85)	-0.044* (-2.24)	-0.028 (-1.02)	-0.042 (-1.56)
N. EUROPE	0.021 (0.46)	0.0187 (0.41)	0.025 (0.55)	0.065 (1.05)	-0.032 (-0.48)
AFRICA	-0.256* (-12.03)	-0.235* (-11.07)	-0.196* (-9.22)	-0.269* (-9.39)	-0.095* (-3.00)
C.&S.AMERICA	-0.322* (-23.81)	-0.281* (-20.64)	-0.234* (-16.97)	-0.31* (-16.26)	-0.159* (-8.03)
MIDDLE EAST	-0.133* (-6.04)	-0.12* (-5.47)	-0.088* (-4.01)	-0.145* (-5.16)	-0.034 (-0.97)
OCEANIA	-0.076* (-2.14)	-0.081* (-2.30)	-0.078* (-2.21)	-0.137* (-2.84)	-0.0147 (-0.29)
ENG_FLUENT		0.177* (20.24)			
PROFICIENT			-0.155* (-19.24)	-0.159* (-14.63)	-0.145* (-12.09)
INTERMEDIATE			-0.258* (-25.62)	-0.278* (-20.56)	-0.226* (-14.97)
POOR			-0.249* (-16.54)	-0.288* (-14.34)	-0.186* (-8.22)
R-Squared	0.226	0.232	0.212	0.247	0.203
Observations	51,398	51,398	51,398	28,441	22,957

Notes: t-statistics in parentheses; significant at 5% level

5.1 Importance of English Proficiency

Several specifications of the earnings equation are reported in Table 3, using Ordinary Least Squares (OLS). The first specification is a standard immigrant earnings function without controlling for English proficiency; the second one further includes a variable that is a general measure of English skills (i.e. fluent or not); the third model examines English proficiency's effects on earnings by including its more detailed measure. Then the whole sample is sorted by gender, and columns 4 and 5 correspond to men and women, respectively. Therefore, the conventional earnings determinants will be discussed first, and then the determinant of particular interest—English proficiency—will be studied. After that, comparisons of the impacts of the determinants of earnings are made between male and female immigrants.

Column 1 shows that all else being equal, an additional year of education is associated with around 6.1% added income, which is significantly higher for the total foreign-born immigrants. This impact remains significant in the remaining models, with similar magnitudes as well. For the total foreign-born sample, earnings increase at a decreasing rate with years since migration. The increase in earnings for one more year of duration of residence in the U.S. is 1.6% (i.e. $0.0164 - 2 * 0.0002$). Like the years of education variable, years since migration variable remains a significantly positive effect on earnings with similar magnitudes across the rest of the models. Moreover, for the total sample, being awarded U.S. citizenship has a significantly positive impact on earnings with a sizable magnitude of 6.84%. Gender is an important earnings determinant: all else held constant, women will earn 25.2% significantly less than men. Being female remains a significantly negative factor on earnings with similar magnitudes, when English-language skills are controlled. In addition, immigrants' earnings differ across their birthplace groups. Compared to the base group of immigrants from English-speaking countries or areas where English is both the official and dominant language, immigrants from Central and South America and Asia (other than the East/Southeast/South Asia) suffer from the most significant earnings disadvantage, which is more than 30%. Followed are: immigrants from Africa with earnings more than 25% below that of the benchmark group; immigrants from Southeast Asia, Eastern and Southern Europe and the Middle East with earnings around 15% below; and immigrants from East Asia, Oceania and Western Europe with 5% to 10% below. For immigrants from South Asia and Northern Europe, their earnings are not significantly different from the earnings of the base group.

The inclusion of the variable of fluency in English (both general and detailed measure) in columns 2 and 3 is associated with a slight decrease in the estimated impact of years since migration and having U.S. citizenship. At the same time, it results in insignificant impact on earnings for being Black, along with a sharp reduction in its magnitude, indicating that most of those whose race is Black in the sample happen to be English-speaking. On the other hand, controlling for immigrants' English proficiency does not drastically alter the significance and magnitudes of other variables' coefficients in column 1. However, foreign-born immigrant workers with weak English skills suffer great income penalties. Column 2 tells that other things being equal, those who speak fluent English will significantly earn on average 17.7% more than those who are not fluent. When a more detailed measure of English language fluency is provided, the results from column 3 show a general trend of increasing penalties for immigrants with weaker English skills. All else held constant, those who are proficient in English will earn 15.5% less than those who speak fluent English; however, those who are intermediate and poor in English earn 25.8% and 24.9% less than those who are fluent, respectively.

