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Kate H. Choi
Marta Tienda
Deborah Cobb-Clark
Mathias Sinning

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Abstract

The claim that marriage is a venue for status exchange of achieved traits, like education, and ascribed attributes, notably race and ethnic membership, has regained traction in the social stratification literature. Most studies that consider status exchanges ignore birthplace as a social boundary for status exchanges via couple formation. This paper evaluates the status exchange hypothesis for Australia and the United States, two Anglophone nations with long immigration traditions whose admission regimes place different emphases on skills. A log-linear analysis reveals evidence of status exchange in the United States among immigrants with lower levels of education and mixed nativity couples with foreign-born husbands. Partly because Australian educational boundaries are less sharply demarcated at the postsecondary level, we find weaker evidence for the status exchange hypothesis. Australian status exchanges across nativity boundaries usually involve marriages between immigrant spouses with a postsecondary credential below a college degree and native-born high school graduates.

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1   Kate H. Choi, Princeton University; Marta Tienda, Princeton University; Deborah Cobb-Clark, University of Melbourne; Mathias Sinning, Australian National University. – All correspondence to Kate H. Choi, The Bendheim Thoman Center for Research on Child Wellbeing, Wallace Hall, Princeton University, Princeton, NJ 08544, E-Mail: hychoi@princeton.edu.

1. Introduction

Between 1970 and 2005, the number of international migrants more than doubled, rising

from 82 to 191 million, with two-thirds destined for high-income industrialized nations (Zlotnik,

2006: Table 6; Freeman, 2006). Currently, the United States hosts the largest absolute number of

immigrants, estimated around 38 million in 2005, but the major industrial Anglophone

countries—Australia, Canada, and the United Kingdom—all rank among the top 10 nations

based on the number of immigrants admitted annually.[1] In relative terms, however, Australia and

Canada trump the United States as immigrant nations: about one in four Australian residents are

foreign born, compared with 19 percent for Canada, 12.5 percent for the United States and nine

percent for the UK (Walsh, 2008; GMF, 2009; Freeman & Birrell, 2001).[2]

The rise of international migration in developed nations has rekindled interest in

intermarriage as a measure of social integration, but until recently few studies considered the

social significance of nativity as a social boundary for marital sorting (Qian & Lichter, 2001;

Khoo et al., 2009; Lichter et al., 2011). Because intermarriage requires intimacy, it signals the

absence of social barriers in inter-group relations and as such, represents the maximal extent of

social integration. Most studies of intermarriage, however, consider racial and ethnic boundaries,

and with few exceptions, the majority focuses on single countries, particularly the United States.

Accordingly, we consider the permeability of nativity as a social boundary for couple formation

by asking whether immigrants engage in status exchange via the marriage market.

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[1] Australia technically ranks 11 in 2005 based on the size of its foreign born population, but we exclude Saudi Arabia because, like other Arab nations, the foreigners are temporary workers rather than permanent settlers.
[2] The UN estimates indicate that one in five Australian residents are foreign born but the Australian government reports that over 5.3 residents are foreign born, which represents 25 percent of the population.

There is ample empirical evidence that educational assortative mating shapes the future contours of social cohesion and inequality (Torche, 2010; Heard, 2011; Goldstein & Kenney, 2001), hence the skill composition of immigrants has direct implications for social integration, and intermarriage trends more specifically. If the salience of nativity as a social boundary for marriage depends on education such that highly skilled immigrants are more attractive to potential spouses than less-skilled natives, then patterns of status exchange will surely differ between Australia and the United States because of the countries' differing emphases on skill and national origins as a condition for admission (Freeman & Birrell, 2001; Walsh, 2008; Wasem, 2007).

Australia and the United States provide interesting cases for evaluating the social significance of nativity as a social boundary for couple formation because of their differing emphases on skills and family reunification as admission criteria. Australia admits approximately two-thirds of its immigrants on skill criteria and strives to recruit persons during their peak working ages (Walsh, 2008). By contrast, about two-thirds of U.S. immigrants are family sponsored, without regard to skills or age (Wasem, 2007). English proficiency is required to attain U.S. citizenship, but is not an explicit admission criterion; however, in order to facilitate market integration, Australia emphasizes a minimum level of English competency as a condition for entry.[3]

To investigate whether immigrant status is a social boundary for mate selection, we build on the theoretical insights from studies of marital sorting and immigrant assimilation. Substantively, we add to a growing literature on intermarriage by explicitly considering how nativity influence assortative mating patterns and empirically evaluating the status exchange

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[3] Specifically, prospective immigrants must score at least a "6" on all four components of the International English Language Testing System (IELTS) exam, or a "5" if destined for a trade occupation. English proficiency requirements were raised in fall, 2010.

hypothesis in comparative perspective. Methodologically, our analysis builds on the most recent developments in estimating status exchange models, which have been the basis of a spirited controversy (Rosenfeld, 2005; 2010; Fu, 2001; Gullickson, 2006; Kalmijn, 2010; Gullickson & Fu, 2010).

Section 2 reviews prior research about status exchange and theorizes how nativity potentially operates as a social boundary. Owing to differences in populations studied and empirical methods used, the existing empirical literature does not yield clear conclusions about the salience of nativity as a social boundary, and in particular, whether status exchanges accentuate or attenuate status divisions. In Section 3, we describe the data, the analysis samples, and the empirical estimation strategy, with due attention both to comparability of educational categories between countries and also to recent methodological developments for evaluating status exchange. Empirical results, including model selection, are reported in section 4. The concluding section highlights similarities and differences between Australia and the United States and also discusses both the insights and challenges of cross-national comparisons.

2. Theories and Evidence

2.1. Intermarriage as Status Exchange

Based on studies of the caste system in India, Kingsley Davis (1941) coined the notion of caste-status exchange in intermarriage, which he generalized to the racial barriers to marriage in the United States "where white and black constitute two distinct racial castes [and] no intermarriage is legally or morally permitted" (Davis, 1941: 388). The basic idea is that marriage partners "trade" characteristics such that highly-ranked members of out groups exchange their status by marrying lower-ranked members of in groups. Several studies demonstrate that status

differentials between social groups can and do inhibit intermarriage unless couples engage in status exchange; however, the majority consider black-white intermarriage, particularly in the United States, where legal prohibitions reinforced racial divisions until the post-Civil Rights period. Writing during a period of low immigration, Davis (1941) did not consider whether birthplace operates as a barrier to marriage. Nevertheless, he explicitly acknowledged that immigration blurs racial and class boundaries via intermarriage, and that intermarriage is "both a criterion and an agency of assimilation" (p.377) that bears on "the societal need for vertical as well as horizontal cohesion" (p. 394).

