Educational Attainment and Labor Market Integration of Young Adults, with Emphasis on Second-Generation Immigrants

By

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Dedicated to

My parents for the unconditional support

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ABSTRACT

The first chapter is the economic assimilation of second generation Immigrants. The population of second generation Americans (U.S. born individuals of foreign-born parents) stood at 45 million in 2015. The labor market outcomes of this large segment of the population can provide useful insights into the long-run contribution of immigration to the US labor force and economy. This study uses a longitudinal data set and makes use of detailed personal and family characteristics to study the economic assimilation of second generation immigrants. The use of longitudinal data allows us to examine the relative wage evolution of second generation immigrants in the US. The trends show that second generation immigrant adolescents begin their careers with a wage advantage over natives (third and subsequent generations of immigrants), which diminishes as they age. Overall, we find female second generation immigrants to have a wage advantage of about 8 percent over natives whereas male second generation immigrants have a small or no wages advantage over native males once personal and parental characteristics are controlled for.

The second chapter investigate the Impact of physical appearance on the transition from high school to full-time employment Due to changes in the structure of the economy since the 1980s, the average time it takes a job-seeker with only a high school diploma to gain full-time employment has been increasing. Several reasons have been proffered for the low transition from high school graduation to full-time employment, but these reasons have been shifting over time. Against this background, I propose an additional element, physical attribute, that may explain the low transition

from high school graduation to full-time employment. Using both parametric and semi-parametric hazard models, I show that physical appearance affects the odds of transitioning from high school to full-time employment. I find that job-seekers who have only a high school diploma and who are well below average in physical height, spend on average, five more months unemployed compared to others. There is no significant reduction in the odds of exiting unemployment for taller job-seekers, suggesting a shortness penalty, but not a height premium. Additionally, I find the likelihood of obese job-seekers transitioning from high school to full-time employment is about 28% lower than that of non-obese job-seekers. With the economy predominantly service oriented, these results imply job-seekers with less than desirable physical attributes will face challenging labor market conditions for the foreseeable future.

The third and the final chapter examines the impact of parental education on the educational attainment of second generation immigrants (SGI). Leveraging the rich parental characteristics available in the NLSY, I contrast the effect of parental years of schooling on the years of schooling and degree attainment of natives and second generation immigrants. I find a positive correlation between parental schooling and the educational attainment for both natives and SGI. The impact is more pronounced for natives than for the average SGI. The results seem to indicate that some immigrant parents invest more in the education of their children to help them achieve socio-economic mobility. These also robust to the inclusion of several parental socio-economic characteristics and controls for the ability of the children.

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CHAPTER I

THE ECONOMIC ASSIMILATION OF SECOND GENERATION IMMIGRANTS IN THE U.S.: A LONGITUDINAL STUDY

1. Introduction

The recent surge in immigration in the US has brought the issue of immigration back into the limelight and made it a topic of much debate in social, economic and political circles. From, an economic standpoint, it is well known that immigrants face a significant wage disadvantage as compared to natives (Perotti 1992; Phillips 1999; Borjas 2006). This wage disadvantage dimishes, but does not disappear, as they age in the US, acquire US-specific human capital and get acquainted with the US culture. Noting this enduring wage disadvantage, many studies (such as the study by Borjas, 2009) have taken a skeptical view of new immigration and concluded that, relative to natives, recent immigrants have lower level of human capital than their earlier counterparts. Low skilled immigration is also found to have contributed to income inequality in the US (Reed, 2001; Card, 2009). Any discussion of the merits of immigration is, therefore, incomplete without taking account of the economic performance of the children of immigrants. Many immigrants migrate to the US to invest in their children's future and expect them to attain high levels of human capital (Caponi, 2011). Afterall, these individuals, children of immigrants, are likely to live their whole life in the US, pay taxes and receive income support payments (Card, 2005).

The US population has grown by more than 130 million since 1965 and 72 million of this growth is linked to immigration (Pew Research Center, 2015). The center also forecasts that the US population will increase to 441 million by the year 2065, which 88% of the growth is expected to be through immigrants and their children. Over recent decades, the number of second generation Americans (U.S.-born individuals born to foreign-born parents) has increased substantially to about 35 million (11.67% of the US population) (MPI, 2013). Out of these 35 million second generation immigrants 20 million are over the age of 18 and are mostly participating in the labor market (PEW Research Center, 2013). The education, employment and wages of this segment of second generation immigrants can provide useful insights about the long-run contribution of immigration to the US labor force and economy. Using the National Longitudinal Study of Youth (NLSY), which is a nationally representative longitudinal data set for individuals born between 1980 and 1984, this study analyzes the early labor market outcomes of second generation immigrants to provide insight into the economic assimilation of immigrants in the US economy.

The children of mid-twentieth century immigrants have managed to compete with natives on equal terms. However, these immigrants were primarily from European countries and were racially and culturally more similar to the original American settlers than recent immigrants. Since the majority of recent immigrants are originate from less developed countries and are visibly different in race and culture, it has been argued that their children may not assimilate like the children of earlier immigrants (Alba and Farley, 2002). This study analyzes the wages of the children of immigrants from the 1960s, 1970s and early 1980s. These second generation immigrants were born in the early

1980s, which makes them the most recent cohort of second generation immigrants whose wages can be observed for a decade or longer.

The article makes several contributions to the literature. First, it studies the relative wage profile of second generation immigrants in comparison to natives (defined as the children of second and later generation immigrants). To the best of our knowledge, there is no other study that has presented this analysis. It makes our study the first to present the evolution of relative wages of second generation immigrants. The analysis of changes in wage disparities between second generation immigrants and natives over the course of their early career (18 to 30 years of age) highlights if and when immigrants gain a wage advantage over natives. Given the fact that the majority of second generation immigrants are Hispanics, the study also presents a separate analysis for Hispanics and discusses the patterns in relative wages of immigrant Hispanics and native Hispanics compared to the rest of the native population.

Other than the relative wage profile, we also examine the overall relative wage of second generation immigrant (SGIs, hereafter) adolescents. This analysis builds on previous studies[1] of economic assimilation of SGIs, but makes a couple of important innovations. First, we estimate the relative wages of SGIs that have recently joined the labor market. In doing so, we use many personal and family characteristics that are vital in isolating the effect of foreign parentage on wages. Second, we estimate numerous models to highlight the importance of various factors in determining the wage advantage/disadvantage of SGIs.

[1] Section 2 details previous studies on economic assimilation on second generation immigrants.

We find that SGIs enter the labor market with a wage advantage over natives, which is particularly pronounced for females. However, this wage advantage largely erodes by the time they are 30 years of age. Our pooled regression analysis finds an 8 percent wage advantage for female SGIs over native females.[2] SGI Hispanic males earn as much as natives, according to our results, while female Hispanic SGIs earn 6 to 10 percent higher wages than native females. Overall, our findings suggest that children of immigrants earn as much as natives or, in case of female SGIs, substantially more than natives. The impressive performance of SGIs should reduce, to some degree, current concerns about the long run impact of low skilled immigration on the US labor force and economy.

The article is structured as follows. Section 2 presents the literature review and highlights the contributions of this article to the literature. Section 3 discusses the data. Section 4 outlines the empirical strategy. Section 5 presents the empirical results. Section 6 concludes.

2. Literature Review and Motivation

The literature on the economic assimilation of SGIs is small compared to that on the economic assimilation of first generation immigrants. While the literature on the economic assimilation of first generation immigrants overwhelmingly finds that they experience a substantial wage disadvantage as compared to natives for much of their

[2]The estimates of the wage advantage for male SGIs become statistically insignificant once parental characteristics are controlled for.

working life[3], the literature on the economic assimilation of second generation immigrants is less clear.

Farley and Alba (2002) use census data for the years 1998 and 2000 to analyze the assimilation of immigrants across first, second and subsequent generations of immigrants. With just age, education and marital status as the controls, they show that SGIs of ages between 25 and 39 have lower wages compared to natives for most ethnic groups.

Card (2005) uses census data from 1995 to 2002 to show that SGIs enjoy a small wage (about 2%) advantage over natives, even after controlling for education and geographic location. Borjas (2006) studies the changes in relative inter-generational wages of immigrants using the census data from 1940, 1970 and 1995-2003. Using respondents from pooled Census data for the years 1995 and 2003, he finds that male SGIs enjoy a 2.9% wage advantage over native men; female SGIs have 5.7% higher weekly wages than native females. Sakamoto et al. (2010) use the Current Population Survey and the 2000 Census to study the wages and schooling of African American SGIs. They find that African American SGIs do as well as Whites in educational attainment. While wages of African American SGI females are at par with Whites, African American male SGIs face a 16 percent disadvantage in wages as compared to Whites.

Findings for other countries show that wages of SGIs are generally at par with natives. Deutsch et al. (2006) find that SGIs earn more than the first and the third generation immigrants in Israel. Ekberg et al. (2010) show that SGIs have a small wage

[3]See, for example, Borjas(1985, 1995), Card (2005) and Lubotsky (2007).

advantage over natives in Sweden. Langevin et al. (2013) find relative wages of SGIs in France to vary by their parents' origin. They show that those originating from Northern Africa and Sub-Saharan Africa have lower wages than French natives, while Asian and European SGIs do not differ significantly from their French native counterparts.

We make several contributions to the existing literature. First, studies from Borjas and Friedberg (2009) and Borjas (2015) note a change in the characteristics of recent (1970s onward) cohorts of immigrants. These studies state that, unlike immigrants of the early and mid-twentieth century, immigrants of the late 20th century come from developing counties, are predominantly not white, and are culturally more different from the US population. We follow up on these results by studying the children of the immigrants of the 1960s, 1970s and early 1980s.

Second, previous studies that have explored the wage assimilation of US SGIs have used cross sectional data and, hence, could not identify the relative wage evolution of SGIs. We extend the literature on the assimilation of SGIs by using a longitudinal data set to provide the trends in the relative wages of SGIs. We find that SGIs enter the labor market (18 years of age) with a wages advantage. But this advantage largely erodes by the time they are 30.

Third, previous studies have used pooled census data to determine the level of economic assimilation of SGIs. We present a comparable analysis by using a longitudinal data set, which makes it possible to control for parental characteristics, such as wages and education. This is an important contribution given that many studies have found education of parents to be a key determinant of a person's labor market success

(Haveman and Wolfe, 1994; Mulligan, 1997). By controlling for these personal characteristics, we show that the wages of SGI males are at par with native males, while wages of female SGIs are significantly higher than those of native females. We also highlight the importance of controlling for differences in characteristics between natives and SGIs by estimating a number of models with different control variables.

Fourth, a large proportion of recent immigrants are Hispanics. Coupled with a high net birth rate, this influx of Hispanics has increased the US Hispanic population by more than four times since 1965 making them 18% of the total population of the US and, therefore, an important demographic group in the US (Brown, 2014; Zong and Batalova, 2015). Hispanics tend to be more attached to their culture and take longer to learn the English language and other US specific skills (Borjas 2015) than other immigrants. Given the importance of Hispanics, we show separately the patterns and levels of wage assimilation of recent Hispanic SGIs.

Last, but not least, our study more accurately identifies Hispanics. Duncan and Trejo (2011) note that almost all first generation immigrants from Spanish speaking countries identify themselves as Hispanics. However, the rate of Hispanic identification reduces to 83 percent for SGIs and 73 percent for third generation immigrants. They further state that this is likely to generate a selection problem if successful Hispanics from second and third generation do not identify themselves as Hispanics. Our study is largely immune from this problem as parents of young adolescents report their race in the data we use for this study. We also ensure that ethnicity of young adolescents is consistent with the ethnicity of their parents.

3. Data

We use the National Longitudinal Survey of Youth 1997 (NLSY97) data to study the economic assimilation of SGIs. The NLSY97 has information on a nationally representative sample of 9,000 individuals born between 1980 and 1984. The survey is administered by the Bureau of Labor Statistics (BLS). The first round of the survey took place in 1997, when individuals were between the ages of 12 and 16. Since then, the BLS has been conducting surveys on an annual basis. Hence, the survey has year by year information of an individual from the early teens (school age) to the ages of 26 to 30, as of 2010.[4] The information includes education, labor market outcomes and demographic details, including family background information.

The data set is particularly useful for studying the economic assimilation of SGIs for a number of reasons. First, the longitudinal nature of the data allows us to examine the evolution of relative wages of SGIs over the course of 13 years. The detailed annual information on wages, education and location allows us to control for these characteristics in analyzing the question if and when immigrants assimilate with natives over the course of their early working life. Second, the data provide information on parental characteristics that are not available in the census data. These include the wages and education of parents. This information can play a vital role in isolating the effect of foreign parentage on the relative labor market outcomes of immigrants.

[4] At the time of our study, the Center for Human Resource Research, which distributes the NLSY data, has wage data available up to the year 2010. Therefore, the sample ends in 2010.

Tables 1 and 2 present summary statistics for males and females, respectively. The sample for males constitutes of 2,970 respondents of which 558 are SGIs. Out of these 558 SGIs, 395 are Hispanics. We only include the respondents who are at least 18 years of age and have worked for a wage.[5] These restrictions imply that we can only use the survey rounds from 1999 to 2010. The number of observations for the years 1999 to 2001 are lower than those for the following years because many individuals are under the age of 18 during this period. The first two columns of Table 1 show the wages, education and parental characteristics of all SGIs and natives, while the third and fourth columns show this information for SGI and native Hispanics.

Table 1 shows that male SGIs have higher annual wages than native males. They earn about 16 dollars an hour on average, which is 1.72 dollars above the average hourly wage ($14.27) of natives. This difference is similar to the difference in wages of Hispanic immigrant and Hispanic native males. The statistics on education are calculated using the responses to the latest available round of the survey. These statistics show the highest level of education ever attained by a respondent. Compared to natives, a larger proportion of second generation male immigrants, in particular Hispanics, do not have a high school diploma. The proportion of immigrants who have an associate's degree is higher than for natives. A larger proportion of native males have a bachelor's or advanced degree as compared to immigrants. The wages and education levels of parents (first generation immigrants) of SGIs are substantially lower than the parental wages and education levels of natives. Parents of male SGIs earn about $10,000 less annually than parents of natives.

[5]Only individuals who have worked for a wage for at least 100 hours in a year have been included in the sample

In the case of Hispanic SGIs, the average years of schooling of parents is less than 10 years; the average years of schooling for native Hispanics is over 12 years.

Table 2 shows the descriptive statistics for females. The sample for females consists of 2,379 natives and 582 SGIs. Female SGIs earn $1.33 an hour more than native females. Hispanic SGI females earn more than native Hispanic females. Similar to male SGIs, female SGIs are educated less than their native counterparts, but these differences are small compared to males. Annual parental wage income of SGI females are on average $42,363; the annual parental wage income of natives stands at $48,395. The parental wages of female Hispanic SGIs are lower than the parental wages of female native Hispanics. Parents of female SGIs are also less educated than the parents of female natives. Tables 1 and 2 suggest that, despite lower parental wages and education of SGIs, their wages are higher than those of natives. They also appear to earn more than natives despite their lower educational attainment.

It needs to be noted that this study is based on a survey of young individuals and it is likely that many natives may just be starting skilled employment, after they have attained higher education near 2010, beyond which we do not have data. Our empirical analysis accounts for this possibility.

4. Empirical Approach

The first part of the empirical analysis presents the trends in the relative wages of SGIs as they grow older. The following two models are estimated to obtain an estimate of relative wages of SGIs at each age level from 18 to 30,

$$\ln(wage_{ia}) = \beta_0 + \beta_1 I_{ia} + \epsilon_{ia} \qquad for\ a = 18\ to\ 30 \tag{1}$$

$$\ln(wage_{ia}) = \beta_0 + \beta_1 I_{ia} + \gamma_1' ethnicity_{ia} + \gamma_2' Educ_{ia} + \delta' State_{ia} + \zeta MSA_{ia} + \eta' Year_{ia} + \epsilon_{ia} \qquad for\ a = 18\ to\ 30 \tag{2}$$

The dependent variable is the log of the hourly wage of individual *i* at age *a*. *I* is a dummy variable that equals 1 if an individual is an SGI. The equations are estimated separately for each age from 18 to 30. This gives us 13 measures of relative wages, one for each age, which we plot to represent the relative wage evolution by age. We estimate the equations separately for males and females. ethnicity is a vector of four dummy variables which represent Blacks, Whites, Hispanics and a category for `other ethnicities'. Given individuals in the data are observed from ages 18 to 30, many are enrolled in educational institutions over certain parts of this period. To account for the likelihood that employment while going to school may have different returns than regular full-time employment, education levels are specified by enrollment status. In particular, we use seven dummy variables to represent the education levels of young men who are not enrolled in a given year and four dummy variables to represent the education level of those who are attending school or college over the course of a year. *Educ* is the matrix of these 11 dummy variables.[6] *State* represents the matrix of dummy variables for the state of residence and *MSA* is a dummy variable which equals 1 if a person lives in a metropolitan area and 0 otherwise; ε is the error term.

[6]Seven dummy variables are created for education levels: less than high school, GED, high school degree, some college, associate's degree, bachelor's degree and graduate degree. Four dummy variables are created for those enrolled in an educational institution: grades 1-12 and not a high school graduate; 2-year College; 4-year College; graduate school.

As Hispanics represent the largest immigrant group in the sample, we also estimate Equations 1 and 2 using samples that are restricted to Hispanic SGIs, Hispanic natives and all other natives (omitting immigrants from other ethnicities). For these estimations the immigrant dummy variable is replaced with two dummy variables - one for immigrant Hispanics and one for native Hispanics. The coefficients of these variables represent the earnings of immigrant and native Hispanics in comparison to non-native Hispanics. These variants of Equations 1 and 2 are presented by Equations 3 and 4,

$$\ln(wage_{ia}) = \beta_0 + \beta_1 IH_{ia} + \beta_2 NH_{ia} + \epsilon_{ia} \qquad for\ a = 18\ to\ 30 \qquad (3)$$

$$\ln(wage_{ia}) = \beta_0 + \beta_1 IH_{ia} + \beta_2 NH_{ia} + \gamma_1' ethnicity_{ia} + \gamma_2' Educ_{ia} + \delta' State_{ia} + \zeta MSA_{ia} + \eta' Year_{ia} + \epsilon_{ia} \qquad for\ a = 18\ to\ 30 \qquad (4)$$

IH is a dummy variable that equals 1 if an individual is a Hispanic SGI and *NH* is a dummy variable that equals 1 if an individual is a native Hispanic. In Equation 4, *ethnicity* represents a vector with two indicator variables - one for Blacks and one for Whites.