Columns 4 and 5 present the estimates for men and women separately, with the detailed measure of English fluency controlled. The results indicate that male immigrants suffer increasing penalties with decreasing levels of English skills. Among the male immigrants, those who are proficient, intermediate

and poor in English will earn 15.9%, 27.8% and 28.8% less than their counterparts with English fluency, respectively, all others being equal. However, female immigrants who speak intermediate English suffer the greatest earnings penalty. Among the female immigrants, all else being equal, those with intermediate level of English skills earn 22.6% less than those speaking fluent English, while those who are proficient and poor in English earn 14.5% and 18.6%, respectively, less than the fluent group. This might indicate that women with poor English skills are dominant in the jobs that do not require English proficiency at all. At the same time, the magnitudes of coefficients reveal that male immigrants may benefit more from well-spoken English than female immigrants, as the male group has greater magnitudes than the female group.

With regard to the conventional determinants of earnings, it is interesting to find that men gain significantly from marriage. Other things being equal, married men will earn 11.9% significantly more than those unmarried men. Citizenship contributes significantly to earnings of both males and females. In particular, female immigrants benefit more economically from holding U.S. citizenship than male immigrants. All else held constant, those females who are awarded U.S. citizenship will earn 6.23% significantly more than those who are without it; the corresponding number for males is 4.17%.

A Chow test is performed to see whether the earnings determinants in models 4 and 5 have the same effects between genders. The Chow statistics is 91.72, which is much greater than the F statistics 1. Therefore, the null hypothesis of parameter equality by gender is refused. The alternative hypothesis that at least one parameter is not equal across genders is accepted. In line with the discussion of comparison between male and female immigrants, the impacts of such factors as fluency in English, marital status, citizenship, education levels, and duration in the U.S., are very different between them.

The discussion above suggests a positive link between earnings and English-language proficiency among foreign-born immigrants. For both male and female immigrants, those who speak English fluently tend to make more money on average. English proficiency is indeed important as it affects their earnings; therefore, providing English training to immigrants is necessary.

5.2 Heterogeneous Effects of English-Language Proficiency across Earnings Distributions

So far, the OLS regressions provide the average effects of English proficiency on earnings, which remain constant. However, they only provide a partial view of the relationship. The effects of English-language proficiency might be heterogeneous across earnings distributions. Immigrants in the lower tier of the earnings distribution may be affected differently by English proficiency from those who are in the upper tier. Exploring the potentially different impacts that English proficiency may have on immigrants with diverse income levels helps policymakers to make better resource allocation decisions (Wang and Wang 2011). Quantile regression analysis can be applied to explore whether the impact of English proficiency on earnings differs across the earnings distributions for immigrants as a whole and for men and women separately. In other words, it shows whether “the dollar gap in earnings returns to levels of language proficiency vary at different parts of the earnings distribution” (Boyd and Cao 2009). Therefore, the Quantile regression analysis shows a more complete picture of the relationship between English-language proficiency and earnings distribution among the foreign-born immigrants.

Tables 4-6 present the estimates from Quantile regression for the full sample, male and female sample, respectively, with effects at 25th, 50th, 75th percentiles. The results will be compared with one another and with OLS estimates.

Table 4. Effect on Earnings—Quantile Regression Results (Full Sample)**Dependent Variable: Log Earnings**