In most cultures, social status based on placement in the status hierarchy, is a marker of spouse desirability, but there is very limited evidence about whether and how nativity operates as a social boundary in couple formation, and thus social cohesion via immigrant integration. Status hierarchies are generally represented by educational attainment, occupational position, income or their combination. Although birthplace is not a caste-like barrier, there are reasons why status exchange might occur among mixed nativity couples. In Australia, immigrants largely enjoy the full benefits of the welfare state, including health care and social welfare benefits, but growing emphasis on immigrant skill since the mid-1970s has increased social inequities between native- and foreign-born residents (Freeman & Birrell, 2001; Walsh, 2008). Australia's immigrant youth, for example, outperform their native counterparts (Cobb-Clark & Nguyen, 2010); such immigrant advantages are conducive to status exchange. In the United States, the social significance of nativity has been heightened since 1996, when legislation was enacted that bars immigrants from receiving most means-tested social benefits for a period of five years, and permanently excludes immigrants from the more generous Supplemental Security Income

program until they acquire citizenship. This sharpening of nativity distinctions also can potentially increase the value of status exchange via marriage in the United States.

Despite its appeal, the status exchange hypothesis is controversial for several reasons. One is that endogamy and homogamy remain the modal patterns of marital sorting (Rosenfeld, 2005; Fu, 2001; Kalmijn, 1991), hence the prevalence of status exchange is likely to be low. Furthermore, the importance of ascribed characteristics for partner choice has declined over time as young adults select mates independent of their parents' influence (Kalmijn, 1991, 1998). Finally, empirical support for the status exchange hypothesis is inconsistent, partly due to a focus on race boundaries that are relatively rigid, such as black-white divisions in the United States, and partly due to methodological issues.

There is extensive empirical evidence that highly educated minority group members are more likely to marry whites than their lesser-educated compatriots (Fu, 2001; Kalmijn, 1993; 1998). That Asian and Hispanic intermarriage patterns are less consistent with the status exchange hypothesis than those of blacks implicates nativity as a status boundary, albeit one more permeable than the racial barrier. Even as the foreign-born share of the U.S. Asian and Hispanic populations surged, research about status exchange largely ignored nativity differentials in marital sorting. Because educational status exerts a powerful influence on mate selection, the status implications of birthplace will likely depend on immigrants' schooling and labor market qualifications.

A comparison of marital sorting by education and nativity in Australia and the United States should prove instructive for evaluating whether foreign-born spouses use their educational credentials as a status currency in the marriage market not only because of the differing emphases both countries place on labor market skills in their admission regimes, but also

because immigration has altered the ethno-racial and social class contours of marriage markets in both countries (Lichter et al., 2011; Khoo et al., 2009; Heard, 2011; Qian & Lichter, 2011). Specifically, we ask whether immigrants with native-born spouses are more likely to marry "down" educationally than their counterparts who marry within nativity status. We also address how the patterns of status exchange, if they occur in both nations, differ. Finally, because gender status norms are likely to be more rigid for immigrants compared with natives, and because labor market opportunities for unskilled men have been shrinking in both Australia and the United States, we also evaluate whether status exchanges in intermarriage depend on which partner is foreign-born.

2.2. Immigration and Marriage Markets in Australia and the United States

Two aspects of international migration are relevant for a comparative study of intermarriage and status exchange, namely the skill mix of newcomers relative to the host population, and the volume of immigration. Relative to their population size, Australia and the United States each receive similar annual inflows—on the order of 0.4 and .05 percent (including both legal and illegal); however, in Australia, the foreign-born share of the total population is approximately double that of the United States--25 versus 13 percent, respectively (GMF, 2009). What differences in the immigration systems of Australia and the United States portend for intermarriage, and status exchange in particular, depend on how the flows alter marriage markets (opportunities for intermarriage); how the skill distribution of immigrants compares with that of natives; and how mate selection preferences evolve in response to changing educational characteristics of potential mates. Based on population composition alone, opportunities for mixed nativity marriages are higher in Australia than in the United States, but whether such

unions also involve status exchange is an empirical question whose answer partly depends on the skill mix of new arrivals relative to native-born potential partners.

Both the United States and Australia admit immigrants based on family, labor market and humanitarian criteria, but Australia places much greater weight on skills that are relevant to its labor market. To align the skills of immigrants with changes in labor demand, in 1973 Australia's immigration department implemented a point system to judge the admissibility of skilled immigrants (Birrell, 1990; Miller, 1999). In addition to strictly regulating annual caps, Australia's immigration authorities periodically adjust the admission ceilings in response to economic conditions and in recent years increased the points awarded to market skills, including higher thresholds for English proficiency (Freeman & Birrell, 2001; Walsh, 2008). As a result, the number of visas allocated to permanent migrants selected under the points system trebled between 1995 and 2005 (DIC, 2009).[4] By contrast, only about one-third of U.S. immigrants are admitted under employment visas, with the remainder entering under the auspices of family reunification without regard to their employability or earnings potential (Wasem, 2007). As a result the skill distribution of U.S. immigrants is bimodal: migrants admitted under employment visas average higher education than the native population and family migrants average education levels well below the national average (Tienda, 2002).