The second part of the analysis aims to present the overall level of economic assimilation of SGIs. This is done using a pooled sample instead of samples by age. This analysis is more comparable to previous studies. The following model is estimated on samples of males and females,

$$\ln(wage_{ia}) = \beta_0 + \beta_1 I_i + \gamma_0 Age_{it} + \gamma_1' ethnicity_{i} + \gamma_2' Educ_{iy} + \delta' State_{it} + \zeta MSA_{it} + \eta' Year_{it} + \theta' Parent_i + \epsilon_{it} \qquad (5)$$

where *t* denotes the year. Equation 5 introduces controls for age and parental characteristics. *Age* is a continuous variable which represents the age of the respondent. *Parent* represents a vector of covariates of parental income and education.[7] These controls are considered to be key predictors of an individual's labor market outcomes. We estimate numerous variants of Equation 5 to highlight the importance of various controls in isolating the effect of foreign parentage on wages. We also estimate a variant of Equation 5 that replaces immigrant dummy variable with two dummy variables, one for immigrant Hispanics and one for native Hispanics. This model is estimated using samples that are restricted to Hispanic SGIs, Hispanic natives and all other natives. Immigrants from other ethnicities are omitted. All models are estimated separately for males and females.

We also consider panel models to study the relative wages of SGIs. These models are useful in that they allow one to control for unobservable characteristics. In the context of the relative earnings of SGIs, unobservable characteristics, such as the extent of parental involvement and focus on the children's upbringing and labor market outcomes, may vary across SGI and natives. The existence and quality of networks of parents and young adolescents that may be helpful in securing employment are also likely to be different between children of immigrants and natives. A fixed effects model that differences out all time invariant characteristics, including the unobservable ones, cannot be implemented because of the time invariant nature of the variable of interest - the SGI status. The other option is a Random Effects panel model; it accounts for individual

[7]Parents' income and education levels are taken from the 1997 rounds of the survey and are time invariant.

specific heterogeneity by including a random person-specific constant. However, the required assumption that the unobservable heterogeneity is purely random is probably incorrect. The unobservable characteristics of children of immigrant and children of natives are likely to be different in some non-random manner. We do, however, present the results of a random effects panel model (Equation 6) in the appendix.[8]

$$\ln(wage_{ia}) = \beta_0 + \beta_1 I_i + \gamma_0 Age_{it} + \gamma_1' ethnicity_{\ i} + \gamma_2' Educ_{iy} + \delta' State_{it} +$$

$$\zeta MSA_{it} + \eta' Year_{it} + \theta' Parent_i + \upsilon_i + \mu_{it} \qquad (6)$$

This model accounts for individual specific heterogeneity by introducing a random person-specific constant in the form of υ.

5. Results & Discussion

5.1. Relative Wage Profile

Figure 1 summarizes the estimation results of Equations 1 and 3. Equation 1 regresses wages on immigrant status at each age level (18 to 30) to get an estimate of relative wages of SGIs. The coefficients of the relative wages are then plotted with age on the X-axis and relative wages on the Y-axis, while the statistical significance of the estimates is shown using bars around each coefficient based on 95 percent confidence intervals. Since

[8]We use Hausman as well as Breusch and Pagan tests to empirically test the suitability of random effects estimation (Equation 6). The Hausman test compares the coefficients of the fixed effects and random effects model to test for systematic differences in coefficients. With a test statistic of 125 and a p-value of 0.000, we reject the null hypothesis that the random effects model is appropriate. However, the Hausman test may not be an appropriate test as the fixed effects model could not calculate the coefficients of the time invariant characteristics, including our variable of interest - the dummy variable for immigrant status. The Breusch and Pagan test checks for zero variance in the individual random effects. Rejection of null hypothesis supports the existence of random effects. With a test statistic of 2343.05 and a p-value of 0.000, we reject the null hypothesis and, hence, fail to rule out the existence of random effects. The conflicting conclusions from the Hausman test and the Breusch and Pagan test calls for caution against the interpretation of the results from the random effects model that are presented in the appendix.

the dependent variable is the log of hourly wages, the coefficient of immigrant status can be interpreted as an approximate percentage wage advantage or disadvantage of SGIs compared to natives.

The first plot of Figure 1 shows the relative wages of male SGIs in comparison to native males. The plot shows that SGIs have about a 14 percent wage disadvantage over native at the age of 18; this declines to 0 at the age of 24, before increasing again. The second plot in Figure 1 shows the relative wages of female SGIs compared to native females. The plot shows that female SGIs have a substantial wage advantage (20 percent) over native females at the age of 18, which reduces as they age.

The remaining plots of Figure 1 are based on estimation results for Equation 3. This specification is estimated on a sample that excludes the SGIs who are not Hispanic. Some studies, such as the one by LaLonde and Topel (1992), have compared wages of native Hispanics to wages of immigrant Hispanics as both groups are likely to have similar unobservable characteristics. One can compare the coefficients of the dummy variables for second generation immigrant Hispanics and native Hispanics to have a more meaningful analysis of economic assimilation of immigrant Hispanics. The third and fourth plot present the estimates of wages of male SGI Hispanics relative to male non-Hispanic natives. The fifth and sixth plot represent the estimates of the dummy variables for native Hispanics.

The plot of the relative wages of SGI Hispanic males (Plot 3) show that their wages are not statistically different from natives for much of their early career, except at the ages of 21 and 28 when their wages are higher than those of natives. The relative

wages of SGI female Hispanics (Plot 4) are 20 percent higher than those of non-Hispanic female natives at the age of 18. But as they age, this advantage becomes negative and statistically insignificant. The wages of native Hispanic males are mostly statistically indistinguishable from those of native non-Hispanic males (Plot 5) and lower than those of SGI Hispanic males. The relative wages of female Native Hispanics to non-Hispanics (Plot 6) have a similar (downward) trend to the trend of SGI Hispanics. However, the relative wages of native Hispanics are mostly lower than those of SGI Hispanic females.

Figure 1 is based on Equations 1 and 3, which do not control for demographic, educational and locational characteristics in estimating the relationship of immigrant status with wages. Figure 2, which is based on Equations 2 and 4, presents the trends that take into account these confounding factors.

The first plot in Figure 2 shows wages for SGIs to be statistically similar to those of natives to age 26. For ages 28 to 30, SGI males earn about 10 percent more than native males. The relative wages of second generation female immigrants are mostly positive (Plot 2) and there is no downward trend as in Plot 2 of Figure 1.

The remaining plots of Figure 2 are based on the estimation results of Equation 4 and the sample that does not include any non-Hispanic SGIs. Plots 3 and 4 show the relative wages of male and female SGI Hispanics; Plots 5 and 6 present the relative wages of native Hispanics, again for males and females.

The plot of relative wages of male SGI Hispanics (Plot 3 of Figure 2) is based on coefficients that are all statistically insignificant and do not show an upward or downward trend along the age axis. The relative wages of native Hispanics (Plot 5)

indicate a slight downward trend with negative relative wages from the age of 21. However, the relative wages shown on this plot are only statistically significant at the ages of 25 and 27. Hence, these plots fail to discern any substantial differences in relative wages of male SGIs and native Hispanics.

The plot for female SGI Hispanics in Figure 2 shows a less pronounced downward trend in wages as compared to the corresponding plot in Figure 1. Female SGI Hispanics have positive relative wages from ages of 18 to the age of 24. From age 24 onward their relative wages hover around zero with one negative spike at the age of 29. The estimates of wages of native Hispanic females are not statistically different from those of non-Hispanic native females, making them similar to those of SGI Hispanic females.

The relative wage profiles shown in Figure 1, which are based on Equations 1 and 3 and do not have control variables, suggest that SGIs earn more than natives as they enter their twenties, but that this advantage erodes as they age. The relative wage profiles shown in Figure 2, which are based on Equations 2 and 4 and include control variables, do not show clear trends by age. The relative wages of SGIs tend to be positive, but mostly statistically insignificant, over the course of their late teens and twenties. The wages of Hispanic SGIs are not different from those of Hispanic and non-Hispanic natives.

5.2. Relative Wages

This section provides an analysis of the average level of relative wages of SGIs. Numerous variants of Equation 5 are estimated using a pooled sample of NLSY

respondents from the years 1999 to 2000. This analysis is comparable to the literature on the wages of SGIs that uses pooled census data from various years. Table 3 presents the results for all SGIs, Table 4 the results of SGI Hispanics and native Hispanics.

Panel A of Table 3 shows the results for males and Panel B the results for females. The results in column 1 are based on the specification that controls only for area of residence, year of observation and the age of respondents. Male SGIs are shown to have a small but statistically insignificant advantage over natives. Female SGIs are shown to have a statistically significant wage advantage of 4.1 percent. Once ethnicity is controlled for, the estimate of relative wages of SGI males gains statistical significance and increases to 4.6 percent. Female SGIs are estimated to have a 9.2 percent wage advantage over native females, once we control for ethnicity.

Adding control variables for education does not substantially change the relative wages of male or female SGIs. This observation should not be understood to mean that education has only a limited role in explaining the relative wages of SGIs. The key point to note here is that ethnicity and education are correlated and controlling for one of those absorbs much of the joint variation.[9] The final column of Table 3 adds parental characteristics into the specification. This change does not generate a statistically significant relationship of wages and immigrant status for males. Female SGIs are still found to earn 7.4 percent more than native females, once we control for parental earnings and education.

[9]Hispanics and Blacks are on average less educated than Whites and `Other/Mixed' races.

Given the fact that the majority of SGIs in our sample are Hispanics, it may be useful to understand the extent to which the positive relative wages of SGIs are driven by Hispanics. Table 4 presents the estimation results of a model similar to that of Equation 5, but it replaces the immigrant dummy variable with two indicator variables, one for SGI Hispanics and the other for native Hispanics. The omitted category in this model consists of non-Hispanic natives. The sample used to estimate the results of Table 4 do not include non-Hispanic SGIs. Panel A of Table 4 gives the results for males, panel B those for females.

The first column of Table 4 presents the estimates when the controls are limited to those for area, year and age. The estimates show that male Hispanic SGIs have a wage disadvantage of 3.9 percent compared to non-Hispanic natives. The corresponding wage disadvantage of native male Hispanics is 4.1 percentage points higher. The estimate of the wage disadvantage is -0.041 for female Hispanic SGIs and -0.046 for native Hispanic females. Once ethnicity dummy variables are added into the specification, the wage disadvantage increases to 11 percent for male Hispanic SGIs and to 14.4 percent for male Hispanic natives. For females, the inclusion of ethnicity dummy variables results in the estimates of relative wages of Hispanic SGIs and natives to become statistically insignificant. The results in the third column of Panels A and B are based on specifications that include education dummy variables. In Panel A, the wage disadvantage of SGI and native Hispanics is substantially less than in the estimates of the previous column. This suggests that male Hispanics have a significantly lower level of educational attainment than non-Hispanic natives. For females (Panel B), the inclusion of the education variables in the specification results in an increase in relative wages of

female SGI Hispanics, giving them an advantage of 6.7 percent over non-native Hispanics.

The specification in the final column of Table 4 controls for the education and earnings of the parents of the respondents. The inclusion of these controls results in positive but statistically insignificant estimates of the relative wages of male SGIs and native Hispanics. The estimate of the relative wage of female SGI Hispanics increases to 10.2 percent as result of adding parental characteristics in the specification. By contrast, the estimate of the relative wage of native Hispanic females stays statistically insignificant.

An increase in the relative wage of Hispanic SGIs as a result of controlling for parental characteristics is consistent with the observation from the descriptive statistics that parents of Hispanic SGIs have lower levels of earnings and educations. The wage disadvantage of male SGI Hispanics is fully explained by the specification of the final column, which includes parental characteristics. Female SGI enjoy a large earnings advantage over natives after we account for parental characteristics. These findings contrast with the popular opinion about SGI Hispanics. Our results point towards substantial economic gains of Hispanics within one generation of migration into the US. These results undermine the fears, elaborated by Portes and Zhao (1995), and Portes (1996), that children of new immigrants may become a new urban underclass by failing to catch up with natives in the labor market. Instead, our results provide empirical support to the argument presented by Waters and Jimenez (2005), whose discussion concludes by

acknowledging the successful socioeconomic assimilation of recent immigrants from Central and South America and their children in the US.

6. Conclusion

The foreign born population in the US has been rising since 1970. Unlike previous immigrants, the majority of the new immigrants have come from Latin America and Asia. These immigrants have lagged behind their native counterparts in the labor market. There has also been significant concern over the economic and social assimilation of the children of immigrants from Latin America (Borjas, 2006; Perreira et al., 2006). We use longitudinal data for individuals born between 1980 and 1984 to study the relative wages of children of immigrants (SGIs), the majority of which came to the US during the 1960s to 1980s.

We identify the relative wage evolution of SGIs with ages from 18 to 30. We also estimate the average level of the relative wages of SGIs, while controlling for many personal and parental characteristics. Given that the majority of new immigrants are Hispanic, we provide a separate analysis for Hispanic SGIs and show the patterns and levels of wage assimilation of recent Hispanic SGIs.

The raw estimates (without controls) of relative wage profiles indicate that SGIs have a wage advantage over natives at the beginning of their career. This advantage is over 10 percent for male SGIs and over 20 percent for female SGIs. However, these large wage advantages diminish over the course of their early working life. Our pooled regression models estimate a wage advantage of about 7 to 8 percent for female SGIs over native females. For male SGIs, the estimate of the wage advantage becomes

insignificant once parental characteristics are controlled for. Our study does not share the pessimistic view about the labor market outcomes of Hispanic SGIs. We find that Hispanic SGI males earn as much as natives, while female Hispanic SGIs have about 10 percent higher wages than native females. Our study supports the argument of Caponi (2011) who states that Mexican SGIs do not face the issues of lack of English language proficiency and social skills that their parents faced.

Overall, these results are consistent with arguments made by Kao and Tienda (1995) and Goyette and Xie (1999), who argue that SGIs tend to attain high levels of socioeconomic status due to their effort, ambition, and motivation induced by their immigrant parents. These studies state that parents of SGIs put an increased focus on the education and career of their children and frequently remind their children of the sacrifices that they made in order to come to the US. Hence, we conclude that children of relatively recent immigrants do at least as well in the labor market as their native counterparts.

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APPENDICES

APPENDIX A: TABLES

Table 1: Descriptive Statistics (Males)

	All Immigrants*	All Natives**	Immigrant* Hispanics	Natives** Hispanics
Personal Characteristics				
Annual Wages	24,894	23,227	24,514	22,942
	(19,371)	(19,201)	(17,177)	(17,753)
Hourly Wages	15.99	14.27	15.40	13.66
	(20.29)	(15.12)	(19.72)	(11.82)
<High School	13.14%	8.45%	17.45%	10.81%
High School	58.95%	61.08%	62.83%	69.33%
Associate's	7.66%	5.97%	7.83%	3.56%
Bachelor's	16.25%	19.52%	9.93%	13.14%
Advanced	0.76%	1.03%	0.09%	0.56%
Parental Characteristics				
Annual wages of Parents	38,919	49,445	26,212	37,848
	(37,940)	(42,410)	(21,443)	(31,890)
Father's Years of Schooling	10.99	12.99	9.32	12.16
	(6.84)	(2.74)	(6.08)	(2.72)
Mother's Years of Schooling	11.08	12.96	9.43	12.15
	(6.66)	(2.43)	(4.91)	(2.43)
Number of Respondents	558	2,412	395	276

Notes: * Second Generation Immigrants. **Third and subsequent generations of foreign born individuals. Standard errors are in parenthesis. Average incomes have been calculated using data from 12 rounds (years 1999-2010) of the survey. Household income is reported for year 1996 when all of the respondents were living with parents and were mostly under the age of 16.

Table 2: Descriptive Statistics (Females)

	All Immigrants*	All Natives**	Immigrant* Hispanics	Natives** Hispanics
Personal Characteristics				
Annual Wage	20,278	18,440	18,936	16,905
	(15,964)	(15,622)	(12,811)	(12,477)
Hourly Wage	13.99	12.66	13.34	12.29
	(15.41)	(13.16)	(16.05)	(12.03)
<High School	9.28%	5.73%	12.42%	9.56%
High School	52.25%	51.05%	59.03%	61.98%
Associate's	8.54%	9.14%	8.76%	6.49%
Bachelor's	23.95%	25.51%	15.42%	17.57%
Advanced	1.30%	1.50%	0.75%	0.00%
Parental Characteristics				
Annual wages of Parents	42,363	48,395	29,178	37,080
	(43,586)	(41,248)	(27,397)	(31,827)
Father's Years of Schooling	11.32	12.99	9.87	12.18
	(5.57)	(2.60)	(5.89)	(2.57)
Mother's Years of Schooling	10.52	13.00	9.27	12.34
	(4.12)	(2.93)	(3.94)	(5.94)
Number of Respondents	582	2,379	422	217

Notes: * Second Generation Immigrants. **Third and subsequent generations of foreign born individuals. Standard errors are in parenthesis. Average incomes have been calculated using data from 12 rounds (years 1999-2010) of the survey. Household income is reported for year 1996 when all youths were living with parents and were mostly under the age of 16.

Table 3: Relative Wages of Second Generation Immigrants

	(1)	(2)	(3)	(4)
Panel A: Males				
Immigrant	0.018	0.046***	0.040***	0.023
	(0.014)	(0.015)	(0.015)	(0.019)
Observations	22,286	22,286	22,233	14,761
R^2	0.134	0.150	0.18	0.194
Panel B: Females				
Immigrant	0.041***	0.092***	0.081***	0.074***
	(0.013)	(0.015)	(0.015)	(0.019)
Observations	21,551	21,551	21,505	14,171
R^2	0.152	0.161	0.215	0.231
Controls				
State Dummy Variables	X	X	X	X
MSA Status	X	X	X	X
Year Dummy Variables	X	X	X	X
Age	X	X	X	X
Ethnicity Dummy Variables		X	X	X
Education Dummy Variables			X	X
Parental Characteristics				X

Notes: Immigrant refers to second generation immigrant. Standard errors in parentheses. *$p<0.10$, **$p<0.05$, ***$p<0.01$. Dependent Variable: Log of hourly wages.

