Occupational Skills and Labour Market Progression of Immigrant Women in Canada

Alícia Adserà [*]

Woodrow Wilson School
Princeton University
347 Wallace Hall,
Princeton NJ 08544

adsera@princeton.edu

Ana Ferrer

Department of Economics
University of Waterloo
200 University Avenue
Waterloo, ON, Canada N2L 3G1

aferrer@uwaterloo.ca

Abstract

We use the confidential files of the 1991-2006 Canadian Census, combined with information from O*NET on the skill requirements of jobs, to explore whether immigrant women behave as secondary workers, remaining marginally attached to the labour market and experiencing little career progression over time. Our results show that the labour market patterns of female immigrants to Canada do not fit this profile, but rather conform to patterns recently exhibited by married native women elsewhere, with rising participation and wage progression. At best, only relatively uneducated immigrant women in unskilled occupations may fit the profile of secondary workers, with slow skill mobility and low-status job-traps. Educated immigrant women, on the other hand, experience skill assimilation over time: a reduction in physical strength and an increase in analytical skills required in their jobs relative to those of natives.

1. Introduction

We exploit a large sample of immigrant and native married women taken from the restricted files of four Canadian censuses (1991-2006), combined with information on the skill requirements of the jobs women hold, to examine the progression of market outcomes of immigrant women. To our knowledge, this is the first paper to exclusively assess the labour market advancement of Canadian immigrant women through the changes in the task content of their occupations -- in line with recent work in labour economics. Our results concur with recent findings in the US literature showing that married immigrant women make labour supply decisions similar to those recently observed for native married women, who are guided by their own opportunities in the labour market, and dispel the more traditional view that Canadian immigrant women behave on average like secondary workers.

A large literature documents immigrant assimilation using different measures of labour market performance (Chiswick, 1978, Borjas, 1985, 1995, 2013). Since the 1990s these studies report that recent immigrant cohorts to most major host countries have experienced a significant deterioration in their economic well-being relative to previous arrival cohorts (See among others, Borjas 1995; Bell, 1997; Dustmann et al., 2003; Aydemur and Skaterud 2005; Antecol et al, 2006; Clark and Lindley, 2009; Beenstock et al., 2010). Traditionally, this work focused on men, partly because labour force decisions of women were more complex and required richer data, and partly because immigrant women's labour force activity was considered less economically relevant. Hence, the majority of earlier studies typically looked solely at male immigrants, though a few papers also analyzed the labour market outcomes of immigrant women (Ferrer and Ridell 2008; Amuedo-Dorantes and de la Rica, 2007; Adsera and Chiswick, 2007; Dustmann and Fabri, 2005; Shoeni, 1998; Duleep and Sanders 1993; Beach and Worswick, 1993). Most of the earlier studies that distinguished workers by gender found that, in general,

the assimilation patterns of female and male immigrants were different. A series of papers that employ US and Canadian data (Duleep and Sanders, 1993; Worswick, 1996 and 1999; Baker and Benjamin, 1997; Duleep and Regrets, 1999) found evidence that immigrant women married to immigrant men were more likely to work immediately after migration, but had flatter wage profiles and a lower propensity to undertake country-specific human capital investments than immigrant women married to native-born men. These results support a popular account of the labour supply choices of immigrant women that highlights their role as secondary (or lower-wage) earners in the household. This explanation relies on traditional views of gender roles within families and argues that recent immigrant women join the labour market largely to support their husbands' investment in local skills - which depreciate upon migration. However, more recent studies (Blau et al., 2003; Duleep and Dowhan, 2002; Basilio et al., 2009) find that married immigrant women make labour supply decisions similar to those recently observed for native married women.

It is not surprising to find conflicting evidence regarding the labour market outcomes of married immigrant women in the literature since immigration policies and institutions in place to ease immigrant assimilation vary across destinations. These differences, in turn, are bound to affect the composition of immigrant flows and the way immigrant families allocate their time. Further, any changes that occur over time on those same institutional features within a country can result in conflicting empirical results. In many cases, discrepancies across studies regarding immigration outcomes are related to the use of different data sets. For instance, Duleep and Dowhan (2002) analyze longitudinal US data and suggest that the theory of women as secondary workers is consistent with the earnings path of immigrant women to the US from earlier cohorts, but not with that of recent cohorts. Kim and Varanasi (2010) replicate the results in Blau et al. (2003) to find that the secondary worker's theory is partly supported among immigrant women working in low-status jobs

In trying to understand the labour market outcomes of immigrant women, we take advantage of both the novel approaches pioneered by Autor (2013) to study job transitions and the availability of more recent and richer data to contribute to the literature in two dimensions. First, following recent work by Autor and Handel (2013) we expand the set of labour outcomes the literature has considered in the past to analyze the progression of immigrant women in the market - such as participation and wages - to consider in addition on the skill content of the jobs immigrant women hold. The nature of the work performed is a dimension along which the labour force outcomes of immigrant and native-born women may possibly differ. If immigrant women only participate temporarily as a response to a decrease in family earnings around the time of migration, low status jobs may appear more attractive to them. Qualifying for these positions is easier than for high status jobs that require credentials or experience. Do immigrant women temporarily aim for low-status jobs, that are easy to get and pay relatively well for unskilled workers, to boost family earnings, while their partners upgrade their qualifications? As their partners settle, do they move to better positions or rather they drop from the labour force? The ability to answer these questions using only standard measures of occupational category may be limited. While considering broad measures of occupational status – such as blue/white collar or managerial/non-managerial jobs - may miss a substantial part of the change in occupational status, including too finely detailed job classifications --such as 4-digit level SOC occupations - is impractical. In this paper we employ a small set of fundamental occupational skills – such as analytical capability and physical strength demands of jobs - obtained from the Occupational Information Network (O*Net). With these tools we focus on the degree of attachment to low-skill jobs among immigrant women and how the skill requirements of their jobs change with time in Canada.

Second, we also extend the existing literature by looking at the most recent cohorts of Canadian immigrants with the 20% confidential Canadian Census that offers more detailed information than the

publicly available data employed by previous studies. It allows us to better control for immigrant heterogeneity in an array of dimensions. For instance, detailed information of country of birth, allows us to include in the models measures of both linguistic proximity between origin and destination countries and the degree of labour force attachment among women in the source countries, to better understand (and control for) the influence of the country of origin on the outcomes of immigrant women. Much has changed in the Canadian labour market during the 1990s and 2000s, particularly in regards to immigration policy. As a result, the composition of the immigrant pool has evolved, and most notably the educational attainment of immigrants relative to that of natives has increased (Ferrer et al., 2014 and Bonikowska et al., 2011). In view of these changes, we do not necessarily expect to replicate previous results in the literature of Canadian immigration with our data.

Our results indicate that immigrant women experience substantial advancement in the Canadian labour market over the years, with rising participation and wage progression. University-educated women start at relatively low levels of participation and wages, but experience substantial improvements over the years, whereas less-educated immigrants show flatter profiles. This dichotomy is also apparent when examining the skills required by the jobs they hold. Relatively uneducated immigrant women in low-skill occupations experience little improvement in skills over the years. Educated immigrant women, on the other hand, progressively work in jobs requiring substantially less physical strength and slightly more analytical skills.

The next section discusses the methodology and presents the data. Section 3 shows the results on labour force participation, wages and skill assimilation of women with time in Canada. Section 4 discusses the robustness of the results, and the final section concludes.

2. Methodology and Data

Our analysis of the labour market assimilation of immigrant women follows pioneer work by Borjas (1985) that, in absence of longitudinal data, relies on multiple cross-sectional data to disentangle the cohort and entry effects from immigrant outcomes.[1] We distinguish four different types of families in our analysis and include separate entry-cohort effects for each immigrant spouse. We estimate the following type of regression to compare the performance of immigrant women to those of the native-born

$$Y_{it} = X_{it}\,\beta_1 + \sum_{h=I,NB} \sum_t \sum_k \tau_{kt} C_{ik}^{Wh} * t + \sum_{w=I,NB} \sum_t \sum_k \tau_{kt} C_{ik}^{Hw} * t + \gamma t + \varepsilon_{it}$$

where the dependent variable (Y_{it}) is a measure of labour market performance of woman i, in survey year t; X_{it} is a vector of individual/household characteristics including age, age squared, fertility indicators, education, husband wage, province and city of residence, and a measure of linguistic proximity of mother tongue to local language; C_{ik}^{Wh}, C_{ik}^{Hw} are indicators for different k-immigrant arrival cohorts of immigrant wives/husbands, which we interact with the indicator for survey year (t) to track the evolution of different cohorts over time on a particular outcome. This approach yields more flexible estimates of assimilation patterns than more traditional approaches that use a continuous variable for years since migration (and its square). The later impose either a linear or quadratic pattern of assimilation over time, whereas our specification generates separate estimates each time the cohort is

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[1] Lubotsky (2007) shows that using cross-sectional data overestimates the wage progression of immigrants in the US. However, longitudinal data adequate to study immigrant progress is very rare. In Canada, there are two panel data sets with enough information about immigrants for such study, but they only follow individuals for a maximum of 6 years. In addition, the small numbers do not permit to properly control for immigrant heterogeneity.

observed in our data without restricting the shape of the assimilation profile.[2] Cohorts are defined over five years (e.g. the "86-90" cohort includes individuals arriving between 1986 and 1990). To differentiate mixed couples, cohort effects vary depending on whether the husband/wife (*h/w*) of the immigrant is him/herself immigrant or Canadian born. Previous literature shows it is relevant to distinguish between types of immigrant couples (Baker and Benjamin, 1997; Basilio et al. 2009). The coefficients for the cohort-time indicators τ_{kt} are the key parameters of interest. In our robustness analysis, we also include gender differences in labour force participation across countries of origin to control for cultural differences in preferences for female employment.