In addition to the differing weight assigned to family versus employment-based immigrants, the definition of skill-based immigration differs between Australia and the United States. Capped at 140 thousand annually, U.S. employment visas accord highest priority to persons of extraordinary ability, including scientists and engineers; second and third preferences

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[4] The most recent yearbook indicates that in 2008-2009, the majority (56.4 percent) of permanent immigrants to Australia entered as skilled workers under the point system, while 34.2 percent entered as family migrants and fewer than one in ten (9.6 percent) entered as refugees (DIC 2009).

focus on professionals with advanced degrees as well as college graduates destined to industries

facing skill shortages. In the U. S. context, therefore, skilled legal immigrants hold baccalaureate

degrees or higher. Australia's skilled occupation visas include professionals with advanced

degrees along with college graduates, but also workers destined for managerial jobs and skilled

trades. Between 1995 and 2005, the share of employment visas allocated to highly educated

professionals rose from 36 percent to 46 percent, yet over 20 percent were granted to associate

professionals, tradespersons, and other semi-skilled occupations.[5]

     Australia's emphasis on skilled migration is a propitious setting for status exchange, even

if status distinctions between natives and immigrants are less sharply demarcated among semi-

skilled immigrants. Here, as elsewhere, the opportunity for status exchanges also partly depends

on social class variation in marriage behavior. Consistent with the experience of other Western

nations, Heard (2011) shows that the retreat from marriage in Australia is largely concentrated

among low education groups, but she does but does not consider whether nativity differences in

coupling behavior contribute to socioeconomic disparities in couple formation. Even if

immigration attenuates the incipient retreat from marriage in Australia, it is unclear whether

sorting patterns accentuate status homogamy or involve status exchange. Unfortunately, because

Heard does not analyze couples, but rather examines the education-specific marriage rates of

men and women separately, she cannot address the pervasiveness of either marital homogamy or

status exchange.

     Whether mixed nativity unions in Australia and the United States involve status exchange

is an empirical question. On the one hand, the preponderance of high skill immigrants in

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[5] According to Walsh (2008), in 2004-05, nearly 12 percent of employment visas were issued to trades workers
(mechanical, fabric, automotive, electrical and construction trades) and an additional 9 percent to associate
professions that range from financial advisors and brokers to chefs.

Australia's pool implies greater higher opportunities for status exchange via marriage. On the other hand, the large heterogeneity of Australia's skilled immigrants implies weaker currency for status exchange in sorting behavior. With a bi-modal skill distribution of its foreign-born population, the United States might be more conducive for status exchange through marriage compared with Australia. In the following section, we use log-linear methods to examine whether foreign-born spouses trade their more favorable educational attributes to marry a native-born spouse, while netting out nativity variation in the skill composition of spouses as well as the relative size of the immigrant population.

3. Data and Methods

3.1. Data and Sample

An examination of spousal educational resemblance by couple nativity status requires large samples, which few surveys can satisfy except for decennial censuses. For Australia, we use the entire 2001 Census of Population and Housing provided by the Australian Bureau of Statistics (ABS) and for the United States we use the 5 percent Integrated Public Use Microdata Sample (IPUMS) of the 2000 U.S. Census. Both censuses contain information about birthplace, year of arrival for the foreign-born, marital status and, importantly, a "spouse location variable" that permits matching spouses who co-reside in the same household.[6] The major disadvantage of census data is the lack of information about former marriages, including number of previous marriages and characteristics of former spouses (Mare, 1991; Qian, 1997). This limitation restricts the analysis to the stock of current marriages as of the census date and can potentially

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[6] Our samples exclude respondents lacking valid nativity, age, or marital status data. Except for sensitive items like income, for example, missing data is seldom a problem in census data.

introduce biases if educational assortative mating patterns differ by marriage duration and between first and higher order marriages (Mare, 1991; Qian, 1997).

To mitigate these biases we restrict the analytical sample to currently married couples in which the wife is between the ages of 25 and 34. The lower age bound of 25 allows sufficient time for spouses to have graduated from college. Imposing an upper age limit of 34 minimizes potential selection biases resulting from marital disruption and remarriage (Mare, 1991; Qian & Lichter, 2001). Finally, to focus on marriages that likely occurred in the host country, the analytical sample excludes couples where the wife migrated before age 19. These restrictions yield a final analysis sample of nearly 480 thousand couples in the United States and the universe of 664 thousand couples in Australia.

3.2 Key Measures

The theoretical discussion hypothesizes that nativity shapes educational assortative mating patterns, primarily via educational homogamy and status exchange. Testing this hypothesis requires information about nativity (foreign or native) and educational attainment. Notwithstanding the appeal of comparative research, deriving comparable measures is often challenging. Despite their many socio-cultural similarities, practically oriented training is more pervasive in the Australian postsecondary education system compared with the U.S. system.

Spousal education. For the U.S., we adhere to the conventional four-category scheme to classify each spouse based on their completed years of schooling: (1) Less than High School (<12); (2) High School Graduate (12); (3) Some College (13-15); and (4) BA or above (16+). For Australia, we construct a six-category classification scheme that builds on years of school completed but also considers certifications at the post-secondary level: (1) Less than high school: Year 9 or below; Years 10 and 11 and no post-secondary qualification; (2) High School

Graduate: Year 12 and no post-secondary qualification; (3) Certificate: Years 10 and 11 with a certificate from a post-secondary institution; (4) Diploma: Years 10 and 11 with a diploma from a post-secondary institution; (5) Some College: Year 12 or above with a certificate or diploma; and (6) College: Bachelor degree or higher. The appendix provides a rationale for this classification scheme.

Couple Nativity Status is a dichotomous variable that distinguishes between native and foreign-born individuals. Cross-classifying husband's and wife's nativity status yields four possibilities: (1) Both spouses are native born; (2) Both spouses are foreign born; (3) Native-born wife and foreign-born husband; (4) Native-born husband and foreign-born wife.

3.3. Analytical plan

The empirical analysis first describes nativity variation in spousal educational resemblance, drawing comparisons between Australia and the United States. Subsequently, we estimate log-linear models for contingency tables to evaluate the status exchange hypothesis for cross-nativity marriages in both countries. Specifically, we (1) test whether immigrants with native-born spouses have higher education levels than immigrants with foreign-born spouses, and (2) compare the educational resemblance between spouses among mixed and same nativity couples. These analyses also address whether patterns of status exchange among mixed nativity couples depend on which partner is foreign born as well as the immigrant spouse's education.

Designed to estimate the association between spouses' education net of differences in marginal distributions of husband's and wife's characteristics, log-linear models are well suited for studying status exchange (Mare, 1991; Qian & Lichter, 2007; Schwartz & Mare, 2005). Controls for spouse attributes are essential to isolate variations in preferences for a foreign- or native-born spouse and to avoid conflating opportunities to marry across status and nativity

boundaries based on unequal group sizes. Nevertheless, the appropriate specification of status

exchange models has been the topic of considerable controversy (Fu, 2001; Gullickson, 2006;

Gullickson & Fu, 2010; Kalmijn, 2010; Rosenfeld, 2005, 2010). Drawing from the

methodological consensus reached in the most recent round of this debate, we adopt the models

developed by Fu (2001) and Gullickson (2006) to examine whether status exchange occurs

across nativity lines.