Variable	OLS	QR_25	QR_50	QR_75
CONSTANT	2.027* (0.024)	1.662* (0.027)	2.029* (0.025)	2.411* (0.028)
ED	0.054* (0.001)	0.046* (0.001)	0.052* (0.001)	0.057* (0.001)
EX	0.001 (0.001)	-0.001 (0.001)	-0.002* (0.001)	0.000 (0.001)
EXSQ	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
YSM	0.013* (0.001)	0.017* (0.001)	0.015* (0.001)	0.009* (0.001)
YSMSQ	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
FE	-0.255* (0.006)	-0.243* (0.007)	-0.256* (0.006)	-0.264* (0.007)
MARRIED	0.066* (0.009)	0.076* (0.010)	0.071* (0.009)	0.058* (0.010)
CITIZEN	0.052* (0.007)	0.063* (0.009)	0.061* (0.008)	0.055* (0.008)
BLACK	-0.019 (0.013)	0.038* (0.014)	-0.003 (0.013)	-0.016 (0.015)
E.ASIA	-0.005 (0.016)	-0.002 (0.018)	0.022 (0.016)	0.031 (0.018)
S-E.ASIA	-0.103* (0.015)	-0.052* (0.017)	-0.100* (0.016)	-0.132* (0.017)
S.ASIA	0.032 (0.017)	0.009 (0.020)	0.097* (0.018)	0.084* (0.020)
OTHER ASIA	-0.256* (-0.54)	-0.157* (0.061)	-0.199* (0.055)	-0.316* (0.061)
E.&S.EUROPE	-0.079* (0.016)	-0.003 (0.018)	-0.063* (0.016)	-0.113* (0.018)
W.EUROPE	-0.044* (0.019)	-0.037 (0.022)	-0.038 (0.020)	-0.045* (0.022)
N.EUROPE	0.025 (0.046)	0.089 (0.052)	0.046 (0.047)	-0.025 (0.051)
ARICA	-0.196* (0.021)	-0.163* (0.024)	-0.200* (0.022)	-0.206* (0.025)
C.&S.AMERICA	-0.234* (0.014)	-0.172* (0.016)	-0.231* (0.014)	-0.297* (0.016)
MIDDLE EAST	-0.088* (0.022)	-0.090* (0.025)	-0.088* (0.023)	-0.053* (0.025)
OCEANIA	-0.078* (0.035)	-0.043 (0.040)	-0.054 (0.036)	-0.055 (0.040)
PROFICIENT	-0.155* (0.008)	-0.144* (0.009)	-0.166* (0.008)	-0.169* (0.009)
INTERMEDIATE	-0.258* (0.010)	-0.235* (0.012)	-0.276* (0.010)	-0.275* (0.011)
POOR	-0.249* (0.015)	-0.223* (0.018)	-0.274* (0.016)	-0.291* (0.017)
OBSERVATIONS	51,398	51,398	51,398	51,398
R-SQUARED	0.2376	0.1375	0.1724	0.1803

Note: standard errors in parentheses; significant at 5%

The coefficients in Table 4 appear to vary across quantiles. For the full sample, education is significantly positive across all the quantiles, whose return is greater at the higher quantiles of earnings. Other things being equal, additional year of education will increase the earnings of immigrants at 0.75 quantile by 5.7%, 5.2% for those at 0.5 quantile, and 4.6% at 0.25 quantile. Most noticeably, the results show that English-language proficiency has heterogeneous effects on earnings throughout the entire earnings distribution, which differ considerably from the OLS coefficients. The economic penalty for being deficient in English is generally greater for immigrants at the upper tier of earnings distribution and for each level of English proficiency (proficient, intermediate, and poor). Specifically, among immigrants who are proficient in English, those at the 0.75 of earnings distribution quantile earn 16.9% less than their fluent counterparts, while 16.6% less for those at the 0.5 quantile and 14.4% less for those at the 0.25 quantile. Among immigrants who are intermediate in English, those at the 0.75 and 0.50 of earnings distribution quantile suffer a similar loss of earnings of around 27.5% and such loss of earnings is only 23.5% for those at the 0.25 quantile. Among immigrants who are poor in English, those at the 0.75 of earnings distribution quantile earn 29.1% less than their fluent counterparts, while 27.4% less for those at the 0.5 quantile and 22.3% less for those at the 0.25 quantile.

In other words, the reward for English proficiency is greater for immigrants at the upper earnings distribution. The possible reason might be that fluency in English is more needed for the higher-ranking (higher earnings in general) jobs; while lower-ranking occupations, such as the goods production and assembly lines, are unlikely to be as affected by English proficiency.