Table 4: Relative Wages of Second Generation Hispanic Immigrants

	(1)	(2)	(3)	(4)
Panel A: Males				
Immigrant Hispanics	-0.039**	-0.110***	-0.029	0.026
	(0.017)	(0.035)	(0.034)	(0.043)
Native Hispanics	-0.080***	-0.144***	-0.074**	0.033
	(0.019)	(0.035)	(0.035)	(0.042)
Observations	21,081	21,081	21,030	13,917
R^2	0.134	0.149	0.178	0.192
Panel B: Females				
Immigrant Hispanics	-0.041**	-0.009	0.067**	0.102**
	(0.017)	(0.034)	(0.033)	(0.040)
Native Hispanics	-0.046**	-0.009	0.043	0.067
	(0.020)	(0.036)	(0.035)	(0.041)
Observations	20,353	20,353	20,307	13,273
R^2	0.146	0.155	0.209	0.226
Controls				
State Dummy Variables	X	X	X	X
MSA Status	X	X	X	X
Year Dummy Variables	X	X	X	X
Age	X	X	X	X
Ethnicity Dummy Variables		X	X	X
Education Dummy Variables			X	X
Parental Characteristics				X

Notes: Immigrant refers to second generation immigrants and native refer to third and subsequent generation of foreign born individuals. Standard errors in parentheses. *$p<0.10$, **$p<0.05$, ***$p<0.01$. Dependent Variable: Log of hourly wages.

Table 5: Relative Wages of Second Generation Immigrants (Appendix)
(Random Effects Model)

	(1)	(2)	(3)	(4)
Panel A: Males				
Immigrant	0.021	0.050*	0.043	0.008
	(0.025)	(0.027)	(0.027)	(0.035)
Observations	22,286	22,286	22,233	14,761
Panel B: Females				
Immigrant	0.063***	0.105***	0.091***	0.079**
	(0.024)	(0.027)	(0.025)	(0.032)
Observations	21,551	21,551	21,505	14,171
Controls				
State Dummy Variables	X	X	X	X
MSA Status	X	X	X	X
Year Dummy Variables	X	X	X	X
Age	X	X	X	X
Ethnicity Dummy Variables		X	X	X
Education Dummy Variables			X	X
Parental Characteristics				X

Notes: Immigrant refers to second generation immigrant. Standard errors in parentheses. *$p<0.10$, **$p<0.05$, ***$p<0.010$. Dependent Variable: Log of hourly wages.

Table 6: Relative Wages of Second Generation Hispanic Immigrants (Appendix)
(Random Effects Model)

	(1)	(2)	(3)	(4)
Panel A: Males				
Immigrant Hispanics	-0.033	-0.106	-0.009	0.030
	(0.031)	(0.065)	(0.064)	(0.079)
Native Hispanics	-0.058*	-0.140**	-0.056	0.048
	(0.035)	(0.067)	(0.066)	(0.077)
Observations	21,081	21,081	21,030	13,917
Panel B: Females				
Immigrant Hispanics	-0.019	-0.002	0.070	0.105
	(0.029)	(0.06)	(0.057)	(0.069)
Native Hispanics	-0.045	-0.008	0.038	0.065
	(0.036)	(0.064)	(0.06)	(0.069)
Observations	20,353	20,353	20,307	13,273
Controls				
State Dummy Variables	X	X	X	X
MSA Status	X	X	X	X
Year Dummy Variables	X	X	X	X
Age	X	X	X	X
Ethnicity Dummy Variables		X	X	X
Education Dummy Variables			X	X
Parental Characteristics				X

Notes: Immigrant refers to second generation immigrants and native refer to third and subsequent generation of foreign born individuals. Standard errors in parentheses. *$p<0.1$, **$p<0.05$, ***$p<0.01$. Dependent Variable: Log of hourly wages.

APPENDIX B: FIGURES

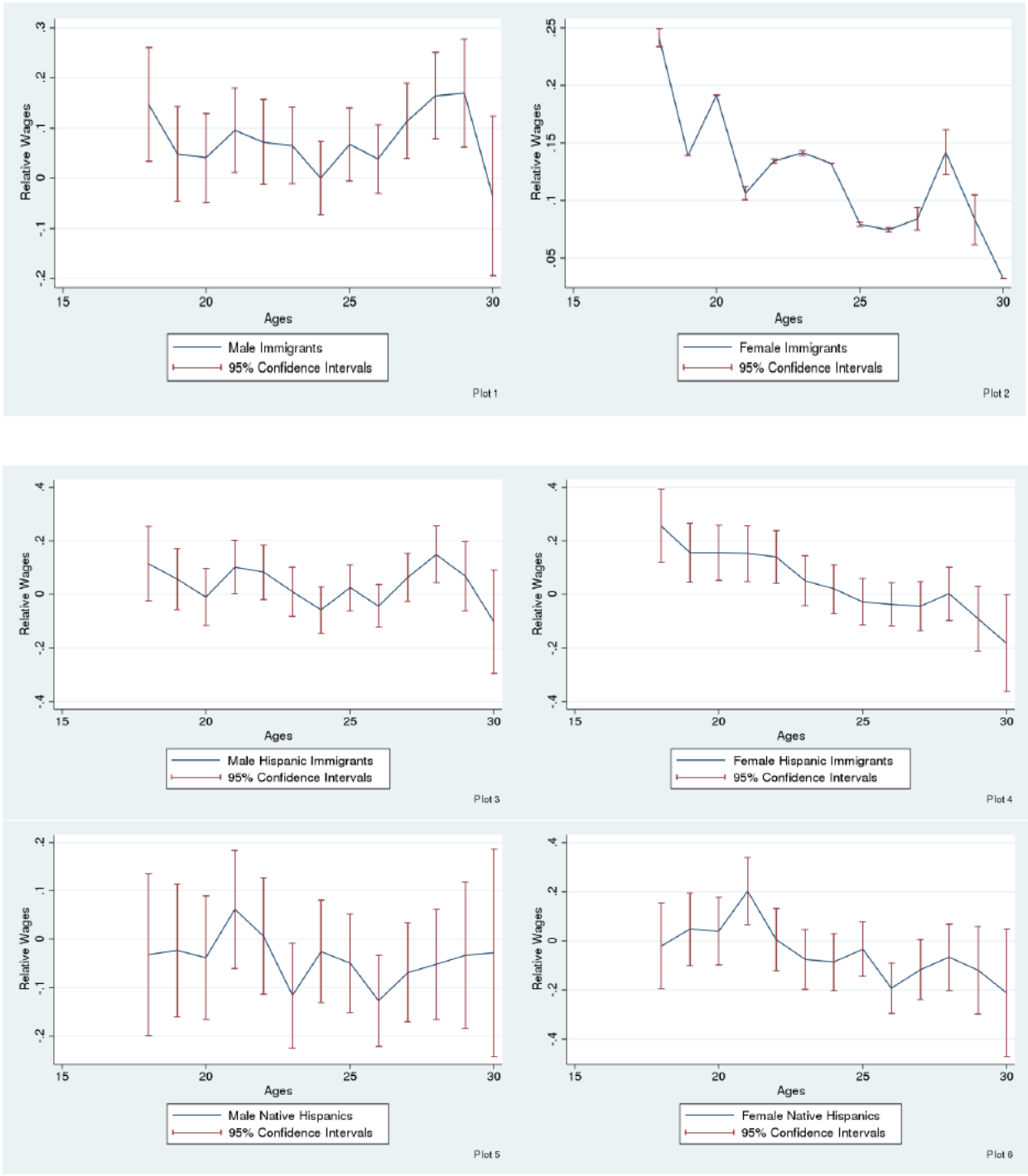

Figure 1: Trends without Controls

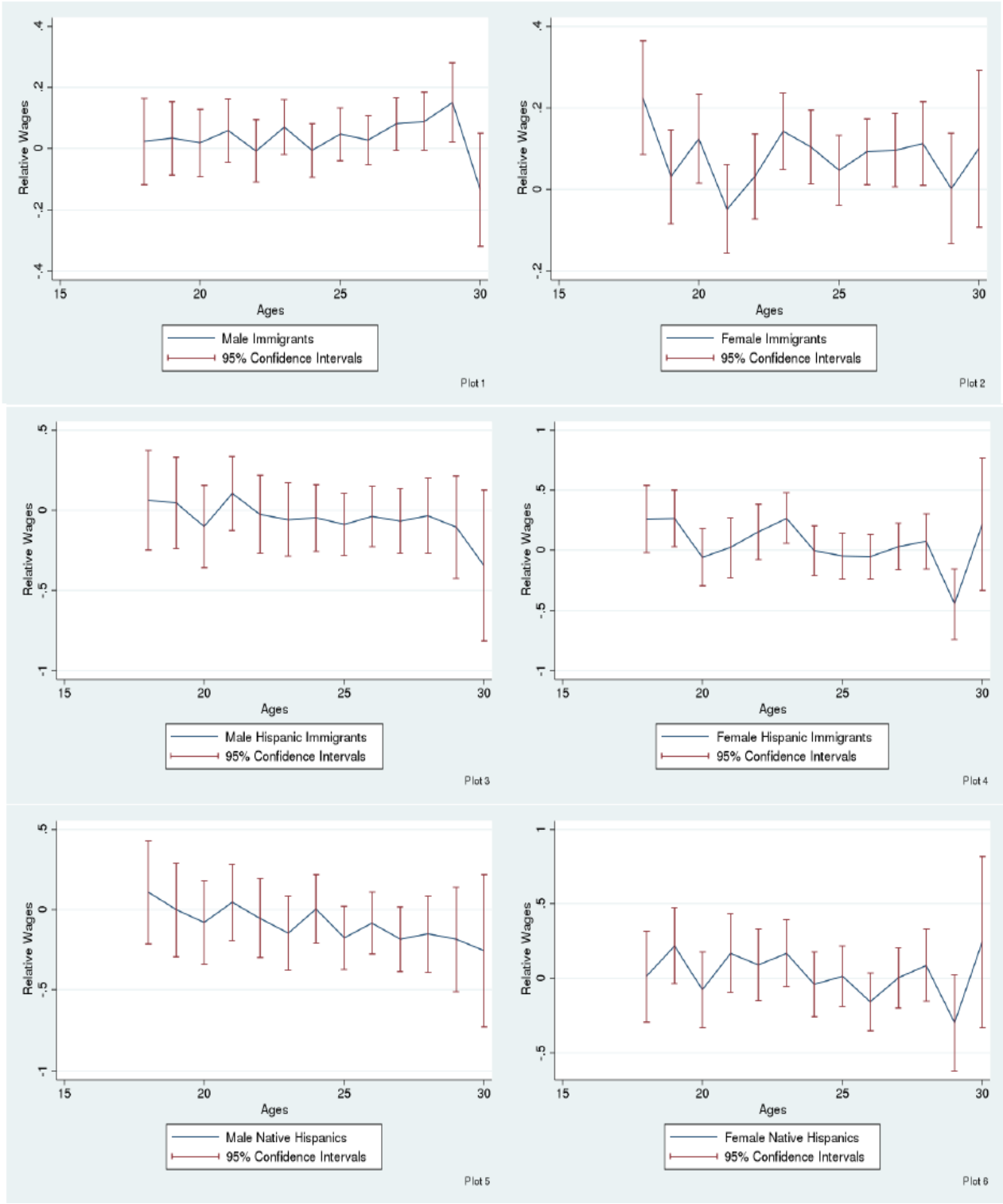

Figure 2: Trends with Controls

CHAPTER II

THE IMPACT OF PHYSICAL APPEARANCE ON THE TRANSITION FROM HIGH SCHOOL TO FULL-TIME EMPLOYMENT

1. Introduction

In the past four decades, the length it takes the average high school graduate to find full-time employment has been trending upwards. Whereas more than 80 percent of all high school graduates in 1973 found stable employment within one year of graduation, the ratio dropped to roughly 20 percent in 1992 (Ryan, 2001).While the literature on the factors that affect the transition of young high school graduates to full-time work is extensive, the role of non-cognitive endowments such as physical appearance has been neglected. Since the structure of the US economy started to shift toward service based industries, soft skills have assumed more importance in determining the labor market outcome of job-seekers (Capelli, 1995). Wage dispersion, institutional changes, demographics, and the lack of apprenticeship programs explain the low transition from high school to full-time employment.[1]

[1] See Mukoyama and Sahin (2009), Klerman and Korolyi (1994), and OECD-Organization for Economic Cooperation and Development (1998) for the factors that help or hinder the high school to full-time employment transition in developed countries.

These, however, may not tell the whole story. This paper examines whether physical appearance (height and obesity), aesthetic characteristics that are more valuable in a service-related career, alter the odds of transitioning from high school (HS) to sustained full-time employment.[2]

The purpose of this paper is to explore the role of physical appearance as a mechanism that complements existing explanations for the high school to full-time employment transitions. Understanding other factors that hinder the transition from high school to full-time employment beyond those recognized in the literature is important in designing and guiding policy. Therefore, the main contribution of this paper is to show that physical appearance plays an important role in explaining the low transition from high school to full-time employment in the new economy for low-skilled positions.

Using work history data from the National Longitudinal Survey of Youth 1997 (NLSY97), I estimate the impact of physical appearance on the hazards of transitioning from high school to full-time employment. I use both parametric and the semi-parametric Cox proportional hazard model to examine whether physical appearance affect the probability of transitioning from high-school to employment. The focus on job seekers with only a high school diploma is deliberate. First, a high school diploma is typically the most basic qualification required for a full-time employment, which makes the risk of unemployment after HS rather uniform for all job seekers. Second, job seekers with only a high school diploma are more likely to work in the occupations where physical

[2] I make a distinction between part-time employment and sustained full-time employment. This is because many HS graduates will endure a long period of "milling about" and "churning" before they settle down on a career path (Klerman and Korolyi, 1994).

appearance is important more than any other group. Third, the distribution of reservation wages for most high school graduates who indicate a willingness to work full time is narrow and bounded by the minimum wage.[3] Because transitions to employment spells are not independent of previous spells, examining multiple transitions into some state (unemployment, marriage etc.) may be biased (Kovacevic and Roberts, 2002). As such, this study focuses on the first transition to employment, which minimizes the potential bias from previous spells of unemployment.

Because transitions to employment spells are not independent of previous spells, examining multiple transitions into some state (unemployment, marriage etc) may be biased **(**Kovacevic and Roberts, 2002**)**. As such, this study focuses on the first transition to employment, which minimizes the potential bias from previous spells of unemployment.

The empirical findings from this study indicate that physical appearance plays a role in the odds of transitioning from high school to full-time employment. Job-seekers of a short stature have 18% lower odds of transitioning from high school to full-time employment as shown in Table 3. This means short job seekers spend, on average, 28 months without full-time employment, compared to other job seekers who spend around 23 months unemployed. I also find that tall job seekers do not experience any significant

[3] Unless asked specifically, the reservation wage of most job seekers is unobserved. However, the link between the duration of unemployment and reservation wage is strong (Brown and Taylor, 2011). Since I do not observe reservation wages directly, I assume the minimum wage can act as a proxy for the reservation wage for recent high school graduates. The difference between the minimum wage ($7.25) and the median starting wage of high school graduates working full-time at ($9.70) makes this presumption workable.

increase in the probability of exiting unemployment. Additionally, I find the odds of obese job-seekers transitioning from school to full-time employment is around 27.8% lower than the odds of exiting unemployment for non-obese job-seekers. Furthermore, I find that short and obese job-seekers do not face as large a decline in the odds of transition to full-time employment into blue collar occupations.

These finding are important because many employers cite non-cognitive skills such as physical appearance as one of the key attributes they consider in making hiring decisions (Holzer, 1996). This suggests that recently graduated job-seekers with less than satisfactory levels of these attributes seeking to transition from high-school to full-time employment may face less favorable labor market conditions.

The rest of the paper is organized as follows. Section 2 explores the background and provides a literature review. In Section 3, I explain the data, identification strategy, and empirical methodology. Section 4 presents the results, discussions and robustness checks. Section 5 concludes.

2. Background

Longer duration of unemployment are costly and can lead to discouraged workers.[6] Key policy interventions to alleviate the impact of unemployment duration such as

[4] My definition of obesity comes from the National Institute of Health (NIH). That is derived from the Body Mass Index(BMI). BMI = (Weight/Height*Height)*703. If the BMI is greater than 30, the NIH considers the person obese.See https://www.nih.gov/news-events/news-releases/nih-study-identifies-ideal-body-mass-index

[5] I define blue collar occupations based on Bjerk (2007). As those that do not require any specialized skill. For instance, working in a metal factory does not require any specialized skill to obtain the employment.

[6] In an extensive exposition, Nichols, Mitchell, et al. (2013) argue that the consequences of long-term unemployment include detachment from the labor force and decline in human and social capital among

unemployment insurance have facilitated consumption smoothing. With unemployment duration remaining stubbornly high after the Great Recession (Kroft et al., 2016), however, the fiscal sustainability of unemployment insurance has come under question. The specter of long-term unemployment poses a threat especially to the economic prospects of new workers.

With fewer job openings for a relatively stable pool of workers with only a high school diploma, job seekers in this market need to provide the right signals of employability. Skills obtained from high school only, provide one dimension of employability. Other signals of employability such as physical appearance may be increasing in importance in this shrinking job market. Their increasing importance may be one of the factors driving the prolonged duration of unemployment.

2.1. School-to-Work Transitions

Delayed transitions from school-to-work pose serious challenges to the long term labor market prospect for youths in terms of lower wages and diminished labor market attachment (Greg 2001; Nerendranathan and Elias 1993). School-to-work transitions have been most impacted by youth employment options and the rising importance of skills in youth based occupations (Ryan, 2001). In the context of this study, both youth employment options and the rising importance of skills are driven by shifts in the overall structure of the economy. Additionally, changes in macroeconomic conditions and global economic crises have also been cited as causes for longer school-to-work transitions in advanced countries (Quintini and Martin, 2014).

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others. http://www.urban.org/sites/default/files/publication/23921/412887-Consequences-of-Long-Term-Unemployment.PDF

Unlike previous studies that take a negative view of the duration of school to stable employment, Klerman and Karoly (1994), using a more dynamic framework come to a different conclusion. They note that, while the typical high school graduate will not settle down into stable employment until their early twenties, the constant switch between different jobs for short periods of time may not be detrimental to their career prospects. They contend that it is likely that young workers may hop from job to job until they land on the right "career enhancing" job path. Rather than hurting them, this may actually place the job-seeker in a position more closely aligned with their skills and interest. This may in-turn improve their long term labor market outcomes. Klerman and Karoly (1994) find that the school-to-work dynamics show significant diversity, with some groups displaying the traditional "milling about" period before finding stable employment.