Log-linear analyses are based on country-specific contingency tables. Our tables which

are designed to answer whether status exchange occurs among mixed nativity couples, cross-

classify husband's and wife's education by couple nativity status. This cross-classification yields

a contingency table consisting of 64 cells (4x4x2x2) for the United States and for Australia a

table consisting of 144 cells (6x6x2x2). For each contingency table we estimate four sets of log-

linear models for subsamples of immigrant husbands, immigrant wives, native born husbands,

and native born wives.

The baseline model, which assumes that the association between husband's and wife's

education do not vary by couple nativity status, does not allow for the possibility of status

exchange among mixed nativity couples. Formally, the model can be written as follows:

$$\log(m_{iwag} / t_{iwag}) = \gamma + \gamma_i^H + \gamma_w^W + \gamma_{iw}^{HW} + \gamma_a^A + \gamma_g^G + \gamma_{ag}^{AG}$$

where, for the United States, H is husband's education ($i=1,...,4$), W is wife's education

($w=1,...,4$), A is husband's nativity status ($a=1,2$), and G is wife's nativity status ($g=1,2$). The

outcome m_{hwag} is the expected number of marriages between husbands in education category i

and nativity status a, and wives in education category w and nativity status g. To ensure that our

estimates are representative of the U.S. populations, each model incorporates (wife's person)

weights using offset t_{iwag} , which is equal to the inverse of the total weighted frequency of the

cell divided by the unweighted cell (Agresti, 2002; Clogg & Eliason, 1987; Schwartz & Mare, 2005). The baseline model for Australia is similar to that for the United States except that each spouse's education consists of six categories and weights are not needed with a complete population census.

The marriage market model of status exchange assumes that the desirability of a spouse is measured by their ability to find a partner with higher levels of education. Specifically, if immigrant spouses are deemed less desirable than their native-born counterparts, then they will marry spouses with lower levels of education (Fu, 2001; Gullickson, 2006). Formally, the marriage market model is represented as follows:

$$\log(m_{iwag}/t_{iwag}) = Baseline\ model + \gamma_{iag}^{HAG} + \gamma_{wag}^{WAG}$$

Parameters γ_{iag}^{HAG} and γ_{wag}^{WAG} compute differences in the odds of marrying a spouse in the adjacent higher educational category depending on couple nativity status.[7] We infer the existence of status exchange when (1) native-born spouses of immigrants average fewer years of schooling than foreign-born spouses in same nativity couples and when (2) immigrant spouses of native born have higher levels of education than native-born spouses in same nativity couples.

The intra-couple educational resemblance models directly compare husband's and wife's education. In these models, the parameters estimate whether the odds of marrying down educationally are higher among foreign-born spouses in mixed nativity couples compared with spouses in same nativity couples. The unconstrained version of the intra-couple educational resemblance model allows for the possibility that status exchange occurs at different rates among foreign-born spouses with varying levels of education. It is formally represented as follows:

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[7] Because educational boundaries at the post-secondary level in Australia are less sharply demarcated and the hierarchy of the certificate, diploma, and some college category are unclear, we constrained the coefficients of these parameters to be the same for these categories.

$$\log(m_{iwag}/t_{iwag}) = Baseline\ model + \gamma_{iag}^{HAG} + \gamma_{wag}^{WAG} + \sum_{i=1}^{n-1}\delta_i x_{iwag} + \sum_{i=1}^{n-1}\tau_w y_{iwag}$$

where

$$x_{iwag}\begin{cases} 1 & \text{if i>w} \\ \\ 0 & \text{otherwise} \end{cases}$$

and

$$y_{iwag}\begin{cases} 1 & \text{if w>i} \\ \\ 0 & \text{otherwise} \end{cases}$$

The constrained version of the intra-couple educational resemblance model imposes the additional assumption that status exchange occurs at equal rates among foreign-born spouses with different levels of education. Formally, this model takes the form:

$$\log(m_{iwag}/t_{iwag}) = Baseline\ model + \gamma_{iag}^{HAG} + \gamma_{wag}^{WAG} + \rho x_{iwag} + \varphi y_{iwag}$$

Where x_{iwag} and y_{iwag} are defined analogously. Statistically significant, positive δ_i, τ_w, τ and φ provide evidence of status exchange among mixed nativity couples.

4. Results

4.1. Descriptive Results

Table 1, which displays the distribution of educational attainment by nativity status for sampled wives and their spouses, reveals much lower attainment levels in Australia compared with the United States. Some college is the modal education status for U.S. wives ages 25-34, but in Australia, one-in three wives and nearly 30 percent of their husbands failed to graduate from high school. Stated differently, over three times as many Australian married women ages 25-34

lack high school credentials compared with their U.S. counterparts. Among husbands, the education gap is less dramatic, yet 29 percent of Australian husbands lack high school credentials compared to only 12 percent of U.S. husbands. Gender disparities in educational attainment are less extreme among the college educated, 3 and 5 percentage points in the United States and Australia, respectively; however, just over one-in five Australian wives ages 25-34 completed university degrees compared with nearly a third of U.S. wives.[8]

Table 1 about Here

The differing skill emphases of U.S. and Australian immigration regimes manifest themselves in the educational profiles of foreign-born spouses. In the United States, about one-third of married immigrant women ages 25-34 lack a high school education, as do the husbands of the sampled women. This compares with between eight and 10 percent of native-born spouses. College attendance and completion rates are appreciably higher among U.S. natives than foreign-born spouses. Approximately 30 percent of sampled U.S.-born wives and their husbands completed a B.A. degree or more, but only 22 percent of comparably aged immigrant spouses were college graduates. Immigrant spouses are also less likely to have some postsecondary schooling compared with their U.S.-born counterparts.