A similar pattern remains for both gender groups, although slight differences exist for either group, according to Table 5 and Table 6. Male immigrants who are intermediate in English follow the above pattern exactly. Those at the 0.75, 0.50 and 0.25 earnings distribution quantile suffer earnings penalties for 28.1%, 27.6% and 25%, respectively, compared with their fluent counterparts. Among male immigrants who are proficient in English, those at the 0.75 and 0.5 of earnings distribution quantile earn 15.4% less than their fluent counterparts, while 13.7% less for those at the 0.25 quantile. However, the earnings disadvantage is the greatest for men at the 0.50 quantile who are poor in English (-30.6%), compared to men with the highest level of proficiency, which is followed by those at the 0.75 and 0.25 quantile (-29.5% and -26.7%, respectively).

On the other hand, female immigrants who are poor in English follow the pattern of the whole sample exactly. Those at the 0.75, 0.50 and 0.25 earnings distribution quantile suffer earnings penalties for 23.8%, 23.1% and 16.4%, respectively, compared with their fluent counterparts. However, among women who are proficient and intermediate in English, the earnings disadvantage is the greatest for those at the 0.50 quantile, compared to women fluent in English (-17.5% and 26.7%, respectively), which is followed by those at the 0.75 and 0.25 quantile (-15.9% and -14%, respectively, for proficient group; -24.6% and -20.9%, respectively, for intermediate group). The possible reason might be that most women are employed in the middle-ranking jobs (such as administrative assistant jobs with middle-ranking payments) that require English proficiency.

Table 5. Effect on Earnings—Quantile Regression Results (Male Sample)

Dependent Variable: Log Earnings				
Variable	OLS	QR_25	QR_50	QR_75
CONSTANT	2.034* (0.032)	1.671* (0.032)	2.030* (0.030)	2.441 (0.039)
ED	0.052* (0.001)	0.044* (0.001)	0.050* (0.001)	0.054* (0.002)
EX	0.006* (0.002)	0.003 (0.002)	0.003 (0.002)	0.006* (0.002)
EXSQ	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
YSM	0.011* (0.001)	0.017* (0.001)	0.015* (0.001)	0.008* (0.001)
YSMSQ	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
MARRIED	0.119* (0.011)	0.132* (0.011)	0.121* (0.011)	0.115* (0.014)
CITIZEN	0.042* (0.010)	0.049* (0.010)	0.048* (0.010)	0.036* (0.012)
BLACK	-0.097* (0.018)	-0.042* (0.018)	-0.073* (0.018)	-0.075* (0.023)
E.ASIA	-0.063* (0.022)	-0.074* (0.022)	-0.010 (0.021)	-0.040 (0.026)
S-E.ASIA	-0.219* (0.022)	-0.157* (0.022)	-0.203* (0.021)	-0.273* (0.026)
S.ASIA	-0.006 (0.023)	-0.017 (0.022)	0.107* (0.022)	0.031 (0.027)
OTHER ASIA	-0.389* (0.080)	-0.412* (0.079)	-0.322* (0.076)	-0.361* (0.096)
E.&S.EUROPE	-0.141* (0.022)	-0.056* (0.022)	-0.098* (0.021)	-0.187* (0.026)
W.EUROPE	-0.028 (0.028)	0.012 (0.027)	0.014 (0.027)	-0.031 (0.033)
N.EUROPE	0.065 (0.062)	0.140* (0.061)	0.061 (0.059)	0.052 (0.074)
ARICA	-0.269* (0.029)	-0.221* (0.028)	-0.247* (0.027)	-0.268* (0.035)
C.&S.AMERICA	-0.310* (0.019)	-0.245* (0.019)	-0.305* (0.018)	-0.407* (0.023)
MIDDLE EAST	-0.145* (0.028)	-0.165* (0.028)	-0.125* (0.027)	-0.090* (0.034)
OCEANIA	-0.137* (0.048)	-0.095* (0.048)	-0.119* (0.046)	-0.150* (0.058)
PROFICIENT	-0.159* (0.011)	-0.137* (0.011)	-0.154* (0.010)	-0.154* (0.013)
INTERMEDIATE	-0.278* (0.014)	-0.250* (0.014)	-0.276* (0.013)	-0.281* (0.016)
POOR	-0.288* (0.020)	-0.267* (0.020)	-0.306* (0.019)	-0.295* (0.024)
OBSERVATIONS	28,441	28,441	28,441	28,441
R-SQUARED	0.2466	0.1395	0.1786	0.1918