In addition to youth employment options and skill mismatches, labor market policies also play a critical role in the transition from school-to-work for youths. Quintini and Martin (2014) argue that vocational education and apprenticeship in Europe help in lowering the transition from school-to-work for some groups. However, Quintini et al. (2007) note that there is some worry as to whether the countries that successfully implement apprenticeship systems can sustain the program. This is because the number of youths may be exceeding the number of openings for these apprenticeships. They suggest that the pressure on the apprenticeship system can be mitigated by developing more robust "dual-type" systems where students can simultaneously develop an employment relationship while still on track to getting a high school diploma. The successful implementation of a dual-type system requires the active involvement of firms and carefully designed incentives from the government.

2.2. Macroeconomic Changes and the Transition from School-to-Work

In our current economy, some factors, such as the aging population, may favor the swift transition of youths from high-school to work. However, Danziger and Ratner (2010) find technological changes, increasing globalization, and relative job insecurity are posing serious challenges to the seamless transition from school to work. As industries adopt labor-saving technologies, both wages and the employment prospects of workers are lowered (Juhn et al., 1991). This is especially true for younger cohorts who are typically displaced by these technologies.

Another critical factor that affects the transition from school-to-work for young job-seekers is the minimum wage. Based on CPS data over 1979 to 1992, Neumark and Wascher (1995) find increases in the minimum wage raise the odds of teenagers dropping out of school to seek work. Neumark and Wascher (1995) caution that there is sufficient diversity in the response of teenagers to increases in the minimum wage that only those at the threshold of the minimum wage will be affected by these increases.

Looking at several countries in the developing world, Manacorda et al. (2017) find a strong negative relationship between economic growth and the length of the time it takes to transition from to high-school to work. They find increases in GDP growth reduce the transition from school to work in many of the countries.

Rosas and Rossignotti (2005) find the sectoral distribution of jobs available to youth is also affecting their transition from school-to-work. This is especially true in the post industrial economy where youths are predominantly found in occupations within the

retail and sales occupations. Unlike other sectors where hard skills are central to the performance of job responsibilities, the service sector relies more on soft-skills (Holzer, 1996). This presents a challenge to youths from disadvantaged backgrounds, which may translate into poor labor market prospects.

2.3. Physical Appearance and Labor Market Outcomes (Height and Unemployment)

This paper builds on the sizable literature documenting the empirical work on the effect of physical appearance on labor market outcomes. Roberts and Herman (1986), Young and French (1996), and Higham and Carment (1992), for instance, argue that taller people enjoy economic and other social advantages. It is argued that people who are shorter in height are discriminated against in various ways in their job market search (including job separation and job finding), due to cultural and social perceptions. In that context, physical height appears to be a socially desirable asset. Taller individuals are judged as being more persuasive (DeShields et al., 1996).

Lundborg et al. (2014) evaluate a large data pool (i.e. 450,000) of Swedish males who underwent mandatory military enlistment at age 18 and a subsample of 150,000 siblings in order to examine the reason for higher earnings by tall people. Accounting for both cognitive and non-cognitive skills, family background, and muscular strength in their height-earnings relationship, they find that a substantial height premium exists even after these factors have been accounted for. They also identify the sorting of short people into low-paid occupations which may indicate discrimination by physical stature.

In a recent survey of labor market outcomes by Case and Paxson (2008), a simpler explanation is offered for the wage premium associated with height: height is positively associated with cognitive ability which is rewarded in the labor market. Using data from the United States and the United Kingdom, they show that taller children have higher average cognitive test scores and these test scores explain a large portion of the height premium in earnings. Children with higher test scores also experience earlier adolescent growth spurts. Therefore, height in adolescence serves as a marker of cognitive ability. On average, taller adults hold jobs of higher status and earn more than other workers. This may help in creating societal impression that taller people are more successful in life.

In addition to height being correlated with ability which leads to better labor market outcomes, it is also claimed that the correlation between height and self esteem accounts for the height-wage relationship. Judge and Cable (2004) find that the effect of height on self-esteem and what they call "social esteem", which is how individuals are perceived and evaluated by others in society, plays a vital role in the wage-height relationship. Self-esteem and social esteem each may then affect both objective and subjective performance. In other words, how managers evaluate an employee's performance clearly has an impact on career outcomes, such as promotions or earnings. Consequently, under their hypothesis that height is positively associated with earnings, they establish that height is more strongly related to subjective outcomes than to objective outcomes. They present the most comprehensive analysis of the relationship of height to workplace success to date and their results suggest that tall individuals have advantages in several important aspects of their careers and organizational lives.

In an earlier study, Hensley and Cooper (1987) review the relationship between height and occupational success. They investigated the areas of academia, police work, and sales. The study concludes that height is an important attribute in securing a position, but there is no observable effect on job performance. These findings are limited to men. Vogl (2014) argues that taller workers are paid higher wages. A prominent explanation for this pattern is that physical growth and cognitive development share common childhood inputs, inducing a correlation between adult height and two productive skills, strength, and intelligence. By exploring the relative roles of strength and intelligence in explaining the labor market height premium among Mexican men, the study shows that the cognitive test scores account for a limited share of the height premium. Roughly half of the premium can be attributed to differences in educational background and in occupational choices. Taller workers tend to obtain more education and are more represented in occupations with greater intelligence and lower strength requirements which suggests a possible role for cognitive skills.

The results of Persico et al. (2004) show that taller workers receive a wage premium. After controlling for differences in family background, the disparity is similar in magnitude to the race and gender gaps. Their research exploits the variation in the height of an individual over time to explore how height affects wages. They control for teen height and this ultimately eliminates the effect of adult height on wages for white men. The teen height premium is not explained by differences in resources or endowments. The teen height premium is partially mediated through participation in high school sports and clubs. They also estimate the monetary benefits of a medical treatment for children that increase height.

Sciulli et al. (2012) study the relationship between having a disability and unemployment duration by focusing on individuals registered at Portuguese job centers. Disabled people are likely to occupy disadvantaged positions in the labor market; but this topic has received little attention in the literature, despite its relevance. As different disabilities affect unemployment duration differently, the authors distinguish different types of disabilities and shed light on disability-specific support policies. They find lower re-employment probabilities for many groups of disabled people, such as individuals with impairments in general functions, disfigurement, speech and visual disorders, and muscle-skeletal and other organ impairments. By conducting a decomposition analysis, they find that part of the disadvantage is due to differences in returns rather than to differences in characteristics. These findings suggest that the disadvantage of disabled people in the labor market is not only explained by a different distribution of characteristics, but also by the interaction of their characteristics with the work environment.

The recent contribution by Koutentakis (2015) investigates gender unemployment dynamics for ten advanced economies, applying a new methodology to widely available Labor Force Survey data. The study uses job-finding and job-separation rates for each gender to construct the steady-state unemployment gap as well as two counterfactual gender unemployment gaps. One is generated from differences in job-finding rates and the other from differences in job-separation rates. The paper finds that in all countries the gender unemployment gap that can be attributed to differences in the job-finding rate is lower than that of the job-separation rate which suggests that gender differences in the job-separation rate are the major factor behind the gender unemployment gap.

In a more recent survey of unemployment duration, Rothstein (2016) uses a reduced-form hazard model to analyze the factors that affect entry into first time long-term unemployment. The study finds that a large sample of the population (about 25%) has experienced long-term unemployment. Furthermore, individuals with lower educational attainment, lower cognitive test scores, and blacks have higher odds of experiencing long-term unemployment.

Unemployment duration is also affected by previous work experience (Fernandez, 2006). Closely related to the positive benefits of job experience on unemployment duration is the importance of early work experience for high school students. Baum and Ruhm (2016) argue that the long term career prospects of students with high school experience is enhanced by obtaining both hard and soft skills in the work place. It is evident that work-related skills students obtain while working in high school will also help them in obtaining employment. In that respect, high school work experience can reduce the duration of unemployment for students who graduate from high school.

2.4. Obesity and Unemployment

Obese individuals face adverse labor market outcomes compared to their non-obese counterparts (Roehling at el., 2013). This includes facing a lower probability of employment (Averett, 2014). The obesity-employment literature regards the lower probability of employment for obese individual as discriminatory, but Garcia and Quintana-Domeque (2006) find little evidence of discrimination against obese workers in the job market.

In a meta-analytic examination of the obesity-employment literature, Vanhove and Gordon (2014) find a negative relationship between obesity and employment status. They find the magnitude of the discrimination based on obesity status is stronger for the probability of getting employment than for the magnitude of wage discrimination. In a larger meta-analytical study of the impact of obesity on the probability of employment, Rudolph et al. (2009) conclude that obesity is associated with both lower wages and diminished chances of employment. Rudolph et al. (2009) also derive a negative effect of obesity on other labor market outcomes such as employee evaluation.

Greve (2008) also finds a negative relationship between obesity and employment for Denmark. Examining data on 8,000 individuals between 1995 and 2000, Greve (2008) shows that the impact of obesity on employment has an "inverted u-shaped" pattern for the wages of men. The study does not identify any significant impact of obesity on either employment, or wages in the public sector. The fact that there is difference in the private sector, but not in the public sectors, suggest that there might be some discrimination. Using propensity score matching and IV regression techniques, Morris (2007) associates obesity with a significant and negative impact on the probability of employment for both males and females in the UK. For the male sample, not adjusting the obesity variable for endogeneity does not alter the estimates, but the apparent endogeneity of obesity for females leads to an underestimation of the coefficient.

In a simulated study of the impact of health status on hiring decisions, Klesges et al. (1990) concludes that obese applicants were not rated as highly by reviewers. Obese

applicants were assumed to be poorly qualified for positions and ultimately less likely to be offered the job.

3. Data, Identification Strategy, and Empirical Methodology

3.1. Data

The main data set I use for this study is the National Longitudinal Study of Youth 1997 (NLSY97). The NLSY97 is a nationally-representative survey of young men and women in the United States who were 12 to 16 years old as of December 31, 1996. The same participants were interviewed every year from 1997 to 2013, which is the most recent follow-up survey available. The NLSY97 began with approximately 9,000 youths including a Black and Hispanic oversample. The time frame of the data that I use is between 1997 and 2010. This provides a sufficiently large period through which all respondents must have completed high school and obtained full-time employment. The Census Bureau's Current Population Survey (CPS) is used to provide the state unemployment rate in this study.

By 2010, the ages of the respondents ranged from 24 to 28 and the majority of them had completed their schooling. Parents and youths were both interviewed in the original 1997 survey. My key explanatory variable is a respondent's physical appearance - short stature[7]I used short, binary variable, as an outcome variable. I define 'Short' as being one standard deviation shorter than the median height. and obesity. NLSY97 is uniquely suited for this analysis because it provides rich details on individual characteristics used

[7] I used short, binary variable, as an outcome variable. I define 'Short' as being one standard deviation shorter than the median height.

to build a work history critical for duration studies. The longitudinal structure of the NLSY allows us to observe, mostly on a weekly basis, employment status and job seeking behavior. It also allows us to build a weekly data on when individuals received their first full-time employment. The determination of first full-time employment is built using the variable that indicates the number of hours the respondent works.

I include other covariates in the model such as a measure of cognitive ability (ASVAB), non-cognitive skills, education, age, marital status, the state unemployment rate and a variable that indicates whether a respondent is seeking employment. I also control for weight, health status, household income, family size, parental height, race, gender and high school job experience. High school job experience is captured with a binary variable that indicates whether or not a respondent has held any type of paid employment while still enrolled in school. Some respondents only have summer jobs, while others have paid employment year round (in addition to summer jobs). Students with only summer work experience are not recorded as having high school work experience. More specifically, the high school work experience variable takes the value of 1 only if a respondent held a paid employee position for more than at least 520 hours a year.The choice of 520 hours is based on the assumption that a high school student will work roughly 10 hours a week for 52 weeks in a year.[8]

In Table 1, I present some relevant summary statistics for the data. The average age at which respondents start full-time employment is 21.16 years (or 254 months). Most

[8] The choice of 520 hours is based on the assumption that a high school student will work roughly 10 hours a week for 52 weeks in a year.

respondents who obtain full time employment work, on average, for 46 hours a week with a standard deviation of 13 hours. Roughly two-thirds of all respondents had some type of work experience while in high school and about one-tenth are married. Close to a half of the sample is Black or Hispanic which illustrates the minority/low-income oversampling in the NLSY. Table 2 shows that for many respondents the transition from high school to full-time employment is not swift. This is not surprising since many respondents will transition from high school to college while others may work part-time until they find what best suits them.

3.2. Identification Strategy and Empirical Methodology

As the first full-time employment often serves as a gateway for future career paths, discrimination in job search process is important. In this paper, I specifically examine the impact of physical appearance on the transition from high school to first full-time employment.

According to Card (1995), cognitive ability plays a major role in the determination of wages and, by implication, of employment. With height and cognitive ability positively correlated according to Case and Paxson (2008), it is useful to control for ability in examining the impact of physical appearance [height] on unemployment duration. Ability in this study is captured by the ASVAB score which is based on a sequence of tests that cover basic math, verbal, and manual skills. Rather than use a single ability measure such as the Armed Forces Qualifications Test, ASVAB constructs a separate measure of math and verbal ability for each respondent. Another important set of confounding factors I control for in the analysis are non-cognitive skills and

personality traits. The relationship between physical appearance and earnings and other labor market outcomes by implication is mediated through the impact of physical appearance on self esteem, and confidence (Mobius and Rosenblat, 2006). These non-cognitive traits including self esteem, confidence, and motivation can translate into a shorter length in the transition from high school to full-time employment. Non-cognitive skills measured by coding speed were associated with lower odds of having a first long-term spell (Rothstein, 2016) . In addition, (Segal, 2012; Petre, 2013) both suggest that the score on the coding speed which is a part of the ASVAB measures non-cognitive skills. I use the coding speed test from the ASVAB test battery to measure non-cognitive skills as suggested by Segal (2012). The inclusion of a rich array of control variables minimizes the bias arising from confounding variables.

Following Rothstein (2016), I use a Cox hazard model to estimate the hazard of transitioning from high-school to full-time employment as follows:

$$\lambda_i = (t \setminus x_{1i}, x_{2i}, \ldots + x_{\mathcal{K}i}) = \lambda_0(t) * exp(\beta_1 x_{1i} + \beta_2 x_{2i} + \cdots + \beta_{\mathcal{K}} x_{\mathcal{K}i})$$

where \lambda_{i} denotes the hazard function. The hazard function is the odds that, given that a person remains unemployed (survives) to time t, he/she will experience the event (gain employment) in the next period. \lambda_{0} is the baseline hazard. This is an unspecified function that is similar to the intercept in a standard regression. x_{1i}...x_{Ki} are the K regressors for person i that explain the evolution of the hazard function.

I use two measures of full time employment. The first, which is based on the definition of full-time employment by the Bureau of Labor Statistics (BLS) is 35 hours

per week. The second definition is based on the definition by the Internal Revenue Service (IRS): 30 hours per week for 50 weeks or more.

Since the literature on the disparity in wages between tall and short people is not conclusive on whether it is a tall-person premium or a short-person penalty,[9] I directly include height as an explanatory variable in my model. If the disparity in wages is due to a tall-person premium, then the impact of height on the odds of exiting unemployment will be positive. Alternatively, I include a discrete measure for short people to test whether the disparity in wages is due to a height penalty. That is, will the odds of exiting unemployment be reduced if a person is short? I consider a respondent short if his/her height is one standard deviation below the median height for his/her age.

By design, my data observations start from when a respondent completes high school. As such, there is no left censoring of the data in this study. This is a central assumption that I use for identifying the model. I restrict the choices available to graduating high school students to 6 distinct options: (1) seek full-time employment; (2) seek part-time employment; (3) seek full-time employment while enrolled in college; (4) seek part-time employment while enrolled in college; (5) enroll in college without employment and (6) remain unemployed. For identification, I only examine duration under the two options: working full-time or remaining unemployed. As a result, I do not analyze the students who work either full-time or part-time and attend college; or the high school graduates who work part-time. I also ensure the respondents are actively seeking employment by noting their job search status. NLSY has several questions that explain

[9] See, for example, Roberts and Herman (1986).

the job search history of respondents. These questions are detailed enough to clarify whether the job seeker is in between jobs, or if he/she is looking for a job while still employed. These variables are quite important in the analysis because they provide an indicator of a respondent's current employment status. It shows, for instance, whether some respondents are unemployed because they are not seeking employment and not necessarily due to other factors, such as the lack of openings.[10]

One key assumption of this paper is that probability of transitioning from school to work is roughly equal for all high school graduates. Thus, anchoring high school graduation as entry into the risk pool ensures that all respondents have a similar chance of getting employed upon graduation. That is to say that all respondents that graduate high school and indicate a willingness to work share an equal chance of transitioning from a state of unemployment to first full-time employment.

Another key assumption is on how reservation wages enter the model. Reservation wages are a function of search costs and the arrival of job offers[11] which implies that the chances of exiting unemployment depend on the reservation wages of the unemployed. The choice of first full-time employment after high school is made with this in mind. Unlike the general population, the distribution of reservation wages is narrow and bounded by the minimum wage. Therefore, setting entry into the risk pool at high school graduation makes the reservation wages of the unemployed equal to the minimum

[10] Individuals who never graduated from high school, or never held full time employment were dropped from the sample. However, the analysis was restricted to only high school graduates who are enrolled, seeking employment, and working full-time, or remaining unemployed

[11] Addison, Machado and Portugal (2013)

wage. Since the minimum wage is a hard floor that applies to all respondents, this substantially reduces the impact of reservation wages on the probability of exiting unemployment.

Table 2 provides the transition characteristics of respondents. Of the 8,984 respondents in the study, only 8,705 provided a response on their high school graduation status. I drop any respondent that did not provide a status on whether they have graduated high school, or not. This yields a total of 460,037 person-month records. The mean number of records per person in the duration data is around 53 and the maximum is 168. The variation in the number of records per person is due to the difference in respondent's ages in the data. For instance, individuals who were 12 years of age by January 1, 1997 were not likely to finish high school until they were 17 or 18. This means that around 60 to 72 months of observation for such respondents will not be directly included in the analysis since I define entry to start at the conclusion of high school. For some of the respondents, the data are right censored. Specifically, 2,039 (8,705-6,666) respondents either never graduated high school, or never held full time employment.