Despite the priority given to skill in Australia's immigration regime, the educational profiles of Australian- and foreign-born spouses are remarkably similar, with a few notable exceptions. Among wives, natives are more likely than immigrants to lack high school credentials (33 versus 28 percent, respectively). Concomitantly, immigrant wives have a five-percentage point edge over their Australian-born counterparts in college completion rates—26

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[8] These distributions are consistent with OECD (2001) statistics, which indicate that about 43 percent of the Australian, but only 13 percent of the U.S. labor force completed less than upper secondary education in 1999. About 27 percent of the US and 18 percent of the Australian labor force completed a university education.

versus 21 percent respectively. Similar educational differentials obtain for Australian husbands except that the nativity differentials are slightly less pronounced at the lowest attainment category and slightly more pronounced among college graduates. Although Australian husbands are less likely than wives to complete high school, they are considerably more likely to obtain postsecondary certification credentials that may or may not require a high school diploma. Only 14 percent of immigrants held certificate credentials, compared with nearly one-in-four Australian-born husbands.

The relative similarity of husbands and wives' educational profiles reported in Table 1 suggest that both countries will exhibit high levels of educational homogamy, yet status exchange is plausible in light of differences both within and between nativity groups. Table 2 reports educational sorting patterns for couples based on the joint nativity status both spouses. We represent the educational resemblance between spouses using three measures of marital sorting: *homogamy* (both spouses have equivalent education); *hypogamy* (wives have higher education than their spouses); and *hypergamy* (wives have less education than their spouses). That homogamy is more pervasive in the United States than Australia partly reflects differences in the number of educational categories used to match couples, however, some of the differences derive from variation in assortative mating and others to differences in opportunities to optimize partner match. In the United States the growing gender disparities in educational attainment favoring women are evident in the higher pervasiveness of hypogamy relative to hypergamy, but in Australia hypergamous unions are slightly more common than hypogamous couples (33 and 30 percent, respectively.

Table 2 about Here

Despite country differences in the *level* of homogamy, both exhibit the highest levels of homogamy among couples where both partners are foreign-born. Just over half of all U.S. women ages 25-34 married within their educational strata, compared with 58 percent of immigrants who married a foreign-born husband. In Australia, foreign-born couples were appreciably more likely to marry within their educational stratum than either mixed-nativity couples or native-born partners—46 percent compared with 37-38 percent, respectively.

By crossing the nativity boundary, couples can engage in status exchange, but the aggregate evidence for educationally heterogamous unions does not support the status exchange hypothesis. Among mixed-nativity U.S. couples, foreign-born spouses appear to consistently have lower levels of education than their native-born spouses, which is inconsistent with status exchange. In Australia, hypergamy and hypogamy are about equally likely among mixed nativity couples, and largely parallel the national averages. These patterns, however, neither refute nor support status exchange because they conflate sorting based on mate preferences with opportunity constraints based on variations in group size. Because we are interested in the *relative* desirability of immigrant over native-born spouses, in the next section, we estimate log-linear models that isolate variations in sorting patterns that reflect differences in preferences net of the opportunity constraints imposed by group size.

4.2. Log-linear Results

To determine whether nativity is a social boundary for marriage, and specifically test whether status exchange occurs among foreign- and native-born spouses, we first compare the fit of the four models to identify the most probable status exchange model. We present both log-likelihood ratios and Bayesian information criterion (BIC) statistics for model fit; however,

given our large sample size, we rely on BIC statistics to pick the most probable model (Raftery, 1995).

Table 3, which presents the specifications and fit of the models, reveals that the baseline model yields a poorer fit than the status exchange models for both Australia and the United States. This finding suggests that nativity status is associated with marital sorting in both settings and allows for the possibility that mixed nativity couples engage in status exchange. Comparisons of the U.S. status exchange models indicate that the marriage market model best fits the data for subsamples with immigrant wives, whereas the constrained intra-couple model of educational resemblance is the most probable model for subsamples with immigrant husbands. Stated differently, for the subsample of immigrant wives, we can test the status exchange hypothesis by examining how the education of husbands in mixed nativity couples compares with that of husbands in same nativity couples. For the subsample of immigrant husbands, the relative desirability of a potential partner also hinges on comparisons between their own education and that of potential native born spouse. For Australia, the constrained intra-couple educational resemblance model is best fitting for all couples, except those with native-born husbands.

Table 3 goes here.

Although the fit statistics do not provide a clear choice for the best fitting model, for two reasons we select the constrained intra-couple model of educational resemblance as the most probable model describing how nativity status operates as a social boundary in couple formation. First, this model fits the data best for most subsamples. Second, this model includes the three way interaction terms (i.e. γ_{iag}^{HAG} and γ_{wag}^{WAG}) used in the marriage market model to gauge the existence of status exchange. Moreover, the coefficients for the three way interaction terms (i.e.

γ_{iag}^{HAG} and γ_{wag}^{WAG}) remain virtually unchanged with and without the addition of four way interaction terms (i.e. x_{iwag} and y_{iwag}). Therefore, interpretations of the three way interaction terms derived from the constrained intra-couple educational resemblance models also permit us to assess whether immigrant spouses are more likely to marry a native-born spouse with lower levels of education compared with spouses who marry within their nativity status. We report estimates obtained using our most probable model.

One strategy to identify status exchange is to compare education levels of immigrant and native-born spouses in mixed nativity couples to their counterparts with same nativity spouses. For mixed nativity couples, two circumstances implicate status exchange: (1) if immigrants with native-born spouses have higher levels of education than immigrants with foreign-born spouses; (2) if native-born partners with immigrant spouses have lower education levels than their counterparts in same nativity couples. Tables 4 and 5 present the odds ratios derived from the constrained intra-couple resemblance models for the United States and Australia, respectively.

In the United States, the likelihood of status exchange is inversely associated with immigrant spouses' education levels. For instance, the relative odds that immigrants married to U.S.-natives have a high school diploma are nearly 125 percent higher compared with immigrants married to a fellow immigrant. By comparison, the odds of college enrollment are 60 percent higher and the odds of college graduation are 20 percent higher for immigrants in mixed nativity couples relative to immigrants who marry within their nativity group. In fact, foreign-born husbands who cross the nativity boundary in their partner choice are less likely to have college degrees compared with immigrants who marry a fellow immigrant.

Table 4 goes here.