Note: standard errors in parentheses; significant at 5%

Table 6. Effect on Earnings—Quantile Regression Results (Female Sample)

Dependent Variable: Log Earnings				
Variable	OLS	QR_25	QR_50	QR_75
CONSTANT	1.787* (0.036)	1.444* (0.035)	1.769* (0.037)	2.114* (0.042)
ED	0.055* (0.001)	0.048* (0.001)	0.054* (0.002)	0.061* (0.002)
EX	-0.005* (0.002)	-0.004* (0.002)	-0.005* (0.002)	-0.007* (0.002)
EXSQ	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
YSM	0.014* (0.001)	0.018* (0.001)	0.016* (0.001)	0.011* (0.002)
YSMSQ	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
MARRIED	-0.014 (0.013)	-0.011 (0.013)	-0.001 (0.013)	-0.012 (0.015)
CITIZEN	0.062* (0.011)	0.068* (0.011)	0.075* (0.011)	0.077* (0.012)
BLACK	0.053* (0.018)	0.097* (0.018)	0.062* (0.018)	0.032* (0.020)
E.ASIA	0.057* (0.022)	0.055* (0.022)	0.078* (0.023)	0.107* (0.025)
S-E.ASIA	0.014 (0.021)	0.027 (0.022)	0.022 (0.022)	-0.004 (0.024)
S.ASIA	0.057* (0.027)	-0.009 (0.027)	0.063* (0.028)	0.149* (0.030)
OTHER ASIA	-0.127 (0.072)	0.028 (0.072)	-0.063 (0.074)	-0.205* (0.079)
E.&S.EUROPE	-0.013 (0.023)	0.032 (0.023)	-0.012 (0.024)	-0.042 (0.026)
W.EUROPE	-0.042 (0.027)	-0.062* (0.027)	-0.059* (0.028)	-0.038 (0.030)
N.EUROPE	-0.032 (0.067)	-0.012 (0.066)	-0.050 (0.069)	0.003 (0.074)
ARICA	-0.095* (0.032)	-0.087* (0.031)	-0.106* (0.033)	-0.108* (0.036)
C.&S.AMERICA	-0.159* (0.020)	-0.121* (0.020)	-0.154* (0.020)	-0.193* (0.022)
MIDDLE EAST	-0.034 (0.035)	-0.030 (0.035)	-0.027 (0.036)	-0.067 (0.039)
OCEANIA	-0.015 (0.051)	-0.013 (0.051)	0.033 (0.053)	0.038 (0.057)
PROFICIENT	-0.145* (0.012)	-0.140* (0.012)	-0.175* (0.012)	-0.159* (0.013)
INTERMEDIATE	-0.226* (0.015)	-0.209* (0.016)	-0.267* (0.016)	-0.246* (0.017)
POOR	-0.186* (0.023)	-0.164* (0.023)	-0.231* (0.023)	-0.238* (0.025)
OBSERVATIONS	22,957	22,957	22,957	22,957
R-SQUARED	0.2027	0.1229	0.1544	0.1517

Note: standard errors in parentheses; significant at 5%

6. Conclusions

In this paper, I reexamine the effects of English-language proficiency on foreign-born immigrants in the U.S. by using data from the 2001 American Community Survey (ACS), with the focus of comparing its effects on male and female immigrants.

The analysis demonstrates the importance of English language fluency on earnings for the total immigrants in the sample, which is consistent with most literature. Therefore, providing English training to immigrants is necessary as it affects their earnings. Interestingly, the results further indicate that male immigrants suffer increasing penalties with decreasing levels of English skills, and female immigrants who speak intermediate English suffer the greatest earnings penalty. Moreover, male immigrants may benefit more from well-spoken English than female immigrants.

This study also shows that English-language proficiency exhibits heterogeneous effects on immigrant earnings by applying the Quantile Regression approach. Results indicate that the reward to English proficiency is greater for immigrants at the upper earnings distribution. The possible reason might be that fluency in English is more critical for higher-ranking jobs, and English proficiency may not play an important role in lower-ranking occupations. A similar pattern remains for both gender groups, although slight differences exist for either group. Such results are suggestive for policymakers.

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