4. Results

In this section, I report the results of estimating the impact of physical appearance on the hazard of transitioning from high school to full-time employment. In what follows, I analyze the impact of physical appearance under each definition of full-time employment separately. The BLS definition for full-time work is more restrictive but, perhaps, more accurate. As shown in Figure 1, the vast majority of employed respondents worked more than 35 hours a week. Since all the respondents captured in the IRS

definition will also be covered by the BLS definition of full-time employment, the results in this section will provide an extra margin of comfort in the robustness of the estimates. I also analyze height as both a binary and continuous variable to distinguish a shortness penalty from a height premium. The results I present here will show the impact under each scenario and draw conclusions based on the magnitudes of the hazards of exiting unemployment.

4.1. Impact of Height on the Transition to Full-Time Employment

4.1.1. Impact of height on the transition from school on the IRS definition of full-time employment

Panel A of Table 3 presents the impact of height/shortness on the hazard of beginning the first spell of full-time employment for various subsamples. Column 1 displays the results of the analysis on all respondents that have graduated high school, but did not enroll in college. I find the odds of transitioning from high school to full-time employment is 18.4% (1 - 0.816) lower for short job seekers. This indicates that its takes shorter job-seekers longer to find full-time employment after graduation. When I use height as a continuous variable, the odds of exiting unemployment increases by 2.7% for every increase of one inch in height.

In the second column, I limit the sample to males only who are seeking full-time employment and who are not enrolled in college. For this subsample, I find the probability of transitioning from high school to full-time employment is 31.9% lower for short job seekers. An increase of an inch in height is associated with a 3% increase in the odds of gaining full-time employment.

Column 3 of shows the impact of height on the odds of transitioning to full-time employment for females. The estimates show that the odds of exiting unemployment are not different between short job seekers and those who are not. I also find that a continuous increase in height does not alter the probability of gaining full-time employment for females.

I limit the sample to job seekers that obtain employment in blue-collar jobs in column 4. Short job seekers in blue-collar occupations have 14.4% lower odds of exiting unemployment. An increase of one inch raises the odds of exiting unemployment for job seekers in blue-collar occupations by 2.1%.

4.1.2. Impact of height on the transition from school on the BLS definition of full-time employment

Panel B of Table 3 reports the impact of height/shortness on the odds of transitioning from high school to full-time employment using the BLS definition of full-time work. The column headings of Panel B are the same as those of Panel A.

In column (1), I find that the likelihood of exiting unemployment is 19.4% (1 - 0.806) lower for short job seekers compared to non-short job-seekers. With respect to the continuous measurement of height, an increase of one inch raises the odds of gaining full-time employment by 2.4%. When I use the BLS definition of full-time employment, the apparent disparity in the odds of transitioning from school to full-time employment increases. That is, under the IRS definition of full-time employment, short job-seekers face a 18.4% lower odds of transitioning to full-time employment. In contrast, under the

BLS definition short job-seekers face an 19.4% lower odds of transitioning to full-time employment. This suggests that when I use a less restrictive definition of full-time employment, the difference in the odds of exiting unemployment between short and other job-seekers is not as large.

Column (2) reports the results on a sub-sample limited to males only. Short males have a 30.6% lower probability of transitioning from school to full-time employment compared to others. Additionally, an increase of one inch for males leads to a 1.4% increase in the likelihood of exiting unemployment.

As with the IRS definition of full-time employment, I do not find a significant difference in the odds of exiting unemployment for short female job-seekers. It could be that shortness is less of an issue in women then it is in men. I show these results in column three.

In column (4), I present the results of investigating the impact of height/shortness on the odds of transitioning from high school to full-time employment in blue-collar occupations. Shortness is associated with a 10.3% reduction in the odds of exiting unemployment. This compares to 14.4% under the IRS definition. Height, when measured as a continuous variable, does not alter the odds of exiting full time employment for blue-collar job seekers under the BLS definition. This stands in direct contrast with my previous findings which predominantly point to increases in height being associated with a higher likelihood of exiting unemployment.

Figure 2 plots the survival curves of the transition from high school to full-time employment for short and other job seekers. As I showed previously, the likelihood of

exiting unemployment is lower for short job seekers. The figures visually show that the probability of exiting unemployment begins equally upon graduation and then falls over time. The figure also shows that close to 40% of all job seekers gain full-time employment by the 30th month. The figure also shows , the disparity in the odds of transitioning to full-time work becomes wider as job seekers stay unemployed longer. I test the equality of the survival curves using the Log-Rank and Wilcoxon tests. Both tests reject the null hypothesis that the survival curves of short and other job seekers are equal.

I also provide an extensive version of this analysis that shows the impact of several covariates on the odds of transitioning from high-school to full-time employment in the Appendix. Even though the impact of these covariates is not the focus of this study, the results provide some insight on the other factors that may hinder the high-school to work transition.

4.2. Impact of Obesity on the Transition to Full-Time Employment

Table 4 presents the results of examining the impact of obesity on the transition from high school to full-time employment. Panel A of Table 4 reports the results for the IRS definition of full-time employment, while Panel B uses the BLS definition.

Column (1) of Panel A shows that the odds of exiting unemployment is 27.8% lower for obese job-seekers using the Cox proportional hazard model. In column (2), which uses a Weibull distribution in the parametric hazard model, I find being obese lowers the likelihood of transitioning from high school to full-time employment by 32.1%. Column (3), which uses an exponential distribution of the parametric hazard model, obese job-seekers face a 36.3% lower odds of transitioning from high school to

full-time employment. Lastly, column (4) shows the likelihood of exiting unemployment for obese job-seekers to be 36.4% when I use a Gompertz distributional assumption. The results from the parametric models support the Cox proportional model. In addition, since the Weibull distribution provides the lowest AIC and BIC, I note that the impact of obesity on the transition from high school to full-time employment is between 27.8 to 32.1%.

Under the more restrictive definition of full-time employment (Panel B of Table 4), I find an insignificant association between obesity and the transition from high school to full-time employment using the Cox proportional hazard model (Column 1). With a parametric hazard model, the likelihood of transitioning from high school to full-time employment is 16.8%, 18.7%, and 18.3% under the Weibull, Exponential, and Gompertz distributions (Columns 2, 3, and 4 respectively). Hence, under the BLS definition of full-time employment, there is a smaller difference in the odds of transitioning from high-school to full-time employment between obese and non-obese job-seekers.

Figure 3 plots the survival curves of obese job seekers from high school graduation until exiting unemployment. The figure shows that obese job seekers have much lower odds of exiting unemployment using the IRS definition of full-time employment. There is still some noticeable disparity in the odds of exiting unemployment under the BLS definition, but not as large as in the IRS definition. This may be due to the fact that the more restrictive BLS definition of full-time employment picks up job seekers who are transitioning into occupations where physical attributes are not an indicator of productivity. That is to say, the BLS definition of full-time work is likely to capture high

school graduates that work in occupations where some hard skill are required- such as Cashiers or Health Worker. For Cashiers and Health workers, physical appearance might not play as big a role in getting employment as they do in restaurant and sales.

4.3. Robustness and Falsification Checks

I check the consistency of the above results using a variety of robustness and falsification checks. Firstly, I use different empirical specifications to estimate the impact of height/shortness on the hazards of exiting unemployment. Secondly, I conduct a falsification exercise by examining whether the impact for tall job-seekers is consistent with previous results. This will help me establish whether the lower odds of transitioning from school to work associated short job-seekers is due to a height premium, or a shortness penalty. Thirdly, I use a quadratic height adjustment to account for the possibility of a non-linear relationship between height and the school to work transition.

The first test examines whether the results on the odds of exiting unemployment for short job seekers is sensitive to the specification I employ. To that end, I measure the hazard of exiting unemployment for short job seekers, using parametric models. I present these results in Table 5. Panel A reports the estimates under the IRS definition of full-time employment for short job seekers. Panel B reports the estimates under the BLS definition of full-time employment for short job-seekers.

Under both full-time definitions, I estimate the hazard of exiting unemployment using parametric models based on the Weibull, Exponential, and Gompertz distributions. I also include the results from the semi-parametric Cox proportional model for comparison. The results from using the parametric specifications show that the odds of

transitioning from high-school to full-time employment is lower, but consistent with the Cox proportional model.

Next, I check whether being tallness is associated with a higher likelihood of exiting unemployment. I define 'tall' as being one standard deviation taller than the median height at any age. I present the results of estimating the impact of tallness on the odds of transitioning from high-school to full-time employment in Table 6. I do not find a significant change in the probability of exiting unemployment for tall job seekers under either the BLS or the IRS definition of full-time employment. The results using the Weibull distribution under the IRS definition is significant at the 90% interval. It shows the odds of exiting unemployment for tall job-seekers is 13.9% lower. I cannot find a strong theoretical basis for this result which implies that taller job-seekers take longer to find full-time employment after graduating high school. This result suggests that taller job-seekers do not command a premium in terms of their likelihood of exiting unemployment after high school. This implies that it is not taller-job-seekers who are responsible for the gap in the odds of transitioning from high-school to full-time employment. Rather, the impact is emanating from shorter job seekers who have a lower probability of exiting unemployment.

Next, I use a quadratic height adjustment in the hazard equation to check whether the impact of height on the odds of exiting unemployment is non-linear. The motivation behind this is as follows. For example, the change in height from 50 inches to 55 inches, which are both below the median, is not expected to have the same impact as a change in height between 64 to 69 inches. In the first instance, the 5-inch change in height occurs at

a level that may already be too short for many occupations. However, the 5-inch jump between 64 to 69 inches makes the job-seeker an above average height job seeker. Under the assumption that being below average height is penalized, I expect the impact of height for job-seekers to increase at a decreasing rate, suggesting a concave relationship. As such, I incorporate a quadratic height variable in the hazard model to check the robustness of my estimates. I present the result of this quadratic height adjustment in Table 7. P-values for the coefficients of the linear and quadratic term coefficients were obtained. Based on the p-values from the joint test, we are able to reject the null that the coefficients of the height and height squared are equal to zero. I find that, when a quadratic height adjustment is incorporated into the model, the impact of height as a continuous variable is very small and significant. While I previously reported height as increasing the odds of exiting unemployment, the results in Table 7 suggests, otherwise. This indicates that the level of height itself is important in assessing the impact of height on the transition from high-school to full-time employment. It is not surprising, therefore, that using a discrete definition of height as short, or tall provides more robust estimates. This also confirms that the gap in the duration of unemployment on the basis of height is due to stature, and not to a simple change in height.

4.4. Discussion

Physical attributes do play a role in the labor market prospects of job-seekers (Dinda et al, 2006; Gilmore at el., 1986). This applies to both height and weight (Loh, 1993). Under any definition of full-time employment, my results consistently show that physical appearance is associated with a lower probability of transitioning from high-school to full-time employment. The mean duration of transitioning from high-school to full-time

employment is 23 months (Table 2). Using this baseline, short job-seekers will experience an increase of 22.54% in the length of the time it takes them to transition from school to work.[12] At this rate, short job seekers will face 22.45% or (1-(1/0.816))*100 longer wait to transition from school to work. At this rate, the transition from school to work for short job seekers is around 28.19 months[13]versus 23 months for others. Harper (2000) finds the shortness penalty for wages to be around 4.3%, which is much lower than the apparent shortness penalty in moving out of unemployment, which I estimate to be around 22.5% lower.

The difference in the shortness penalty between wages and gaining employment may be related to the ability of employers to discern productivity. In the case of the wage penalty, the gap presumably is smaller because employees have been subjected to rigorous screening before being employed. Any short candidate that successfully passes the interview stage must have demonstrated enough qualities relevant to the position to be considered. Upon being employed, the wage of both short and tall employees is determined by their productivity. Hence, the relatively small wage difference between short and the tall employees is because employers can observe productivity and compensate them accordingly. On the other hand, the gap in the probability of transitioning from school to work between short and tall candidates is larger because interviewers lack information about the abilities of their candidates. It is likely, therefore, that interviewers may be inaccurately associating less desirable physical characteristics with lower productivity thus limiting their ability to gain full-time employment.

[12] Table 3 shows short job-seekers face an 18.4% (0.816 -1) lower odds of exiting unemployment relative to others.
[13] That is 22.54% more than 23 months or (1.2254*23) = 28.19 months.

Additionally, I find the odds of obese job-seekers transitioning from school to full-time employment is around 27.8% lower. This implies that obese job-seekers face an extra nine months[14] before they transition from high-school to full-time employment. This is consistent with Caliendo and Lee (2013), who also find obesity is linked to negative labor market outcomes. Although the link between obesity and labor market may be biased,[15] Baum and Ford (2004) still find job market discrimination to be one of the causes for the difference in the labor market outcomes between obese and non-obese individuals.

Most job-seekers who only have a high school diploma are likely to be employed in the retail sales or the food service sectors. It is not clear that being short or obese has any bearing on the ability of a job-seeker to perform their responsibilities satisfactorily in these sectors. Nevertheless, a job-seeker having less than desirable physical attributes may experience lower odds of getting full-time employment because consumers may actually prefer to be served by employees with more desirable physical characteristics. It may also be that employers are interpreting job seekers' physical attributes as indicators of lower productivity. Either way, job seekers with less than desirable physical characteristics are being screened out on the basis of a characteristic that may, or may not be correlated with lower productivity. However, there are instances (such as those in the legal profession) where differences on the basis of physical appearance may be justified

[14] (1/.722 *23 months - 23) =8.85 months

[15] See Cawley (2004)

(Biddle and Hamermesh, 1998).[16] There is ample evidence that physically attractive individuals have better labor market outcomes because they are more persuasive (DeShields at el., 1996).

5. Conclusion

This paper examines the impact of physical appearance on the transition from high-school to full-time employment. Its key findings are that job-seekers with less valued physical attributes, short and obese, face an 18 to 27% lower probability of transitioning from high-school to full-time employment. These differences in the odds of exiting unemployment immediately after high-school are stronger when I consider a less restrictive definition of full-time employment.

These results have important implications in light of the decreasing number of low-skill employment opportunities over the past three decades. As the economy continues to shift toward more service based industries, we can expect that physical attributes will continue to command a premium, or penalty in the case of short and obese job-seekers. Because these physical attributes are typically genetic and cannot be changed, a segment of the population with less than desirable characteristics may be condemned to a life of lower wages and longer periods of unemployment. This disparity in the odds of transitioning from high-school to full-time employment, after controlling

[16] This study concentrated on the impact of physical appearance in the legal profession. They argue that for lawyers, who spend a great deal of time trying to convince several parties (judges, juries or clients), physical attributes may be an important part of the job. They propose 3 hypotheses to explain the importance of looks in the legal profession. One, employers "may prefer to be surrounded by better looking" coworkers. Two, the difference in wages between better-looking lawyers and other may actually be due to discrimination. Three, employers may compensate better looking hires better since clients prefer working with better looking lawyers.

for relevant characteristics suggests discrimination. If that is taking place, then, perhaps, the government has to include physical appearance as another protected characteristic in equal opportunity legislation to ensure a level playing field.

Further research can investigate the impact of physical appearance on the long-term prospects of job-seekers. This will provide more insight on whether the impact is limited to the first transition to full-time employment. Additionally, further studies can examine whether this impact of physical appearance on the probability of transitioning from high-school to full time employment is changing over time. We can obtain more conclusive evidence on how changes in the structure of the economy are affecting the labor market prospects of different groups. These can provide the framework of designing policies that aim to stem out the tide of the declining level of transition from school to work in many OECD countries.

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APPENDICES

APPENDIX A: TABLES

Table 1: Summary Statistics for the Full Sample

	Mean	St. Dev	Max
Age (months)	254	29.77	364
Hours	46.06	13.02	182
Coding-Speed	4801.72	3758.39	18530
ASVAB	365.34	319.30	1000
Weight (lbs)	165.14	41.13	440
Height (inches)	67.42	4.47	96
Family Income ($)	44,923	60277	425,586
Rural (%)	20.46		
Married (%)	10.03		
Experience (%)	63.36		
Enrolled (%)	30.97		
Race			
White (%)	51.49		
Black (%)	25.88		
Hispanic (%)	21.71		
Others (%)	0.91		

Notes: This table provides a summary of all respondents in the data. N = 8705

Table 2: Transition Characteristics of High School Graduates

		Per Subject			
	Total	Mean	Min	Median	Max
No. of Subjects	8,705				
No of Records	460,037	52.85	1	37	168
First Entry Time		0	0	0	0
Final Exit Time		23.78	0		144
Failures	6,666	0.77	0	1	1

Notes: The characteristics of transition from school to work are provided in this table

Table 3: Impact of Height on The Transitioning from School to Work

	Not Enrolled (1)	Males Only (2)	Females Only (3)	Blue-collar (4)
PANEL A: IRS definition of full-time employment				
Short	0.816^{***}	0.681^{***}	0.939	0.856^{***}
	[0.001]	[0.001]	[0.349]	[0.010]
Height	1.027^{***}	1.030^{***}	1.011	1.021^{***}
	[0.000]	[0.000]	[0.204]	[0.001]
Individual Covariates	X	X	X	X
State Level Covariates	X	X	X	X
No. of Subjects	7767	4162	4042	1669
No. of Failures	3791	2695	2573	1290
PANEL B: BLS definition of full-time employment				
Short	0.806^{***}	0.694^{***}	0.963	0.897^{**}
	[0.001]	[0.000]	[0.424]	[0.013]
Height	1.024^{***}	1.014^{***}	1.006	1.008^{***}
	[0.000]	[0.023]	[0.368]	[0.170]
Individual Covariates	X	X	X	X
State Level Covariates	X	X	X	X
No. of Subjects	6392	3419	3407	1669
No. of Failures	3726	2673	2620	1290

Notes: This table reports odds ratios on the impact of height on exiting unemployment. The numbers in square brackets are p-values. *$p<0.1$, **$p<0.05$, ***$p<0.01$.

Table 4: Impact of Obesity on The Transitioning from School to Work

PANEL A: IRS definition of full-time employment				
	Cox	Weibull	Exponential	Gompertz
Obese	0.722^{***}	0.679^{***}	0.637^{***}	0.636^{***}
	[0.002]	[0.000]	[0.000]	[0.000]
Individual Covariates	X	X	X	X
State Level Covariates	X	X	X	X
AIC	50906	9961	10262	10264
BIC	51091	10165	10456	10468
No. of Subjects	7709	7709	7709	7709
No. of Failures	3710	3710	3710	3710
PANEL B: BLS definition of full-time employment				
Obese	0.933	0.832^{*}	0.813^{**}	0.817^{**}
	[0.339]	[0.055]	[0.023]	[0.022]
Individual Covariates	X	X	X	X
State Level Covariates	X	X	X	X
AIC	54291	10922	11424	11345
BIC	54492	11144	11635	11567
No. of Subjects	6324	6324	6324	6324
No. of Failures	3636	3636	3636	3636

Notes: This table reports odds ratios on the impact of height on exiting unemployment. AIC stands for Akaike Information Criterion and BIC stands for Bayes Information Criterion. square brackets are p-values. *$p<0.1$, **$p<0.05$, ***$p<0.01$.