Our basic measures of labour market performance Y_{it} are labour force participation and wages. In addition, a distinctive feature of our analysis is a focus on a third measure of performance, namely occupational skills.

2.1 Data and Sample Selection

The data comes from the restricted individual files of the Canadian Census (1991 through 2006).[3] Previous Canadian studies on this topic employed both public-use Census 1981 and Census 1991 (Worswick, 1996, 1999), or the Survey of Consumer Finances, 1986 and 1991 (Baker and Benjamin, 1997). Confidential Census files include a large level of information on key variables such as country of origin (for immigrants) or fertility in comparison to that contained in public-use data. The large samples contained in the restricted Census files ease concerns of attenuation bias. Further, these files

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[2] In separate estimates (available upon request) we show that our results are robust to a specification that includes both a linear and a quadratic "year since migration" trend. However, such specification tends to overestimate the progress made over time for recent cohorts.

[3] Although the 1981 and 1986 Census could have been available for this research, the difficulty of matching Standard Occupation Classification (SOC) and "Place of birth" from the earlier Census limited their usefulness.

offer comprehensive information on individual labour market outcomes, occupation, country of birth, year of arrival and mother tongue. For each woman we compile relevant data regarding other members of the household, including spouse and the number of children, to obtain detailed measures of fertility based on the number of children in the household and the spouse's immigration and labour market characteristics. Our indicators of fertility include the number of births, the age of the children, and the mother's age at different births. The inclusion of these variables in the models can potentially account for interruptions in labour force attachment over a woman's life cycle. Childbearing is an important ambit in which the behavior of immigrant and Canadian-born females is likely to diverge (Adsera and Ferrer, 2014 a).

As suggested by previous research, both fluency in the language of the destination country and the ability to learn it quickly will influence an immigrant's success in destination countries' labour markets (Bleakley and Chin 2004; Chiswick and Miller 2010; Dustmann and van Soest 2002). However, the Canadian Census has no measure of linguistic fluency which would help to undertake this type of analysis. As a proxy for fluency, we use a measure of linguistic proximity between origin and destination languages based on the levels of the linguistic family tree both languages share developed in Adsera and Pytliková (2015).

We select a sample of married (or common-law, CL) women aged 18 to 45 for our analysis. We choose this age range to focus on the main reproductive years of women and to render our measures of fertility more reliable since we use the number of children living in the household rather than the actual number of births. In addition, we only include immigrant women who immigrated as adults – at age 18 or after to focus on the assimilation of younger (adult) immigrant women, which constitute the majority

of the immigrants.[4] We exclude aboriginal individuals, since their analysis presents a very different set of challenges. In order to reduce computing time to a reasonable length, from each census we select all immigrant women plus a 20 percent random sample of Canadian born women in the same age range and weight the observations accordingly. Our final sample contains over 800,000 observations.

2.2 Measures of Skills

As mentioned in the introduction, most job changes (and their accompanying wage responses) might not result in a change in the occupational category, particularly when measured broadly, but they may involve substantial adjustments in skill requirements. Autor and Handel (2013)'s pioneer work uses the detailed information contained in occupation databases - either the Dictionary of Occupational Titles (DOT) or the Occupational Information Network (O*NET) – to derive a small set of fundamental skill requirements for each job to be used in the analysis. These have the advantage of being limited in range, but to account for variation in very detailed occupational classifications. The skills we consider here are derived from the O*NET by Imai et al (2011). These include two indexes for cognitive skills (social and analytical) and three indexes for manual skills (fine motor skills, physical strength, and visual skills). This classification differs from that employed by others who study the routine/non-routine nature of the jobs (Autor and Dorn, 2013; Warman and Worswick, 2015) to understand the effect of skill biased

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[4] The behavior of child immigrants is likely very different from that of adult immigrants (Adsera and Ferrer, 2014a; Mayer and Riphalm, 2000), particularly since they do not confront the same trade-offs between work and family at arrival as adults do and they likely assimilate more easily to Canadian norms through schooling. Further, most adult immigrant women are married at the time of arrival as marriage is a requirement for spousal visa, the most common visa among female immigrants.

technological change on wage inequality. We abstract from this distinction to focus on the more general notion of manual and non-manual skills that seems more relevant in the case of immigrants.

To facilitate interpretation of the data, the detailed information in the O*NET is summarized by constructing a low-dimensional vector of occupational characteristics using Principal Component Analysis (PCA).[5] The result is a vector of skills necessary to perform the job tasks associated with each 4-digit occupational category using the O*NET. The factor analysis uses as weights the distribution of the skill distribution of the Canadian working population; hence a unit of the skill score (with mean zero) can be interpreted as one standard deviation in the skill distribution of the Canadian population. Figure 1 shows the full distribution of analytical and physical strength skills by family type.[6] A positive index indicates either more physical strength or analytical demands than the job held by the average worker.

2.3. Descriptive statistics

Table 1 presents summary statistics of women by family type. Immigrant women are older and more likely to hold a university degree than natives. Conversely, immigrant women are less likely to participate in the labour market and work fewer hours on average than Canadian-born. Among immigrants, linguistic proximity is the lowest for women in immigrant couples. Around 40% of these women come from countries where either English or French is an official language – compared to 60% of immigrant women in mixed marriages – while for a large fraction of immigrant women (23%) none

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[5] In the PCA, factor loadings are calculated so that variation of the data explained by the constructed variable is maximized. A detailed description of the procedure can be found in Imai et al. (2011).

[6] Note that skills here measure the skills involved in performing each job, not the actual skills of the worker.

of the official languages in their country of origin has any common branch in the linguistic tree with either English or French.

With regard to skill requirements, the jobs held by immigrant women in immigrant couples have the highest strength and motor scores and the lowest analytical (or quantitative) and social (or interpersonal) scores among all married women. These are usually characteristics attached to low status occupations. Immigrant women in immigrant couples work in occupations that require social and analytical skills 0.10 and 0.13 standard deviations, respectively, below the average Canadian worker (both men and women pooled together). Even though their motor and strength skill requirements are also below those required for the average Canadian worker, they are the highest among all groups of married women. In contrast, the average skill requirements in jobs held by immigrant women in mixed marriages involve social and analytical skills that are on average 0.26 and 0.09 standard deviations above the mean for Canadian workers. Moreover their motor and strength skill requirements are 0.36 and 0.30 standard deviations below that of the average Canadian worker.

3. Regression results

3.1. Labour force participation

Previous papers analyzing the role of immigrant women in the labour market start by examining whether or not, as expected for secondary workers, immigrant women with immigrant spouses are more likely to participate in the labour market upon arrival to the country than similar native-born (or than immigrants married to native-born) and whether their participation declines with time in Canada. In the same line, a second prediction of the literature to be contrasted empirically is whether or not immigrant women are more likely than other women to enter low-status job that they eventually leave as their spouses assimilate.

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We use a logit model to estimate a specification of equation (1) where the dependent variable is a binary indicator of labour force participation.[7] Results are presented in Table 2 in the form of odd ratios that can be interpreted as the difference in the probability that immigrant women participate relative to similar native-born women with native-born partners. The first panel shows the odds ratio of participating in any type of job for all married women depending on the years in Canada and the second panel only for the sample of university-educated women. It is natural to focus in the latter group separately because, during the 1990 and early 2000s, Canadian immigration policy placed a strong emphasis on formal education. Although the qualification requirements typically concerned the main applicant, generally a man, they resulted in an increasing fraction of high-educated spouses (Sweetman and Warman, 2009). Hence, recent cohorts of immigrant women to Canada have high levels of education relative to native-born and are deemed more likely to participate consistently in the labour market than previous cohorts.

Some recent studies show an association between home country characteristics such as female labour force participation rates and immigrant women's labour market decisions in the host country (Frank and Hou, 2013; Blau et al. 2011; Fernández and Fogli 2009). In separate, regressions available upon request, we add controls for place of birth and characteristics of the country of origin (such as GDP per capita, fraction of individuals with higher education, or female labour force participation) to our estimations, as a way to partly account for the influence of culture or ethnicity on labour market outcomes. Results from those regressions are qualitatively similar to the ones presented in Table 2, with slightly higher levels of overall participation than when these country characteristics are omitted. We

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[7] Results are qualitatively robust to using a probit specification.

prefer to show results for the average immigrant woman in each cohort since the focus of this paper is not on cultural differences among immigrants

All cohorts of immigrant women in the sample show lower levels of participation at arrival than the Canadian born, and their participation rises steadily (rather than declining) over years spent in Canada. In column 2 of Table 2, for instance, the odds ratio of immigrant women with immigrant partners to participate in the labour market during their first 5 years in Canada - relative to a native-born woman - was 0.346 for the cohort that arrived between 1991 and 1996. After 15 years in the country, the participation of the same cohort of immigrant women relative to natives had increased to 0.737. The pattern looks very similar for both immigrant women in immigrant couples and those in mixed partnerships. Although the first group shows somewhat lower levels of participation than those in mixed couples (particularly for later arrival cohorts), attachment to the labour market evolves at a similar pace for both groups. Neither group of immigrant women behaves as predicted for secondary workers, rather their experience of increasing participation resembles that of immigrant men during the assimilation process (Borjas, 1995; Aydemir and Skuterud 2005) or that of immigrant women in the US and Germany in recent papers (Blau et al. 2003; Basilio et al. 2009).