For native-born spouses, status exchange occurs at the lower rather than the higher end of the educational distribution. Specifically, U.S.-born spouses married to immigrants are less likely to have a high school degree compared with natives with native spouses. For example, the relative odds of having a high school degree are approximately a third lower for U.S.-born spouses with immigrant husbands compared with couples where both spouses are immigrants. Yet, at the upper end of the educational distribution, native-born spouses married to immigrants are more likely to have higher levels of education relative to U.S.-natives who marry a fellow countryman. For example, the relative odds of having a college degree are nearly 20 percent higher for native-born husbands in mixed nativity couples compared with couples where both spouses are U.S.-born. These results are consistent with claims that the highly educated are more accepting of immigrants and minorities, which obviates the need to trade educational credentials to overcome other status disadvantages (Hainmueller & Hiscox, 2007).

Direct comparisons of spouses' educational characteristics provide another way for gauging the existence of status exchange. Based on these estimates, which are derived from the constrained version of the intra-couple resemblance models with the four-way interaction terms (x_{iwag} and y_{iwag}), evidence in support of the status exchange hypothesis obtains when immigrants in mixed nativity couples are more likely to marry down educationally compared with spouses who marry within their nativity status. Results show that immigrant men in mixed nativity couples are more likely to marry spouses with lower education compared with foreign-born husbands whose spouse is a fellow immigrant. Specifically, for immigrant men in mixed nativity marriages, the odds of marrying a wife with lower levels of education are 12 percent higher compared with native-born husbands who married a fellow native born.

This pattern, however, does not hold for mixed nativity couples with immigrant wives. Gender differentials in the occurrence of status exchange suggest that nativity status is a more salient social boundary in men's compared with women's marriages. In fact, prior work has shown that Asian and Hispanic women are more likely to cross ethnic and racial boundaries in marriage compared with men (Passel et al., 2010). Partly this reflects social norms that designate men as primary breadwinners and partly this captures the labor market penalties associated with immigrant status (Becker, 1981; Woolley, 2003). For women, whose traditional social sphere revolves around the family, nativity status seems to be a less salient boundary in the marriage market (Becker, 1981; Woolley, 2003).

The contours of status exchange in Australia are less clearly defined than in the United States, according to the results presented in Table 5. That the three-way interaction among gender, education and couple nativity status does not clearly support or refute the status exchange hypothesis likely reflects Australia's less sharply demarcated educational hierarchy, and in particular the ambiguity of the post-secondary credentialing system. Immigrant spouses who cross the nativity boundary are a notable exception because they are more likely to attain postsecondary credentials (i.e. certificates, diplomas, or forms of college education other than a bachelors degree or higher) compared with immigrant spouses who married a fellow immigrant. For instance, immigrants with an Australian wife are 50 percent more likely than immigrants married to a fellow immigrant to have attained a postsecondary credential. Evidence is even weaker for the subsample of Australian spouses. Australian husbands with immigrant wives, unlike Australian wives with immigrant husbands, are less likely than Australian husbands with Australian wives to have attained a postsecondary credential. These gender differences in mixed

nativity unions, like those for the United States, reinforce the view that nativity is a much more salient barrier in marriage for men.

Table 5 goes here

Unlike the marriage market results, results from the intra-couple educational resemblance model, provide strong evidence of status exchange at the couple level. Consistent with the predictions of status exchange, immigrants in mixed nativity couples are more likely to marry "down" educationally than their counterparts married to fellow immigrants. For example, the relative odds of marrying down educationally are 25 percent higher for immigrant wives with Australian husbands compared with immigrant wives in same nativity couples. Evidence in support of the status exchange hypothesis also obtains for the subsample of Australian wives. For instance, immigrant husbands of Australian wives are 20 percent more likely to be in a hypergamous union (i.e. the husband has a higher education level than the wife) compared with native-born husbands who marry within nativity status.

Yet, an in-depth analysis of the educational composition of mixed nativity couples reveals that the observed patterns of status exchange at the couple level mostly capture marriages between immigrants with postsecondary credentials and native-born spouses with a high school degree or less. This finding suggests that status exchange in Australia may be largely driven by the immigrant selection regime that recruits large numbers of skill trades workers (Walsh, 2008). Simultaneously, it also points to our inability to precisely represent the educational hierarchy in Australia because spouses with vocational post-secondary credentials may not differ in social status from their countrymen with more years of graded schooling who lack vocational certificates or diplomas.

On balance, our results indicate that nativity is a status barrier in both Australian and U.S. marriage markets and, moreover, that foreign-born spouses trade educational credentials via marriage with natives. Support for the status exchange hypothesis is somewhat weaker in Australia, however, owing in part to lower average levels of education compared with the United States and in part to the less sharply defined boundaries between secondary and intermediate postsecondary education.

5. Conclusions and Implications

Because intermarriage is "both a criterion and an agency of assimilation" (Davis, 1941: 377), status exchange has direct implications for the contours of social stratification and social cohesion in immigrant-receiving nations. Most research about status exchange via marriage has focused on racial barriers that have proven to be rather rigid. We demonstrate that nativity also is a social boundary in coupling behavior and, importantly, that its salience depends on a key axis of stratification, namely educational attainments of prospective spouses. Specifically, we find support for the status exchange hypothesis, which maintains that immigrants trade their educational credentials to marry a native with lower status spouses in Australia and the United States—two nations with long immigration traditions. Not surprisingly, the contours of status exchange differ between countries in part because of their different emphases on the educational credentials of immigrant admissions, and in part because of the educational composition of the native population.

Consistent with the status exchange hypothesis, we find that, with some exceptions, immigrant spouses in mixed nativity couples are better educated compared with couples in which both partners are native born. In both countries, status exchange occurs with greater frequency among the less-educated spouses, however. For example, in the United States the likelihood of

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engaging in status exchange is inversely correlated with the immigrant spouse's levels of education. That immigrant men are more likely than foreign-born women to engage in status exchange in both countries likely reflects gender norms that emphasize men's earning capacities. The rise of hypogamy may alter this association in the future, however. Australian intermarriage patterns provide weaker support for the status exchange hypothesis, which largely involves marriages between immigrants in the skilled trades and native spouses with lower levels of education. There, status exchange mostly involves marriage between immigrants with a postsecondary credential below a college degree and native-born high school graduates.