Table 5: Impact of Height on the Odds of Exiting Unemployment: Parametric Models

PANEL A: IRS definition of full-time employment				
	Cox	Weibull	Exponential	Gompertz
Short	0.816^{***}	0.776^{***}	0.770^{***}	0.769^{***}
	[0.001]	[0.000]	[0.001]	[0.000]
Individual Covariates	X	X	X	X
State Level Covariates	X	X	X	X
AIC	52393	10258	10589	10590
BIC	52579	10463	10784	10795
No of Observations	7767	7767	7767	7767
Failures	3791	3791	3791	3791
PANEL B: BLS definition of full-time employment				
	Cox	Weibull	Exponential	Gompertz
Short	0.849^{***}	0.808^{***}	0.795^{***}	0.793^{***}
	[0.002]	[0.000]	[0.000]	[0.000]
Individual Covariates	X	X	X	X
State Level Covariates	X	X	X	X
AIC	55673	11206	11742	16455
BIC	55874	11429	11954	16675
No of Observations	6392	6392	6392	6392
Failures	3726	3726	3726	3726

Notes: AIC stands for Akaike Information Criterion and BIC stands for Bayes Information Criterion.

*$p<0.1$, **$p<0.05$, ***$p<0.01$.

Table 6: Probability of Exiting Unemployment for Tall Job Seekers

PANEL A: IRS definition of full-time employment				
	Cox	Weibull	Exponential	Gompertz
Tall	0.985	0.861*	0.878	0.876
	[0.870]	[0.065]	[0.135]	[0.131]
Individual Covariates	X	X	X	X
State Level Covariates	X	X	X	X
AIC	52408	10276	10609	10610
BIC	52593	10480	10804	10815
No. of Subjects	7767	7767	7767	7767
No. of Failures	3791	3791	3791	3791
PANEL B: BLS definition of full-time employment				
	Cox	Weibull	Exponential	Gompertz
Tall	0.976	0.957	0.959	0.966
	[0.705]	[0.523]	[0.513]	[0.581]
Individual Covariates	X	X	X	X
State Level Covariates	X	X	X	X
AIC	55682	11222	11757	11686
BIC	55883	11444	11969	11908
No. of Subjects	6392	6392	6392	6392
No. of Failures	3726	3726	3726	3726

I define 'tall' as being one standard deviation taller than the median height at any age.

*p<0.1, **p<0.05, ***p<0.01.

Table 7: Quadratic Height Adjustment to Cox Hazard Model

	IRS	BLS
$Height$	1.108	1.036
	[0.418]	[0.645]
$Height^2$	0.999	0.990
	[0.546]	[0.799]
Joint F-test results (p-value)	[0.000]	[0.000]
Individual Covariates	X	X
State Level Covariates	X	X
No. of Subjects	7709	6324
No. of Failures	3710	3636

APPENDIX B: FIGURES

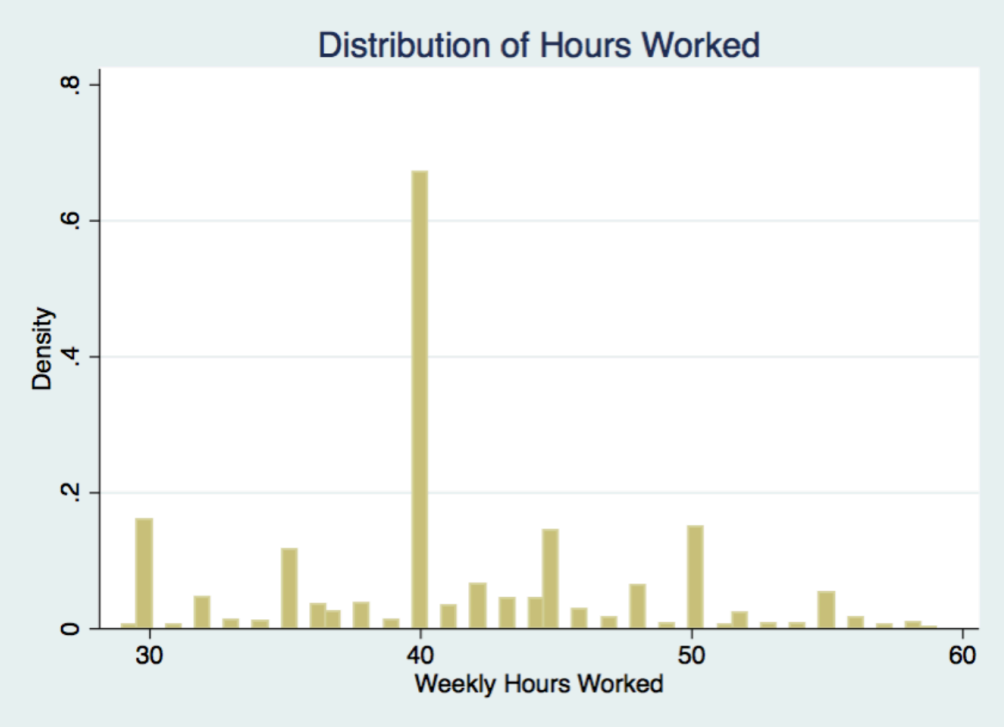


Figure 1: Distribution of Hours Worked

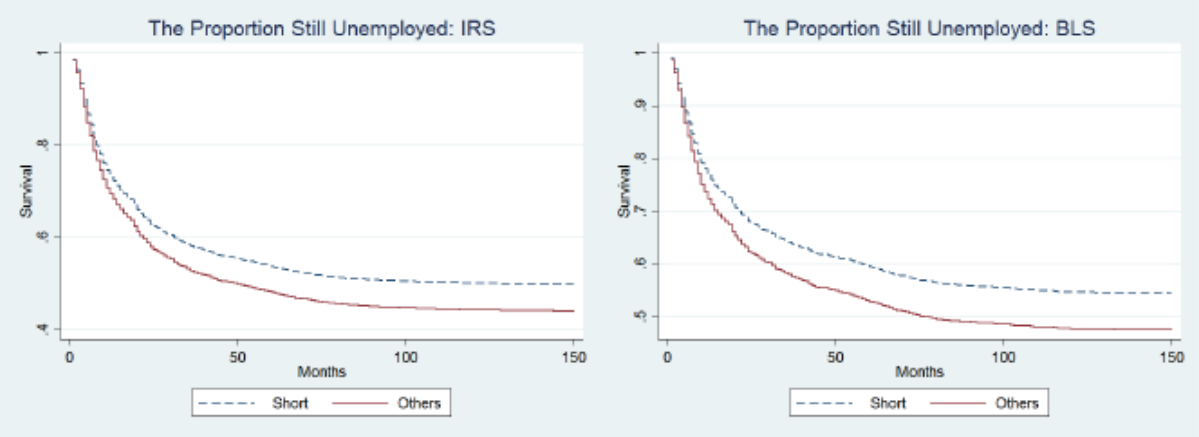
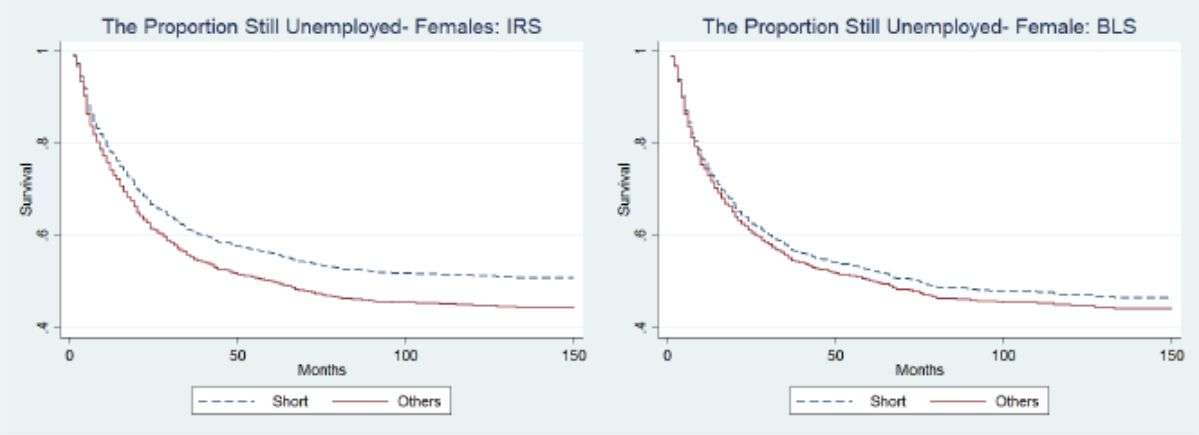
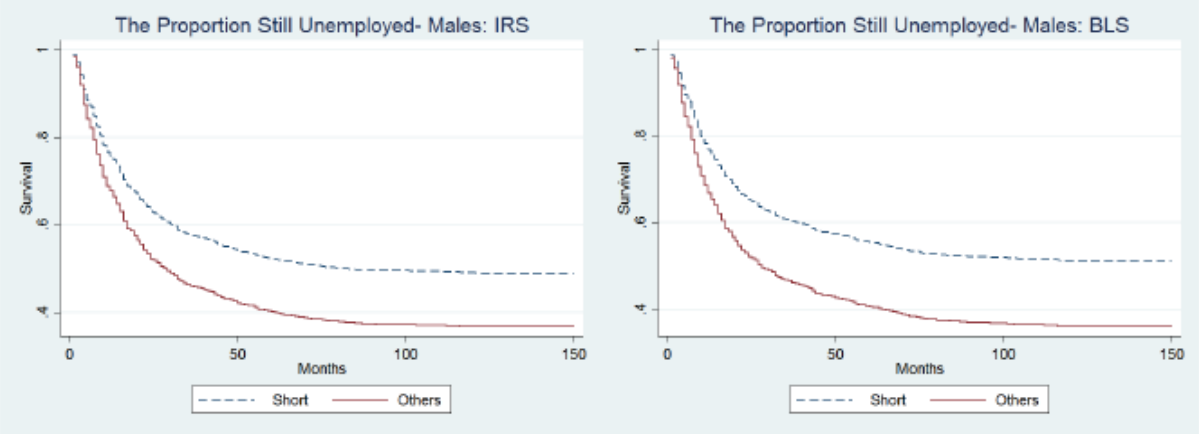


Figure 2: The Proportion Still Unemployed for Different Groups



(a) The Proportion Still Unemployed for Female



(b) The Proportion Still Unemployed for Male

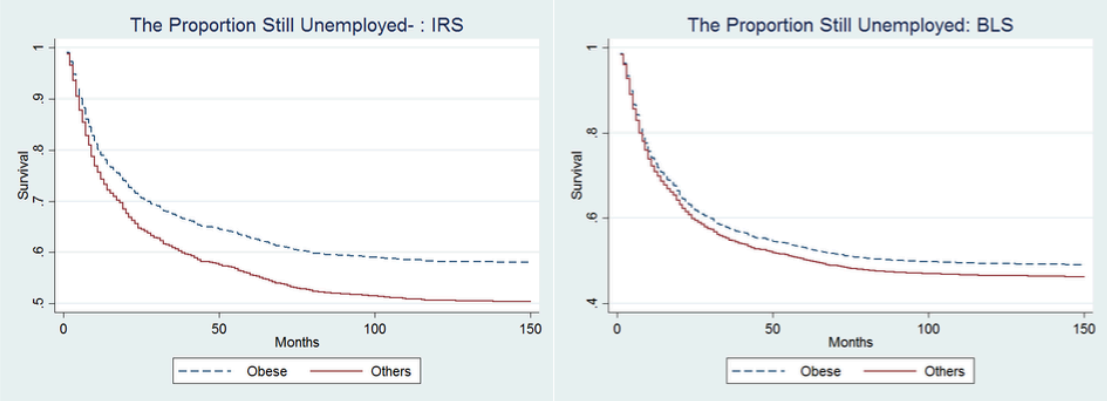


Figure 3: Probability of Exiting Unemployment for Obese Job Seekers

APPENDIX C: ADDITIONAL COVARIATES

In this appendix, I present the impact of several covariates on the likelihood of transitioning from high-school to full-time employment.

Age: Age is associated with a greater likelihood of exiting unemployment. This ranges from a 2.4% increase in the odds of exiting unemployment for each additional year for females to 2.7% for males. The link between age and exiting unemployment is positive. This may be due to extra responsibilities job-seekers face as they age. It is likely that parents might feel that older job-seekers need to be kicked out to enable them gain full-time work.

Weight: Weight has a small but significant impact on the odds of exiting unemployment. This result is uniform across all the subsamples under consideration. I expected weight to reduce the odds of gaining full-time employment for females in particular. This is because weight is one of the physical attributes, along with good looks, that employers value in female job seekers. It is likely that the link between weight and the odds of exiting

Unemployment is not linear. This may account for the inconsistent results. Unemployment rates: Unemployment rates at the state level have a strong and statistically significant negative impact on the odds of gaining full-time employment. A one-percent increase in the unemployment rate at the state level reduces the odds of transitioning from high-school to full-time employment by 21.4 to 25.9%. State level unemployment rates have a relatively weaker impact for female job seekers and for job seekers in blue-collar occupations.

High School Job Experience: For the full sample and the male subsample, having high school job experience increases the odds of gaining full-time employment by 7.4% and 15%, respectively. I also find high school work experience does not increase the odds of exiting unemployment for females and job seekers in blue-collar occupations.

Household Income: Contrary to my expectation, household income does not appear to have a significant impact on the odds of exiting unemployment. When we consider that higher income households have relatively higher reservation wages,[16] it is expected that increases in household income will be associated with lower odds of exiting unemployment.

Race: Both Hispanic and White job seekers have a higher likelihood of exiting unemployment when compared to Blacks. In particular, the odds of exiting unemployment is up to 40% higher for Hispanics and 25% for Whites. This result should not be taken at face value since discrimination and heterogeneity in skills play an important role in the dynamics of unemployment duration on the basis of race (Nord and Ting, 1994).

[16] See, Brown and Taylor (2011)

CHAPTER III

THE IMPACT OF PARENTAL EDUCATION ON THE EDUCATIONAL ATTAINMENT OF SECOND GENERATION IMMIGRANTS IN THE U.S.: EVIDENCE FROM NLSY*

1. Introduction

Countries affiliated with the Organization for Economic Cooperation and Development (OECD) tend to have large second generation immigrant (SGIs) populations (Riphahn, 2003). Immigration has been steadily increasing, with 72 million of the U.S. population being first, second or third generation immigrants. By 2013, US born SGIs numbered about 35 million (MPI, 2013). Despite the negative public perception of immigration, the receiving country tends to reap benefits from immigration. For instance, migrants can have positive effects on aggregate productivity in the host country (Jaumotte et al., 2016). It is, therefore, imperative to understand the educational attainment of immigrants because education is the most important factor in obtaining socio-economic mobility. Previous research suggests that, with the exception of individual ability (Haveman and Wolfe, 1995), nothing determines the educational attainment of children more than parental education. In this study, I examine whether the impact of parental education on the educational attainment of children is stronger for immigrants than for natives. Based on prior literature that suggests immigrants invest more in education to overcome obstacles, including discrimination, I expect the impact of parental education to be stronger on the SGI's educational attainment, than for natives (Lang and Manove, 2011).

This may not be the case, however, if the immigrants are transient migrants without the intent or prospect of residing permanently in the country.

This study examines the effect of parental education on the years of schooling of SGIs.[1] I also investigate whether parental education increases the likelihood of SGIs receiving college degrees. In addition, I identify whether parental education has the same effect on SGIs as on natives. I use data from the National Longitudinal Survey of Youth 1997 (NLSY97). The main advantage of this data set is that it has rich parental characteristics, including education, income, and migration history that are not available in the census data. This information plays an important role in isolating the effect of parental education from other background characteristics with an impact on children's education.

Pooling the data on natives and SGIs, I find that a one-year increase in parental schooling leads to a 0.15 year increase in the educational attainment of their children (Table 2). This finding is consistent with Ermisch and Pronzato (2010) who also show a significant correlation between parental schooling and the educational attainment of their children. Disaggregating the analysis further, I find the impact of parental education on the educational attainment of natives is 0.18 years while the impact of parental education is 0.12 years for SGIs. The gap in the impact of parental schooling on the educational attainment between natives and SGI is significant. One explanation for the gap is that native parents have a better appreciation of the value of education for their children. I

[1] SGI defined as native-born children with at least one foreign-born parent or children born abroad who came to the United States before age 6.

explore whether the knowledge that native parents have on the role of education and educational institutions in attaining socio-economic mobility is responsible for the gap. Long term resident parents of SGIs actually provide more educational input to their children than native parents. I check the robustness of the results by examining the long run impact of parental education on the attainment of college degrees by their children. I find a one-year increase in parental schooling increases the likelihood of SGIs receiving a college degree by 1.2 percentage points in Table 5. The gap in the impact of parental education on the likelihood of natives and SGI obtaining college degrees is 1.4 percentage points. This confirms the year of schooling estimates, suggesting that native parents have more input in the educational attainment of their children. The results in this paper show that the correlation between parental schooling and the educational attainment of their children is strong and positive.

The remainder of the paper is organized as follows. The background and literature review are covered in Section 2. Section 3 lays out the empirical strategy, provides information on the dataset and the variables used. Section 4 presents and discusses the empirical results. Section 5 summarizes the findings and draws conclusion based on the results.

2. Background

It is estimated that 33.5 million people or 12 percent of the American population were born in a foreign country (Larsen, 2004). The demographic breakdown of those 33.5 million non-native individuals is as follows. Approximately 53 percent were born in Central American or South American countries (the majority in Mexico), 25 percent were

born in Asia, 13 percent were born in Europe and 8 percent were born elsewhere. Immigration is woven into the history of the U.S. and has been a feature of the country since its inception. The 1960s were a period of increased immigration to the U.S. This increased the percentage of second generation immigrants who have gone on to utilize the education system and have entered the labor force. The percentage of adult immigrants increased to 10.9% in 1990 and continued to increase into the new millennium. As the percentage of second generation immigrants rises, their educational attainment becomes vital for a healthy domestic economy (Hansen and Kucera, 2004).