The main results carry on when we look instead at the number of hours worked by these cohorts in estimates not presented here but available upon request. On average, immigrant women in immigrant couples arriving in the late 1980s work 5.6 hours less than Canadian-born women upon arrival, but only 2 hours less 15 years after migration. At arrival, differences with the Canadian born are exacerbated for the subsequent cohorts, but convergence over time is substantial. For the cohort arriving during the first half of 1990s, hours participation go from an average of 10 hours less than the native born during the first five years since migration, to an average of 3 hours less after 15 years in Canada. For those arriving

during the last part of the 1990s, hours go from 12 hours left during the first five years, to 7 hours less after ten years. These results contrast with previous findings in Baker and Benjamin (1997) who explored the intensive margin of labour supply decisions of immigrant couples to show that hours of work declined with time in Canada for women in immigrant couples arriving before 1990. The two papers differ in a number of dimensions that could explain these differences such as the data source and the coverage period. However, a plausible account for the divergent findings is that the latest cohorts of immigrant women included in our analysis are more committed to the labour market than previous cohorts.

To study these patterns in detail, we look at how participation in the labour market evolves for immigrant women entering low-skill occupations. We expect that immigrant women, who seek only temporary attachment to the labour market to support family settlement in Canada, are more likely to enter low-skill occupations (Kim and Vanarasi, 2010). Low-skill jobs are defined here as those requiring skills at the bottom 25% of the analytical skill distribution or at the top 25% of the physical strength skill distribution.[8] Hence, the dependent variable is one if a woman participates in a low-skill job and zero otherwise. If immigrant women are entering these occupations merely to support their husbands while they update their human capital, we would expect to see high levels of participation in these jobs - at least around the time of migration - relative to the native-born. The first set of columns in Table 3 shows the results of this exercise both for analytical and for strength skills separately. Upon entry to Canada, immigrants clearly participate in low-skill jobs relatively more than similar native-born married women. Immigrant women in mixed couples show rather flat (in low-analytical jobs) or slightly declining (in high-strength jobs) profiles of participation with years in Canada, with some cohorts

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[8] Results are similar if we use instead jobs requiring low social skills (at the bottom 25% of the social skill distribution) or high fine motor or visual skills (at the top 25% of the corresponding skill distributions) to define a low-skill job.

participating at higher levels than others. Conversely, immigrant women with immigrant partners show a relative *increase* in participation in low-skilled jobs over time. While a declining relative participation pattern could have been difficult to interpret since it could be due to women either retiring from the labour force or moving up into more skilled positions, the increasing pattern suggests that immigrant women either remain or continue to enter in low-skill jobs over time at a much higher rate than native-born women do.

In light of this result, it is natural to ponder whether or not the type of immigrant women entering low-skilled jobs is substantially different from that of native-born entering those same jobs. In particular, since immigrant women are relatively better educated (as shown in Table 1) and presumably more career-oriented, they may not be inclined to leave the labour force even if they remain in comparatively worse jobs than those expected from their formal training. In the second set of columns of Table 3, we repeat the same analysis with the subsample of university-educated women to compare a pool of women with potentially closer career expectations. Among university-educated immigrants, those in mixed couples are between 1.6 and 2.8 times more likely to participate in occupations requiring low analytical skills and between 1.1 and 1.4 times more likely to participate in occupations requiring high physical strength than similar natives. There is some evidence of over time convergence with the Canadian born in jobs requiring high levels of strength, but not for those that demand low analytical skills. However, among women in immigrant couples relative participation in low-skill jobs steadily rises with time in Canada, particularly those requiring low analytical skills. The likelihood of participating in those jobs

is more than 3 times higher for these women than for similar native-born, even 10 and 15 years after migration.[9]

The above results indicate that among university-educated women a much larger fraction of immigrants than Canadian born are employed in low-skilled occupations regardless of the years they have been in the country. Due to the lack of longitudinal dimension in the Census data, it is not possible to interpret these findings as indicating that highly-educated immigrant women get *trapped* in relatively low-skilled positions. An alternative explanation could encompass educated immigrants who start in low-skilled jobs and move up to higher skill positions over time, but are replaced (in the aggregate) by immigrant women of the same arrival cohort who were not working beforehand. We do indeed observe that the fraction of immigrant university-educated women in high-skilled occupations (that require skills either at the bottom quartile of the strength distribution or the top quartile of the analytical one) increases over time for most cohorts. In Figure 3 we present separate estimates that focus in detail on the first five years after migration. Results indicate educated women enter low-skilled positions at much faster rate than those in the high end of the labour market. After one year in Canada, the odds that a university-educated immigrant woman is in a low-skill job relative to similarly educated native-born woman move up from around 1.3 at arrival to 2, whereas the odds ratio of holding a high-skilled job remains stable around 0.6 and only slowly increase to 0.8 after five years in Canada .

3.2. Wage assimilation

The pace of wage assimilation as immigrant women spend more time in Canada provides key information to understand their labour market performance (Duleep and Dowhan 2002; Basilio et al.

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[9] Although the number of university-educated individuals working in low-skill analytical jobs is not large - just under 20,000 in our sample – it includes mostly immigrant women in a 3 to 1 ratio.

2009). Researchers who view immigrant women as secondary workers, only entering the labour market temporarily in response to household income needs, do not expect to observe significant wage advancement among these workers, but rather relatively flat wage profiles.

We estimate an OLS regression of equation (1) where log wages are the dependent variable to analyze the wage-gap among different cohorts of immigrant women and similar native-born women over time. Results in table 4 column (1) show that married immigrant women have low initial earnings, between 20 and 50% lower, which gradually converge towards those of the native-born. Convergence seems to be slower for more recent cohorts.[10]

A substantial part of the gap seems to be related to the skills required in the jobs women hold. Controlling for the skills jobs demand (column 2), the wage gap of recent cohorts decreases except for the 2001 entry cohort which arrived at the time of the IT bust in Canada. Wages are generally higher in jobs requiring high levels of social, motor and analytical skill and lower in jobs requiring high levels of physical strength and visual skills.

To take into account the underlying selection of women into the labour force, we use a two-step Heckman correction model to estimate the wages for different cohorts over time. As instruments for the first stage participation equation, we include the number of children in the household and the female/male ratio of labour force participation in the country of origin either at the time when the woman immigrated to Canada or when she was 18 years of age for the Canadian-born.[11] Results are shown in column (3). First stage estimates and the test of interdependence of equations are presented in the

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[10] We find a similar increasing wage profile even when we restrict the sample to women working in low-status jobs (those that require low levels of analytical skills), which are the jobs secondary workers are expected to enter. Results are available from the authors upon request.

[11] The measure of female labor force participation ratio in the country of origin comes from Frank and Hou (2013).

electronic appendix. Our instruments are all strongly significant. Fertility indicators and the gender labour force ratio at home are, respectively, negatively and positively related to women's labour force participation. The Chi2 test of independence of equation confirms the endogeneity women participation decisions. Accounting for selection generally reduces the wage gap between immigrant and native-born women, particularly during the first years after arrival, but produces similar estimates after 15 years in Canada than those in column (2). The latter could denote the diminishing influence of the culture of the country of origin with time spent in Canada. The observed reduction in the wage gap when selection is taken into account is particularly strong for the 2001 cohort. Overall, patterns observed in columns (1) to (3) consistently confirm strong wage assimilation with years in Canada.[12]

Columns 4 and 5 in table 4 show separate results for the subsamples of non-university and university-educated women respectively. To ease the interpretation of the findings Figure 4 displays these estimates. Even though the entry wage gap between university-educated native born and immigrants rose to 47% for the most recent cohorts the rate of wage progression is also fast for this group (wage differences close down to 15% after 15 years in Canada). In contrast, for non-university educated women, initial wage gaps between natives and immigrants stand at around 20%, but they disappear within 15 years.[13]

This results e poor performance of highly educated immigrant women has been noted in previous researchGiven the relative high levels of educational attainment of recent immigrant women compared

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[12] In addition to those mentioned above, we explore alternative fertility measures to address selection into the labour force - including the number of children before immigration and age at first birth - with and without including occupational skills in the regression. Results, albeit at different levels, show the same steep assimilation pattern described in model (3).

[13] Although not shown here, estimates of cohort effects on wages correcting for selection are similar to those presented above.

to those of native-born, their low initial pay is unlikely the product of low levels of skills, but rather of difficulties in transferring them to the new environment. Among these hurdles, language barriers are a likely candidate.[14]

3.3. Skill assimilation

Results presented to this point indicate that, first, immigrant women do not leave the labour force – not even low-skill jobs - by the time their partners have presumably assimilated, and second, they show important wage progression over the years in Canada. Rather than behaving as secondary workers, immigrant women seem to remain attached to the labour market, and pursue careers of their own. To properly evaluate the progress of these women, an analysis of job-skill mobility could be even more informative than, or at least complementary to, an analysis of participation or of wages. Immigrant women may be undergoing considerable "occupational jumping" from initial low-skilled jobs to higher skilled jobs over time. As a consequence, a significant change in job required skills may not be accompanied by shifts in participation or even immediate wage gains if a woman is switching to a new job requiring a different set of skills.