Thus, despite Australia's greater emphasis on labor market skills in admitting immigrants, two circumstances bear on the lower salience of status exchange. One is that the share of residents lacking high school credentials is relatively high, which translates into a much lower educational profile compared with the United States. Although the log-linear modeling technique controls for differences in opportunities for intermarriage across education strata, the aggregate profile sets the bounds within which immigrants engage in partner selection. Second, the demarcation of post-secondary boundaries between high school completion and a college degree are less sharply defined. Taken together, these two circumstances indicate that intermarriage fosters immigrant integration via working class consolidation in Australia. The latter consideration has broad implications for the role of intermarriage, and status exchange more specifically, in addressing "the societal need for vertical as well as horizontal cohesion" (Davis, 1941: 394).

Looking ahead, growing socioeconomic differentials in propensity to wed along with increases in hypogamy may alter the salience of nativity as a social boundary in marriage. To some extent the significance of nativity as a status boundary is inextricably linked to the national

origins of immigrants, which our log-linear approach could not explore. Future research that examines intermarriage behavior according to birthplace will surely advance understanding of contemporary status boundaries in couple formation, and consequently, the contours of social stratification in countries of high immigration.

APPENDIX

Australia's Education system

Australian children typically begin Kindergarten at age 5 and end their secondary schooling after completing 12th grade. Upon graduation, those students who meet certain minimum coursework requirements are assigned a percentile ranking based on their academic performance in grades 11 and 12 (or in some cases in grade 12 only). Students wishing to attend university register their rank-ordered preferences for specific degree programs offered at Australian universities. Placement offers are made centrally within each state on the basis of students' entrance rankings once they are known.

Instead of a university degree, students may choose to obtain vocational education and training (VET) qualifications that typically constitute an alternative practically oriented tertiary education. VET qualifications, which cover traditional trades, business and commerce as well as the creative arts, generally require two or fewer years after secondary school, provide students with the skills and knowledge they need to enter the workforce or to obtain further education. Recognized qualifications range from basic post-secondary certificates to advanced diplomas that are comparable to those offered by universities. VET courses are mainly provided by public organizations like technical and further education (TAFE) institutions, which are comparable to U.S. community colleges and funded by the Australian Government as well as state and territory governments.

The 2001 Australian census does not distinguish between basic and more advanced certificate levels, but after extensive diagnostic testing and analyses of survey data with detailed education categories, we determined that the boundaries between high school completion and attainment of some postsecondary schooling did not warrant a single category designating "some

college." This is because some diplomas and certificates can be achieved without a high school degree. Therefore, we developed a six-category classification scheme that keeps in tact the high school and college completion boundaries while also representing the categories for skilled trades credentials. These include: (1) Less than high school: Year 9 or below; Years 10 and 11 and no post-secondary qualification; (2) High School Graduate: Year 12 and no post-secondary qualification; (3) Certificate: Years 10 and 11 with a certificate from a post-secondary institution; (4) Diploma: Years 10 and 11 with a diploma from a post-secondary institution; (5) Some College: Year 12 or above with a certificate or diploma; and (6) College: Bachelor degree or higher.

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Table 1. Percentage distribution of Husbands' and Wives' Education by Age at Migration, United States and Australia [a] (Column %)

Education	Sampled Women			Husbands of Sampled Women		
	Native Born	Foreign Born	Total	Native Born	Foreign Born	Total
A. United States						
Less than High School	8	32	10	10	35	12
High School Degree	25	21	25	28	20	27
Some College	36	25	35	33	23	32
BA or above	31	22	31	29	23	28
Total	100	100	100	100	100	100
N in 1000s	437	41	478	428	50	478
B. Australia						
Less than High School	33	28	32	29	25	29
High School Degree	23	24	24	15	20	16
Certificate	7	5	7	23	14	22
Diploma	2	1	2	1	2	2
Some College	14	15	14	14	17	15
BA or above	21	26	22	16	22	17
Total	100	100	100	100	100	100
N in 1000s	592	72	664	557	107	664

Sources: 5 percent IPUMS file of 2000 U.S. Census; 2001 Australian Census
[a] Universe: Wives between the ages of 25 and 34, and if foreign-born, wives had to have migrated prior to age 19
[b] Education categories for Australia:
(1) LT HS: 9 or less, 10 and 11 without certificate/diploma; (2) HS: 12 without certificate/diploma; (3) Certificate: 10/11 with certificate; (4) Diploma: 10/11 with diploma; Some College: 12 with certificate/diploma; BA or more: Bachelor, Graduate diploma, and Postsecondary graduate diploma

Table 2. Marital Sorting Patterns by Couple Age at Migration, United States and Australia [a] (Row %)

Couple Age at Migration	Homogamy (Wife=Husb)	Hypogamy (Wife>Husb)	Hypergamy (Husb>Wife)	Total	N in 1000s
A. United States					
Both Native Born	53	27	19	100	416
Both Foreign Born	58	21	21	100	29
Native Born Wife; Foreign-Born Husband	52	30	18	100	22
Native Born Husband; Foreign-Born Wife	55	22	22	100	13
Total	54	27	20	100	479
B. Australia					
Both Native Born	37	30	33	100	516
Both Foreign Born	46	26	29	100	31
Native Born Wife; Foreign-Born Husband	37	30	32	100	75
Native Born Husband; Foreign-Born Wife	38	30	32	100	40
Total	38	30	33	100	664

Sources: 5 percent IPUMS file of 2000 U.S. Census; 2001 Australian Census
[a] Universe consists of couples where the wife is between the ages of 25 and 34, and if foreign-born, the wife migrated prior to age 19

Table 3. Goodness of Fit Log-likelihood and BIC Statistics for Status Exchange Models