Immigrants provide additional labor services to the host country's labor market, therefore, promoting economic activity (Dustmann, 2008). A common assumption in this context is that first generation immigrants begin work at the lowest occupational tier due to lack of requisite skills, while the following generations pursue more education, seize economic opportunities, and ascend to the middle class (Farley and Alba, 2002). However, previous studies indicate that second generation immigrants face greater obstacles than natives when entering the job market. Moreover, discrepancies in the level of educational attainment between natives and immigrants are visible (Riphahn, 2003). Parental education is a key determinant of a child's labor market success (Haveman and Wolfe, 1995). Educational attainment also has a significant impact on immigrants and their children's contribution to the labor market (Belzil and Hansen, 2003; Murphy and Peltzman, 2004).

Other studies also show a correlation between parental characteristics and children's educational achievements (Bauer and Riphahn, 2007). For example, Belzil and

Hansen (2003) find that 85% of the variation in children's educational attainment can be attributed to family background. They find that family background (especially parent's education) accounts for 68% of the explained variation in their children's school attainment. Likewise, Woessmann (2004) noted that, even though the equality of outcomes in public schools is severely lacking, family background determines educational achievement even more so than institutional inputs and features.

2.1. Correlation between Parental Schooling and the Educational Attainment of Immigrant Children

Parental background as well as ethnicity greatly affect academic success of second generation immigrants according to several studies on the intergenerational effects of education (Hansen and Kucera, 2004). Using a modified version of Becker's (1967) optimal schooling model that includes race and ethnicity, Chiswick (1988) claimed that cultural influence, parental in human capital, and exposure to school affects both whether or not an immigrant goes back to school and the marginal cost of schooling.

Historically, parents' educational attainments could predict their offsprings' educational attainments due to the transmission of ability and other endowments. But educational attainment can also correlate with country of origin. According to Alba and Farley (2012), European and some Asian immigrants tend to acquire education before they immigrate, while Caribbean, Mexican, Latin American, and some Asian immigrants have little education when they immigrate. As a result of newer immigrants coming from lower academic backgrounds, second generation immigrants may academically lag behind native students (Farley and Alba, 2002).

Hansen and Kucera (2004) are the first to observe that educational outcome differences between SGIs and natives are due to the parents' low educational attainment. For example, Canada focuses on the educational achievements of SGIs. They argue that the superior educational attainment of SGIs is due to Canada's immigration system, which seems to be very effective in selecting immigrants whose children will do at least as well as their native cohorts in terms of education. On the other hand, Ours and Veenman (2003) find SGIs have lower educational attainment than natives in the Netherlands. They contend that the results are driven by the fact that immigrants' parents have lower education levels than native parents. In another study examining the educational outcomes of immigrants in Denmark, Colding et al. (2009) show that SGIs have lower educational attainment than natives. They also show that the impact of parental education is insignificant for SGIs, but not for natives. Using data from the German Socio-Economic Panel, Gang and Zimmermann (2000) find that immigrant parents' education does not have any effect on their children's educational outcomes. However, for natives, parents' education has a significant effect on their children's educational outcomes.

There is a notable relationship between family background, especially parental educational attainment, and the individual's educational attainment. Domestic variables with an impact on educational attainment can include parental support and inherent ability. Typically, parents who value education will have children who attain higher levels of education. However, household background variables and their impact on children are subtle. For example, parents with a higher socioeconomic status can provide more resources to their children and reduce the costs associated with attending school.

But they also may have less time to physically invest in their children. Innate ability is similarly difficult to measure, and those raised in homes with a higher level of human capital, particularly parents' education, are more likely to perform better in school and in the job market (Belzil and Hansen, 2003).

2.2. The Gap in Educational Attainment between SGIs and Natives

First-generation immigrant adolescents are trailing their native peers academically(Hirschman, 2001). Indeed, the educational attainment gap between immigrants and natives has increased in the past decades (Borjas, 1994). According to Farley and Alba (2002), immigrant men and American men have not had the same rate of educational attainment since the 1950s and early 1960s. By the 1990s, it became apparent that adult immigrants were significantly less educated than their counterparts born in the U.S. However, second generation immigrants can take advantage of opportunities and protections that have come from legal, social, and economic advancements, such as the Civil Rights Act of 1964 that banned discrimination (Farley and Alba, 2002). The immigrant cohort is a strong predictor of children's educational attainment and academic performance, as evidenced by previous research (Cohen et al., 1997).

Kao and Tienda (1995) and Chiswick and DebBurman (2004) show that first generation immigrants and native-born children of native-born parents were less likely to attain a higher education level than second generation immigrants. Along the same lines, Hirschman (2001) discovered that certain first generation immigrant groups, such as Hispanic and Caribbean students, fall behind academically while other immigrant adolescents are just as likely as their native counterparts to attend school. Conversely,

Perreira et al. (2006) find first generation Hispanic children achieving a higher level of education than their parents, although higher educational attainment decreases for subsequent generations. The commonality in these studies is the varied ways of integration into culture and education (Siahaan et al., 2014).

The country of origin for the immigrant and their ethnic community can determine how they assimilate into American culture, which than affects educational attainment (Hansen and Kucera, 2004). In fact, Zhou (1997) states that second generation immigrants' academic success can be predicted by assessing their ethnic group and that group's perception of the value of education. Chiswick and DebBurman (2004) find that having at least one parent who immigrated to the U.S. positively affected the children's educational attainment, with second generation immigrants gaining half a year more education than their native counterparts. Similar patterns also exist with respect to the country of origin. Immigrants from Mexico typically have less educational attainment than other ethnic groups, due to low incentives to invest in human capital.

Another critical factor that explains the gap in educational attainment is age. Nielsen et al. (2003) find the difference in the age structure[2] between second generation immigrants and natives is responsible for some of the gap in educational attainment. They contend that because SGI's in the 18-35 year cohort are younger than native Danes, the predicted gap in educational attainment is wider. However, when they assumed that SGI's have the same age structure as native Danes, the gap in the educational attainment shrinks. This suggests that age explains part of the gap in educational attainment but

[2] The fact that SGI are still very young, and more likely to complete their education at a higher age comparing to native Danes.

when a more accurate comparison is made in the age of each group, the gap becomes smaller.

Ultimately, the gap in educational attainment is caused by: the socio-economic status of the parents age at immigration for SGI (Nielsen et al., 2003), the educational system in the immigrant's country of origin (Van Ours and Veenman, 2006), the immigrant's generation (Portes and Rumbaut, 2006), and the value immigrants place on education (Zhou, 1997).

2.3. Theories of Educational Attainment among Immigrants

There are three main theories that explain the gap in educational attainment between natives and immigrants: The Selective Assimilation theory, the Optimism theory, and the Ethnic Capital theory

Selective Assimilation theory: This theory postulates that, if some immigrants do not encourage their family members to interact with natives (Gibson, 1993; Kao and Tienda, 2005), SGI children only partially assimilate by learning to speak English and following cultural customs while they are at school.[3] Interestingly, Gibson (1993) discovered that immigrants' educational attainment actually decreased as they more fully assimilated with American students. As a result, the theory of accommodation expects those with the highest level of educational attainment to be SGI and the level of educational attainment to decline in subsequent generations.

[3] Kao and Tienda (1995) created the term "accommodation without assimilation" to describe this phenomena.

Optimism theory: Unlike the accommodation theory, the optimism theory hypothesizes that the educational attainment of immigrant children hinges on both their parents' prioritization of education and the children's English language skills. This theory assumes that second generation immigrants have the highest educational attainment, with the first generation immigrants, who use English as their second language, having a lower educational attainment. The educational attainment of the third generation is expected to decline because the perception of the value of education declines (Landale et al., 1998).

Ethnic Capital theory: This theory posits that, in addition to the skills and experience that the parents possess (Borjas, 1992; Borjas, 1994), the ethnic group effect from the parents' generation can predict the educational attainment of the subsequent generation. The theory suggests that the educational attainment of immigrant youth is higher, the more individuals of their ethnicity are around and the better they do in the destination country.

2.4. Educational Attainment among Immigrants and Gender Differences

Among previous studies, Siahaan et al. (2014) looked at gender to see whether female educational attainment is consistent among natives and immigrant females, as well as among native and immigrant males. Males tend to attain higher levels of education in many parts of the world (Buchmann et al., 2008) but the previous trend has been inverted. In recent years females have been attaining similar higher levels of education than their male counterparts. In fact, in 40 countries (Ganguli et al., 2011), the educational gender gap has decreased. For example, research on the rate of enrollment in Canadian

universities revealed that more females attended university than males according to Christofides et al. (2010).

3. Data and Identification Strategy

3.1. Data

The data set I use for this study is the National Longitudinal Study of Youth 1997 (NLSY97). The NLSY97 is a nationally-representative survey of young men and women who were of age 12 through 16 and who lived in the United States on December 31, 1996. The same participants have been interviewed every year from 1997 until 2013, which is the most recent follow-up survey available. The NLSY97 began with 8,984 youths including a black and Hispanic over sample. I use all 12 inclusive annual survey rounds between 1997 and 2008. By 2008, the age of these respondents varies from 22 to 26 and the majority have completed their schooling at this age.

Parents and children were both interviewed in the original 1997 survey. Our key explanatory variable is parent's educational attainment, mainly the parental years of schooling. Parental education is defined in four major ways. First, I use the educational attainment of the mother as a proxy for parental educational attainment; Ours and Veenman (2003) contend that maternal educational attainment is more important in the human capital transmission process. Second, I average the educational attainment of both parents and use it as a proxy for parental educational attainment because some immigrants are coming from places where female education is discouraged. Third, I use the father's education as the proxy for parental educational attainment. Lastly, I use the educational attainment of the parent with the highest level of education. That is, if the father has 13 years of schooling and the mother has 7 years of schooling, I use the father's

educational attainment as a proxy for parental educational attainment. Here, I assume the most educated parent will play a significant role in transmitting educational input to the child. The results of my analysis below are not sensitive to the definition of parental educational attainment as defined above. However, I do find a stronger effect when I use the 4th definition of parental educational attainment than for the other 3 definitions.

NLSY97 is uniquely suited for this analysis because it provides rich details on parental characteristics such as income, education, age, state of residence, and migration history. Because I focus on the relationship between the education of children and the education of their parents, I use the 2008 sample from NLSY, which contains rich information on all these educational levels. My outcome variable is the educational attainment of SGIs in terms of (i) years of schooling and (ii) the attainment of a bachelors degree by the year 2008. I have full information on the educational attainment of both parents which includes the years of schooling and last degree they earned.

I control for the following covariates: ability, household income, age of mother at birth of child, race, sex, state of residence, urban or rural residence, and whether the family speaks another language at home besides English. NLSY samples include various measures of family income and individual ability. Each year, respondents are asked about total household income in the previous year. Using this variable, I construct average household income for each respondent from 1997 to 2008. Parental income has been found to be positively related with both a child's future income and educational attainment (Altonji and Dunn, 2000). Age of the parents could be an important variable in

this study. Older parents are often more affluent and have higher educational attainment than younger parents (Bray et al. 2006).

It is particularly important to control for academic ability since ability plays an important role in educational outcomes (Card, 1995). Ability in this study is captured by the ASVAB, which is a sequence of tests that cover basic math, verbal, and manual skills. Rather than use a single ability measure, such as the Armed Forces Qualifications Test, ASVAB constructs separate measures of math and verbal ability for each respondent.[4] I also include dummy variables for race and gender. In addition, the mother's age at the birth of the respondent is also available. We expect a younger mother is less likely to provide an emotionally supportive environment and act responsively with her children compared to a more matured mother who may tend to have more knowledge about child development and effective parenting. Mollborn and Dennis (2012) find that children of younger mothers tend to have significant socioeconomic disadvantages which also culminates in the children living in more hazardous home conditions. They also find that younger mothers have lower parenting skills as compared to older mothers.

Another important factor that explains the educational achievement of SGIs is their parents' English language proficiency, or the language spoken at home. Proficiency in the host country's language promotes children's literacy in many countries (Schnepf, 2007). Parents who have difficulty with the English language are less likely to adopt

[4] Math ability is measured by averaging the scores on the Arithmetic Reasoning and Mathematics Knowledge portions of the ASVAB. Verbal ability is measured by averaging the scores on the Word Knowledge and Paragraph Comprehension portions of the ASVAB. Finally, within each group a percentile score was computed using the weights yielding a final value between zero and 99

strategies that contribute to academic achievement, such as reading at home, watching educational television, going to the library, or visiting museums. For example, families in which parents speak only Spanish at home participate less in literacy activities with their young children, regardless of the mother's education or household income (Schneider et al., 2006). Accordingly, I control for whether the family speaks a language other than English at home. I also control for the state of residence. This is an important variable because of the variation in state rules on the age at which children start school (Angrist and Keueger, 1991). Controlling for the state of residence is also important because it can minimize enclave effects. States such as California, Texas, and Florida have large immigrant populations who tend to reside in close quarters with one another creating enclaves.

Table 1 shows some summary statistics for the sample. The Years of schooling variable stands out. The average years of schooling for male SGIs is 13.78 versus 13.60 for natives and 14.27 for female SGIs versus 14.18 native females. This echoes what has been found in the literature: second generation immigrants have higher educational attainment than natives, especially females. We also see that the average years of schooling for the parent of an SGI is 11.40 versus 13.03 for natives. At 11.40 years of schooling, the average parent of a SGI does not have a high school diploma (12 years corresponds to a HS diploma) while the average native parent has a HS diploma. The ASVAB scores of SGIs are 12 percent lower than those of natives. High school drop out rates are also higher for SGIs, but mother's age at birth and household incomes are roughly equal among SGI families and the families of natives.

3.2. Identification Strategy

In this section, I explain how I identify the impact of parental education on the educational attainment of second generation immigrants (SGIs). Previous studies have established the role of parental education on the educational outcomes of children,[5] with the children of immigrants having higher education and wages than natives (Card et al., 1998). However, the gap in educational attainment between immigrants and natives has been rasing due to new immigrants coming from countries with lower educational attainment. As immigrants are getting significantly less educated than natives, we expect the educational attainment of their children to diverge as well.

Using data from the NLSY, I estimate the transmission of human capital from parents to SGIs. I collapse the NLSY data prior to 2008 and create a history of income and other socio-economic characteristics for the sample. My key variables are: years of schooling for the respondent, father's educational attainment, mother's educational attainment, ability, household income, age of mother at birth of child, race, sex, state of residence, and whether the family speaks another language at home besides English.

To format this panel data set into cross sectional data referenced in 2008, I do the following. In the case of binary variables that do not change over time (race and gender), I take the response for 2008 as the accurate value. For ability, which I proxy with ASVAB, I use the initial recorded estimate, from either 1997, or 1998. For household

[5] See Bauer & Riphan (2006), Belzil and Hansen (2003), and Woessmann (2008).

income, I take the average of the incomes recorded from 1997 through 2008. Maternal age at birth is recorded once in 1997. The status of a family with regards to speaking another language at home besides English is also recorded once at the beginning of the panel. State of residence is hard to code because some residents move between states. To assign a state of residence, I initially looked at the state where the resident lived the most. Another way I assign state of residence is by using the state recorded at the beginning of the panel. Because only a small sample of SGIs move from one state to another, using either specification does not alter the results in any meaningful way.

I first compare the years of schooling between natives and SGIs who are 22 - 26 years of age. I limit the analysis to those in this age bracket because compulsory schooling regulations mean that there will be little variation in educational attainment between natives and immigrants who are less than 22 years old. There are also different initiatives in many states that encourage students who dropped out of school to return if they are between 18 - 24 years of age. For the continuous outcome variable, I use OLS to measure the impact of parental education on the educational attainment between natives and SGIs. For the binary outcome model, I use a binary logit model to measure the impact of parental education on obtaining a bachelors degree between natives and SGI. The empirical methodology I use is derived from Siahaan et al. (2014) as follows:

$$Educ_i = \phi + \propto ParentEduc_i + \beta \mathcal{X}_i + \epsilon_i \qquad if\ SGI = 1 \qquad (1)$$

$$Educ_i = \phi + \delta\ ParentEduc_i + \omega \mathcal{X}_i + \epsilon_i \qquad if\ SGI = 0 \qquad (2)$$

where $Educ_i$ represents a continuous variable that measures the educational attainment of either a native, or a SGI respondent; $ParentEduc_i$ is a continuous variable that measures

the level of educational attained by the parent. $\mathcal{X}_i$ is a vector of individual and family covariates. The random error is ϵ_i and SGI is an indicator variable for the respondent being a second generation immigrant. Equation (1) measures the impact of parental education on educational attainment of SGIs while Equation (2) is for natives. My hypothesis is that parental education plays a significant role in the educational attainment of natives.

I run the initial analysis separately for natives and immigrants because there are key differences between natives and SGIs on the basis of their disposition towards schooling (St-Hilaire, 2002). Unlike natives, recent immigrants and SGIs from low income countries with poor access to education have a stronger motivation to succeed (Cummins, 2008) even if they underperform at school. Since motivation is unobserved and cannot be controlled with a proxy from the NLSY, I examine each sample separately. If I find native parents playing a more significant role in the educational attainment of their children compared to parents of SGIs, I can reject the motivation hypothesis posited by Villiger et al. (2014). Instead, I can explore the direct parental input as the major determinant of the educational attainment of SGIs and not the sheer willpower and motivation to succeed. Native parents are more likely to adopt strategies that contribute to academic achievement, such as reading at home, watching educational television, going to the library, or visiting museums. Adopting these strategies is facilitated by native parents having a good understanding of the role of education in opening the door to upward mobility. Native parents know how to navigate the educational system to obtain the best education for their children.

If the motivation hypothesis is rejected, I can modify Equations (1) and (2) above by pooling the sample and examine the interaction effects as follows:

$$Educ_i = \phi + \propto ParentEduc_i * Imm_i + ParentEduc_i + \beta\, Imm_i + \gamma \mathcal{X}_i + \epsilon_i \quad (3)$$

where $Educ_i$ represents the educational attainment of either a native or a SGI respondent; Imm_i is an indicator variable that is 1 if either the respondent's father, or mother is an immigrant; $\propto$ is coefficient of interest. It shows the difference in the impact of parental education on educational attainment between SGIs and natives. If $\propto$ is negative and statistically significant, it suggests that the impact of native parents on the educational attainment of their children is higher than the impact of immigrant parents on the educational attainment of SGIs.

4. Results

4.1. Years of Schooling

Table 2 represents the impact of parental education on the children's educational attainment. When I pool the sample without isolating natives and immigrants as it shows in first column, parental education increases the children's educational attainment by 0.15 years (see first column). This result is consistent with Ermisch and Pronzato (2010), who found each year of parental education increases the children's years of school by about 0.10 years. This result suggests that investments in human capital is transmitted to children through the educational endowment of their parents.