To study patterns of skill mobility among immigrant women relative to natives, we estimate an OLS model of equation (1) where the dependent variable measures the level of a particular skill index required in the job each woman holds. The purpose of this exercise is to assess whether or not there is upgrading with time in Canada in the skills required by the jobs immigrant women perform. Figures 5 and 6, panel (a), present these results for analytical and strength skill for all immigrant women in mixed

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[14] Proper analysis of effect of language in the transfer of skills across countries is out of the scope of this paper. We pursue this analysis in a separate paper (Adsera and Ferrer, 2014b)

and non-mixed couples separately (Table 2 in the electronic appendix shows the estimated coefficients and standard errors).

Immigrants generally work in jobs requiring more strength or less analytical skills than similar natives. Those in mixed couples are closer to the native-born than those in immigrant couples and experience some advancement over time in both skill dimensions. However, the patterns of skill mobility (both strength and analytical) for those in immigrant couples are surprisingly flat. A somewhat unexpected result is the relative absence of cohort effects in analytical skill progression, with successive cohorts starting mainly at similar relative levels of skills at arrival and with years in Canada. By contrast estimates show strong cohort effects for the evolution of relative strength skills, which significantly increase for each successive cohort of immigrant women in immigrant couples.

These estimated patterns suggest that the majority of immigrant women experience little career progression as measured by the skills embodied in their jobs. On its own, this finding could be understood as the result of low labour force attachment characteristic of secondary workers. However, it is somewhat puzzling when taken together with the patterns of labour force participation and wage mobility examined before.

Potentially, these aggregate results are masking different behavior for different subsets of immigrant women. As noted, considerable changes during the 1990s and 2000s in the Canadian immigration policy have altered the educational composition of immigration. It is plausible that the career expectations and labour force attachment of immigrant women may differ by their educational attainment. To explore this issue in more detail, we repeat the analysis for the subsample of university educated women. Results are shown in panel (b) of figures 5 and 6 (Coefficients can be seen in table 6 in the appendix). The picture for university-educated immigrants, with a clear trend in skill progression,

is very different from that of the average immigrant. The amount of analytical skills required by their jobs increases over time, but more importantly there is a significant reduction in the amount of strength skills those same positions demand. Educated immigrants with immigrant spouses from the 1996 cohort start in jobs requiring strength skills that are 0.3 standard deviations above those required for the average Canadian-born woman job. After 5 years in Canada, these women hold jobs that require strength levels only 0.15 standard deviations above the average -- a remarkable improvement considering the flat profiles observed for the average immigrant woman. This suggests that mainly immigrants with non-university education are those who remain in low status jobs – as measured by the levels of skills these jobs require.

4. Robustness

4.1 Immigrant husbands

Among recently arrived immigrants, a working wife may allow men more time to search for a suitable job or to train and to acquire local human capital (Worswick 1996, 1999). If this strategy is successful, these immigrants may assimilate better in the labour market than those whose wives do not work. We test to what extent the labour force participation of immigrant women is associated with better labour outcomes of their husbands. In particular, we use the same methodology as before to examine the wage and skill progression of immigrant men married to the immigrant women in our sample, and differentiate whether or not the wife participates in the labour market. Results for male wages and skills are shown in Table 3 in the electronic appendix in.

Men whose wives participate in the labour market show almost identical labour market progression - both in terms of wages and required skills – to the average immigrant. Irrespective of the wife's labour market attachment, wage gaps with respect to natives are halved by the time these men

have been in Canada between 15 and 10 years. Analytical skill progression is also very close for the average married immigrant and that whom spouse participates.

4.2 Cultural preferences regarding the labour market

The distinction between immigrant women in either immigrant or mixed partnerships aims to control for differences between immigrants and natives in cultural preferences regarding female participation as well as to focus on the effect of transitory household income shocks at arrival on female labour market attachment (Baker and Benjamin, 1997). Immigrants from the same areas of origin will likely share cultural preferences for work, but those married to native born do not experience family income shocks pushing them into the labour market. Of course, separating immigrant women by the nativity of their spouses is not a perfect strategy if – as expected - there is selection into inter-marriage. On the one hand, if mixed unions take place after arrival as a result of assortative matching, the outcomes of immigrants married to natives may not be a good control for immigrant's cultural preferences for work, since there might be individual unobserved characteristics influencing both the propensity to marry natives and labour market choices.[15] More importantly, if some immigrants were not already married upon arrival, but married later, our estimates do not adequately measure the choices of married women facing different household constraints at the time of arrival. A few researchers – see Cobb-Clark and Crossley (2004) or Basilio et al. (2009), Cohen-Goldner et al. (2009) among others - are able to use information on the time of marriage to eliminate the potential bias due to assortative matching and/or the effect of marital status on labour outcomes. However, the majority of the literature (including this paper) is

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[15] Table 1 shows that immigrant women in mixed partnerships are more educated and have closer linguistic proximity to the native-born than other immigrant women. This suggests that they might not be a good control group for the labor force preferences of immigrants. These human capital advantages can help them land better jobs, but also make them more likely to marry native-born individuals and here we cannot distinguish the two effects.

limited by datasets that do not contain age at marriage and as a result, assumes that immigrant couples immigrated together. Therefore it is not possible to interpret our findings as causal, or to argue that the distinction between mixed and immigrant couples frees our results from immigrant's cultural preferences regarding work outcomes.

We develop several strategies to assess the robustness of the results to consideration of selectivity into marriage. Regarding the heterogeneity in cultural preferences for work, in alternative specifications, we include the gender labour force participation ratio in the country of origin of each immigrant measured at their time of migration to Canada as an alternative control for cultural preferences regarding the labour market that does not rely on mixed unions. Previous research has found this variable to be associated with the labour market outcomes of immigrant women at destination countries (Frank and Hou, 2013). The variable is strongly significant, but its inclusion does not change our participation results qualitatively. This suggests that broadly measured cultural preferences for work do not influence our results substantially

The majority of immigrant women are married at arrival, and hence this is only a small concern in our case.[16] As a robustness test, we run our models for the subsample of immigrant women who arrived before their partners (and presumably were not married at arrival). Estimates for immigrant couples are not significantly different from those presented in the paper and are available upon request.

4.3 Age cohort across census years

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[16] Citizen and Immigration Canada reports that 72% of immigrant women arriving in 2004 are married at the time of landing. In our sample we estimate this number to be 75% (including common law status)

One concern with cohort analysis regards the adequacy of the reference group (native-born women married to native-born husbands, aged 18 to 45), which changes over time as native-born women age out of earlier census and are replaced by women from a younger cohort in recent census. We have repeated the analysis using a single age cohort of women – those who were 18 to 24 in 1991 - to keep the age effects constant through the census years. All our results are robust for this subsample and are available upon request.

4.4 Differences in incentives to support husbands' investment in local human capital

As suggested by Duleep and Regrets (1999), immigrant women with educated partners have potentially more to gain from supporting their husbands' investment in local skills. It is plausible that patterns of behavior expected from secondary work can be more prevalent among these women than for the average immigrant. To examine whether this is the case, we consider the subsample of women married to educated husbands (those with university education). Somewhat surprisingly, we do not see large differences in the participation profiles of the two groups, both in levels and evolution over time. Immigrant women married to highly-educated immigrant husbands show increasing levels of participation with years since migration in low analytically skilled jobs as the average immigrant woman, rather than high initial levels that decline over time. Further, the patterns of wage assimilation of women married to highly-educated immigrant husbands and those of women married to less-educated immigrant husbands are alike. Finally, the evolution of analytical skills used in the jobs held by the subsample of immigrant women married to highly-educated immigrant husbands is also similar to that of all immigrant women (Results are presented in Figures 1 and 2 in the electronic appendix).

Conclusion

Our results show that immigrant women significantly increase labour force participation levels and experience wage gains over time, even though the skills required by their jobs do not converge to those of natives. However, university-educated women also experience significant skill progression with years in Canada. With time in Canada they work at jobs that require less strength and slightly more analytical skills. These results do not accord with the basic predictions of a model that views immigrant women as secondary workers, who enter the labour market in response to the income shock brought by the initial depreciation of their husbands' skills in their new location, and are at odds with findings for previous cohorts of Canadian immigrant women (Baker and Benjamin 1997). These general patterns, however, fit recent evidence on the performance of married immigrant women in the US (Blau et al., 2003 among others) that shows they make labour supply decisions similar to those recently observed for native married women and are robust to a variety of alternative specifications.

One of the main changes brought about by the Canadian immigration policy reform during the 1990s and 2000s is an increase in the fraction of female immigrants with post-secondary education. Their share went up from 32 to 57% over the period 1991-2006, while the corresponding proportion for native-born women only rose from 32 to 48%.[17] Our analysis by educational attainment suggests that most labour market progression for immigrant women occurs precisely for the group of highly educated women. Despite starting with very low wages and relatively high levels of participation in low-skilled jobs, there is evidence of rapid wage gains and of (a somewhat slower) job-skill progression for university-educated immigrants. Overall, notwithstanding the observed labour market assimilation, the gap between immigrants and the native-born does not close even after 20 years in Canada.