	Model Type		Model Specification	U.S.			Australia		
				d.f.	Log-likelihood	BIC	d.f.	Log-likelihood	BIC
A. Native Born Wife- FB Husb versus Both Native Born Spouses									
1	Baseline	:	H W A G HW AG HA WG	12	-328	177	30	-624	145
2	Marriage Market:	:	MODEL 1 + AGH + AGW	9	-184	-70	25	-482	-72
3	Unconstrained intra-couple resemblance	:	MODEL 2 + $\Upsilon^{OAG \text{ (Unconstrained)}}$	6	-171	-58	20	-426	-118
4	Constrained intra-couple resemblance	:	MODEL 2 + $\Upsilon^{OAG \text{ (Constrained)}}$	8	-175	-77	24	-451	-121
B. FB Wife- Native Born Husb versus Both FB Spouses									
1	Baseline	:	H W A G HW AG HA WG	12	-873	1347	30	-502	95
2	Marriage Market:	:	MODEL 1 + AGH + AGW	9	-160	-46	25	-414	-24
3	Unconstrained intra-couple resemblance	:	MODEL 2 + $\Upsilon^{OAG \text{ (Unconstrained)}}$	6	-148	-39	20	-363	-70
4	Constrained intra-couple resemblance	:	MODEL 2 + $\Upsilon^{OAG \text{ (Constrained)}}$	8	-160	-36	24	-375	-92
C. Native Born Husb-FB Wife versus Both Native Born Spouses									
1	Baseline	:	H W A G HW AG HA WG	12	-367	267	30	-663	250
2	Marriage Market:	:	MODEL 1 + AGH + AGW	9	-166	-96	25	-379	-253
3	Unconstrained intra-couple resemblance	:	MODEL 2 + $\Upsilon^{OAG \text{ (Unconstrained)}}$	6	-162	-67	20	-361	-222
4	Constrained intra-couple resemblance	:	MODEL 2 + $\Upsilon^{OAG \text{ (Constrained)}}$	8	-166	-83	24	-379	-240
D. FB Husb- Native Wife versus Both FB Spouses									
1	Baseline	:	H W A G HW AG HA WG	12	-341	271	30	-1020	1096
2	Marriage Market:	:	MODEL 1 + AGH + AGW	9	-169	-40	25	-528	168
3	Unconstrained intra-couple resemblance	:	MODEL 2 + $\Upsilon^{OAG \text{ (Unconstrained)}}$	6	-156	-35	20	-391	-46
4	Constrained intra-couple resemblance	:	MODEL 2 + $\Upsilon^{OAG \text{ (Constrained)}}$	8	-162	-43	24	-414	-47

Notes:
The abbreviations denote the following:
H: Husband's Age at Migration; W: Wife's Age at Migration; A: Husband's Age at Migration; G: Wife's Age at Migration
Most probable model for each subsample is highlighted in yellow. Overall, we select "constrained intra-couple educational resemblance" models.

Table 4. Odds Ratio Predicting the Likelihood that Spouse in Mixed Nativity Couples have Higher Levels of Education than Spouse in Same Nativity Couples, United States
(Estimates based on Models of Constrained Intra-couple Resemblance)

Comparisons	exp(β)	β/se
A. Foreign-Born Wife: FB Wife - U.S.B Husb versus <u>Both FB Spouses</u>[a]		
Immigrant Wife's Educational Boundaries		
HS vs. Less than High School	2.24	19.13
Some College vs. High School	1.57	12.68
College vs. Some College	1.19	5.00
Status Exchange		
Husband marries up	0.09	-71.91
U.S.B Husb* Husband marries up	1.04	0.90
B. Foreign-Born Husband: FB Husb-U.S.B Wife versus <u>Both FB Spouses</u>		
Immigrant Husband's Educational Boundaries		
HS vs. Less than High School	1.47	12.59
Some College vs. High School	1.04	1.17
College vs. Some College	0.84	-5.51
Status Exchange		
Husband marries down (Hypergamy)	0.13	-71.08
U.S.B Wife* Husband marries down	1.14	3.69
C. U.S.-Born Wife: U.S.B Wife- FB Husb versus <u>Both U.S.B Spouses</u>		
Native Born Wife's Educational Boundaries		
HS vs. Less than High School	0.68	-14.81
Some College vs. High School	1.19	8.26
College vs. Some College	1.15	6.42
Status Exchange		
Husband marries down (Hypergamy)	2.19	75.00
FB Husb* Husband marries down	1.12	4.43
D. Native Born Husband: U.S.B Husb- FB Wife versus <u>Both U.S.B Spouses</u>		
Native Born Husband's Educational Boundaries		
HS vs. Less than High School	0.86	-4.14
Some College vs. High School	1.47	13.32
College vs. Some College	1.18	5.65
Status Exchange		
Husband marries up	2.52	90.81
FB Wife* Husband marries up	0.99	-0.26

Source: 5 percent IPUMS sample of 2000 U.S. Census
[a] Reference groups are underlined

Table 5. Odds Ratio Predicting the Likelihood that Spouse in Mixed Nativity Couples have Higher Levels of Education than Spouse in Same Nativity Couples, Australia
(Estimates based on Models of Constrained Intra-couple Resemblance)

Comparisons	exp(β)	β/se
A. FB Wife-Australian Husb versus Both FB Spouses		
Immigrant Wife's Educational Boundaries		
HS vs. Less than High School	0.89	-4.83
Postsecondary Credential [b] vs. HS	1.09	3.82
College vs. Some College	1.03	0.97
Intra-couple Status Exchange		
Husband marries up	0.01	-94.09
Native Born Husb*Husband marries up	1.24	7.25
B. FB Husb-Australian Wife versus Both FB Spouses		
Immigrant Wife's Educational Boundaries		
HS vs. Less than High School	0.86	-7.24
Postsecondary Credential vs. HS	1.47	20.12
College vs. Some College	0.68	-19.02
Intra-couple Status Exchange		
Husband marries up	0.02	-106.12
Native Born Wife* Husband marries up	1.43	13.87
C. Australian Wife- FB Husb versus Both Australian Spouses		
Native Born Wife's Educational Boundaries		
HS vs. Less than High School	1.20	13.23
Postsecondary Credential vs. HS	1.07	5.65
College vs. Some College	1.07	5.54
Status Exchange		
Husband marries down	0.02	-260.45
FB Husb* Husband marries down	1.19	11.42
D. Australian Husb- FB Wife versus Both Australian Spouses		
Native Born Husband's Educational Boundaries		
HS vs. Less than High School	1.24	11.36
Postsecondary Credential vs. HS	0.84	-11.59
College vs. Some College	1.34	16.08
Status Exchange		
Husband marries up	0.02	-252.97
FB Wife* Husband marries up	1.00	0.14

Source: 2001 Australian Census
[a] Reference groups are underlined
[b] Postsecondary credential refers to Certificate; Diploma; and Some College. We constrained the coefficient for these parameters to be the same because hierarchy among these categories is unclear.