I estimate Equations (1) and (2) and present the result in columns 2 and 3 of Table 2, respectively. The impact of parental education on the years of schooling for

immigrants and is for natives. For both natives and immigrants, I find a positive and statistically significant relationship between parental education and the children's years of schooling. The impact for immigrants is 0.12 years while the impact for natives is 0.18 years. This means that if the educational attainment of immigrant parents increases by 1 year, the years of schooling will increase by 1.4 months for SGI children.[6] The increase for natives is 2.16 months. These results are naive estimates that provide a baseline or a rough approximation of the magnitudes of the effects

To confirm this result, I use Equation (3) which measures the difference in the impact of parental input using interaction effects. This specification is an improvement over the previous model because it allows us to compared the coefficients on the impact of each group simultaneously. Table 3 provides the estimates from evaluating Equation (3). The interaction effect framework which shows the difference in the impact of parental education on the children's educational attainment, using the natives as the base group. That is, each coefficient estimate captures the impact of parental education on SGIs minus the impact of parental education on natives. Column (1) is a naive model that looks at the difference without accounting for individual or parental characteristics. I find that the difference in the impact of parental input on the children's education attainment between natives and immigrants is 0.12 years. Without controlling for ability, income, and age (amongst other covariates), this specification is susceptible to omitted variable bias. I continue the analysis by adding key variables such as ability, language spoken at home, mother's age at birth, to show the importance of adequately controlling for

[6] 0.12 years translate to 1.4 months.

confounding factors in the analysis. Column (5) is the model with all the relevant covariates in the specification. It shows the impact of parental education on the years of schooling for SGIs to be 0.05 years lower than for natives. The result in Table 2 shows that the difference in the impact of parental education on years of schooling to be 0.058 years.

4.2. Degree Attained

To investigate the longer term impact of parental education, I examine whether there is a significant difference in the attainment of college degrees between natives and SGIs. This is an extension of the previous section where I examine the years of schooling. Obtaining a college degree requires a greater effort from the students and their parents. Hence, the results from this section can confirm the estimates in the previous section and also establish the persistence of the transmission of human capital from parents.

Table 4 presents the marginal effects from a logit regression showing the impact of parental education on the attainment of college degrees. Column (1) is a naive specification without any individual covariates. Column (2) adds individual covariates, column (3) adds language spoken at home, column (4) incorporates mother's age at birth and column (5), my preferred specification, includes all variables. The result in column 5 shows that the difference in the impact of parental education on the likelihood of attaining a college degree is 1.4 percentage points in favor of natives. The large gap in the impact of parental education input is consistent with Colding et al. (2009). The coefficients on degree attainment are smaller than, but consistent with the results on years

of schooling. It is not immediately clear why parents play a bigger role in SGIs gaining more years of schooling, but not college degrees.

4.3. Robustness

I conduct a number of robustness checks to ensure the results are not peculiar to this analysis. One of the key determinants of the educational attainment of children is parental education, which also partly explains parental income. Indeed, Holmlund et al. (2011) argue that the correlation between parental education and the educational attainment of their children is caused by the relationship between parental income and parental education. If that is the case, then we expect a linear relationship between household income and the impact of parental education on their children. Figure 1 plots the relationship between the coefficient of the regressions in Equation (3) for different income levels. It shows that at lower incomes (less than $20,000) the magnitude of the difference in the impact of parental input on the educational attainment of the children is low relative to the average. As income rises to $40,000, the difference in the impact of parental input on the educational attainment of native children and SGI's increases. For higher incomes (more than $40,000), the magnitude of the difference in the impact of parental input on the educational attainment of the native and SGI children returns to the levels of lower income families. The figure suggests that parents in households around the median income provide the strongest educational input to the children. This quadratic relationship suggests that, in addition to income, the educational attainment of parents does independently determine the educational attainment of children.

I also reestimate the model for 2007 and 2009 data to confirm that the results are not revealing a spurious relationship peculiar to 2008. Table 5 shows the difference in the impact of parental education on the years of schooling between natives and SGIs for 2007, 2008, and 2009. The direction of the coefficients in all years is consistently negative, which suggests that native parents provide more input into the educational attainment of their children than SGI parents. The magnitude of the effect increases over time. That is, the gap in the impact of parental input on the years of schooling is lowest in 2007 (0.045 years) and highest in 2009 (0.055 years). This choice is not arbitrary. It is the year in which even the youngest respondent must have graduated from high school. Showing that the results are consistent in 2007 and 2009 solidifies my hypothesis.

5. Discussion and Conclusion

The difference in parental input has been cited as the reason for a gap in educational attainment between natives and immigrants. When I do not distinguish between SGIs and native children, I find a one year increase in parental education causes a 0.15 year increase in schooling for their children. Estimates of this impact in the literature range from -0.08 (Maurin and McNally, 2008) to 0.49 (Antonovics and Goldberger, 2005). A survey by Holmlund et al. (2011), shows that the estimates have been shrinking over time. In that regard, my baseline estimate of 0.15 on 2008 data is in line with the trend. Holmlund et al. (2011) note that some estimates are sensitive to the identification strategy employed. This is not a major concern in this study since my analysis examines the gap in educational attainment for a specific cohort captured in the NLSY dataset and also has a robust proxy for ability (ASVAB).

The impact of parental input on the educational attainment of SGIs is 0.12 more year of schooling while that of natives is 0.18 more years of schooling. This is consistent with Dustmann (2008) who finds the correlation between parental education and their children is 0.145 for first generation immigrants and 0.177 for natives. Yaman (2014) finds an even wider gap between SGIs and natives. The magnitude of this impact is quite significant. For instance, an average immigrant with 11.40 years of schooling increases an SGI's years of schooling by 1.4 years.[7] This is not trivial. It is the equivalent of adding more than one grade to the educational attainment of the student. This is surprising in light of the conclusions in Card et al. (1998) showing that children of immigrants have higher educational attainment.

There is no significant gap in the impact of parental education on the educational attainment of female SGIs and natives. This partially explains why second generation females have higher educational attainment than their native female peers as shown in Table 1. But why do parents of SGIs invest more towards the education of their female children? One possible explanation is discrimination. Recent immigrants perceive discrimination, but the perception is more intense for females both at school and at work (Flippen and Parrado, 2015). One way of countering discrimination is by investing more in education, which can be used as a signaling mechanism (Lang and Manove, 2011). To that end, parents of female SGIs may be investing more in the education of their children to help them overcome the perceived discrimination. This eventually enables the female SGIs to obtain the level of education that is similar to that of natives and puts them on a path to upward socio-economic mobility.

[7] This is derived as the product of the average value and the estimated coefficient: 11.40*0.12

I confirm the impact of parental educational input on the years of schooling by examining the impact on degree attainment. This is especially helpful in light of sheepskin effects.[8] The results from the degree attainment specification are consistent with years of schooling estimates. Both show that the impact of native parents is stronger than for the SGIs. Table 4 shows that the impact of parental educational attainment on the likelihood of SGIs obtaining a degree is 1.4 percentage points less than the impact of native parents on their children. Preliminary results, not presented in this study, show that a one year increase in parent's years of schooling increases by 2.1 percentage point the likelihood of their children obtaining a college degree. Specifically, the impact is 2.6 for natives and 1.2 for SGIs. Table 1 shows that around 25% of all SGIs hold a degree. Therefore, a one year increase in the average parental years of schooling will increase the number of SGIs holding a degree to 26.2%.[9] Even though both native and immigrant parents increase the likelihood of their children receiving a degree, the impact is more pronounced for natives. This is puzzling in light of the strong correlation between parental education and the educational attainment of their children. It is notable, though, that the difference in the impact of parental education on the likelihood of receiving degrees between natives and SGI is small when compared to the impact of years of schooling. Perhaps SGI parents think their responsibility for transmitting human capital is limited to their children graduating high school.

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[8] "Sheepskin effects, also known as credential effects, refer to increases in labour market earnings associated with the completion of a diploma or degree — such as high school or university graduation" Ferrer and Riddell (2001).

[9] 25% is the initial level of immigrants holding a degree. A one year increase in the parental schooling will add 1.2 points hence making for a total of 26.2% (25+1.2) of all SGIs holding a degree.

The results from the degree attainment specification show that the impact parents have on the educational attainment of their children persists but weakens over time. I can only speculate about the cause for this weakening over time. Customarily, the age at which minors are allowed to move out of their parents home is 18 years of age. So long as children are under the care of their parents, parents are more likely to invest in their education. This shows up quite strongly in the initial estimates using years of schooling. As children become older, the responsibility for their education shifts more towards the individual and, hence, parental input weakens.

While the NLSY provides a very rich set of demographic variables suitable to this type of study, a number of limitations still remain. For one, the number of SGIs is rather small to extrapolate the result to all immigrants. The trade-off using NLSY data is that we give up size to obtain the relevant parental characteristics of SGIs. Additionally, the NLSY data on SGIs is heavily tilted toward Latin Americans. This in itself is not a problem in that I am trying to estimate the impact of immigrant parents years of schooling on the educational attainment of their children. However, the literature has shown that immigrants from Asia have a different socio-economic path and trend as compared to immigrants from Latin America or the Caribbean. Another major limitation of the NLSY data in this study is the lack of sub-state location-specific information.[10] This is particularly important because ethnic concentration can have a significantly negative effect on the schooling decisions of SGIs (see Yaman, 2014). Even though I do not directly observe whether a SGI resides in an ethnic enclave, the results are still

[10] That is, data at the county level or even zip code level.

relevant because the enclave effect is on the SGI, and not on the parent. However, there is still some concern as to whether the ethnic concentration affects the ability of parents to provide educational input to their children. Yet another caveat in reading these results is accepting that the functional form employed accurately identifies the causal link. As highlighted in Holmlund et al. (2011), identifying the impact of parental education on children is subject to specification bias related to their ability. To the extent that ASVAB tests measure cognition, this bias may not be present.

The limitations above provide the paths for further research into this subject. Future studies can benefit from using more robust controls for ability by using twins, or adopted children. This could disentangle the parental impact due to education and the impact due to the transmission of ability from parents to children. Another useful extension of this study would be examining the impact of parental education on SGIs over multiple cohorts. This study deals with children of more recent immigrants who are, on average, poorer and less educated than previous cohorts. More robust estimates can be achieved if data on ethnic concentrations can be incorporated into the model.

The results in this study provide some insights on why the educational attainment of SGIs and natives is diverging over time. It is already established that the correlation between parental education and the educational attainment of their children is strong and positive. Native parents are passing on more human capital to their children than the parents of SGIs. Therefore, the gap in parental input on the educational attainment of SGIs is one of the main reasons why SGIs are lagging behind their native counterparts in years of schooling. As a matter of policy, this gap can be narrowed or even reversed if an

environment is created where SGIs can assimilate into their communities. Hence, the main implication of this study is that the gap in the educational attainment between natives and SGIs is caused by SGI parents transmitting less of their endowments to their children than native parents.

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APPENDICES

APPENDIX A: TABLES

Table 1: Summary Statistics

	Full Sample		SGI		Natives	
	Male	Female	Male	Female	Male	Female
Age (years)	24.93	25.00	24.97	24.99	24.92	25.00
	(1.39)	(1.40)	(1.41)	(1.35)	(1.38)	(1.41)
Years of schooling	13.62	14.19	13.78	14.27	13.60	14.18
	(2.31)	(2.40)	(2.33)	(2.49)	(2.31)	(2.39)
Father's schooling (years)	12.86	12.83	11.35	11.58	13.05	13.01
	(3.09)	(2.80)	(4.44)	(4.31)	(2.81)	(2.75)
Mother's schooling (years)	12.93	12.84	11.62	10.85	13.10	13.13
	(3.09)	(2.80)	(4.44)	(4.31)	(2.41)	(2.34)
ASVAB	47.84	49.89	43.45	42.92	48.41	50.90
	(29.74)	(28.15)	(29.55)	(27.89)	(29.72)	(28.05)
HS Drop out Rates (%)	10.3	7.7	11.8	8.4	10.1	7.6
Maternal Age (years)	25.90	25.77	26.79	26.67	25.78	25.63
	(5.29)	(5.48)	(6.00)	(5.43)	(5.19)	(5.21)
Have college Degree (%)	21.67	30.92	21.81	30.99	22.22	30.71
Household Income ($)	60,365	56,536	61,884	57,042	60,167	56,462
	(41,665)	(40,294)	(41,873)	(37,108)	(41,643)	(40,745)
Sample Size	3,146	2,895	369	382	2,777	2,513

NOTES- Std. Dev stands for standard deviation (in parenthesis) . HS represents high school.

Table 2: Impact of Parental Education on Years of Schooling

	Full Sample	Immigrants	Natives
	(1)	(2)	(3)
Parental Education	0.15***	0.12***	0.18***
	(0.01)	(0.02)	(0.01)
Age	0.101	0.059	0.107
	(0.017)	(0.054)	(0.018)
Household Income	0.201	0.188	0.240
	(0.088)	(0.091)	(0.050)
Ability	0.035	0.037	0.034
	(0.000)	(0.003)	(0.001)
Mother's Age at Birth	0.028	0.027	0.024
	(0.028)	(0.012)	(0.005)
Speak Spanish at Home	0.309	0.432	-0.090
	(0.072)	(0.202)	(0.104)
R^2	0.37	0.32	0.38
No. of Obs.	6,041	751	5120

NOTES- This table shows the impact of parental education of the educational attainment of their children . The number in parenthesis represents the coefficients stander error. . No. of Obs. stands for the number of observations in each sample *$p<0.1$, **$p<0.05$, ***$p<0.01$.

Results are based on Equation 1 and 2.

Table 3: Interaction Effects

	(1)	(2)	(3)	(4)	(5)
Diff. in Parental Impact	-0.12***	-0.09***	-0.101***	-0.100***	-0.05***
	(0.018)	(0.017)	(0.02)	(0.018)	(0.019)
Parent's Education	0.35	0.30	0.31	0.30	0.16
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Immigrant	1.98	1.68	1.61	1.55	0.89
	(0.23)	(0.23)	(0.23)	(0.24)	(0.26)
Age in 2008		0.08	0.09	0.10	0.10
		(0.02)	(0.02)	(0.02)	(0.02)
Race		0.00	-0.02	-0.01	0.06
		(0.02)	(0.02)	(0.02)	(0.02)
Household Income ($,000)		0.09	0.09	0.07	0.06
		(0.00)	(0.00)	(0.00)	(0.00)
Gender		0.64	0.63	0.62	0.03
		(0.05)	(0.05)	(0.05)	(0.00)
Live in City		-0.10	-0.15	-0.13	0.54
		(0.06)	(0.06)	(0.06)	(0.05)
State of Residence		0.00	0.00	0.00	-0.12
		(0.00)	(0.00)	(0.00)	(0.06)
Other Language at Home			0.21	0.05	0.00
			(0.08)	(0.00)	(0.00)
Mother's Age at Birth				0.17	0.03
				(0.08)	(0.00)
Ability					0.19
					(0.08)
R^2	0.15	0.21	0.22	0.23	0.37
No of Obs.	8,573	8,330	7,802	7,380	6,041

NOTES- This table shows the difference in the impact of parental education of the educational attainment of native and SGI of their children. No. of Obs. stands for the number of observations in each sample. *$p<0.1$, **$p<0.05$, ***$p<0.01$. Std. Dev stands for standard deviation (in parenthesis). Results are based on Equation 3.

Table 4: Impact of Parental Education on Degree Attainment

	(1)	(2)	(3)	(4)	(5)
Diff. in Parental Impact	-0.018***	-0.017***	-0.019***	-0.018***	-0.014***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Individual Covariates	No	Yes	Yes	Yes	Yes
Other Languages at Home	No	No	Yes	Yes	Yes
Mother's Age at Home	No	No	No	Yes	Yes
Ability	No	No	No	No	Yes
R^2	0.12	0.16	0.16	0.18	0.26
No. of Observations	8638	8395	7861	7435	6084

Notes- The results show the marginal effect showing the impact of parental education on degree attainment from a logit regression based on equation 3. *p<0.1, **p<0.05, and ***p<0.01.

Table 5: Difference In Parental Input between Natives and SGI

	2007	2008	2009
Diff. in Parental Impact	-0.045**	-0.05***	-0.055***
	(0.018)	(0.019)	(0.02)
Individual Covariates	Yes	Yes	Yes
Bilingual	Yes	Yes	Yes
Mother's Age at Birth	Yes	Yes	Yes
Ability	Yes	Yes	Yes
R^2	0.37	0.37	0.36
No. of Obs.	6,056	6,041	6,051

NOTES- Diff. in Parental Impact represents the coefficient that measure the difference in the effect of parental education on the years of schooling between natives and SGI. No. of Obs. stands for the number of observations in each sample. Results based on equation 3. *p<0.1, **p<0.05, and ***p<0.01.

APPENDIX B: FIGURES

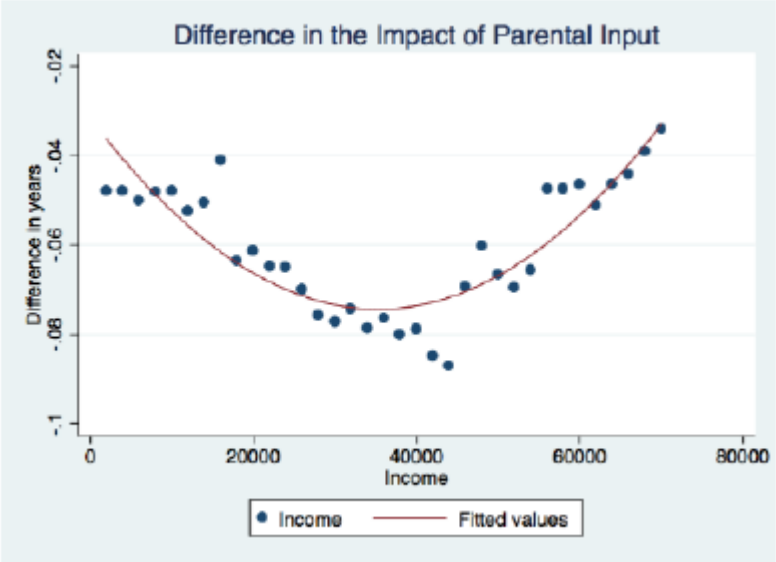

Figure 1: Impact over Different Income Groups