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[17] CANSIM table 054-0002, based on data from the Longitudinal Immigrant Data Base and CANSIM table 282-0004 based on Labour Force Survey estimates

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Table 1. Sample Summary Statistics.[(*)] Census 1991-2006

		Canadian born		Immigrant	
		NB partner	Immigrant partner	NB partner	Immigrant partner
Women Characteristics					
Age		35	35	36	36
Education	High S. or less	0.46	0.40	0.32	0.45
	Post-secondary (other)	0.34	0.31	0.30	0.22
	Bachelor	0.17	0.23	0.29	0.26
	Graduate	0.03	0.05	0.09	0.08
Hours of Work		24.6	25.4	23.0	21.3
Labour Force Participation		0.81	0.82	0.76	0.72
Skills	Social	0.24	0.38	0.30	-0.09
	Motor	-0.34	-0.46	-0.38	-0.12
	Strength	-0.30	-0.43	-0.32	-0.12
	Quantitative	0.06	0.18	0.12	-0.12
	Visual	-0.35	-0.42	-0.37	-0.28
Linguistic proximity*	Same Lg.	1.00	1.00	0.63	0.41
	4th level			0.11	0.15
	3rd/2nd level			0.09	0.03
	1st level			0.08	0.18
	None			0.10	0.23
Husband Characteristics					
Age		37	40	40	40
Education	High S. or less	0.45	0.37	0.33	0.38
	Post-secondary (other)	0.36	0.35	0.31	0.23
	Bachelor	0.15	0.20	0.25	0.26
	Graduate	0.04	0.08	0.11	0.13
Hours of Work		39.4	39.0	39.7	34.7
Labour Force Participation		0.95	0.94	0.94	0.89
% Observations		74%	6%	3%	17%

* The sample is restricted to married (or in common law relations) women 18-45 years of age. Immigrants are adults (18 years or older) at arrival

Table 2.Odds ratio of the labour force participation of married immigrant women relative to similar natives * (P-values)

Cohort	Years in Canada	All women		University-educated women	
		NB husband	IMM husband	NB husband	IMM husband
1986-90	5	0.506	0.606	0.401	0.421
		(0.000)	(0.000)	(0.000)	(0.000)
	10	0.707	0.736	0.592	0.509
		(0.000)	(0.000)	(0.000)	(0.000)
	15	0.791	0.891	0.798	0.684
		(0.000)	(0.041)	(0.012)	(0.041)
	20	0.875	0.910	0.684	0.833
		(0.021)	(0.002)	(0.021)	(0.002)
1991-95	5	0.464	0.346	0.345	0.240
		(0.000)	(0.000)	(0.000)	(0.000)
	10	0.673	0.651	0.579	0.527
		(0.000)	(0.000)	(0.000)	(0.000)
	15	0.755	0.737	0.708	0.721
		(0.000)	(0.000)	(0.000)	(0.000)
1996-00	5	0.394	0.269	0.333	0.215
		(0.000)	(0.000)	(0.000)	(0.000)
	10	0.566	0.508	0.560	0.506
		(0.000)	(0.000)	(0.000)	(0.000)
2001-05	5	0.365	0.271	0.325	0.254
		(0.000)	(0.000)	(0.000)	(0.000)
Observations		828,650		226,230	

All specifications include arrival cohort-time effects for immigrants and their spouses - as in equation (1) - plus controls for woman's age and age squared, education, province and main Census Metropolitan Area, survey year, husband's wage, number of children before migration, number of children 0-5 in the household and number of children 6-14, age at first birth and indicators for linguistic proximity to English or French. P-values in parenthesis.
* The sample is restricted to married (or common law) women 18-45 years of age. Immigrants are adults (18 years or older) at arrival

Table 3.Odds ratio of the labour force participation of married immigrant women relative to natives* (P-values)

Cohort	YSM	Low-Skill Jobs				Low-Skill Jobs (University-educated women)			
		Analytical (a)		Strength (b)		Analytical (a)		Strength (b)	
		NB husband	IMM husband	NB husband	IMM husband	NB husband	IMM husband	NB husband	IMM husband
1986-90	5	1.145	1.441	1.040	1.481	2.046	2.842	1.291	1.749
		(0.011)	(0.000)	(0.400)	(0.000)	(0.000)	(0.000)	(0.003)	(0.000)
	10	1.244	1.409	1.097	1.478	1.623	2.340	1.416	1.589
		(0.000)	(0.000)	(0.035)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	15	1.087	1.691	1.171	1.550	1.858	2.978	1.243	1.501
		(0.130)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.016)	(0.000)
	20	1.185	1.863	1.169	1.771	1.642	3.356	1.069	1.696
		(0.007)	(0.000)	(0.005)	(0.000)	(0.000)	(0.000)	(0.522)	(0.000)
1991-95	5	1.180	1.056	1.226	1.330	1.769	1.976	1.385	1.821
		(0.001)	(0.009)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	10	1.234	1.667	1.253	1.497	2.340	3.556	1.340	1.759
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	15	1.279	1.854	1.125	1.664	2.778	3.744	1.211	1.776
		(0.003)	(0.000)	(0.013)	(0.000)	(0.000)	(0.000)	(0.015)	(0.000)
1996-00	5	1.062	1.285	1.094	1.193	2.475	2.743	1.372	1.545
		(0.233)	(0.000)	(0.455)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	10	1.066	1.622	1.044	1.376	2.264	3.455	1.104	1.541
		(0.261)	(0.000)	(0.366)	(0.000)	(0.000)	(0.000)	(0.177)	(0.000)
2001-05	5	1.168	1.597	1.041	1.321	2.521	3.897	1.136	1.682
		(0.001)	(0.000)	(0.314)	(0.000)	(0.000)	(0.000)	(0.034)	(0.000)
Observations		828,650		828,650		226,230		226,230	

All specifications include same regressors as specified in Table 2

(a) Indicates participation in a job requiring low levels of analytical skills- at the bottom 25% of the analytical skill distribution) (b) Indicates participation in a job requiring high levels of strength skills - at the top 25% of the strength skill distribution)

* The sample is restricted to married (or common law) women 18-45 years of age. Immigrants are adults (18 years or older) at arrival.

Table 4. Weekly wages of immigrant women with immigrant partners
(relative to native-born women with NB partners)

Cohort	YSM	All (1)	(2)	Heckman (3)	Non-university (4)	University (5)
1986-90	5	-0.220***	-0.164***	-0.109***	-0.100***	-0.303***
	10	-0.152***	-0.101***	-0.062***	-0.054***	-0.226***
	15	-0.075***	-0.010	-0.020**	0.035**	-0.132***
	20	-0.069***	0.004	-0.013	0.037**	-0.065***
1991-95	5	-0.384***	-0.309***	-0.231***	-0.200***	-0.484***
	10	-0.215***	-0.136***	-0.081***	-0.097***	-0.199***
	15	-0.140***	-0.059***	-0.056***	0.002	-0.151***
1996-00	5	-0.428***	-0.590***	-0.218***	-0.197***	-0.412***
	10	-0.282***	-0.347***	-0.168***	-0.088***	-0.264***
2001-05	5	-0.543***	-0.214***	-0.346***	-0.226***	-0.468***
Social			0.086***	0.066***	0.074***	0.117***
Motor			0.152***	0.116***	0.188***	0.042***
Visual			-0.080***	-0.049***	-0.083***	-0.021***
Strength			-0.128***	-0.098***	-0.171***	-0.019***
Quantitative			0.119***	0.116***	0.105***	0.162***
Observations		583,220	562,695		400,810	161,885

The sample is restricted to married (common law) women 18-45 years of age. Immigrants are adults (18 years or older) at arrival.

All specifications include same regressors as specified in Table 2

Model (3) estimates a two-step selection model where the first stage estimates participation as a function of the female/male ratio of labour force participation in the country of origin at the time the woman was 18 years old, and the number of children in the household (coefficients shown in the appendix). Models (4) and (5) repeat specification (2) for the subsamples of university- and non-university educated women, respectively.

(***) indicates the coefficient is significant at 1%, (**) at 5%; (*) at 10%.

Figure 1. Distribution of analytical (quantitative) and physical strength skills in jobs held by married women by family type
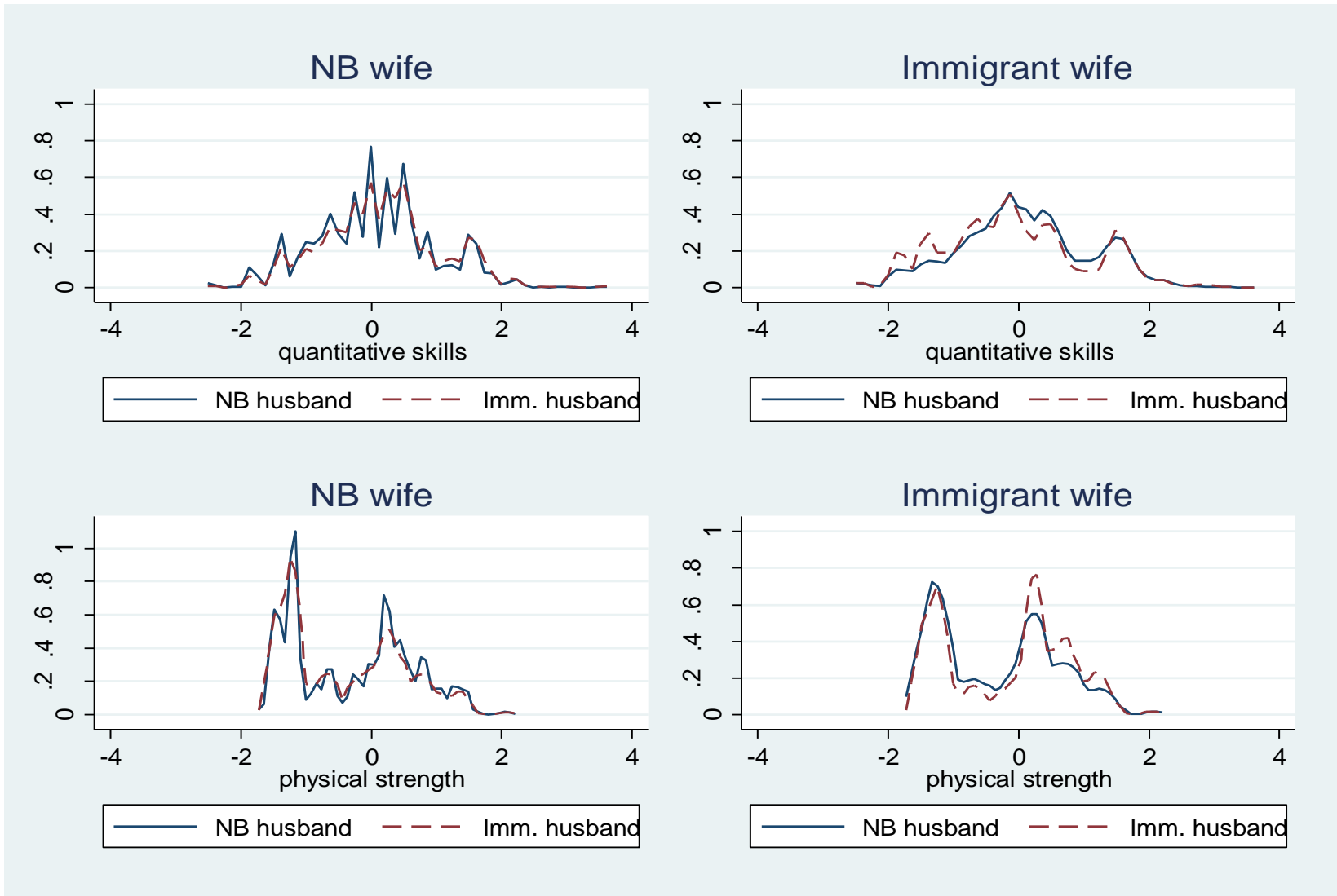
Figure 2. Distribution of weekly wages of married women by immigrant status of husband
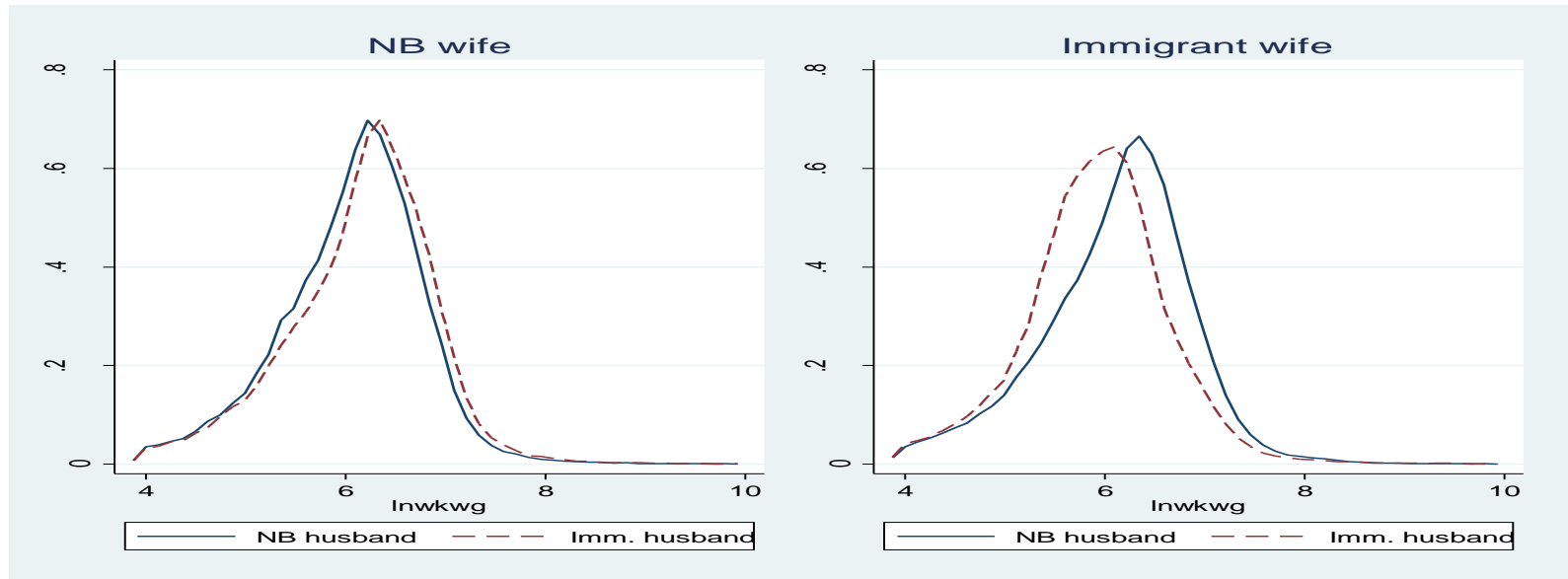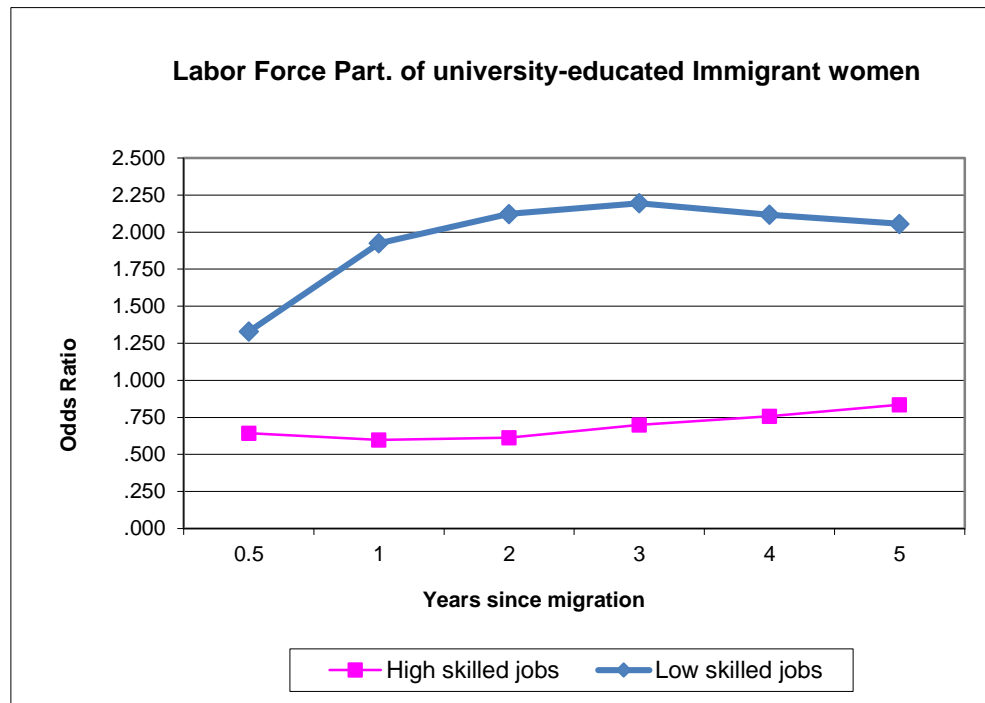
Figure 3. Odds ratio of participation of university-educated immigrant women with immigrant-husbands by type of job, relative to university-educated native women with native-born husbands.

Labor Force Part. of university-educated Immigrant women

Source: Author's calculations using Canadian census 1991-2006. For low skills, the dependent variable is an indicator equal to 1 if a woman participates in a job requiring skills either at the bottom quartile of the analytical distribution or at the top quartile of the strength distribution. For high skills, the definition is the reverse.

Figure 4. Wage assimilation of married immigrant women in immigrant couples relative to native-born women, by educational attainment of women.
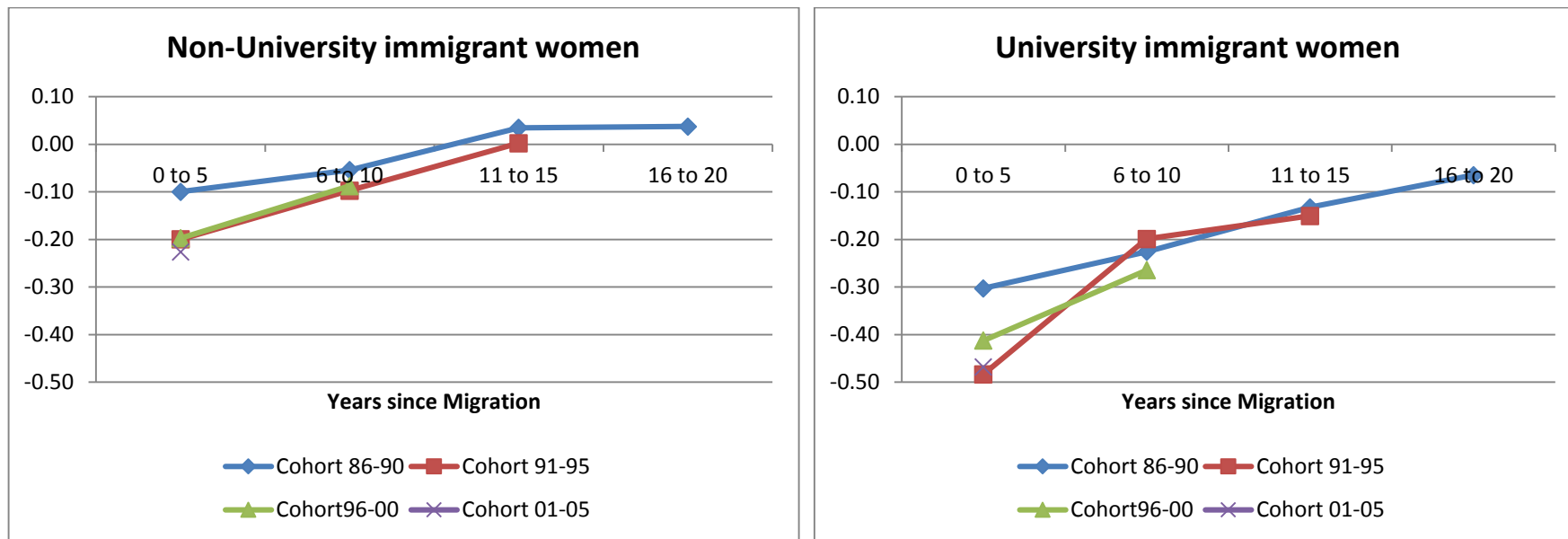
Figure 5 (a). Analytical skill mobility of immigrant women relative to similar natives, by cohort and family type (estimates in Table 6)
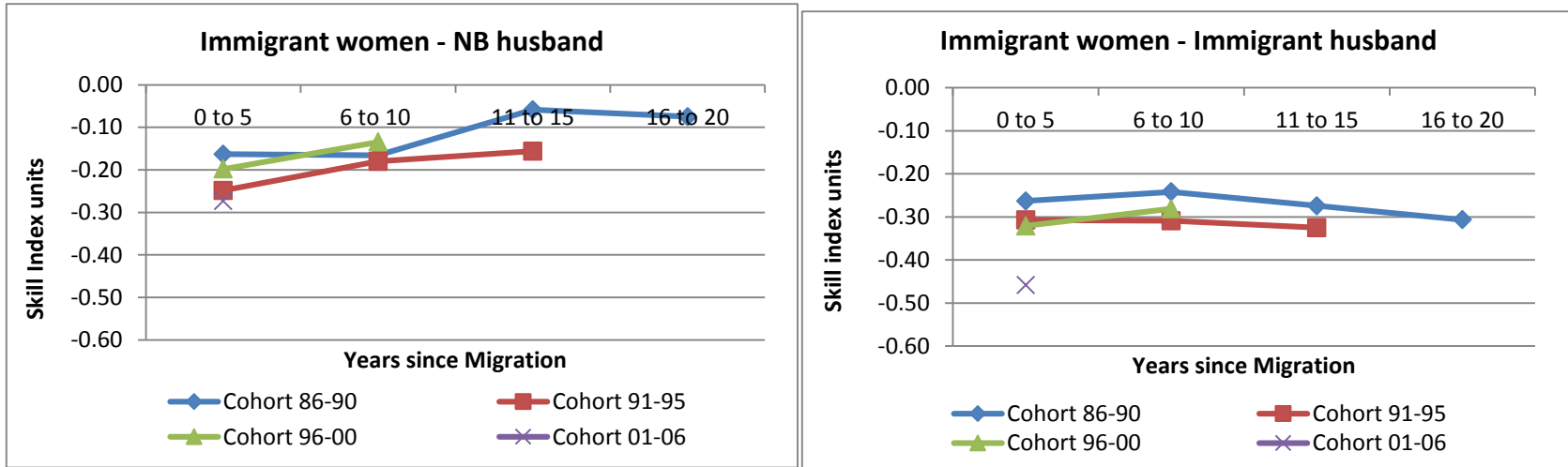

Figure 5 (b). Analytical skill mobility of University-educated immigrant women relative to similar natives, by cohort and family type.
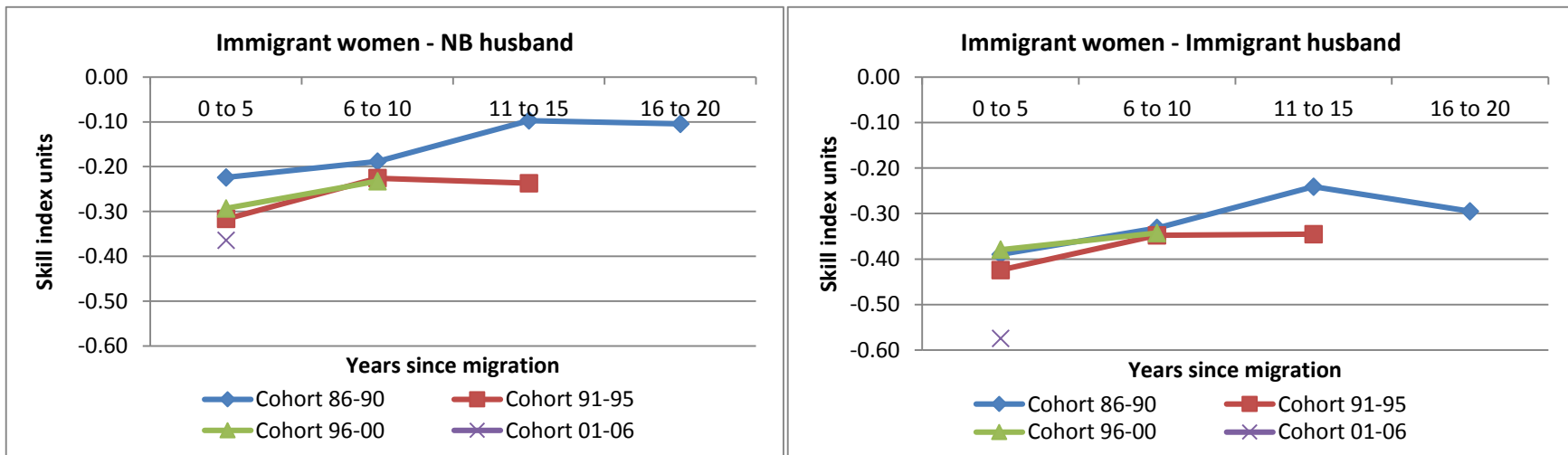
Figure 6 (a). Strength skill mobility of immigrant women relative to similar natives, by cohort and family type (estimates in Table 6)
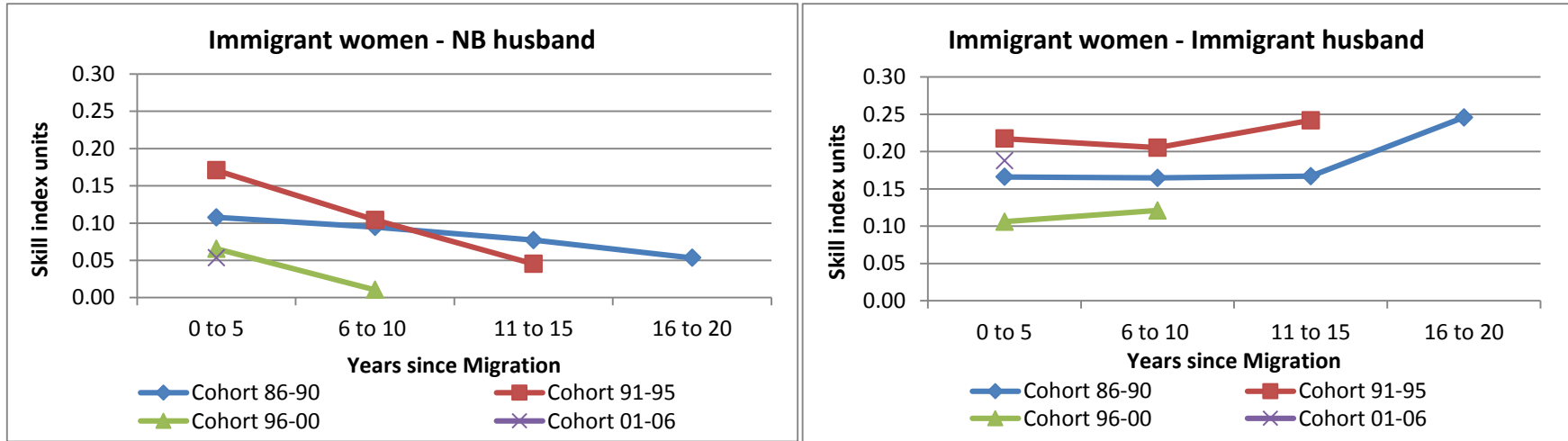

Figure 6 (b). Strength skill mobility of University ed. immigrant women relative to similar natives, by cohort and family type.
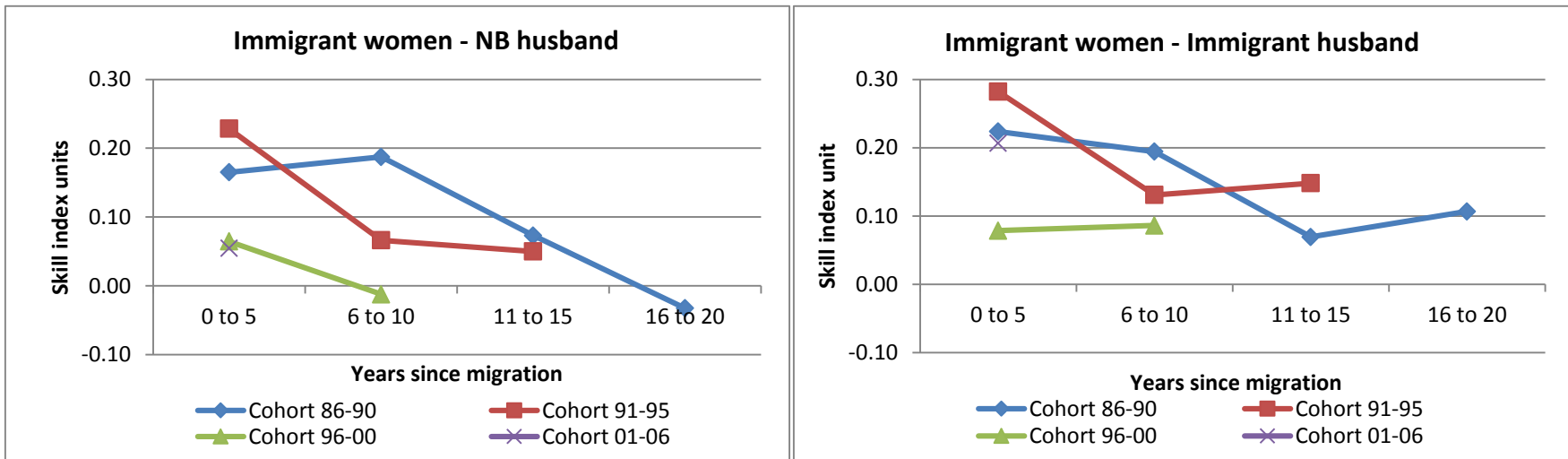
Electronic Appendix

Table 1. First Stage estimates for wage equation in column (3), table 4

LFP	Coefficient	P-value
Number of children	-0.13	0.00
Gender Labour Force Ratio at home at immigration	0.17	0.00
Children born before migration	-0.19	0.00
lambda (SE)	-0.88	
	(0.004)	
Independent equations Chi2(1) test	36218	0.000

Table 2. Skill mobility of married immigrant women (relative to native-born women with NB husbands)

		Analytical Mobility				Strength Mobility			
		(1) All		(2) University		(3) All		(4) University	
Cohort	YSM	NB husband	Immigrant husband	NB husband	Immigrant husband	NB husband	Immigrant husband	NB husband	Immigrant husband
1986-90	5	-0.163	-0.263	-0.224	-0.390	0.108	0.166	0.165	0.224
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	10	-0.166	-0.242	-0.189	-0.332	0.095	0.165	0.187	0.194
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	15	-0.059	-0.274	-0.097	-0.241	0.077	0.167	0.073	0.069
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.011)	(0.000)
	20	-0.075	-0.307	-0.105	-0.295	0.053	0.246	-0.032	0.107
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.035)	(0.000)
1991-95	5	-0.249	-0.307	-0.317	-0.424	0.171	0.217	0.228	0.282
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	10	-0.180	-0.309	-0.226	-0.348	0.104	0.205	0.066	0.131
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.009)	(0.000)
	15	-0.156	-0.325	-0.237	-0.345	0.045	0.242	0.050	0.148
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.051)	(0.000)
1996-00	5	-0.198	-0.321	-0.293	-0.380	0.066	0.106	0.065	0.078
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.008)	(0.000)
	10	-0.135	-0.281	-0.233	-0.343	0.011	0.121	-0.012	0.086
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.595)	(0.000)
2001-05	5	-0.273	-0.458	-0.364	-0.574	0.053	0.188	0.055	0.207
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.006)	(0.000)

The sample is restricted to married women 18-45 years of age. Immigrants are adults at arrival (18 or older).

Regression includes cohort-time effects for immigrants and their spouses - as in equation (1) - plus controls for woman's age and age squared, education, linguistic proximity, location, fertility and survey year. Coefficients shown in figures 5 and 6

(***) indicates the coefficient is significant at 1%. YSM stands for "years since migration"

Table 3. Wage and analytical skill assimilation of immigrant men in immigrant couples

(by wive's labour force participation) relative to similar natives.

		Wages		Analytical skill	
		All	**If wife participates**	**All**	**If wife participates**
Cohort	**YSM**				
1986-90	5	-0.386	-0.395	-0.306	-0.323
		(0.000)	(0.000)	(0.000)	(0.000)
	10	-0.304	-0.301	-0.124	-0.140
		(0.000)	(0.000)	(0.000)	(0.000)
	15	-0.245	-0.247	-0.183	-0.183
		(0.000)	(0.000)	(0.000)	(0.000)
	20	-0.197	-0.182	-0.306	-0.332
		(0.000)	(0.000)	(0.000)	(0.000)
1991-95	5	-0.556	-0.569	-0.136	-0.183
		(0.000)	(0.000)	(0.000)	(0.000)
	10	-0.354	-0.355	-0.226	-0.226
		(0.000)	(0.000)	(0.000)	(0.000)
	15	-0.294	-0.279	-0.317	-0.328
		(0.000)	(0.000)	(0.000)	(0.000)
1996-00	5	-0.487	-0.493	-0.140	-0.186
		(0.000)	(0.000)	(0.000)	(0.000)
	10	-0.333	-0.326	-0.324	-0.317
		(0.000)	(0.000)	(0.000)	(0.000)
2001-05	5	-0.609	-0.595	-0.532	-0.529
		(0.000)	(0.000)	(0.000)	(0.000)
Observations		677,805	530,340		

The sample is composed of the husbands and common law partners of the female in the sample.

All specifications include arrival cohort-time effects for immigrants and their spouses - as in equation (1) - plus controls for male experience and experience squared education, group area of origin, province and main Census Metropolitan Area, and survey year.

(***) indicates the coefficient is significant at 1%, (**) at 5%; (*) at 10%.

Figure 1. Immigrant women labour force participation in low-skill jobs (quantitative) by husband education relative to natives

Immigrant women - Immigrant husband

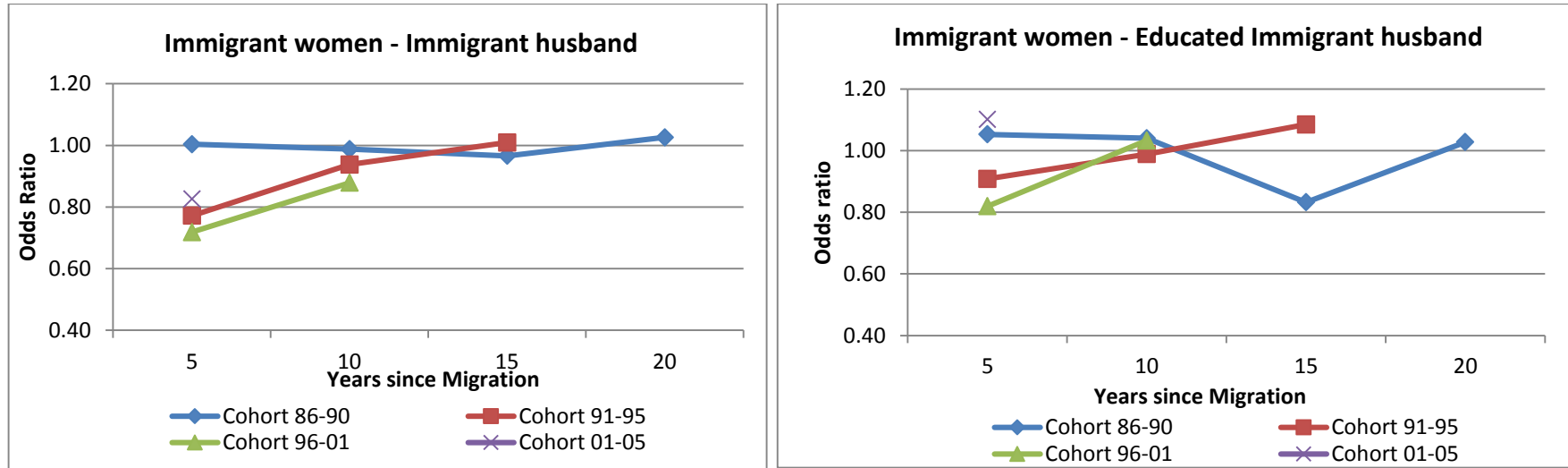Immigrant women - Educated Immigrant husband

Figure 2. Immigrant women quantitative skill mobility by cohort and family type. Univ. Educated husbands

Immigrant women - Immigrant husband

Immigrant women - Educated immigrant husband